

form 20-F 2017



UNITED STATES SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 20-F

(Mark One)

REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR 12(g) OF THE SECURITIES EXCHANGE ACT OF 1934
OR

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2017

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____

SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
Date of event requiring this shell company report _____

Commission file number: 1-10888

TOTAL S.A.

(Exact Name of Registrant as Specified in Its Charter)

Republic of France

(Jurisdiction of Incorporation or Organization)

2, place Jean Millier
La Défense 6
92400 Courbevoie
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(Address of Principal Executive Offices)

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(Name, Telephone, Email and/or Facsimile Number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act.

Title of each class	Name of each exchange on which registered
Shares American Depositary Shares	New York Stock Exchange* New York Stock Exchange

* Not for trading, but only in connection with the registration of American Depositary Shares, pursuant to the requirements of the Securities and Exchange Commission.

Securities registered or to be registered pursuant to Section 12(g) of the Act.

None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act.

None

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report.

2,528,989,616 Shares, par value €2.50 each, as of December 31, 2017

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).** Yes No

** In accordance with the applicable rules, the registrant is filing Interactive Data Files for the first time with this report.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer

Accelerated filer

Non-accelerated filer

Emerging growth company

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards*** provided pursuant to Section 13(a) of the Exchange Act.

*** The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

International Financial Reporting Standards as issued by the International Accounting Standards Board

U.S. GAAP

Other

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow. Item 17 Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

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Basis of presentation

References in this annual report on Form 20-F to pages and sections of the 2017 Registration Document are references only to those pages and sections of TOTAL's Registration Document for the year ended December 31, 2017 attached in Exhibit 15.1 to this Form 20-F. Other than as expressly provided herein, the 2017 Registration Document is not incorporated herein by reference.

TOTAL's Consolidated Financial Statements, which start on page 233 of the 2017 Registration Document and are incorporated herein by reference, are prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB) and IFRS as adopted by the European Union (EU) as of December 31, 2017.

In addition, this annual report on Form 20-F and the 2017 Registration Document contain certain measures that are not defined by generally accepted accounting principles (GAAP) such as IFRS. Our management uses these financial measures, along with the most directly comparable GAAP financial measures, in evaluating our operating performance. We believe that presentation of this information, along with comparable GAAP measures, is useful to investors because it allows investors to understand the primary method used by management to evaluate performance on a meaningful basis. Non-GAAP financial measures should not be considered in isolation from, or as a substitute for, financial information presented in compliance with GAAP. Non-GAAP financial measures as reported by us may not be comparable with similarly titled amounts reported by other companies.

Statements regarding competitive position

Unless otherwise indicated, statements made in "Item 4. Information on the company" referring to TOTAL's competitive position are based on the Company's estimates, and in some cases rely on a range of sources, including investment analysts' reports, independent market studies and TOTAL's internal assessments of market share based on publicly available information about the financial results and performance of market participants.

Additional information

This annual report on Form 20-F reports information primarily regarding TOTAL's business, operations and financial information relating to the fiscal year ended December 31, 2017. For more recent updates regarding TOTAL, you may inspect any reports, statements or other information TOTAL files with the United States Securities and Exchange Commission ("SEC"). All of TOTAL's SEC filings made after December 31, 2001, are available to the public at the SEC website at <http://www.sec.gov> and from certain commercial document retrieval services. See also "Item 10. – 10.8 Documents on display".

No material on the TOTAL website forms any part of this annual report on Form 20-F. References in this document to documents on the TOTAL website are included as an aid to their location and are not incorporated by reference into this document.

Certain terms, abbreviations and conversion table

For the meanings of certain terms used in this document, as well as certain abbreviations and a conversion table, refer to the "Glossary" starting on page 405 of the 2017 Registration Document, which is incorporated herein by reference.

Cautionary statement concerning forward-looking statements

TOTAL has made certain forward-looking statements in this document and in the documents referred to in, or incorporated by reference into, this annual report. Such statements are subject to risks and uncertainties. These statements are based on the beliefs and assumptions of the management of TOTAL and on the information currently available to such management. Forward-looking statements include information concerning forecasts, projections, anticipated synergies, and other information concerning possible or assumed future results of TOTAL, and may be preceded by, followed by, or otherwise include the words "believes", "expects", "anticipates", "intends", "plans", "targets", "estimates" or similar expressions.

Forward-looking statements are not assurances of results or values. They involve risks, uncertainties and assumptions. TOTAL's future results and share value may differ materially from those expressed in these forward-looking statements. Many of the factors that will determine these results and values are beyond TOTAL's ability to control or predict. Except for its ongoing obligations to disclose material information as required by applicable securities laws, TOTAL does not have any intention or obligation to update forward-looking statements after the distribution of this document, even if new information, future events or other circumstances have made them incorrect or misleading.

Various factors, certain of which are discussed elsewhere in this document and in the documents referred to in, or incorporated by reference into, this document, could affect the future results of TOTAL and could cause actual results to differ materially from those expressed in such forward-looking statements, including:

- material adverse changes in general economic conditions or in the markets served by TOTAL, including changes in the prices of oil, natural gas, refined products, petrochemical products and other chemicals;
- changes in currency exchange rates and currency devaluations;
- the success and the economic efficiency of oil and natural gas exploration, development and production programs, including, without limitation, those that are not controlled and/or operated by TOTAL;
- uncertainties about estimates of changes in proven and potential reserves and the capabilities of production facilities;
- uncertainties about the ability to control unit costs in exploration, production, refining and marketing (including refining margins) and chemicals;
- changes in the current capital expenditure plans of TOTAL;
- the ability of TOTAL to realize anticipated cost savings, synergies and operating efficiencies;
- the financial resources of competitors;
- changes in laws and regulations, including tax and environmental laws and industrial safety regulations;

- the quality of future opportunities that may be presented to or pursued by TOTAL;
- the ability to generate cash flow or obtain financing to fund growth and the cost of such financing and liquidity conditions in the capital markets generally;
- the ability to obtain governmental or regulatory approvals;
- the ability to respond to challenges in international markets, including political or economic conditions (including national and international armed conflict) and trade and regulatory matters (including actual or proposed sanctions on companies that conduct business in certain countries);
- the ability to complete and integrate appropriate acquisitions, strategic alliances and joint ventures;
- changes in the political environment that adversely affect exploration, production licenses and contractual rights or impose minimum drilling obligations, price controls, nationalization or expropriation, and regulation of refining and marketing, chemicals and power generating activities;
- the possibility that other unpredictable events such as labor disputes or industrial accidents will adversely affect the business of TOTAL; and
- the risk that TOTAL will inadequately hedge the price of crude oil or finished products.

For additional factors, please refer to "Item 3. – 3.2 Risk factors", "Item 5. Operating and financial review and prospects" and "Item 11. Quantitative and qualitative disclosures about market risk".

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3. KEY INFORMATION

3.1 Selected financial data

The following table presents selected consolidated financial data for TOTAL on the basis of IFRS as issued by the IASB and IFRS as adopted by the EU for the years ended December 31, 2017, 2016, 2015, 2014 and 2013. Effective January 1, 2014, TOTAL changed the presentation currency of the Group's Consolidated Financial Statements from the Euro to the US Dollar. Comparative 2013 information in the table below has been restated. Following the retrospective application of the accounting interpretation IFRIC 21 effective January 1, 2014, the information for 2013 has been restated; however, the impact on such restated results is not significant. ERNST & YOUNG Audit and KPMG Audit, a division of KPMG S.A., independent registered public accounting firms and the Company's auditors, audited the historical Consolidated Financial Statements of TOTAL for these periods from which the financial data presented below for such periods are derived. All such data should be read in conjunction with the Consolidated Financial Statements and the Notes thereto starting on page 233 of the 2017 Registration Document, which are incorporated herein by reference.

<i>(M\$, except share and per share data)^(a)</i>	2017	2016	2015	2014	2013
INCOME STATEMENT DATA					
Revenues from sales	149,099	127,925	143,421	212,018	227,969
Net income, Group share	8,631	6,196	5,087	4,244	11,228
Earnings per share (\$)	\$3.36	\$2.52	\$2.17	\$1.87	\$4.96
Fully diluted earnings per share (\$)	\$3.34	\$2.51	\$2.16	\$1.86	\$4.94
CASH FLOW STATEMENT DATA					
Cash flow from operating activities	22,319	16,521	19,946	25,608	28,513
Total expenditures	16,896	20,530	28,033	30,509	34,431
BALANCE SHEET DATA					
Total assets	242,631	230,978	224,484	229,798	239,223
Non-current financial debt	41,340	43,067	44,464	45,481	34,574
Non-controlling interests	2,481	2,894	2,915	3,201	3,138
Shareholders' equity – Group share	111,556	98,680	92,494	90,330	100,241
Common shares	7,882	7,604	7,670	7,518	7,493
DIVIDENDS					
Dividend per share (€)	€2.48 ^(b)	€2.45	€2.44	€2.44	€2.38
Dividend per share (\$)	\$2.96 ^{(b)(c)}	\$2.61	\$2.67	\$2.93	\$3.24
COMMON SHARES^(d)					
Average number outstanding of common shares €2.50 par value (shares undiluted)	2,481,802,636	2,379,182,155	2,295,037,940	2,272,859,512	2,264,349,795
Average number outstanding of common shares €2.50 par value (shares diluted)	2,494,756,413	2,389,713,936	2,304,435,542	2,281,004,151	2,271,543,658

(a) Following the retrospective application of the accounting interpretation IFRIC 21 effective January 1, 2014, the information for 2013 has been restated; however, the impact on such restated results is not significant.

(b) Subject to approval by the shareholders' meeting on June 1, 2018.

(c) Estimated dividend in dollars includes the first quarterly interim ADR dividend of \$0.73 paid in October 2017 and the second quarterly interim ADR dividend of \$0.75 paid in January 2018, as well as the third quarterly interim ADR dividend of \$0.74 payable in April 2018 and the proposed final interim ADR dividend of \$0.74 payable in June 2018, both converted at a rate of \$1.20/€.

(d) The number of common shares shown has been used to calculate per share amounts.

3.2 Risk factors

The Group and its businesses are subject to various risks relating to changing competitive, economic, political, legal, social, industry, business and financial conditions, including changes in such conditions. Point 3.1 (“Risk factors”) of chapter 3 of the 2017 Registration Document (starting on page 74) is incorporated herein by reference.

For additional information on these conditions, along with TOTAL’s approaches to managing certain of these risks, please refer to “Item 5. Operating and financial review and prospects” and “Item 11. Quantitative and qualitative disclosures about market risk”, as well as points 3.3 (“Internal control and risk management procedures”) and 3.5 (“Vigilance Plan”) of chapter 3 (starting on pages 88 and 96, respectively) of the 2017 Registration Document, which are incorporated herein by reference.

ITEM 4. INFORMATION ON THE COMPANY

The following information providing an integrated overview of the Group from the 2017 Registration Document is incorporated herein by reference:

- presentation of the Group and its governance (point 1.1 of chapter 1, starting on page 4);
- the Group’s collective ambition and strategy (point 1.2 of chapter 1, on page 9);
- history, employees, integrated business model and geographic presence (point 1.3 of chapter 1, starting on page 10);
- an overview of the Group’s R&D, investment policy and sustainable development initiatives (point 1.5 of chapter 1, on page 23); and
- organizational structure (point 1.6 of chapter 1, starting on page 26).

The following information providing an overview of the Group’s businesses and activities from the 2017 Registration Document is incorporated herein by reference:

- business overview for fiscal year 2017 (points 2.1 to 2.4 of chapter 2, starting on page 30);
- information concerning the Group’s principal capital expenditures and divestitures (point 2.5 of chapter 2, starting on page 68). See also “Item 5. Operating and financial review and prospects”; and
- geographical breakdown of the Group’s sales, property, plants and equipment, intangible assets and capital expenditures over the past three years (Note 4 to the Consolidated Financial Statements, on page 259).

The following other information from the 2017 Registration Document is incorporated herein by reference:

- insurance policy (point 3.4 of chapter 3, starting on page 95);
- social, environmental and societal information (introduction and points 5.1.3 to 5.4 of chapter 5, starting on page 170); and
- investor relations (point 6.6 of chapter 6, starting on page 223).

ITEM 4A. UNRESOLVED STAFF COMMENTS

None.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

This section is the Company’s analysis of its financial performance and of significant trends that may affect its future performance. It should be read in conjunction with the Consolidated Financial Statements and the Notes thereto in the 2017 Registration Document (starting on page 233), which are incorporated herein by reference. The Consolidated Financial Statements and the Notes thereto are prepared in accordance with IFRS as issued by the IASB and IFRS as adopted by the EU.

This section contains forward-looking statements that are subject to risks and uncertainties. For a list of important factors that could cause actual results to differ materially from those expressed in the forward-looking statements, see “Cautionary Statement Concerning Forward-Looking Statements” starting on page i.

For an overview of TOTAL’s critical accounting policies, including policies involving management’s judgment and estimates, refer to the Introduction to the Notes to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 244), which is incorporated herein by reference.

5.1 Overview

TOTAL’s results are affected by a variety of factors, including changes in crude oil and natural gas prices as well as refining and marketing margins, which are all generally expressed in dollars, and changes in exchange rates, particularly the value of the euro compared to the dollar. Higher crude oil and natural gas prices generally have a positive effect on the income of TOTAL, since the Exploration & Production segment’s oil and gas business and Gas, Renewables & Power segment’s downstream gas business are positively impacted by the resulting increase in revenues. Lower crude oil and natural gas prices generally have a corresponding negative effect. The effect of changes in crude oil prices on the activities of TOTAL’s Refining & Chemicals and Marketing & Services segments depends upon the speed at which the prices of refined petroleum products adjust to reflect such changes. TOTAL’s results are also significantly affected by the costs of its activities, in particular those related to exploration and production, and by the outcome of its strategic decisions with respect to cost reduction efforts. In addition, TOTAL’s

results are affected by general economic and political conditions and changes in governmental laws and regulations, as well as by the impact of decisions by OPEC on production levels. For more information, refer to “Item 3. – 3.2 Risk factors”.

The Brent price rose to \$54/b on average in 2017 from \$44/b in 2016 while remaining volatile. The Group demonstrated its ability to capture the benefit of higher prices and reported a return on equity above 10%, the highest among the majors. The Exploration & Production segment, in particular, increased its adjusted net operating income by approximately 86% and its operating cash flow before working capital changes at replacement cost⁽¹⁾ by 38% whereas oil prices only increased by 24%.

TOTAL's net income (Group share) in 2017 increased by 39% to \$8,631 million from \$6,196 million in 2016, mainly due to higher hydrocarbon prices and growth of the Group's production. Adjustments to net income (Group share), which include special items and the after-tax inventory valuation effect, had a negative impact of \$1,947 million in 2017. Excluding these items, adjusted net income increased by 28% (compared to a 24% increase in Brent) to \$10,578 million in 2017 compared to \$8,287 million in 2016, due to a much higher contribution from Exploration & Production and the continued decrease in the Group's breakeven. For additional information, refer to “– 5.2 Group results 2015-2017” and “– 5.3 Business segment reporting”, below.

Financial discipline was successfully maintained. Organic investments were \$14.4 billion (excluding acquisitions), in line with the Group's target of \$13-15 billion, and cost savings reached \$3.7 billion in 2017, more than the target of \$3.5 billion. Production costs⁽²⁾ fell to \$5.4/boe in 2017 from \$9.9/boe in 2014.

These strong results were driven by production growth (5% in 2017), notably the start-up of the Moho-Nord in the Republic of the Congo, the ramp-up of Kashagan in Kazakhstan and the entry into Al Shaheen in Qatar. The Downstream⁽³⁾ confirmed again this year its ability to generate about \$7 billion of operating cash flow before working capital changes at replacement cost and reported a return on capital employed of more than 30%.

In 2017, the Group took advantage of the cyclical low to launch five Upstream projects, including the first phase of the Libra development in Brazil, as well as launching petrochemical projects in the United States and South Korea. In the Exploration & Production segment, the Group is preparing for future growth with the acquisition of Mærsk Oil, strengthening its position in the North Sea, and finalized its entry into the Lapa and Lara fields in Brazil in early 2018. In the U.S. Gulf of Mexico, the Group participated in a major discovery at the Ballymore prospect. In the framework of reinforcing its integrated gas strategy, it announced the acquisition of the LNG business of Engie to take full advantage of the fast-growing LNG market. Marketing & Services continues to grow, notably by expanding its retail network into Mexico.

The strategy implemented since 2015 has enabled the Group to reduce its pre-dividend organic breakeven⁽⁴⁾ to \$27/b in 2017 and generate \$22 billion of debt-adjusted cash flow (“DACF”)⁽⁵⁾. The Group also continued to strengthen its balance sheet, ending the year with a 13.8% gearing⁽⁶⁾, a significant decrease compared to 2016.

Outlook

Since the end of 2017, Brent has been trading between \$60/b and \$70/b, supported by strong demand (+1.6 Mb/d in 2017), extended production cuts by OPEC and Russia and a decrease in crude oil inventories, which nevertheless remain higher than the past five-year average, which could contribute to continuing price volatility. The Group maintains its strategy to cut costs with the objective of achieving over \$4 billion of cost savings in 2018 and production costs of \$5.5/boe. Organic investments are targeted at around \$14 billion in 2018.

The Exploration & Production segment's production is expected to increase by 6% in 2018, confirming the objective to grow by 5% per year on average between 2016 and 2022. As a result of this expected growth and the portfolio mix, the Group's cash flow sensitivity to a \$10/b change in the price of Brent increases to \$2.8 billion in 2018 from \$2.5 billion in 2017. The Group intends to take advantage of the favorable cost environment by continuing to launch projects in 2018. The growing demand for LNG supports the Group's strategy to develop along the integrated gas value chain, as illustrated by the announced acquisition of Engie's LNG portfolio.

In the context of sharply higher oil prices, rising refined product inventories, due to high global refining utilization rates, and seasonally weak winter demand, refining margins have decreased since December 2017. Despite the current weakness in refining margins, the Downstream is expected to generate \$7 billion of operating cash flow before working capital changes at replacement cost once again in 2018. Refining & Chemicals continues to expand its high-return integrated platforms notably in the United States and in Asia-Middle East. Marketing & Services continues to pursue its growth strategy in high-potential markets.

The Group's pre-dividend organic breakeven is continuing to fall, with an objective of \$25/b in 2018.

(1) Operating cash flow excluding the change in working capital at replacement cost provides information on underlying cash flow without the short-term impacts of changes in inventory and other working capital elements at replacement cost. For information on the replacement cost method, refer to “– 5.3 Business segment reporting” and Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference.

(2) “Production costs” = costs related to the production of hydrocarbons in accordance with FASB ASC 932-360-25-15.

(3) Refining & Chemicals and Marketing & Services segments.

(4) Barrel price permitting the generation of cash flow that is equal to organic investments.

(5) DACF = operating cash flow excluding both the change in working capital at replacement cost and financial charges. It provides a measure of cash flow generated by the Group's activities regardless of its financial structure.

(6) “Gearing” refers to the net-debt-to-equity ratio. “Net-debt-to-equity ratio” = (net debt)/(adjusted shareholders' equity). For additional information, refer to Note 15.1(E) to the Consolidated Financial Statements in the 2017 Registration Document (on page 307), which is incorporated herein by reference.

After a period of heavy investment, the Group's cash flow generation is growing strongly, driven by an increase in production that is at the best level among the majors. The Group has taken advantage of the low part of the oil price cycle to acquire high-quality resources at attractive prices and emerge stronger with better visibility on its cash flow generation and a net-debt-to-equity ratio below 20%⁽¹⁾. In this context, the Board of Directors is proposing a shareholder return policy for the coming three years comprised of dividend increases and share buybacks (for additional information concerning the Group's dividends and dividend policy, refer to point 6.2 of chapter 6 (starting on page 213) of the 2017 Registration Document, which is incorporated herein by reference).

5.2 Group results 2015-2017

As of and for the year ended December 31,
(M\$, except per share data)

	2017	2016	2015
Non-Group sales	171,493	149,743	165,357
Adjusted net operating income from business segments ^(a)			
- Exploration & Production	5,985	3,217	4,330
- Gas, Renewables & Power ^(b)	485	439	567
- Refining & Chemicals	3,790	4,195	4,839
- Marketing & Services	1,676	1,559	1,591
Equity in net income (loss) of affiliates	2,015	2,214	2,361
Fully-diluted earnings per share (\$)	3.34	2.51	2.16
Fully-diluted weighted-average shares (millions)	2,495	2,390	2,304
Net income (Group share)	8,631	6,196	5,087
Gross investments ^(c)	16,896	20,530	28,033
Divestments	5,264	2,877	7,584
Net investments ^(d)	11,636	17,757	20,360
Organic investments ^(e)	14,395	17,484	22,976
Resource acquisitions ^(f)	714	780	2,808
Cash flow from operating activities	22,319	16,521	19,946
- Includes (increase)/decrease in working capital ^(g)	827	(1,119)	1,683

(a) Adjusted results are defined as income using replacement cost, adjusted for special items, excluding the impact of changes for fair value. See "– 5.3 Business segment reporting" below for further details.

(b) Following the Group's reorganization fully effective as of January 1, 2017, the new Gas, Renewables & Power segment reflects the Group's ambition in low-carbon energies. It encompasses downstream Gas activities previously integrated in the Upstream (now Exploration & Production) segment, New Energies activities (excluding biotechnologies) previously integrated in the Marketing & Services segment and a new Innovation & Energy Efficiency division. In this Item 5, certain financial information for the Exploration & Production, Refining & Chemicals (which includes a new Biofuels division) and Marketing & Services segments have been restated accordingly.

(c) "Gross investments" include acquisitions and increases in non-current loans. For additional information on investments, refer to point 2.5 of chapter 2 of the 2017 Registration Document (starting on page 68), which is incorporated herein by reference.

(d) "Net investments" = gross investments – divestments – repayment of non-current loans – other operations with non-controlling interests. For additional information on investments, refer to point 2.5 of chapter 2 of the 2017 Registration Document (starting on page 68), which is incorporated herein by reference.

(e) "Organic investments" = net investments excluding acquisitions, asset sales and other operations with non-controlling interests. For additional information on investments, refer to point 2.5 of chapter 2 of the 2017 Registration Document (starting on page 68), which is incorporated herein by reference.

(f) "Resource acquisitions" = acquisition of a participating interest in an oil and gas mining property by way of an assignment of rights and obligations in the corresponding permit or license and related contracts, with a view to producing the recoverable oil and gas.

(g) The change in working capital as determined using the replacement cost method was \$1,184 million in 2017, \$(467) million in 2016 and \$570 million in 2015. For information on the replacement cost method, refer to Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference.

2017 vs. 2016

The Brent price rose to \$54/b on average in 2017 from \$44/b in 2016 while remaining volatile. In 2017, TOTAL's average liquids price realization⁽²⁾ increased by 25% to \$50.2/b from \$40.3/b in 2016. TOTAL's average natural gas price realization for the Group's consolidated subsidiaries increased by 15% to \$4.08/Mbtu in 2017 from \$3.56/Mbtu in 2016. The Group's European Refining Margin Indicator ("ERMI")⁽³⁾ increased to \$40.9/t on average in 2017 compared to \$34.1/t in 2016, an increase of 20% due to elevated petroleum product demand. In the fourth quarter of 2017, the ERMI was \$35.5/t. Petrochemicals continued to benefit from a favorable environment albeit down compared to a year ago.

The euro-dollar exchange rate averaged \$1.13/€ in 2017 compared to \$1.11/€ in 2016.

In this overall more favorable environment, non-Group sales in 2017 were \$171,493 million compared to \$149,743 million in 2016, an increase of 15% reflecting the increased hydrocarbon prices and Group production. Non-Group sales increased 11% for the Exploration & Production segment, 27% for the Gas, Renewables & Power segment, 15% for the Refining & Chemicals segment and 12% for the Marketing & Services segment.

(1) Excluding the impact of IFRS 16, which is the subject of an ongoing evaluation by a working group formed for that purpose. For information on the transition to IFRS 16, refer to Note 1.2 to the Consolidated Financial Statements in the 2017 Registration Document (on page 246), which is incorporated herein by reference.

(2) Consolidated subsidiaries, excluding fixed margins.

(3) The ERMI is a Group indicator intended to represent the margin after variable costs for a hypothetical complex refinery located around Rotterdam in Northern Europe that processes a mix of crude oil and other inputs commonly supplied to this region to produce and market the main refined products at prevailing prices in this region. The indicator margin may not be representative of the actual margins achieved by the Group in any period because of the Group's particular refinery configurations, product mix effects or other company-specific operating conditions.

Net income (Group share) in 2017 increased by 39% to \$8,631 million from \$6,196 million in 2016, mainly due to higher hydrocarbon prices and growth of the Group's production. In 2017, adjustments to net income (Group share), which included special items of \$(2,213) million and after-tax inventory valuation effect of \$282 million, had a negative impact on net income (Group share) of \$1,947 million. Special items included mainly an impairment of Fort Hills in Canada (following the operator announcement of the increase of the project's costs), Gladstone LNG in Australia and assets in Congo, partially offset by a gain on the sale of Atotech. For a detailed overview of adjustment items for 2017, refer to Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference. In 2016, adjustments to net income (Group share), which included special items of \$(2,567) million and after-tax inventory valuation effect of \$479 million, had a negative impact on net income (Group share) of \$2,091 million. Special items in 2016 included impairments on Gladstone LNG in Australia, Angola LNG, and Laggan-Tormore in the United Kingdom, reflecting the decrease in gas price assumptions for the coming years. Excluding these items, adjusted net income in 2017 increased by 28% to \$10,578 million compared to \$8,287 million in 2016. The increase was the result of a much higher contribution from Exploration & Production and the continued decrease in the Group's breakeven.

Income taxes in 2017 amounted to \$3,029 million, 3.1 times higher than \$970 million in 2016, due to the relative weight and higher tax rates in the Exploration & Production segment in a higher hydrocarbon price environment.

In 2017, the Company did not buy back any of its shares. In 2016, the Company bought back 100,331,268 TOTAL treasury shares owned by Group affiliates under the authorization granted by the shareholders at the meeting of May 24, 2016, which were subsequently canceled by the Company's Board of Directors.

Fully-diluted earnings per share was \$3.34 in 2017 compared to \$2.51 in 2016, an increase of 33%.

Asset sales completed in 2017 were \$4,239 million, essentially comprised of the sale of Atotech, mature assets in Gabon, Gina Krog in Norway, part of the interest in the Fort Hills project in Canada, the SPMR pipeline in France and LPG activities in Germany. Asset sales completed in 2016 were \$1,864 million.

Acquisitions completed in 2017 were \$1,476 million, including \$714 million of resource acquisitions, mainly comprised of the bonus related to the license for Elk-Antelope in Papua New Guinea, a marketing and logistics network in East Africa and a 23% equity share in Tellurian, Inc. Acquisitions completed in 2016 were \$2,033 million, including \$780 million of resource acquisitions.

In addition, in early 2018, the Group finalized the acquisition of assets in Brazil from Petrobras for \$1.95 billion as well as the sale of TotalErg in Italy for \$415 million (including the B2B and the LPG businesses). Finally, in March 2018, TOTAL S.A. finalized the acquisition of Mærsk Oil in a share and debt transaction.

The Group's cash flow from operating activities for the full-year 2017 was \$22,319 million, an increase of 35% compared to \$16,521 million in 2016. The change in working capital at replacement cost for the full-year 2017, which is the (increase)/decrease in working capital of \$827 million as determined in accordance with IFRS adjusted for the pre-tax inventory valuation effect of \$357 million, was \$1,184 million compared to \$(467) million in 2016. Operating cash flow excluding the change in working capital at replacement cost for the full-year 2017 was \$21,135 million, an increase of 24% compared to \$16,988 million in 2016. Operating cash flow for the full-year 2017 excluding the change in working capital at replacement cost and without financial charges (DACF) was \$22,183 million, an increase of 26% compared to \$17,581 million in 2016. The Group's net cash flow⁽¹⁾ was \$9,499 million for the full-year 2017 compared to \$(769) million in 2016, mainly due to the nearly \$4 billion increase in operating cash flow before working capital changes, the decrease in net investments related to the \$3 billion decrease in organic investments and the sale of Atotech.

See also "– 5.4 Liquidity and Capital Resources", below.

2016 vs. 2015

After falling from \$100/b in 2014 to \$52/b on average in 2015, Brent prices were highly volatile in 2016, fluctuating between \$27/b and \$58/b, with an average of \$44/b for the year. In 2016, TOTAL's average liquids price realization decreased by 15% to \$40.3/b from \$47.4/b in 2015. TOTAL's average natural gas price realization for the Group's consolidated subsidiaries decreased in 2016 by 25% to \$3.56/Mbtu from \$4.75/Mbtu in 2015. The ERMI was \$34/t in 2016, a 30% decrease compared to the high levels in 2015 (\$48.5/t), in the context of high petroleum stocks. The environment for petrochemicals remained favorable.

The Euro remained stable in 2016 compared to the US Dollar, with the euro-dollar exchange rate averaging \$1.11/€ in 2016 and 2015.

In this overall less favorable environment, non-Group sales in 2016 were \$149,743 million, a decrease of 9% compared to \$165,357 million for 2015. The decrease in hydrocarbon prices and refining margins were partially offset by production growth and strong results for petrochemicals.

Net income (Group share) in 2016 increased by 22% to \$6,196 million from \$5,087 million in 2015, mainly due to a less negative impact on net income (Group share) in 2016 of special items (as further discussed below), with the Group demonstrating its resilience despite the 19% drop in hydrocarbon prices due to the strength of its integrated model and commitment of its teams to reducing the breakeven. In 2016, adjustments to net income (Group share), which included special items of \$(2,567) million and after-tax inventory valuation effect of \$479 million, had a negative impact on net income (Group share) of \$2,091 million in 2016. Special items included impairments on Gladstone LNG in Australia, Angola LNG, and Laggan-Tormore in the United Kingdom, reflecting the decrease in gas price assumptions for the coming years. In 2015, adjustment items, which included special items of \$(4,675) million and after-tax inventory valuation effect of \$(747) million, had a negative impact on net income (Group share) of \$5,431 million. Special items included impairments on Fort Hills in Canada and Gladstone LNG in Australia as well as in Libya, an adjustment to depreciation on Usan in Nigeria following the cancellation of the sale process and the impairment of exploration projects that will not be developed. Excluding these items, adjusted net income declined by 21% to \$8,287 million in 2016 compared to \$10,518 million in 2015, primarily due to the impact of lower Brent prices, partially offset by the contribution from downstream activities.

Income taxes in 2016 amounted to \$970 million, a decrease of 41% compared to \$1,653 million in 2015, due to the relative weight and lower tax rates in Exploration & Production in a lower hydrocarbon price environment.

In 2016, the Company bought back 100,331,268 TOTAL treasury shares owned by Group affiliates under the authorization granted by the shareholders at the meeting of May 24, 2016, which were subsequently canceled by the Company's Board of Directors. TOTAL bought back approximately 4.7 million of its own shares in 2015 (i.e., approximately 0.19% of the share capital as of December 31, 2015) under the

(1) "Net cash flow" = operating cash flow before working capital changes at replacement cost – net investments (including other transactions with non-controlling interests).

authorization granted by the shareholders at the meeting of May 29, 2015. The number of fully-diluted shares at December 31, 2016, was 2,436 million compared to 2,336 million at December 31, 2015.

Fully-diluted earnings per share was \$2.51 in 2016 compared to \$2.16 in 2015, an increase of 16%.

Asset sales completed in 2016 were \$1,864 million, mainly comprised of the sale of a 15% interest in the Gina Krog field in Norway, the FUKA gas pipeline network in the North Sea and the retail network in Turkey. Asset sales completed in 2015 \$5,968 million.

Acquisitions completed in 2016 were \$2,033 million, including \$780 million of resource acquisitions, mainly comprised of the additional 75% interest in the Barnett shale gas field in the United States, and the acquisitions of Saft, Lampiris and a retail network in the Dominican Republic. Acquisitions completed in 2015 were \$3,441 million, including \$2,808 million of resource acquisitions.

The Group's cash flow from operating activities for the full-year 2016 was \$16,521 million, a decrease of 17% compared to \$19,946 million in 2015. The change in working capital at replacement cost for the full-year 2016, which is the (increase)/decrease in working capital of \$(1,119) million as determined in accordance with IFRS adjusted for the pre-tax inventory valuation effect of \$652 million, was \$(467) million compared to \$570 million in 2015. Operating cash flow excluding the change in working capital at replacement cost for the full-year 2016 was \$16,988 million, a decrease of 12% compared to \$19,376 million in 2015. Operating cash flow for the full-year 2016 excluding the change in working capital at replacement cost and without financial charges (DACF) was \$17,581 million, a decrease of 11% compared to \$19,839 million in 2015. The Group's net cash flow was \$(769) million for the full-year 2016 compared to \$(984) million in 2015, an improvement despite a nearly \$10/b decrease in the Brent price in 2016 compared to 2015. The decrease in investments was able to offset the decrease in operating cash flow before working capital changes mainly caused by the decrease in hydrocarbon prices and European refining margins.

See also "– 5.4 Liquidity and Capital Resources", below.

5.3 Business segment reporting

The financial information for each business segment is reported on the same basis as that used internally by the chief operating decision-maker in assessing segment performance and the allocation of segment resources. Due to their particular nature or significance, certain transactions qualifying as "special items" are excluded from the business segment figures. In general, special items relate to transactions that are significant, infrequent or unusual. In certain instances, certain transactions such as restructuring costs or asset disposals, which are not considered to be representative of the normal course of business, may qualify as special items although they may have occurred in prior years or are likely to recur in following years.

In accordance with IAS 2, the Group values inventories of petroleum products in its financial statements according to the First-In, First-Out (FIFO) method and other inventories using the weighted-average cost method. Under the FIFO method, the cost of inventory is based on the historic cost of acquisition or manufacture rather than the current replacement cost. In volatile energy markets, this can have a significant distorting effect on the reported income. Accordingly, the adjusted results of the Refining & Chemicals and Marketing & Services segments are presented according to the replacement cost method in order to facilitate the comparability of the Group's results with those of its competitors and to help illustrate the operating performance of these segments excluding the impact of oil price changes on the replacement of inventories. In the replacement cost method, which approximates the Last-In, First-Out (LIFO) method, the variation of inventory values in the statement of income is, depending on the nature of the inventory, determined using either the month-end price differential between one period and another or the average prices of the period. The inventory valuation effect is the difference between the results under the FIFO and replacement cost methods.

The effect of changes in fair value presented as an adjustment item reflects, for trading inventories and storage contracts, differences between internal measures of performance used by TOTAL's management and the accounting for these transactions under IFRS, which requires that trading inventories be recorded at their fair value using period-end spot prices. In order to best reflect the management of economic exposure through derivative transactions, internal indicators used to measure performance include valuations of trading inventories recorded at their fair value based on forward prices. Furthermore, TOTAL, in its trading activities, enters into storage contracts, the future effects of which are recorded at fair value in the Group's internal economic performance. IFRS, by requiring accounting for storage contracts on an accrual basis, precludes recognition of this fair value effect.

The adjusted business segment results (adjusted operating income and adjusted net operating income) are defined as replacement cost results, adjusted for special items, excluding the effect of changes in fair value. For further information on the adjustments affecting operating income on a segment-by-segment basis, and for a reconciliation of segment figures to figures reported in the Company's audited Consolidated Financial Statements, see Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference.

The Group measures performance at the segment level on the basis of adjusted net operating income. Net operating income comprises operating income of the relevant segment after deducting the amortization and the depreciation of intangible assets other than leasehold rights, translation adjustments and gains or losses on the sale of assets, as well as all other income and expenses related to capital employed (dividends from non-consolidated companies, income from equity affiliates and capitalized interest expenses) and after income taxes applicable to the above. The income and expenses not included in net operating income that are included in net income are interest expenses related to long-term liabilities net of interest earned on cash and cash equivalents, after applicable income taxes (net cost of net debt and non-controlling interests). Adjusted net operating income excludes the effect of the adjustments (special items and the inventory valuation effect) described above. For further discussion of the calculation of net operating income and the calculation of return on average capital employed (ROACE⁽¹⁾), see Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference.

(1) "ROACE" = ratio of adjusted net operating income to average capital employed at replacement cost between the beginning and the end of the period.

5.3.1 Exploration & Production segment

Environment – liquids and gas price realizations ^(a)	2017	2016	2015
Brent (\$/b)	54.2	43.7	52.4
Average liquids price (\$/b)	50.2	40.3	47.4
Average gas price (\$/Mbtu)	4.08	3.56	4.75
Average hydrocarbons price (\$/boe)	38.7	31.9	39.2

(a) Consolidated subsidiaries, excluding fixed margins.

Production	2017	2016	2015
Liquids (kb/d)	1,346	1,271	1,237
Gas (Mcf/d)	6,662	6,447	6,054
Combined production (kboe/d)	2,566	2,452	2,347

Results (M\$)	2017	2016	2015
Non-Group sales	8,477	7,629	10,297
Operating income ^(a)	2,792	(431)	(2,669)
Equity in income (loss) of affiliates and other items	1,546	1,375	1,944
Effective tax rate ^(b)	41.2%	27.7%	48.2%
Tax on net operating income	(2,233)	401	(361)
Net operating income ^(a)	2,105	1,345	(1,086)
Adjustments affecting net operating income	3,880	1,872	5,416
Adjusted net operating income ^(c)	5,985	3,217	4,330
- Including income from equity affiliates	1,542	1,363	1,662
Gross investments	12,802	16,085	24,233
Divestments	1,918	2,187	2,880
Organic investments	11,310	14,464	20,536
Cash flow from operating activities	11,459	9,010	11,567
ROACE	6%	3%	4%

(a) For the definitions of "operating income" and "net operating income", refer to Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference.

(b) "Effective tax rate" = tax on adjusted net operating income / (adjusted net operating income – income from equity affiliates – dividends received from investments – impairment of goodwill + tax on adjusted net operating income).

(c) Adjusted for special items. See Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference.

2017 vs. 2016

In 2017, market conditions were more favorable than in 2016. The average realized price of liquids increased by 25% and the average realized gas price by 15%.

For the full-year 2017, hydrocarbon production was 2,566 thousand barrels of oil equivalent per day (kboe/d), an increase of 5% compared to 2,452 kboe/d in 2016, due to the following:

- +5% due to new start-ups and ramp-ups, notably Moho Nord, Kashagan, Edradour and Glenlivet, and Angola LNG;
- +2% portfolio effect, mainly due to taking over the giant Al Shaheen oil field concession in Qatar and acquiring an additional 75% interest in the Barnett shale in the United States, partially offset by the exit from the southern sector in the Republic of the Congo and asset sales in Norway;
- +1% related to improved security conditions in Libya and Nigeria; and
- -3% due to natural field decline, the PSC price effect⁽¹⁾ and OPEC quotas.

For a discussion of the Group's proved reserves, refer to point 2.1.3 ("Reserves") of chapter 2 of the 2017 Registration Document (starting on page 32), which is incorporated herein by reference. See also point 9.1 ("Oil and gas information pursuant to FASB Accounting Standards Codification 932") of chapter 9 of the 2017 Registration Document (starting on page 344), which is incorporated herein by reference, for additional information on proved reserves, including tables showing changes in proved reserves by region.

Non-Group sales for the Exploration & Production segment in 2017 were \$8,477 million compared to \$7,629 million in 2016, an increase of 11%.

The segment's adjusted net operating income was \$5,985 million in 2017, an increase of 86% compared to \$3,217 million in 2016, notably due to production growth, cost reductions and an increase in oil and gas prices.

The effective tax rate increased from 27.7% in 2016 to 41.2% in 2017, in line with the rise in hydrocarbon prices.

(1) The "PSC price effect" refers to the impact of changing hydrocarbon prices on entitlement volumes from production sharing and buyback contracts. For example, as the price of oil or gas increases above certain pre-determined levels, TOTAL's share of production generally decreases.

Adjusted net operating income for the Exploration & Production segment excludes special items. The exclusion of special items had a positive impact on the segment's adjusted net operating income in 2017 of \$3,880 million. Special items mainly included impairments of Fort Hills in Canada (following the operator announcement of the increase of the project's costs), Gladstone LNG in Australia, assets in the Republic of the Congo and gas assets in the United Kingdom, as well as assets in the United States and Norway (for additional information, refer to Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference). In 2016, the exclusion of special items had a positive impact on the segment's adjusted net operating income of \$1,872 million. Special items mainly included impairments on Gladstone LNG in Australia, Angola LNG and Laggan-Tormore in the United Kingdom, reflecting the decrease in gas price assumptions for the coming years.

Technical costs⁽¹⁾ for consolidated affiliates, calculated in accordance with ASC 932⁽²⁾, continue to fall, to \$19.5/boe in 2017 compared to \$20.4/boe in 2016. This decrease was mainly due to the reduction in production costs from \$5.9/boe in 2016 to \$5.4/boe in 2017.

The segment's cash flow from operating activities for the full-year 2017 was \$11,459 million, an increase of 27% compared to \$9,010 million in 2016. Operating cash flow for the full-year 2017 excluding the change in working capital at replacement cost of \$(1,932) million (\$726 million in 2016) was \$13,391 million compared to \$9,736 million in 2016, an increase of 38% whereas oil prices only increased by 24%, notably due to production ramp-ups on major projects started up since 2016, including Kashagan and Moho Nord, the increase in hydrocarbon prices and operating cost reductions. Operating cash flow for the full-year 2017 excluding the change in working capital at replacement cost and without financial charges was \$14,753 million compared to \$10,592 million in 2016, an increase of 39%.

For information on the segment's capital expenditures, refer to points 2.1.2 ("Exploration and development") (on page 32) and 2.5 ("Investments") (starting on page 68) of chapter 2 of the 2017 Registration Document, which are incorporated herein by reference. See also "– 5.4 Liquidity and Capital Resources", below.

In this context, the segment's ROACE for the full-year 2017 was 6% compared to 3% for the full-year 2016.

2016 vs. 2015

Market conditions were less favorable in 2016 compared to 2015. The average realized price of liquids decreased by 15% and the average realized gas prices by 25%.

For the full-year 2016, hydrocarbon production was 2,452 kboe/d, an increase of 4.5% compared to 2,347 kboe/d in 2015, due to the following:

- +6% due to new start ups and ramp ups, notably Laggan-Tormore, Surmont Phase 2, Termokarstovoye, Gladstone LNG, Moho Phase 1b, and Vega Pleyade, and Incahuasi; and
- -1.5% due to the security situation in Nigeria and Yemen, and wild fires in Canada.
- Natural field decline was offset by a positive PSC price effect and portfolio effects.

Non-Group sales for the segment in 2016 were \$7,629 million compared to \$10,297 million in 2015, a decrease of 26%.

The segment's adjusted net operating income was \$3,217 million in 2016, a decrease of 26% compared to \$4,330 million in 2015. The increase in production combined with the decrease in operating costs as well as the lower effective tax rate partially offset the impact of lower hydrocarbon prices.

Adjusted net operating income for the Exploration & Production segment excludes special items. The exclusion of special items had a positive impact on the segment's adjusted net operating income in 2016 of \$1,872 million. Special items mainly included impairments on Gladstone LNG in Australia, Angola LNG, and Laggan-Tormore in the United Kingdom, reflecting the decrease in gas price assumptions for the coming years. In 2015, the exclusion of special items had a positive impact on the segment's adjusted net operating income of \$5,416 million. Special items mainly included impairments on Fort Hills in Canada and Gladstone LNG in Australia as well as in Libya, an adjustment to depreciation on Usan in Nigeria following the cancellation of the sale process and the impairment of exploration projects that will not be developed.

Technical costs for consolidated subsidiaries, calculated in accordance with ASC 932, were reduced to \$20.4/boe in 2016 compared to \$23.0/boe in 2015. This decrease was essentially due to the reduction in production costs from \$7.4/boe in 2015 to \$5.9/boe in 2016.

The segment's cash flow from operating activities for the full-year 2016 was \$9,010 million, a decrease of 22% compared to \$11,567 million in 2015. Operating cash flow for the full-year 2016 excluding the change in working capital at replacement cost of \$(726) million (\$245 million in 2015) was \$9,736 million compared to \$11,322 million in 2015, essentially due to the decrease in hydrocarbon prices, partially offset by the increase in production and decrease in operating costs. Operating cash flow for the full-year 2016 excluding the change in working capital at replacement cost and without financial charges was \$10,592 million compared to \$11,920 million in 2015, a decrease of 11%.

In this context, the segment's ROACE for the full-year 2016 was 3% compared to 4% for the full-year 2015.

(1) "Technical costs" = (production costs + exploration expenses + depreciation, depletion and amortization and valuation allowances)/production of the year.

(2) Financial Accounting Standards Board (FASB) Accounting Standards Codification Topic 932, Extractive industries – Oil and Gas.

5.3.2 Gas, Renewables & Power segment

Results <i>(M\$, except ERM)</i>	2017	2016	2015
Non-Group sales	12,854	10,124	9,149
Operating income ^(a)	(276)	(161)	(177)
Equity in income (loss) of affiliates and other items	31	71	(75)
Tax on net operating income	(140)	(4)	19
Net operating income ^(a)	(385)	(94)	(233)
Adjustments affecting net operating income	870	533	800
Adjusted net operating income ^(b)	485	439	567
Gross investments	797	1,221	588
Divestments	73	166	418
Organic investments	353	270	397
Cash flow from operating activities	993	538	(384)
ROACE	10%	9%	13%

(a) For the definitions of "operating income" and "net operating income", refer to Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference.

(b) Adjusted for special items. See Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference.

2017 vs. 2016

Non-Group sales for the Gas, Renewables & Power segment in 2017 were \$12,854 million compared to \$10,124 million in 2016, an increase of 27%.

The segment's adjusted net operating income was \$485 million in 2017, an increase of 10% compared to \$439 million in 2016.

Adjusted net operating income for the Gas, Renewables & Power segment excludes special items. The exclusion of special items had a positive impact on the segment's adjusted net operating income in 2017 of \$870 million. Special items included an impairment concerning SunPower⁽¹⁾ in the United States given the depressed economic environment of the solar activity (for additional information, refer to Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference). In 2016, the exclusion of special items had a positive impact on the segment's adjusted net operating income of \$533 million.

The segment's cash flow from operating activities for the full-year 2017 was \$993 million, an increase of 85% compared to \$538 million in 2016. Operating cash flow for the full-year 2017 excluding the change in working capital at replacement cost of \$761 million (\$413 million in 2016) was \$232 million, an increase of 86% compared to \$125 million in 2016. Operating cash flow for the full-year 2017 excluding the change in working capital at replacement cost and without financial charges was \$294 million compared to \$176 million in 2016, an increase of 67%.

For information on the segment's investments, refer to point 2.5 of chapter 2 of the 2017 Registration Document (starting on page 68), which is incorporated herein by reference. See also "– 5.4 Liquidity and Capital Resources", below.

In this context, the segment's ROACE for the full-year 2017 was 10% compared to 9% for the full year 2016.

2016 vs. 2015

Non-Group sales for the segment in 2016 were \$10,124 million compared to \$9,149 million in 2015, an increase of 11%.

The segment's adjusted net operating income was \$439 million in 2016, a decrease of 23% compared to \$567 million 2015.

Adjusted net operating income for the Gas, Renewables & Power segment excludes special items. The exclusion of special items had a positive impact on the segment's adjusted net operating income in 2016 of \$533 million compared to a positive impact of \$800 million in 2015.

The segment's cash flow from operating activities for the full-year 2016 was \$538 million compared to \$(384) million in 2015. Operating cash flow for the full-year 2016 excluding the change in working capital at replacement cost of \$413 million (\$(365) million in 2015) was \$125 million, compared to \$(19) million in 2015. Operating cash flow for the full-year 2016 excluding the change in working capital at replacement cost and without financial charges was \$176 million compared to \$5 million in 2015.

In this context, the segment's ROACE for the full-year 2016 was 9% compared to 13% for the full year 2015.

(1) As of December 31, 2017, TOTAL held an interest of 56.26% in SunPower, an American company listed on Nasdaq and based in California.

5.3.3 Refining & Chemicals segment

Refinery throughput and utilization rates ^(a)	2017	2016	2015
Total refinery throughput (kb/d)	1,827	1,965	2,023
- France	624	669	674
- Rest of Europe	767	802	849
- Rest of World	436	494	500
Utilization rates based on crude only ^(b)	88%	85%	86%

(a) Includes share of TotalErg, and African refineries reported in the Marketing & Services segment.

(b) Based on distillation capacity at the beginning of the year.

Results

(M\$, except ERM)

	2017	2016	2015
European refining margin indicator ("ERMI") (\$/t)	40.9	34.1	48.5
Non-Group sales	75,505	65,632	70,623
Operating income ^(a)	4,170	4,991	4,544
Equity in income (loss) of affiliates and other items	2,979	779	1,724
Tax on net operating income	(944)	(1,244)	(1,106)
Net operating income ^(a)	6,205	4,526	5,162
Adjustments affecting net operating income	(2,415)	(331)	(323)
Adjusted net operating income ^(b)	3,790	4,195	4,839
Gross investments	1,734	1,861	1,875
Divestments	2,820	88	3,494
Organic investments	1,625	1,642	851
Cash flow from operating activities	7,440	4,585	6,435
ROACE	33%	38%	40%

(a) For the definitions of "operating income" and "net operating income", refer to Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference.

(b) Adjusted for special items. See Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference.

2017 vs. 2016

Refinery throughput decreased by 7% for the full-year 2017 compared to 2016 as a result of the definitive ending of distillation capacity at La Mède (France) and Lindsey (UK) and the temporary shutdown due to Hurricane Harvey in the United States. The ERMI increased to \$40.9/t on average in 2017 compared to \$34.1/t in 2016, an increase of 20% due to elevated petroleum product demand. In the fourth quarter of 2017, the ERMI was \$35.5/t. Petrochemicals continued to benefit from a favorable environment albeit down compared to a year ago.

Non-Group sales for the Refining & Chemicals segment in 2017 were \$75,505 million compared to \$65,632 million in 2016, an increase of 15%.

The segment's adjusted net operating income was \$3,790 million for the full-year 2017, a decrease of 10% compared to \$4,195 million in 2016, notably due to the impact of Hurricane Harvey, the impact of modernization work on the Antwerp platform and the sale of Atotech in early 2017 as well as lower trading results due to the evolution of the market into backwardation⁽¹⁾.

Adjusted net operating income for the Refining & Chemicals segment excludes any after-tax inventory valuation effect and special items. The exclusion of the inventory valuation effect had a negative impact on the segment's adjusted net operating income in 2017 of \$298 million compared to a negative impact of \$500 million in 2016. The exclusion of special items had a negative impact on the segment's adjusted net operating income in 2017 of \$2,117 million, consisting essentially of a gain on the sale of Atotech, compared to a positive impact of \$169 million in 2016.

The segment's cash flow from operating activities for the full-year 2017 was \$7,440 million, an increase of 62% compared to \$4,585 million in 2016. Operating cash flow for the full-year 2017 excluding the change in working capital at replacement cost of \$2,683 million (\$289 million in 2016) was \$4,757 million, a decrease of 2% compared to \$4,874 million in 2016. Operating cash flow for the full-year 2017 excluding the change in working capital at replacement cost and without financial charges was \$4,728 million compared to \$4,873 million in 2016, a decrease of 3%.

For information on the segment's investments, refer to point 2.5 of chapter 2 of the 2017 Registration Document (starting on page 68), which is incorporated herein by reference. See also "– 5.4 Liquidity and Capital Resources", below.

In this context, the segment's ROACE for the full-year 2017 was 33% compared to 38% for the full year 2016.

2016 vs. 2015

The ERMI averaged \$34/t in 2016, a decrease of 30% compared to the high level of 2015, in the context of high petroleum product stocks. Refinery throughput for the full-year 2016 decreased by 3% compared to 2015, notably due to shutdowns in Europe and the United States in the second quarter and the sale of the Schwedt refinery in Germany.

Non-Group sales for the segment in 2016 were \$65,632 million compared to \$70,623 million in 2015, a decrease of 7%.

(1) "Backwardation" is the price structure where the prompt price of an index is higher than the future price.

The segment's adjusted net operating income in 2016 was \$4,195 million compared to \$4,839 million in 2015, a decrease of 13% essentially due to the decrease in refining margins. Petrochemicals continued to generate good results, notably due to the strong contribution from the Group's major integrated platforms in Asia and the Middle East.

Adjusted net operating income for the Refining & Chemicals segment excludes any after-tax inventory valuation effect and special items. The exclusion of the inventory valuation effect had a negative impact on the segment's adjusted net operating income in 2016 of \$500 million compared to a positive impact of \$590 million in 2015. The exclusion of special items had a positive impact on the segment's adjusted net operating income in 2016 of \$169 million compared to a negative impact in 2015 of \$913 million, consisting essentially of gains on asset sales.

The segment's cash flow from operating activities for the full-year 2016 was \$4,585 million, a decrease of 29% compared to \$6,435 million in 2015. Operating cash flow for the full-year 2016 excluding the change in working capital at replacement cost of \$(289) million (\$647 million in 2015) was \$4,874 million, a decrease of 16% compared to \$5,788 million in 2015. Operating cash flow for the full-year 2016 excluding the change in working capital at replacement cost and without financial charges was \$4,873 million compared to \$5,788 million in 2015, a decrease of 16%.

In this context, the segment's ROACE for the full-year 2016 was 38% compared to 40% for the full year 2015.

5.3.4 Marketing & Services segment

Petroleum product sales ^(a) (kb/d)	2017	2016	2015
Total Marketing & Services sales	1,779	1,793	1,818
- Europe	1,049	1,093	1,092
- Rest of world	730	700	726

(a) Excludes trading and bulk Refining sales, which are reported under the Refining & Chemicals segment; includes share of TotalErg.

Results (M\$)	2017	2016	2015
Non-Group sales	74,634	66,351	75,282
Operating income ^(a)	1,819	1,789	1,665
Equity in income (loss) of affiliates and other items	497	170	467
Tax on net operating income	(561)	(541)	(537)
Net operating income ^(a)	1,755	1,418	1,595
Adjustments affecting net operating income	(79)	141	(4)
Adjusted net operating income ^(b)	1,676	1,559	1,591
Gross investments	1,457	1,245	1,267
Divestments	413	424	767
Organic investments	1,019	1,003	1,130
Cash flow from operating activities	2,130	1,754	2,323
ROACE	26%	27%	25%

(a) For the definitions of "operating income" and "net operating income", refer to Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference.

(b) Adjusted for special items. See Note 3 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 247), which is incorporated herein by reference.

2017 vs. 2016

In 2017, petroleum product sales were generally stable compared to the previous year, with a move toward Africa and Asia where the Group has strong growth. European sales were affected by the divestment of mature LPG distribution activities in Belgium and Germany.

Non-Group sales for the Marketing & Services segment in 2017 were \$74,634 million compared to \$66,351 million in 2016, an increase of 12%.

The Marketing & Services segment's results continue to grow in a context of strong retail margins, notably in Africa. The segment's adjusted net operating income in 2017 was \$1,676 million, an increase of 8% compared to \$1,559 million in 2016.

Adjusted net operating income for the Marketing & Services segment excludes any after-tax inventory valuation effect and special items. The exclusion of the inventory valuation effect had a positive impact on the segment's adjusted net operating income in 2017 of \$3 million compared to a positive impact of \$13 million in 2016. The exclusion of special items had a negative impact on the segment's adjusted net operating income in 2017 of \$82 million compared to a positive impact of \$128 million in 2016.

The segment's cash flow from operating activities for the full-year 2017 was \$2,130 million, an increase of 21% compared to \$1,754 million in 2016. Operating cash flow for the full-year 2017 excluding the change in working capital at replacement cost of \$(21) million (\$133 million in 2016) was \$2,151 million, an increase of 14% compared to \$1,887 million in 2016. Operating cash flow for the full-year 2017 excluding the change in working capital at replacement cost and without financial charges was \$2,242 million compared to \$1,966 million in 2016, an increase of 14%.

For information on the Marketing & Services segment's investments, refer to point 2.5 of chapter 2 of the 2017 Registration Document (starting on page 68), which is incorporated herein by reference. See also "– 5.4 Liquidity and Capital Resources", below.

In this context, the segment's ROACE for the full-year 2017 was 26% compared to 27% for the full year 2016.

2016 vs. 2015

In 2016, refined product sales decreased slightly compared to 2015, essentially due to the sale of the retail network in Turkey.

Non-Group sales for the segment in 2016 were \$66,351 million compared to \$75,282 million in 2015, a decrease of 12%.

The segment's adjusted net operating income in 2016 was \$1,559 million, a decrease of 2% compared to \$1,591 million in 2015.

Adjusted net operating income for the Marketing & Services segment excludes any after-tax inventory valuation effect and special items. The exclusion of the inventory valuation effect had a positive impact on the segment's adjusted net operating income in 2016 of \$13 million compared to a positive impact of \$169 million in 2015. The exclusion of special items had a positive impact on the segment's adjusted net operating income in 2016 of \$128 million compared to a negative impact of \$173 million in 2015.

The segment's cash flow from operating activities for the full-year 2016 was \$1,754 million, a decrease of 24% compared to \$2,323 million in 2015. Operating cash flow for the full-year 2016 excluding the change in working capital at replacement cost of \$(133) million (\$382 million in 2015) was \$1,887 million, a decrease of 3% compared to \$1,941 million in 2015. Operating cash flow for the full-year 2016 excluding the change in working capital at replacement cost and without financial charges was \$1,966 million compared to \$2,058 million in 2015, a decrease of 4%.

In this context, the segment's ROACE for the full-year 2016 was 27% compared to 25% for the full year 2015.

5.4 Liquidity and capital resources

(M\$)	2017	2016	2015
Cash flow from operating activities	22,319	16,521	19,946
Including (increase) decrease in working capital	827	(1,119)	1,683
Cash flow used in investing activities	(11,632)	(17,653)	(20,449)
Total expenditures	(16,896)	(20,530)	(28,033)
Total divestments	5,264	2,877	7,584
Cash flow from financing activities	(5,540)	3,532	1,060
Net increase (decrease) in cash and cash equivalents	5,147	2,400	577
Effect of exchange rates	3,441	(1,072)	(2,469)
Cash and cash equivalents at the beginning of the period	24,597	23,269	25,181
Cash and cash equivalents at the end of the period	33,185	24,597	23,269

TOTAL's cash requirements for working capital, capital expenditures, acquisitions and dividend payments over the past three years were financed primarily by a combination of funds generated from operations, borrowings and divestments of non-core assets. In the current environment, TOTAL expects its external debt to be principally financed from the international debt capital markets. The Group continually monitors the balance between cash flow from operating activities and net expenditures. In the Company's opinion, its working capital is sufficient for its present requirements.

5.4.1 Capital expenditures

The largest part of TOTAL's capital expenditures in 2017 of \$16,896 million was made up of additions to intangible assets and property, plant and equipment (approximately 84%), with the remainder attributable to equity-method affiliates and to acquisitions of subsidiaries. In the Exploration & Production segment, as described in more detail under point 9.1.6 ("Cost incurred") of chapter 9 of the 2017 Registration Document (on page 356), which is incorporated herein by reference, capital expenditures in 2017 were principally development costs (approximately 87%, mainly for construction of new production facilities), exploration expenditures (successful or unsuccessful, approximately 5%) and acquisitions of proved and unproved properties (approximately 6%). In the Gas, Renewables & Power segment, approximately 52% of capital expenditures in 2017 were acquisitions, with the balance being related mainly to facilities investments. In the Refining & Chemicals segment, approximately 92% of capital expenditures in 2017 were related to refining and petrochemical activities (essentially 55% for existing units including maintenance and major turnarounds and 45% for new construction), the balance being related mainly to Hutchinson. In the Marketing & Services segment, approximately 24% of capital expenditures in 2017 were acquisitions, with the balance being related to expenditures mainly in Europe and Africa.

For additional information on capital expenditures, refer to the discussion above in "– 5.1 Overview", "– 5.2 Group results 2015-2017" and "– 5.3 Business segment reporting", above, as well as points 1.5.2 ("A targeted investment policy") of chapter 1 (on page 23) and 2.5 ("Investments") of chapter 2 (starting on page 68) of the 2017 Registration Document, which are incorporated herein by reference.

5.4.2 Cash flow

Cash flow from operating activities in 2017 was \$22,319 million compared to \$16,521 million in 2016 and \$19,946 million in 2015. The increase of \$5,798 million from 2016 to 2017 was mainly due to an increase of the net result and a decrease in working capital requirements in 2017 of \$827 million compared to an increase in 2016 of \$1,119 million. The Group's working capital requirement was affected by the effect of changes in oil and oil product prices. As IFRS rules require TOTAL to account for inventories of petroleum products according to the FIFO method, an increase in oil and oil product prices at the end of the relevant period compared to the beginning of the same period generates, all other factors remaining equal, an increase in inventories and accounts receivable net of an increase in accounts payable, resulting in an increase in working capital requirements. However, despite the increase in oil and oil product prices in 2017, the Group's working capital requirement decreased by \$827 million, due to increases in accounts payable and decreases in other current assets, partially offset by increases in accounts receivable.

The Group's working capital requirement increased by \$1,119 million in 2016 mainly due to increases in inventories and receivables partially offset by an increase in payables, and decreased by \$1,683 million in 2015 mainly due to reductions in inventory and receivables.

Cash flow used in investing activities in 2017 was \$11,632 million compared to \$17,653 million in 2016 and \$20,449 million in 2015. The decrease of \$6,021 million from 2016 to 2017 was mainly due to lower expenditures on the portfolio of Exploration & Production projects and higher divestments mainly in the Refining & Chemicals segment (principally Atotech). The decrease from 2015 to 2016 was mainly due to lower expenditures on the Group's portfolio of Upstream projects and lower divestments mainly in the Refining & Chemicals segment, which had a higher level of divestments in 2015 due to the sale of Bostik. Total expenditures in 2017 were \$16,896 million compared to \$20,530 million in 2016 and \$28,033 million in 2015. During 2017, 76% of the expenditures were made by the Exploration & Production segment (as compared to 78% in 2016 and 86% in 2015), 5% by the Gas, Power & Renewables segment (as compared to 6% in 2016 and 2% in 2015), 10% by the Refining & Chemicals segment (compared to 9% in 2016 and 7% in 2015) and 9% by the Marketing & Services segment (compared to 6% in 2016 and 5% in 2015). The main source of funding for these expenditures was cash from operating activities and issuances of non-current debt. For additional information on expenditures, please refer to the discussions in "– 5.1 Overview", "– 5.2 Group results 2015-2017" and "– 5.3 Business segment reporting", above, and point 2.5 ("Investments") of chapter 2 of the 2017 Registration Document (starting on page 68), which is incorporated herein by reference.

Divestments, based on selling price and net of cash sold, in 2017 were \$5,264 million compared to \$2,877 million in 2016 and \$7,584 million in 2015. In 2017, the Group's principal divestments were assets sales of \$4,239 million, consisting mainly of sales of Atotech, interests in the Gina Krog field in Norway and in various mature assets in Gabon. In 2016, the Group's principal divestments were asset sales of \$1,864 million, consisting mainly of interests in the FUKA and SIRGE gas pipelines, and the St. Fergus gas terminal in the United Kingdom. In 2015, the Group's principal divestments were asset sales of \$5,968 million, consisting mainly of sales of Bostik, interests in onshore blocks in Nigeria, Totalgaz, the Schwedt refinery, the Géosel oil storage facility, coal mining assets in South Africa, and partial interests in Laggan-Tormore and Fort Hills.

Cash flow used in financing activities in 2017 was \$(5,540) million compared to \$3,532 million in 2016 and \$1,060 million in 2015. The decrease in cash flow from financing activities in 2017 compared to 2016 was primarily due to the non-issuance of perpetual subordinated notes in 2017 compared to \$4,711 million having been issued in 2016, the increase in variation of current borrowings \$(7,175) million in 2017 compared to \$(3,260) million in 2016 and the decrease in net issuance of non-current borrowings (\$2,277 million in 2017 compared to \$3,576 million in 2016).

5.4.3 Indebtedness

The Company's non-current financial debt at year-end 2017 was \$41,340 million⁽¹⁾ compared to \$43,067 million at year-end 2016 and \$44,464 million at year-end 2015. For further information on the Company's level of borrowing and the type of financial instruments, including maturity profile of debt and currency and interest rate structure, see Note 15 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 303), which is incorporated herein by reference. For further information on the Company's treasury policies, including the use of instruments for hedging purposes and the currencies in which cash and cash equivalents are held, see "Item 11. Quantitative and Qualitative Disclosures About Market Risk".

Cash and cash equivalents at year-end 2017 were \$33,185 million compared to \$24,597 million at year-end 2016 and \$23,269 million at year-end 2015.

On November 27, 2017, Standard & Poor's upgraded TOTAL's outlook to stable, with a long term credit rating remaining at A+.

5.4.4 Shareholders' equity

Shareholders' equity at year-end 2017 was \$114,037 million compared to \$101,574 million at year-end 2016 and \$95,409 million at year-end 2015. Changes in shareholders' equity in 2017 were primarily due to the impacts of comprehensive income, dividend payments and the issuance of common shares. Changes in shareholders' equity in 2016 were primarily due to the impacts of comprehensive income, dividend payments, the issuance of perpetual subordinated notes and the issuance of common shares. Changes in shareholders' equity in 2015 were primarily due to the impacts of dividend payments, the issuance of perpetual subordinated notes and the issuance of common shares.

In 2017, the Company did not buy back any shares. At its meeting held on December 15, 2016, and pursuant to the authorization of the Extraordinary Shareholders' Meeting of May 11, 2012, the Company's Board of Directors decided to cancel 100,331,268 treasury shares (i.e., 4.13% of the share capital as of December 31, 2016) that the Company had bought back off-market in December 2016 from four of its 100% indirectly controlled subsidiaries. Following this transaction, Group affiliates no longer hold any treasury shares. This buyback of shares had no impact on the Company's Consolidated Financial Statements. In 2015, the Company bought back nearly 4.7 million of its own shares (i.e., 0.19% of the share capital as of December 31, 2015) under the previous authorization granted by the shareholders at the meeting of May 29, 2015.

5.4.5 Net-debt-to-equity

As of December 31, 2017, TOTAL's net-debt-to-equity ratio⁽²⁾ was 13.8% compared to 27.1% and 28.3% at year-ends 2016 and 2015, respectively. The decrease from 2016 to 2017 was mostly due to the decrease of the net debt driven by the increase in cash and cash equivalents and also by the increase of equity explained above.

As of December 31, 2017, the Company had \$11,478 million of long-term confirmed lines of credit, of which \$11,478 million were unused.

(1) Excludes net current and non-current financial debt of \$(140) million as of December 31, 2016 and \$141 million as of December 31, 2015, related to assets classified in accordance with IFRS 5 "non-current assets held for sale and discontinued operations". None as of December 31, 2017.

(2) For additional information, refer to Note 15.1(E) to the Consolidated Financial Statements in the 2017 Registration Document (on page 307), which is incorporated herein by reference.

5.5 Guarantees and other off-balance sheet arrangements

As of December 31, 2017, the guarantees provided by the Company in connection with the financing of the Ichthys LNG project amounted to \$8,500 million. As of December 31, 2016, the guarantees amounted to \$7,800 million.

Guarantees given against borrowings also include the guarantee given by the Company in connection with the financing of the Yamal LNG project, which amounted to \$4,038 million as of December 31, 2017, compared to \$3,147 million as of December 31, 2016.

The Company has confirmed and extended guarantees for Total Refining Saudi Arabia S.A.S. shareholders' advances that amounted to \$1,462 million as of December 31, 2017, compared to \$1,230 million as of December 31, 2016.

The guarantee given in 2008 by the Company in connection with the financing of the Yemen LNG project amounted to \$551 million as of December 31, 2017, same as in 2016.

These guarantees and other information on the Company's commitments and contingencies are presented in Note 13 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 296), which is incorporated herein by reference.

The Group does not currently consider that these guarantees, or any other off-balance sheet arrangements of the Company or any other members of the Group, have or are reasonably likely to have, currently or in the future, a material effect on the Group's financial condition, changes in financial condition, revenues or expenses, results of operation, liquidity, capital expenditures or capital resources.

5.6 Contractual obligations

Payment due by period (M\$)	Less than 1 year	1-3 years	3-5 years	More than 5 years	Total
Non-current debt obligations ^(a)	-	10,914	8,626	20,004	39,544
Current portion of non-current debt obligations ^(b)	4,646	-	-	-	4,646
Finance lease obligations ^(c)	39	133	128	856	1,156
Asset retirement obligations ^(d)	485	1,093	1,072	9,590	12,240
Operating lease obligations ^(e)	1,401	1,801	1,085	2,154	6,441
Purchase obligations ^(e)	8,605	12,686	11,231	53,844	86,366
TOTAL	15,176	26,627	22,142	86,448	150,393

(a) Non-current debt obligations are included in the items "Non-current financial debt" and "Hedging instruments of non-current financial debt" of the Consolidated Balance Sheet (refer to point 8.4 of chapter 8 of the 2017 Registration Document (on page 240), which is incorporated herein by reference). The figures in this table are net of the non-current portion of issue swaps and swaps hedging bonds, and exclude non-current finance lease obligations of \$1,117 million.

(b) The current portion of non-current debt is included in the items "Current borrowings", "Current financial assets" and "Other current financial liabilities" of the Consolidated Balance Sheet. The figures in this table are net of the current portion of issue swaps and swaps hedging bonds and exclude the current portion of finance lease obligations of \$39 million.

(c) Finance lease obligations and operating lease obligations: the Group leases real estate, retail stations, ships and other equipment through non-cancelable capital and operating leases. These amounts represent the future minimum lease payments on non-cancelable leases to which the Group is committed as of December 31, 2017, less the financial expense due on finance lease obligations for \$48 million.

(d) The discounted present value of Exploration & Production asset retirement obligations, primarily asset removal costs at the completion date.

(e) Purchase obligations are obligations under contractual agreements to purchase goods or services, including capital projects. These obligations are enforceable and legally binding on TOTAL and specify all significant terms, including the amount and the timing of the payments. These obligations mainly include: hydrocarbon unconditional purchase contracts (except where an active, highly liquid market exists and when the hydrocarbons are expected to be re-sold shortly after purchase); reservation of transport capacities in pipelines; unconditional exploration works and development works in the Exploration & Production segment; and contracts for capital investment projects in the Refining & Chemicals segment. This disclosure does not include contractual exploration obligations with host states where a monetary value is not attributed and purchases of booking capacities in pipelines where the Group has a participation superior to the capacity used.

For additional information on the Group's contractual obligations, refer to Note 13 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 296), which is incorporated herein by reference. The Group has other obligations in connection with pension plans that are described in Note 10 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 287), which is incorporated herein by reference. As these obligations are not contractually fixed as to timing and amount, they have not been included in this disclosure. Other non-current liabilities, detailed in Note 12 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 293), which is incorporated herein by reference, are liabilities related to risks that are probable and amounts that can be reasonably estimated. However, no contractual agreements exist related to the settlement of such liabilities, and the timing of the settlement is not known.

5.7 Research and development

For a discussion of the Group's R&D policies and activities, refer to points 1.5.1 of chapter 1 (on page 23) and 2.6 of chapter 2 (starting on page 70) of the 2017 Registration Document, which are incorporated herein by reference.

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

The following information concerning directors and senior management from the 2017 Registration Document is incorporated herein by reference:

- composition of the Board of Directors (introduction and point 4.1.1 of chapter 4, starting on page 104); and
- information concerning the General Management (point 4.1.5 of chapter 4, starting on page 134).

The following information concerning compensation from the 2017 Registration Document is incorporated herein by reference:

- approach to overall compensation (point 5.1.1.3 of chapter 5, starting on page 172); and

- compensation for the administration and management bodies (point 4.3 of chapter 4, starting on page 137).

The following information concerning Board practices and corporate governance from the 2017 Registration Document is incorporated herein by reference:

- practices of the Board of Directors (point 4.1.2 of chapter 4, starting on page 119);
- report of the Lead Independent Director on her mandate (point 4.1.3 of chapter 4, starting on page 132);
- evaluation of the functioning of the Board of Directors (point 4.1.4 of chapter 4, on page 133); and
- statement regarding corporate governance (point 4.2 of chapter 4, on page 137).

The following information concerning employees and share ownership from the 2017 Registration Document is incorporated herein by reference:

- number and categories of employees (points 5.1.1.1 and 5.1.1.2 of chapter 5, starting on page 171);
- shares held by the administration and management bodies (point 4.1.6 of chapter 4, starting on page 135); and
- employee shareholding (point 6.4.2 of chapter 6, on page 221).

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

The following information concerning shareholders from the 2017 Registration Document is incorporated herein by reference:

- major shareholders (point 6.4.1 of chapter 6, starting on page 219); and
- shareholding structure (point 6.4.3 of chapter 6, on page 221).

The Group's main transactions with related parties (principally all the investments carried under the equity method) and the balances receivable from and payable to them are shown in Note 8 to the Consolidated Financial Statements in the 2017 Registration Document (starting on page 271), which is incorporated herein by reference. In the ordinary course of its business, TOTAL enters into transactions with various organizations with which certain of its directors or executive officers may be associated, but no such transactions of a material or unusual nature have been entered into during the period commencing on January 1, 2015, and ending on the date of this document.

ITEM 8. FINANCIAL INFORMATION

The following information from the 2017 Registration Document is incorporated herein by reference:

- Consolidated Financial Statements and Notes thereto (chapter 8, starting on page 233);
- supplemental oil and gas information (points 9.1 and 9.2 of chapter 9, starting on page 344);
- report on payments made to governments (point 9.3 of chapter 9, starting on page 363);
- legal and arbitration proceedings (point 3.2 of chapter 3, starting on page 86); and
- dividend policy and other related information (point 6.2 of chapter 6, starting on page 213).

Except for certain events mentioned in "Item 5. Operating and financial review and prospects" and point 3.2 ("Legal and arbitration proceedings") of chapter 3 (starting on page 86) and Note 17 ("Post closing events") to the Consolidated Financial Statements (on page 323) of the 2017 Registration Document, which are incorporated herein by reference, no significant changes to the Group's financial or commercial situation have occurred since the date of the Company's Consolidated Financial Statements.

Refer to "Item 18. Financial statements" for the reports of the statutory auditors.

ITEM 9. THE OFFER AND LISTING

9.1 Markets

The principal trading markets for the Company's shares are the Euronext Paris exchange in France and the New York Stock Exchange ("NYSE") in the United States. The shares are also listed on Euronext Brussels and the London Stock Exchange.

9.2 Offer and listing details

Provided below is certain information on trading on Euronext Paris and the New York Stock Exchange. For additional information on listing details and share performance, refer to point 6.1 ("Listing details") of chapter 6 of the 2017 Registration Document (starting on page 210), which is incorporated herein by reference.

9.2.1 Trading on Euronext Paris

Official trading of listed securities on Euronext Paris, including the shares, is transacted through French investment service providers that are members of Euronext Paris and takes place continuously on each business day in Paris from 9:00 a.m. to 5:30 p.m. (Paris time), with a fixing of the closing price at 5:35 p.m. Euronext Paris may suspend or resume trading in a security listed on Euronext Paris if the quoted price of the security exceeds certain price limits defined by the regulations of Euronext Paris.

The markets of Euronext Paris settle and transfer ownership two trading days after a transaction (T+2). Highly liquid shares, including those of the Company, are eligible for deferred settlement (*Service de Règlement Différé* – SRD). Payment and delivery for shares under the SRD occurs on the last trading day of each month. Use of the SRD service requires payment of a commission.

In France, the shares are included in the principal index published by Euronext Paris (the “CAC 40 Index”). The CAC 40 Index is derived daily by comparing the total market capitalization of forty stocks traded on Euronext Paris to the total market capitalization of the stocks that made up the CAC 40 Index on December 31, 1987. Adjustments are made to allow for expansion of the sample due to new issues. The CAC 40 index indicates trends in the French stock market as a whole and is one of the most widely followed stock price indices in France. In the UK, the shares are listed in both the FTSE Eurotop 100 and FTSEurofirst 100 index. As a result of the creation of Euronext, the shares are included in Euronext 100, the index representing Euronext’s blue chip companies based on market capitalization. The shares are also included in the Stoxx Europe 50 and Euro Stoxx 50, blue chip indices comprised of the fifty most highly capitalized and most actively traded equities throughout Europe and within the European Monetary Union, respectively. Since June 2000, the shares have been included in the Dow Jones Global Titans 50 Index which consists of fifty global companies selected based on market capitalization, book value, assets, revenue and earnings.

The table below sets forth, for the periods indicated, the reported high and low quoted prices in euros for the currently outstanding shares on Euronext Paris.

Price per share (€)	High	Low
2013	45.670	35.175
2014	54.710	38.250
2015	50.300	36.920
2016	48.885	35.210
First Quarter	43.430	35.210
Second Quarter	45.225	38.065
Third Quarter	44.955	40.530
Fourth Quarter	48.885	41.825
2017	49.500	42.225
First Quarter	49.500	45.825
Second Quarter	49.075	43.145
Third Quarter	46.050	42.225
September	46.050	43.460
Fourth Quarter	49.335	45.070
October	48.165	45.070
November	49.335	45.955
December	48.025	46.025
2018 (through February 28)	48.750	43.090
January	48.750	45.845
February	47.585	43.090

9.2.2 Trading on the New York Stock Exchange

ADSs evidenced by ADRs have been listed on the NYSE since October 25, 1991. JPMORGAN CHASE BANK, N.A. serves as depository with respect to the ADSs evidenced by ADRs traded on the NYSE. One ADS corresponds to one TOTAL share. The table below sets forth, for the periods indicated, the reported high and low prices quoted in dollars for the currently outstanding ADSs evidenced by ADRs on the NYSE.

Price per ADR (\$)	High	Low
2013	62.45	45.93
2014	74.220	48.433
2015	54.790	40.930
2016	51.360	39.050
First Quarter	48.000	39.050
Second Quarter	51.300	43.550
Third Quarter	50.210	45.355
Fourth Quarter	51.360	45.050
2017	57.070	48.150
First Quarter	52.040	48.840
Second Quarter	54.690	48.920
Third Quarter	55.040	48.150
September	55.040	51.880
Fourth Quarter	57.070	53.010
October	55.940	53.010
November	57.070	54.410
December	56.980	54.140
2018 (through February 28)	59.570	53.370
January	59.570	55.200
February	59.230	53.370

ITEM 10. ADDITIONAL INFORMATION

10.1 Share capital

The following information from the 2017 Registration Document is incorporated herein by reference:

- information concerning the share capital (point 7.1 of chapter 7, starting on page 226);
- the use of delegations of authority and power granted to the Board of Directors with respect to share capital increases (point 4.4.2 of chapter 4, starting on page 162);
- information on share buybacks (point 6.3 of chapter 6, starting on page 216); and
- factors likely to have an impact in the event of a public offering (point 4.4.4 of chapter 4, on page 163).

10.2 Memorandum and articles of association

The following information from the 2017 Registration Document is incorporated herein by reference:

- information concerning the articles of incorporation and bylaws, and other information (point 7.2 of chapter 7, starting on page 228); and
- participation of shareholders at shareholders' meetings (point 4.4.3 of chapter 4, on page 163).

10.3 Material contracts

There have been no material contracts (not entered into in the ordinary course of business) entered into by members of the Group since March 16, 2016.

10.4 Exchange controls

Under current French exchange control regulations, no limits exist on the amount of payments that TOTAL may remit to residents of the United States. Laws and regulations concerning foreign exchange controls do require, however, that an accredited intermediary must handle all payments or transfer of funds made by a French resident to a non-resident.

10.5 Taxation

10.5.1 General

This section generally summarizes the material U.S. federal income tax and French tax consequences of owning and disposing of shares or ADSs of TOTAL to U.S. Holders that hold their shares or ADSs as capital assets for tax purposes. A U.S. Holder is a beneficial owner of shares or ADSs that is (i) a citizen or resident of the United States for U.S. federal income tax purposes, (ii) a domestic corporation or other domestic entity treated as a corporation for U.S. federal income tax purposes, (iii) an estate whose income is subject to U.S. federal income tax regardless of its source, or (iv) a trust if a U.S. court can exercise primary supervision over the trust's administration and one or more U.S. persons are authorized to control all substantial decisions of the trust.

This section does not address the Medicare tax on net investment income and does not apply to members of special classes of holders subject to special rules, including:

- dealers in securities;
- traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;
- tax-exempt organizations;
- life insurance companies;
- U.S. pension funds;
- U.S. Regulated Investment Companies (RICs), Real Estate Investment Trusts (REITs), and Real Estate Mortgage Investment Conduits (REMICs);
- persons who are liable for the alternative minimum tax;
- persons that actually or constructively own 10% or more of the share capital or voting rights in TOTAL;
- persons that purchase or sell shares or ADSs as part of a wash sale for U.S. federal income tax purposes;
- persons that hold the shares or ADSs as part of a straddle or a hedging or conversion transaction; or
- persons whose functional currency is not the U.S. dollar.

If a partnership or other entity treated as a partnership for U.S. federal income tax purposes holds shares or ADSs, the tax treatment of a partner will generally depend upon the status of the partner and upon the activities of the partnership. Partners of a partnership holding these shares or ADSs should consult their tax advisors as to the tax consequences of owning or disposing of shares or ADSs, as applicable.

Under French law, specific rules apply to trusts, in particular specific tax and filing requirements as well as modifications to wealth, estate and gift taxes as they apply to trusts. Given the complex nature of these rules and the fact that their application varies depending on the status of the trust, the grantor, the beneficiary and the assets held in the trust, the following summary does not address the tax treatment of ADSs or shares held in a trust. If ADSs or shares are held in trust, the grantor, trustee and beneficiary are urged to consult their own tax advisor regarding the specific tax consequences of acquiring, owning and disposing of ADSs or shares.

In addition, the discussion below is limited to U.S. Holders that (i) are residents of the United States for purposes of the Treaty (as defined below), (ii) do not maintain a permanent establishment or fixed base in France to which the shares or ADSs are attributable and through which the respective U.S. Holders carry on, or have carried on, a business (or, if the holder is an individual, performs or has performed independent personal services), and (iii) are otherwise eligible for the benefits of the Treaty in respect of income and gain from the shares or ADSs (in particular, under the "Limitation on Benefits" provision of the Treaty). In addition, this section is based in part upon the representations of the Depository and the assumption that each obligation in the Deposit Agreement and any related agreement will be performed in accordance with its terms.

This section is based on the Internal Revenue Code of 1986, as amended ("IRC"), its legislative history, existing and proposed regulations, published rulings and court decisions, and with respect to the description of the material French tax consequences, the laws of the Republic of France and French tax regulations, all as currently in effect, as well as on the Convention Between the United States and the Republic of France for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with respect to Taxes on Income and Capital dated August 31, 1994, as amended (the "Treaty"). These laws, regulations and the Treaty are subject to change, possibly on a retroactive basis.

In general, and taking into account the earlier assumptions, for U.S. federal income tax purposes, a U.S. Holder of ADRs evidencing ADSs will be treated as the owner of the shares represented by those ADRs. Exchanges of shares for ADRs, and ADRs for shares, generally will not be subject to U.S. federal income tax.

This discussion is intended only as a descriptive summary and does not purport to be a complete analysis or listing of all potential tax effects of the ownership or disposition of the shares and ADSs and is not intended to substitute competent professional advice. Individual situations of holders of shares and ADSs may vary from the description made below. The following summary does not address the French tax treatment applicable to dividends paid in so-called "Non Cooperative Countries and Territories" ("NCCT") within the meaning of section 238-0 A of the French Tax Code (*Code général des impôts*). It does not apply to dividends paid to persons established or domiciled in such a NCCT, or paid to a bank account opened in a financial institution located in such a NCCT.

Holders are urged to consult their own tax advisors regarding the U.S. federal, state and local, and French and other tax consequences of owning and disposing shares or ADSs of TOTAL in their respective circumstances. In particular, a holder is encouraged to confirm with its advisor whether the holder is a U.S. Holder eligible for the benefits of the Treaty.

10.5.2 Taxation of dividends

French taxation

The term “dividends” used in the following discussion means dividends within the meaning of the Treaty.

Until December 31, 2017, dividends paid to non-residents of France were in principle subject to a French withholding tax at a rate of 30%, regardless of whether they were paid in cash, in shares or a mix of both. Note that as of January 1, 2018, the French withholding tax is levied at a rate of 12.8% for dividends paid to U.S. Holders who are individuals, provided that applicable formalities are complied with in accordance with the administrative guidelines to be published by the French tax authorities, and at a rate of 30% for dividends paid to U.S. Holders that are legal entities (the “Legal Entities U.S. Holders”).

However, under the Treaty, a U.S. Holder is generally entitled to a reduced rate of French withholding tax of 15% with respect to dividends, provided that certain requirements are satisfied. As of January 1, 2018, this reduced rate would in practice only be of interest to Legal Entities U.S. Holders subject to the withholding tax at a rate of 30%.

Administrative guidelines (*Bulletin Officiel des Finances Publiques*, BOI-INT-DG-20-20-20-20120912) (the “Administrative Guidelines”) set forth the conditions under which the reduced French withholding tax at the rate of 15% may be available. The immediate application of the reduced 15% rate is available to those U.S. Holders that may benefit from the so-called “simplified procedure” (within the meaning of the Administrative Guidelines).

Under the “simplified procedure”, U.S. Holders may claim the immediate application of withholding tax at the rate of 15% on the dividends to be received by them, provided that:

- (i) they furnish to the U.S. financial institution managing their securities account a certificate of residence conforming with form No. 5000-FR. The immediate application of the 15% withholding tax will be available only if the certificate of residence is sent to the U.S. financial institution managing their securities account no later than the dividend payment date. Furthermore, each financial institution managing the U.S. Holders’ securities account must also send to the French paying agent the figure of the total amount of dividends to be received which are eligible to the reduced withholding tax rate before the dividend payment date; and
- (ii) the U.S. financial institution managing the U.S. Holder’s securities account provides to the French paying agent a list of the eligible U.S. Holders and other pieces of information set forth in the Administrative Guidelines. Furthermore, the financial institution managing the U.S. Holders’ securities account should certify that the U.S. Holder is, to the best of its knowledge, a United States resident within the meaning of the Treaty. These documents must be sent to the French paying agent within a time frame that will allow the French paying agent to file them no later than the end of the third month computed as from the end of the month of the dividend payment date.

Where the U.S. Holder’s identity and tax residence are known by the French paying agent, the latter may release such U.S. Holder from furnishing to (i) the financial institution managing its securities account, or (ii) as the case may be, the U.S. Internal Revenue Service (“IRS”), the abovementioned certificate of residence, and apply the 15% withholding tax rate to dividends it pays to such U.S. Holder.

For a U.S. Holder that is not entitled to the “simplified procedure” and whose identity and tax residence are not known by the paying agent at the time of the payment, the 30% French withholding tax will be levied at the time the dividends are paid. Such U.S. Holder, however, may be entitled to a refund of the withholding tax in excess of the 15% rate under the “standard procedure”, as opposed to the “simplified procedure”, provided that the U.S. Holder furnishes to the French paying agent an application for refund on forms No. 5000-FR and 5001-FR (or any other relevant form to be issued by the French tax authorities) certified by the U.S. financial institution managing the U.S. Holder’s securities account (or, if not, by the competent U.S. tax authorities) before December 31 of the second year following the date of payment of the withholding tax at the 30% rate to the French tax authorities, according to the requirements provided by the Administrative Guidelines.

Copies of forms No. 5000-FR and 5001-FR (or any other relevant form to be issued by the French tax authorities) as well as the form of the certificate of residence and the U.S. financial institution certification, together with instructions, are available from the IRS and the French tax authorities.

These forms, together with instructions, are to be provided by the Depositary to all U.S. Holders of ADRs registered with the Depositary. The Depositary is to use reasonable efforts to follow the procedures established by the French tax authorities for U.S. Holders to benefit from the immediate application of the 15% French withholding tax rate or, as the case may be, to recover the excess 15% French withholding tax initially withheld and deducted in respect of dividends distributed to them by TOTAL. To effect such benefit or recovery, the Depositary shall advise such U.S. Holder to return the relevant forms to it, properly completed and executed. Upon receipt of the relevant forms properly completed and executed by such U.S. Holder, the Depositary shall cause them to be filed with the appropriate French tax authorities, and upon receipt of any resulting remittance, the Depositary shall distribute to the U.S. Holder entitled thereto, as soon as practicable, the proceeds thereof in U.S. dollars.

The identity and address of the French paying agent are available from TOTAL.

In addition, subject to certain specific filing obligations, there is no withholding tax on dividend payments made by French companies to:

- (i) non-French collective investment funds formed under foreign law and established in a Member State of the European Union or in another State or territory, such as the United States, that has entered with France into an administrative assistance agreement for the purpose of combating fraud and tax evasion, and which fulfill the two following conditions: (a) the fund raises capital among a number of investors for the purpose of investing in accordance with a defined investment policy, in the interest of its investors, and (b) the fund has characteristics similar to those of collective investment funds organized under French law (*i.e.*, among others, open-end mutual fund (OPCVM), open-end real estate fund (OPC) and closed-end investment companies (SICAF)); and
- (ii) companies whose effective place of management is, or which have a permanent establishment receiving the dividends, in a Member State of the European Union or in another State or territory that has entered with France into an administrative assistance agreement for the purpose of combating fraud and tax evasion, such as the United States, that are in a loss-making position and subject, at the time of the distribution, to insolvency proceedings similar to the one set out in Article L. 640-1 of the French Commercial Code and that meet the other conditions set out in Article 119 *quinquies* of the French Tax Code as specified by the administrative guidelines n° BOI-RPPM-RCM-30-30-20-80-20160406.

Collective investment funds and companies mentioned in (ii) above are urged to consult their own tax advisors to confirm whether they are eligible to such provisions and under which conditions.

U.S. taxation

For U.S. federal income tax purposes and subject to the passive foreign investment company rules discussed below, the gross amount of any dividend that a U.S. Holder must include in gross income equals the amount paid by TOTAL (*i.e.*, the net distribution received plus any tax withheld therefrom) to the extent of the current and accumulated earnings and profits of TOTAL (as determined for U.S. federal income tax purposes). Dividends paid to a non-corporate U.S. Holder that constitute qualified dividend income will be taxable to the holder at the preferential rates applicable to long-term capital gains provided that the shares or ADSs are held for more than sixty days during the 121-day period beginning sixty days before the ex-dividend date and the holder meets other holding period requirements. TOTAL believes that dividends paid by TOTAL with respect to its shares or ADSs will be qualified dividend income. The dividend will not be eligible for the dividends-received deduction allowed to a U.S. corporation under IRC section 243. The dividend is taxable to the U.S. Holder when the holder, in the case of shares, or the Depository, in the case of ADSs, receives the dividend, actually or constructively. Because TOTAL does not currently maintain calculations of earnings and profits for U.S. federal income tax purposes, a U.S. Holder of shares or ADSs of TOTAL should expect to treat distributions with respect to the shares or ADSs as dividends.

The amount of any dividend distribution includible in the income of a U.S. Holder equals the U.S. dollar value of the euro payment made, determined at the spot euro/dollar exchange rate on the date the dividend distribution is includible in the U.S. Holder's income, regardless of whether the payment is in fact converted into U.S. dollars. Any gain or loss resulting from currency exchange fluctuations during the period from the date the dividend payment is includible in the U.S. Holder's income to the date the payment is converted into U.S. dollars will generally be treated as ordinary income or loss and, for foreign tax credit limitation purposes, from sources within the United States and will not be eligible for the special tax rate applicable to qualified dividend income. **The U.S. federal income tax rules governing the availability and computation of foreign tax credits are complex. U.S. Holders should consult their own tax advisors concerning the implications of these rules in light of their particular circumstances.**

Subject to certain conditions and limitations, French taxes withheld in accordance with the Treaty and paid over to the French tax authorities will generally be eligible for credit against the U.S. Holder's U.S. federal income tax liability. The limitation on foreign taxes eligible for credit is calculated separately with respect to specific classes of income. In addition, special rules apply in determining the foreign tax credit limitation with respect to dividends that are subject to the preferential tax rates. To the extent a refund of the tax withheld is available to a U.S. Holder under French law or under the Treaty, the amount of tax withheld that is refundable will not be eligible for credit against such holder's U.S. federal income tax liability.

For this purpose, dividends distributed by TOTAL will generally constitute "passive income" for purposes of computing the foreign tax credit allowable to the U.S. Holder. Alternatively, a U.S. Holder may claim all foreign taxes paid as an itemized deduction in lieu of claiming a foreign tax credit.

If a U.S. Holder has the option to receive a distribution in shares (or ADSs) instead of cash, the distribution of shares (or ADSs) will be taxable as if the holder had received an amount equal to the fair market value of the distributed shares (or ADSs), and such holder's tax basis in the distributed shares (or ADSs) will be equal to such amount.

10.5.3 Taxation of disposition of shares

In general, a U.S. Holder will not be subject to French tax on any capital gain from the sale or exchange of the shares or ADSs or redemption of the underlying shares that the ADSs represent unless those shares or ADSs form part of a business property of a permanent establishment or fixed base that the U.S. Holder has in France. Special rules may apply to individuals who are residents of more than one country.

A financial transaction tax applies, under certain conditions, to the acquisition of shares of publicly traded companies registered in France having a market capitalization over €1 billion on December 1 of the year preceding the acquisition. A list of the companies within the scope of the financial transaction tax for 2018 is published in the French Guidelines *Bulletin Officiel des Finances Publiques*, BOI-ANNN-000467-20171221. TOTAL is included in this list. The tax also applies to the acquisition of ADRs evidencing ADSs. The financial transaction tax is due at a rate of 0.3% on the price paid to acquire the shares. The person or entity liable for the tax is generally the provider of investment services defined in Article L. 321-1 of the French Monetary and Financial Code (*prestataire de services d'investissement*). Investment service providers providing equivalent services outside France are subject to the tax under the same terms and conditions. Taxable transactions are broadly construed but several exceptions may apply. In general, non-income taxes, such as this financial transaction tax, paid by a U.S. Holder are not eligible for a foreign tax credit for U.S. federal income tax purposes. U.S. Holders should consult their own tax advisors as to the tax consequences and creditability of such financial transaction tax.

For U.S. federal income tax purposes and subject to the passive foreign investment company rules discussed below, a U.S. Holder generally will recognize capital gain or loss upon the sale or other disposition of shares or ADSs equal to the difference between the U.S. dollar value of the amount realized on the sale or disposition and the holder's tax basis, determined in U.S. dollars, in the shares or ADSs. The gain or loss generally will be U.S. source gain or loss and will be long-term capital gain or loss if the U.S. Holder's holding period of the shares or ADSs is more than one year at the time of the disposition. Long-term capital gain of a non-corporate U.S. Holder is generally taxed at preferential rates if specified minimum holding periods are met. The deductibility of capital losses is subject to limitation.

10.5.4 Passive foreign investment status

TOTAL believes that the shares or ADSs are not treated as stock of a passive foreign investment company ("PFIC") for U.S. federal income tax purposes, and TOTAL does not expect that it will be treated as a PFIC in the current or future taxable years. This conclusion is a factual determination that is made annually and thus is subject to change. If TOTAL is treated as a PFIC, gain realized on the sale or other disposition of the shares or ADSs would in general not be treated as capital gain. Instead, unless a U.S. Holder elects to be taxed annually on a mark-to-market basis with respect to the shares or ADSs, a U.S. Holder would be treated as if he or she had realized such gain and certain "excess distributions" ratably over the holding period for the shares or ADSs and would be taxed at the highest tax rate in effect for each such year to which the gain was allocated, in addition to an interest charge in respect of the tax attributable to each such year. With certain exceptions, a U.S. Holder's shares or ADSs will be treated as stock in a PFIC if TOTAL were a PFIC at any time during such holder's holding

period in the shares or ADSs. Dividends paid will not be eligible for the preferential tax rates applicable to qualified dividend income if TOTAL is treated as a PFIC with respect to a U.S. Holder either in the taxable year of the distribution or the preceding taxable year, but instead will be taxable at rates applicable to ordinary income.

10.5.5 French estate and gift taxes

In general, a transfer of shares or ADSs by gift or by reason of the death of a U.S. Holder that would otherwise be subject to French gift or inheritance tax, respectively, will not be subject to such French tax by reason of the Convention between the United States of America and the French Republic for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with Respect to Taxes on Estates, Inheritances and Gifts, dated November 24, 1978, as amended, unless the donor or the transferor is domiciled in France at the time of making the gift, or at the time of his death, or if the shares or ADSs were used in, or held for use in, the conduct of a business through a permanent establishment or a fixed base in France.

10.5.6 French wealth tax

As of January 1, 2018, the French wealth tax was abolished. Until 2017, the French wealth tax did not apply to a U.S. Holder (i) that was not an individual, or (ii) in the case of individuals who were eligible for the benefits of the Treaty and who owned, alone or with related persons, directly or indirectly, TOTAL shares which gave right to less than 25% of TOTAL's earnings.

10.5.7 U.S. state and local taxes

In addition to U.S. federal income tax, U.S. Holders of shares or ADSs may be subject to U.S. state and local taxes with respect to their shares or ADSs. U.S. Holders should consult their own tax advisors.

10.6 Dividends and paying agents

The information set forth in point 6.2.2 ("Dividend payment") of chapter 6 of the 2017 Registration Document (on page 215) is incorporated herein by reference.

10.7 Statements by experts

The independent third-party report of DeGolyer and MacNaughton, a petroleum engineering consulting firm with address at 5001 Spring Valley Road, Suite 800 East, Dallas, Texas 75244, is attached as Exhibit 15.3 to this Form 20-F. This report provided TOTAL estimates of proved crude oil, condensate and natural gas reserves, as of December 31, 2017, of certain properties owned by PAO NOVATEK. As evidenced by Exhibit 15.4 to this Form 20-F, DeGolyer and MacNaughton has consented to the inclusion of their report in this Form 20-F.

10.8 Documents on display

TOTAL files annual, periodic, and other reports and information with the Securities and Exchange Commission. You may inspect any reports, statements or other information TOTAL files with the SEC at the SEC's public reference rooms by calling the SEC for more information at 1-800-SEC-0330. All of TOTAL's SEC filings made after December 31, 2001, are available to the public at the SEC website at www.sec.gov and from certain commercial document retrieval services. You may also inspect any document the Company files with the SEC at the offices of The New York Stock Exchange, 20 Broad Street, New York, New York 10005.

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Please refer to Notes 15.3 (starting on page 312) and 16.2 (on page 322) to the Consolidated Financial Statements in the 2017 Registration Document, which are incorporated herein by reference, for a qualitative and quantitative discussion of the Group's exposure to market risks. Please also refer to Notes 15.2 (starting on page 308) and 16 (starting on page 319) to the Consolidated Financial Statements in the 2017 Registration Document, which are incorporated herein by reference, for details of the different derivatives owned by the Group in these markets.

As part of its financing and cash management activities, the Group uses derivative instruments to manage its exposure to changes in interest rates and foreign exchange rates. These instruments are mainly interest rate and currency swaps. The Group may also occasionally use futures contracts and options. These operations and their accounting treatment are detailed in Notes 15.2 (starting on page 308) and 16 (starting on page 319) to the Consolidated Financial Statements in the 2017 Registration Document, which are incorporated herein by reference.

The financial performance of TOTAL is sensitive to a number of factors; the most significant being oil and gas prices, generally expressed in dollars, and exchange rates, in particular that of the dollar versus the euro. Generally, a rise in the price of crude oil has a positive effect on earnings as a result of an increase in revenues from oil and gas production. Conversely, a decline in crude oil prices reduces revenues. The impact of changes in crude oil prices on the activities of the Refining & Chemicals and Marketing & Services segments depends upon the speed at which the prices of finished products adjust to reflect these changes. All of the Group's activities are, to various degrees, sensitive to fluctuations in the dollar/euro exchange rate.

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

12.1 American depositary receipts fees and charges

JPMORGAN CHASE BANK, N.A., as depositary for the TOTAL S.A. ADR program, collects its fees for delivery and surrender of ADRs directly from investors depositing shares or surrendering ADRs for the purpose of withdrawal or from intermediaries acting for them. The depositary collects fees for making distributions to investors by deducting those fees from the amounts distributed or by selling a portion of distributable property to pay the fees. The depositary may generally refuse to provide fee-attracting services until its fees for those services are paid. A copy of the depositary agreement is attached as Exhibit (a) to the registration statement on Form F-6 (Reg. No. 333-199737) filed by the Company with the SEC on October 31, 2014.

Investors must pay:	For:
\$5.00 (or less) per 100 ADSs (or portion of 100 ADSs)	<ul style="list-style-type: none"> - Issuance of ADRs, including issuances resulting from a distribution of shares or rights or other property, stocks splits or mergers - Cancellation of ADRs for the purpose of withdrawal, including if the deposit agreement terminates
A fee equivalent to the fee that would be payable if securities distributed to the investor had been shares and the shares had been deposited for issuance of ADSs	<ul style="list-style-type: none"> - Distribution of securities distributed to holders of deposited securities that are distributed by the depositary to ADS registered holders
Registration or transfer fees	<ul style="list-style-type: none"> - Transfer and registration of shares on the Company's share register to or from the name of the depositary or its agent when the investor deposits or withdraws shares
Expenses of the depositary	<ul style="list-style-type: none"> - Cable, telex and facsimile transmissions (when expressly provided in the deposit agreement - Converting foreign currency to U.S. dollars
Taxes and other governmental charges the depositary or the custodian have to pay on any ADS or share underlying an ADS, for example, stock transfer taxes, stamp duty or withholding taxes	<ul style="list-style-type: none"> - As necessary
Any charges incurred by the depositary or its agents for servicing the deposited securities	<ul style="list-style-type: none"> - As necessary

The depositary has agreed to provide the Company with payments concerning, among other things, expenses incurred by the Company for the establishment and maintenance of the ADR program that include, but are not limited to, exchange listing fees, annual meeting expenses, standard out-of-pocket maintenance costs for the ADRs (e.g., the expenses of postage and envelopes for mailing annual and interim financial reports, printing and distributing dividend checks, electronic filing of U.S. Federal tax information, mailing required tax forms, stationery, postage, facsimile, and telephone calls), shareholder identification, investor relations activities or programs in North America, accounting fees (such as external audit fees incurred in connection with the Sarbanes-Oxley Act, the preparation of the Company's Form 20-F and paid to the FASB and the PCAOB), legal fees and other expenses incurred in connection with the preparation of regulatory filings and other documentation related to ongoing SEC, NYSE and U.S. securities law compliance. In certain instances, the depositary has agreed to make additional payments to the Company based on certain applicable performance indicators related to the ADR facility.

During fiscal year 2017, the Company received net payments of approximately \$6.6 million from the depositary.

ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

None.

ITEM 15. CONTROLS AND PROCEDURES

15.1 Disclosure controls and procedures

An evaluation was carried out under the supervision and with the participation of the Group's management, including the Chief Executive Officer and the Chief Financial Officer, of the effectiveness, as of the end of the period covered by this report, of the design and operation of the Group's disclosure controls and procedures, which are defined as those controls and procedures designed to ensure that information required to be disclosed in reports filed under the Securities Exchange Act of 1934, as amended, is recorded, summarized and reported within specified time periods. There are inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures. Accordingly, even effective disclosure controls and procedures can provide only reasonable assurance of achieving their control objectives. Based on this evaluation, the Chief Executive Officer and the Chief Financial Officer concluded that the design and operation of these disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed in the reports that the Company files under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the applicable rules and forms, and that it is accumulated and communicated to management, including themselves, as appropriate to allow timely decisions regarding required disclosure.

15.2 Management's annual report on internal control over financial reporting

The Group's management is responsible for establishing and maintaining adequate internal control over financial reporting. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements and even when determined to be effective, can only provide reasonable assurance with respect to financial statement preparation and presentation. Also, the effectiveness of an internal control system may change over time.

The Group's management, including the Chief Executive Officer and the Chief Financial Officer, conducted an evaluation of the effectiveness of internal control over financial reporting using the criteria set forth in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on the results of this evaluation, the Group's management concluded that its internal control over financial reporting was effective as of December 31, 2017.

The effectiveness of internal control over financial reporting as of December 31, 2017, was audited by ERNST & YOUNG Audit and KPMG Audit, a division of KPMG S.A., independent registered public accounting firms, as stated in their report included in Item 18 of this annual report.

15.3 Changes in internal control over financial reporting

There were no changes in the Group's internal control over financial reporting that occurred during the period covered by this report that have materially affected, or that were reasonably likely to materially affect, the Group's internal control over financial reporting.

15.4 Internal control and risk management procedures

For additional information, refer to points 3.3 and 3.5 of chapter 3 of the 2017 Registration Document (starting on pages 88 and 96, respectively), which are incorporated herein by reference.

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Ms. Marie-Christine Coisne-Roquette is the Audit Committee financial expert. She is an independent member of the Board of Directors in accordance with the NYSE listing standards applicable to TOTAL.

ITEM 16B. CODE OF ETHICS

At its meeting on October 27, 2016, the Board of Directors adopted a revised code of ethics that applies to its Chief Executive Officer, Chief Financial Officer, Chief Accounting Officer and the financial and accounting officers for its principal activities. A copy of this code of ethics is included as an exhibit to this annual report.

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

16C.1 Fees for accountants' services

The information set forth in point 4.4.5.2 of chapter 4 of the 2017 Registration Document (on page 165) is incorporated herein by reference.

16C.2 Audit Committee pre-approval policy

The Audit Committee has adopted an Audit and Non-Audit Services Pre-Approval Policy that sets forth the procedures and the conditions pursuant to which services proposed to be performed by the statutory auditors may be pre-approved and that are not prohibited by regulatory or other professional requirements. This policy provides for both pre-approval of certain types of services through the use of an annual budget approved by the Audit Committee for these types of services and special pre-approval of services by the Audit Committee on a case-by-case basis. The Audit Committee reviews on an annual basis the services provided by the statutory auditors. During 2017, no audit-related fees, tax fees or other non-audit fees were approved by the Audit Committee pursuant to the *de minimis* exception to the pre-approval requirement provided by paragraph (c)(7)(i)(C) of Rule 2-01 of Regulation S-X.

16C.3 Auditor's term of office

French law provides that the statutory and alternate auditors are appointed for renewable 6 fiscal-year terms. The terms of office of the current statutory auditors and the alternate auditors will expire at the end of the Annual Shareholders' Meeting called in 2022 to approve the financial statements for fiscal year 2021.

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

None.

ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

Period	Total Number Of Shares (Or Units) Purchased	Average Price Paid Per Share (Or Units) (€)	Total Number Of Shares (Or Units) Purchased, As Part Of Publicly Announced Plans Or Programs ^(a)	Maximum Number Of Shares (Or Units) That May Yet Be Purchased Under The Plans Or Programs ^(b)
January 2017	-	-	-	234,779,415
February 2017	-	-	-	234,792,947
March 2017	-	-	-	234,805,949
April 2017	-	-	-	237,758,364
May 2017	-	-	-	237,781,335
June 2017	-	-	-	239,569,766
July 2017	-	-	-	241,780,495
August 2017	-	-	-	241,821,595
September 2017	-	-	-	241,897,317
October 2017	-	-	-	244,476,614
November 2017	-	-	-	244,504,681
December 2017	-	-	-	244,522,205

(a) The Annual Shareholders' Meeting of May 26, 2017, canceled and replaced the previous resolution from the Annual Shareholders' Meeting of May 24, 2016, authorizing the Board of Directors to trade in the Company's own shares on the market for a period of 18 months within the framework of the stock purchase program. The maximum number of shares that may be purchased by virtue of this authorization or under the previous authorization may not exceed 10% of the total number of shares constituting the share capital, this amount being periodically adjusted to take into account operations modifying the share capital after each shareholders' meeting. Under no circumstances may the total number of shares the Company holds, either directly or indirectly through its subsidiaries, exceed 10% of the share capital. This authorization will be renewed subject to the approval of the Annual Shareholders' Meeting of June 1, 2018 through the 5th resolution.

(b) Based on 10% of the Company's share capital, and after deducting the shares held by the Company for cancellation and the shares held by the Company to cover the share purchase option plans for Company employees and restricted share grants for Company employees, as well as after deducting the shares held by the subsidiaries.

ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT

Not applicable.

ITEM 16G. CORPORATE GOVERNANCE

This section presents a summary of significant differences between French corporate governance practices and the NYSE's corporate governance standards, as required by section 303A.11 of the NYSE Listed Company Manual.

16G.1 Overview

The following paragraphs provide a brief, general summary of significant ways in which our corporate governance practices differ from those required by the listing standards of the New York Stock Exchange ("NYSE") for U.S. companies that have common stock listed on the NYSE. While our management believes that our corporate governance practices are similar in many respects to those of U.S. domestic NYSE listed companies and provide investors with protections that are comparable in many respects to those established by the NYSE Listed Company Manual, certain significant differences are described below.

The principal sources of corporate governance standards in France are the French Commercial Code (*Code de commerce*), the French Financial and Monetary Code (*Code monétaire et financier*) and the regulations and recommendations provided by the French Financial Markets Authority (*Autorité des marchés financiers*, AMF), as well as a number of general recommendations and guidelines on corporate governance, most notably the Corporate Governance Code of Listed Corporations (the "AFEP-MEDEF Code") published by the two main French business confederations, the *Association Française des Entreprises Privées* (AFEP) and the *Mouvement des Entreprises de France* (MEDEF), the latest version of which was published in November 2016.

The AFEP-MEDEF Code includes, among other things, recommendations relating to the role and operation of the board of directors (creation, composition and evaluation of the board of directors and the audit, compensation and nominations committees) and the independence criteria for board members. Articles L. 820-1 *et seq.* of the French Commercial Code prohibits statutory auditors from providing certain non-audit services and defines certain criteria for the independence of statutory auditors. In France, the independence of statutory auditors is also monitored by an independent body, the High Council for statutory auditors (*Haut Conseil du Commissariat aux Comptes*).

For an overview of certain of our corporate governance policies, refer to points 4.1 and 4.2 of chapter 4 of the 2017 Registration Document (starting on page 104), which are incorporated herein by reference.

16G.2 Composition of Board of Directors; Independence

The NYSE listing standards provide that the board of directors of a U.S.-listed company must include a majority of independent directors and that the audit committee, the nominating/corporate governance committee and the compensation committee must be composed entirely of independent directors. A director qualifies as independent only if the board affirmatively determines that the director has no material relationship with the company, either directly or as a partner, shareholder or officer of an organization that has a relationship with the company. Furthermore, as discussed below, the listing standards require additional procedures in regards to the independence of directors who sit on the compensation committee. In addition, the listing standards enumerate a number of relationships that preclude independence.

French law does not contain any independence requirement for the members of the board of directors of a French company, except for the audit committee, as described below. The AFEP-MEDEF Code recommends, however, that (i) the independent directors should account for half of the members of the board of directors of widely-held corporations without controlling shareholders, and (ii) independent directors should account for at least one-third of board members in controlled companies. Members of the board representing employees and employee shareholders are not taken into account in calculating these percentages. The AFEP-MEDEF Code states that a director is independent when "he or she has no relationship of any kind whatsoever with the corporation, its group or the management that may interfere with his or her freedom of judgment. Accordingly, an independent director is understood to be any non-executive director of the corporation or the group who has no particular bonds of interest (significant shareholder, employee, other) with them." The AFEP-MEDEF Code also enumerates specific criteria for determining independence, which are on the whole consistent with the goals of the NYSE listing standards, as recently amended, although the specific tests under the two standards may vary on some points.

As noted in the AFEP-MEDEF Code, "qualification as an independent director should be discussed by the appointments committee [...] and decided on by the board on the occasion of the appointment of a director, and annually for all directors."

For an overview of the Company's Board of Directors' assessment of the independence of the Company's Directors, including a description of the Board's independence criteria, refer to point 4.1.1.4 of chapter 4 of the 2017 Registration Document (starting on page 116), which is incorporated herein by reference.

16G.3 Representation of women on corporate boards

The French Commercial Code provides for legally binding quotas to balance gender representation on boards of directors of French listed companies, requiring that each gender represent at least 40%. Directors representing the employees are not taken into account in calculating this percentage. When the board of directors consists of a maximum of eight members, the difference between the number of directors of each gender should not be higher than two. Any appointment of a director made in violation of these rules will be declared null and void and payment of the directors' compensation will be suspended until the board composition is compliant with the required quota (the suspension of the directors' compensation will also be disclosed in the management report). However, if a director whose appointment is null and void takes part in decisions of the board of directors, such decisions are not declared automatically null and void by virtue thereof. As of March 14, 2018, the Company's Board of Directors had six male and six female members. Therefore, excluding the director representing employees in accordance with French law, the proportion of women on the Board was 45.5%.

16G.4 Board committees

16G.4.1 Overview

The NYSE listing standards require that a U.S.-listed company have an audit committee, a nominating/corporate governance committee and a compensation committee. Each of these committees must consist solely of independent directors and must have a written charter that addresses certain matters specified in the listing standards. Furthermore, the listing standards require that, in addition to the independence criteria referenced above under “Composition of Board of Directors; Independence”, certain enumerated factors be taken into consideration when making a determination on the independence of directors on the compensation committee or when engaging advisors to the compensation committee.

With the exception of an audit committee, as described below, French law currently requires neither the establishment of board committees nor the adoption of written charters.

The AFEP-MEDEF Code recommends, however, that the board of directors sets up, in addition to the audit committee required by French law, a nominations committee and a compensation committee. The AFEP-MEDEF Code also recommends that at least two-thirds of the audit committee members and a majority of the members of each of the compensation committee and the nominations committee be independent directors. It is recommended that the chairman of the compensation committee be independent and that one of its members be an employee director. None of those three committees should include any Executive Officer⁽¹⁾.

TOTAL has established an Audit Committee, a Governance and Ethics Committee, a Compensation Committee and a Strategy & CSR Committee. As of March 14, 2018, the composition of these Committees was as follows:

- the Audit Committee had four members, 100% of whom have been deemed independent by the Board of Directors;
- the Governance and Ethics Committee had three members, 100% of whom have been deemed independent by the Board of Directors;
- the Compensation Committee had four members, 100% of whom have been deemed independent by the Board of Directors (according to point 8.3 of the AFEP-MEDEF Code, directors representing the employee shareholders and directors representing employees are not taken into account when determining this percentage); and
- the Strategy & CSR Committee had five members. With the exception of Mr. Pouyanné, who chairs the committee, all members of this Committee have been deemed independent by the Board of Directors.

For a description of the scope of each Committee’s activity and the independence assessment of each member, see point 4.1.2.3 of chapter 4 of the 2017 Registration Document (starting on page 127), which is incorporated herein by reference.

The NYSE listing standards also require that the audit, nominating/corporate governance and compensation committees of a U.S.-listed company be vested with decision-making powers on certain matters. Under French law, however, those committees are advisory in nature and have no decision-making authority. Board committees are responsible for examining matters within the scope of their charter and making recommendations thereon to the board of directors. Under French law, the board of directors has the final decision-making authority.

16G.4.2 Audit Committee

The NYSE listing standards contain detailed requirements for the audit committees of U.S.-listed companies. Some, but not all, of these requirements also apply to non-U.S.-listed companies, such as TOTAL. French law and the AFEP-MEDEF Code share the NYSE listing standards’ goal of establishing a system for overseeing the company’s accounting process that is independent from management and that ensures auditor independence. As a result, they address similar topics, with some overlap.

Article L. 823-19 of the French Commercial Code requires the board of directors of companies listed in France to establish an audit committee, at least one member of which must be an independent director and must be competent in finance, accounting or statutory audit procedures. The AFEP-MEDEF Code provides that at least two-thirds of the directors on the audit committee be independent and that the audit committee should not include any Executive Officer. Under NYSE rules, in the absence of an applicable exemption, audit committees are required to satisfy the independence requirements under Rule 10A-3 of the Exchange Act. TOTAL’s Audit Committee consists of three directors, all of whom meet the independence requirements under Rule 10A-3.

The duties of the Company’s Audit Committee, in line with French law and the AFEP-MEDEF Code, are described in point 4.1.2.3 of chapter 4 of the 2017 Registration Document (starting on page 127), which is incorporated herein by reference. The Audit Committee regularly reports to the Board of Directors on the fulfillment of its tasks, the results of the financial statements certification process and the contribution of such process to guaranteeing the financial information’s integrity.

One structural difference between the legal status of the audit committee of a U.S.-listed company and that of a French-listed company concerns the degree of the committee’s involvement in managing the relationship between the company and the auditors. French law requires French companies that publish consolidated financial statements, such as TOTAL S.A., to have two co-statutory auditors. While the NYSE listing standards require that the audit committee of a U.S.-listed company have direct responsibility for the appointment, compensation, retention and oversight of the work of the auditor, French law provides that the election of the co-statutory auditors is the sole responsibility of the shareholders duly convened at a shareholders’ meeting. In making their decision, the shareholders may rely on proposals submitted to them by the board of directors based on recommendations from the audit committee. The shareholders elect the statutory auditors for an audit period of six financial years. The statutory auditors may only be revoked by a court order and only on grounds of professional negligence or incapacity to perform their mission.

⁽¹⁾ As defined by the AFEP-MEDEF Code, Executive Officers “include the Chairman and Chief Executive Officer, the Deputy chief executive officer(s) of public limited companies with a Board of Directors, the Chairman and members of the Management Board in public limited companies having a Management Board and Supervisory Board and the statutory managers of partnerships limited by shares”.

16G.5 Meetings of non-management directors

The NYSE listing standards require that the non-management directors of a U.S.-listed company meet at regularly scheduled executive sessions without management. French law does not contain such a requirement. The AFEP-MEDEF Code recommends, however, that a meeting not attended by the Executive Officers be organized each year.

Since December 16, 2015, the rules of procedure of the board of directors provide that, with the agreement of the Governance and Ethics Committee, the Lead Independent Director may hold meetings of the directors who do not hold executive or salaried positions on the Board of Directors. He or she reports to the Board of Directors on the conclusions of such meetings.

In December 2017, the Lead Independent Director held a meeting of the independent directors. She subsequently presented a summary of this meeting to the Board of Directors.

Thus, the Board of Directors' practice is in line with the recommendation made in the AFEP-MEDEF Code.

16G.6 Shareholder approval of compensation

Pursuant to the provisions of the French Commercial Code, as amended, the compensation of the chairman of the board of directors, the chief executive officer and, as the case may be, the deputy chief executive officer(s) in French listed companies shall each year be submitted to the approval of their shareholders. Articles L. 225-37-2 and L. 225-100 of the French Commercial Code provide respectively for an *ex ante* vote and an *ex post* vote:

- *ex ante* vote: the shareholders shall each year approve the principles and criteria for determining, allocating and granting the fixed, variable and exceptional components making up the total compensation and the benefits of any kind, attributable to each of the abovementioned officers for the current fiscal year. In the event a resolution is rejected by the shareholders, the preceding already approved compensation policy for the concerned officer will be applicable; and
- *ex post* vote: the shareholders shall each year approve the fixed, variable and exceptional components of the aggregate compensation and benefit of any kinds due or attributable to each of the abovementioned officers for the preceding fiscal year. In the event a resolution is rejected by the shareholders, the variable and exceptional components of the compensation will not be paid to the relevant officer.

16G.7 Disclosure

The NYSE listing standards require U.S.-listed companies to adopt, and post on their websites, a set of corporate governance guidelines. The guidelines must address, among other things: director qualification standards, director responsibilities, director access to management and independent advisers, director compensation, director orientation and continuing education, management succession and an annual performance evaluation of the board. In addition, the chief executive officer of a U.S.-listed company must certify to the NYSE annually that he or she is not aware of any violations by the company of the NYSE's corporate governance listing standards.

French law requires neither the adoption of such guidelines nor the provision of such certification. The AFEP-MEDEF Code recommends, however, that the board of directors of a French-listed company review its operation annually and perform a formal evaluation at least once every three years, under the leadership of the appointments or nominations committee or an independent director, assisted by an external consultant. TOTAL's Board of Directors' most recent formal evaluation took place in early 2016. The AFEP-MEDEF Code also recommends that shareholders be informed of these evaluations each year in the annual report. In addition, Article L. 225-37 of the French Commercial Code requires the board of directors to present to the shareholders a corporate governance report appended to the management report, notably describing the composition of the board and the balanced representation of men and women on the board, the preparation and organization of the Board's work, as well as the offices and positions of each TOTAL Executive Officer and the compensation received by each such officer. The AFEP-MEDEF Code also includes ethical rules concerning which directors are expected to comply.

16G.8 Code of business conduct and ethics

The NYSE listing standards require each U.S.-listed company to adopt, and post on its website, a code of business conduct and ethics for its directors, officers and employees. There were no similar requirements applicable under French law in 2016. Article 17 of Law n° 2016/1691 of December 9, 2016, requires the top management (such as the chairman of the board or chief executive officer) of large French companies to adopt by June 1, 2017, a code of conduct proscribing the different types of behavior being likely to characterize acts of corruption, bribery or influence peddling, which code shall be included in the rules of procedure of the company and be submitted to employee representatives. Under the SEC's rules and regulations, all companies required to submit periodic reports to the SEC, including TOTAL, must disclose in their annual reports whether they have adopted a code of ethics for their principal executive officers and senior financial officers. In addition, they must file a copy of the code with the SEC, post the text of the code on their website or undertake to provide a copy upon request to any person without charge. There is significant, though not complete, overlap between the code of ethics required by the NYSE listing standards and the code of ethics for senior financial officers required by the SEC's rules. For a description of the code of ethics adopted by TOTAL, refer to point 3.3.2 of chapter 3 of the 2017 Registration Document (starting on page 88), which is incorporated herein by reference, and "Item 16B. Code of ethics".

ITEM 16H. MINE SAFETY DISCLOSURE

Not applicable.

ITEM 17. FINANCIAL STATEMENTS

Not applicable.

ITEM 18. FINANCIAL STATEMENTS

The Consolidated Financial Statements and Notes thereto included in the 2017 Registration Document (starting on page 233) are incorporated herein by reference.

The reports of the statutory auditors, ERNST & YOUNG Audit and KPMG Audit, a division of KPMG S.A., are included in the following pages:

KPMG Audit
Tour EQHO
2 Avenue Gambetta
CS 60055
92066 Paris la Défense Cedex
France

ERNST & YOUNG Audit
1/2, place des Saisons
92400 Courbevoie – Paris La Défense 1
France

TOTAL S.A.

Registered office: 2, place Jean Millier – La Défense 6 – 92400 Courbevoie – France

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRMS ON THE CONSOLIDATED FINANCIAL STATEMENTS

To the Shareholders and Board of Directors:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of TOTAL S.A. and subsidiaries (“the Company”) as of December 31, 2017, 2016 and 2015, the related consolidated statements of income, comprehensive income, changes in shareholders’ equity, and cash flows for each of the years in the three year period ended December 31, 2017, and the related notes (collectively, “the consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017, 2016 and 2015, and the results of its operations and its cash flows for each of the years in the three year period ended December 31, 2017, in conformity with International Financial Reporting Standards as adopted by the European Union and in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company’s internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission”, and our report dated March 14, 2018 expressed an unqualified opinion on the effectiveness of the Company’s internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are public accounting firms registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Paris La Défense, March 14, 2018

KPMG Audit,
a division of KPMG S.A.

ERNST & YOUNG Audit

/s/ JACQUES-FRANÇOIS LETHU

/s/ ERIC JACQUET

/s/ ERNST & YOUNG AUDIT

Jacques-François Lethu
Partner

Eric Jacquet
Partner

ERNST & YOUNG Audit

We or our predecessor firms have served as the Company’s
auditor since 1996.

We have served as the Company’s
auditor since 2004.

KPMG Audit
Tour EQHO
2 Avenue Gambetta
CS 60055
92066 Paris la Défense Cedex
France

ERNST & YOUNG Audit
1/2, place des Saisons
92400 Courbevoie – Paris La Défense 1
France

TOTAL S.A.

Registered office: 2, place Jean Millier – La Défense 6 – 92400 Courbevoie – France

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRMS ON THE INTERNAL CONTROL OVER FINANCIAL REPORTING

Year ended December 31, 2017

To the Shareholders and Board of Directors,

Opinion on Internal Control Over Financial Reporting

We have audited TOTAL S.A. and subsidiaries' ("the Company") internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2017, 2016 and 2015, the related consolidated statements of income, comprehensive income, changes in shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2017 and the related notes (collectively, "the consolidated financial statements"), and our report dated March 14, 2018 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are public accounting firms registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Paris La Défense, March 14, 2018

KPMG Audit,
a division of KPMG S.A.

ERNST & YOUNG Audit

/s/ JACQUES-FRANÇOIS LETHU

/s/ ERIC JACQUET

/s/ ERNST & YOUNG AUDIT

Jacques-François Lethu
Partner

Eric Jacquet
Partner

ERNST & YOUNG Audit

ITEM 19. EXHIBITS

The following documents are filed as part of this annual report:

1	Bylaws (<i>Statuts</i>) of TOTAL S.A. (as amended through March 8, 2018).
2	The total amount of long-term debt securities authorized under any instrument does not exceed 10% of the total assets of the Company and its subsidiaries on a consolidated basis. We hereby agree to furnish to the SEC, upon its request, a copy of any instrument defining the rights of holders of long-term debt of the Company or of its subsidiaries for which consolidated or unconsolidated financial statements are required to be filed.
7.1	Ratio of earnings to fixed charges.
7.2	Computation of earnings to fixed charges.
8	List of Subsidiaries (see Note 18 to the Consolidated Financial Statements included in the 2017 Registration Document (starting on page 324), which is incorporated herein by reference).
11	Code of Ethics (incorporated by reference to the Company's annual report on Form 20-F for the year ended December 31, 2016, filed on March 17, 2017).
12.1	Certification of Chief Executive Officer.
12.2	Certification of Chief Financial Officer.
13.1	Certification of Chief Executive Officer.
13.2	Certification of Chief Financial Officer.
15.1	Excerpt of the pages and sections of the 2017 Registration Document incorporated herein by reference.
15.2	Consent of ERNST & YOUNG Audit and of KPMG Audit, a division of KPMG S.A.
15.3	Third party report of DeGolyer and MacNaughton.
15.4	Consent of DeGolyer and MacNaughton.
101	XBRL Document.

SIGNATURE

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

TOTAL S.A.

By: /s/ PATRICK POUYANNÉ

Name: Patrick Pouyanné
Title: Chairman and Chief Executive Officer

Date: March 16, 2018

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EXHIBIT 15.1

Exhibit 15.1 contains the excerpts of TOTAL S.A.'s 2017 Registration Document that are incorporated by reference into this Annual Report on Form 20-F.⁽¹⁾

(1) Where information has been deleted from TOTAL S.A.'s 2017 Registration Document, such deletion is indicated in this exhibit with a notation that such information has been redacted.

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[REDACTED SECTION: CERTAIN TEXT HAS BEEN REDACTED.]

1

PRESENTATION OF THE GROUP – INTEGRATED REPORT

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1.1 Presentation of the Group and its governance

1.1.1 A major energy player underpinned by stable governance

1.1.1.1 4th largest international oil and gas major with consolidated sales of \$171,493 million in 2017

TOTAL, which has produced oil and gas for almost a century, is one of the largest international oil and gas companies and a major player in low carbon energies⁽¹⁾. It is present on five continents and in more than 130 countries.

The Group's activities include the exploration and production of oil and gas, refining, petrochemicals and the distribution of energy in various forms to the end customer. Committed to better energy, over 98,000 employees help throughout the world to provide the Group's customers with products and services that are safer, more affordable,

cleaner, more efficient, more innovative and accessible to the greatest number of people.

Energy, an essential resource, accompanies the development of society. In view of the major challenges faced by the world today, energy producers have a key role to play.

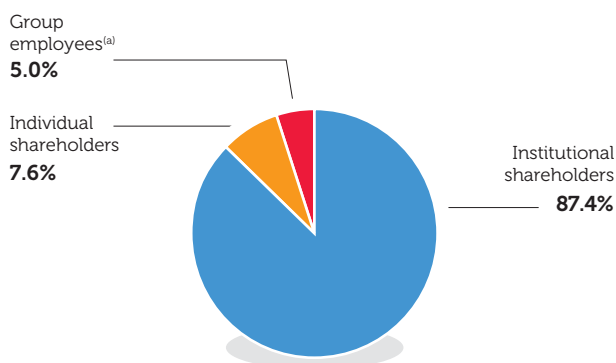
It is by relying on the support provided by its governance and by a diverse shareholder base that the Group will be able to fulfill its collective ambition to become a responsible energy major and to supply more affordable, more available and cleaner energy.

1.1.1.2 A diverse shareholder base

Shareholder base of TOTAL S.A. is diverse, and spread throughout the world. It comprises institutional investors, individual shareholders and employees committed to the Company project. For more information, refer to point 6.4 of chapter 6.

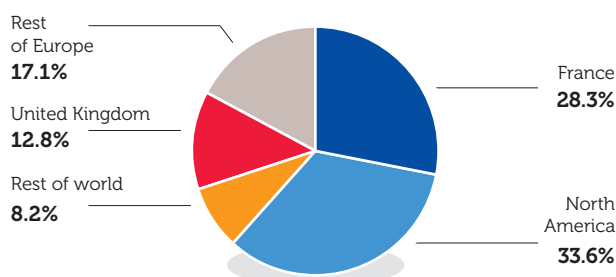
Shareholding structure by shareholder type

Estimates below are as of December 31, 2017, excluding treasury shares, based on the survey of identifiable holders of bearer shares conducted on that date.



Shareholding structure by area

Estimates below are as of December 31, 2017, excluding treasury shares, based on the survey of identifiable holders of bearer shares conducted on that date.



(a) On the basis of employee shareholdings as defined in Article L. 225-102 of the French Commercial Code, treasury shares excluded (5.0% of the total share capital, refer to point 6.4.1 of chapter 6).

The number of French individual shareholders of TOTAL S.A. is estimated at approximately 450,000.

(1) TOTAL S.A., a French limited liability company (société anonyme), currently constitutes with all of the Group's companies, the world's 4th largest publicly traded integrated oil and gas group based on market capitalization (in dollars) as of December 31, 2017.

1.1.1.3 A Board of Directors that is fully committed and able to determine the Company's strategic orientations

As of March 14, 2018



(a) Excluding the director representing the employee shareholders and the director representing employees, in accordance with the recommendations of the AFEP-MEDEF Code (point 8.3). For more information, refer to point 4.1.1.4 of chapter 4.

(b) Excluding the director representing employees, in accordance with Article L. 225-27-1 of the French Commercial Code.

The Board of Directors determines the strategic orientation of TOTAL and supervises its implementation. It approves investment and divestment operations when they concern amounts that exceed 3% of the Group's equity and examines all matters related to the smooth running of the company. It monitors the management of both financial and extra-financial matters and ensures the quality of information provided to shareholders and to financial markets.

The Board of Directors relies on the work of four Committees: the Audit Committee, the Governance and Ethics Committee, the Compensation Committee and the Strategic & CSR Committee.













Composed as of March 14, 2018 of 12 directors, including 9 independent members, the Board reflects diversity and complementarity of experiences, expertises, nationalities and cultures necessary to take account of the interests of all of the Group's shareholders and stakeholders.

Since December 2015, Patrick Pouyanné has held the position of Chairman and Chief Executive Officer of TOTAL S.A. The decision to combine the functions of Chairman of the Board of Directors and Chief Executive Officer was made further to work undertaken by the Governance and Ethics Committee, in the interests of the Company and in compliance with the traditions of the Group. The Board of Directors deemed that the unified Management Form was most appropriate to the Group's organization, *modus operandi* and business, and to the specificities of the oil and gas sector. In its decision, the Board in particular noted the advantage of having unified management in strategic negotiations with governments and the Group's partners. The Board of Directors regularly examines whether maintaining the unified management form remains appropriate.

Attentive to the concerns of investors and stakeholders, the Board of Directors pays specific attention to the balance of power within the Group. Consequently, every year, the Board examines desirable changes to its composition to try to maintain a high level of general independence and the full involvement of the directors in the work of the Board and of the Committees. It was also for these reasons that the Board of Directors, at its meeting on December 16, 2015, amended the provisions of its Rules of Procedure to provide for the appointment of a Lead Independent Director in case of the combination of the positions of Chairman of the Board of Directors and Chief Executive Officer. The Lead Independent Director's duties, resources and rights are described in the Rules of Procedure of the Board of Directors. Aside from these duties, the Chairman and Chief Executive Officer and the Lead Independent Director strive to maintain permanent contact on any important matter concerning the running of the Company. Since 2016, they have held monthly meetings. Finally, since 2016, the Lead Independent Director has organized executive sessions with the independent directors so that they may discuss the Group's strategic challenges and working practices. The directors are also in regular contact with the members of the Group's management team, whether members of the Executive Committee during Board Meetings or operational managers during Group site visits. Contact between the directors and managers enables the directors to gain a practical understanding of the Group's activities.

The balance of power within the Company's bodies is thereby ensured by a stable and structured governance.

Overview of the Board of Directors

As of March 14, 2018	Age	Sex	Nationality	Independence	1 st appointment	Expiry of term of office	Years' service on the Board	Number of directorships in listed companies ^(a)	Committees			
									Audit	Governance and Ethics	Compensation	Strategic & CSR
Patrick Pouyanné Chairman and Chief Executive Officer	54	M			2015	2018	3	1				C
Patrick Artus	66	M		•	2009	2018	9	2	•			•
Patricia Barbizet Lead Independent Director	62	F		•	2008	2020	10	2		C	•	•
Marie-Christine Coisne-Roquette	61	F		•	2011	2020	7	1	C		•	
Mark Cutifani	59	M		•	2017	2020	1	1				
Maria van der Hoeven	68	F		•	2016	2019	2	2	•			
Anne-Marie Idrac	66	F		•	2012	2018	6	4		•		•
Gérard Lamarche	56	M		•	2012	2019	6	4	•		C	
Jean Lemierre	67	M		•	2016	2019	2	1		•		•
Renata Perycz ^(b)	54	F		n/a	2016	2019	2	0			•	
Christine Renaud ^(c)	49	F		n/a	2017	2020	1	0				
Carlos Tavares	59	M		•	2017	2020	1	2				

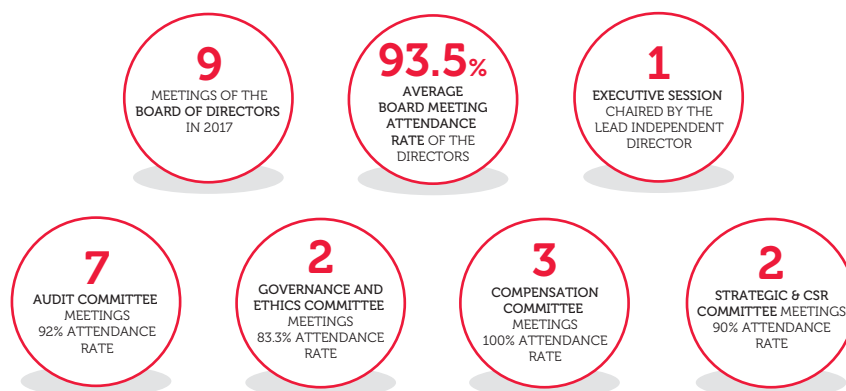
(a) Number of directorships held by the director in listed companies outside of his or her group, including foreign companies, assessed in accordance with the recommendations of the AFEP-MEDEF Code, point 18 (refer to point 4.1.1.4 of chapter 4).

(b) Renata Perycz was designated pursuant to the provisions of Article L. 225-23 of the French Commercial Code as director representing employee shareholders on the proposal of the employee shareholders specified by Article L. 225-102 of the French Commercial Code.

(c) Christine Renaud was designated as director representing employees by the Central Works Council of UES Amont – Global Services – Holding pursuant to the provisions of Article L. 225-27-1 of the French Commercial Code and of the Company's bylaws.

C: Chairperson.

Activities of the Board of Directors and of the Committees



The duties and work of the Board of Directors and of its Committees are described in point 4.1.2 of chapter 4.

1.1.2 The Group in a few figures

1.1.2.1 2017 key figures

As of December 31, 2017^(a)



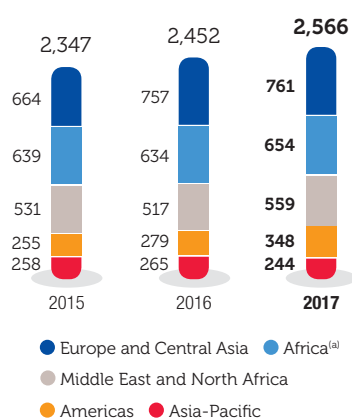
(a) For a definition of the various performance indicators, refer to the Glossary and to Note 3 to the Consolidated Financial Statements (point 8.7 of chapter 8).

(b) Subject to approval by the Shareholders' Meeting on June 1, 2018.

1.1.2.2 Key figures by segment

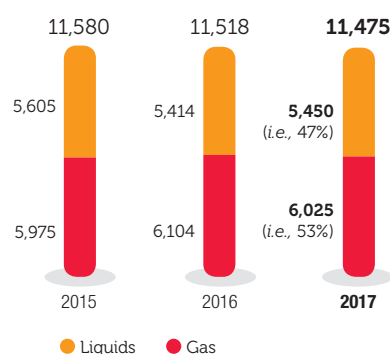
Exploration & Production

Hydrocarbon production (kboe/d)



(a) Excluding North Africa.

Liquids and gas proved reserves^(a) (Mboe)



(a) Proved reserves based on SEC rules (Brent at \$54.36/b in 2017, \$42.82/b in 2016 and \$54.17/b in 2015).

Gas, Renewables & Power

Managed LNG volumes

(Mt)	2015	2016	2017
Managed LNG volumes	12.8	12.9	15.6

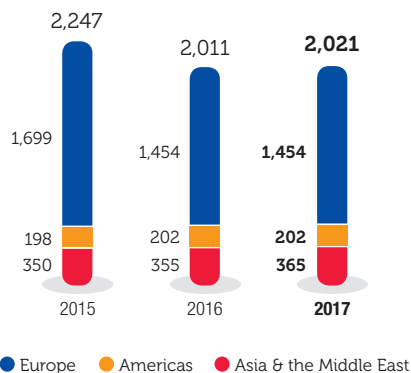
Installed power capacities by gas or renewables^(a)

(MW)	2015	2016	2017
Installed power capacities by gas or renewables	687	804	903

(a) In Group's equity stake.

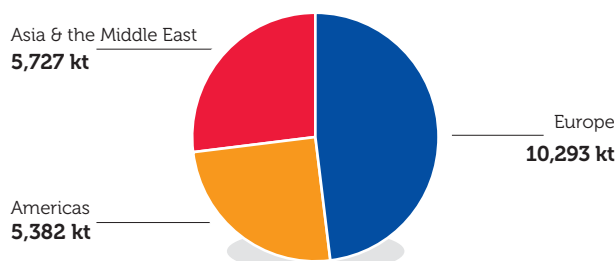
Refining & Chemicals and Marketing & Services

Crude oil refining capacity^(a) (kb/d)



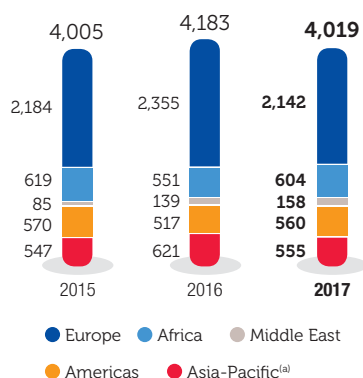
(a) Capacity data based on crude distillation unit stream-day capacities under normal operating conditions, less the impact of shutdown for regular repair and maintenance activities.

Petrochemicals production capacity by geographic area as of December 31, 2017



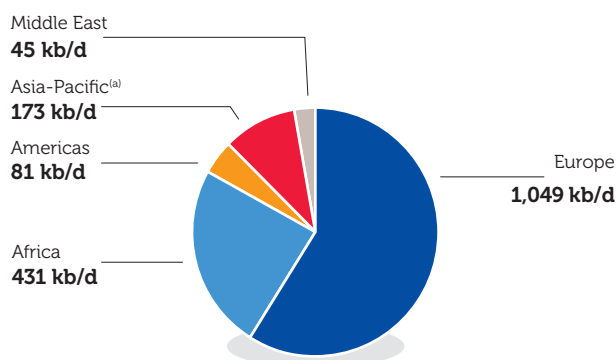
Petroleum product sales (kb/d)

Including Trading



(a) Including Indian Ocean islands.

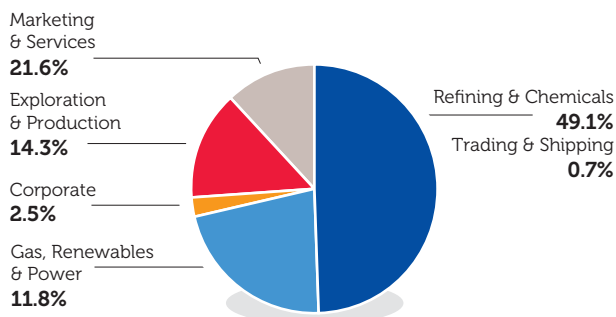
Marketing & Services petroleum product sales by geographic area in 2017



(a) Including Indian Ocean islands.

1.1.2.3 Workforce

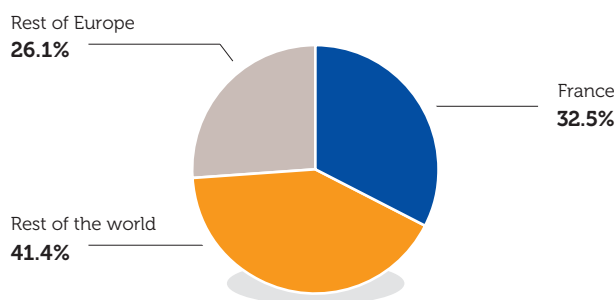
Employees by segment^(a)



(a) Refer to point 5.1.1 of chapter 5.

Workforce as of December 31, 2017: 98,277

Employees by region^(a)



(a) Refer to point 5.1.1 of chapter 5.

Workforce as of December 31, 2017: 98,277

1.2 An ambition that goes hand in hand with sustainable growth: “become the responsible energy major”

1.2.1 A collective ambition in view of the challenges that must be tackled by the oil and gas industry

TOTAL is an integrated energy group and one of the world’s largest. It is invested with an economic and social mission: as a player within and a beneficiary of economic globalization, it wishes to make its success a vector of progress that benefits to the greatest number of people.

Sustainable Development Goals (SDGs) were adopted by the United Nations in 2015. These goals acknowledge the decisive role corporations can play in economic and social development and ask them to show responsibility and innovation in finding solutions to global sustainable development challenges.

In 2016, TOTAL committed itself to contributing to the achievement of the SDGs by implementing the recommendations of the United Nations. Consequently, the Group has embarked on a structured approach to identify and prioritize the SDGs on which it can have the greatest impact, such as climate change, decent work and human rights, and access to energy.

Access to energy is a source of progress and a condition for economic and social development and for the improvement of living conditions of people around the world. In most countries, and in the developing world in particular, access to low-cost energy is a priority as it is a pillar of development.

The Group’s vocation is to produce the energy that the world needs, and will need in the future, and to make it accessible to the greatest number of people – over one billion⁽¹⁾ people still have no access to electricity.

This vocation is to be accomplished in a responsible manner and by working to make an effective contribution to the climate change issue, in particular.

Meeting the energy needs of a growing global population, providing concrete solutions to help limit global warming, adapting to new patterns of consumption and changes to the expectations of customers and stakeholders constitute the challenges that a major energy player like TOTAL can help to tackle.

To respond to these challenges, TOTAL’s ambition over the next 20 years is to become the responsible energy major by contributing to the supply of more affordable, more available and cleaner energy to the greatest number of people:

- more affordable – as low-cost energy is essential to favor the economic development of billions of people who wish to improve their living conditions;
- more available – as people expect energy to be continuously available and accessible on a daily basis;
- cleaner – as the Group intends to reduce the environmental footprint and the CO₂ emissions of its operations, and to actively contribute to finding solutions that limit the impact of climate change, particularly by providing its customers with a mix of energy products whose carbon intensity is regularly reduced.

1.2.2 A clear strategy for sustainable growth

To fulfill this ambition, TOTAL is deploying a clear strategy that is based on four main priorities and that integrates the challenges of climate change, using as a point of reference the 2°C Sustainable Development Scenario of the International Energy Agency (IEA):

- drive profitable and sustainable growth in Exploration & Production activities, with priority given to the production of gas (the fossil fuel that emits the least amount of carbon dioxide) and constant emphasis on producing at a competitive cost by ensuring strict investment discipline;
- carry on enhancing the competitiveness of major integrated refining and petrochemical platforms;

- increase the distribution of petroleum products, particularly in high-growth regions, and offer innovative solutions and services that meet the needs of customers above and beyond the supply of petroleum products; and
- expand along the full gas value chain by unlocking access to new markets, and develop profitable low carbon businesses, in particular renewable energies and biofuels.

In addition, TOTAL intends to strengthen its involvement in the circular economy and implement a program of actions, particularly in the following areas: purchasing, waste management, new ranges of polymers, solarization of service stations and improved efficiency energy.

(1) Source: Energy Access Outlook 2017 published by the International Energy Agency (IEA).

1.3 Advantages that allow the Group to stand out in a changing energy world

To become the responsible energy major and to help provide specific solutions to major challenges that are to emerge over coming decades, TOTAL can rely on several advantages: its strong identity

and values, the know-how of employees committed to better energy its integrated business model and its geographic presence.

1.3.1 A long-standing energy player that draws on its strong identity

Energy is rooted in TOTAL's history.

A producer of oil and gas for almost a century, the Group history started in 1924 with the creation of *Compagnie française des pétroles* (CFP), which began its oil production activities in the Middle East at this time. Over the years, the Group has diversified its

activities and opened sites around the world by positioning itself in the gas, refining and petrochemical segments and the distribution of petroleum products, solar power, bioenergies and electricity.

1.3.1.1 Key dates of the Group's history

1920	Creation in Brussels by an Antwerp-based group of bankers and investors of <i>Compagnie Financière belge des Pétroles</i> , known as Petrofina
1924	Creation of <i>Compagnie française des Pétroles</i> (CFP) by Raymond Poincaré, French Prime Minister
1927	Initial discovery of the Kirkuk field in Iraq; the field's reserves are considerable
1933	Commissioning of the Gonfreville refinery in Normandy (France) with an annual capacity of 900,000 t of crude oil
1939	Discovery in France of the Saint Marcet gas field by <i>Centre de recherches de pétrole du Midi</i> Creation of <i>Régie Autonome des Pétroles</i> (RAP), which later became the Elf Group
1941	Creation of <i>Société nationale des pétroles d'Aquitaine</i> (SNPA)
1945	Creation of <i>Bureau de recherches de pétroles</i> (BRP)
1947	Creation of <i>Compagnie Française de Distribution des Pétroles en Afrique</i>
1951	Discovery of the Lacq gas field (France) by SNPA
1954	Launch of the TOTAL brand by CFP
1956	Discovery of the Edjeleh, Hassi R'Mel (gas) and Hassi Messaoud (oil) fields in the Algerian Sahara
1960	Construction of the Gonfreville steam cracker (France) to respond to the growing demand for plastic
1961	Discovery of the first offshore fields in Gabon; the Anguille field was the first one found
1965	TOTAL acquires Desmarais Frères, an important player in the distribution market
1966	Creation of <i>Entreprise de recherches et d'activités pétrolières</i> (ERAP) following the merger of BRP and RAP
1967	Launch of the ELF brand
1970	Elf takes control of Antar
1971	The Ekofisk field in the North Sea starts production Creation of GIE ATO, a joint venture between SNPA and TOTAL in the chemicals industry
1974	Hutchinson-Mapa joins the Group
1976	Creation of <i>Société nationale Elf Aquitaine</i> (SNEA) following the merger of ERAP and SNPA
1980	Creation of Chloé Chimie, a joint venture between Elf Aquitaine, CFP and Rhône Poulenc
1982	Drilling by CFP of the first deep-offshore well in the Mediterranean Sea
1983	Birth of the company Atochem, an SNEA subsidiary, following the merger of ATO Chimie, Chloé Chimie and a part of Péchiney Ugine Kuhlmann Opening of the first self-service station in France
1985	CFP becomes Total-CFP and then TOTAL in 1991
1994	Disposal by the French state of its majority stake in the capital of Elf Aquitaine
1996	Disposal by the French state of its remaining stake in the capital of Elf Aquitaine
2000	Following the incorporation of Fina in 1999, TOTAL acquires Elf Aquitaine. The new Group is called, TotalFinaElf and is the world's 4 th largest oil major
2001	The Girassol field on Block 17 in Angola starts production
2003	TotalFinaElf changes its name to TOTAL
2006	Spin-off of Arkema
2011	Investment in the solar energy segment with the acquisition of 60% of the US company, SunPower
2016	Acquisition of Saft Groupe, a battery manufacturer
2017	Announcement of the acquisition of Mærsk Oil & Gas A/S in a share and debt transaction Announcement of the acquisition of Engle's LNG business

1.3.1.2 Five strong values at the heart of the Group

Safety, Respect for Each Other, Pioneer Spirit, Stand Together and Performance-Minded represent, just as its history, the part of

TOTAL's identity shared by all employees. These values guide the daily actions and relations of the Group with its stakeholders.

"These values describe and unite us. They are the levers on which we rely to achieve our ambition of becoming the responsible energy major."

Patrick Pouyanné, Chairman and Chief Executive Officer

These five strong values also require all of TOTAL's employees to act in an exemplary manner, in priority in the following areas: safety, security, health, environment, integrity in all of its forms (particularly, the prevention of corruption, fraud and anti-competitive practices) and human rights.

It is through strict adherence to these values and to this course of action that the Group intends to build strong and sustainable growth for itself and for all of its stakeholders, and thereby deliver on its commitment to better energy.

1.3.2 Employees committed to better energy



1.3.2.1 Employee diversity, a competitive edge

The Group is an image of its employees: diverse. The diversity of talents within TOTAL is crucial to its competitiveness, innovative capacity and attractiveness.

With over 150 nationalities represented, a workforce of which 33% is made up of women and 26% of managers are women, a presence in over 130 countries, and more than 500 business-related competencies, it goes without saying that the Group is a global player. A wide range of opinions enables innovative solutions and new opportunities to arise.

Such diversity is an essential asset for the Group. The capacity of Group employees to mobilize themselves and act in an entrepreneurial spirit is vital. It enables ambitious projects to be completed and offers everyone the opportunity to give meaning to their work and grow professionally. Diversity is embodied, in particular, by the presence of more than 20% women members on management committees (head office and subsidiaries). This reality testifies to the Group's desire to strengthen diversity as a vector of innovation and progress.

"Women and men are at the heart of our collective project. Our employees – in all corners of the planet and thanks to their individual commitment – are the energy that drives our Group forward. This diversity is an invaluable asset that makes it possible to accomplish ambitious projects."

Namita Shah, President, People & Social Responsibility

1.3.2.2 Employee commitment is essential to the success of the Company project

The Group addresses its challenges thanks to the commitment of its employees. It is for this reason that the Group strives to ensure that the most demanding safety, ethics and integrity, management and social performance practices are implemented wherever it operates. The aim of this process is to create the conditions that enable everyone to fulfill his or her potential and TOTAL to pursue its development.

TOTAL has adopted a proactive approach by subscribing to the principles of numerous national and international agreements that fight against all forms of discrimination and by striving to ensure the safety and security of its employees and the respect of their fundamental rights. The Group has a long-standing commitment to promoting equal opportunity and diversity, which constitute, for everyone, a source of development where only expertise and talent count.

The Group is also committed to social dialogue, which is one of the vectors used to modernize companies. Among the numerous stakeholders with which TOTAL maintains regular dialogue, the Group's employees and their representatives have a privileged position and role.

This approach is illustrated by several commitments made by the Group, such as its adhesion on December 21, 2017 to the Global Deal initiative, alongside about 60 partners, states, trade unions, companies and international organizations. This international multi-party initiative aims to fight against inequality, encourage social dialogue and promote a fairer globalization. It states that social dialogue, collective bargaining and trade-union freedom play an essential role in the fulfillment of Sustainable Development Goals (SDGs 8, 10 and 17) of the United Nations. Similarly, the signing of a global agreement with the trade union federation IndustriALL in 2015 guarantees for the Group's employees a high level of commitment to social matters in countries where the Group operates. The Group had 256 active agreements (including 160 in France) with employee representatives in place at the end of 2017.

TOTAL encourages a managerial policy that favors commitment, accountability and the evaluation of performance; this policy is supported by the promotion of functional and geographic mobility

and training (78% of employees within the scope of the WHRS⁽¹⁾ took at least one course in 2017).

The technical and commercial know-how of employees and their ability to manage large projects underpin the Group's operational excellence and are essential for the Group's development. It is thanks to the recognized expertise of its employees that TOTAL is able to form partnerships of trust with the world's main producing and consuming nations in the most demanding areas, such as deep offshore, liquefied natural gas (LNG), low carbon energy, refining and petrochemicals, which are also areas in which the Group has developed some of the most high-performance platforms. It is for this reason that all employees, regardless of their function, are encouraged to build on their expertise and competencies by accessing a wide range of trainings.

In order to improve the Group's social performance, the expectations of employees are regularly listened to and discussed. For example, Total Survey gathers the views and improvement suggestions of tens of thousands of employees every two years.

This approach testifies to the Group's desire to entrench a continuous improvement process that benefits everyone. For more information, refer to point 5.1 of chapter 5.

1.3.3 The strength of the Group's integrated business model

1.3.3.1 A resilient integrated business model

Oil and gas are commodities that are traded on markets that are known for their volatility. To manage this constraint as well as possible, TOTAL opted for an integrated business model with activities throughout the oil and gas value chain. It extends from exploration and production, refining, liquefaction, petrochemicals and trading to, finally, the distribution of products to the end customer.

This business model enables the Company to benefit from synergies between different activities and from price volatility. It also enables the Company to manage the bottom of the cycle better and capture margin when the market improves. Thanks to an integrated business model, the Group's Upstream activities, which are more dependent on the price of oil, can complement its Downstream activities, which – at the bottom of the cycle – enable the Group to benefit from added value untapped by the Upstream part of the business.

"It is thanks to the effectiveness of our integrated business model for the oil chain that we were able to withstand high oil-price volatility. And it is the same model that we apply to gas and renewable energies, both intended for the generation of electricity."

Patrick Pouyanné, Chairman and Chief Executive Officer



(1) The Worldwide Human Resources Survey (WHRS) is an annual survey which comprises about 100 indicators in addition to those used in the Global Workforce Analysis. Refer to point 5.4.2 of chapter 5.

1.3.3.2 An integrated business model to be developed on the gas-renewables-electricity chain

In the coming years, according to the IEA, the growth in demand for electricity is expected to outstrip global demand for energy. In light of the digitization of the economy, the mobility revolution, and decentralized generation, many products and services are going to be “electrified” while, at the same time, a growing share of the world’s population will benefit from access to electricity.

To fulfill its ambition, the Group intends to apply this integrated business model to the electricity chain, from the production of low carbon energy to the generation of electricity.

Preference will be given to three main priorities:

- integration on the gas chain from production to liquefaction and distribution,
- the generation of electricity using gas or renewable energies and its storage; and
- the trading and the sale of gas or electricity as the producer, or not.

1.3.4 Geographic presence: key to the Group’s future growth

It is thanks to its pioneer spirit and sense of solidarity that TOTAL has become a global oil and gas major and that it has forged partnerships of trust with host countries. Remaining loyal to these principles means being permanently open to new alliances, which are key to the Group’s development, despite geopolitical uncertainty.

It is thanks to a strong and lasting geographic presence that the Group will be able to meet its goal of becoming a recognized partner in the sustainable economic and social development of the communities and regions in which it operates for the creation of shared value.

substantial resources, Asia, in order to benefit from this market’s high rate of growth, and Russia, where TOTAL is working on major industrial projects and maintains a special and long-term relationship with local industrial players.

1.3.4.2 Managing geopolitical uncertainty

The world is confronted by political and geopolitical uncertainty characterized by tension connected to conflict and war in countries such as Syria, Iraq, Yemen and Libya. It is exacerbated by international terrorism.

1.3.4.1 From one history to one ambition

The Group is present in over 130 countries and on 5 continents. There are three geographic regions in particular that represent the historical foundations of TOTAL’s strategy and today stand out thanks to the quality of the on-site teams and solid partnerships forged over time.

- **Europe:** The core of the Group’s knowledge. Europe is home to the Group’s decision-making center; it is the hub of its research and innovation work and constitutes a strong industrial base;
- **Middle East:** The Group began its production activities in this region and is recognized in the Middle East as a partner of choice among producing nations and their national oil companies. The aim of the Group is to develop its activities in all business lines in this region, even when geopolitical tension rises;
- **Africa:** TOTAL is the largest major on the basis of the volume of hydrocarbon production and by the number of Group-branded service stations on the African continent⁽¹⁾. TOTAL generates electricity from renewable sources. The Group intends to remain the continent’s partner of choice and to contribute to its economic and social development through the creation of shared value.

In this context, TOTAL intends to develop its activities by putting its competencies to the benefit of each of the countries where it operates, by complying with applicable laws and international economic sanctions where imposed. The Group also ensures that the capital invested in the most sensitive countries remain at a level limiting its exposure in each of them.

This is the process that TOTAL intends to pursue and has, in fact, already been acted upon following its decision to carry on investing in Russia while complying with the economic sanctions imposed by the United States and Europe, and following its decision to develop activities in Iran in the diplomatic framework set in January 2016 and resulting from the Joint Comprehensive Plan of Action (JCPOA). The Group, if needed, stops its activities in countries that become too risky (such as Yemen and Syria).

Loyalty to its partners, particularly during such kind of situations, is also a strong characteristic of the Group.

TOTAL’s activities wherever they are, are carried out in strict adherence to applicable laws and covered by compliance and risk management procedures. It was within this framework that a full-time compliance coordinator for Iran was appointed within the Group in 2016, for example.

Today, new regions which are vital for the Group have appeared, particularly the Americas, which represent a strong growth opportunity for all of the Group’s businesses due, in particular, to this region’s

By continuing to invest and to supply energy, the Group helps to maintain conditions that favor the economic development of these regions.

“During these troubled times, our industry can and must be a stabilizing factor.”

Patrick Pouyanné, Chairman and Chief Executive Officer

For more information on risk factors, internal control and risk management procedures and reasonable vigilance measures implemented by the Group, refer to points 3.1, 3.3 and 3.5 of chapter 3.

(1) Source: Public data. IHS.

1.3.4.3 A local socio-economic development partner

Safety, integrity, respect for human rights, and societal and environmental responsibility are principles and values that form part of the Group's operating processes. If TOTAL has been able to build and develop partnerships throughout the world, it is also because it has incorporated a local value creation process into its development model. This process is systematic, professional and a major competitive advantage.

Based on dialogue with the local population and public and private players, this process is used to identify development priorities and create synergies. The Group intends to apply this approach over the long term to ensure that its major projects create shared wealth.

In addition to the societal initiatives that are directly related to the Group's industrial activities, TOTAL has also been committed to

taking general-interest measures in the countries where it operates. In the face of growing inequality and significant environmental challenges, the Group wishes to bolster its civic engagement and implement a new societal engagement policy as from 2018. It wishes to act in a way that ensures the vitality and sustainability of the territories in which the Group is present by putting actions that benefit young people first.

In order to boost the impact of its societal initiatives, TOTAL has selected four areas of intervention that it considers to be vital for the territories' sustainable development:

- forests and climate, for a beneficial environment for humans;
- integration and qualification of young people, for the autonomy of young people in socially vulnerable situations;
- road safety, for safer mobility; and
- culture and heritage, for dialogue between cultures.

[REDACTED SECTION: CERTAIN TEXT HAS BEEN REDACTED.]

1.5 Strong commitments that benefit sustainable growth

1.5.1 Committed R&D

- \$912 million invested in 2017
- 4,132 employees dedicated to R&D in 2017
- 18 R&D centers around the world
- 1,000 partnership agreements
- over 200 patent applications filed in 2017

The Group relies on a dynamic R&D policy to conduct and develop its activities. There are two main priorities:

- developing activities and programs with a direct impact on TOTAL's aim to become the responsible energy major;
- anticipating technological breakthroughs in order to seize opportunities for development relating to the evolution of the energy mix.

The Group is committed to optimizing R&D resources in terms of human talent, infrastructure and regional centers of excellence, and to working with selected partners that bring specific, high-level skills to every project.

The portfolio of R&D programs is divided between transverse programs developed at all of the R&D centers and vertical programs specific to the different businesses. For example, the purpose of the CCUS (carbon capture, usage and storage) transverse program, which shall account for 10% of innovation and R&D efforts for the Group's oil and gas activities⁽¹⁾ in the short term, is to enable the Group to become a major player in this area and throughout the value chain so that it may contribute to the reduction in global CO₂ emissions and to prepare the Group for new business opportunities.

For more information, refer to point 2.6 of chapter 2.

1.5.2 A targeted investment policy

- \$14.4 billion of organic investments in 2017
- \$1.5 billion of targeted acquisitions in 2017, including \$714 million of resource acquisitions
- Finalization in 2017 of a \$10 billion disposals of assets' program for the period, 2015-2017

Since the fall in the price of oil in 2014, the Group has continued to select its investments very carefully and in accordance with its strategy. These investments are dedicated to:

- the development of new upstream and downstream installations in order to benefit from a favorable cost environment;

- the adding of attractive resources to the portfolio through the exploration or acquisition of resources that have already been discovered, thereby capitalizing on favorable market conditions;
- the dynamic growth of its low carbon activities in the gas and renewable energy sectors; and
- the growth of its Marketing & Services business in buoyant markets.

The Group also strives to continuously improve its portfolio by selling its least strategic assets.

For more information, refer to point 2.5 of chapter 2.

1.5.3 A continuous improvement dynamic

In 2016, TOTAL committed itself to contributing to the success of the Sustainable Development Goals (SDG) adopted by the United Nations. To this end, the Group started by identifying the goals to which it already contributes by pursuing its own improvement targets. In 2017, the Group launched an action plan to prioritize its actions in accordance with the SDGs which are the most significant in relation to its activities and to update its public commitments in 2018. TOTAL considers the SDGs to be an opportunity to better measure and value its contribution to society as a whole. The Group manages its activities and assesses its performance on three sustainable development pillars: financial results (Profit), the creation of value for stakeholders (People) and the preservation of ecosystems (Planet).

1.5.3.1 Commitments and indicators of progress

Safety, health, climate, the environment and even shared development: in every country where the Group is present, TOTAL manages its operations with the aim of working in a sustainable, active and positive manner. The Group was one of the first in the industry to publish measurable improvement targets in these areas.

(1) Excluding R&D budgets of Hutchinson, SunPower and Saft Groupe.

SAFETY - HEALTH

For TOTAL, being committed to better energy means, first of all, guaranteeing the safety of its employees and stakeholders, its installations and products. It also implies protecting the health of all those connected to, whether directly or indirectly, its activities.



Safety

GOALS

To be recognized as a reference in the area of safety within its industry and to achieve a zero fatal accident rate

CURRENTLY

66% fall in the accident rate TRIR^(a) between 2010 and 2017.



Health

COMMITMENT

To preserve the health of employees, customers and communities in the vicinity of the Group's activities.

CURRENTLY

98% of employees benefited from regular medical monitoring in 2017^(b).

CLIMATE

The challenges posed by climate change stand at the heart of TOTAL's strategic vision. The goal: to help keep global warming below 2°C by 2100. Thanks to three levers: improving the carbon intensity of the production mix, developing low-carbon businesses including renewable energies, and improving energy efficiency.



Hydrocarbons

AMBITION

Ensure gas makes up more than 60% of the Group's hydrocarbon mix by 2035.

GOALS

An **80%** reduction in routine flaring between 2010 and 2020 with the aim of eliminating routine flaring by 2030.

An average annual **1%** improvement in the energy efficiency of operated installations between 2010 and 2020.

CURRENTLY

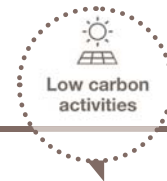
30% reduction in greenhouse gas emissions between 2010 and 2017.

Methane emissions constituted less than **0.5%** of the Group's marketed and operated gas production in 2017.

End of coal activity since 2016.

87% reduction in routine flaring between 2010 and 2017.

Almost **14%** improvement in the energy efficiency of Group installations between 2010 and 2017.



Low carbon activities

AMBITION

Low carbon activities^(c) are expected to make up almost 20% of the Group's portfolio within the next 20 years.

GOALS

To promote the responsible use of energy among Group customers by providing them with solutions (products and services).

CURRENTLY

500MW installed photovoltaic capacity held by the Group.

Almost **100** products that bear the TOTAL Ecosolutions label.

Energy services offered through the subsidiaries, BHC Energy, Tenag and Greenflex.

Growth in renewable energies, SunPower, Total Solar, Total Enr. Development of energy storage solutions, Saft Groupe. Development of gas and electricity marketing activities, Lampiris, Total Spring.

(a) TRIR (Total Recordable Injury Rate): number of recorded injuries per million hours worked.

(b) WHRS data.

(c) Downstream gas, renewable energies, energy storage, energy efficiency, cleaner fuels and carbon capture, usage and storage techniques.

ENVIRONNEMENT

The Group upholds the highest environmental standards.

Aim: to improve the environmental performance of its installations and products.

**GOALS**

To reduce SO₂^(a) emissions by **50%** between 2010 and 2020.

CURRENTLY

Over **50%** reduction in SO₂ emissions since 2016.

**GOALS**

To maintain hydrocarbon content of water discharges below

30 mg/l for offshore sites and at

15 mg/l for onshore and coastal sites by 2020.

CURRENTLY

100% of the Group's oil sites had reached this performance target by 2016.

**COMMITMENTS**

The Group recycles more than half of its waste and continues its efforts in this area.

CURRENTLY

52% of waste recycled in 2017.

**COMMITMENTS**

TOTAL does not conduct oil and gas exploration or production operations at natural sites included on the UNESCO World Heritage List^(b) or in oil fields under sea ice in the Arctic.

The Group systematically develops biodiversity action plans for production sites located in protected areas^(c).

SHARED DEVELOPMENT

Shared development depends on an active and positive contribution at a local level.

GOALS

To reach **25 M** people in Africa by 2020 thanks to decentralized energy solutions.

CURRENTLY

In 2017, **€243 M** was spent on societal projects around the world.

By the end of 2017, the Group's decentralized solar-power offer had enabled almost **10 M** people to benefit from access to electricity.

DIVERSITY / GENDER DIVERSITY

The Group promotes equal treatment for

men and women through a global policy of gender diversity. In terms of compensation, specific measures have been in place since 2010 to prevent and correct unjustified salary gaps.

GOALS

The Group's target for 2020 is

25% of women senior executives

40% non-French nationals executives

more than **20%** of women in management committees (head office and subsidiaries).

CURRENTLY IN 2017

21% of women senior executives.

29% of non-French nationals executives.

21% of women in Management Committees (head office and subsidiaries).

(a) SO₂: sulfur dioxide, produced during the burning of fossil fuel.

(b) Natural sites included on the UNESCO World Heritage List of June 4, 2013.

(c) Sites located in IUCN I to IV or Ramsar convention protected areas.

1.5.3.2 Support for global initiatives

Aside from complying with national regulations in force wherever the Group operates, TOTAL has renewed its support for the United Nations Global Compact every year since 2002. In addition, the Group committed itself to respecting the UN Guiding Principles on business and human rights following their adoption in 2011.

The challenges posed by the Sustainable Development Scenario (2°C) of the IEA demands a collective effort. The Group has played an active role in various international initiatives that involve the private and the public sectors to bring about:

- carbon pricing (the World Bank's Carbon Pricing Leadership Coalition, Caring for Climate – United Nations Global Compact, Paying for Carbon call: TOTAL and five other industry leaders);
- the end of routine flaring of associated gas (the World Bank's Zero Routine Flaring by 2030 initiative);
- control over methane emissions (Oil & Gas Methane Partnership of the Climate and Clean Air Coalition, the Oil & Gas Climate Initiative in cooperation with UN Environment and EDF, etc.); and

- greater transparency: recommendations from the G20 Financial Stability Board Task Force on Climate-related Financial Disclosures (TCFD).

TOTAL also actively supports collaborative and multi-stakeholder initiatives in areas in which the coordinated involvement of governments, companies and civil society is key to global progress, particularly:

- financial transparency: the Group has adhered to the Extractive Industries Transparency Initiative (EITI) since its launch in 2002;
- the fight against corruption: TOTAL joined the Partnering Against Corruption Initiative (PACI) in 2016;
- the provision of security and respect for human rights by implementing the Voluntary Principles on Security and Human Rights (VPSHR) since 2012; and
- the reduction of inequalities through the development of social dialogue to favor more inclusive economic growth: TOTAL was one of the first French companies to adhere to the Global Deal initiative at the end of 2017.

1.6 A revamped organizational structure to support the Group's ambition

1.6.1 TOTAL S.A., parent company of the Group and its subsidiaries

TOTAL S.A. is the Group's parent company. It acts as a holding company and drives the Group's strategy.

The Group's operations are conducted through subsidiaries that are directly or indirectly owned by TOTAL S.A. and through stakes in joint ventures which are not necessarily controlled by TOTAL. TOTAL S.A. has two secondary establishments in France, located in Lacq and Pau. It also has branch offices as in the United Arab Emirates and in Oman.

Corporate name: TOTAL S.A.

Head office: 2, place Jean Millier, La Défense 6, 92400 Courbevoie, France

Registered in the French trade registry in Nanterre under no. 542 051 180 RCS

LEI (Legal Entity Identifier): 529900S21EQ1BO4ESM68

EC Registration Number: FR 59 542 051 180

Term of the Company: extended for 99 years from March 22, 2000

Fiscal year: from January 1 to December 31 of each year

APE Code (NAF): 7010Z

The scope of consolidation of TOTAL S.A. as of December 31, 2017 consisted of 972 companies, including 867 fully consolidated companies and 105 companies accounted for under the equity method. The principles of consolidation are described in Note 1.1 to the

Consolidated Financial Statements and the list of companies included in the scope of consolidation can be found in Note 18 to the Consolidated Financial Statements (refer to point 8.7 of chapter 8).

The situation of the direct subsidiaries and shareholdings of TOTAL S.A., and in particular those with a gross value exceeding 1% of the Company's share capital, is shown in the table of subsidiaries and affiliates in point 10.4.1 of chapter 10.

Interests in listed companies

TOTAL holds stakes in a limited number of companies that issue financial instruments in France or abroad or whose financial instruments are listed in France or abroad. These companies are mainly the Group's financing vehicles (Total Capital, Total Capital International, Total Capital Canada Ltd) or the operational subsidiaries in its business segments, in particular in Africa, such as Total Gabon⁽¹⁾.

TOTAL also holds a majority stake in SunPower (56.26% on December 31, 2017), an American company listed on Nasdaq, and minority interests in other companies, including PAO Novatek (18.9% on December 31, 2017), a Russian company listed on the Moscow Interbank Currency Exchange and the London Stock Exchange.

The changes to the composition of the Group during the fiscal year of 2017 are explained in Note 2 of the Consolidated Financial Statements (refer to point 8.7 of chapter 8). In 2017, TOTAL S.A., the Group's parent company, did not acquire any stakes in companies with registered offices in France representing more than one twentieth, one tenth, one fifth, one third or one half of the capital of these companies, nor took control of any such companies.

(1) TOTAL Gabon is a company under Gabonese law, the shares of which are listed on Euronext Paris and owned by TOTAL (58.28%), the Republic of Gabon (25%) and the public (16.72%).

1.6.2 A revamped operational structure

On an operational level, the Group's businesses are organized in business segments, which receive assistance from the corporate functional divisions.

In order to implement TOTAL's strategy and in line with the "One Total" company project, a new organization, fully effective since January 1, 2017, was put in place and is structured around four business segments following the creation of the Gas, Renewables & Power segment, which joined the existing Exploration & Production, Refining & Chemicals and Marketing & Services segments.

- the Exploration & Production segment encompasses the Group's exploration and production activities in more than 50 countries. The Group produces oil and gas in approximately 30 countries;
- the Gas, Renewables & Power segment spearheads the Group's ambitions in low carbon energies. It comprises gas activities that are conducted downstream of the production process and concern natural gas, liquefied natural gas (LNG) and liquefied petroleum gas (LPG), as well as power generation and gas trading. It also develops the Group's renewable energy activities (excluding biotechnologies) and energy efficiency activities through a new and dedicated Innovation & Energy Efficiency division;
- the Refining & Chemicals segment is a large industrial segment that encompasses refining and petrochemical activities and Hutchinson's operations. It also includes oil Trading & Shipping activities;

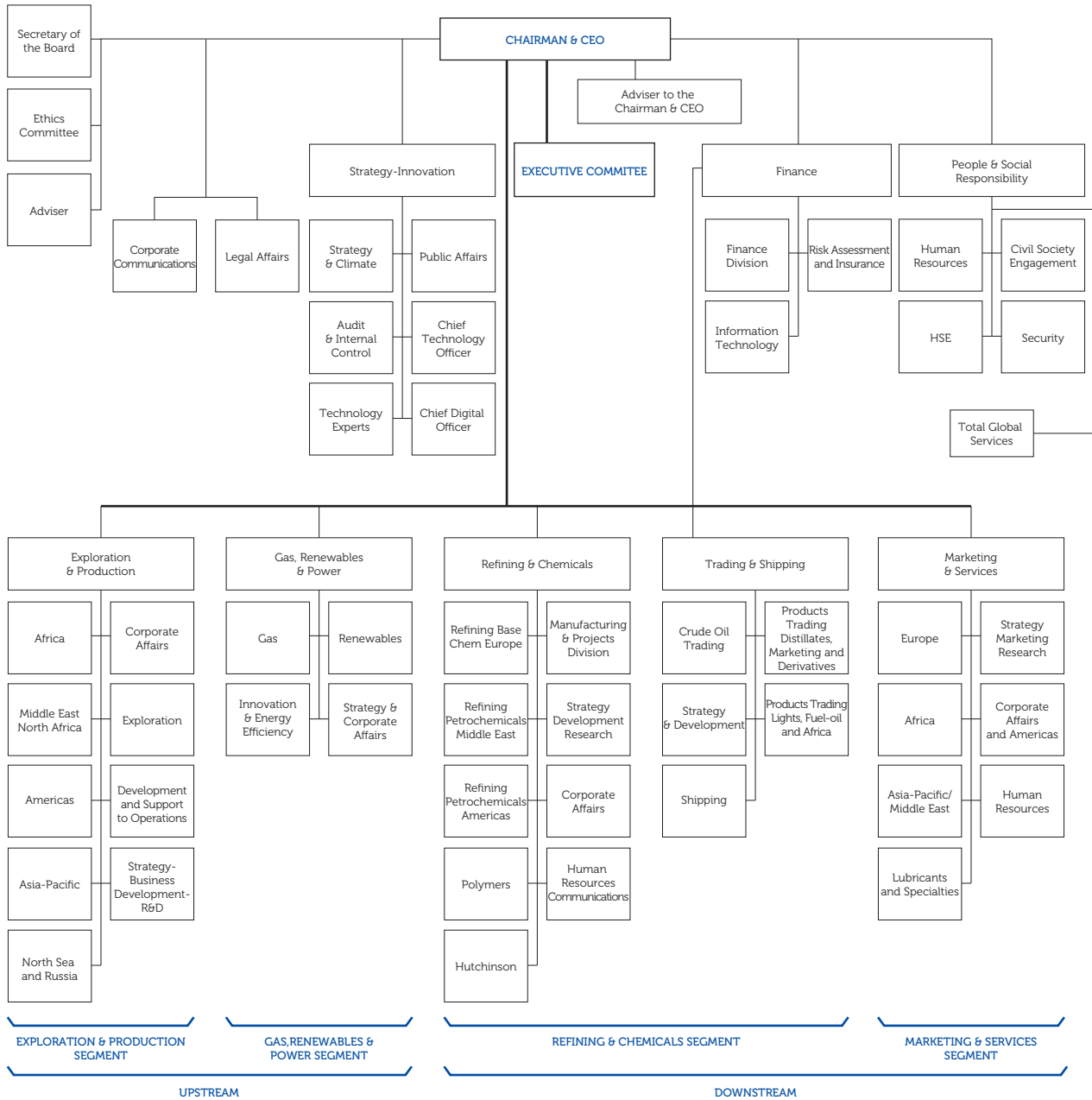
- the Marketing & Services segment includes worldwide supply and marketing activities in the oil products and services field.

In order to improve efficiency, reduce costs and create value within the Group, a specific branch, TOTAL Global Services (TGS), pools the various segments' support services (Accounting, Purchasing, Information Systems, Training, Human Resources Administration and Facilities Management). The entities that make up TGS operate as service companies for internal clients across the business segments and Holding.

Finally, the various Corporate entities are regrouped in two divisions:

- the People & Social Responsibility division consists of: the Human Resources division, the Health, Safety and Environment division, which combines HSE departments across the different segments to establish a strong, unified environmental and safety model, the Security division, and the Civil Society Engagement division;
- the Strategy-Innovation division is made of: the Strategy & Climate division, responsible notably for ensuring that TOTAL's strategy incorporates climate issues, the Public Affairs division, the Audit & Internal Control division, the Research & Development division (which coordinates all of the Group's R&D activities and notably transversal programs), and the Digital division.

Organization chart as of December 31, 2017



2

BUSINESS OVERVIEW FOR FISCAL YEAR 2017

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2.1 Exploration & Production segment

The Exploration & Production (E&P) segment encompasses the Group's oil and gas exploration and production activities in more than 50 countries.

<p>2.57 Mboe/d hydrocarbons produced in 2017</p>	<p>11.5 Bboe of proved hydrocarbon reserves as of December 31, 2017⁽¹⁾</p>	<p>\$11.3 billion of organic investments⁽²⁾ in 2017</p>	<p>13,023 employees present</p>
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2015 and 2016 data have been restated in line with the new Group organization fully effective since January 1, 2017 (refer to point 1.6.2 of chapter 1).

[REDACTED SECTION: CERTAIN TEXT HAS BEEN REDACTED.]

Price realizations ^(a)	2017	2016	2015
Average liquids price (\$/b)	50.2	40.3	47.4
Average gas price (\$/Mbtu)	4.08	3.56	4.75

(a) Consolidated subsidiaries, excluding fixed margins.

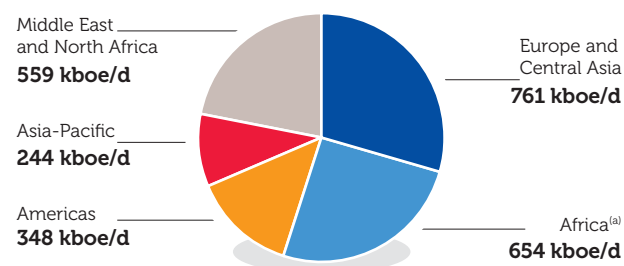
(1) Based on a Brent crude price of \$54.36/b (reference price in 2017), according to rules established by the Securities and Exchange Commission (refer to point 2.1.3 of this chapter).

(2) Organic investments = net investments, excluding acquisitions, divestments and other operations with non-controlling interests (refer to point 2.5.1 of this chapter).

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Production

Hydrocarbon production	2017	2016	2015
Combined production (kboe/d)	2,566	2,452	2,347
Liquids (kb/d)	1,346	1,271	1,237
Gas (Mcf/d)	6,662	6,447	6,054



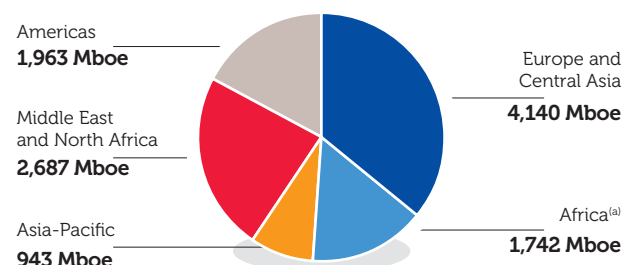
(a) Excluding North Africa.

For the full-year 2017, hydrocarbon production was 2,566 kboe/d, an increase of more than 5% compared to 2016, due to the following:

- +5% due to new start-ups and ramp-ups, notably Moho Nord, Kashagan, Edradour and Glenlivet, and Angola LNG;
- +2% portfolio effect, mainly due to taking over the giant Al Shaheen oil field concession in Qatar and acquiring an additional 75% interest in the Barnett shale in the United States, partially offset by the exit from the southern sector of the Republic of the Congo and asset sales in Norway;
- +1% related to improved security conditions in Libya and Nigeria;
- -3% due to natural field decline, the PSC price effect and OPEC quotas.

Proved reserves

As of December 31,	2017	2016	2015
Hydrocarbon reserves (Mboe)	11,475	11,518	11,580
Liquids (Mb)	5,450	5,414	5,605
Gas (Bcf)	32,506	32,984	32,206



(a) Excluding North Africa.

Proved reserves based on SEC rules (Brent at \$54.36/b) were 11,475 Mboe at December 31, 2017. The proved reserve replacement rate⁽¹⁾, based on SEC rules (Brent at \$54.36/b in 2017), was 95% in 2017 and 98% over three years.

[REDACTED SECTION: CERTAIN TEXT HAS BEEN REDACTED.]

(1) Change in reserves excluding production: (revisions + discoveries, extensions + acquisitions – divestments)/production for the period.
[Redacted section: certain text has been redacted.]

2.1.1 Presentation of the segment

Exploration & Production (E&P)'s mission is to discover and develop oil and gas fields in order to meet a growing energy demand. Safety is a core value for that mission.

In an environment marked by the strong volatility of hydrocarbon prices, E&P's strategy is to develop an oil and gas production model that is resilient (*i.e.*, able to withstand a long period of low oil and gas prices), profitable and sustainable.

The deployment of the strategy is based on three main levers:

- increase profitability: E&P strives to maximize the value of its assets through operational excellence and to ensure strict investment discipline by being selective in the sanctioning of new projects. In addition, E&P continues to restructure or sell the least performing assets in its portfolio;
- develop operational excellence: in order to ensure its resilience, E&P continues to reduce costs, improve the efficiency of its installations and start up projects on time and within budget. E&P also seeks to minimize the environmental impact of its activities; and
- renew reserves, through exploration as well as accessing already discovered resources, building on E&P's competitive advantages in terms of geographical spread and technical skills.

E&P plans to start 14 new major projects in 2017 and 2018, including the start-up of five major projects in 2017. Additionally, thanks to a significant decrease of its capital investments, which peaked in 2013, E&P restored some flexibility to take acquisition opportunities (such as the acquisition of assets in Brazil in January 2018 and the acquisition of Mærsk Oilie og Gas A/S, "Mærsk Oil" in March 2018) and to launch new projects, taking advantage of the lower costs in the current environment. More than 10 projects are planned to be launched between 2017 and 2018. These actions are expected to lead to a 5% yearly average production increase between 2016 and 2022.

Finally, E&P includes climate change issues in its strategy by taking the Sustainable Development Scenario (2°C) of the IAE as a reference and by aiming to decrease the carbon intensity of its energetic mix. The segment therefore is focusing its oil investments on low break-even projects, developing the production of gas, integrating a CO₂ price in its investment decisions and developing expertise in technologies for carbon capture, use and storage.

2.1.2 Exploration and development

TOTAL evaluates exploration opportunities based on a variety of geological, technical, political, economic (including tax and contractual terms) environmental and societal factors.

The exploration strategy deployed since 2015 aims to prioritize the most promising drill targets with a view to creating value and resources. The Group plans balanced exploration investments:

- 50% for core and emerging basins, where the presence of hydrocarbons is already proven;
- 25% for exploration in mature hydrocarbon plays; and
- 25% for high-potential frontier basins.

In 2017, exploration expenditure from all E&P subsidiaries was \$1.2 billion, mainly in the United States, Brazil, the United Kingdom, Nigeria, Myanmar, Papua New Guinea, Cyprus, Bulgaria, Côte d'Ivoire, Egypt and Norway, compared to \$1.4 billion in 2016 and \$1.9 billion in 2015. The 2018 exploration-appraisal budget is \$1.2 billion.

Organic investments⁽¹⁾ from all E&P subsidiaries were \$11.3 billion⁽²⁾ in 2017, compared to \$14.5 billion⁽²⁾ in 2016 and \$20.5 billion in 2015, and were mainly in Australia, Angola, Canada, Norway, the Republic of Congo, Nigeria, the United States, Abu Dhabi, the United Kingdom, Brazil and Iraq.

2.1.3 Reserves

The definitions used for proved, proved developed and proved undeveloped oil and gas reserves are in accordance with the United States Securities & Exchange Commission (SEC) Rule 4-10 of Regulation S-X as amended by the SEC Modernization of Oil and Gas Reporting release issued on December 31, 2008. Proved reserves are estimated using geological and engineering data to determine with reasonable certainty whether the crude oil or natural gas in known reservoirs is recoverable under existing regulatory, economic and operating conditions.

TOTAL's oil and gas reserves are consolidated annually, taking into account, among other factors, levels of production, field

reassessments, additional reserves from discoveries and acquisitions, disposal of reserves and other economic factors.

Unless otherwise indicated, any reference to TOTAL's proved reserves, proved developed reserves, proved undeveloped reserves and production reflects the Group's entire share of such reserves or such production. TOTAL's worldwide proved reserves include the proved reserves of its consolidated subsidiaries as well as its proportionate share of the proved reserves of equity affiliates. The reserves estimation process involves making subjective judgments. Consequently, estimates of reserves are not exact measurements and are subject to revision under well-established control procedures.

(1) For Exploration & Production, organic investments include exploration investments, net development investments and net financial investments.

(2) Excluding the Group's Gas activities.

The reserves booking process requires, among other things:

- that internal peer review of technical evaluations is carried out to ensure that the SEC definitions and guidance are followed; and
- that management makes significant funding commitments towards the development of the reserves prior to booking.

For further information concerning the reserves and their evaluation process, refer to points 9.1 and 9.2 of chapter 9.

Proved reserves for 2017, 2016 and 2015

In accordance with the amended Rule 4-10 of Regulation S-X, proved reserves at December 31 are calculated using a 12-month average price determined as the unweighted arithmetic average of the first-day-of-the-month price for each month of the relevant year unless prices are defined by contractual arrangements, excluding escalations based upon future conditions. The average reference prices for Brent crude for 2017, 2016 and 2015 were, respectively, \$54.36/b, \$42.82/b and \$54.17/b.

As of December 31, 2017, TOTAL's combined proved reserves of oil and gas were 11,475 Mboe (61% of which were proved developed reserves). Liquids (crude oil, condensates, natural gas liquids and bitumen) represented approximately 47% of these reserves and natural gas 53%. These reserves were located in Europe and Central Asia (mainly in Kazakhstan, Norway, The United Kingdom and Russia), Africa (mainly in Angola, Nigeria and the Republic of Congo), the Americas (mainly in Argentina, Canada, the United States and Venezuela), the Middle East and North Africa (mainly in Qatar, the United Arab Emirates and Yemen), and Asia-Pacific (mainly in Australia).

Discoveries of new fields and extensions of existing fields added 1,708 Mboe to TOTAL's proved reserves during the 3-year period ended December 31, 2017 (before deducting production and sales of reserves in place and adding any acquisitions of reserves in place during this period). The net level of reserve revisions during this 3-year period is +984 Mboe, which was mainly due to the overall positive revisions in field behaviors and to the net impact of the changes in hydrocarbon prices in 2015 (decrease), 2016 (decrease) and 2017 (increase) that led to a reserves decrease resulting from

shorter producing life of certain producing fields and from partial debooking of proved undeveloped reserves due to economic reasons, partially offset by reserves increase on fields with producing sharing or risked service contracts.

As of December 31, 2016, TOTAL's combined proved reserves of oil and gas were 11,518 Mboe (58% of which were proved developed reserves) compared to 11,580 Mboe (53% of which were proved developed reserves) as of December 31, 2015. Liquids (crude oil, condensates, natural gas liquids and bitumen) at year-end 2016 represented approximately 47% of these reserves and natural gas the remaining 53% and, at year-end 2015, approximately 48% of these reserves and natural gas the remaining 52%.

Sensitivity to oil and gas prices

Changes in the price used as a reference for the proved reserves estimation result in non-proportionate inverse changes in proved reserves associated with production sharing and risked service contracts (which together represent approximately 19% of TOTAL's reserves as of December 31, 2017). Under such contracts, TOTAL is entitled to a portion of the production, the sale of which is meant to cover expenses incurred by the Group. As oil prices decrease, more barrels are necessary to cover the same amount of expenses. Moreover, the number of barrels recoverable under these contracts may vary according to criteria such as cumulative production, the rate of return on investment or the income-cumulative expenses ratio. This increase is partly offset by a reduction of the duration over which fields can be produced economically. However, the decrease in reserves due to this reduction is generally less than the increase in reserves under production sharing or risked service contracts due to such lower prices. As a result, lower prices usually lead to an increase in TOTAL's reserves and vice versa. In Canada, a decrease in the reference price per barrel used as a reference for estimating proved reserves leads to a decrease in the volume of royalties and, therefore, an increase of the proved reserves.

Lastly, for any type of contract, a significant decrease in the reference price of petroleum products that negatively impacts projects' profitability may lead to a reduction of proved reserves and vice versa.

2.1.4 Production

The average daily production of liquids and natural gas was 2,566 kboe/d in 2017 compared to 2,452 kboe/d in 2016 and 2,347 kboe/d in 2015. Liquids represented approximately 52% and natural gas approximately 48% of TOTAL's overall production in 2017.

The tables on the following pages set forth TOTAL's annual and average daily production of liquids and natural gas by geographic area and for each of the last three fiscal years.

Consistent with industry practice, TOTAL often holds a percentage interest in its fields rather than a 100% interest, with the balance being held by joint venture partners (which may include other

international oil companies, state-owned oil companies or government entities). The Group's entities may frequently act as operator (the party responsible for technical production) on acreage in which it holds an interest. For further information, refer to the table on producing assets by geographical zone in point 2.1.8 of this chapter.

As in 2016 and 2015, substantially all of the liquids production from TOTAL's E&P segment in 2017 was marketed by the Trading & Shipping division of TOTAL's Refining & Chemicals segment (refer to table regarding Trading's crude oil sales and supply and petroleum products sales in point 2.3.2.1 of this chapter).

2.1.5 Delivery commitments

The majority of TOTAL's natural gas production is sold under long-term contracts. However, its North American production, and part of its production from the United Kingdom, the Netherlands and Norway, is sold on the spot market.

The long-term contracts under which TOTAL sells its natural gas usually provide for a price related to, among other factors, average crude oil and other petroleum product prices, as well as, in some cases, a cost-of-living index. Though the price of natural gas tends to fluctuate in line with crude oil prices, a slight delay may occur before changes in crude oil prices are reflected in long-term natural gas prices.

Some of TOTAL's long-term contracts, such as in Bolivia, Nigeria, Norway, Thailand and Qatar, specify the delivery of quantities of natural gas that may or may not be fixed and determinable. Such delivery commitments vary substantially, both in duration and scope, from contract to contract throughout the world. For example, in some cases, contracts require delivery of natural gas on an as-needed basis, and, in other cases, contracts call for the delivery of varied amounts of natural gas over different periods of time. Nevertheless, TOTAL estimates the fixed and determinable quantity of gas to be delivered over the period 2018-2020 to be 4,927 Bcf. The Group expects to satisfy most of these obligations through the production of its proved reserves of natural gas, with, if needed, additional sourcing from spot market purchases (refer to points 9.1 and 9.2 of chapter 9).

2.1.6 Contractual framework of activities

Licenses, permits and contracts governing the Group entities' ownership of oil and gas interests have terms that vary from country to country and are generally granted by or entered into with a government entity or a state-owned company and are sometimes entered into with private owners. These agreements usually take the form of concessions or production sharing contracts.

In the framework of oil concession agreements, the oil company owns the assets and the facilities and is entitled to the entire production. In exchange, the operating risks, costs and investments are the oil company's responsibility and it agrees to remit to the relevant host country, usually the owner of the subsoil resources, a production-based royalty, income tax, and possibly other taxes that may apply under local tax legislation.

The production sharing contract ("PSC") involves a more complex legal framework than the concession agreement: it defines the terms and conditions of production sharing and sets the rules governing the cooperation between the company or consortium in possession of the license and the host country, which is generally represented by a state-owned company. The latter can thus be involved in operating decisions, cost accounting and production allocation. The consortium agrees to undertake and finance all exploration, development and production activities at its own risk. In exchange, it is entitled to a portion of the production, known as "cost oil", the sale of which is intended to cover its incurred expenses (capital and operating costs). The balance of production, known as "profit oil", is then shared in varying proportions, between the company or consortium, on the one hand, and the host country or state-owned company, on the other hand.

Today, concession agreements and PSCs can coexist, sometimes in the same country or even on the same block. Even though there are other contractual models, TOTAL's license portfolio is comprised mainly of concession agreements.

On most licenses, the partners and authorities of the host country, often assisted by international accounting firms, perform joint venture and PSC cost audits and ensure the observance of contractual obligations.

In some countries, TOTAL has also signed contracts called "risked service contracts", which are similar to PSCs. However, the profit oil is replaced by a defined or determinable cash monetary remuneration, agreed by contract, which depends notably on field performance parameters such as the amount of barrels produced.

Oil and gas exploration and production activities are subject to authorization granted by public authorities (licenses), which are granted for specific and limited periods of time and include an obligation to relinquish a large portion, or the entire portion in case of failure, of the area covered by the license at the end of the exploration period.

TOTAL pays taxes on income generated from its oil and gas production and sales activities under its concessions, PSCs and risked service contracts, as provided for by local regulations. In addition, depending on the country, TOTAL's production and sales activities may be subject to a number of other taxes, fees and withholdings, including special petroleum taxes and fees. The taxes imposed on oil and gas production and sales activities are generally substantially higher than those imposed on other industrial or commercial businesses.

2.1.7 Production by geographical zone

The following table sets forth the Group's annual liquids and natural gas production by geographical zone, according to the internal business units of E&P in 2017.

	2017			2016			2015		
	Liquids Mb ^(a)	Natural gas Bcf ^(b)	Total Mboe	Liquids Mb ^(a)	Natural gas Bcf ^(b)	Total Mboe	Liquids Mb ^(a)	Natural gas Bcf ^(b)	Total Mboe
Europe and Central Asia	98	976	278	91	1,002	277	80	881	243
Azerbaijan	-	-	-	-	-	-	-	-	-
France	-	-	-	-	-	-	-	-	-
Italy	-	-	-	-	-	-	-	-	-
Kazakhstan	11	19	15	1	2	1	-	-	-
Norway	46	234	88	44	226	86	47	224	88
Netherlands	-	41	7	-	52	9	-	58	10
United Kingdom	15	201	52	18	218	58	13	142	39
Russia	26	481	116	28	504	123	20	457	106
Africa (excl. North Africa)	183	277	239	186	227	232	190	212	233
Angola	73	47	83	84	25	89	86	18	90
Republic of the Congo	36	12	38	31	11	33	30	11	32
Gabon	19	5	20	20	5	21	20	5	22
Nigeria	55	213	98	51	186	89	54	178	89
Middle East and North Africa	153	282	204	137	291	189	136	318	193
Algeria	1	21	5	2	33	8	3	35	9
United Arab Emirates	102	24	107	102	25	107	100	24	105
Iraq	6	-	6	6	<1	7	7	-	7
Libya	11	-	11	5	-	5	5	-	5
Oman	9	23	13	10	23	14	8	21	12
Qatar	24	214	62	11	210	49	12	209	49
Yemen	-	-	-	-	-	-	1	29	6
Americas	48	442	127	40	346	102	35	327	93
Argentina	2	141	27	3	143	29	3	129	26
Bolivia	2	79	17	1	59	12	1	49	10
Brazil	<1	-	<1	-	-	-	-	-	-
Canada	22	-	22	12	-	12	5	-	5
Colombia	<1	-	<1	-	-	-	-	-	-
United States	11	192	45	11	111	31	13	112	33
Venezuela	11	30	16	12	33	17	13	37	19
Asia-Pacific	10	455	89	11	494	97	12	471	94
Australia	-	41	7	-	33	6	-	10	1
Brunei	1	32	8	1	29	7	1	23	5
China	<1	29	5	-	19	4	-	22	4
Indonesia	6	190	41	7	240	51	8	247	54
Myanmar	-	55	7	-	60	8	-	56	7
Thailand	3	108	21	3	112	22	3	113	23
TOTAL PRODUCTION	492	2,432	937	465	2,360	897	453	2,209	856
INCLUDING SHARE OF EQUITY AFFILIATES	103	700	232	91	694	220	81	667	204
Angola	2	29	7	-	7	2	-	-	-
United Arab Emirates	42	19	46	42	19	45	39	18	43
Oman	8	23	13	9	23	13	8	21	12
Qatar	16	144	42	3	139	28	3	140	28
Russia	24	483	112	25	503	120	17	456	102
Venezuela	11	2	12	12	3	12	14	3	14
Yemen	-	-	-	-	-	-	-	29	5

(a) Liquids consist of crude oil, bitumen, condensates and natural gas liquids (NGL). The Group's production in Canada consists of bitumen only, and all of the Group's bitumen production is in Canada. The table above does not set forth separate figures for NGL because they represented less than 7.5% of the Group's total liquids production in each of the years 2015, 2016 and 2017.

(b) Including fuel gas (173 Bcf in 2017, 163 Bcf in 2016, 159 Bcf in 2015).

The following table sets forth the Group's average daily liquids and natural gas production by geographical zone, according to the internal business units of E&P in 2017.

	2017			2016			2015		
	Liquids kb/d ^(a)	Natural gas Mcf/d ^(b)	Total kboe/d	Liquids kb/d ^(a)	Natural gas Mcf/d ^(b)	Total kboe/d	Liquids kb/d ^(a)	Natural gas Mcf/d ^(b)	Total kboe/d
Europe and Central Asia	265	2,674	761	249	2,737	757	215	2,413	664
Azerbaijan	-	-	-	-	-	-	-	-	-
France	-	-	-	-	-	-	-	-	-
Italy	-	-	-	-	-	-	-	-	-
Kazakhstan	31	53	42	3	6	4	-	-	-
Norway	121	640	239	121	618	235	125	614	239
Netherlands	-	112	20	-	141	25	1	158	28
United Kingdom	42	551	142	49	595	158	35	389	107
Russia	71	1,318	318	76	1,377	335	54	1,252	290
Africa (excl. North Africa)	502	759	654	509	621	634	521	581	639
Angola	204	130	229	230	68	243	238	49	248
Republic of the Congo	98	32	104	84	29	90	81	30	87
Gabon	51	14	54	55	15	58	55	15	59
Nigeria	149	583	267	140	509	243	147	487	245
Middle East and North Africa	419	771	559	373	795	517	372	874	531
Algeria	4	58	15	6	90	23	7	96	25
United Arab Emirates	278	63	290	279	67	291	274	66	287
Iraq	15	1	16	17	1	18	18	1	18
Libya	31	-	31	14	-	14	14	-	14
Oman	25	64	37	26	62	37	25	58	36
Qatar	66	585	170	31	575	134	32	573	134
Yemen	-	-	-	-	-	-	2	80	17
Americas	132	1,212	348	109	944	279	95	896	255
Argentina	6	388	76	8	391	78	8	354	72
Bolivia	5	216	46	4	160	34	3	133	28
Brazil	<1	-	<1	-	-	-	-	-	-
Canada	59	-	59	34	-	34	14	-	14
Colombia	<1	-	<1	-	-	-	-	-	-
United States	31	527	123	31	304	86	34	308	89
Venezuela	31	81	44	32	89	47	36	101	52
Asia-Pacific	28	1,247	244	31	1,350	265	34	1,290	258
Australia	-	114	19	-	91	16	-	28	4
Brunei	3	87	21	3	78	18	3	62	15
China	<1	80	15	-	53	10	-	59	11
Indonesia	16	519	112	19	657	140	22	676	147
Myanmar	-	151	19	-	165	21	-	153	19
Thailand	9	296	58	9	306	60	9	312	62
TOTAL PRODUCTION	1,346	6,663	2,566	1,271	6,447	2,452	1,237	6,054	2,347
INCLUDING SHARE OF EQUITY AFFILIATES	284	1,914	639	247	1,894	600	219	1,828	559
Angola	5	80	20	1	20	5	-	-	-
United Arab Emirates	115	53	125	114	51	123	107	50	116
Oman	23	64	35	24	62	36	24	58	34
Qatar	43	395	114	7	379	76	7	383	77
Russia	67	1,317	313	69	1,375	327	45	1,250	280
Venezuela	31	5	32	32	7	33	36	7	37
Yemen	-	-	-	-	-	-	-	80	15

(a) Liquids consist of crude oil, bitumen, condensates and natural gas liquids (NGL). The Group's production in Canada consists of bitumen only, and all of the Group's bitumen production is in Canada. With respect to NGL, the table above does not set forth separate figures for NGL because they represented less than 7.5% of the Group's total liquids production in each of the years 2015, 2016 and 2017.

(b) Including fuel gas (473 Mcf/d in 2017, 448 Mcf/d in 2016, 435 Mcf/d in 2015).

2.1.8 Producing assets by geographical zone

The table below sets forth, as of December 31, 2017^(a) and by geographical zone according to the internal business units of E&P in 2017, TOTAL's producing assets, the year in which TOTAL's activities started, the Group's interest in each asset (Group share in %) and whether TOTAL is operator of the asset.

Europe and Central Asia

Kazakhstan (1992)	Non-operated: Kashagan (16.81%)
Norway (1965)	Operated: Atla (40.00%), Skirne (40.00%) Non-operated: Åsgard (7.68%), Ekofisk (39.90%), Ekofisk South (39.90%), Eldfisk (39.90%), Embla (39.90%), Gimle (4.90%), Heimdal (16.76%), Islay (5.51%) ^(b) , Kristin (6.00%), Kvitebjørn (5.00%), Mikkel (7.65%), Oseberg (14.70%), Oseberg East (14.70%), Oseberg South (14.70%), Snøhvit (18.40%), Stjerne (14.70%), Troll I (3.69%), Troll II (3.69%), Tune (10.00%), Tyrihans (23.15%), Visund (7.70%), Visund South (7.70%), Visund North (7.70%)
Netherlands (1964)	Operated: F6a oil (65.68%), J3a (30.00%), K1a (40.10%), K3b (56.16%), K4a (50.00%), K4b/K5a (36.31%), K5b (50.00%), K6 (56.16%), L1a (60.00%), L1d (60.00%), L1e (55.66%), L1f (55.66%), L4a (55.66%) Non-operated: E16a (16.92%), E17a/E17b (14.10%), J3b/J6 (25.00%), K9ab-A (22.46%), Q16a (6.49%)
United Kingdom (1962)	Operated: Alwyn North (100.00%), Dunbar (100.00%), Ellon (100.00%), Forvie North (100.00%), Grant (100.00%), Jura (100.00%), Nuggets (100.00%), Elgin-Franklin (46.17%), West Franklin (46.17%), Glenelg (58.73%), Islay (94.49%) ^(b) , Laggan Tormore (60.00%), Edradour and Glenlivet (60.00%) Non-operated: Bruce (43.25%), Markham unitized field (7.35%), Keith (25.00%)
Russia (1991)	Non-operated: Kharyaga (20.00%), Termokarstovoye (49.00%) ^(c) , Yamal LNG (20.00%) ^(d) , several fields through the participation in PAO Novatek (18.90%)
Africa (excl. North Africa)	
Angola (1953)	Operated: Girassol, Dalia, Pazflor, CLOV (Block 17) (40.00%) Non-operated: Cabinda Block 0 (10.00%), Kuito, BBLT, Tombua-Landana (Block 14) (20.00%) ^(e) , Lianzi (Block 14K) (10.00%) ^(e) , Angola LNG (13.60%)
Gabon (1928)	Operated: Anguille Marine (100.00%), Anguille Nord Est (100.00%), Baliste (100.00%), Baudroie Marine (100.00%), Baudroie Nord Marine (100.00%), Grand Anguille Marine (100.00%), Lopez Nord (100.00%), Mérou Sardine Sud (100.00%), N'Tchengue (100.00%), Port Gentil Océan (100.00%), Torpille (100.00%), Torpille Nord Est (100.00%) Non-operated: Barbier (65.28%), Girelle (65.28%), Gonelle (65.28%), Grondin (65.28%), Hylia Marine (37.50%), Mandaros (65.28%), Pageau (65.28%), Rabi Kounga (32.92%)
Nigeria (1962)	Operated: OML 58 (40.00%), OML 99 Amenam-Kpono (30.40%), OML 100 (40.00%), OML 102 (40.00%), OML 130 (24.00%) Non-operated: OML 102 – Ekanga (40.00%), Shell Petroleum Development Company (SPDC 10.00%), OML 118 – Bonga (12.50%), OML 138 (20.00%), Nigeria LNG (15.00%)
The Republic of the Congo (1968)	Operated: Kombi-Likalala-Libondo (65.00%), Moho Bilondo (53.50%), Moho Nord (53.50%), Nkossa (53.50%), Nsoko (53.50%), Sendji (55.25%), Yanga (55.25%) Non-operated: Lianzi (26.75%), Loango (42.50%), Zatchi (29.75%)

(a) The Group's interest in the local entity is approximately 100% in all cases except for Total Gabon (58.28%), Total E&P Congo (85%) and certain entities in Abu Dhabi and Oman (see notes b through l below).

(b) The Islay field extends partially into Norway. Total E&P UK holds a 94.49% stake and Total E&P Norge 5.51%.

(c) TOTAL's interest in the joint venture ZAO Terneftegas with PAO Novatek (51.00%).

(d) TOTAL's interest in the joint venture OAO Yamal LNG with PAO Novatek (50.10%), CNPC (20.00%) and Silk Road Fund (9.90%).

(e) Stake in the company Angola Block 14 BV (TOTAL 50.01%).

Middle East and North Africa

Algeria (1952)	Non-operated: Tin Fouyé Tabankort (35.00%)
U.A.E. (1939)	Operated: Abu Al Bukhoosh (75.00%) Non-operated: ADNOC Onshore (10.00%), ADNOC Offshore (13.33%) ^(f) , ADNOC Gas Processing (15.00%), ADNOC LNG (5.00%)
Iraq (1920)	Non-operated: Halfaya (22.5%) ^(g)
Libya (1959)	Non-operated: zones 15, 16 & 32 (75.00%) ^(h) , zone 129 & 130 (30.00%) ^(h) , zone 130 & 131 (24.00%) ^(h)
Oman (1937)	Non-operated: various onshore fields (Block 6) (4.00%) ⁽ⁱ⁾ , Mukhaizna field (Block 53) (2.00%) ⁽ⁱ⁾
Qatar (1936)	Operated: Al Khalij (40.00%) Non-operated: North Field-Block NF Dolphin (24.50%), North Field-Qatargas 1 Downstream (10.00%), North Field-Qatargas 1 Upstream (20.00%), North Field-Qatargas 2 Train 5 (16.70%), Al Shaheen (30.00%)
Yemen (1987)	Non-operated: Various onshore fields (Block 5) (15.00%)

Americas

Argentina (1978)	Operated: Aguada Pichana Este (27.27%), Aguada San Roque (24.71%), Rincon La Ceniza (45.00%), Aries (37.50%), Cañadon Alfa Complex (37.50%), Carina (37.50%), Hidra (37.50%), Kaus (37.50%), Vega Pleyade (37.50%), La Escalonada (45.00%) Non-operated: Rincón de Aranda (45.00%), Sierra Chata (2.51%)
Bolivia (1995)	Operated: Incahuasi (50.00%) Non-operated: San Alberto (15.00%), San Antonio (15.00%), Itaú (41.00%)
Brazil (1999)	Non-operated: Libra (20.00%)
Canada (1999)	Non-operated: Surmont (50.00%)
United States (1957)	Operated: several assets in the Barnett Shale area (100.00%) Non-operated: several assets in the Utica Shale area (25.00%) ^(k) , Chinook (33.33%), Tahiti (17.00%)
Venezuela (1980)	Non-operated: PetroCedeño (30.32%), Yucal Placer (69.50%)
Colombia (2017)	Non-operated: Niscota (50.00%)

Asia-Pacific

Australia (2005)	Non-operated: several assets in UJV GLNG (27.50%) ^(l)
Brunei (1986)	Operated: Maharaja Lela Jamalulalam (37.50%)
China (2006)	Non-operated: South Sulige (49.00%)
Indonesia (1968)	Operated: Bekapai (50.00%), Handil (50.00%), Peciko (50.00%), Sisi-Nubi (47.90%), South Mahakam (50.00%), Tambora (50.00%), Tunu (50.00%) Non-operated: Badak (1.05%), Nilam-gas and condensates (9.29%), Nilam-oil (10.58%), Ruby-gas and condensates (15.00%)
Myanmar (1992)	Operated: Blocks M5/M6 (Yadana, Sein, Badamayar) (31.24%)
Thailand (1990)	Non-operated: Bongkot (33.33%)

(f) Via Abu Dhabi Marine Areas Limited (equity affiliate), TOTAL holds a 13.33% stake in the Abu Dhabi Marine Areas (ADNOC Offshore) concession operated by Abu Dhabi Company for Offshore Petroleum Operations Limited.

(g) TOTAL's interest in the joint venture.

(h) TOTAL's stake in the foreign consortium.

(i) TOTAL's indirect interest (4.00%) in the concession, via its 10.00% interest in Private Oil Holdings Oman Ltd. TOTAL also has a direct interest (5.54%) in the Oman LNG facility (trains 1 and 2), and an indirect participation (2.04%) through OLNK in Qalhat LNG (train 3).

(j) TOTAL's direct interest in Block 53.

(k) TOTAL's interest in the joint venture with Chesapeake.

(l) TOTAL's interest in the unincorporated joint venture.

2.1.9 Activities by geographical zone

The information below describes the Group's main exploration and production activities presented by geographical zone according to the internal business units⁽¹⁾ of E&P in 2017, without detailing all of the assets held by TOTAL. In each zone, the countries are presented in decreasing order of production. The capacities referred to herein are expressed on a 100% basis, regardless of the Group's stake in the asset.

Europe and Central Asia

In 2017, TOTAL's production in the zone of Europe and Central Asia was 761 kboe/d, representing 30% of the Group's total production, compared to 757 kboe/d in 2016 and 664 kboe/d in 2015. The two main producing countries in this zone in 2017 were Russia and Norway.

In **Russia**, where the largest percentage of TOTAL's proved reserves are located (nearly 21% as of December 31, 2017), the Group's production was 318 kboe/d in 2017, compared to 335 kboe/d in 2016 and 290 kboe/d in 2015. This production comes from TOTAL's stake in PAO Novatek⁽²⁾, as well as from the Termokarstovoye⁽³⁾ and Kharyaga fields (20%) and, since December 2017, the Yamal LNG project. Since 2015, Russia has been the leading contributor to the Group's production.

TOTAL participates in the Yamal LNG project. In 2013, the company OAO Yamal LNG⁽⁴⁾ launched this project aimed at developing the onshore field of South Tambey (gas and condensates) located on the Yamal peninsula, and at building a three-train gas liquefaction plant with total LNG capacity of 16.5 Mt/y. The Yamal LNG project's financing was finalized in 2016 in compliance with applicable regulations. In November 2017, the Yamal LNG plant started production with the first shipment aboard "Christophe de Margerie".

For further information on international economic sanctions applicable in Russia, refer to point 3.1.9 of chapter 3.

In **Norway**, the Group's production was 239 kboe/d in 2017 compared to 235 kboe/d in 2016 and 239 kboe/d in 2015. This production comes from various fields, notably Ekofisk (39.9%), Snøhvit (18.4%) and Troll (3.69%). TOTAL has equity stakes in 83 production licenses on the Norwegian maritime continental shelf, 35 of which it operates. The Group also holds an 18.4% stake in the gas liquefaction plant of Snøhvit (capacity of 4.2 Mt/y). This plant, located in the Barents Sea, is supplied with production from the Snøhvit and Albatross gas fields.

In the Greater Hild area, TOTAL announced in November 2017 the sale of its interests in the Martin Linge field (51%, operator, estimated capacity 80 kboe/d) and the Garantiana discovery (40%).

The Group disposed of a 15% stake in the Gina Krog field in the Sleipner area in December 2016, and the remaining stake (15%) in September 2017.

In 2017, an impairment in Norway was recognized in the Consolidated Financial Statements.

In the **United Kingdom**, the Group's production was 142 kboe/d in 2017 compared to 158 kboe/d in 2016 and 107 kboe/d in 2015. Approximately 95% of this production comes from operated fields, split on the one hand between the Alwyn area in the Northern North Sea and the Elgin-Franklin area in the Central Graben and, on the other hand, the West of Shetland Laggan Tormore area.

- In the Alwyn area (100%), production from the Alwyn and Dunbar fields represents 26% and 16% of production, respectively, of this area. The rest of the production comes from satellites linked to these fields;
- In the Central Graben, TOTAL holds stakes in the Elgin, Franklin and West Franklin fields (46.2%, operator). The Elgin redevelopment project includes the drilling of five wells. Two were drilled in 2016 and a third is underway. The West Franklin Phase II redeployment project came to an end in 2016;
- In the West of Shetland area, the Laggan and Tormore fields (60%, operator) started production in February 2016 and the Edradour and Glenlivet fields in August 2017. TOTAL also operates the P967 license, which includes the 2016 Tobermory gas discovery (30%). The total capacity is 90 kboe/d.

An impairment on gas assets in the United Kingdom was recognized in the 2015, 2016 and 2017 Consolidated Financial Statements.

In October 2017, TOTAL sold its stakes in two shale gas exploration and production licenses (PEDL 139 and 140, 40%) located in the Gainsborough Trough (East Midlands region), together with some of its interests in the shale gas licenses from the 14th round. TOTAL retains interests in licenses PEDL 273, 305 and 316 (20%).

In **Kazakhstan**, the Group's production was 42 kboe/d in 2017. This comes from the Kashagan field operated by the North Caspian Operating Company (NCOC) in the North Caspian license (16.81%). The first phase of production of the Kashagan field and the associated processing plant started in October 2016. Commissioning of the facilities is ongoing, including the start-up of raw gas reinjection in August 2017 in order to ramp oil production up to the expected capacity of 370 kb/d. In addition, engineering and design work is underway to increase production capacity by raising raw gas compression and injection capacities.

In the **Netherlands**, the Group's production was 20 kboe/d in 2017 compared to 25 kboe/d in 2016 and 28 kboe/d in 2015. This decrease was due to natural field decline. In 2017, production on platforms L7 and F15 stopped so that they can be dismantled. TOTAL holds interests in 24 offshore production licenses, including 20 that it operates.

In **Italy**, TOTAL holds stakes in the Tempa Rossa field (50%, operator) located on the Gorgoglione concession (Basilicate region), as well as three exploration licenses. The development project is ongoing and production is expected to start in 2018.

(1) The geographical zones are as follows: Europe and Central Asia; Africa (excluding North Africa); Middle East and North Africa; Americas; and Asia-Pacific. The information presented relating to 2015 production has been restated accordingly.

(2) A Russian company listed on the Moscow and London stock exchanges and in which the Group held an interest of 18.9% as of December 31, 2017.

(3) The development and production license of Termokarstovoye onshore gas and condensates field is held by ZAO Terneftegaz, a joint venture between Novatek (51%) and TOTAL (49%).

(4) OAO Yamal LNG is held by PAO Novatek (50.1%), Total E&P Yamal (20%), CNODC (20%), a subsidiary of China National Petroleum Corporation, and Silk Road Fund (9.9%).

In **Azerbaijan**, TOTAL signed an agreement in November 2016 establishing the contractual and commercial conditions for a first phase of production of the Absheron gas and condensate field (50% following the withdrawal of Engie in June 2017), which is located in the Caspian Sea and was discovered by TOTAL in 2011. The production capacity of this high pressure field is expected to be 35 kboe/d and the gas produced will supply Azerbaijan's domestic market. Drilling operations started in February 2018.

In **France**, the Group's production ended in 2014 with the sale of the Lacq concessions. TOTAL remains the owner of parts of the Lacq industrial site, located in the southwest of France, and is carrying out decommissioning, dismantling and site rehabilitation activities.

In **Bulgaria**, where TOTAL has been present since 2012, the Group drilled a deep offshore exploration well in 2016 on the Han Asparuh block (14,220 km²), 100 km offshore in the Black Sea, which revealed the presence of oil in the Polshkov well. The second well under the contract was drilled in 2017.

In **Greece**, TOTAL (50%, operator) and its partners signed a license agreement for offshore Block 2 in the Ionian Sea with the Greek authorities in October 2017. Following the official license award by ratification of the Hellenic Parliament in February 2018, exploration work can commence.

Rest of the Europe and Central Asia area

TOTAL also holds interests in an exploration license without activity in Tajikistan.

Africa (excluding North Africa)

In 2017, TOTAL's production in the zone of Africa⁽¹⁾ was 654 kboe/d, representing 25% of the Group's total production, compared to 634 kboe/d in 2016 and 639 kboe/d in 2015. The two main producing countries in this zone in 2017 were Nigeria and Angola.

In **Nigeria**, the Group's production, primarily offshore, was 267 kboe/d in 2017 compared to 243 kboe/d in 2016 and 245 kboe/d in 2015. This recent increase in production is due to the development of Ofon phase 2 (OML102) and improved production from the licenses held by the Shell Petroleum Development Company (SPDC) joint venture following the negative impact of difficult operational security conditions in the Niger delta in 2016.

TOTAL operates five production licenses (OML) on the 34 leases in which the Group has interests (including two exploration licenses).

TOTAL has offshore operations (production was 172 kboe/d in 2017) notably on the following leases:

- on OML 139 (18%), the Owowo-3 exploration well, drilled in 2016, confirmed the discovery of oil made in 2012 and enabled progress in the preparation of the development plan. The discovery is located near OML 138 (20%), where three oil discoveries were made in 2014 and 2015 and where the field Usan is producing;
- on OML 130 (24%, operator), the development of the Egina field (200 kboe/d capacity) launched in 2013 is underway and production is expected to start in 2018. The Preowei field was assessed in 2017 and should enable the finalization of the studies for a satellite development of Egina;
- on OML 102 (40%, operator), the drilling of the 24 additional wells (Ofon, phase 2) on the Ofon oil fields is on progress and should be completed in 2018;

- on OML 99 (40%, operator), studies are ongoing for the development of the Ikike field; and
- on OML 118 (12.5%), the Bonga field contributed 17 kboe/d to the Group's production in 2017. Optimization studies of the Bonga South West Aparo project (10% unitized) are ongoing.

TOTAL also has onshore operations (production was 95 kboe/d in 2017), notably:

- on OML 58 (40%, operator), under its joint venture with Nigerian National Petroleum Corporation (NNPC), a gas production capacity of 550 Mcf/d was reached and delivery of gas to the Nigerian domestic market started in 2016; and
- in relation to the SPDC joint venture (10%), which includes 20 oil mining leases (of which 17 are located onshore), the 2017 production was 58 kboe/d (of which 55 kboe/d was onshore). The sale process of OML 25 is underway.

TOTAL is also developing LNG activities with a 15% stake in the Nigeria LNG Ltd company, which owns a liquefaction plant with a 22 Mt/year total capacity. Assessments are ongoing for the installation of an additional capacity of approximately 7 Mt/year.

In **Angola**, where TOTAL is the leading oil operator in the country⁽²⁾, the Group's production was 229 kboe/d in 2017 compared to 243 kboe/d in 2016 and 248 kboe/d in 2015. This production comes from Blocks 17, 14 and 0, and Angola LNG.

- Deep offshore Block 17 (40%, operator), TOTAL's main asset in Angola, is composed of four major producing hubs: Girassol, Dalia, Pazflor and CLOV. TOTAL continued to invest in brownfield projects in 2017, including in particular Clov Phase 1, two wells infill, which is expected to start production in 2018, as well as Dalia Phase 2A and Girassol M14, which started production in 2017. The Zinia Phase 2 project, a satellite development of Pazflor, is moving forward.
- On the ultra-deep offshore Block 32 (30%, operator), the Kaombo project was launched in 2014 to develop the discoveries in the southeast part of the block via two FPSOs with a capacity of 115 kb/d each. In June 2016, a presidential decree was published providing new and favorable tax conditions for the project. The drilling campaign of 59 wells began in 2015. Production of Kaombo Nord is expected to start in 2018. The discoveries in the central and northern parts of the block (outside Kaombo) offer additional potential and are currently being assessed.
- On Block 14 (20%)⁽³⁾, production comes from the Tombua-Landana and Kuito fields as well as the BBLT project, comprising the Benguela, Belize, Lobito and Tomboco fields.
- Block 14K (36.75%) is the offshore unitization area between Angola (Block 14) and the Republic of the Congo (Haute Mer license). The Lianzi field, which is connected to the existing BBLT platform (Block 14), started production in 2015. TOTAL's interest in the unitized zone is held 10% through Angola Block 14 BV and 26.75% through Total E&P Congo.
- On Block 0 (10%), the second phase of the Mafumeira field development project started production in March 2017.
- On Block 48 (50%, operator), TOTAL and Sonangol have concluded an agreement in order to jointly explore the block. The first phase of this program is expected to last for two years with the drilling of one exploration well.

(1) Excluding North Africa, which is reported in the zone of the Middle East and North Africa.

(2) Company data.

(3) Stake held by the company Angola Block 14 BV (TOTAL 50.01%).

TOTAL is also developing its LNG activities through the Angola LNG project (13.6%), which includes a gas liquefaction plant with a total capacity of 5.2 Mt/year near Soyo, supplied by gas associated with production from Blocks 0, 14, 15, 17 and 18. LNG production started in 2013, but various technical incidents required an extended shutdown of the plant. LNG production resumed in May 2016. Following work to increase the reliability of the facilities, the plant has been capable of processing all of the gas supplied since April 2017. Taking into account the revised gas price assumptions, an impairment on Angola LNG was recognized in the 2016 Consolidated Financial Statements.

In the Bas-Congo basin, TOTAL is also the operator of exploration Block 17/06 (30%).

In the deep offshore Kwanza basin, TOTAL operates Blocks 25 (35%) and 40 (40%). The operating license on Block 39 (7.5%) expired at the end of December 2016.

In the **Republic of the Congo**, the Group's production, through its subsidiary Total E&P Congo⁽¹⁾, was 104 kboe/d in 2017 compared to 90 kboe/d in 2016 and 87 kboe/d in 2015.

- On the offshore field Moho Bilondo (53.5%, operator), the Phase 1b project (capacity of 40 kboe/d) started production in 2015. The Moho Nord project (capacity of 100 kboe/d) started production in March 2017.
- Block 14K (36.75%) corresponds to the offshore unitization area between the Republic of the Congo (Haute Mer license) and Angola (Block 14 located in Angola). The Lianzi field started production in 2015. TOTAL's interests in the unitization area are held 26.75% by Total E&P Congo and 10% by Angola Block 14 BV.
- Total E&P Congo is operator of Djéno (63%), the sole oil terminal in the country.
- At the end of 2016, Total E&P Congo returned its interests in the Tchibouela, Tchendo, Tchibeli and Litanzi fields (65%) to the Republic of the Congo, as the licenses have expired.

An impairment was required on several Congo assets and recognized in the 2017 Consolidated Financial Statements.

In **Gabon**, the Group's production was 54 kboe/d in 2017 compared to 58 kboe/d in 2016 and 59 kboe/d in 2015. In October 2017, TOTAL finalized the sale to Perenco of stakes in a number of onshore and offshore fields with production of 13 kboe/d, and transferred operatorship to Perenco on various mature fields (Grondin and Hylia sectors). The Group's activities in Gabon are now exclusively carried out by Total Gabon⁽²⁾. TOTAL wholly owns and operates the Anguille and Torpille sector offshore fields, the Mandji Island sector onshore fields and the Cap Lopez oil terminal. In 2017, TOTAL increased its stake in the Baudroie-Mérout field from 50% to 100%, in line with its strategy of refocusing on the North offshore area. TOTAL is also the operator of the Diaba deep offshore license (42.5%), an exploration area. Discussions are ongoing with authorities for a renewal of the license in 2018.

In **Uganda**, TOTAL is present in the Lake Albert project, a major project for the Group, via a stake in licenses EA-1, EA-1A, EA-2 and EA-3 (Kingfisher). TOTAL is the operator of licenses EA-1 and EA-1A. In January 2017, TOTAL signed an agreement to acquire 21.57% of the 33.33% interest held by Tullow in the licenses. TOTAL will take over operatorship from Tullow of the northern portion of license EA-2, enabling significant efficiency gains and synergies for the development of the northern part of the project (known as Tilenga). China National Offshore Oil Corporation (CNOOC) has exercised its

pre-emption right on 50% of the interest acquired. The agreement remains subject to approval by the Ugandan authorities. Following the finalization of the transaction, TOTAL expects to own a 44.1% stake in the Lake Albert project.

In April 2016, the Government of Uganda decided to export the Lake Albert oil through a pipeline (EACOP) via Tanzania to the port of Tanga on the Indian Ocean. In May 2017, an intergovernmental agreement was signed between Uganda and Tanzania in order to set out the legal and fiscal framework of the pipeline development project. Implementation agreements are being negotiated with each of the two governments. Finalization of the front end engineering and design (FEED) work for the upstream part of the project and the pipeline is underway.

In **Mauritania**, TOTAL has increased its exploration in the country through the acquisition of two new deep offshore license the Block C7 in May 2017 and the Block C8 in August 2017. On the Block C9 operated by TOTAL since 2012, an exploration well is planned at the end of 2018.

In **Senegal**, TOTAL signed two agreements to explore the country's deep offshore potential in May 2017 through the acquisition of the deep offshore block Rufisque and a research contract in ultra deep offshore.

Rest of the zone of Africa

TOTAL also holds interests in exploration licenses in South Africa, Côte d'Ivoire, Kenya, Mozambique, Namibia and the Democratic Republic of the Congo.

Middle East and North Africa

In 2017, TOTAL's production in the zone of the Middle East and North Africa was 559 kboe/d, representing 22% of the Group's total production, compared to 517 kboe/d in 2016 and 531 kboe/d in 2015. The two main producing countries in this zone in 2017 were the United Arab Emirates and Qatar.

In the **United Arab Emirates**, the Group's production was 290 kboe/d in 2017 compared to 291 kboe/d in 2016 and 287 kboe/d in 2015. The Group holds, since January 1, 2015, a 10% stake in the Abu Dhabi Company for Onshore Petroleum Operations Ltd. (ADCO, renamed ADNOC Onshore in 2017) concession for a period of 40 years, which follows a previous 75-year onshore concession. This concession covers the 15 main onshore fields of Abu Dhabi and represents more than half of the Emirate's production. TOTAL holds a 75% stake (operator) in the Abu Al Bukhoosh field and a 13.3% stake in the Abu Dhabi Marine Areas Ltd (ADMA, renamed ADNOC Offshore in 2017) concession, which operates two of the main offshore fields in Abu Dhabi (Umm Shaif and Lower Zakum). TOTAL also holds a 15% stake in Abu Dhabi Gas Industries (GASCO, renamed ADNOC Gas Processing in 2017), which produces NGL and condensates from the associated gas produced by ADNOC Onshore. In addition, TOTAL holds 5% of the Abu Dhabi Gas Liquefaction Company (ADGAS, renamed ADNOC LNG in 2017), which processes the associated gas produced by ADNOC Offshore in order to produce LNG, NGL and condensates, and 5% of National Gas Shipping Company (NGSCO), which owns eight LNG tankers and exports the LNG produced by ADNOC LNG.

TOTAL holds a 24.5% stake in Dolphin Energy Ltd. in partnership with Mubadala, a company owned by the government of Abu Dhabi, that markets to the United Arab Emirates gas coming from Qatar. The operations of Dolphin Energy were not impacted by the evolution of the diplomatic relations between the United Arab Emirates and Qatar.

(1) Total E&P Congo is owned by TOTAL (85%) and Qatar Petroleum (15%).

(2) Total Gabon is a company under Gabonese law, the shares of which are listed on Euronext Paris and owned by TOTAL (58.28%), the Republic of Gabon (25%) and the public (16.72%).

In **Qatar**, the Group's production was 170 kboe/d in 2017 compared to 134 kboe/d in 2016 and 2015.

In June 2016, TOTAL signed an agreement granting it a 30% stake in the Al Shaheen offshore oil field concession for a period of 25 years beginning in July 2017. The Al Shaheen field has been producing since 1994 and lies offshore 80 km north of Ras Laffan. Production, which represents approximately half of Qatar's oil production, is provided by 30 platforms and 300 wells. Since July 2017, the Al Shaheen field has been operated by a new operating company, North Oil Company, held by TOTAL (30%) and Qatar Petroleum (70%).

TOTAL also operates the Al Khalij field (40%, operator).

In addition, the Group participates in the production, processing and exporting of gas from the North Field through its stakes in the Qatargas 1 and Qatargas 2 LNG plants and in Dolphin Energy for the marketing of gas from the Dolphin Block to the United Arab Emirates and Oman:

- Qatargas 1: TOTAL holds a 20% stake in the North Field-Qatargas 1 Upstream Block, supplying the three LNG trains (total capacity of 10 Mt/y) of Qatargas 1 (10%); and
- Qatargas 2: the Group holds a 16.7% stake in train 5, which has an LNG production capacity of 8 Mt/y.

TOTAL offtakes part of the LNG produced under the 2006 contracts that provide for the purchase of 5.2 Mt/y of LNG by the Group.

In **Oman**, the Group's production was 37 kboe/d in 2017 compared to 37 kboe/d in 2016 and 36 kboe/d in 2015. TOTAL participates in the production of oil principally in Block 6 (4%)⁽¹⁾, but also in Block 53 (2%). The Group also produces LNG through its investments in the Oman LNG (5.54%)/Qalhat LNG (2.04%)⁽²⁾ liquefaction complex, with an overall capacity of 10.5 Mt/y.

In **Libya**, the Group's production was 31 kboe/d in 2017 compared to 14 kboe/d in 2016 and 2015. This production comes from blocks located on offshore areas 15, 16 and 32 (Al Jurf, 75%⁽³⁾), which have not been affected by security issues, and also from the El Sharara fields in onshore area 129 and 130 (30%⁽³⁾), where production restarted in 2016, and onshore area 130 and 131 (24%⁽³⁾), restarted in May 2017. Production as well as exploration activities have been stopped on Mabruk, onshore areas 70 and 87 (75%⁽³⁾) since the end of 2014. In March 2018, TOTAL acquired Marathon Oil Libya Limited, which holds a 16.33% stake in the Waha Concessions in Libya. This acquisition will give TOTAL access to production and an exploration potential across the area covered by the concessions in the Sirte Basin.

In **Iraq**, the Group's production was 16 kboe/d in 2017 compared to 18 kboe/d in 2016 and 2015. TOTAL holds a 22.5% stake in the risked service contract for the Halfaya field, located in Missan province. Following development studies in 2016, the decision to develop phase 3 of the project to increase production to 400 kb/d was taken and the contracts were awarded in 2017.

In **Algeria**, TOTAL's production was 15 kboe/d in 2017 compared to 23 kboe/d in 2016 and 25 kboe/d in 2015. All of the Group's production in Algeria comes from the Tin Fouyé Tabankort (TFT) field (35%).

In addition, the development of the Timimoun gas field (37.75%) continued in 2017 with activities related to the construction of the plant and drilling. Pursuant to the Global Agreement (*Accord Global*)

signed in April 2017, a new concession contract (which substitutes the previous PSC contract) and a gas agreement for Timimoun were signed in December 2017.

In **Yemen**, the Group had no production in 2017 and 2016 compared to 17 kboe/d in 2015. Due to the security conditions in the vicinity of Balhaf, Yemen LNG, in which the Group holds a stake of 39.62%, stopped its commercial production and export of LNG in April 2015, when Yemen LNG declared force majeure to its various stakeholders. The plant is in a preservation mode.

TOTAL is a partner in Block 5 (Marib basin, Jannah license, 15%) and holds various stakes in four onshore exploration licenses.

In **Iran**, TOTAL signed the contract relating to the development and production of phase 11 (SP11) of the giant South Pars gas field (expected production capacity of 2 Bcf/d, i.e., 400 kboe/d including condensates) with the National Iranian Oil Company (NIOC) in July 2017. The produced gas will supply the Iranian domestic market. This 20-year risked service contract is the first of the new variety of contracts referred to as the Iranian Petroleum Contract (IPC). TOTAL is the operator and has a 50.1% interest alongside the Chinese state-owned company CNPC (30%) and Petropars (19.9%), a wholly-owned subsidiary of NIOC. For information on international economic sanctions concerning Iran, refer to point 3.1.9 of chapter 3.

In **Syria**, TOTAL has had no production and no activity since December 2011. The Group has a 100% stake in the Deir Ez Zor license, which was operated by the joint venture company DEZPC, in which TOTAL and the state-owned company SPC each have a 50% share. Additionally, TOTAL is holder of the Tabiyeh contract which came into effect in 2009. For information on international economic sanctions concerning Syria, refer to point 3.1.9 of chapter 3.

In **Lebanon**, TOTAL entered two exploration blocks 4 and 9 (40%, operator) located offshore Lebanon, in the eastern part of Mediterranean Sea in February 2018.

Rest of the zone of the Middle East and North Africa

TOTAL also holds interests in exploration licenses in Cyprus and Egypt.

Americas

In 2017, TOTAL's production in the zone of the Americas was 348 kboe/d, representing 14% of the Group's total production, compared to 279 kboe/d in 2016 and 255 kboe/d in 2015. The two main producing countries in this zone in 2017 were the United States and Argentina.

In the **United States**, the Group's production was 123 kboe/d in 2017 compared to 86 kboe/d in 2016 and 89 kboe/d in 2015.

Following the acquisition by TOTAL from Chesapeake in late 2016 of its 75% stake in a joint venture in which the Group had already held a 25% interest since 2009, the year 2017 was TOTAL's first full year of operating the Barnett shale gas assets. As a result of the work carried out since the 2nd quarter of 2017, the decline that started in 2013 has been stopped and operated production has started to stabilize at around 600 Mcf/d.

TOTAL also has a 25% stake in a joint venture operated by Chesapeake in the Utica basin (on an acreage mainly located in Ohio) that produces shale gas. TOTAL was not involved in the drilling of any wells in 2017 and 2016, compared to eight in 2015.

(1) TOTAL holds an indirect 4% stake in Petroleum Development Oman LLC, operator of Block 6, via its 10% stake in Private Oil Holdings Oman Ltd.

(2) TOTAL's indirect stake via Oman LNG's stake in Qalhat LNG.

(3) TOTAL's stake in the foreign consortium.

In the Gulf of Mexico, TOTAL holds interests in the deep offshore fields Tahiti (17%) and Chinook (33.33%). On Tahiti, the commissioning of several new in-fill wells drilled since 2015 has enabled the field to return to its highest historical levels, in excess of 100 kboe/d. The Tahiti Vertical Expansion (TVEX) project launched in 2016 in order to extend the production level of the field is expected to start production in the second half of 2018. The work continued in 2017, notably with the drilling of three of the four productive wells.

In exploration in the Gulf of Mexico:

- TOTAL (40%) and its partner Cobalt (60%, operator) continued their work to assess the commerciality of the North Platte discovery. In May 2017, TOTAL ended its alliance for joint deepwater exploration with Cobalt, formed in 2009;
- the Group acquired new mining rights on blocks awarded during the annual auctions in March and August 2017; and
- an agreement signed in September 2017 covering 16 blocks allows for joint drilling on 7 exploration prospects operated by Chevron. TOTAL will have stakes of between 25% and 40% in these wells. Under this agreement, TOTAL announced in January 2018 a major oil discovery in the Ballymore prospect (40%) located deep offshore, on the Norphlet thematic. A sidetrack well is ongoing to confirm the upside potential.

In January 2018, TOTAL announced the signature of an agreement with Samson in December 2017 in order to acquire Samson Offshore, LLC, which holds a 12.5% interest in four blocks covering the Anchor discovery. The transaction also includes the acquisition of a 12.5% interest in the nearby exploration block Green Canyon 761, where TOTAL already holds a 12.5% interest.

In 2017, an impairment on assets in the United States was recognised in the Consolidated Financial Statements.

In **Argentina**, TOTAL operated approximately 30%⁽¹⁾ of the country's gas production in 2017. The Group's production was 76 kboe/d in 2017 compared to 78 kboe/d in 2016 and 72 kboe/d in 2015:

- In Tierra del Fuego, on the CMA-1 concession, TOTAL operates the Ara and Cañadon Alfa Complex onshore fields and the Hidra, Carina and Aries offshore fields (37.5%). In February 2016, TOTAL started production on the Vega Pleyade offshore gas and condensates field (37.5%, operator), which has a production capacity of 350 Mcf/d. TOTAL also expects to launch the Fenix project (37.5%, operator) before the end of 2018;
- In the Neuquén onshore basin, the Group holds interests in 10 licenses and operates 6 of them, including Aguada Pichana and San Roque, where production has already started. Three shale gas and oil pilot projects were launched: the first on the Aguada Pichana Block (27.27%, operator), where production started mid-2015; the second on the Rincón la Ceniza Block, located on the gas and condensate portion of Vaca Muerta (45%, operator), where production started in July 2016; and the third on the Aguada San Roque Block (24.71%, operator), which was launched in August 2017.

Following the good results of the Aguada Pichana pilot project and a reduction in drilling costs, the first phase of development of the giant Vaca Muerta shale play was launched in July 2017 in the eastern part of the block. Under this project, all of the Aguada Pichana partners, Total Austral S.A. (27.27%, operator), YPF S.A. (27.27%), Wintershall Energia S.A. (27.27%) and Panamerican Energy LLC (18.18%), signed an agreement that splits the block into two parts. This agreement will permit TOTAL to increase its participation to 41% in the non-conventional part of the Aguada Pichana Este project.

The initial results of the pilot development on the Rincón la Ceniza Block are encouraging at this stage. The delineation well drilled in 2016 on the La Escalonada Block in order to test the oil portion of the formation has also demonstrated good productivity.

In **Canada**, the Group's production increased to 59 kboe/d in 2017 compared to 34 kboe/d in 2016 and 14 kboe/d in 2015. This comes from the ramp-up of Surmont (50%), a project developed by SAGD⁽²⁾ and operated by ConocoPhillips. The second phase was commissioned in 2015 and Surmont's total production reached approximately 135 kb/d during 2017.

Construction of the Fort Hills oil sands mining project was more than 95% complete at year-end 2017. Bitumen production from the first train started in January 2018. As a result of a full comparative analysis of its global asset portfolio in the context of lower oil prices, the Group decided in 2015 to decrease its exposure to Canadian oil sands and reduce its stake in Fort Hills from 39.2% to 29.2%. An impairment on the part of the asset sold was recognized in the 2015 Consolidated Financial Statements. A dispute over the funding of the cost overrun of the project, of which the operator notified the partners in January 2017, was resolved with the sale of an additional 3.15% by TOTAL to Suncor and Teck. A further adjustment will be performed after the final project cost is known. The book value of TOTAL's interest in Fort Hills was adjusted in 2017 to take into account the reduction in the expected value of the project following the cost increase.

On the Joslyn (38.25%, operator) and Northern Lights (50% operator) licenses, the projects were suspended in 2014 and work remains strictly limited to legal and contractual obligations and maintaining safety.

In **Bolivia**, the Group's production, mainly gas, was 46 kboe/d in 2017 compared to 34 kboe/d in 2016 and 28 kboe/d in 2015. TOTAL is active on six licenses, five of which have producing fields: San Alberto (15%), San Antonio (15%), Block XX Tarija Oeste (41%), and Aquio and Ipati (50%, operator), where the Incahuasi gas field started production in August 2016. On the Azero exploration license (50%), which covers an area of more than 7,800 km² in the Andean foothills, a geophysical data acquisition campaign was started at the end of 2016. The drilling of a well is expected to follow in 2018/2019. The Rio Hondo exploration license was relinquished in June 2017.

In **Venezuela**, the Group's production was 44 kboe/d in 2017 compared to 47 kboe/d in 2016 and 52 kboe/d in 2015. It comes from the Group's interests in PetroCedeño (30.32%) and Yucal Placer (69.5%). Development of the extra heavy oil field of PetroCedeño continues (49 wells were drilled in 2017 compared to 39 in 2016 and 47 in 2015), as well as the debottlenecking project for the water separation and treatment facilities.

The sale of the 49% stake in offshore exploration Block 4 of Plataforma Deltana is awaiting approval from the authorities. For information on international economic sanctions concerning Venezuela, refer to point 3.1.9 of chapter 3.

In **Brazil**, TOTAL acquired in 2013 a 20% stake in the Libra field, located in the Santos field in the ultra-deep offshore (2,000 m), approximately 170 km off the coast of Rio de Janeiro over an area of 1,550 km². At year-end 2017, 12 wells had been drilled and the production started in November 2017 with the FPSO Pioneiro de Libra (50 kb/d capacity) designed to carry out the long-term production tests necessary for optimizing future development phases. The first development phase (17 wells connected to an FPSO with a capacity of 150 kb/d) also started in December 2017.

(1) Source: Department of Federal Planning, Public Investment and Services, Energy Secretariat.

(2) Steam Assisted Gravity Drainage: production by injection of recycled water vapor.

In addition, the Group holds 17 exploration licenses located in the Foz do Amazonas, Barreirinhas, Ceará, Espírito Santo and Pelotas basins.

In February 2017, TOTAL and Petrobras signed definitive contracts in relation to a package of upstream and downstream gas and electricity assets in Brazil and other international opportunities contemplated by their strategic alliance agreed in December 2016. As part of this strategic alliance, following the granting of the necessary authorization in January 2018, TOTAL acquired a 22.5% interest in the concession lara, located in Block BM-S-11A, which is currently under development, as well as a 35% interest and the operatorship in the Lapa field concession area, located in Block BM-S-9A. The Lapa field entered into production in December 2016. Technical cooperation between the two companies will be reinforced, in particular by the joint assessment of the exploration potential of promising areas in Brazil and by the development of new technologies, in particular in deep offshore.

In **Mexico**, TOTAL was awarded exploration licenses in December 2016 on three blocks in offshore Mexico, following the country's first competitive deep water bid round resulting from the reform of the energy sector. Located in the Perdido basin, Block 2 (50%, operator) covers an area of 2,977 km² at water depths of between 2,300 m and 3,600 m. Located in the Salina basin, Block 1 (33.3%) extends over 2,381 km² and Block 3 (33.3%) covers 3,287 km². In June 2017, TOTAL acquired Block 15 (60%, operator) in the Sureste basin, which covers an area of 972 km².

In **Colombia**, TOTAL started production on the Niscota field (50%) in October 2017. Production for 2017 was less than 1 kboe/d.

In **Guyana**, TOTAL enters exploration in the Guyana Basin with three exploration licences offshore Guyana. The Group has signed agreements in February 2018 to acquire a 35% working interest in the Canje Block and a 25% working interest in the Kanuku Block and furthermore held an option to purchase a 25% working interest in the Orinduik block.

Rest of the zone of the Americas

TOTAL also has interests in exploration licenses in Aruba and French Guyana, where the Guyane Maritime license (100%, operator) was, in September 2017, officially extended to mid-2019.

Asia-Pacific

In 2017, TOTAL's production in the zone of Asia-Pacific was 244 kboe/d, representing 9% of the Group's overall production, compared to 265 kboe/d in 2016 and 258 kboe/d in 2015. The two main producing countries in this zone in 2017 were Indonesia and Thailand.

In **Indonesia**, the Group's production was 112 kboe/d in 2017 compared to 140 kboe/d in 2016 and 147 kboe/d in 2015. TOTAL's operations in Indonesia were primarily concentrated on the Mahakam license (50%, operator), which in particular includes the Peciko and Tunu gas fields. The Group also has a stake in the Sisi-Nubi gas field (47.9%, operator):

- On the Mahakam license, which expired end of December 2017, the Indonesian government has decided to allocate 100% of the participating interest to Pertamina (operator) from January 1, 2018, and to give it the possibility to farm out some interests to its current partners.

The Group delivered most of its natural gas production on this license to the Bontang LNG plant. These volumes of gas represented almost 80% of the plant's supply in 2017. To this gas production was added the operated production of oil and condensates from the Handil and Bekapai fields. In addition, the

works aimed at maintaining production on the Tunu, Peciko, South Mahakam, Sisi-Nubi and Bekapai fields continued. Drilling activities on behalf of Pertamina started in July 2017;

- On the Sebuku license (15%), production from the Ruby gas field is routed by pipeline for processing and separation at the Senipah terminal (operated by TOTAL).

In **Thailand**, the Group's production was 58 kboe/d in 2017 compared to 60 kboe/d in 2016 and 62 kboe/d in 2015. This production comes from the Bongkot offshore gas and condensate field (33.33%). The Thai state-owned company PTT purchases all of the natural gas and condensate production. New investments are underway for maintaining the plateau and responding to gas demand.

In **Brunei**, the Group's production was 21 kboe/d in 2017 compared to 18 kboe/d in 2016 and 15 kboe/d in 2015. This production comes from the Maharaja Lela Jamalulalam offshore gas and condensate field on Block B (37.5%, operator). The gas is delivered to the Brunei LNG liquefaction plant. On the Maharaja Lela South project, intended to increase the field's production capacity, the new platform has been installed and the six planned wells have started production.

Studies are continuing to reassess the potential of the deep offshore exploration Block CA1 (86.9%, operator), which includes the Jagus East discovery, the reservoirs of which are connected to those of the Gumusut-Kakap field in Malaysia.

In **Myanmar**, the Group's production was 19 kboe/d in 2017 compared to 21 kboe/d in 2016 and 19 kboe/d in 2015.

The Yadana field (31.24%, operator), located on the offshore Blocks M5 and M6, primarily produces gas for delivery to PTT for use in Thai power plants. The Yadana field also supplies the domestic market via an offshore pipeline built and operated by MOGE, a Myanmar state-owned company. In May 2017, TOTAL started production on the Badamayar field, a satellite of the Yadana field. This project is expected to make it possible to extend production on this gas field, which is 8 Bcf/y, beyond 2020.

In 2015, TOTAL signed a production sharing contract on deep offshore Block YWB (100%, operator), awarded in 2014 during the offshore round launched by the local authorities. A 2D seismic survey was carried out in May 2016.

In 2015, the Group entered exploration license A6 (40%) located in the deep offshore area west of Myanmar. Two of the three exploration wells drilled since 2015 have resulted in gas discoveries. Evaluation of these discoveries is ongoing.

In **Australia**, the Group's production was 19 kboe/d in 2017 compared to 16 kboe/d in 2016 and 4 kboe/d in 2015. This production comes from Gladstone LNG (GLNG) (27.5%), an integrated gas production, transportation and liquefaction project from the Fairview, Roma, Scotia and Arcadia fields with a capacity of 7.8 Mt/y located on Curtis Island, Queensland. Train 1 of the plant started production in 2015 and train 2 in May 2016. An impairment was recognized in the 2015, 2016 and 2017 Consolidated Financial Statements.

The Ichthys project (30%) involves the development of a gas and condensate field located in the Browse Basin. This development includes a platform for the production, processing and export of gas, an FPSO for processing and exporting the condensate (with 100 kb/d condensate capacity), an 889 km gas pipeline and an onshore liquefaction plant (with 8.9 Mt/y LNG and 1.6 Mt/y LPG capacities) in Darwin. The LNG has already been sold, mainly to Asian buyers, under long-term contracts. According to the operator, the production is expected to start in the 1st semester of 2018.

In **China**, the Group's production was 15 kboe/d in 2017 compared to 10 kboe/d in 2016 and 11 kboe/d in 2015. This production comes from the South Sulige Block (49%) in the Ordos Basin of Inner Mongolia, where the drilling of tight gas development wells is ongoing.

In 2017, TOTAL signed a production sharing contract on the Taiyang exploration block (49%, operator), located in both Chinese and Taiwanese waters in the China Sea. A 2D seismic survey is underway.

In **Papua New Guinea**, the Group owns a stake in Block PRL-15 (40.1%, operator since 2015). The State of Papua New Guinea retains the right to take a stake in the license (when the final investment decision is made) at a maximum level of 22.5%. In this case, TOTAL's stake would be reduced to 31.1%.

Block PRL-15 includes the two discoveries Elk and Antelope. The delineation program of these discoveries was completed in April 2017 and the results of the wells drilled confirmed the resource levels of the fields. In 2016, the Group carried out the environmental and societal baseline studies in the country that are necessary for the granting of authorization to start production in the fields. The development studies are ongoing.

In March 2017, the acquisition of a 35% stake in exploration license PPL339, located in Gulf Province, came into effect.

Since 2016, TOTAL has held deep offshore exploration license PPL576 (100%) in the Offshore Eastern Papuan Foldbelt area

southeast of Port Moresby. The interpretation of the multi-client seismic survey performed in late 2016 revealed some promising prospects. In October 2017, the authorities awarded TOTAL (100%) a second exploration license (PPL589) in this area.

Rest of the zone of Asia-Pacific

TOTAL also holds interests in exploration licenses in Malaysia and the Philippines. In Cambodia, TOTAL is working to implement an agreement entered into in 2009 with the Cambodian government for the exploration of Block 3 located in an area of the Gulf of Thailand disputed by the governments of Cambodia and Thailand. This agreement remains subject to the establishment by both countries of an appropriate contractual framework.

Mærsk Oil acquisition

Following the finalization of the Mærsk Oil acquisition, Total holds interests notably in Fields in United Kingdom (Culzean, 49.99%, operator), Norway (Johan Sverdrup, 8.44%), Denmark (31.2% ownership of the Danish Underground Consortium producing assets), the US Gulf of Mexico (Jack, 25%), Algeria, Kenya, Kazakhstan, Angola and Brazil.

2.1.10 Oil and gas acreage

As of December 31, (in thousands of acres)		2017	
		Undeveloped acreage ^(a)	Developed acreage
Europe and Central Asia (excl. Russia)	Gross	17,885	730
	Net	6,567	165
Russia	Gross	3,758	604
	Net	691	121
Africa (excl. North Africa)	Gross	73,608	829
	Net	53,518	204
Middle East and North Africa	Gross	32,977	2,879
	Net	5,902	445
Americas	Gross	20,487	1,075
	Net	11,985	527
Asia-Pacific	Gross	52,477	885
	Net	34,556	321
TOTAL	GROSS	201,192	7,002
	NET^(b)	113,219	1,783

(a) Undeveloped acreage includes leases and concessions.

(b) Net acreage equals the sum of the Group's equity stakes in gross acreage.

2.1.11 Number of productive wells

As of December 31, (number of wells)		2017	
		Gross productive wells	Net productive wells ^(a)
Europe and Central Asia (excl. Russia)	Oil	436	114
	Gas	244	90
Russia	Oil	297	55
	Gas	574	100
Africa (excl. North Africa)	Oil	1,590	442
	Gas	75	15
Middle East and North Africa	Oil	10,197	628
	Gas	168	41
Americas	Oil	1,044	346
	Gas	3,422	2,005
Asia-Pacific	Oil	131	60
	Gas	3,053	1,108
TOTAL	OIL	13,695	1,645
	GAS	7,536	3,359

(a) Net wells equal the sum of the Group's equity stakes in gross wells.

2.1.12 Net productive and dry wells drilled

As of December 31, (number of wells)	2017			2016			2015		
	Net productive wells drilled (a)(b)	Net dry wells drilled (a)(c)	Net total wells drilled (a)(c)	Net productive wells drilled (a)(b)	Net dry wells drilled (a)(c)	Net total wells drilled (a)(c)	Net productive wells drilled (a)(b)	Net dry wells drilled (a)(c)	Net total wells drilled (a)(c)
Exploration									
Europe and Central Asia (excl. Russia)	0.1	1.8	1.9	1.1	1.0	2.1	1.0	4.6	5.6
Russia	-	-	-	-	-	-	-	-	-
Africa (excl. North Africa)	0.2	0.5	0.8	0.7	-	0.7	0.2	2.1	2.3
Middle East and North Africa	0.6	0.5	1.1	0.8	-	0.8	0.3	0.5	0.8
Americas	1.3	0.5	1.7	2.1	0.8	2.9	1.4	0.6	2.0
Asia-Pacific	1.2	0.7	1.9	1.6	-	1.6	2.0	0.9	2.9
TOTAL	3.4	4.0	7.4	6.3	1.8	8.1	4.9	8.7	13.6
Development									
Europe and Central Asia (excl. Russia)	8.8	-	8.8	13.6	0.5	14.1	15.7	0.4	16.1
Russia	21.5	-	21.5	18.7	-	18.7	22.9	-	22.9
Africa (excl. North Africa)	14.4	-	14.4	14.6	-	14.6	21.4	-	21.4
Middle East and North Africa	82.0	-	82.0	49.3	1.1	50.4	36.6	0.6	37.2
Americas	29.2	0.5	29.7	35.4	-	35.4	60.6	0.1	60.7
Asia-Pacific	132.4	-	132.4	151.0	-	151.0	86.9	-	86.9
TOTAL	288.3	0.5	288.8	282.6	1.6	284.2	244.1	1.1	245.2
TOTAL	291.7	4.5	296.2	288.9	3.4	292.3	249.0	9.8	258.8

(a) Net wells equal the sum of the Group's equity stakes in gross wells.

(b) Includes certain exploratory wells that were abandoned, but which would have been capable of producing oil in sufficient quantities to justify completion.

(c) For information: service wells and stratigraphic wells are not reported in this table.

2.1.13 Wells in the process of being drilled (including wells temporarily suspended)

As of December 31, (number of wells)	2017	
	Gross	Net ^(a)
Exploration		
Europe and Central Asia (excl. Russia)	6	1.9
Russia	-	-
Africa (excl. North Africa)	19	4.7
Middle East and North Africa	2	0.0
Americas	8	2.8
Asia-Pacific	5	1.9
TOTAL	40	11.3
Other wells^(b)		
Europe and Central Asia (excl. Russia)	16	5.2
Russia	61	15.2
Africa (excl. North Africa)	67	13.6
Middle East and North Africa	200	27.5
Americas	44	18.5
Asia-Pacific	809	201.5
TOTAL	1,197	281.5
TOTAL	1,237	292.8

(a) Net wells equal the sum of the Group's equity stakes in gross wells. Includes wells for which surface facilities permitting production have not yet been constructed. Such wells are also reported in the table "Number of net productive and dry wells drilled", above, for the year in which they were drilled.

(b) Other wells are developments wells, service wells, stratigraphic wells and extension wells.

2.1.14 Interests in pipelines

The table below sets forth the interests of the Group's entities⁽¹⁾ in TOTAL's main oil and gas pipelines as of December 31, 2017.

Pipeline(s)	Origin	Destination	(%) interest	Operator	Liquids	Gas
Europe and Central Asia						
Azerbaijan						
BTC	Baku (Azerbaijan)	Ceyhan (Turkey, Mediterranean)	5.00		X	
Norway						
Frostpipe (inhibited)	Lille-Frigg, Froy	Oseberg	36.25		X	
Heimdal to Brae Condensate Line	Heimdal	Brae	16.76		X	
Kvitebjorn Pipeline	Kvitebjorn	Mongstad	5.00		X	
Norpipe Oil	Ekofisk Treatment center	Teeside (United Kingdom)	34.93		X	
Oseberg Transport System	Oseberg, Brage and Veslefrikk	Sture	12.98		X	
Troll Oil Pipeline I and II	Troll B and C	Vestprosess (Mongstad refinery)	3.71		X	
Vestprosess	Kollsnes (Area E)	Vestprosess (Mongstad refinery)	5.00		X	
Polarled	Asta Hansteen/Linnorm	Nyhamna	5.11			X
Netherlands						
Nogat Pipeline	F3-FB	Den Helder	5.00			X
WGT K13-Den Helder	K13A	Den Helder	4.66			X
WGT K13-Extension	Markham	K13 (via K4/K5)	23.00			X
United Kingdom						
Alwyn Liquid Export Line	Alwyn North	Cormorant	100.00	X	X	
Bruce Liquid Export Line	Bruce	Forties (Unity)	43.25		X	
Central Graben Liquid Export Line (LEP)	Elgin-Franklin	ETAP	15.89		X	
Ninian Pipeline System	Ninian	Sullom Voe	16.00		X	
Shearwater Elgin Area Line (SEAL)	Elgin-Franklin, Shearwater	Bacton	25.73			X
SEAL to Interconnector Link (SILK)	Bacton	Interconnector	54.66	X		X
Africa (excl. North Africa)						
Gabon						
Mandji Pipes	Mandji fields	Cap Lopez Terminal	100.00 ^(a)	X	X	
Nigeria						
O.U.R	Obite	Rumuji	40.00	X		X
NOPL	Rumuji	Owaza	40.00	X		X
Middle East and North Africa						
Qatar						
Dolphin	North Field (Qatar)	Taweelah-Fujairah-Ain (United Arab Emirates)	24.50			X
Americas						
Argentina						
TGM	TGN	Uruguayana (Brazil)	32.68			X
Brazil						
TBG	Bolivia-Brazil border	Porto Alegre via São Paulo	9.67			X
TSB	Argentina-Brazil border (TGM) Porto Alegre	Uruguayana (Brazil) Canoas	25.00			X
Asia-Pacific						
Australia						
GLNG	Fairview, Roma, Scotia, Arcadia	GLNG (Curtis Island)	27.50			X
Myanmar						
Yadana	Yadana field	Ban-I Tong (Thai border)	31.24	X		X

(a) Interest of Total Gabon. The Group holds an interest of 58.28% in Total Gabon.

(1) Excluding equity affiliates, except for the Yadana and Dolphin pipelines.

2.2 Gas, Renewables & Power segment

The Gas, Renewables & Power segment carries the Group's ambition in low carbon activities through the development of downstream gas and renewable energies as well as the energy efficiency businesses.

The segment employs an integrated business model along the full gas and power value chain. The number of its clients is in strong growth, notably in B2C, following the acquisition of Lampiris in 2016.

2

> 900 MW_c of installed power capacity ⁽¹⁾ in 2017	15.6 Mt LNG volumes managed in 2017	\$0.4 B organic investments ⁽²⁾ in 2017	11,492 employees present	> 1.5 M sites, of which 2/3 are B2C sites
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2015 and 2016 data have been restated in line with the new Group organization fully effective since January 1, 2017 (refer to point 1.6.2 of chapter 1).

[REDACTED SECTION: CERTAIN TEXT HAS BEEN REDACTED.]

(1) In Group's equity stake.

(2) Organic investments = net investments, excluding acquisitions, divestments and other operations with non-controlling interests (refer to point 2.5.1 of this chapter).

2.2.1 Downstream gas and power

The activities of TOTAL in the gas business have a primary objective to contribute to the growth of the Group by ensuring market outlets for its current and future natural gas production.

Beyond the production and liquefaction of natural gas (refer to point 2.1.8 of this chapter) and in order to enhance the value of the Group's gas resources, the activities of Gas also include the trading and marketing of natural gas, which is sold either by pipeline or in the form of liquefied natural gas (LNG), liquefied petroleum gas (LPG) and electricity as well as shipping of LNG and LPG. The Group also has stakes in infrastructure companies (including regasification terminals, natural gas transportation and storage, and power plants) necessary to implement its strategy.

Finally, TOTAL aims to pursue the development of expertise in the power generation sector, especially through cogeneration and combined-cycle power plant projects, against a backdrop of increasing global demand for electricity.

2.2.1.1 Purchases, sales and shipping of LNG

A pioneer in the LNG industry, TOTAL is today one of the world's leading players⁽¹⁾ in the sector and has solid and diversified positions both in the upstream and downstream portions of the LNG chain.

LNG development is a key element of the strategy of the Group, which is strengthening its positions in most major production zones and markets.

Through its stakes in liquefaction plants located in Nigeria, Qatar, Australia, Norway, Oman, the United Arab Emirates, Yemen⁽²⁾, Angola and Russia, and its gas supply agreement with the Bontang plant in Indonesia, the Group markets LNG in all global markets. In 2017, the share of LNG production sold by TOTAL was 11.2 Mt compared to 11 Mt in 2016 and 10.2 Mt in 2015. The growth of LNG production sold by TOTAL over the coming years is expected to be ensured by the Group's liquefaction projects under construction in Australia and Russia and by projects currently under consideration, including new projects in Papua New Guinea and the United States and the expansion of the Nigeria LNG plant.

In November 2017, TOTAL signed an agreement with Engie relating to the planned acquisition of its portfolio of upstream LNG assets. This portfolio includes stakes in liquefaction plants (in particular, in the Cameron LNG project in the United States and in the first Idku train in Egypt), long-term LNG sale and purchase agreements, a fleet of LNG tankers and access rights to regasification terminals in Europe. The transaction remains subject to the legal process of informing and consulting the relevant employee representative bodies and approval by the competent authorities and partners on certain contracts. The transaction is expected to be finalized in mid-2018.

Since February 2017, TOTAL holds a stake in Tellurian Inc. (20.53% as of December 31, 2017), which aims to develop an integrated gas project, from low-cost gas production in the United States to the delivery of LNG to international markets, from the Driftwood LNG terminal. The terminal is in the technical design phase and a permit application was filed with the FERC (Federal Energy Regulation Commission) in March 2017.

Long-term Group LNG purchases and sales

TOTAL acquires long-term LNG volumes mainly from liquefaction projects in which the Group holds an interest, including Qatargas 2 (Qatar), Yemen LNG (Yemen), Nigeria LNG (Nigeria) and Snøhvit (Norway), or other projects like Sabine Pass (United States). These volumes support the expansion of the Group's worldwide LNG portfolio. Since 2009, a growing portion of the long-term volume purchased by the Group that was initially intended for delivery to North American and European markets has been diverted to more Asian growth markets.

New LNG sources are expected to support the growth of the Group's LNG portfolio, notably in Russia (Yamal LNG), Australia (Ichthys LNG) and the United States (train 5 of Sabine Pass LNG, Cameron LNG and Corpus Christi). Furthermore, the Group is developing new LNG markets by promoting LNG import infrastructure projects.

TOTAL has entered into several significant long-term agreements throughout the world for the sale of LNG from the Group's global LNG portfolio, notably in China, Indonesia, Japan, South Korea and Spain.

LNG shipping

As part of its LNG transport activities, TOTAL uses three long-term chartered LNG tankers: since 2006, the Arctic Lady, with a capacity of 145,000 m³; since 2011, the Meridian Spirit, with a capacity of 165,000 m³, primarily for the transport of volumes from Snøhvit in Norway; and, since the second half of 2017, the SK Audace, with a capacity of 180,000 m³. The SK Audace is chartered to fulfill TOTAL Gas & Power Limited's purchasing obligations in Australia and the United States. Two additional vessels will be delivered in 2018.

2.2.1.2 Trading

In 2017, TOTAL continued its downstream strategy from natural gas and LNG production by developing its trading, marketing and logistics activities. The aim of this strategy is to optimize access for the Group's current and future production to markets supplied on a long-term contractual basis and to markets open to international competition (with short-term contracts and spot sales).

The Group also has operations in electricity trading, marketing of LPG and petcoke and is also active in the marketing of sulfur. In 2016, the Group stopped its coal trading activities.

In **Mexico**, TOTAL has reserved 25% of the regasification capacity of the Altamira receiving terminal, *i.e.*, 59 Bcf/y (1.7 Bcm/y), through its 25% stake in Gas del Litoral.

In the **United States**, TOTAL has reserved a regasification capacity of approximately 353 Bcf/y (10 Bcm/y) in the Sabine Pass terminal (Louisiana) for a 20-year period until 2029. In 2012, TOTAL and Sabine Pass Liquefaction (SPL) signed agreements allowing SPL to gradually obtain access to TOTAL's reserved capacity. Access to 38 Bcf/y commenced in 2012, growing to 195 Bcf/y from the start-up of train 3 scheduled in 2017 and plateauing at substantially all of TOTAL's capacity from the start-up of train 5 scheduled in 2019. In return, SPL will pay TOTAL a fee linked to the capacity assigned.

The trading teams are located in London, Houston, Geneva and Singapore.

(1) Publicly available information: upstream and downstream LNG portfolios in 2017.

(2) The Yemen LNG plant has been shut down since April 2015. For more information, refer to point 2.1.8 of this chapter.

Gas and electricity

TOTAL is pursuing gas and electricity trading operations in Europe and North America in order to sell the Group's production and to supply the Group's marketing subsidiaries and other entities.

In **Europe**, TOTAL traded 883 Bcf (25 Bcm) of natural gas in 2017, compared to 887 Bcf (25.1 Bcm) in 2016 and 849 Bcf (24.0 Bcm) in 2015. The Group also traded 70.2 TWh of electricity in 2017, compared to 49.1 TWh in 2016 and 41.1 TWh in 2015, mainly from external sources.

In **North America**, TOTAL traded 426 Bcf (12.1 Bcm) of natural gas in 2017 from its own production or from external resources compared to 356 Bcf (10.1 Bcm) in 2016 and 441 Bcf (12.5 Bcm) in 2015.

LNG

TOTAL operates LNG trading activities through both spot sales and long-term contracts such as those described in point 2.2.2.1 above. Significant sale and purchase agreements have permitted appreciable development of the Group's activities in LNG trading, especially in the Asian markets (China, South Korea, India, Indonesia and Japan). The spot and long-term LNG portfolio allows TOTAL to supply gas to its main customers worldwide, while retaining a sufficient degree of flexibility to react to market opportunities.

In 2017, TOTAL purchased 59 contractual cargoes under long-term contracts from Qatar, Nigeria and Norway and 49 spot or medium-term cargoes, compared to, respectively, 51 and 19 in 2016 and 64 and 20 in 2015. Deliveries from Yemen LNG have been interrupted since April 2015.

LPG

In 2017, TOTAL traded more than 4.9 Mt of LPG (propane and butane) worldwide, compared to 5.3 Mt in 2016 and 5.8 Mt in 2015. Nearly 32% of these quantities came from fields or refineries operated by the Group. This trading activity was conducted by means of seven time-chartered vessels. In 2017, 241 voyages were necessary for transporting the negotiated quantities, including 156 journeys carried out by TOTAL's time-chartered vessels and 85 journeys by spot-chartered vessels.

Petcoke and sulfur

TOTAL has been trading petcoke produced since 2011 by the Port Arthur refinery in the United States. 1 Mt of petcoke were sold on the international market in 2017, compared to 1.1 Mt in 2016 and 1.1 Mt in 2015.

TOTAL began trading in 2014 petcoke from the Jubail refinery in Saudi Arabia. In 2017, 1.1 Mt were sold, compared to 890 kt in 2016 and 720 kt in 2015.

Petcoke is sold to cement producers and electricity producers mainly in India, as well as in Mexico, Brazil, other Latin American countries and Turkey.

In 2017, TOTAL sold 0.9 Mt of sulfur, mainly from its refineries' production, compared to 0.7 Mt in 2016.

2.2.1.3 Marketing

To optimize its position throughout the value chain and to leverage the synergies from the Group's other activities, TOTAL has been developing the business of marketing natural gas and electricity to end users. As part of its development strategy, TOTAL finalized in September 2016 the acquisition of Belgian company Lampiris, which is also present on the French market.

In the **United Kingdom**, TOTAL markets gas and electricity to the industrial and commercial segments through its subsidiary Total Gas & Power Ltd. In 2017, the volumes of gas sold were 151 Bcf (4.3 Bcm), compared to 143 Bcf (4.0 Bcm) in 2016 and 140 Bcf (4.0 Bcm) in 2015. Electricity sales were 9.1 TWh in 2017, compared to 7.4 TWh in 2016 and 6.0 TWh in 2015.

In **France**, TOTAL operates in the natural gas and electricity markets for industrial and commercial customers through its marketing subsidiary Total Énergie Gaz, the sales of which were 67 Bcf (1.9 Bcm) in 2017, compared to 77 Bcf (2.2 Bcm) in 2016 and 84 Bcf (2.4 Bcm) in 2015. Electricity sales were 0.9 TWh in 2017. TOTAL also operates on the domestic market in France through its subsidiary Total Spring (previously known as Lampiris France).

In **Germany**, Total Energie Gas GmbH, a marketing subsidiary of TOTAL, marketed 40 Bcf (1.2 Bcm) of gas in 2017 to industrial and commercial customers, compared to 31 Bcf (0.9 Bcm) in 2016 and 31 Bcf (0.9 Bcm) in 2015. Electricity sales were 0.3 TWh in 2017.

In the **Netherlands**, TOTAL operates in the natural gas and electricity markets for industrial and commercial customers through its subsidiary Total Gas & Power Nederland B.V. The volumes delivered in 2017 were 11 Bcf (0.3 Bcm). Electricity sales were 0.2 TWh in 2017.

In **Belgium**, TOTAL operates on the natural gas and electricity supply markets through its subsidiary Lampiris. The subsidiary operates in Belgium under the Lampiris brand for the domestic market and Total Gas & Power Belgium for industrial and commercial customers. TOTAL is the fourth-largest gas and electricity supplier on the Belgian market⁽¹⁾, with more than 319,000 gas metering points and more than 496,000 electricity metering points (B2B and B2C) at year-end 2017. In 2017, almost 26 Bcf (0.7 Bcm) of gas was delivered, and electricity sales were nearly 3.7 TWh.

In **Spain**, TOTAL markets natural gas to the industrial and commercial segments and electricity since 2017 through a dedicated subsidiary. The Group sold its 35% stake in Cepsa Gas Comercializadora during 2017 third quarter. In 2017, the volumes of gas sold were 14 Bcf (35% share equivalent to 0.4 Bcm), compared to 100 Bcf (2.8 Bcm) in 2016 and 105 Bcf (3.0 Bcm) in 2015.

In **Argentina**, the subsidiary Total Gas Marketing Cono Sur oversees the marketing of gas on behalf of Total Austral, the Group's production subsidiary in Argentina. In 2017, the volumes of gas sold were 147 Bcf (4.2 Bcm), compared to 142 Bcf (4.0 Bcm) in 2016 and 128 Bcf (3.6 Bcm) in 2015.

The Group also holds stakes in the marketing companies that are associated with the LNG regasification terminals located at Altamira in Mexico and Hazira in India.

(1) Source: Belgian national regulator statistics and benchmarks (CREG).

2.2.1.4 Gas facilities

Downstream from its natural gas and LNG production activities, TOTAL holds stakes in natural gas transport networks (refer to point 2.1.14 of this chapter) and LNG regasification terminals.

LNG regasification

TOTAL has entered into agreements to obtain long-term access to LNG regasification capacity worldwide: in the Americas (United States, Mexico and Brazil), Europe (France and the United Kingdom), Asia (India) and Africa (Côte d'Ivoire). This diversified market presence allows the Group to access new liquefaction projects by becoming a long-term buyer of a portion of the LNG produced, thereby consolidating TOTAL's LNG supply portfolio.

In **France**, TOTAL holds a 27.5% stake in the company Fosmax and has access to a regasification capacity of 78 Bcf/y (2.25 Bcm/y). The terminal received 55 vessels in 2017 compared to 54 in 2016 and 46 in 2015.

TOTAL holds a 9.99% stake in the Dunkerque LNG receiving terminal with a capacity of 459 Bcf/y (13 Bcm/y). Trade agreements have also been signed that allow TOTAL to reserve up to 2 Bcm/y of regasification capacity over a 20-year term. Commercial operations started on January 1, 2017. The terminal received 11 vessels in 2017.

In the **United Kingdom**, through its equity interest in the Qatargas 2 project, TOTAL holds an 8.35% stake in the South Hook LNG receiving terminal with a total capacity of 742 Bcf/y (21 Bcm/y) and an equivalent access right to the regasification capacity. The terminal received 32 cargoes in 2017, compared to 67 in 2016 and 84 in 2015.

In **India**, TOTAL holds a 26% stake in the Hazira receiving terminal, with a regasification capacity of 244 Bcf/y (6.9 Bcm/y). Located in the Gujarat state, this merchant terminal has operations covering both LNG regasification and gas marketing and received 45 vessels in 2017, compared to 60 in 2016 and 57 in 2015.

In **Côte d'Ivoire**, a consortium led by TOTAL (34%, operator) has been assigned responsibility for developing and operating a FSRU (Floating storage and regasification unit) LNG regasification terminal in Abidjan and a start-up scheduled in 2020.

In **Brazil**, as part of its strategic alliance with Petrobras, the definitive contracts of which were signed in February 2017, TOTAL expects to proceed with the acquisition from Petrobras of part of the regasification capacity at the Bahia LNG terminal.

Transportation and storage of natural gas

The Group holds stakes in several natural gas transportation companies located in **Brazil** and **Argentina**.

2.2.1.5 Power generation

In **Abu Dhabi**, the Taweelah A1 gas-fired power plant, which is owned by Gulf Total Tractebel Power Company (TOTAL, 20%), combines electricity generation and water desalination. The plant, in operation since 2003, currently has a net power generation capacity of 1,600 MW and a water desalination capacity of 385,000 m³ per day. The plant's production is sold to Abu Dhabi Water and Electricity Company (ADWEC) as part of a long-term agreement.

In **Brazil**, as part of its strategic alliance with Petrobras, TOTAL could proceed with the acquisition from Petrobras of a 50% interest in two co-generation plants located in the Bahia area.

2.2.1.6 End of coal production and trading

Following completion of the sale in 2015 of its subsidiary Total Coal South Africa, the Group ceased its coal production activities. In addition, the Group ended its coal trading activities in 2016.

2.2.2 Renewable energies and energy storage

As part of its ambition to become the responsible energy major, the Group is developing its activities in low-carbon and renewable energies businesses. Facing the challenge of climate change, TOTAL positions itself on an energy mix with decreasing carbon intensity that takes into account the Sustainable Development Scenario (2°C) of the IEA.

The Group is active along the entire solar photovoltaic value chain with SunPower and Total Solar, from the production of photovoltaic cells to the development of solar farms or the installation of solar facilities in the industrial/commercial and domestic segments.

In 2017, TOTAL maintained its policy of investing in low-carbon businesses by taking an indirect stake of 23% in EREN Renewable Energy. This company, which has been renamed Total Eren, will enable the Group to boost its development in solar energy and break into wind power.

In addition, the acquisition of Saft Groupe S.A. in 2016 has allowed the Group to become a leading player on the high technology batteries market, while examining the opportunity for development in stationary energy storage.

2.2.2.1 Renewable energies

In 2017, TOTAL set itself the goal of achieving 5 GW of renewable power production assets in five years, and it is implementing this growth through its three subsidiaries SunPower, Total Solar and Total Eren.

SunPower

TOTAL has held since 2011 a majority interest in SunPower (56.26% as of December 31, 2017), an American company listed on Nasdaq and based in California.

As an integrated player, SunPower operates over the entire photovoltaic solar power value chain. Upstream, it designs, manufactures and supplies highly-efficient cells and panels that are among the best-performing on the market. Downstream, SunPower is mainly active in distributed generation (domestic, industrial and commercial).

SunPower had a cell production capacity of almost 1,200 MW/y at year-end 2017. The cells are assembled into solar panels in plants located mainly in Mexico and France. To enlarge its commercial offering, SunPower has marketed since 2016 a new range of panels to target the most competitive market sectors while continuing to hold a technological edge over its competitors. Currently, SunPower is finalizing the development of the next generation of its highly efficient technology, which significantly reduces costs while retaining the best performance on the market.

SunPower markets its panels worldwide for applications ranging from residential and commercial roof tiles to solar power plants.

In 2017, the photovoltaic market remained very dynamic, with estimated growth of +30% of newly installed capacities⁽¹⁾.

SunPower installed more than 1.4 GW in 2017 compared to 1.3 GW in 2016 and 1.2 GW in 2015. In 2017, SunPower completed the construction of the El Pelicano solar farm in Chile (111 MWp) and the Gala solar farm in the United States (69 MWp).

SunPower is one of the leading players in the United States on the residential, industrial and commercial rooftop markets, and is developing smart energy offerings (a combination of photovoltaic solar power, storage and other services) and flexible products opening the way for new applications (easy to install ultra-light panels that can be used on all buildings, etc.).

SunPower held, as of December 31, 2017, a 36.5% stake in the company 8point3 Energy Partners, initially set up with its American partner First Solar. In April 2017, First Solar announced its intention to sell its shares in the company. In early 2018, First Solar and SunPower have agreed to sell their stake in 8point3 Energy Partners, to energy investment firm Capital Dynamics, Inc., which has already an existing portfolio of solar and wind assets. The transaction could be completed in the second or third quarter of 2018 subject to conditions precedents being met and regulatory authorizations obtained.

At the end of 2017 in the United States, the International Trade Commission (ITC) acknowledged that the import of low-priced panels from Asia was detrimental to certain companies in the sector (Suniva and Solar World) and recommended that customs barriers be set up on all imports, in the form of tariffs or quotas. On January 23, 2018, the American administration decided to set custom tariffs on polysilicium imported cells or panels. The tariff is 30% on the first year and will decrease by 5% per year during the three following years. However, such tariff shall apply only when a 2.5 GW annual importation quota is reached.

Total Solar

Since 2017, Total Solar, a wholly-owned subsidiary of the Group, conducts TOTAL's own solar development activities with a view to accelerating growth in the downstream portion of the value chain and increasing solar electricity sales.

Total Solar is focused on two market segments:

- decentralized photovoltaic systems aimed at industrial or commercial customers (B2B) entering into private PPAs (power purchase agreements); and
- ground-mounted solar power plants in targeted geographical areas such as Europe, the Middle East, Japan and South Africa.

Total Solar has an installed capacity of 300 MWp (100% equivalent) with the following assets: Shams in Abu Dhabi (20%, total capacity 110 MWp), PV Salvador in Chile (20%, total capacity 70 MWp), Prieska in South Africa (27%, total capacity 86 MWp), Nanao in Japan (39%, total capacity 27 MWp) and La Mède in France (100%, total capacity 7 MWp). Total Solar aims to increase installed capacity by approximately 30% in 2018.

Total Eren

In September 2017, TOTAL announced that it had signed an agreement with EREN Renewable Energy that will enable the Group to accelerate its development in renewable power generation. Under the agreement, TOTAL holds, since December 2017, an indirect stake of 23% in this company, and the Group may take control of it after a period of five years. EREN Renewable Energy has been renamed Total Eren.

Total Eren owns a diversified set of assets (mainly in solar and wind power) representing a gross installed capacity of 650 MW in operation or under construction around the world. Its aim is to reach an overall installed capacity of more than 3 GW worldwide by 2023.

This acquisition thus supplements the Group's portfolio of businesses in the renewable energy sector, particularly solar, where Total Eren's priority strategy will be growth in emerging countries with abundant solar resources and increasing demand for electricity, enabling high project profitability.

New solar technologies

In order to strengthen its technological leadership in the crystalline silicon value chain, and in addition to its R&D cooperation with SunPower, TOTAL partners with leading laboratories and international research institutes. This work consists of developing and optimizing the photovoltaic solar power chain (from cells through to power systems and including modules) by reducing production costs and increasing the efficiency and reliability of components. The Group is also strengthening its expertise in solar resource and panel capacity evaluation and prediction.

TOTAL is one of the founders and key partners of the Ile-de-France Photovoltaic Institute (IPVF), which began operations in 2018.

Downstream, TOTAL is continuing its research efforts on new generations of energy management and control systems for commercial applications in particular, in order to differentiate the Group entities' offerings on the electric market and to lower the cost of energy consumed for customers.

2.2.2.2 Energy storage

Energy storage is a major challenge for the future of power grids and a vital accompaniment to renewable energies, which is intermittent by nature. Large-scale electricity storage is essential to promote the growth of renewables and enable them to make up a significant share of the electricity mix.

The acquisition of 100% of the shares of Saft Groupe S.A. ("Saft"), completed in August 2016 following a successful voluntary takeover bid, is fully in line with TOTAL's goal to develop in low-carbon businesses, particularly renewable energies.

Saft is a French company founded in 1918 specializing in the design, manufacture and marketing of high technology batteries for industry. In 2017, Saft achieved sales of €744 million.

Saft develops nickel and primary lithium batteries for industrial infrastructure, transport and civil and military electronics applications. It also develops batteries for space and defense using its lithium-ion technologies, which are also deployed in the field of energy storage. Building on its technological expertise, Saft is well positioned to benefit from growth in renewable energies beyond its current activities.

(1) Source: BNEF.

As of year-end 2017, Saft is present in 18 countries (historically in Europe and the United States) and has over 4,000 employees. It is achieving steady growth in emerging countries, in particular in Asia,

South America and Russia, and has 14 production sites and approximately 30 sales offices.

2.2.3 Innovation and energy efficiency

2.2.3.1 Energy efficiency services

The energy efficiency services market is expected to see strong growth in the coming years. As a result, the Group is investing in this market, with the aim of helping customers optimize their consumption and emissions and choose between the best sources.

In October 2017, the Group finalized the acquisition of GreenFlex, a French company founded in 2009 that has over 600 customers. GreenFlex employs around 200 people and recorded sales of €358.6 million at year-end 2017, compared to €235.5 million at year-end 2016.

This acquisition enables the Group to speed up the development of its offerings on the energy efficiency market, alongside the growth of its subsidiaries BHC Energy (France) and Tenag (Germany).

It is fully in line with the Group's strategy for growth in the energy performance sector, in priority in five major European countries (France, Germany, Belgium, the Netherlands and the United Kingdom).

The Group offers its customers integrated solutions (products and services) for responsible energy use. Due to the expertise of its subsidiaries GreenFlex, BHC and Tenag, it is able to provide services to improve energy and environmental performance to industrial, commercial and service companies, mainly in Europe but also in Africa and the Middle East on an ad hoc basis. The services offered include energy strategy analysis and consulting, support for implementing actions to improve energy and environmental performance, engineering, installation and funding of assets that contribute to energy efficiency, as well as the supply of digital solutions for monitoring and controlling energy consumption and production and environmental impacts.

2.2.3.2 Total Energy Ventures

Through its venture capital company Total Energy Ventures (TEV), the Group supports the development of companies that offer technologies or innovative business models in areas such as renewable energies, energy efficiency and flexibility management, energy storage, sustainable mobility, etc.

For example, in 2017, TEV acquired a stake in two sustainable mobility companies, Xee, an open platform for the collection, processing and management of data transmitted by connected cars, and Ontruck, a platform that optimizes the transport of goods by road.

TEV also operates through independent investment funds. An example of this is the investment fund managed by the Oil and Gas Climate Initiative (OCGI), an organization that brings together 10 of the world's biggest gas and oil operators with the aim of sharing experiences, promoting progress in technical solutions and acting as a catalyst for important actions to support changes in the energy mix while taking into account the challenges of climate change. TOTAL is

one of the founders and governing members of the organization. In 2017, the OGCI Climate Investments fund, which has access to \$1 billion over 10 years, made its first investments in the priority areas of large-scale carbon capture, storage and valuation, reducing methane emissions along the entire gas value chain, and improving energy efficiency in both transportation and industry. In 2017, the fund's investments included in particular a project that aims to design a large-scale gas-fired power plant with CO₂ capture and storage, the start-up Achates Power, which is developing innovative engines capable of significantly reducing the greenhouse gas emissions produced by vehicles, and the start-up Solidia Technologies, which is developing an innovative cement that uses CO₂ instead of water to set concrete.

2.2.3.3 Carbon capture, use and storage (CCUS)

With a view to promoting a new industry in the field of carbon capture, utilization and storage, the Group is examining the possibility of developing new businesses to enable its industrial, domestic or electricity producing customers to capture, store, utilize or neutralize their CO₂ emissions.

TOTAL considers CCUS to be one of the key factors in combating global warming, and is particularly interested in the emerging carbon capture, utilization and storage value chain and the development of new commercial and industrial models related to this.

The Group intends to participate directly or indirectly (via the OGCI fund in particular) in large-scale pilot projects in this area. In October 2017, TOTAL thus commenced studies with Statoil and Shell for the development of the storage phase of the world's first industrial and commercial project for the capture, transport and storage of 1.5 Mt of CO₂/y emitted by three industrial sites in the Oslo region (Norway).

2.2.3.4 Access to energy

First launched in four pilot countries in 2011, TOTAL's solar solutions for access to energy were distributed in 45 countries by 2017. By the end of 2017, 2.3 million lamps and solar kits had been sold, improving the day-to-day lives of nearly 10 million people. The distribution channels used are both TOTAL's traditional networks (service stations) and "last mile" networks built with local partners to bring these solutions to isolated areas. Reseller networks are then set up and economic programs developed with the support of external partners to recruit and train young solar resellers.

The model is based on innovative partnerships with various stakeholders: in 2017, approximately 50 business partnerships were launched with such varied stakeholders as NGOs, development agencies, professional customers (retailers, TOTAL key account customers, etc.), telecommunications operators or international organizations.

2.3 Refining & Chemicals segment

Refining & Chemicals is a large industrial segment that encompasses refining, base petrochemicals (olefins and aromatics), polymer derivatives (polyethylene, polypropylene, polystyrene and hydro-

carbon resins), the transformation of biomass and the transformation of elastomers (Hutchinson). This segment also includes the activities of Trading & Shipping.

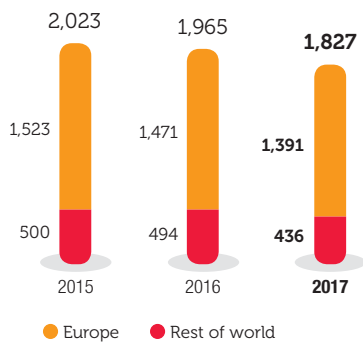
<p>Among the world's 10 largest integrated producers⁽¹⁾</p>	<p>Refining capacity of 2.0 Mb/d at year-end 2017</p>	<p>One of the leading traders of oil and refined products worldwide</p>	<p>\$1.6 billion of organic investments⁽²⁾ in 2017</p>	<p>47,985 employees present</p>
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2015 and 2016 data have been restated in line with the new Group organization fully effective since January 1, 2017 (refer to point 1.6.2 of chapter 1).

Refinery throughput^(a)

[REDACTED SECTION: CERTAIN TEXT HAS BEEN REDACTED.]

(Kb/d)



(a) Includes share of TotalErg (sold in 2018), as well as refineries in Africa and the French Antilles (sold in 2015) that are reported in the Marketing & Services segment.

Refinery throughput decreased by 7% for the full-year 2017 compared to 2016 as a result of the definitive ending of distillation capacity at La Mède (France) and Lindsey (UK) and the temporary shutdown of the Port Arthur refinery in the US due to Hurricane Harvey.

(1) Based on publicly available information, production capacities at year-end 2016.

(2) Organic investments = net investments, excluding acquisitions, divestments and other operations with non-controlling interests (refer to point 2.5.1 of this chapter).

2.3.1 Refining & Chemicals

Refining & Chemicals includes refining, base petrochemicals (olefins and aromatics), polymer derivatives (polyethylene, polypropylene, polystyrene and hydrocarbon resins), biomass conversion and elastomer processing (Hutchinson). The electroplating chemistry (Atotech) and adhesives (Bostik) activities were sold in 2017 and 2015, respectively.

The volume of its Refining & Chemicals activities places TOTAL among the top 10 integrated chemical producers in the world⁽¹⁾.

The strategy of Refining & Chemicals integrates a constant requirement of safety, a core value of the Group and priority given to respect of the environment. In a context of rising worldwide demand for oil and petrochemicals driven by non-OECD countries and the entry of new capacities into the market, the strategy involves:

- improving competitiveness of refining and petrochemicals activities by making optimal use of industrial means of production and concentrating investments on large integrated platforms;
- developing petrochemicals in the United States and the Middle East by exploiting the proximity of cost-effective oil and gas resources in order to supply growth markets, in particular Asia; and
- innovating in low-carbon solutions/products by developing biofuels and biopolymers as well as materials and solutions contributing to the energy efficiency of the Group's customers, in particular in the automotive market.

2.3.1.1 Refining and petrochemicals

TOTAL's refining capacity was 2,021 kb/d as of December 31, 2017, compared to 2,011 kb/d at year-end 2016 and 2,247 kb/d at year-end 2015. TOTAL has equity stakes in 18 refineries (including 9 operated by companies of the Group), located in Europe, the Middle East, the United States, Asia and Africa⁽²⁾.

The Refining & Chemicals segment manages refining operations located in Europe, the Middle East, the United States, Asia and Africa⁽³⁾ with a capacity of 1,977 kb/d at year-end 2017, *i.e.*, 98% of the Group's total capacity.

The petrochemicals businesses are located mainly in Europe, the United States, Qatar, South Korea, Saudi Arabia and the United Arab Emirates. Most of these sites are either adjacent to or connected by pipelines to Group refineries. As a result, TOTAL's petrochemical operations are integrated within its refining operations, thereby maximizing synergies.

Between 2011 and 2016, the Group reduced its production capacities in Europe by 20%, thereby fully meeting the target it had set itself for 2017. In addition, 2017 saw the completion of the major investment project launched in 2013 on the Antwerp platform in Belgium with the aim of improving the site's conversion rate and increasing the flexibility of the steam crackers, as well as the continuation of the project to convert the La Mède refinery to a bio-refinery.

Activities by geographical area

Europe

TOTAL is the second largest refiner in Western Europe⁽⁴⁾.

Western Europe accounts for 72% of the Group's refining capacity, *i.e.*, 1,454 kb/d at year-end 2017, same as at year-end 2016 and 1,699 kb/d at year-end 2015, in line with the Group's target of reducing capacity in Europe.

The Group operates eight refineries in Western Europe (one in Antwerp, Belgium, five in France in Donges, Feyzin, Gonfreville, Grandpuits and La Mède, one in Immingham in the United Kingdom and one in Leuna, Germany) and owns a stake in the Vlissingen refinery (Zeeland) in the Netherlands. In the 1st quarter of 2018, the Group sold its stake in TotalErg, which held a stake in the Trecate refinery in Italy.

The Group's main petrochemical sites in Europe are located in Belgium, in Antwerp (steam crackers, aromatics, polyethylene) and Feluy (polyolefins, polystyrene), and in France, in Carling (polyethylene, polystyrene, polypropylene compounds), Feyzin (steam cracker, aromatics), Gonfreville (steam crackers, aromatics, styrene, polyolefins, polystyrene) and Lavéra (steam cracker, aromatics, polypropylene). Europe accounts for 48% of the Group's petrochemicals capacity, *i.e.*, 10,293 kt at year-end 2017, compared to 10,383 kt at year-end 2016 and 10,394 kt at year-end 2015:

- In **France**, the Group continues to improve its operational efficiency against the backdrop of stagnation in the demand for petroleum products in Europe.

In 2017, TOTAL continued the significant modernization plan announced in April 2015 for its refining facilities in France, in particular at La Mède, with an investment decision made in 2015 for around €275 million to transform the site and in particular create the first bio-refinery in France. The first step relating to this investment took place at the end of 2016 when the treatment of crude oil was ended. The industrial transformation of La Mède is expected to allow TOTAL to respond to the growing demand for biofuel in Europe as from the second half of 2018. Other activities, such as a logistics and storage platform, a solar energy farm and a training center were developed on the site in 2017, and an AdBlue⁽⁵⁾ production plant is expected to be completed in 2018.

In Donges, the €400 million investment project for the construction of intermediate feedstock desulfurization units and hydrogen production units is being considered. This program requires the re-routing of the railroad track that currently crosses the refinery. A three-party memorandum of intent to fund this re-routing work between the state, local authorities and TOTAL was signed at the end of 2015. Work on the project is expected to begin in 2018.

In petrochemicals, the Group reconfigured the Carling platform in Lorraine. Steam cracking ended in October 2015 and new hydrocarbon resin and compound polypropylene production units were commissioned in 2016.

(1) Based on publicly available information, refining and petrochemicals production capacities at year-end 2016.

(2) In the 1st quarter of 2018, the Group sold its stake in TotalErg, which held a stake in the Trecate refinery in Italy.

(3) Earnings related to certain refining assets in Africa and to the TotalErg joint venture (sold during the 1st quarter of 2018) are integrated in the results of the Marketing & Services segment.

(4) Based on publicly available information, 2016 refining capacities.

(5) Fuel additive intended for road transport and designed to lower nitrogen oxide (NOx) compound emissions.

- In **Germany**, TOTAL operates the Leuna refinery (100%), where a new benzene extraction unit (approximately 60 kt/y) started up in late 2017. In 2015, the Group completed the sale of its stake in the Schwedt refinery (16.7%) and acquired a majority stake in Polyblend, a manufacturer of polyolefin compounds that are mainly used in the automotive industry.
- In **Belgium**, the Group launched a major project in 2013 to modernize its Antwerp platform, which started up in late 2017, with:
 - new conversion units in response to the shift in demand towards lighter petroleum products with a very low sulfur content, and
 - a new unit to convert part of the combustible gases recovered from the refining process into raw materials for the petrochemical units.

In addition, the Group has developed a project to enable greater flexibility on one of the steam-cracking units and has thus been processing European ethane since May 2017;
- In the **United Kingdom**, TOTAL decreased the capacity of the Lindsey refinery by half in 2016, reducing it to 5.5 Mt/y. The investment plan also focuses on improving the conversion ratio, adapting logistics and simplifying the refinery's organization, thereby lowering the site's break-even point.

North America

The Group's main sites in North America are located in Texas, at Port Arthur (refinery, steam cracker), Bayport (polyethylene) and La Porte (polypropylene), and in Louisiana, at Carville (styrene, polystyrene).

At Port Arthur, TOTAL holds at the same site a 100% interest in a 178 kb/d capacity refinery and a 40% stake in BASF Total Petrochemicals (BTP), which has a condensate splitter and a steam cracker. The Group continues to work on strengthening the synergies between these two plants.

A pipeline connecting the Port Arthur refinery to the Sun terminal in Nederland was commissioned in 2014 to facilitate access to all domestic crudes, which are priced advantageously compared to the international market. Following investments to adapt its furnaces and the construction of a 10th ethane furnace, which was commissioned in 2014, BTP's cracker can produce more than 1 Mt/year of ethylene, including more than 85% from ethane, propane and butane, which are produced in large quantities locally.

Finally, in partnership with Borealis and Nova, TOTAL started construction in 2017 of a new ethane cracker with an ethylene production capacity of 1 Mt/y on the Port Arthur site for an investment of \$1.7 billion. The partners in the joint venture (TOTAL, 50%) are also considering the development of a new polyethylene unit downstream of the cracker, in addition to the capacities of the Bayport site, so that it has operations all along the value chain. This integrated development will make it possible to maximize the synergies with the existing assets at Port Arthur and Bayport.

Asia, the Middle East and Africa

TOTAL is continuing to expand in growth areas and is developing sites in countries with favorable access to raw materials. The Group has first-rate platforms in these markets, which are ideally positioned for growth.

- In **Saudi Arabia**, TOTAL has a 37.5% stake in the company SATORP (Saudi Aramco Total Refining and Petrochemical Company), which operates the Jubail refinery. It has been fully operational since mid-2014 and technical and financial completions were reached in June 2016. This refinery, which has an initial capacity of 400 kb/d and is situated close to Saudi Arabia's heavy crude oil fields, should have its capacity increased by 10% following the debottlenecking realized in early 2018 during its first major shutdown. The refinery's configuration enables it to process these heavy crudes and sell fuels and other light products that meet very strict specifications and are mainly intended for export. The refinery is also integrated with petrochemical units: a 700 kt/y paraxylene unit, a 200 kt/y propylene unit, and a 140 kt/y benzene unit.
- In **China**, TOTAL holds a 22.4% stake in WEPEC, a company that operates a refinery located in Dalian. Discussions are underway to sell this stake to the Chinese partners of the joint venture.

The Group is also active through its polystyrene plant in Foshan in the Guangzhou region and its polystyrene plant in Ningbo in the Shanghai region, each with a capacity of 200 kt/y.

- In **South Korea**, TOTAL has a 50% stake in Hanwha Total Petrochemicals Co., Ltd. (HTC), which operates a petrochemical complex in Daesan (condensate splitter, steam cracker, styrene, paraxylene, polyolefins). Following the launch in 2014 of new aromatics (paraxylene and benzene) and polymer units (EVA2), HTC continued to expand its activities and the steam cracker now has an ethylene production capacity of 1.1 Mt/y and a styrene production capacity of 1.1 Mt/y. The EVA2 and ARO2 units were debottlenecked in 2016 and 2017 respectively. In 2017, the Group benefited from these investments in a favorable economic environment. In addition, investments totaling more than \$750 million were approved in 2017 to increase the ethylene production capacity by 30% and the polyethylene production capacity by more than 50%.
- In **Qatar**, the Group holds interests⁽¹⁾ in two ethane-based steam crackers (Qapco, Ras Laffan Olefin Cracker-RLOC) and four polyethylene lines (Qapco, Qatofin), including the Qatofin linear low-density polyethylene plant in Messaied with a capacity of 550 kt/y and a 300 kt/y low-density polyethylene line operated by Qapco, which started up in 2012. The Group is considering the debottlenecking of these sites to leverage the available supply of ethane in the region.

TOTAL holds a 10% stake in the Ras Laffan condensate refinery, the capacity of which increased to 300 kb/d following completion of the project to double the refinery's capacity; the new facilities were commissioned in late 2016.

- In the **United Arab Emirates**, TOTAL has a 33.3% stake in ADNOC Fertilizers, which operates a plant producing 2 Mt/y of urea in Ruwais.

In **Africa**, the Group holds interests in four refineries (Cameroon, Côte d'Ivoire, Senegal, South Africa) after the sale of its interest in the refinery in Gabon in 2016. Refining & Chemicals provides technical assistance for two of these refineries: the Natref refinery with a capacity of 109 kb/d in South Africa and the SIR refinery with a capacity of 80 kb/d in Côte d'Ivoire.

(1) TOTAL shareholdings: Qapco (20%); Qatofin (49%); RLOC (22.5%).

Crude oil refining capacity

The table below sets forth TOTAL's crude oil refining capacity^(a):

As of December 31, (kb/d)	2017	2016	2015
Nine refineries operated by Group companies			
Normandy-Gonfreville (100%)	253	253	247
Provence-La Mède (100%)	– ^(b)	– ^(b)	153
Donges (100%)	219	219	219
Feyzin (100%)	109	109	109
Grandpuits (100%)	101	101	101
Antwerp (100%)	338	338	338
Leuna (100%)	227	227	227
Lindsey-Immingham (100%)	109	109	207
Port Arthur (100%) and BTP (40%) ^(c)	202	202	198
SUBTOTAL	1,558	1,558	1,799
Other refineries in which the Group has equity stakes ^(d)	463	453	448
TOTAL	2,021	2,011	2,247

(a) Capacity data based on crude distillation unit stream-day capacities under normal operating conditions, less the average impact of shutdowns for regular repair and maintenance activities.

(b) Crude oil processing stopped indefinitely at the end of 2016.

(c) The condensate splitter held by the joint venture between TOTAL 40% and BASF 60% located in Port Arthur refinery has been taken into account since end 2015.

(d) TOTAL's share as of December 31, 2017 in the 10 refineries in which it has equity stakes ranging from 7% to 55% (one each in the Netherlands, China, Korea, Qatar, Saudi Arabia and Italy and four in Africa). In addition to the sale of its participation in the Schwedt refinery in November 2015 and to the sale of its 50% stake in Société Anonyme de la Raffinerie des Antilles (SARA) in Martinique in May 2015, TOTAL completed in December 2016 the sale of its stake in the SOGARA refinery in Gabon. In 2017, TOTAL also sold a portion of its interests in the SIR refinery in Côte d'Ivoire and SAR refinery in Senegal. In addition, the condensate splitter of Daesan in Korea has been taken into account since end 2015, for a capacity of 79 kb/d (in TOTAL share of 50%).

Refined products

The table below sets forth by product category TOTAL's net share^(a) of refined quantities produced at the Group's refineries:

(kb/d)	2017	2016	2015
Gasoline	283	324	346
Aviation fuel ^(b)	196	182	190
Diesel and heating oils	726	795	825
Heavy fuels	115	140	131
Other products	438	430	439
TOTAL	1,758	1,871	1,931

(a) For refineries not 100% owned by TOTAL, the production shown is TOTAL's equity share in the site's overall production.

(b) Avgas, jet fuel and kerosene.

Utilization rate

The tables below set forth the average utilization rates of the Group's refineries:

	2017	2016	2015
On crude and other feedstock ^{(a)(b)}	91%	87%	88%
On crude ^{(a)(c)}	88%	85%	86%

- (a) Including equity share of refineries in which the Group has a stake.
 (b) Crude + crackers' feedstock/distillation capacity at the beginning of the year.
 (c) Crude/distillation capacity at the beginning of the year.

Petrochemicals: breakdown of TOTAL's main production capacities

As of December 31, (in kt)	2017				2016	2015
	Europe	North America	Asia and Middle East ^(a)	Worldwide	Worldwide	Worldwide
Olefins ^(b)	4,283	1,525	1,571	7,378	7,468	7,433
Aromatics ^(c)	2,903	1,512	2,494	6,909	6,844	6,783
Polyethylene	1,120	445	792	2,357	2,338	2,338
Polypropylene	1,350	1,200	400	2,950	2,950	2,950
Polystyrene	637	700	408	1,745	1,745	1,745
Other ^(d)	-	-	63	63	63	63
TOTAL	10,293	5,382	5,727	21,401	21,407	21,312

- (a) Including interests in Qatar, 50% of Hanwha Total Petrochemicals Co. Ltd. and 37.5% of SATORP in Saudi Arabia.
 (b) Ethylene + propylene + butadiene.
 (c) Including monomer styrene.
 (d) Mainly monoethylene glycol (MEG) and cyclohexane.

Developing new avenues for the production of fuels and polymers

TOTAL is exploring new ways to monetize carbon resources, conventional or otherwise (natural gas, biomass, waste). These projects are part of the Group's commitment to building a diversified energy mix generating lower CO₂ emissions.

Regarding biomass development, TOTAL is pursuing several industrial and exploratory projects. The scope of these developments is broad since they entail defining access to the resource (nature, sustainability, location, supply method, transport), the nature of the molecules and target markets (fuels, petrochemicals, specialty chemicals) and the most appropriate, efficient and environmentally friendly conversion processes.

Biomass to fuels

In Europe, TOTAL produces biofuels, notably hydrotreated vegetable oils (HVO) for incorporation into diesel, and ether produced from ethanol and isobutene (ETBE) for incorporation into gasoline.

As part of the La Mède refinery transformation program announced in 2015, the Group will build the first bio-refinery in France. Work began in 2017 with a view to reaching a production capacity of almost 500 kt/y of biofuel, mainly high-quality biodiesel (HVO), but also biojet and petrochemical bio-feedstocks. This will therefore allow the La Mède plant to meet the growing biofuel market.

TOTAL engaged in extensive research activity in 2017, which targeted the emergence of new biofuel solutions. The BioTFuel consortium's construction of a pilot demonstration unit on the Dunkirk site led to the commencement in 2017 of a gasification test program for synthesis of biomass into fungible, sulfur-free fuels.

Biomass to polymers

TOTAL is actively involved in developing activities associated with the conversion of biomass to polymers. The main area of focus is developing drop-in solutions for direct substitutions, by incorporating biomass into the Group's existing units, for example HVO or other hydrotreated vegetable oil co-products in a naphtha cracker, and developing the production of new molecules such as polylactic acid polymer (PLA) from sugar. In 2017, the Group thus set up a joint venture with Corbion for the production and marketing of PLA from a site in Thailand containing existing lactide units and PLA units under construction.

Biotechnologies and the conversion of biomass

TOTAL is exploring a number of opportunities for developing biomass and has launched numerous collaborative R&D projects for the development of bio-sourced molecules with various academic partners (the Joint BioEnergy Institute in the United States, the University of Wageningen in the Netherlands and the Toulouse White Biotechnology consortium) and industrial partners (Amyris Inc. and Novogy in the United States). In addition, TOTAL holds an interest in Amyris Inc. (approximately 11% as of December 31, 2017), an American company listed on Nasdaq.

Via its R&D platform at Solaize (France), TOTAL is developing new biocomponents by implementing predictive retrosynthesis methodologies.

In the longer term, the Group is also studying the potential for developing a cost-effective phototrophic process for producing biofuels through bioengineering of microalgae and microalgae cultivation methods. It has several European partners in this field (CEA, Wageningen).

2.3.1.2 Elastomer processing (Hutchinson)

Hutchinson actively contributes to the mobility of the future by addressing its customers' needs (automotive, aerospace and major industries – defense, rail, energy) in order to offer a greater level of safety, comfort and energy performance, as well as more responsible solutions.

The company draws on wide-ranging expertise and deploys its know-how from the custom design of materials to the integration of

connected solutions: structural sealing solutions, precision sealing, management of fluids, materials and structures, anti-vibration systems and transmission systems.

To serve its customers, Hutchinson had 88 production sites across the world (of which 55 are located in Europe and 18 in North America) and 35,860 employees at December 31, 2017.

2.3.2 Trading & Shipping

The activities of Trading & Shipping are focused on serving the Group's needs, and notably include:

- selling and marketing the Group's crude oil production;
- providing a supply of crude oil for the Group's refineries;
- importing and exporting the appropriate petroleum products for the Group's refineries to be able to adjust their production to the needs of local markets;
- chartering appropriate ships for these activities; and
- undertaking trading on various derivatives markets.

In addition, with its acquired expertise, Trading & Shipping is able to extend its scope beyond the aforementioned activities.

Trading & Shipping conducts its activities worldwide through various wholly-owned subsidiaries established on strategically important oil markets in Europe, Asia and North America.

2.3.2.1 Trading

In 2017, oil prices dipped during the first half of the year before rallying in the second part of the year, resulting in backwardation⁽¹⁾ structures on most oil indexes. TOTAL is one of the world's largest traders of crude oil and petroleum products on the basis of volumes traded. The table below presents Trading's worldwide crude oil sales and supply sources and petroleum products sales for each of the past three years. Trading of physical volumes of crude oil and petroleum products amounted to 6.1 Mb/d in 2017, compared to 5.6 Mb/d in 2016 and to 5.2 Mb/d in 2015.

Trading's crude oil sales and supply and petroleum products sales^(a)

(kb/d)	2017	2016	2015
Group's worldwide liquids production	1,346	1,271	1,237
Purchased from Exploration & Production	1,120	1,078	935
Purchased from external suppliers	2,870	2,444	2,336
TOTAL OF TRADING'S CRUDE SUPPLY	3,990	3,522	3,271
Sales to Refining & Chemicals and Marketing & Services segments	1,527	1,590	1,668
Sales to external customers	2,463	1,932	1,603
TOTAL OF TRADING'S CRUDE SALES	3,990	3,522	3,271
PETROLEUM PRODUCTS SALES BY TRADING	2,154	2,105	1,961

(a) Including condensates.

Trading operates extensively on physical and derivatives markets, both organized and over the counter. In connection with its Trading activities, TOTAL, like most other oil companies, uses derivative energy instruments (futures, forwards, swaps and options) with the aim of adjusting its exposure to fluctuations in the price of crude oil and petroleum products. These transactions are entered into with a wide variety of counterparties.

For additional information concerning derivatives transactions by Trading & Shipping, see Note 16 (Financial instruments related to commodity contracts) to the Consolidated Financial Statements (refer to point 8.7 of chapter 8).

All of TOTAL's Trading activities are subject to strict internal controls and trading limits.

(1) Backwardation is the price structure where the prompt price of an index is higher than the future price.

2.3.2.2 Shipping

The transportation of crude oil and petroleum products necessary for the activities of the Group is coordinated by Shipping. These requirements are fulfilled through the balanced use of spot and time-charter markets. Additional transport capacity can also be used to transport third-party cargo. Shipping maintains a rigorous safety policy, mainly through a strict selection of chartered vessels.

In 2017, Shipping chartered approximately 3,000 voyages (slightly higher than 2016 and 2015) to transport 133 Mt of crude oil and

petroleum products, compared to 131 Mt in 2016 and 126 Mt in 2015. On December 31, 2017, the mid- and long-term chartered fleet amounted to 59 vessels (including 7 LPG vessels), compared to 59 in 2016 and 55 in 2015. Shipping only charters vessels satisfying the best international standards and the average age of the fleet is approximately seven years.

Like a certain number of other oil companies and ship owners, the Group uses freight rate derivative contracts to adjust Shipping's exposure to freight rate fluctuations.

2

2.4 Marketing & Services segment

The Marketing & Services segment includes worldwide supply and marketing activities of oil products and services.

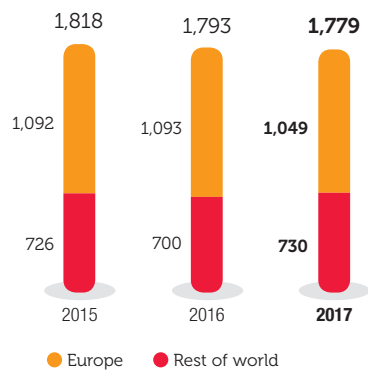


2015 and 2016 data have been restated in line with the new Group organization fully effective since January 1, 2017 (refer to point 1.6.2 of chapter 1).

2017 petroleum products sales^(a)

[REDACTED SECTION: CERTAIN TEXT HAS BEEN REDACTED.]

(Kb/d)



(a) Excludes trading and refining bulk sales, including share of TotalErg (sold in 2018).

In 2017, petroleum product sales were generally stable compared to the previous year, with a move toward Africa and Asia where the Group has strong growth. European sales were affected by the divestment of mature LPG distribution activities in Belgium and Germany.

(1) Source IHS, number of service stations for TOTAL, BP, Chevron, Exxon and Shell.

(2) Source IHS.

(3) TOTAL, Total Access, Elf, Elan and AS24, including service stations owned by third parties.

(4) Organic investments = net investments, excluding acquisitions, divestments and other operations with non-controlling interests (refer to point 2.5.1 of this chapter).

2.4.1 Presentation of the segment

The Marketing & Services (M&S) business segment is dedicated to the development of TOTAL's petroleum products distribution activities and related services throughout the world.

Present in more than 130 countries, M&S conveys TOTAL's brand image to its customers, both individual and professional. TOTAL's ambition is to be a leading brand recognized for its proximity to its customers and the value that it brings to each of them by creating solutions aimed at performance, energy efficiency, mobility, new energies for mobility⁽¹⁾ and digital transformation. M&S promotes the brand's renown through significant advertising campaigns and a strong presence on the ground, with more than 16,000 service stations and over 200,000 people carrying the Group's name⁽²⁾ around the world. To best meet its customers' current and future needs, M&S continues its efforts in R&D, which increased by 13% between 2014 and 2017, in order to design and develop new products, in particular for the engine technologies of the future.

M&S pursues a proactive, primarily organic development strategy focused on large growth markets. It continues to consolidate its market share in key Western European markets⁽³⁾, where it has reached critical mass and is one of the main distributors of petroleum products. M&S continues to develop its activities, particularly in Africa, where it is the market leader⁽⁴⁾, and in Asia. In 2017, organic investments were approximately \$1 billion, stable compared to 2016, and focused mainly on retail activity.

M&S is implementing a dynamic portfolio management strategy. In 2017, it continued to make targeted acquisitions in order to support the development of its activities on growth and promising markets. Having made acquisitions in Pakistan, Vietnam and the Dominican Republic in 2015 and 2016, M&S finalized the purchase of assets in East Africa (Kenya, Uganda and Tanzania) in 2017. M&S has also invested in alternative fuel distribution by taking over PitPoint B.V., one of the leading NGV⁽⁵⁾ service station networks in Europe. It is also expanding into large markets such as Mexico, the second largest Latin American market for petroleum product distribution⁽⁶⁾.

In addition, in January 2018, M&S exited the fuel distribution and commercial sales businesses in Italy by selling its interest in the TotalErg joint venture. M&S sold its mature LPG distribution assets in Italy, Belgium, Luxembourg and Germany. It also finalized the sale of its stake in Société du Pipeline Méditerranée Rhône (SPMR), which operates a network of petroleum product pipelines in the South of France.

M&S's three main business areas are:

- **Retail**, with a network of more than 16,000 Group-branded service stations. The Group is refocusing on its key markets in Western Europe and continues to develop in Africa, where it is present in 40 countries. In addition to the sale of high-performance fuels and petroleum products, M&S captures new customers and builds customer loyalty by diversifying the product lines in its stores and service stations (car wash, food services, car servicing, etc.) notably through partnerships with other leading brands and digital innovations. These additional offerings support customers in their mobility by providing them with all of the products and services they need at "one stop shop" service stations;
- The production and sales of **lubricants**, a highly profitable sector that accounts for a significant share of M&S's adjusted net operating income. TOTAL intends to pursue growth in this business, notably in Asia, particularly by continuing to expand its range of premium products. M&S has entered into commercial and technological partnerships with car manufacturers. TOTAL has 41 blending plants and R&D investments enable the Group to supply high-quality premium lubricants to its customers worldwide;
- The distribution of products and services for **professional markets**. Benefiting from the diversity of its product ranges and its worldwide logistics network deployed as closely as possible to its customers, TOTAL is a partner of choice and a local supplier of products (mainly bulk fuels, aviation fuel, special fluids, LPG, bitumens, heavy fuels and marine bunkers). The Group markets the Total Ecosolutions product range, made up of diverse energy supplies and associated services to enable its customers to optimize their energy bills and reduce their environmental footprint. The Group also offers solutions that help its customers to manage all their energy needs with services such as the maintenance of on-site facilities and the optimization of consumption, particularly through new platforms and digital innovations.

As part of its business, M&S owns stakes through its subsidiaries in four refineries in Africa, following the sale of its minority interest in a refinery in Gabon in 2016. With the disposal of its interest in the TotalErg joint venture in early 2018, M&S has exited Italian refining.

(1) Electro-mobility, natural gas vehicle (NGV), hydrogen, LNG bunker.

(2) Including owner-operators, lubricant distributors, drivers/haulers, etc.

(3) France, Germany, Belgium, Luxembourg and the Netherlands.

(4) Publicly available information, based on quantities sold in 2015.

(5) NGV including compressed natural gas (CNG) and liquefied natural gas (LNG).

(6) Source IHS.

2.4.2 Sales of petroleum products

The following table presents M&S petroleum products sales⁽¹⁾ by geographical area:

(kb/d)	2017	2016	2015
Europe	1,049	1,093	1,092
France	519	541	541
Europe, excluding France	530	552	551
Africa	431	419	423
Middle East	45	55	85
Asia-Pacific ^(a)	173	150	148
Americas	81	76	70

(a) Including Indian Ocean islands.

2.4.3 Service stations

The table below presents the geographical distribution of the Group's branded^(a) service stations:

As of December 31,	2017	2016	2015
Europe ^(b)	8,194	8,309	8,391
of which France	3,548	3,593	3,667
of which TotalErg	2,519	2,585	2,608
Africa	4,377	4,167	4,058
Middle East	821	809	816
Asia-Pacific ^(c)	1,864	1,790	1,531
Americas	555	585	464
AS24 network (dedicated to heavy-duty vehicles)	819	801	763
TOTAL	16,630	16,461	16,023

(a) TOTAL, Total Access, Elf, Elan and AS24. Including service stations owned by third-party companies.

(b) Excluding AS24 network.

(c) Including Indian Ocean islands.

2.4.4 Activities by geographical area

The information below describes Marketing & Services' principle activities presented by geographical zone and main business areas.

Europe

Retail

In Western Europe, M&S aims to optimize its activities in the countries where it has a large market share, enabling good profitability. It has a retail network of nearly 8,200 Group-branded service stations⁽²⁾ mainly spread throughout its key markets: France, Belgium, the Netherlands, Luxembourg and Germany. M&S is regaining market shares in Western Europe by developing an innovative and diversified line of products and services.

- In **France**, the dense retail network of almost 3,500 stations includes over 1,500 TOTAL-branded service stations, nearly 680 Total Access stations (service stations combining low prices and high-quality fuels) and around 1,250 Elan service stations (located mainly in rural areas).

Since its launch in 2011, Total Access enabled the Group to regain market share of nearly 3%⁽³⁾. The Group is diversifying its offering of new energies for mobility by extending the roll-out of electric charging points and NGV stations. TOTAL intends to create a network of 110 TOTAL and AS24 stations offering NGV in France. In addition, M&S has commenced a program to switch more than 500 Elan stations over to the TOTAL brand by 2019.

The Group-branded service stations enjoy close relationships with their local customers, meeting their everyday non-fuel needs with a multi-service, multi-product offering developed through services in restaurants, convenience stores and car wash provided by leading brands such as Bonjour and TOTAL Wash, as well as partnerships tailored to local requirements.

TOTAL has interests in 28 depots in France, 7 of which are operated by Group companies. In 2017, TOTAL took a stake in Dépôt Rouen Petit-Couronne (DRPC).

(1) In addition to M&S's petroleum product sales, the Group's sales also include international trading (1,659 kb/d in 2017, 1,690 kb/d in 2016 and 1,538 kb/d in 2015) and bulk refining sales (581 kb/d in 2017, 700 kb/d in 2016 and 649 kb/d in 2015).

(2) Excluding AS24 network.

(3) Company data between 2011 and 2017.

- In **Germany**, where TOTAL is the country's fourth-largest operator⁽¹⁾ with nearly 1,200 Group-branded service stations at the end of 2017, and in **Belgium**, where TOTAL is the country's largest operator⁽²⁾ with more than 530 Group-branded stations, TOTAL's market share has increased by more than 1% in three years.
- In the **Netherlands**, TOTAL acquired PitPoint B.V. in 2017, in order to further develop the Group's low-carbon businesses throughout Europe. This company specializes in the distribution of new energies for mobility⁽³⁾ and owns cutting-edge NGV technology and a network of around 100 NGV stations spread throughout the Netherlands, Germany and Belgium.

TOTAL is rolling out a dedicated offering for the growing freight transport sector. The AS24 brand has a network of over 800 service stations aimed at heavy-duty vehicle customers in 28 European countries. AS24 seeks continued growth, primarily in the Mediterranean basin and Eastern Europe and through its toll payment card service which covers nearly 20 countries. AS24 is also addressing the future needs of the heavy-duty vehicles sector by diversifying its offering with the gradual introduction of NGV to its network in France and certain other European countries. The Group's first service station supplying NGV in France was opened under the AS24 brand in 2017.

In 2016, TOTAL also finalized the sale of its network of 450 service stations in Turkey, while retaining its brand and lubricants business in the country.

TOTAL is also a major player in the European market for fuel payment cards with nearly 3.3 million cards, enabling companies of all sizes to improve fuel cost management and access an ever-increasing number of services. TOTAL is expanding its fuel card offering for professional customers, with an electric charging service across Europe and new digital applications.

Lubricants

TOTAL is pursuing its development in Europe, which is mainly supported by its lubricant production sites in Rouen (France) and Ertvelde (Belgium). In April 2018, a new blending plant in Russia is expected to join the Group's European production network.

In addition, TOTAL resumed lubricants distribution in Portugal in January 2017. A network of Speedy service points is currently being rolled out in Spain. In Italy, the Group will consolidate its position following the purchase from Erg of its shares in the lubricants business previously operated by TotalErg.

Professional markets and other specialties

TOTAL produces and markets specialty products in Europe, and relies on its industrial facilities to produce special fluids (Oudalle in France) and bitumen (Brunsbüttel in Germany).

In France, TOTAL promotes a large fuel and service offering to 125,000 vehicle fleet managers. As for fuel sales (heavy fuels, domestic fuels, etc.), they reach nearly one million customers.

Africa

Retail

TOTAL is the leading marketer of petroleum products in Africa. In the countries in which it is present, the Group achieved an average retail market share of nearly 18%⁽⁴⁾ in 2017, an increase of 1.1% compared to 2014. It is pursuing a strategy of profitable growth aiming at outpacing market expansion.

In the zone of Africa, the retail network was made up of more than 4,500 Group-branded service stations in 2017, spread across 40 countries. The Group has major retail networks in South Africa, Nigeria, Egypt and Morocco.

In order to achieve its goal of gaining market share in all of the countries where it is present in Africa, and in addition to its organic growth strategy, TOTAL acquires independent petroleum networks in certain countries. In 2017, the Group finalized the purchase of assets in Kenya, Uganda and Tanzania, enabling it to strengthen its supply and logistics activities in East Africa and boost the growth of the retail network with nearly 100 additional service stations, notably in Tanzania.

M&S is diversifying its offering at service stations and is deploying a range of products and new services in food services and convenience stores. To this end, the Group is developing partnerships, particularly with African start-ups, in order to introduce new electronic payment solutions capable of improving customer experience at the point of sale.

Lubricants

TOTAL is the leading distributor on the continent⁽⁵⁾ and continues its growth strategy. M&S relies in particular on its lubricant production plants in Nigeria, Egypt and South Africa. A new production site is under construction in Algeria.

Professional markets and other specialties

TOTAL acts as a leading partner, notably for mining customers in Africa, by delivering complete supply chain and management solutions for fuels. TOTAL is developing innovative, low-carbon energy solutions as part of hybrid offerings by incorporating solar energy into its existing portfolio of products and services.

M&S also offers a diverse range of products and services aimed at professionals in Africa. Among the different products, the bitumen offering meets the requirements of the public works sector in this continent with a variety of packaging options. Special fluids form an integral part of development projects in the petroleum, mining and agricultural sectors. Industrial customers also receive support from TOTAL for the maintenance of on-site facilities through lubricants in service analysis, among others.

(1) Source: IHS 2015.

(2) Source: IHS 2015.

(3) NGV, hydrogen, electric charging points.

(4) Company data.

(5) Company data.

Asia-Pacific & the Middle East

M&S markets its products and services in more than 20 countries in this zone.

Retail

TOTAL has nearly 2,000 Group-branded service stations over the Asia-Pacific & Middle East zone at year-end 2017 with service station networks in China, Pakistan, the Philippines, Cambodia, Indonesia, Jordan and Lebanon. The Group is also a significant player in the Pacific islands.

The network has doubled since 2014 in the Asia-Pacific region, with growth in Pakistan (purchase of 500 service stations finalized in 2015), the Philippines (creation of a joint venture with FilOil, increasing its network by more than 200 stations since 2016) and China (more than 250 stations operated via a wholly-owned subsidiary and two joint ventures with SinoChem). TOTAL now has nearly 175 service stations in Jordan as well as Lebanon.

TOTAL is also developing further in the area by offering its *Excellium*-branded premium products, most notably in China in 2017. Applying the concept of the “one stop shop” service station, the Group also opened its first Café Bonjour outlet in Cambodia and is continuing to incorporate stores and restaurants run by local partners into its retail network.

Lubricants

The lubricants business is driving M&S's expansion in Asia. The capacities of the lubricant blending plants in this zone, spread over 11 production sites, increased by almost 50% between 2014 and 2016. M&S relies in particular on its lubricant production plants in Singapore, Tianjin and Dubai, and on the premium product and service range widely distributed by its network of Total Quartz Auto Care service centers.

Professional markets and other specialties

TOTAL has signed several partnership agreements with **industrial customers**, enabling it to expand its operations on a number of markets, such as mining and construction, in several countries in the zone. In particular, the Group will supply lubricants to one of the world's leading mining industry service providers on more than 20 mining sites mostly in Australia, Indonesia and Mongolia.

In **specialty products**, TOTAL confirmed its position as the number two⁽¹⁾ player in the LPG market in Vietnam and continues to operate in other markets in the region. In **India**, TOTAL also conducts LPG activities, including a network of service stations providing LPG for transportation. In bitumen sales, the Group is a PMB⁽²⁾ supplier in the country.

Americas

In **retail**, the Group operates on several **Caribbean islands** with nearly 550 Group-branded service stations at year-end 2017.

Taking advantage of the reform and liberalization of the Mexican energy market, TOTAL entered into a partnership in 2017 with a local service station group and will gradually switch a network of nearly 250 service stations in Mexico over to the TOTAL brand.

In January 2016, the Group also strengthened its position in the Americas with the acquisition of a majority stake of 70% in the fuel marketing leader in the Dominican Republic, which operates a network of 130 service stations, commercial sales and lubricants activities. TOTAL has sold its network of nearly 20 service stations in Costa Rica.

In **lubricants and other specialty products**, TOTAL is pursuing its strategy of growth across the region, mainly in lubricants, aviation fuel and special fluids. To strengthen its special fluids business, the Group has built a production plant in Bayport, Texas, which has been operational since early 2016.

2.4.5 Products and services developments

The Group develops technologically advanced products, some of which are formulated for use in motor sports before being generally released on the market, and continues its technical partnerships. The Group is notably associated with the PSA group, with which a cooperation agreement was renewed in late 2016 relating to R&D, business relations with the three PSA⁽³⁾ brands and motor sports (WRC, WTCC and Rallycross). In 2017, TOTAL also supplied DS Performance with lubricants specifically developed for the Formula E⁽⁴⁾ championship. In addition, TOTAL will be the official supplier of fuel to various endurance rally championships⁽⁵⁾ for the next five years. These partnerships demonstrate TOTAL's technical excellence in the formulation of fuels and lubricants under extreme conditions, subject to requirements to reduce fuel consumption, for the engines of the future.

In order to respond to developments in world markets and prepare for tomorrow's growth opportunities, TOTAL develops products and services in collaboration with its customers that optimize their energy bills, such as the products under the Total Ecosolutions label, which

include Excellium fuels and Fuel Economy lubricants (refer to point 5.2.3.4 of chapter 5). These solutions include a diversified range of energy supplies (fuels, gas, solar and wood pellets) as well as consumption auditing, monitoring and management services, particularly through innovative digital platforms for its industrial customers.

Overall, TOTAL is accelerating its digital innovation strategy in order to develop new offerings for its customers and improve operational efficiency. In Africa, TOTAL is continuing to develop new electronic payment solutions that will enable it to extend its money transfer and smartphone payment services. In Germany, TOTAL has worked with a car sharing company to develop an electronic solution enabling a connected car to be involved directly in fuel payment. The Total Services mobile application has also been deployed in 44 countries. Using a centralized digital tool, nearly 4 million customers in 12 countries can receive personalized offers under the Marketing & Services's customer relationship program.

(1) Company data.

(2) Polymer-modified bitumen.

(3) Peugeot, Citroën, DS.

(4) Formula E: motor racing championship using single-seater electrically-powered cars.

(5) As from 2018, official supplier of fuel for the FIA World Endurance Championship, together with the 24 Hours of Le Mans, the European Le Mans Series and the Asian Le Mans Series.

The Group is also continuing to carry out research into and deploy IoT⁽¹⁾ applications for logistics, maintenance and security. In addition, TOTAL offers online domestic heating oil orders in France via the fioulmarket.fr web site, as well as its online platform Bitume Online for fixed-price bitumen purchases aimed at its professionals customers.

For the longer term, TOTAL intends to expand into alternatives to traditional fuels and has comprehensive commercial offerings in this area:

- **Natural gas for land transportation:** TOTAL has broken new ground in 2017 with the purchase of PitPoint B.V., a company that is expected to enable M&S to grow its NGV business in the coming years. As of today, TOTAL has around 500 stations⁽²⁾ supplying NGV to private individuals and professionals in Asia, Africa and Europe. The Group intends to accelerate the development of this network to quickly establish coverage that meets its customers' expectations, and will initially target the freight transportation segment on its key European markets (Germany, Belgium, Luxembourg, the Netherlands and France).
- **Electro-mobility:** TOTAL expects to have more than 100 service stations equipped with charging points in Belgium, the Netherlands, Luxembourg, France and Germany at year-end 2017.

Work to equip stations with higher power charging points on major highways and other roads will continue in the coming years, with the aim of covering the Group's key European markets with a network of charging points every 150 km. The Group will also give its customers wider access to other operators' charging networks through specific partnerships.

- **Hydrogen:** TOTAL continues to roll out hydrogen stations under the H2 Mobility Germany joint venture that was set up in 2015 with its partners Air Liquide, Daimler, Linde, OMV and Shell to build a network of around 400 hydrogen stations in Germany. The joint venture aims to create an initial network of around 100 stations by 2019, a third of which will be TOTAL stations.
- **Natural gas for shipping:** In order to comply with new emission standards for marine fuels that will come into effect in 2020, TOTAL is supporting its customers through this transition with its subsidiary Total Marine Fuel Global Solution, which offers a diversified range of marine fuels and associated services. The Group is expanding its product portfolio with bunker fuel, which has a sulfur content of 0.5%, and LNG bunker. In 2017, TOTAL signed its first partnership agreements in Europe and Asia to promote the establishment of LNG as a marine fuel, notably with the shipping companies CMA CGM and Brittany Ferries.

(1) Internet of Things: connected objects.

(2) Including PitPoint B.V. NGV stations and excluding NGV stations in Italy. Hosted or operated stations.

2.5 Investments

2.5.1 Major investments over the 2015-2017 period⁽¹⁾

Gross investments ^(a) (M\$)	2017	2016	2015
Exploration & Production	12,802	16,085	24,233
Gas, Renewables & Power	797	1,221	588
Refining & Chemicals	1,734	1,861	1,875
Marketing & Services	1,457	1,245	1,267
Corporate	106	118	70
TOTAL	16,896	20,530	28,033
Net investments ^(b) (M\$)	2017	2016	2015
Exploration & Production	10,886	13,895	21,353
Gas, Renewables & Power	726	1,162	170
Refining & Chemicals	(1,086)	1,773	(1,619)
Marketing & Services	1,044	821	411
Corporate	66	106	45
TOTAL	11,636	17,757	20,360
(M\$)	2017	2016	2015
Acquisitions	1,476	2,033	3,441
including resource acquisitions ^(c)	714	780	2,808
Divestments	4,239	1,864	5,968
Other operations with non-controlling interests	(4)	(104)	89
Organic investments ^(d) (M\$)	2017	2016	2015
Exploration & Production	11,310	14,464	20,536
Gas, Renewables & Power	353	270	397
Refining & Chemicals	1,625	1,642	851
Marketing & Services	1,019	1,003	1,130
Corporate	88	105	62
TOTAL	14,395	17,484	22,976

(a) Including acquisitions and increases in non-current loans. The main acquisitions for the 2015-2017 period are detailed in Note 7 to the Consolidated Financial Statements (point 8.7 of chapter 8).

(b) Net investments = gross investments – divestments – repayment of non-current loans – other operations with non-controlling interests. The main divestments for the 2015-2017 period are detailed in Note 7 to the Consolidated Financial Statements (point 8.7 of chapter 8).

(c) Resource acquisitions = acquisition of a participating interest in an oil and gas mining property by way of an assignment of rights and obligations in the corresponding permit or license and related contracts, with a view to producing the recoverable oil and gas.

(d) Organic investments = net investments excluding acquisitions, divestments and other operations with non-controlling interests.

In 2017, the Group's organic investments and resource acquisitions were \$15.1 billion compared to \$18.3 billion in 2016. This decrease follows the completion and start-up of five major production growth projects in 2016 and five in 2017. It also resulted from a successful capital efficiency program implemented over the past years.

In the Exploration & Production segment, most of the organic investments were geared toward the development of new hydrocarbon production facilities, the maintenance of existing facilities and exploration activities. Development investments related in particular to the major projects that started up in 2017 (Moho Nord in

the Republic of the Congo, Badamyar in Myanmar, Edradour and Glenlivet in the United Kingdom, Libra in Brazil and Yamal LNG in Russia), the other major projects that are under construction and expected to start up in the coming years (Ichthys LNG in Australia, Tempa Rossa in Italy, Kaombo in Angola and Egina in Nigeria), as well as the projects that were approved in 2017 (Absheron 1 in Azerbaijan, Vaca Muerta in Argentina and Halfaya 3 in Iraq).

In the Gas, Renewables & Power segment, organic investments mainly related to the development of industrial activities at SunPower and Saft, together with Total Solar's solar power plant projects.

(1) Following the reorganization of the Group, which has been fully effective since January 1, 2017, the 2016 and 2015 information for the segments has been restated on this basis (refer to point 1.6.2 of chapter 1).

In the Refining & Chemicals segment, organic investments were made, on the one hand, in the safety and maintenance of facilities, and, on the other hand, in projects aimed at improving the competitiveness of plants. In 2017, the Group completed the modernization of the Antwerp refinery in Belgium with the addition of a new heavy fuel oil conversion unit and another petrochemical unit and continued the transformation of the La Mède refinery in France into a bio-refinery. In addition, significant investments were approved, including the development of petrochemical activities in Texas (United States) as part of a joint venture with Borealis and Nova, and a project to increase the capacity of the Daesan integrated platform in South Korea.

In the Marketing & Services segment, organic investments in 2017 mainly concerned retail networks in growth regions in Africa and Asia, logistics and specialty products production and storage facilities.

The Group's acquisitions in 2017 totaled \$1.5 billion, including \$714 million in resource acquisitions, a 25% decrease compared to \$2.0 billion in 2016.

The Group took advantage of favorable market conditions to expand its Exploration & Production portfolio. In Brazil, TOTAL and Petrobras finalized a major milestone in their strategic alliance with the transfer of interests in the Lara and Lapa concessions early January 2018 and the Group signed a contract on the development of the South Pars 11 field in Iran. Resource acquisitions were \$714 million in 2017. The Group is preparing for future growth with the announcement of the acquisition of Mærsk Oil (finalized in March 2018), which has a portfolio mainly located in OECD countries, and an additional 10.8% stake in the Lake Albert project in Uganda from Tullow; in addition, it has signed a partnership agreement with Sonatrach in Algeria.

In the frame of its integrated gas strategy, the Group has announced the acquisition of the majority of Engie's upstream LNG activities⁽¹⁾. TOTAL is expected to become the second-largest LNG actor in the world as a result⁽²⁾ and will be able to take benefit from a fast growing market.

2.5.2 Major planned investments

Investments, including resource acquisitions, are expected to be between \$15 and \$17 billion per year for the 2018-2020 period, enabling the delivery of profitable future growth for the Group.

Investments in the Exploration & Production segment will largely be allocated to major development projects under construction, including trains 2 and 3 of Yamal LNG in Russia, Ichthys LNG in Australia, Kaombo in Angola, Egina in Nigeria, Libra 1 in Brazil and South Pars 11 in Iran. Determined to take benefit from the current favourable cost environment, the Group will launch new projects in 2018. A portion of the funds will also be allocated to assets already in production, in particular for maintenance capital expenditures and in-fill wells.

In the Refining & Chemicals segment, the transformation of the La Mède refinery into a bio-refinery, the construction of a side cracker at the Port Arthur refinery in the United States and the project to increase the capacity of the Daesan integrated platform in South Korea are some of the major investments expected in 2018. The Group is also examining projects for growth in Qatar and Saudi Arabia. A significant portion of the segment's investment budget will also be allocated to safety and maintenance.

The Marketing & Services segment's investment budget will finance, in particular, the service station network, logistics, specialty products production and storage facilities, particularly lubricants. Most of the

The Group continues to pursue growth in the Gas, Renewables & Power segment and, as part of the development of profitable low-carbon businesses, TOTAL in 2017 acquired a 23% interest in Tellurian Inc., with the aim of developing a low cost LNG project in the United States.

The Group also purchased a 23% stake in EREN Renewable Energy, renamed Total Eren, contributing to its development in low-carbon energy production. Finally, TOTAL acquired GreenFlex, which operates in the field of energy efficiency.

In the Marketing & Services segment, the Group finalized the acquisition of a retail and supply terminal network in Kenya, Uganda and Tanzania and signed an agreement in Mexico, the second-largest Latin American market for petroleum product distribution⁽³⁾. TOTAL also boosted its growth in natural gas for vehicles in Europe with the acquisition of PitPoint B.V. in 2017. In the lubricants segment, the Group strengthened its position in Italy by finalizing in January 2018 the purchase of Erg's 51% stake in the TotalErg joint venture (consequently, this joint venture has been terminated).

The Group's divestment program of mature and non-core assets, totaling \$10 billion over the period 2015-2017, has been concluded successfully. The divestments finalized in 2017 had a total value of \$4.2 billion, including the sale of Atotech for \$2.7 billion, the sale of the SPMR pipeline the disposal of mature assets in Gabon, the sale of a part of the Group's interest in Fort Hills in Canada and of the interest in the Gina Krog field in Norway. Also in Norway, the Group announced in November 2017 the sale of its interest in the Martin Linge field. In addition, in Italy, TOTAL finalized in January 2018 the disposal of its interest in TotalErg's distribution, refining and LPG activities.

Net investments were \$11.6 billion in 2017 compared to \$17.8 billion in 2016, a decrease of 35%, and \$20.4 billion in 2015. This decrease is mainly due to the discipline implemented on organic investments and the finalization of the asset disposal program.

segment's investment budget will be allocated to growth regions, notably Africa, the Middle East and Asia.

The Group will continue investing to grow its Gas, Renewables & Power businesses, as well as in R&D. The growing LNG demand support the Group's strategy to develop along the gas value chain as illustrated by the announced acquisition of Engie's upstream LNG activities.

TOTAL self-finances most of its investments with cash flow from operating activities and occasionally accesses the bond market when financial market conditions are favorable. Investments for joint ventures between TOTAL and external partners are generally funded through specific project financing.

As part of certain project financing arrangements, TOTAL S.A. has provided guarantees. These guarantees ("Guarantees given on borrowings") as well as other information on the Group's off-balance sheet commitments and contractual obligations appear in Note 13 to the Consolidated Financial Statements (point 8.7 of chapter 8). The Group believes that neither these guarantees nor the other off-balance sheet commitments of TOTAL S.A. or of any other Group company have, or could reasonably have in the future, a material effect on the Group's financial position, income and expenses, liquidity, investments or financial resources.

(1) The finalization of the transaction is subject to the granting of the necessary authorizations.

(2) Based on quantities managed, publicly available information.

(3) Company data and publicly available information.

2.6 Research & Development

In 2017, the Group invested \$912 million in R&D, compared to \$1,050 million in 2016 and \$980 million in 2015. There were 4,132 people dedicated to R&D activities in 2017 compared to 4,939 in 2016 and 4,248 in 2015⁽¹⁾.

TOTAL invested \$656 million in 2017 in innovation and R&D for its oil and gas activities⁽²⁾. The expenses dedicated to these activities increased by 2% between 2015 and 2017.

The Group has 18 R&D sites worldwide and has entered into approximately 1,000 partnership agreements with other industrial groups, along with academic or highly specialized research institutes.

R&D at TOTAL focuses on two major areas:

- prioritizing the development of activities and programs that directly impact TOTAL's objective of becoming the responsible energy major; and
- anticipating technological breakthroughs in order to seize opportunities for development relating to the evolution of the energy mix.

To this end, the Group is committed to optimizing R&D resources in terms of human talent, infrastructure and regional centers of excellence, and to working with selected partners that bring specific and high-level skills to every project.

To achieve the Group's 20-year ambition, the portfolio of R&D programs is divided between transverse programs developed at all of the R&D centers and vertical programs specific to the different businesses.

The portfolio is aimed at:

- understanding the impact of the Group's operations and products on environments and ecosystems (such as water, soil, air, biodiversity);
- mastering digital and electronic technologies (data science, high-performance computing, artificial intelligence) applied to the Group's businesses;
- developing and industrializing carbon capture, use and storage (CCUS), solar and biomass technologies to help prepare for future energy needs and to continue addressing climate issues;
- acquiring knowledge and developing tools and technologies to discover and exploit increasingly complex oil and gas resources to meet the growing global demand for energy;
- designing and producing practical, innovative and competitive products and materials that meet customers' needs by delivering better performance and helping to improve energy efficiency and reduce environmental impacts; and
- mastering and using innovative technologies such as materials sciences, nanotechnology and new analytic techniques.

In addition, each business segment is actively developing an intellectual property activity aimed at protecting its innovations, allowing its activity to develop, and promoting its technological assets among its partners. In 2017, more than 200 patent applications were filed by the Group.

2.6.1 Transverse programs

The eight transverse programs are divided into three categories: strategic programs, support programs and anticipation programs.

Strategic programs cover the following areas:

- Health, safety and environment (HSE), such as, for example, the BIOMEM process, which is based on the use of microorganisms to remove dissolved hydrocarbons from water used for production (water quality, cost, weight and space reduction). Several Exploration & Production subsidiaries have expressed an interest in installing a BIOMEM pilot on site.
- Carbon capture, use and storage (CCUS), such as the large-scale Northern Lights research project in Norway, in which the Group is involved alongside Shell and Statoil. The first phase of the project relates to a storage capacity of around 1.5 Mt/y. TOTAL is also part of TCM (Technology Center Mongstad), one of the world's largest carbon capture technology development center.
- Energy efficiency, through, for example, the creation by the French National Center for Scientific Research (CNRS) and TOTAL of an exploratory research program known as PEPS (*Projets Exploratoires Premier Soutien*) for a period of four years as from 2017. This program makes it possible to launch calls for projects with laboratories belonging in particular to the CNRS on the topic of energy efficiency in industrial processes. The first call for projects led to the identification of six projects covering a wide variety of subjects.

- Gas, such as, for example, the partnership signed in late 2017 between TOTAL and GTC Technology (a major American player that operates in petrochemical process engineering on a global scale) to develop a process for converting natural gas into high added-value molecules such as olefins and aromatic precursors.

Support programs cover all of the Group's R&D activities:

- Digital technology, such as, for example, the creation of algorithms and computer codes to take into account technological developments in high-performance computing (HPC). The two technologies currently being studied will be three times more energy efficient than the supercomputer Pangea, which is one of the ten most powerful computers in the world and installed at TOTAL's Technical Center in Pau.
- Analysis and measurements, including, for example, the partnership with the Namur surface analysis platform in Belgium, which was used to characterize DLC (diamond-like carbon) coating, a world first.
- Understanding process and product performance (U3P), such as, for example, analyzing corrosion issues.

The anticipation program is carried out by forward-looking laboratories that aim to assess the impact on the Group's businesses of new technologies, such as nanotechnology, robotics or the mobility of the future.

(1) Figures for 2016 and 2015 concerning the Group's R&D investments and employees were not restated following the sale of Atotech (finalized in January 2017).

(2) Excluding R&D budgets of Hutchinson, SunPower and Saft Groupe.

2.6.2 Vertical programs

2.6.2.1 Exploration & Production segment

All of the R&D projects aim to combine environmental performance, improved safety and economic viability of operations. A major asset for R&D lies in the remarkable high-performance computing capabilities of the Pangea supercomputer developed by the Group.

R&D continues its efforts in geology, with the continued goal of optimizing geological concept modeling and improving assessment of the potential of new sedimentary basins or new plays in known basins.

In geophysics, R&D is also investing in efficient, low environmental impact, low-cost breakthrough technologies to improve delineation of promising exploration areas. The aim is to quickly obtain high-quality 3D images of the subsurface in hard-to-reach areas.

In order to improve reservoir management, R&D aims to address the entire chain of innovations necessary to maximize reserves and field production at a lower cost.

Operations on wells, from drilling to closure, account for a significant share of Exploration & Production's R&D costs. New R&D projects are under way to improve well productivity and further increase operational safety.

In deep offshore, R&D continued to focus on reducing development costs through the creation of fully underwater developments.

In addition, a new project was launched in 2017 aimed at designing a new generation of more profitable conventional developments, with stripped-down facilities operated by robots that will no longer require a permanent human presence.

2.6.2.2 Gas, Renewables & Power segment

Solar

The R&D effort covers the entire solar value chain, from silicon to photovoltaic electricity management systems.

At the upstream end of the solar value chain, TOTAL is a founding partner of the Ile-de-France Photovoltaic Institute (IPVF), an 8,000 m² research institute with 4,000 m² of laboratories on the Paris-Saclay campus that is expected to host more than 150 academic and industrial researchers as of 2018. Backed by this technical platform and a very high-quality scientific support structure, the Institute aims to identify and develop the solar technologies of the future, more efficiently and less costly than those currently available. TOTAL's solar R&D will have a private laboratory within the Institute that it uses to provide shorter term support for technical developments by the Group's subsidiaries (Total Solar, Total Eren, SunPower).

At the downstream end of the solar value chain, activities are focused on developing software tools and algorithms for intelligent electricity production and consumption management. The solutions developed are aimed at the domestic, commercial and industrial markets, as well as consumers of hybrid solutions (combining several energy sources) for facilities that may or may not be connected to the grid.

Energy storage

Energy storage R&D is more particularly carried out by the teams of Saft Groupe (Saft). Building on the success of its nickel and primary lithium batteries, the subsidiary has launched a development program based on new advanced lithium-ion technologies that can be used to manufacture more efficient products. Saft continues to invest in

innovation by initiating several programs relating in particular to research into electrochemistry, new materials and improving production processes and battery management systems and software. In addition, a significant portion of R&D work is dedicated to creating new products to meet specific customer requirements. Saft invests approximately 9% of its sales in R&D each year.

2.6.2.3 Refining & Chemicals segment

Refining & Chemicals (excluding Hutchinson)

R&D's goal in this area is to support the medium and long-term development of Refining & Chemicals. In doing so, it contributes to the technological differentiation of this business through the development, implementation and promotion of new, more efficient solutions and paves the way for the industrialization of knowledge, processes and technologies.

R&D places special emphasis on the three major challenges facing Refining & Chemicals: managing the environmental footprint; achieving excellence in processes and operations; and developing innovative products, including biosourced products.

It is developing solutions to limit the impact of emissions and improve the energy efficiency of both industrial facilities and private homes.

R&D designs technologies that will make it possible to recycle polymers (particularly polystyrene) under acceptable conditions in terms of end product quality, cost and environmental impact. One of the remaining challenges is retaining the suitability of the recycled product for use in contact with foodstuffs.

R&D is developing expertise and technologies to improve the performance of its assets. Research is focused on the integrity, availability and improved output of refining and petrochemicals facilities. As a result, advanced modeling of feedstocks and processes is used to optimize processing from the monthly supply of the platforms to the real-time monitoring of the facilities' constraints. Research conducted on catalysts and their selection is helping to increase performance, improve stability and extend their service life at a lower cost.

In order to take advantage of different types of feedstock, R&D examines new processes, such as in the field of deep conversion in refining or heavy crude processing in petrochemicals. It studies the catalytic solutions of the future, paving the way for nanocatalysis.

The offer of innovative products is a key aspect of research on polymers. R&D draws on its knowledge of metallocenes and bimodality to develop different types of mass consumption polymers that have exceptional properties allowing them to replace heavier materials and compete with technical polymers. High added-value niche polymers are also being developed, both in the form of blends and composites.

The efficient use of resources is a major challenge for sustainable development, and Refining & Chemicals' R&D is developing technologies enabling more efficient use of biosourced molecules. The aim is to produce higher added-value chemical compounds, whether through biotechnologies or thermochemical processes. Research in this field is focused on examining conversion processes using vegetable oils, sugar or lignocellulose. The goal is to produce bioplastics and biofuels and to extend the range of feedstocks that can be used in existing facilities. R&D is also particularly mindful of issues related to blends and product quality raised by the use of biomolecules.

Elastomer processing (Hutchinson)

R&D is an important factor in innovation and differentiation for Hutchinson, which is present along the entire value chain, from designing custom materials (e.g., rubber, thermoplastics, composites) to incorporating connected solutions (e.g., complex solutions, mechatronics, connected objects).

With a corporate research and innovation center, more than 25 technical centers and a number of university partnerships worldwide, Hutchinson is equipped to rise to the challenge of contributing to a safer, more comfortable, and more responsible mobility of the future.

Weight reduction, increased energy efficiency and improved diagnostic and control functionality are common preoccupations across all of Hutchinson's markets (e.g., automotive, aerospace, defense, railways). Hutchinson designs innovative solutions that put its customers ahead of the game, and transposes those solutions between markets, adopting a cross-fertilization approach.

2.6.2.4 Marketing & Services segment

In 2017, the R&D activities of Marketing & Services continued to implement its roadmap in line with its ambitions, which are focused on reducing the environmental footprint of products, particularly CO₂ emissions, and increasing energy efficiency by improving the durability of customers' equipment.

The roadmap is broken down into two areas: energy savings for customers; and competitive advantage and new product ranges for the consumer and professional markets, while anticipating changes in legislation and incorporating biosourced molecules.

The Fuel Economy range of lubricants, which now covers all fields of application (automotive, marine and manufacturing), has been extended with new products designed to comply with the specifications of manufacturers targeted by Total Lubrificants. The key innovative work is focused at the top of the chain on designing and incorporating breakthrough components in formulations. Significant success has been achieved with the development of new lubricant base stocks that are undergoing registration and industrialization, and through the approval of a new viscosity improver polymer concept in partnership with a number of academic laboratories. Further up the chain, research is also being carried out into various novel technologies such as nanotechnology in order to maximize the performance of future generations of Fuel Economy lubricants.

A new "fluids for electric vehicles" program has been set up, together with an internal technology watch to identify the requirements of future forms of mobility and modes of transport for goods and people, in order to customize future areas of research.

In the field of heavy-duty vehicles, TOTAL is involved in the FALCON project (Flexible & Aerodynamic truck for Low CONsumption) as part of a consortium of 12 partners led by Renault Trucks with a view to developing a complete demonstration vehicle to validate the ambitious aim of reduced fuel consumption (-13%) and therefore CO₂ emissions, through innovative designs.

Several new families of engine detergent for future *Total Excellium* fuel ranges have been identified as a result of academic and industrial partnerships. Engine tests have been performed to compare the relative performances of these new solutions and prepare for future pilot and industrial development.

In the field of refinery additives, work is under way to improve properties in cold temperatures, particularly for high renewable fraction diesel fuels.

With respect to bitumen, work has been focused on designing bitumen in solid form for easier transport and developing methods to measure the resistance to oxidation and aging of bituminous binders. Research has also contributed to the first industrial production runs of a bitumen-polymer binder using a new process developed in house.

The first projects carried out by the "Chemicals and biocomponent processes" laboratory shared by the Marketing & Services and Refining & Chemicals segments, which opened in 2016, relate, on the one hand, to the synthesis of renewable lubricants under an industrial cooperation agreement, and, on the other hand, to the development of processes to prepare biosourced hydrocarbons that can be used in various industrial solvent applications, as monomers for polymers or as fuel components.

In 2017, the Solaize research center in France opened its Innovation Building, which includes an interactive showroom for unveiling major innovations and technological advances resulting from Marketing & Services' research into fuels, lubricants, bitumens and special fluids.

The Asia-Pacific Technical Center based in Mumbai, India, has continued to grow and now has dedicated teams for its areas of expertise, namely lubricants (particularly for textiles and two-wheeled vehicles), special fluids and fuel additives.

2.7 Property, plant and equipment

The companies of the Group have freehold and leasehold interests in over 130 countries throughout the world. Operations in properties, oil and gas fields or any other industrial, commercial or administrative facility, as well as the production capacities and utilization rates of these facilities, are described in this chapter for each business segment (Exploration & Production, Gas, Renewables & Power, Refining & Chemicals and Marketing & Services).

A summary of the Group's property, plant and equipment and their main related expenses (depreciation and impairment) is included in

Note 7 to the Consolidated Financial Statements (point 8.7 of chapter 8).

Minimum royalties from finance lease agreements regarding properties, service stations, vessels and other equipment are presented in Note 13 to the Consolidated Financial Statements (point 8.7 of chapter 8).

Information about the objectives of the Company's environmental policy, in particular those related to the Group's industrial sites or facilities, is presented in chapter 5.

3

RISKS AND CONTROL

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3.1 Risk Factors

The Group conducts its activities in an ever-changing environment and is exposed to risks that, if they were to occur, could have a material adverse effect on its business, financial condition, including its operating income and cash flow, reputation or outlook.

The Group employs a continuous process of identifying and analyzing risks in order to determine those that could prevent it from achieving its objectives. This chapter presents the significant risks to which the Group believes it is exposed as of the date of this Registration Document. However, as of such date, the Group may not be aware

of other risks that could, or other risks may not have been considered by the Group as being likely to, have a material adverse impact on the Group, its business, financial condition, including its operating income and cash flow, reputation or outlook.

The main internal control and risk management procedures, in particular those relating to the preparation and processing of accounting and financial information, are described in point 3.3 of this chapter.

3.1.1 Risks related to market environment and other financial risks

The financial performance of TOTAL is sensitive to a number of market environment related factors, the most significant being hydrocarbon prices, refining margins and exchange rates.

Generally, a decline in hydrocarbon prices has a negative effect on the Group's results due to a decrease in revenues from oil and gas production. Conversely, a rise in hydrocarbon prices increases the Group's results.

In 2017, oil prices, which had strengthened progressively at the end of 2016 notably due to the OPEC/non-OPEC agreement concluded in November 2016, were stable during the first quarter of the year before decreasing and reaching their lowest point in June. Prices then continuously strengthened during the second half, notably due to strong demand and the respect by producing countries of their quota commitments. The market remains highly volatile.

For the year 2018, according to the scenarios retained below, the Group estimates that an increase of \$10 per barrel in the price of Brent crude would increase annual adjusted net operating income⁽¹⁾ by approximately \$2.3 billion and annual cash flow from operations by approximately \$2.8 billion. Conversely, a decrease of \$10 per barrel in the price of Brent crude would decrease annual adjusted net

operating income by approximately \$2.3 billion and annual cash flow from operations by approximately \$2.8 billion.

The impact of changes in crude oil and gas prices on downstream operations depends upon the speed at which the prices of finished products adjust to reflect these changes. The Group estimates that a decrease in its European Refining Margin Indicator ("ERMI") of \$10 per ton would decrease annual adjusted net operating income by approximately \$0.5 billion and annual cash flow from operations by approximately \$0.6 billion. Conversely, an increase in its ERMI of \$10 per ton would increase annual adjusted net operating income by approximately \$0.5 billion and annual cash flow from operations by approximately \$0.6 billion.

All of the Group's activities are, for various reasons and to varying degrees, sensitive to fluctuations in the dollar/euro exchange rate. The Group estimates that a decrease of \$0.10 per euro (strengthening of the dollar versus the euro) would increase annual adjusted net operating income by approximately \$0.1 billion and have a limited impact on annual cash flow from operations. Conversely, an increase of \$0.10 per euro (weakening of the dollar versus the euro) would decrease adjusted net operating income by approximately \$0.1 billion and have a limited impact on annual cash flow from operations.

Market impact environment 2018 ^(a)	Scenario retained	Change	Estimated impact on adjusted net operating income	Estimated impact on cash flow from operations
Brent	50 \$/b	+/-10 \$/b	+/-2.3 B\$	+/-2.8 B\$
European Refining Margin Indicator (ERMI)	35 \$/t	+/-10 \$/t	+/-0.5 B\$	+/-0.6 B\$
\$/€	1.2 \$/€	+/-0.1 \$ per €	-/+0.1 B\$	≈ 0 B\$

(a) Sensitivities revised once per year upon publication of the previous year's fourth quarter results. Indicated sensitivities are approximate and based upon TOTAL's current view of its 2018 portfolio. Results may differ significantly from the estimates implied by the application of these sensitivities. The impact of the \$/€ sensitivity on adjusted net operating income is primarily attributable to Refining & Chemicals.

(1) Adjusted results are defined as income at replacement cost, excluding non-recurring items and the impact of fair value changes.

In addition to the adverse effect on the Group's revenues, margins and profitability, a prolonged period of low oil and natural gas prices could lead the Group to review its projects and the evaluation of its assets and oil and natural gas reserves.

Prices for oil and natural gas may fluctuate widely due to many factors over which TOTAL has no control. These factors include:

- variations in global and regional supply of and demand for energy;
- global and regional economic and political developments in natural resource-producing regions, particularly in the Middle East, Africa and South America, as well as in Russia;
- the ability of the OPEC and other producing nations to influence global production levels and prices;
- prices of unconventional energies as well as evolving approaches for developing oil sands and shale oil, which may affect the Group's realized prices, notably under its long-term gas sales contracts and asset valuations, particularly in North America;
- cost and availability of new technologies;
- regulations and governmental actions;
- global economic and financial market conditions;
- the security situation in certain regions, the magnitude of international terrorist threats, wars or other conflicts;
- changes in demographics, notably population growth rates, and consumer preferences; and
- adverse weather conditions that can disrupt supplies or interrupt operations of the Group's facilities.

Prolonged periods of low oil and natural gas prices may reduce the economic viability of projects in production or in development, and reduce the Group's liquidity, thereby decreasing its ability to finance capital expenditures and/or causing it to cancel or postpone investment projects.

If TOTAL were unable to finance its investment projects, the Group's opportunities for future revenue and profitability growth would be reduced, which could materially impact the Group's financial condition, including its operating income and cash flow.

Prolonged periods of low oil and natural gas prices may reduce the Group's reported reserves and cause the Group to revise the price assumptions upon which asset impairment tests are based that could have a significant adverse effect on the Group's results in the period in which it occurs. For additional information on impairments recognized on the Group's assets, refer to Note 3 to the Consolidated Financial Statements (point 8.7 of chapter 8).

Conversely, in a high oil and gas price environment, the Group can experience significant increases in cost and government take, and, under some production-sharing contracts, the Group's production rights could be reduced. Higher prices can also reduce demand for the Group's products.

The Group's earnings from its Refining & Chemicals and Marketing & Services segments are primarily dependent upon the supply and demand for petroleum products and the associated margins on sales of these products, with the impact of changes in oil and gas prices on earnings on these segments being dependent upon the speed at which the prices of petroleum products adjust to reflect movements in oil and gas prices. In 2017, the negative effects of lower oil and gas prices on the Group's results were partially offset by the results of the Refining & Chemicals segment. During 2017, the Group's refining margins improved during the first nine months of the year before dropping significantly in December 2017. In 2018, they could experience some volatility depending on the evolution of the price of crude.

The activities of Trading & Shipping (oil, gas and power trading and shipping activities) are particularly sensitive to market risk and more specifically to price risk as a consequence of the volatility of oil and gas prices, to liquidity risk (inability to buy or sell cargoes at market prices) and to counterparty risk (when a counterparty does not fulfill its contractual obligations). The Group uses various energy derivative instruments and freight-rates instruments to reduce its exposure to price fluctuations of crude oil, petroleum products, natural gas, power and freight-rates. Although TOTAL believes it has established appropriate risk management procedures, large market fluctuations may adversely affect the Group's activities and financial condition, including its operating income and cash flow.

For more detailed information on the impact of oil and gas prices on the Group's 2017 results, financial condition (including impairments) and outlook, refer to point 1.4 of chapter 1.

TOTAL is exposed to other financial risks related to its financing and cash management activities.

The Group is exposed to changes in interest rates and foreign exchange rates. Even though the Group generally seeks to minimize the currency exposure of each entity to its functional currency (primarily the dollar, the euro, the pound sterling and the Norwegian krone), the Group's financial condition, including its operating income and cash flow, could be impacted by a significant change in the value of these currencies.

In addition, as TOTAL mostly turns to financial markets for its financing, its financial condition and operations could be materially impacted if access to those markets were to become more difficult.

For further information on financial risks, refer to Notes 15 and 16 to the Consolidated Financial Statements (point 8.7 of chapter 8).

3.1.2 Industrial and environmental risks and risks related to climate issues

TOTAL is exposed to risks related to the safety and security of its operations.

The Group's activities involve a wide range of operational risks, such as explosions, fires, accidents, equipment failures, leakage of toxic products, emissions or discharges into the air, water or soil, that can potentially cause death or injury, or impact natural resources and ecosystems.

The industrial event that could have the most significant impact is a major industrial accident, e.g., blow out, explosion, fire, leakage of highly toxic products or massive leakage, resulting in death or injury and/or accidental pollution on a large-scale or at an environmentally sensitive site.

Acts of terrorism or malicious acts against the Group's or contractors' employees, plants, sites, pipelines and transportation or computer systems could also disrupt the Group's business activities and could cause harm or damage to people, property and the environment.

Certain activities of the Group face additional specific risks. TOTAL's Exploration & Production activities are exposed to risks related to the physical characteristics of oil and gas fields, particularly during drilling operations, which can cause blow outs, explosions, fires or other damage, in particular to the environment, and lead to a disruption of the Group's operations or reduce its production. In addition to the risks of explosions and fires, the activities of the Gas, Renewables & Power, Refining & Chemicals and Marketing & Services business segments entail risks related to the overall life cycle of the products manufactured, as well as the materials used. With regard to transportation, the likelihood of an operational accident depends not only on the hazardous nature of the products transported, but also on the volumes involved and the sensitivity of the regions through which they are transported (quality of infrastructure, population density, environmental considerations).

TOTAL's workforce and the public are exposed to risks inherent to the Group's operations, which could lead to legal proceedings against the Group's entities and legal representatives, notably in cases of death, injury and property and environmental damage. Such proceedings could also damage the Group's reputation. In addition, like most industrial groups, TOTAL is concerned by declarations of occupational illnesses.

To manage the operational risks to which it is exposed, the Group has adopted a preventive and remedial approach by putting in place centralized HSE (health, safety and environment) and security management systems that seek to take all necessary measures to reduce the related risks (refer to point 3.3.3.3 of this chapter). In addition, the Group maintains third-party liability insurance coverage for all its subsidiaries. TOTAL also has insurance to protect against the risk of damage to Group property and/or business interruption at its main refining and petrochemical sites. TOTAL's insurance and risk management policies are described in point 3.4 of this chapter. However, the Group is not insured against all potential risks. In certain cases, such as a major environmental disaster, TOTAL's liability may exceed the maximum coverage provided by its third-party liability insurance. The Group cannot guarantee that it will not suffer any uninsured loss and there can be no guarantee, particularly in the event of a major environmental disaster or industrial accident, that such loss would not have a material adverse effect on

the Group's financial condition, including its operating income and cash flow, and its reputation.

Crisis management systems are necessary to effectively respond to emergencies, avoid potential disruptions to the Group's business and operations and minimize impacts on third parties or the environment.

The Group has crisis management plans in place to deal with emergencies (refer to point 3.3 of this chapter). However, these plans cannot exclude the risk that the Group's business and operations may be severely disrupted in a crisis situation or ensure the absence of impacts on third parties or the environment. TOTAL has also implemented business continuity plans to continue or resume operations following a shutdown or incident. An inability for the Group to resume its activities in a timely manner could prolong the impact of any disruption and thus could have a material adverse effect on its financial condition, including its operating income and cash flow.

TOTAL is subject to increasingly stringent environmental, health and safety laws and regulations in numerous countries and may incur material related compliance costs.

The Group's activities are subject to numerous laws and regulations pertaining to the environment, health and safety. In most countries where the Group operates, particularly in Europe and the United States, sites and products are subject to increasingly stringent laws governing the protection of the environment (e.g., water, air, soil, noise, protection of nature, waste management, impact assessments), health (e.g., occupational safety, chemical product risk), and the safety of personnel and residents. Product quality and consumer protection are also subject to increasingly strict regulations. The Group's entities ensure that their products meet applicable specifications and abide by all applicable consumer protection laws. Failure to do so could lead to personal injury, property damage, environmental harm and loss of customers, which could negatively impact the Group's financial condition, including its operating income and cash flow, and its reputation.

TOTAL incurs, and will continue to incur, substantial expenditures to comply with increasingly complex laws and regulations aimed at protecting health, safety and the environment. Such expenditures could have a material adverse effect on the Group's financial condition.

The introduction of new laws and regulations could compel the Group to curtail, modify or cease certain operations or implement temporary shutdowns of sites, which could diminish its productivity and have a material adverse impact on its financial condition.

Moreover, most of the Group's activities will eventually, at site closure, require decommissioning followed by environmental remediation after operations are discontinued, in compliance with applicable regulations. Costs related to such activities may materially exceed the Group's provisions and adversely impact its operating results. With regard to the permanent shutdown of an activity, the Group's environmental contingencies and asset retirement obligations are addressed in the "Asset retirement obligations" and "Provisions for environmental contingencies" sections of the Group's consolidated balance sheet (refer to Note 12 to the Consolidated Financial Statements, point 8.7 of chapter 8). Future expenditures related to asset retirement obligations are accounted for in accordance with the accounting principles described in the same Note.

Laws and regulations related to climate change as well as growing concern of stakeholders may adversely affect the Group's business and financial condition.

Global concern over greenhouse gas ("GHG") emissions and climate change, which notably led to the signature of the Paris Agreement on December 12, 2015 as part of the United Nations Climate Change Conference (COP 21), is likely to lead to further regulation in these areas. These additional regulatory requirements could lead the Group to curtail, change or cease certain of its operations, and submit the Group's facilities to additional compliance obligations, which could adversely affect the Group's businesses and financial condition, including its operating income and cash flow.

Regulations designed to gradually limit fossil fuel use may, depending on the GHG emission limits and time horizons set, negatively and significantly affect the development of projects, as well as the economic value of certain of the Group's assets. Internal studies conducted by TOTAL have shown that a long term CO₂ price of \$40/t⁽¹⁾ applied worldwide would have a negative impact of around 5% on the discounted value of the Group's assets (upstream and downstream)⁽²⁾. [REDACTED SECTION: CERTAIN TEXT HAS BEEN REDACTED.] In response to these possible developments, natural gas, which is the fossil energy that emits the least amount of GHG, represented nearly 48% of TOTAL's production in 2017, compared to approximately 35% in 2005, and the Group's objective is to grow this percentage over the long term with the expected growth of gas markets. In addition, the Group ceased its coal production activities and is developing its activities in the realms of solar energy production and energy from biomass (renewable energies).

In Europe, the regulations concerning the market for CO₂ emission allowances, the EU Emissions Trading System (EU-ETS), entered a third phase on January 1, 2013. This phase marks the end of the overall free allocation of emission allowances: certain emissions, such as those related to electricity production, no longer benefit from free allowances, while for others free allowances have been significantly reduced. Free allocations are now established based on the emission level of the top-performing plants (*i.e.*, the least GHG-emitting) within the same sector ("top 10 benchmark"). Lower-performing plants must purchase, at market price, the necessary allowances to cover their emissions over these free allocations. The plants also need to indirectly bear the cost of allowances for all electricity consumed (including electricity generated internally at the facilities). The 2014 update to the EU-ETS list of sectors exposed to carbon leakage

confirmed that refining activities in Europe are an exposed sector and should continue to benefit from free allocations partially covering its deficits. Based on available information, the Group has estimated that approximately 25% of its emissions subject to the EU-ETS will not be covered by free allowances during the period 2013-2020 and at least 30% during the period 2021-2030. The financial risk related to the foreseeable purchase of CO₂ emission allowances on the market is expected to rise due to the effects of the ongoing reform of the EU-ETS. At year-end 2017, the price of CO₂ emission allowances stood at approximately €7.5/t CO₂. The forecast for 2020 indicates that the price could rise to approximately €15/t⁽³⁾ CO₂ due to the establishment of a "market stability reserve" as from 2019. The Group believes that the price of CO₂ emission allowances could rise to at least €30/t during phase 4 (2021-2030).

In addition, the growing concern of all stakeholders with regard to climate change could potentially have an impact on certain external financing of the Group's projects or influence certain investors involved in the oil and gas sector.

Finally, the Company and several of its affiliates have received claims issued by public entities in certain countries in view of financing the protective measures to be implemented in order to limit the consequences of climate change. The Group is subject to the risk of judicial actions in this area.

The physical effects of climate change may adversely affect the Group's business.

TOTAL's businesses operate in varied locales where the potential physical impacts of climate change, including changes in weather patterns, are highly uncertain and may adversely impact the results of the Group's operations.

Climate change potentially has multiple effects that could harm the Group's operations. The increasing scarcity of water resources may negatively affect the Group's operations in some regions of the world, high sea levels may harm certain coastal activities, and the multiplication of extreme weather events may damage offshore and onshore facilities. These climate risk factors are continually assessed in TOTAL's management and risk management plans.

The Group believes that it is impossible to guarantee that the contingencies or liabilities related to the matters mentioned in this point 3.1.2 would not have a material adverse impact on its business, financial condition, including its operating income and cash flow, reputation or outlook, if such risks were to occur.

(1) As from 2021 or the current price in a given country.

(2) Sensitivity calculated for a crude oil price of \$60/\$80/b compared to a reference scenario that takes into account a CO₂ price in the regions already covered by a carbon pricing system.

(3) Company data.

3.1.3 Risks related to critical IT systems security

Disruption to or breaches of TOTAL's critical IT services or information security systems could adversely affect the Group's operations.

The Group's activities depend heavily on the reliability and security of its information technology (IT) systems. Integrity of IT systems could be compromised due to, for example, technical failure, cyber-attack (viruses, computer intrusions), power or network outages or natural disasters. The cyber threat is constantly evolving. Attacks are becoming more sophisticated with regularly renewed techniques as the digital transformation amplifies exposure to these cyber threats.

The adoption of new technologies, such as the Internet of things (IoT) or the migration to the cloud, as well as the evolution of architectures for increasingly interconnected systems, are all areas where cyber security is a very important issue.

As a result, the Group's activities and assets could sustain serious damage, services to clients could be interrupted, material intellectual property could be divulged and, in some cases, personal injury, property damage, environmental harm and regulatory violations could occur, potentially having a material adverse effect on the Group's financial condition, including its operating income and cash flow.

3.1.4 Risks related to the development of major projects and reserves

The Group's production growth and profitability depend on the delivery of its major development projects.

Growth of production and profitability of the Group rely heavily on the successful execution of its major development projects that are increasingly complex and capital-intensive. These major projects may face a number of difficulties, including, in particular, those related to:

- economic or political risks, including threats specific to a certain country or region, such as terrorism, social unrest or other conflicts (refer to point 3.1.6 of this chapter);
- negotiations with partners, governments, local communities, suppliers, customers and other third parties;
- obtaining project financing;
- controlling capital and operating costs;
- earning an adequate return in a low oil and/or gas price environment;
- adhering to project schedules; and
- the timely issuance or renewal of permits and licenses by public agencies.

Poor delivery of any major project that underpins production or production growth could adversely affect the Group's financial condition, including its operating income and cash flow.

The Group's long-term profitability depends on cost-effective discovery, acquisition and development of economically viable new reserves; if the Group is unsuccessful, its financial condition, including its operating income and cash flow, could be materially and adversely affected.

A large portion of the Group's revenues and operating results are derived from the sale of oil and gas that the Group extracts from underground reserves developed as part of its Exploration & Production activities. The development of oil and gas fields, the construction of facilities and the drilling of production or injection wells is capital intensive and requires advanced technology. Due to constantly changing market conditions and environmental challenges, cost projections can be uncertain. For Exploration & Production activities to continue to be profitable, the Group needs to replace its reserves with new proved reserves (*i.e.*, reserves that can be developed and produced in an economically viable manner).

In addition, TOTAL's ability to discover, acquire and develop new reserves successfully is uncertain and can be negatively affected by a number of factors, including:

- the geological nature of oil and gas fields, notably unexpected drilling conditions including pressure or unexpected heterogeneities in geological formations;
- the risk of dry holes or failure to find expected commercial quantities of hydrocarbons;
- equipment failures, fires, blow-outs or accidents;
- shortages or delays in the availability or delivery of appropriate equipment;
- the Group's inability to develop or implement new technologies that enable access to previously inaccessible fields;
- the Group's inability to anticipate market changes in a timely manner;
- adverse weather conditions;
- the inability of the Group's partners to execute or finance projects in which the Group holds an interest or to meet their contractual obligations;
- the inability of service companies to deliver contracted services on time and on budget;
- compliance with both anticipated and unanticipated governmental requirements, including U.S. and EU regulations that may give a competitive advantage to companies not subject to such regulations;
- economic or political risks, including threats specific to a certain country or region, such as terrorism, social unrest or other conflicts (refer to point 3.1.6 of this chapter);
- competition from oil and gas companies for the acquisition and development of assets and licenses (refer to point 3.1.7 of this chapter);
- increased taxes and royalties, including retroactive claims and changes in regulations and tax reassessments; and
- disputes related to property titles.

These factors could lead to cost overruns and/or could impair the Group's ability to complete a development project or make production economical. Some of these factors may also affect the Group's projects and facilities further down the oil and gas chain.

If TOTAL fails to develop new reserves cost-effectively and in sufficient quantities, the Group's financial condition, including its operating income and cash flow, could be materially affected.

The Group's oil and gas reserves data are estimates only and subsequent downward adjustments are possible. If actual production from such reserves proves to be lower than current estimates indicate, the Group's financial condition, including its operating income and cash flow, could be negatively impacted.

The Group's proved reserves figures are estimates prepared in accordance with SEC rules. Proved reserves are those reserves which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically recoverable – from a given date forward, from known reservoirs and under existing economic conditions, operating methods and government regulations – prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation. Reserves are estimated by teams of qualified, experienced and trained geoscientists and petroleum, gas and project engineers, who rigorously review and analyze in detail all available geoscience and engineering data (e.g., seismic data, electrical logs, cores, fluids, pressures, flow rates, facilities parameters). This process involves making subjective judgments, including with respect to the estimate of hydrocarbons initially in place, initial production rates and recovery efficiency, based on

available geological, technical and economic data. Consequently, estimates of reserves are not exact measurements and are subject to revision.

A variety of factors that are beyond the Group's control could cause such estimates to be adjusted downward in the future, or cause the Group's actual production to be lower than its currently reported proved reserves indicate. Such factors include:

- a prolonged period of low prices of oil or gas, making reserves no longer economically viable to exploit and therefore not classifiable as proved;
- an increase in the price of oil or gas, which may reduce the reserves to which the Group is entitled under production sharing and risked service contracts and other contractual terms;
- changes in tax rules and other regulations that make reserves no longer economically viable to exploit; and
- the actual production performance of the Group's deposits.

The Group's reserves estimates may therefore require substantial downward revisions should its subjective judgments prove not to have been conservative enough based on the available geoscience and engineering data, or the Group's assumptions regarding factors or variables that are beyond its control prove to be incorrect over time. Any downward adjustment could indicate lower future production amounts, which could adversely affect the Group's financial condition, including its operating income and cash flow.

3.1.5 Risks related to equity affiliates and management of assets operated by third parties

Many of the Group's projects are conducted by equity affiliates or are operated by third parties. For these projects, the Group's degree of control, as well as its ability to identify and manage risks, may be reduced.

A significant number of the Group's projects are conducted by equity affiliates⁽¹⁾ or operated by third parties. In cases where the Group's company is not the operator, such company may have limited influence over, and control of, the behavior, performance and costs of the partnership, its ability to manage risks may be limited and it may, nevertheless, be prosecuted by regulators or claimants in the event of an incident.

Additionally, the partners of the Group may not be able to meet their financial or other obligations to the projects, which may threaten the viability of a given project. These partners may also not have the

financial capacity to fully indemnify the Group or third parties in the event of an incident.

With respect to joint ventures, contractual terms generally provide that the operator, whether an entity of the Group or a third party, assumes full liability for damages caused by its gross negligence or willful misconduct.

In the absence of the operator's gross negligence or willful misconduct, other liabilities are generally borne by the joint venture and the cost thereof is assumed by the partners of the joint venture in proportion to their respective ownership interests.

With respect to third-party providers of goods and services, the amount and nature of the liability assumed by the third party depends on the context and may be limited by contract. Contracts may also contain obligations to indemnify TOTAL or for TOTAL to indemnify partners or third parties.

(1) For additional information, refer to Note 8 to the Consolidated Financial Statements (point 8.7 of chapter 8).

3.1.6 Risks related to political or economic factors

TOTAL has significant production and reserves located in politically, economically and socially unstable areas, where the likelihood of material disruption of the Group's operations is relatively high.

A significant portion of TOTAL's oil and gas production and reserves is located in countries that are not part of the Organisation for Economic Co-operation and Development (OECD). In recent years, a number of these countries have experienced varying degrees of one or more of the following: economic or political instability, civil war, violent conflict, social unrest, actions of terrorist groups and the application of international economic sanctions. Any of these conditions alone or in combination could disrupt the Group's operations in any of these regions, causing substantial declines in production or revisions to reserves estimates.

In Africa (excluding North Africa), which represented 25% of the Group's 2017 combined liquids and gas production, certain of the countries in which the Group has production have recently suffered from some of these conditions, including Nigeria, which is one of the main contributing countries to the Group's production of hydrocarbons (refer to point 2.1.9 of chapter 2).

The Middle East and North Africa zone, which represented 22% of the Group's 2017 combined liquids and gas production, has in recent years suffered increased political volatility in connection with violent conflict and social unrest, including Syria, where European Union (EU) and U.S. economic sanctions have prohibited TOTAL from producing oil and gas since 2011, or Libya. In Yemen, the deterioration of security conditions in the vicinity of Balhaf caused the company Yemen LNG, in which the Group holds a stake of 39.62%, to stop its commercial production and export of LNG and to declare *force majeure* to its various stakeholders in 2015. The plant has been put in preservation mode. In Iran, following the suspension on January 16, 2016 of UN economic sanctions, most U.S. secondary sanctions and most EU economic sanctions, the Group has engaged in certain activities. However, sanctions could be reinstated unilaterally in the event of a dispute over Iran's compliance with its nuclear commitments or in certain other cases.

In South America, which represented 6% of the Group's 2017 combined liquids and gas production, certain of the countries in which TOTAL has production have recently suffered from some of the above-mentioned conditions, including Brazil and Venezuela.

Since July 2014, international economic sanctions have been adopted against certain Russian persons and entities, including various entities operating in the financial, energy and defense sectors. As of December 31, 2017, TOTAL held 21% of its proved reserves in Russia, where from the Group had 12% of its combined oil and gas production in 2017.

For additional information concerning international economic sanctions applicable notably to Cuba, Iran, Russia, Syria and Venezuela, refer to point 3.1.9.1 of this chapter.

Furthermore, in addition to current production, TOTAL is also exploring for and developing, or is participating in the exploration and/or development of, new reserves in other regions of the world

that are historically characterized by political, social and economic instability.

The occurrence and magnitude of incidents related to economic, social and political instability are unpredictable. It is possible that they could have a material adverse impact on the Group's production and operations in the future and/or cause certain investors to reduce their holdings of TOTAL's securities.

TOTAL, like other major international energy companies, has a geographically diverse portfolio of reserves and operational sites, which allows it to conduct its business and financial affairs so as to reduce its exposure to political and economic risks. However, there can be no assurance that such events will not have a material adverse impact on the Group.

Intervention by host country authorities can adversely affect the Group's activities and its operating results.

TOTAL has significant exploration and production activities, and in some cases refining, marketing or chemicals operations, in countries whose governmental and regulatory framework is subject to unexpected change and where the enforcement of contractual rights is uncertain. The legal framework of TOTAL's exploration and production activities, established through concessions, licenses, permits and contracts granted by or entered into with a government entity, a state-owned company or, sometimes, private owners, is subject to risks of renegotiation that, in certain cases, can reduce or challenge the protections offered by the initial legal framework and/or the economic benefit to TOTAL.

In addition, the Group's exploration and production activities in such countries are often undertaken in conjunction with state-owned entities, for example as part of a joint venture in which the state has a significant degree of control. In recent years, in various regions globally, TOTAL has observed governments and state-owned enterprises impose more stringent conditions on companies pursuing exploration and production activities in their respective countries, increasing the costs and uncertainties of the Group's business operations. TOTAL expects this trend to continue.

Potential increasing intervention by governments in such countries can take a wide variety of forms, including:

- the award or denial of exploration and production interests;
- the imposition of specific drilling obligations;
- price and/or production quota controls and export limits;
- nationalization or expropriation of assets;
- unilateral cancellation or modification of license or contract rights;
- increases in taxes and royalties, including retroactive claims and changes in regulations and tax reassessments;
- the renegotiation of contracts;
- the imposition of increased local content requirements;
- payment delays; and
- currency exchange restrictions or currency devaluation.

If a host government were to intervene in one of these forms in a country where TOTAL has substantial operations, including exploration, the Group could incur material costs or the Group's production or asset value could decrease, which could potentially have a material adverse effect on its financial condition, including its operating income and cash flow.

For example, the Nigerian government has been contemplating new legislation to govern the petroleum industry which, if passed into law, could have an impact on the existing and future activities of the Group in that country through increased taxes and/or operating costs and could adversely affect financial returns from projects in that country.

3.1.7 Risks related to competition and lack of innovation

The Group operates in a highly competitive environment. Its competitiveness could be adversely impacted if the Group's level of innovation lagged behind its competitors.

TOTAL's main competitors are comprised of national and international oil companies. The evolution of the energy sector has opened the door to new competitors and increased market price volatility.

TOTAL is subject to competition in the acquisition of assets and licenses for the exploration and production of oil and natural gas as well as for the sale of manufactured products based on crude and refined oil. In the gas sector, major producers increasingly compete in the downstream value chain with established distribution companies. Increased competitive pressure could have a significant negative effect on the prices, margins and market shares of the Group's companies.

The pursuit of unconventional gas development, particularly in the United States, has contributed to falling hydrocarbon market prices and a marked difference between spot and long-term contract prices. The competitiveness of long-term contracts indexed to oil

prices could be affected if this discrepancy persists and if it should prove difficult to invoke price revision clauses.

The Group's activities are carried out in a constantly changing environment with new products and technologies continuously emerging. The Group may not be able to anticipate these changes, identify and integrate technological developments in order to maintain its competitiveness, maintain a high level of performance and operational excellence, and best meet the needs and demands of its customers. The Group's innovation policy requires significant investment, notably in R&D, of which the expected impact cannot be guaranteed.

In the field of R&D, the multiplication of research partnerships, in particular in related technical fields, may make it difficult for the Group to track technical information exchanged with research partners and monitor related contractual restrictions (e.g., confidentiality, limited use). New and increasingly complex digital technologies as well as the multiplication of partnerships are all likely to increase contamination risks, which could, as a result, limit TOTAL's ability to exploit innovations.

3

3.1.8 Ethical misconduct and non-compliance risks

Ethical misconduct or breaches of applicable laws by employees of the Group could expose TOTAL to criminal and civil penalties and be damaging to TOTAL's reputation and shareholder value.

The Group's Code of Conduct, which applies to all of its employees, defines TOTAL's commitment to business integrity and compliance with applicable legal requirements and high ethical standards. This commitment is supported by a "zero tolerance" principle. Ethical misconduct (notably with respect to human rights) or non-compliance with applicable laws and regulations (including corruption, fraud and competition laws) by TOTAL or any third party acting on its behalf could expose TOTAL and/or its employees to criminal and civil

penalties and could be damaging to TOTAL's reputation and shareholder value.

Further measures could, depending on applicable legislation (notably, the U.S. Foreign Corrupt Practices Act, the UK Bribery Act or the French law n° 2016-1691 dated December 9, 2016 on transparency, the fight against corruption and modernization of the economy), be imposed by competent authorities, such as the review and reinforcement of the compliance program under the supervision of an independent third party. Generally, entities of the Group could potentially be subject to administrative, judicial or arbitration proceedings that could have a material adverse impact on the Group's financial condition and reputation (refer to point 3.2 of this chapter).

3.1.9 Countries targeted by economic sanctions

TOTAL has activities in certain countries targeted by economic sanctions. If the Group's activities are not conducted in accordance with applicable laws and regulations, TOTAL could be sanctioned.

Various members of the international community have targeted certain countries, including Cuba, Iran, Syria and Venezuela, as well as certain economic sectors in Russia, with economic sanctions and other restrictive measures. U.S. and European restrictions relevant to the Group and certain disclosure concerning the Group's limited

activities or presence in certain targeted countries are outlined below in points 3.1.9.1 and 3.1.9.2, respectively.

3.1.9.1 U.S. and European legal restrictions

TOTAL closely monitors applicable international economic sanctions regimes, changes to such regimes and possible impacts on the Group's activities. TOTAL, ensuring compliance with applicable sanctions, does not believe that its activities in targeted countries are in violation of applicable economic sanctions regimes administered by the United States and the European Union ("EU"). However, the Group cannot assure that current or future regulations or

developments related to economic sanctions will not have a negative impact on its business, financial condition or reputation. A violation by the Group of applicable laws or regulations could result in criminal, civil and/or material financial penalties.

Restrictions against Cuba

U.S. sanctions against Cuba prohibit any person subject to the jurisdiction of the United States⁽¹⁾ from taking part in a transaction in connection with Cuba. These sanctions prohibit, on the one hand, the use of the U.S. dollar for almost all transactions related to Cuba, and, on the other hand, to export all goods subject to Export Administration Regulations⁽²⁾ to Cuba with exceptions (for example, certain medical equipment), and all Cuban good to the United States. Cuba is not subject to European sanctions. TOTAL intends to continue the development of its activities in Cuba.

Restrictions against Iran

On July 14, 2015, the EU, China, France, Russia, the United Kingdom, the United States and Germany reached an agreement with Iran, known as the Joint Comprehensive Plan of Action (the "JCPOA"), regarding limits on Iran's nuclear activities and relief under certain U.S., EU and UN economic sanctions regarding Iran. On January 16, 2016, the International Atomic Energy Agency ("IAEA") confirmed that Iran had met its initial nuclear compliance commitments under the JCPOA. Therefore, as from that date, UN economic sanctions, most U.S. secondary sanctions (*i.e.*, those covering non-U.S. persons⁽³⁾) and most EU economic sanctions were suspended⁽⁴⁾. Sanctions could, however, be reinstated unilaterally by any participant in the event of a dispute over Iran's compliance with its nuclear commitments or in certain other cases. TOTAL is closely monitoring developments in this regard.

With respect to the Group's activities conducted under the sanctions framework that was in place prior to the entry into force of the JCPOA, the U.S. Department of State made a determination on September 30, 2010 that certain historical activities would not be deemed sanctionable and that, so long as TOTAL acts in accordance with its commitments related to this determination, it will not be regarded as a company of concern for its past Iran-related activities. Since 2011, TOTAL has had no production in Iran.

Certain U.S. states have adopted legislation with respect to Iran requiring, in certain conditions, state pension funds to divest securities in any company with active business operations in Iran and state contracts not to be awarded to such companies. State regulators have adopted similar initiatives relating to investments by

insurance companies. These measures are generally still in effect despite the JCPOA sanctions relief. If TOTAL's activities in Iran were determined to fall within the scope of these prohibitions, and in the absence of any available exemptions, certain U.S. institutions holding interests in TOTAL may be required to sell their interests.

Concerning certain activities of the Group in Iran, notably the project to develop phase 11 of the South Pars gas field for the National Iranian Oil Company ("NIOC")⁽⁵⁾ according to the risked service contract (IPC) signed in July 2017, refer to point 3.1.9.2, below.

Restrictions against Russia

Since July 2014, international economic sanctions have been adopted against certain Russian persons and entities, including various entities operating in the financial, energy and defense sectors.

The economic sanctions adopted by the EU since 2014 do not materially affect TOTAL's activities in Russia. TOTAL has been formally authorized by the French government, which is the competent authority for granting authorization under the EU sanctions regime, to continue all its activities in Russia (on the Kharyaga and Termokarstovoye fields and the Yamal LNG project).

The United States has adopted economic sanctions targeting notably PAO Novatek⁽⁶⁾ ("Novatek"), as well as entities in which Novatek (individually or with other similarly targeted persons or entities collectively) owns an interest of at least 50%, including OAO Yamal LNG⁽⁷⁾ ("Yamal LNG") and Terneftegas⁽⁸⁾. These sanctions notably prohibit U.S. persons from transacting in, providing financing for or otherwise dealing in debt issued by these entities after July 16, 2014 of greater than 90 days maturity (duration reduced to 60 days as from the end of November 2017). Consequently, the use of the U.S. dollar for such financing, including for Yamal LNG, is effectively prohibited. The Yamal LNG project's financing was finalized in successive steps in 2016 in compliance with applicable regulations.

TOTAL's activities in Russia are not materially affected by restrictive measures adopted by the United States in August 2015 imposing export controls and restrictions relating to the export of certain goods, services, and technologies destined for projects located in Russia in the field of oil exploration. They are also not materially affected by restrictive measures adopted by the United States in August 2017 relating to Russian exportation pipelines transactions.

As of December 31, 2017, TOTAL held 21% of its proved reserves in Russia, where from the Group had 12% of its combined oil and gas production in 2017.

(1) *Cuban Assets Control Regulations (CACR)*, 31 CFR Part. 515.

(2) *Export Administration Regulations (EAR)* § 734.3.

(3) For purposes of this chapter, "U.S. person" means any U.S. citizen and permanent resident alien wherever he/she is in the world, entity organized under the laws of the United States or any jurisdiction within the United States, including foreign branches, or any person or entity located in the United States.

(4) Certain limited U.S. and EU human rights-related and terrorism-related sanctions remain in force.

(5) NIOC was removed on January 16, 2016 from the U.S. and EU sanctions designation lists.

(6) A Russian company listed on the Moscow and London stock exchanges and in which the Group held an interest of 18.9% as of December 31, 2017.

(7) A company jointly owned by PAO Novatek (50.1%), Total E&P Yamal (20%), CNODC (20%), a subsidiary of China National Petroleum Corporation ("CNPC") and Silk Road Fund (9.9%).

(8) A company jointly owned by PAO Novatek (51%) and Total Termokarstovoye BV (49%).

Restrictions against Syria

The EU adopted measures in 2011 regarding trade with and investment in Syria that are applicable to European persons and to entities constituted under the laws of an EU Member State, including, notably, a prohibition on the purchase, import or transportation from Syria of crude oil and petroleum products. The United States also has adopted comprehensive measures that broadly prohibit trade and investment in Syria. Since 2011, the Group has ceased activities that contribute to oil and gas production in Syria and has not purchased hydrocarbons from Syria.

Restrictions against Venezuela

In August 2017, the United States adopted economic sanctions relating to Venezuela and certain state-owned entities, including Petroleos de Venezuela, S.A. ("PdVSA") as well as entities in which PdVSA (individually or with other similarly targeted persons or entities collectively) owns an interest of at least 50%, including Petrocedeño S.A., a company in which the Group held an interest of 30.32% as of December 31, 2017. These sanctions prohibit U.S. persons from transacting in, providing financing for or otherwise dealing in debt issued by these entities on or after August 25, 2017 of greater than 90 days maturity. Consequently, the use of the U.S. dollar for such financing, including for Petrocedeño S.A., is effectively prohibited.

Since November 13, 2017, Venezuela has also been subject to European sanctions, which mainly provide for the freezing of assets of certain individuals and entities considered responsible for human rights violations, repressive acts against civil society or attacks on Venezuelan democracy and rule of law, as well as persons and entities associated with them. These sanctions prohibit the Group from entering into a commercial relationship with the persons and entities concerned.

As of this date, the activities of TOTAL in Venezuela are not significantly impacted by these measures.

3.1.9.2 Information concerning certain limited activities in Iran and Syria

Information concerning TOTAL's activities related to Iran that took place in 2017 provided in this section is disclosed according to Section 13(r) of the Securities Exchange Act of 1934, as amended ("U.S. Exchange Act"). In addition, information for 2017 is provided concerning the payments made by Group affiliates to, or additional cash flow that operations of Group affiliates generate for, the government of any country identified by the United States as a state sponsor of terrorism (currently, Iran, North Korea, Syria and Sudan⁽¹⁾) or any entity controlled by those governments. TOTAL believes that these activities are not sanctionable and has not been informed that it is at risk of possible imposition of sanctions for activities previously disclosed. For more information on certain U.S. and EU restrictions relevant to TOTAL in these jurisdictions, refer to point 3.1.9.1 of this chapter.

Iran

The Iran Threat Reduction and Syria Human Rights Act of 2012 ("ITRA") added Section 13(r) to the U.S. Exchange Act, which requires TOTAL S.A. to disclose whether the Company or any of its affiliates has knowingly engaged during the calendar year in certain

Iran-related activities, including those targeted under the Iran Sanctions Act of 1996, as amended ("ISA"), without regard to whether such activities are sanctionable under ISA, and any transaction or dealing with the government of Iran that is not conducted pursuant to a specific authorization of the U.S. government. While neither TOTAL S.A. nor any of its affiliates have engaged in any activity that would be required to be disclosed pursuant to subparagraphs (B) or (C) of Section 13(r) (1), affiliates of the Company may be deemed to have engaged in certain transactions or dealings with the government of Iran that would require disclosure pursuant to Section 13(r) (1) (A) and (D), as discussed below.

Statements in this section concerning affiliates intending or expecting to continue described activities are subject to such activities continuing to be permissible under applicable international economic sanctions regimes.

Exploration & Production

Following the suspension of certain international economic sanctions against Iran on January 16, 2016 (as described in point 3.1.9.1 of this chapter), the Group commenced various business development activities in Iran. TOTAL entered into a memorandum of understanding ("MOU") on January 28, 2016 with NIOC, pursuant to which NIOC provided technical data on certain oil and gas projects so that TOTAL could assess potential developments in Iran in compliance with the remaining applicable international economic sanctions. TOTAL subsequently proposed to develop and operate the South Pars Phase 11 gas field offshore Iran in the Persian Gulf along the international border with Qatar. This resulted in the negotiation of a Heads of Agreement ("HOA") signed in November 2016 by NIOC, Total E&P South Pars S.A.S. ("TEPSP") (a wholly-owned affiliate), CNPC International Ltd. ("CNPCI") (a wholly-owned affiliate of China National Petroleum Company) and Petropars Ltd. ("Petropars") (a wholly-owned affiliate of NIOC) concerning the development and operation of the field. These parties then negotiated and signed a 20-year risked service contract on July 3, 2017 (the "Risked Service Contract") for the development and production of phase 11 of the giant South Pars gas field ("SP11"). The project is expected to have a production capacity of 2 Bcf/d or 400,000 boe/d including condensate, and to supply the Iranian domestic market starting in 2021. TEPSP (50.1%) is the operator of the SP11 project alongside CNPCI (30%) and Petropars (19.9%). These companies entered into a joint operating agreement in July 2017 concerning, among other things, the governance of their obligations under the Risked Service Contract and the designation of TEPSP as the project's operator. A branch office of TEPSP was opened in 2017 in Tehran for this purpose.

The SP11 project is expected to be developed in two phases. The first phase, with an estimated cost of approximately \$2 billion equivalent, consists of 30 wells and 2 wellhead platforms connected to existing onshore treatment facilities by 2 subsea pipelines. Since the November 2016 HOA signature, TOTAL has conducted engineering studies on behalf of the consortium and it initiated calls for tender during the third quarter of 2017 in order to award the contracts required to start developing the project in early 2018. At a later stage, once required by reservoir conditions, a second phase is expected to be launched involving the construction of offshore compression facilities.

(1) TOTAL is not present in North Korea. In Sudan, other than the payment of fees related to patents, the Group is not aware of any of its activities in 2017 having resulted in payments to, or additional cash flow for, the government of that country.

The total required investment for the SP11 project is expected to be approximately \$4 billion equivalent, of which TEPSP would finance 50.1% via equity contributions and payments in non-U.S. currency. In the event of new or reinstated international economic sanctions, if such sanctions were to prevent TEPSP from performing under the Risked Service Contract, TEPSP expects to be able to withdraw from the Contract and recover its past costs from NIOC (unless such recovery is prevented by sanctions).

Also in 2017, the MOU entered into between TOTAL and NIOC in January 2016 to assess potential developments in Iran (including South Azadegan) was amended to extend the MOU's duration and include North Azadegan. NIOC provided TOTAL in 2017 with technical data on the Azadegan oil field so that it could assess potential development of this field. Representatives of TOTAL held technical meetings in 2017 with representatives of NIOC and its affiliated companies and carried out a technical review of the Azadegan (South & North) oil field as well as the Iran LNG Project (a project contemplating a 10 Mt/y LNG production facility at Tombak Port on Iran's Persian Gulf coast), the results of which were partially disclosed to NIOC and relevant affiliated companies. In addition, TOTAL signed an MOU in 2017 with an international company to evaluate the Azadegan oil field opportunity with NIOC.

During 2017, in connection with anticipated activities under the aforementioned Risked Service Contract and MOUs, and to discuss other new project opportunities, representatives of TOTAL attended meetings with the Iranian oil and gas ministry and several Iranian companies with ties to the government of Iran. After the signing ceremony of the Risked Service Contract, senior management of TOTAL attended a meeting with the President of Iran. In connection with travel to Iran in 2017 by employees of the Group, TOTAL made payments to Iranian authorities for visas, airport services, exit fees and similar travel-related charges. In addition, representatives of TOTAL had a meeting in France with the Iranian ambassador and hosted official visits in France of representatives from the Iran Ministry of Petroleum, NIOC and affiliates of NIOC for demonstrations of TOTAL's technical capabilities and expertise.

Following the signature of a confidentiality agreement in late 2016 among the Oman Ministry of Oil and Gas, NIGEC (a subsidiary of NIOC) and a group of international companies, including TOTAL, representatives of the Group attended meetings in 2017 with the parties to the agreement, including NIGEC, to discuss a potential project for the construction, operation and maintenance of a pipeline to supply natural gas from Iran to Oman as well as to market such gas.

Neither revenues nor profits were recognized from any of the aforementioned activities in 2017, except that TEPSP received payments of approximately \$15 million equivalent from its partners under the Risked Service Contract, including NIOC, for the reimbursement of their respective shares of past costs incurred by TEPSP under the HOA and their respective shares of the costs and expenditures incurred in 2017 under the Risked Service Contract.

Concerning payments to Iranian entities in 2017, Total Iran BV (100%) and TEPSP (on behalf of SP11 Project JV Partners) collectively made payments of approximately IRR 7 billion (approximately \$210,000⁽¹⁾) to (i) the Iranian administration for taxes and social security contributions concerning the personnel of the aforementioned branch office and residual buyback contract-related obligations, and (ii) Iranian public entities for payments with respect to the maintenance of the aforementioned branch office (e.g., utilities, telecommunications).

TOTAL expects similar types of payments to be made by these affiliates in 2018 albeit in higher amounts due to increased business development activity in Iran.

Furthermore, Total E&P UK Limited ("TEP UK"), a wholly-owned affiliate, holds a 43.25% interest in a joint venture at the Bruce field in the UK with BP Exploration Operating Company Limited (37%, operator), BHP Billiton Petroleum Great Britain Ltd (16%) and Marubeni Oil & Gas (North Sea) Limited (3.75%). This joint venture is party to an agreement (the "Bruce Rhum Agreement") governing certain transportation, processing and operation services provided to a joint venture at the Rhum field in the UK that is co-owned by BP (50% operator) and the Iranian Oil Company UK Ltd ("IOC"), a subsidiary of NIOC (50%). In 2017, TEP UK liaised directly with IOC concerning its interest in the Bruce Rhum Agreement and it provided services to IOC under the Bruce Rhum Agreement. TEP UK is also party to an agreement with BP whereby TEP UK shall under certain conditions use reasonable endeavors to evacuate Rhum NGL from the St Fergus Terminal. TEP UK conducts activities pursuant to this agreement only when the Rhum Owners' primary evacuation route for Rhum NGL is not available, and subject to BP having title to all of the Rhum NGL to be evacuated and BP having a valid OFAC license for the activity. In 2017, the aforementioned activities generated for TEP UK gross revenue of approximately £3.9 million and net profit of approximately £2.3 million. TEP UK expects to continue these activities in 2018.

Other segments

The Group does not own or operate any refineries or chemical plants in Iran and did not purchase Iranian hydrocarbons prior to 2016 when prohibited by applicable EU and U.S. economic sanctions (refer to point 3.1.9.1 of this chapter).

The Group continued its trading activities with Iran in 2017 via its wholly-owned affiliate TOTS TOTAL OIL TRADING SA, which purchased approximately 58 Mb of Iranian crude oil for nearly €2.6 billion pursuant to a mix of spot and term contracts. In connection with these purchases, CSSA Chartering and Shipping Services SA, a wholly-owned affiliate, chartered vessels owned by an entity with ties to the government of Iran to transport this crude oil. It is not possible to estimate the gross revenue and net profit related to these purchases, because most of this crude oil was used to supply the Group's refineries. However, approximately 6.6 Mb of this crude oil were sold to entities outside of the Group. In addition, in 2017 approximately 14 Mb of petroleum products were bought from/sold to entities with ties to the government of Iran. These activities generated gross revenue of nearly €1.1 billion and a net loss of approximately €5.7 million. The affiliates expect to continue these activities in 2018.

Saft Groupe S.A. ("Saft"), a wholly-owned affiliate, in 2017 sold signaling and backup battery systems for metros and railways as well as products for the utilities and oil and gas sectors to companies in Iran, including some having direct or indirect ties with the Iranian government. In 2017, this activity generated gross revenue of approximately €3.2 million and net profit of approximately €0.4 million. Saft expects to continue this activity in 2018.

Saft also attended the Iran Oil Show in 2017, where it discussed business opportunities with Iranian customers, including those with direct or indirect ties with the Iranian government. Saft expects to conduct similar business development activities in 2018.

(1) Unless otherwise indicated, currencies converted to USD in this point 3.1.9.2 were converted using the average exchange rate for fiscal year 2017, as published by Bloomberg.

Total Eren, a company in which Total Eren Holding holds an interest of 68.76% (TOTAL S.A. owns 33.86% of Total Eren Holding), had preliminary discussions in 2017 for possible investments in renewable energy projects in Iran, including meetings with ministries of the Iranian government. Neither revenues nor profits were recognized from this activity in 2017, and the company expects to continue this activity in 2018.

In relation to a non-binding MOU signed in 2016 with National Petrochemical Company ("NPC"), a company owned by the government of Iran, to consider a project for the construction in Iran of a steam cracker and polyethylene production lines, representatives of Total Raffinage Chimie ("TRC"), a wholly-owned affiliate, made several visits to Iran in 2017 to discuss the project with representatives of NPC. In addition, the Iranian Ministry of Petroleum issued in January 2017 a resolution allocating to the potential project certain amounts of ethane, ethylene and polyethylene. This resolution was renewed by the Ministry of Petroleum in July 2017. No revenue or profit from these activities was recognized in 2017 and similar activities are expected to continue in 2018.

The company Le Joint Français, a wholly-owned affiliate, sold vehicular O-ring seals in 2017 to Iran Khodro, a company in which the government of Iran holds a 20% interest and which is supervised by Iran's Industrial Management Organization. This activity generated gross revenue of approximately €700,000 and net profit of approximately €34,000. The company expects to continue this activity in 2018.

Paulstra S.N.C., a wholly-owned affiliate, obtained in 2017 an order from Iran Khodro to sell vehicular anti-vibration systems over a 5-year period. In 2017, this activity generated gross revenue of approximately €270,000 and net profit of approximately €20,000. Paulstra S.N.C. also sold vehicular anti-vibration systems in 2017 to Saipa, an Iranian company in which the Industrial & Development Organization of Iran holds a 35.75% interest. This activity generated gross revenue of approximately €3,000 and net profit of approximately €900. The company expects to continue these activities in 2018.

Hutchinson S.N.C., a wholly-owned affiliate, sold vehicular body sealing and hoses in 2017 to Iran Khodro. This activity generated gross revenue of approximately €2.7 million and net profit of approximately €171,000. The company expects to continue these activities in 2018.

Industrielle Desmarquoy S.N.C., a wholly-owned affiliate, sold vehicular plastic sealing in 2017 to Iran Khodro. This activity generated gross revenue of approximately €7,400 and net profit of approximately €600. The company expects to continue this activity in 2018.

Hanwha Total Petrochemicals ("HTC"), a joint venture in which Total Holdings UK Limited (a wholly-owned affiliate) holds a 50% interest and Hanwha General Chemicals holds a 50% interest, purchased nearly 44 Mb of condensates from NIOC for approximately KRW 2,600 billion (approximately \$2.3 billion). These condensates are used as raw material for certain of HTC's steam crackers. HTC also chartered seven tankers of condensates with National Iranian Tanker Company (NITC), a subsidiary of NIOC, for approximately KRW 16 billion (approximately \$14.2 million). The company expects to continue these activities in 2018.

Total Research & Technology Feluy, a wholly-owned affiliate, Total Marketing & Services, a company wholly-owned by TOTAL S.A. and

six employees ("TMS"), and TRC paid in 2017 fees totaling approximately €4,000 to Iranian authorities related to various patents⁽¹⁾. Similar payments are expected to be made in 2018.

The Company paid fees in 2017 of approximately €2,000 to Iranian authorities related to the maintenance and protection of trademarks and designs. Similar payments are expected to be made in 2018.

Until December 2012, at which time it sold its entire interest, the Group held a 50% interest in the lubricants retail company Beh Total (now named Beh Tam) along with Behran Oil (50%), a company controlled by entities with ties to the government of Iran. As part of the sale of the Group's interest in Beh Tam, TOTAL S.A. agreed to license the trademark "Total" to Beh Tam for an initial 3-year period for the sale by Beh Tam of lubricants to domestic consumers in Iran. In 2014, Total E&P Iran ("TEPI"), a wholly-owned affiliate, received, on behalf of TOTAL S.A., royalty payments of approximately IRR 24 billion (nearly \$1 million⁽²⁾) from Beh Tam for such license. These payments were based on Beh Tam's sales of lubricants during the previous calendar year. In 2015, royalty payments were suspended notably due to a procedure brought by the Iranian tax authorities against TEPI. As of the end of 2017, no royalty payments had been received since 2015, but the payment of outstanding royalties in favor of TOTAL S.A. is expected in 2018. In addition, representatives of Total Oil Asia-Pacific Ltd, a wholly-owned affiliate, made several visits to Behran Oil during 2017 regarding the potential purchase of 50% of the share capital of Beh Tam. As of the end of 2017, no agreement had been reached and no money was paid or received by either company. Further discussions are expected to take place in 2018.

Total Marketing Middle East FZE, a wholly-owned affiliate, sold lubricants to Beh Tam in 2017. The sale in 2017 of approximately 392 t of lubricants and special fluids generated gross revenue of approximately AED 8.1 million (approximately \$2.2 million) and net profit of approximately AED 3.7 million (approximately \$1 million). The company expects to continue this activity in 2018.

Total Marketing France ("TMF"), a company wholly-owned by TMS, provided in 2017 fuel payment cards to the Iranian embassy and delegation to UNESCO in France for use in the Group's service stations. In 2017, these activities generated gross revenue of approximately €17,000 and net profit of approximately €1,000. The company expects to continue this activity in 2018.

TMF also sold jet fuel in 2017 to Iran Air as part of its airplane refueling activities in France. The sale of approximately one million liters of jet fuel generated gross revenue of approximately €450,000 and net profit of approximately €9,500. The company expects to continue this activity in 2018.

Total Belgium, a wholly-owned affiliate, provided in 2017 fuel payment cards to the Iranian embassy in Brussels (Belgium) for use in the Group's service stations. In 2017, these activities generated gross revenue of approximately €1,500 and net profit of approximately €300. The company expects to continue this activity in 2018.

Proxifuel, a wholly-owned affiliate, sold in 2017 domestic heating oil to the Iranian embassy in Brussels. In 2017, these activities generated gross revenue of less than €1,000 and net profit of less than €100. The company expects to continue this activity in 2018.

(1) Section 560.509 of the U.S. Iranian Transactions and Sanctions Regulations provides an authorization for certain transactions in connection with patent, trademark, copyright or other intellectual property protection in the United States or Iran, including payments for such services and payments to persons in Iran directly connected to intellectual property rights, and TOTAL believes that the activities related to the patent applications described in this point 3.1.9.2 are consistent with that authorization.

(2) Based on an average daily exchange rate of \$1 = IRR 0.000039 during 2014, as published by Bloomberg.

Caldeo, a company wholly-owned by TMS, sold in 2017 domestic heating oil to the Iranian embassy in France, which generated gross revenue of approximately €1,100 and net profit of less than €200. The company expects to continue this activity in 2018.

Total Lubrifiants, a company owned 99.99% by TMS (the remaining shares being held by one employee and five non-Group individual shareholders), received in 2017 three payments totaling €350,000 (from NITC) in payment of unpaid invoices from 2010. The company may receive similar payments in 2018.

As a result of legal proceedings initiated in the United Kingdom by one of its suppliers against a TOTAL S.A. affiliate based in India, Total Oil Private Limited ("TOIPL"), TOTAL S.A. has recently concluded an investigation into the transactions, including into the facts and circumstances that follow. In January 2014, TOIPL received two spot contract shipments of LPG from a supplier based in Dubai. The vessel *Scoter*, which was owned by the National Iranian Tanker Company, was used to transport one of the shipments received by TOIPL. At the time of these transactions, India was the recipient of a

waiver pursuant to Section 1245 (d)(4)(d) of the National Defense Authorization Act ("NDAA"). TOIPL has not paid the supplier for the shipments due to a contract dispute. The total value of the two contracts was \$8.85 million, and the value of the shipment delivered aboard the *Scoter* was approximately \$7.1 million. TOIPL's LPG is stored in limited capacity storage facilities and contain LPG received from multiple suppliers. Therefore, it is not possible to provide a precise amount of gross revenue attributable to these spot contracts.

Syria

Since early December 2011, TOTAL has ceased its activities that contribute to oil and gas production in Syria and maintains a local office solely for non-operational functions. In late 2014, the Group initiated a downsizing of its Damascus office and reduced its staff to a few employees. Taxes and contributions for public services rendered in 2017 in relation to the maintenance of the aforementioned office and its personnel are expected to be paid to Syrian government agencies in 2018.

3.2 Legal and arbitration proceedings

There are no governmental, legal or arbitration proceedings, including any proceeding of which the Company is aware that are pending or threatened against the Company, that could have, or could have had during the last 12 months, a material impact on the Group's financial situation or profitability.

Described below are the main administrative, legal and arbitration proceedings in which the Company and the other entities of the Group are involved.

Alitalia

In the Marketing & Services segment, a civil proceeding was initiated in Italy, in 2013, against TOTAL S.A. and its subsidiary Total Aviazione Italia Srl before the competent Italian civil court. The plaintiff claims against TOTAL S.A., its subsidiary and other third parties, damages that it estimates to be nearly €908 million. This proceeding follows practices that had been condemned by the Italian competition authority in 2006. The parties have exchanged preliminary findings. The existence and the assessment of the alleged damages in this procedure involving multiple defendants remain contested.

Blue Rapid and the Russian Olympic Committee – Russian regions and Interneft

Blue Rapid, a Panamanian company, and the Russian Olympic Committee filed a claim for damages with the Paris Commercial Court against Elf Aquitaine, alleging a so-called non-completion by a former subsidiary of Elf Aquitaine of a contract related to an exploration and production project in Russia negotiated in the early 1990s. Elf Aquitaine believed this claim to be unfounded and opposed it. On January 12, 2009, the Commercial Court of Paris rejected Blue Rapid's claim against Elf Aquitaine and found that the Russian Olympic Committee did not have standing in the matter. On June 30, 2011, the Court of Appeal of Paris dismissed as inadmissible the claim of Blue Rapid and the Russian Olympic Committee against Elf Aquitaine, notably on the grounds of the contract having lapsed. The judgment of the Court of Appeal of Paris is now final and binding following two decisions issued on February 18, 2016 by the French Supreme Court to put an end to this proceeding.

In connection with the same facts, and 15 years after the aforementioned exploration and production contract was rendered null and void ("*caduc*"), a Russian company, which was held not to be the contracting party to the contract, and two regions of the Russian Federation that were not even parties to the contract, launched an arbitration procedure against the aforementioned former subsidiary of Elf Aquitaine that was liquidated in 2005, claiming alleged damages of \$22.4 billion. The arbitral tribunal issued its decision on June 19, 2017 and entirely dismissed this claim.

The Group has lodged a criminal complaint to denounce the fraudulent claim of which the Group believes it is a victim and, has taken and reserved its rights to take all actions and measures to defend its interests.

FERC

The Office of Enforcement of the U.S. Federal Energy Regulatory Commission (FERC) began in 2015 an investigation in connection with the natural gas trading activities in the United States of Total Gas & Power North America, Inc. (TGPNA), a U.S. subsidiary of the Group. The investigation covered transactions made by TGPNA between June 2009 and June 2012 on the natural gas market. TGPNA received a Notice of Alleged Violations from FERC on September 21, 2015. On April 28, 2016, FERC issued an order to show cause to TGPNA and two of its former employees, and to TOTAL S.A. and Total Gas & Power Ltd., regarding the same facts. TGPNA contests the claims brought against it.

A class action was launched to seek damages from these three companies and was dismissed by a judgment of the U.S. District court of New York issued on March 15, 2017. The claimants have appealed this judgment.

Grande Paroisse

On September 21, 2001, an explosion occurred at the industrial site of Grande Paroisse (a former subsidiary of Atofina which became a subsidiary of Elf Aquitaine Fertilisants on December 31, 2004). The explosion caused the death of 31 people, including 21 workers at the

site, injured many others and caused significant damage on the site and to property in the city of Toulouse.

After many years, the investigating magistrate brought charges against Grande Paroisse and the former Plant Manager before the Toulouse Criminal Court. On November 19, 2009, this tribunal acquitted both the former Plant Manager and Grande Paroisse due to the lack of reliable evidence for the explosion. The Court declared Grande Paroisse civilly liable for the damages caused by the explosion to the victims in its capacity as custodian and operator of the plant.

On September 24, 2012, the Court of Appeal of Toulouse declared criminally responsible and convicted Grande Paroisse and the former Plant Manager.

On January 13, 2015, the French Supreme Court (*Cour de cassation*) fully quashed the decision of September 24, 2012. The case was referred back to the Court of Appeal of Paris, which, on October 31, 2017, convicted Grande Paroisse and the former Plant Manager. Both have decided to appeal this decision before the French Supreme Court (*Cour de cassation*).

A compensation mechanism for victims was set up immediately following the explosion. €2.3 billion was paid for the compensation of claims and related expenses amounts. A €11.9 million reserve remains booked in the Group's Consolidated Financial Statements as of December 31, 2017.

Iran

In 2003, the Securities and Exchange Commission (SEC) followed by the Department of Justice (DoJ) issued a formal order directing an investigation against TOTAL, and other oil companies, for alleged violations of the Foreign Corrupt Practices Act (FCPA) and the Company's accounting obligations in connection with the pursuit of business in Iran in the 1990s.

In late May 2013, and after several years of discussions, TOTAL reached settlements with the U.S. authorities (a Deferred Prosecution Agreement with the DoJ and a Cease and Desist Order with the SEC). These settlements, which put an end to these investigations, were concluded without admission of guilt and in exchange for TOTAL respecting a number of obligations, including the payment of a fine and civil compensation for an aggregate amount of \$398.2 million. By virtue of these settlements, TOTAL also accepted the appointment of an independent compliance monitor to review the Group's compliance program and to recommend possible improvements.

In July 2016, the monitor submitted his third and final report, in which he certified that TOTAL had devised and implemented an appropriate compliance program. As a result of this certification, the U.S. authorities, after having reviewed the monitor's report, concluded that TOTAL had fulfilled all of its obligations, thus bringing an end to the monitoring process. As a result, a court in the State of Virginia

granted a motion to dismiss on November 9, 2016, thereby terminating the procedure directed at the Company, which can no longer be pursued in the United States for these same facts.

With respect to the same facts, TOTAL was placed under formal investigation in France in 2012. In October 2014, the investigating magistrate decided to refer the case to trial. The hearing is expected to take place during the fourth quarter of 2018.

Italy

As part of an investigation led by the Public Prosecutor of the Potenza Court in 2007, Total Italia and also certain Group employees were the subjects of an investigation related to alleged irregularities in connection with the purchase of lands and the award of calls for tenders in relation to the preparation and development of an oil field located in the south of Italy.

Pursuant to a judgment issued on April 4, 2016, the Potenza Criminal Court found four employees to be guilty of corruption, with two of these employees also being found guilty of misappropriation in connection with the purchase of land. The procedure with respect to Total Italia was sent back to the public prosecutor due to the imprecision of the terms of prosecution. The four employees decided to challenge the judgment before the Court of Appeal.

On February 20, 2018, the Court of Appeal of Potenza recorded the termination of the proceedings directed towards the four employees prosecuted for corruption because of the expiration of the statute of limitation.

Oil-for-Food Program

Several countries have launched investigations concerning possible violations of the UN resolutions relating to the Iraqi Oil-for-Food Program implemented as from 1996.

Pursuant to a French criminal investigation, certain current or former Group employees were placed under formal criminal investigation for possible charges as aiding and abetting the misappropriation of corporate assets and/or as aiding and abetting the corruption of foreign public agents. In 2010, TOTAL S.A. was indicted on bribery charges as well as aiding and abetting and concealing the influence peddling.

On July 8, 2013, TOTAL S.A. and the persons who were prosecuted were cleared of all charges by the Paris Criminal Court, which found that none of the offenses for which they had been prosecuted was established. The Prosecutor's office appealed the parts of the Criminal Court's decision acquitting TOTAL S.A. for corruption of foreign public agents. On February 26, 2016, the Court of Appeal of Paris overturned the Criminal Court's decision and TOTAL S.A. was convicted and ordered to pay a fine of €750,000. The Company has decided to appeal this decision before the French Supreme Court (*Cour de cassation*). On March 14, 2018, the French Supreme Court rejected the appeal.

3.3 Internal control and risk management procedures

The following information was prepared with the support of several functional divisions of the Company, and in particular the Audit &

Internal Control, Legal and Finance Divisions. It was examined by the Audit Committee, then approved by the Board of Directors.

3.3.1 Fundamental elements of the internal control and risk management systems

The Group is structured around business segments to which the Group's operational entities report. The business segments' management are responsible, within their area of responsibility, for ensuring that operations are carried out in accordance with the strategic objectives defined by the Board of Directors and General Management. The functional divisions at the Holding level help General Management define norms and standards, oversee their application and monitor activities. They also lend their expertise to the operational divisions.

The Group's internal control and risk management systems are structured around this three-level organization – Holding level, business segments, operational entities – where each level is directly involved and accountable in line with the level of delegation determined by General Management.

General Management constantly strives to maintain an efficient internal control system across the Group, based on the framework of the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In this framework, internal control is a process intended to provide reasonable assurance that the objectives related to operations, reporting and compliance with applicable laws and regulations are achieved. As for any internal control system, it cannot provide an absolute guarantee that all risks are completely controlled or eliminated.

The COSO framework is considered equivalent to the reference framework of the French Financial Markets Authority (*Autorité des marchés financiers*). The Group has also chosen to rely on this framework as part of its obligations under the Sarbanes-Oxley Act.

The Group's internal control and risk management systems are therefore based on the five components of this framework: control environment, risk assessment, control activities, monitoring, and information and communication.

The Group's risk management system draws on the main international standards (COSO Enterprise Risk Management integrated framework, ISO 31000: 2009 – Risk management) as well as on French standards (Reference framework of the French Financial Markets Authority). The internal Risk Management, Internal Control and Audit Charter forms the common framework on which the Group relies to ensure control of its activities.

The Group's internal control and risk management systems cover the processes of the fully consolidated entities.

The principles of control fit into the framework of the rules of corporate governance. In particular, these rules task the Board of Directors' Audit Committee with monitoring the efficiency of the internal control and risk management systems and of the internal audit performed to assess the risk management systems at all levels of the organization and make recommendations for their improvement. The Audit Committee also monitors the process of producing accounting and financial information, in order to guarantee its integrity.

Approximately 400 employees monitor the internal control systems within the Group. The assessment of the internal control and risk management system is mainly overseen by the Audit & Internal Control Division, which was composed of 70 people in 2017 and carried out more than 150 internal audits.

3.3.2 Control environment

Integrity and ethics

TOTAL's control environment is based primarily on its Code of Conduct, which sets forth its priority actions in terms of safety, security, protection of health and the environment, integrity and respect for human rights. The principles of the Code of Conduct are set forth in a number of guides, such as the Business Integrity Guide and the Human Rights Guide. These documents are distributed to employees and are available on the intranet. They also set out the rules of individual behavior expected of all employees in the countries where the Group has a presence. Similarly, a Financial Code of Ethics sets forth the obligations applicable to the Chairman and Chief Executive Officer, the Chief Financial Officer, the Vice President of the Corporate Accounting Division and the financial and accounting officers of the principal Group activities.

As a priority of General Management, the Group deploys an ethics policy and compliance programs, in particular for the prevention of corruption, fraud and competition law infringement. These programs include reporting and control actions (review and audit missions). Assessments of ethics are also conducted (refer to point 5.3.5.2 of chapter 5). In these areas, the Group also relies on the Compliance network and the Ethics Committee, the role of which is to listen and provide assistance.

Structures, authorities and responsibilities

General Management ensures that the organizational structure and reporting lines plan, execute, control and periodically assess the Group's activities. It regularly reviews the relevance of the organizational structures so as to be able to adapt them quickly to changes in the activities and in the environment in which they are carried out.

The Group has also defined central responsibilities that cover the three lines of internal control: (1) operational management, which is responsible for implementing internal control, (2) support functions (such as Finance, Legal, Human Resources, etc.), which prescribe the internal control systems, verify their implementation and effectiveness and assist operational employees, and (3) internal auditors who, through their internal control reports, provide recommendations to improve the effectiveness of the system.

In addition, an accountability system is defined and formalized at all levels of the organization, through organization notes, organization charts, appointment notes, job descriptions and delegations of powers. Each business segment has established, in accordance with the Group's instructions, clear rules applicable to its own scope.

Policies and procedures

TOTAL has a framework of Group standards that are completed by a series of practical recommendations and feedback. Like the Group's organization, this framework has a three-level structure: a Group level, with the REFLEX Group framework and the technical framework set out by the Group Technology Committee, frameworks for each business segment, and a specific framework for each significant operational entity.

The main applicable procedures regarding finance at Group level cover acquisitions and sales, capital expenditure, financing and cash management, budget control and financial reporting. Disclosure controls and procedures concerning information to be published are in place (refer to point 3.3.4 below). At the operating levels, these procedures mainly pertain to health, safety, industrial safety, IT security and the environment, as well as integrity and fraud and corruption prevention.

These documents, all of which are published on the Group's intranet, are reviewed regularly and their implementation is monitored.

At the business segment or operational entity levels, control activities are organized around the main operational processes: exploration and reserves, procurement, capital expenditures, production, sales, oil and gas trading, inventories, Human Resources, financing and cash management, and account closing process.

Training and employee retention

The Group's Human Resources policy sets out rules and practices that reflect its commitment in terms of social responsibility and its expectations of employees, particularly in terms of competencies. Job descriptions within the Group's various entities define the competencies and expertise required for employees to effectively carry out their functions.

In addition, the Human Resources function shapes and regularly updates policies aimed at attracting new talents, including employee training, assessment and retention policies (annual appraisals, training programs, compensation policies and career management – refer to point 5.1 of chapter 5).

Accountability

The Board of Directors, with the support of the Audit Committee, ensures that the internal control functions are operating properly. The Audit Committee ensures that General Management implements internal control and risk management procedures based on the risks identified, such that the Group's objectives are achieved.

The general managements of the business segments and operational entities are responsible for designing and deploying specific

components of this internal control and risk management system within their area of responsibility. A representation letter process deployed at the various levels of the organization reinforces the effectiveness of the internal control system, particularly over financial reporting.

The Corporate Audit & Internal Control Division pursues a continual process aimed at strengthening the assessment of the role and involvement of all employees in terms of internal control. Training initiatives tailored to the various stakeholders involved in the internal control process are regularly launched within the Group.

Control activities and assessment

Any activity, process or management system may be the subject of an internal audit conducted by Group Audit, in accordance with the international internal audit framework of internal audits and its Code of Conduct. The Group's Audit & Internal Control Division also conducts joint audits with third-party auditors and provides assistance (advice, analysis, input regarding methodology). The audit plan, which is based on an analysis of the risks and risk management systems, is submitted annually to the Executive Committee and the Audit Committee.

The Group regularly examines and assesses the design and effectiveness of the key operational, financial and information technology controls related to internal control over financial reporting, in compliance with the Sarbanes-Oxley Act. In 2017, this assessment was performed with the assistance of the Group's main entities and Audit & Internal Control Division. The system used covers:

- the most significant entities, which assess the key operational controls of their significant processes and respond to a Group questionnaire for assessing the internal control system; and
- other less significant entities, which respond only to the Group questionnaire for assessing the internal control system.

These two categories of entities, which include the central functions of the business segments and the Holding, account for approximately 80% and 10%, respectively, of the financial aggregates in the Group's Consolidated Financial Statements.

The statutory auditors also review the internal controls that they deem necessary as part of their certification of the financial statements. In 2017, they reviewed the implementation of the Group's internal control framework and the design and effectiveness of key internal controls at its main entities regarding financial reporting. Based on their review, the statutory auditors stated that they had no remarks on the information presented on internal control and risk management procedures.

The reports on the work performed by the Group Audit and statutory auditors are periodically summarized and presented to the Audit Committee and, thereby, to the Board of Directors. The Senior Vice President, Audit & Internal Control attended all Audit Committee meetings held in 2017. The Audit Committee also meets with the statutory auditors at least once a year without any Company representatives present.

If areas of improvement are identified by these internal audits and operational controls, then corrective action plans are drawn up and shared with operational management, who along with the Group's Audit & Internal Control Division, monitor their implementation closely.

Based on the internal reviews, General Management has reasonable assurance of the effectiveness of the Group's internal control.

3.3.3 Risk assessment and management

3.3.3.1 General principles

To implement its strategy, General Management ensures that clear and precise objectives are defined at the various levels of the organization with regard to operations, reporting and compliance.

Operational objectives focus on the definition and efficient use of human, financial and technical resources. In particular, they are defined during the budgetary processes and in the long-term plan, and are regularly monitored as part of the self-assessment process.

The monitoring of operational objectives (financial and non-financial) helps in decision-making and monitoring performance of activities at each level of the organization.

The Group implements a risk-management system that is an essential factor in the deployment of its strategy, based on responsible risk-taking.

This system relies on a continuous process of identifying and analyzing risks in order to determine those that could prevent the attainment of TOTAL's goals.

The Executive Committee, with the assistance of the Group Risk Management Committee (GRMC), is responsible for identifying and analyzing internal and external risks that could impact the achievement of the Group's objectives. The main responsibilities of the GRMC include ensuring that the Group has a map of the risks to which it is exposed and that efficient risk management systems are in place. The GRMC's work focuses on continuously improving risk awareness and the risk management systems.

Risk mapping, which has been carried out since the 2000s, is a dynamic process that has taken shape over the years. The Group's risk map is included in the inputs of the audit plan, which is based on an analysis of the risks and the risk management systems, together with the work of the GRMC.

The GRMC relies on the work carried out by the business segments and functional divisions, which concurrently establish their own risk mapping. The business segments are responsible for defining and implementing a risk management policy suited to their specific activities. However, the handling of certain transverse risks is more closely coordinated by the respective functional divisions.

Regarding commitments, General Management exercises operational control over TOTAL's activities through the Executive Committee's approval of investments and expenses that exceed defined thresholds. The Risk Committee is tasked with reviewing these projects in advance, and in particular verifying the analysis of the various associated risks.

3.3.3.2 Implementation of the organizational framework

The Group Risk Management Committee (GRMC)

The GRMC is chaired by a member of the Executive Committee, the Group's Chief Financial Officer, and includes the Senior Vice Presidents of the corporate functions together with the chief administrative officers or chief financial officers of the business segments. The Chief Financial Officer attends all meetings of the Board of Directors' Audit Committee, thus strengthening the link between the GRMC and the Audit Committee.

The GRMC meets six times a year. At each meeting, the participants share any potential risks they have identified and presentations are given on one or more risk-related topics, during which the members of the GRMC are invited to cast a critical eye over the subject, question the work done and, if applicable, provide additional information or clarification in order to enhance the understanding of

the risk and improve the risk management systems. The GRMC can request that actions be taken.

The work of the GRMC is led by the Audit & Internal Control Division, which assists contributors in preparing the presentations and acts as the committee's secretary. In this capacity, the Audit & Internal Control Division reports regularly on the work of the GRMC to the Executive Committee, and once a year to the Audit Committee in the presence of the Executive Committee member who chairs the GRMC.

The Risk Committee

The Risk Committee is chaired by a member of the Executive Committee, the Senior Vice President Strategy & Innovation or the Chief Financial Officer. It is made up of representatives from the Strategy & Climate, Finance, Legal, Insurance and HSE corporate divisions.

The Risk Committee meets on the same schedule as the Executive Committee. Any project submitted to the Executive Committee (and therefore giving rise to a financial commitment that exceeds certain thresholds) is first presented to the Risk Committee by the relevant operational division.

Following the review by the Risk Committee of the risks associated with the project submitted, the Strategy & Climate Division sends the Executive Committee a memorandum stating its opinion in light of the Risk Committee's comments.

The Audit & Internal Control Division

The Risk Team of the Audit & Internal Control Division is responsible for producing and continuously updating the Group's risk map. To this end, it uses all of the risk mapping work carried out across the Group, in the business segments and within the functional divisions; the results of all audits and internal control activities; the action plans resulting from this work and the monitoring of their implementation; structured feedback; benchmarks and other external information sources; regular interviews with the Group's executive officers; and all information gathered during GRMC meetings and the preparation for these meetings.

The Audit & Internal Control Division reports regularly on its work on the Group's risk map to the Executive Committee, and annually to the Audit Committee.

3.3.3.3 Systems in place

Financial risks

The management and conditions of use of financial instruments are governed by strict rules that are defined by the Group's General Management, and which provide for centralization by the Treasury Division of liquidity, interest and exchange rate positions, management of financial instruments and access to capital markets. The Group's financing policy consists of incurring long-term debt at a floating rate or at a fixed rate depending on the Group's general needs and interest rates. Debt is mainly incurred in dollars or euros.

The Group's cash balances, which mainly consist of dollars and euros, are managed to maintain liquidity based on daily interest rates in the given currency. Maximum amounts are set for transactions exceeding one month, with placements not to exceed 12 months. TOTAL S.A. also has confirmed credit facilities granted by international banks. These credit facilities, along with the Group's net cash position, allow it to continually maintain a high level of liquidity in accordance with targets set by General Management.

In terms of counterparty risk in financial transactions, the Group adheres to a cautious policy, and only makes commitments with institutions featuring a high degree of financial soundness, as based on a multi-criteria analysis. An overall credit limit is set for each authorized financial counterparty and allocated among the Group's subsidiaries. In addition, to reduce market value risk on its commitments, the Treasury Division has entered into margin call contracts with its counterparties.

The Group seeks to minimize its currency exposure, on the one hand, by financing its long-term assets in the functional currency of the entity to which they belong and, on the other hand, by systematically hedging the currency exposure generated by commercial activity. These risks are managed centrally by the Treasury Division, which operates within a set of limits defined by General Management.

The policy for managing risks related to financing and cash management activities as well as the Group's currency exposure and interest rate risks is described in detail in Note 15 to the Consolidated Financial Statements (point 8.7 of chapter 8).

Industrial and environmental risks and risks related to climate issues

The Group has developed a Safety Health Environment Quality Charter that sets out the basic principles applicable to the protection of people, property and the environment and also covers the aspects of safety and health (H3SEQ). This Charter is implemented at several levels within the Group through its management systems.

Along these lines, TOTAL implements management systems such as the internal MAESTRO system, which meets the requirements of the standards ISO 14001, ISO 9001 and OHSAS 18001, as well as the new ISO 45001. The Group performs regular assessments, following various procedures, of the risks and impacts of its activities in the areas of industrial safety (particularly process safety), the environment and the protection of workers and local residents:

- prior to approving new investment, acquisition and disposal projects;
- during operations (safety studies, environmental impact assessments, health impact studies);
- prior to releasing new substances on the market (toxicological and ecotoxicological studies, life cycle analyses).

These assessments incorporate the regulatory requirements of the countries where the Group's activities are carried out and generally accepted professional practices.

In countries where prior administrative authorization and supervision are required, projects are not undertaken without the authorization of the relevant authorities based on the studies provided to them.

In particular, TOTAL has developed a common methodology for analyzing technological risks that is being gradually applied to all activities carried out by the companies of the Group (refer to point 5.2.2.2 of chapter 5). TOTAL develops risk management measures based on risk and impact assessments. These measures involve facility and structure design, the reinforcement of safety devices and environmental remediation.

In addition to developing management systems as described above, the Group strives to minimize industrial, safety and environmental risks inherent in its operations by conducting thorough inspections and audits, training personnel and raising awareness among all those involved.

In addition, performance indicators (particularly in the areas of HSE) and risk monitoring have been put in place, objectives have been set and action plans have been implemented to achieve these objectives (refer to point 5.2 of chapter 5).

Although the emphasis is on preventing risks, TOTAL takes regular steps to prepare for crisis management based on identified risk scenarios. The Group has a crisis management process that relies on a permanent on-call system, regular drills, training courses in crisis management and a set of dedicated tools. The organization set up in the event of a crisis is deployed at two closely coordinated levels:

- at the local level (country, site or entity), a crisis unit is responsible for ensuring operational management and implementing emergency plans; and
- at the head office level, a crisis unit consisting of a multidisciplinary team is tasked with assessing the situation and overseeing crisis management. This central unit provides the necessary expertise and mobilizes additional resources to assist the local crisis unit when necessary and intervene directly when the situation cannot be handled locally.

Concerning the area of security, the Group has put in place the means to monitor and analyze threats and risks at a central level in order to anticipate and take all necessary preventive measures so as to diminish its exposure to security risks in the countries where it operates.

In addition, TOTAL has developed emergency plans and procedures to respond to an oil spill or leak. These plans and procedures are specific to each subsidiary and adapted to its organization, activities and environment, and are consistent with the Group's antipollution plan. They are reviewed regularly and tested through drills (refer to point 5.2.2.2 of chapter 5).

In the event of accidental pollution, the Group's companies have access to internal human and physical resources (Fast Oil Spill Team, Oil Spill Response Limited, Cedre⁽¹⁾) and also benefit from assistance agreements with the main third-party organizations specialized in the management of hydrocarbon spills.

With regard to risks related to climate issues, TOTAL, in accordance with its Safety Health Environment Quality Charter, is committed to managing its energy consumption and develops processes to improve its energy performance and that of its customers.

In its decision-making process, the risks and associated climate issues (flaring, greenhouse gas emissions, CO₂ price sensitivity) are assessed prior to the presentation of the projects to the Executive Committee.

In order to ensure the viability of its projects and long-term strategy in light of the challenges raised by climate change, the Group integrates, into the financial evaluation of investments presented to the Executive Committee, either a long-term CO₂ price of \$30 to \$40 per ton (depending on the price of crude), or the actual price of CO₂ in a given country if higher. The Group performs sensitivity tests to assess the ability of its asset portfolio to withstand an increase in the price per ton of CO₂.

In addition, TOTAL takes into account the Sustainable Development Scenario (2°C) of the International Agency for Energy (IAE) in its analysis of changes in energy markets (notably that of hydrocarbons) and its development strategy. As a result, the Group is prioritizing its projects and focusing on hydrocarbon assets with moderate production and processing costs that meet the highest environmental and safety standards.

(1) Association to improve the fight against water pollution.

Finally, the Group assesses the vulnerability of its facilities to climatic events so that their consequences do not affect the integrity of the facilities or the safety of individuals. More generally, natural hazards (climate-related risks as well as seismic, tsunami, soil strength and other risks) are taken into account in the conception of industrial facilities, which are designed to withstand both normal and extreme conditions. The Group carries out a systematic assessment of the possible repercussions of climate change on its future projects. These analyses include a review by type of risk (e.g., sea level, storms, temperature, permafrost) and take into account the lifespan of the projects and their capacity to gradually adapt. These studies have not identified any facilities that cannot withstand the consequences of climate change known today.

Risks related to information systems

In order to maintain information systems that are appropriate to the organization's needs and limit the risks associated with information systems and their data, TOTAL's IT Division has developed and distributed governance and security rules that describe the recommended infrastructure, organization and procedures. These rules are implemented across the Group under the responsibility of the various business segments. To address cyber threats, the Group conducts specific risk analyses permitting to define and put in place appropriate security controls concerning information systems.

The Group has also developed control activities at various levels of the organization relating to areas where information systems cover all or part of the processes. Information Technology General Controls aim to guarantee that information systems function and are available as required, and that data integrity and confidentiality are guaranteed and changes controlled.

Information Technology Automated Controls aim to ensure the integrity and confidentiality of data generated or supported by business applications, particularly those that impact financial flows.

The outsourcing of some components of the Group's IT infrastructure to service providers poses specific risks and requires the selection and development of additional controls of the completeness, accuracy and validity of the information supplied and received from such service providers. Accordingly, to ensure continuous improvement, the Group assesses whether suitable controls are implemented by the service providers concerned and what controls are necessary within its own organization to maintain these risks at an acceptable level.

Furthermore, faced with rising legal and security-related risks, the Group deploys policies to conserve documents and to protect personal data and the security of its information assets. The Group has also employed an Operational Security Center to detect and analyze IT system security events.

Ethical misconduct and non-compliance risks

Prevention of corruption risks

General Management constantly reiterates the principle of zero tolerance with regard to corruption. Internal rules have been published since 2011 in this area. They cover various areas where particular risks of exposure to corruption may exist (acquisitions/disposals, business partnerships and joint ventures, representatives dealing with public officials, procurement and sales, donations, gifts and invitations, Human Resources, etc.) in an effort to detect, assess and address risks at a very early stage through an appropriate due diligence process.

Awareness-raising and training actions are regularly taken for all employees and the most exposed functions in support of this program. For more information, refer to point 5.3.5.1 of chapter 5.

In addition, more than 360 Compliance Officers have been appointed and trained within the business segments and operational entities. Their role is to ensure that the program is implemented at the local level.

Since the certification of its compliance program in 2016 at the end of a monitoring period jointly requested by the Securities and Exchange Commission (SEC) and the Department of Justice (DoJ), the Group is still committed and pursuing its efforts in a bid to ensure the sustainability, development and continuous improvement of this compliance program.

Fraud prevention

The Group deploys an anti-fraud and fraud prevention program and has implemented a range of procedures and programs that help to prevent, detect and limit different types of fraud. This effort is supported by the business principles and values of individual behavior described in the Group's Code of Conduct and other standards applied by the Group's business segments.

The Group has issued a directive for handling incidents of fraud that has been widely distributed to employees, and has created an alert system that employees can use to report acts including those that may constitute fraud.

An antifraud compliance program has been deployed since 2015, including e-learning modules for all Group employees, a Guide to the "Prevention and the fight against fraud", a map of the risks of fraud in the Group, a guide to the types of risk of fraud that includes descriptions of the main risks and was published in 2016, and a campaign to raise awareness of four major risks of fraud, launched end of 2016. This program is deployed by the network of fraud risk coordinators in the business segments and operational entities. The role of coordinator is usually performed by the Compliance Officer. Fraud risk analyses are also carried out in the subsidiaries.

Prevention of risks of non-compliance with international economic sanctions regimes

The Group's activities in certain sanctioned countries (refer to point 3.1.9 of this chapter) are subject to an analysis of compliance with the various applicable economic sanctions regimes. With respect to Iran, a specific compliance program has been put in place. In-depth investigations, carried out by specialized service providers, are conducted on the Group's stakeholders in Iran, in order to identify possible links with companies or persons listed under international sanctions (Specially Designated Nationals (SDN) lists, Single List of Frozen Assets of the EU and the UN, etc.). U.S. persons are also excluded from any transaction related to Iran. An Iran compliance coordinator was appointed in 2016 and liaises with the compliance teams of the relevant business segments and the Holding in order to ensure compliance of the Group's activities with applicable laws and regulations.

Prevention of competition law infringement

A Group policy aimed at ensuring compliance with, and preventing infringement of, competition law has been in place since 2014 and is

a follow-up to the various measures previously implemented by the business segments. Its deployment is based, in particular, on management and staff involvement, training courses that include an e-learning module, and appropriate organization.

Prevention of conflicts of interest and market abuse

To prevent conflicts of interest, each of the Group's senior executives completes an annual statement declaring any conflicts of interest to which they may be subject. By completing this declaration, each senior executive also agrees to report to their supervisor any conflict of interest that he or she has had, or of which he or she is aware in performing his or her duties. An internal rule named "Conflicts of Interests" reminds all employees of their obligation to report to their supervisor any situation that might give rise to a conflict of interests.

The Group implements a policy to prevent market abuse linked to trading on the financial markets that is based, in particular, on internal ethics rules that are updated on a regular basis and widely distributed to employees. In addition, the Group's senior executives and certain employees, in light of their positions, are asked to refrain from carrying out any transactions, including hedging transactions, on TOTAL shares or ADRs and in collective investment plans (FCPE) invested primarily in TOTAL shares (as well as derivatives related to

such shares) on the day on which the Company discloses its periodic results publications (quarterly, interim and annual), as well as during the 30 calendar-day period preceding such date. An annual campaign specifies the applicable "blackout" periods.

Risks related to the protection of intellectual assets

To mitigate the risks of third parties infringing its intellectual property and the leak of know-how, TOTAL protects its rights under research partnership agreements negotiated by the Group's intellectual property specialists, the terms and conditions of which are consistent with the Group's industrial and commercial strategy. The Group has a policy of filing and maintaining patents, it monitors technological developments in terms of freedom of use, and it takes, when necessary, all appropriate measures to ensure the protection of its rights.

In addition, since some of its employees have access to confidential documents while performing their duties, TOTAL has adopted internal rules concerning the management of confidential information. The Group's intellectual property specialists also carry out awareness-raising activities with the R&D teams so that the teams are better informed about restrictions that may apply to the use of information and data.

3

3.3.4 Main characteristics of the internal control and risk management procedures relating to the preparation and processing of accounting and financial information

Accounting and financial internal control covers the processes that produce accounting and financial data, and mainly the financial statements processes and the processes to produce and publish accounting and financial information. The internal control system aims to:

- conserve the Group's assets;
- comply with accounting regulations, and properly apply standards and methods to the production of financial information;
- guarantee the reliability of accounting and financial information by controlling the production of accounting and financial information and its consistency with the information used to produce the control panels at every appropriate level of the organization.

At Group level, the Finance Division, which includes the Accounting Division, the Budget & Financial Control and the Tax Division, is responsible for the production and processing of accounting and financial information. The scope of the internal control procedures relating to the production and processing of financial and accounting information includes the parent company (TOTAL S.A.) and all of the fully consolidated entities.

Refer to point 4.1.2.3 of chapter 4 for a description of the role and the missions of the Audit Committee. These missions are defined within the framework of European and American regulations, and in particular Directive 2014/56/EU and EU Directive n°537/2014 pertaining to the legal control of accounts, and are based on the report of the working group on the audit committee, published by the AMF on July 22, 2010.

3.3.4.1 Production of accounting and financial information

Organization of the Financial and Information Systems function

Dedicated teams implement the accounting and financial processes in the areas of consolidation, tax, budget and management control, financing, cash positions and information systems. The entities, business segments and General Management are respectively responsible for accounting activities.

The Accounting Division, which is part of the Finance Division, is responsible for drawing up the Consolidated Financial Statements and manages the Group's network of accounting teams.

The tax function, made up of a network of tax experts in the Holding, the business segments and the entities, monitors changes in local and international rules. It oversees the implementation of the Group's tax policy.

Management control contributes to the reinforcement of the internal control system at every level of the organization. The network of management controllers in the entities and the business segments is supervised by the Budget & Financial Control Division. This department also produces the monthly control panel, the budget and the long-term plan for the Group.

The Treasury Division implements the financial policy, and in particular the processing and centralization of cash flows, the debt and liquidity investment policy and the coverage of currency exposure and interest rate risks.

The Information Systems Division takes decision on the choice of software suited to the Group's accounting and financial requirements. These information systems are subject to works to reinforce the task separation system and to improve the control of access rights. Tools are available to make sure that access rights comply with the Group's rules in this area.

Consolidated Financial Statements process

The Accounting Division, which reports to the Finance Division, prepares the Group's quarterly Consolidated Financial Statements according to IFRS standards, on the basis of the reporting packages prepared by the entities concerned. The Consolidated Financial Statements are examined by the Audit Committee, then approved by the Board of Directors.

The main factors in the preparation of the Consolidated Financial Statements are as follows:

- the processes feeding the individual accounts used to prepare the reporting packages for consolidation purposes are subject to validation, authorization and booking rules;
- the consistency and reliability of the accounting and control data are validated for each consolidated entity and at each appropriate level of the organization;
- a consolidation tool, supervised by the Accounting Division, is used by each consolidated entity and the Group. It guarantees the consistency and reliability of the data at each appropriate level of the organization;
- a consolidation reporting package from each entity concerned is sent directly to the Accounting Division. It is used to optimize the transmission and the completeness of the information;
- a corpus of accounting rules and methods is formally defined. Its application is compulsory for all the consolidated entities in order to provide uniform and reliable financial information. This framework is built according to IFRS accounting standards. The Accounting Division centrally distributes this framework through regular and formal communication with the business segment managers, formal procedures and a Financial Reporting Manual that is regularly updated. In particular, it specifies the procedures for the booking, identification and valuation of off-balance sheet commitments;
- new accounting standards under preparation and changes to the existing framework are monitored in order to assess and anticipate their impacts on the Consolidated Financial Statements;
- an accounts plan used by all the consolidated entities is formally set forth in the Financial Reporting Manual, specifying the content of each account and the procedures for the preparation of the reporting packages for consolidation purposes;
- the account closing process is supervised and is based mainly on the formalization of economic assumptions, judgments and estimates, treatment of complex accounting transactions and compliance with established timetables announced through Group instructions disclosed to each entity;
- off-balance sheet commitments, which are valued according to the Financial Reporting Manual, are reported on a quarterly basis to the Audit Committee.

Processing of accounting and financial information

Internal control of accounting information is mainly focused around the following areas:

- a monthly financial report is formalized by Group and business segment control panels. This report and the Consolidated Financial Statements use the same framework and standards. In addition, the quarterly closing schedule is the same for preparing the Consolidated Financial Statements and financial reporting;
- a detailed analysis of differences as part of the quarterly reconciliation between the Consolidated Financial Statements and financial reporting is supervised by the Accounting and Budget & Financial Control Divisions, which are part of the Finance Division;
- a detailed analysis of differences between actual amounts and the yearly budget established on a monthly basis is realized at each level of the organization. The various monthly indicators are used to continually and uniformly monitor the performances of each of the entities, business segments and of the Group, and to make sure that they are in keeping with the objective;
- an annual reconciliation between the parent company financial statements and the financial statements based on IFRS standards is performed by entity;
- periodic controls are designed to ensure the reliability of accounting information and mainly concern the processes for preparing aggregated financial items;
- a regular process for the signature of representation letters is deployed at each level of the organization;
- an annual control system of the accounts of equity affiliates based on a questionnaire completed by each entity concerned. This system is integrated into the Group's internal control framework; and
- the Disclosure Committee (CCIP) ensures the application of the procedures in place.

Other significant financial information is produced according to strict internal control procedures.

Proved oil and gas reserves are evaluated annually by the relevant entities. They are reviewed by the Reserves Committees, approved by Exploration & Production's general management and then validated by the Group's General Management. They are also presented to the Audit Committee each year.

The internal control process related to estimating reserves is formalized in a special procedure described in detail in point 2.1.3 of chapter 2. The reserves evaluation and the related internal control processes are audited periodically.

The strategic outlook published by the Group is prepared, in particular, according to the long-term plans drawn up at the business segment and Group levels, and on the work carried out at each relevant level of the organization. The Board of Directors reviews the strategic outlook each year.

3.3.4.2 Publication of accounting and financial information

Significant information about the Group is published externally according to formal internal procedures. These procedures aim to guarantee the quality and fair presentation of the information intended for the financial markets, and its timely publication.

The Disclosure Committee (CCIP), chaired by the Chief Financial Officer, ensures the application of these procedures. It meets before TOTAL's financial results press releases, strategic presentations and annual reports are submitted to the Audit Committee and the Board of Directors.

A calendar of the publication of financial information is published and made available to investors on the Group's web site (refer to point 6.6 of chapter 6). With the help of the Legal Division, Investor Relations ensures that all publications are made on time and in accordance with the principle of equal access to information between shareholders.

Assessment of the system for the internal control of accounting and financial information

The Group's General Management is responsible for implementing and assessing the internal control system for financial and accounting disclosure. In this context, the implementation of the Group's internal control framework, based on the various components of the COSO framework, is assessed internally at regular intervals within the Group's main entities.

Pursuant to the requirements introduced by Section 302 of the Sarbanes-Oxley Act, the Chairman and Chief Executive Officer and the Chief Financial Officer of the Company have conducted, with the assistance of members of certain divisions of the Group (in particular Legal, Audit & Internal Control and Corporate Communications), an evaluation of the effectiveness of the internal disclosure controls and procedures, over the period covered by the annual report on Form 20-F. For fiscal year 2017, the Chairman and Chief Executive Officer and the Chief Financial Officer concluded that the disclosure controls and procedures were effective.

In addition, a specific process is in place for reporting any information related to the Group's accounting procedures, internal control and auditing. This process is available to any shareholder, employee or third party.

Finally, the Consolidated Financial Statements undergo a limited examination by external auditors during quarterly closing, and an audit during annual closing. Almost all the audit missions in the countries are fulfilled by the members of the networks of the two statutory auditors, who, after having jointly examined all the accounts and the procedures used to produce them, proceed with the annual certification of the Group's Consolidated Financial Statements. They are informed in advance of the process for the preparation of the accounts and present a summary of their work to the Group accounting and financial managers and to the Audit Committee during the quarterly reviews and annual closing. The statutory auditors also perform those internal control audits that they deem necessary as part of their mission to certify the Financial Statements.

3.4 Insurance and risk management

3.4.1 Organization

TOTAL has its own reinsurance company, Omnium Reinsurance Company (ORC). ORC is integrated within the Group's insurance management and is used as a centralized global operations tool for covering the Group companies' insurable risks. It allows the Group's worldwide insurance program to be implemented in compliance with the specific requirements of local regulations applicable in the countries where the Group operates.

Some countries may require the purchase of insurance from a local insurance company. If the local insurer accepts to cover the subsidiary of the Group in compliance with its worldwide insurance program, ORC negotiates a retrocession of the covered risks from the local insurer. As a result, ORC enters into reinsurance contracts with the subsidiaries' local insurance companies, which transfer most of the risk to ORC.

At the same time, ORC negotiates a reinsurance program at the Group level with oil industry mutual insurance companies and commercial reinsurance markets. ORC allows the Group to better manage price variations in the insurance market by taking on a greater or lesser amount of risk corresponding to the price trends in the insurance market.

In 2017, the net amount of risk retained by ORC after reinsurance was, on the one hand, a maximum of \$70 million per onshore or offshore third-party liability insurance claim and, on the other hand, \$75 million per property damage and/or business interruption insurance claim. Accordingly, in the event of any loss giving rise to an aggregate insurance claim, the effect on ORC would be limited to its maximum retention of \$145 million per occurrence.

3.4.2 Risk and insurance management policy

In this context, the Group risk and insurance management policy is to work with the relevant internal department of each subsidiary to:

- define scenarios of major disaster risks (estimated maximum loss);
- assess the potential financial impact on the Group should a catastrophic event occur;
- help implement measures to limit the probability that a catastrophic event occurs and the financial consequences if such event should occur; and
- manage the level of financial risk from such events to be either covered internally by the Group or transferred to the insurance market.

3.4.3 Insurance policy

The Group has worldwide property insurance and third-party liability coverage for all its subsidiaries. These programs are contracted with first-class insurers (or reinsurers and oil and gas industry mutual insurance companies through ORC).

The amounts insured depend on the financial risks defined in the disaster scenarios and the coverage terms offered by the market (available capacities and price conditions).

More specifically for:

- third-party liability: since the maximum financial risk cannot be evaluated by a systematic approach, the amounts insured are based on market conditions and oil and gas industry practice. In 2017, the Group's third-party liability insurance for any third-party liability (including potential accidental environmental liabilities) was capped at \$900 million (onshore) and \$850 million (offshore). In addition, the Group adopts, where appropriate, the necessary means to manage the compensation of victims in the event of an industrial accident for which it is liable; and
- property damage and business interruption: the amounts insured vary by sector and by site and are based on the estimated cost and scenarios of reconstruction under maximum loss situations and on insurance market conditions. The Group subscribed for business interruption coverage in 2017 for its main refining and petrochemical sites.

For example, for the Group's highest risks (North Sea platforms and main refineries or petrochemical plants), in 2017 the insurance limit for the Group share of the installations was approximately \$1.75 billion for the Refining & Chemicals segment and approximately \$2.2 billion for the Exploration & Production segment.

Deductibles for property damage and third-party liability fluctuate between €0.1 and €10 million depending on the level of risk and

liability, and are borne by the relevant subsidiaries. For business interruption, coverage is triggered 60 days after the occurrence giving rise to the interruption. In addition, the main refineries and petrochemical plants bear a combined retention for property damage and business interruption of \$75 million per insurance claim.

Other insurance contracts are bought by the Group in addition to property damage and third-party liability coverage, mainly in connection with car fleets, credit insurance and employee benefits. These risks are mostly underwritten by outside insurance companies.

The above-described policy is given as an example of a situation as of a given date and cannot be considered as representative of future conditions. The Group's insurance policy may be changed at any time depending on the market conditions, specific circumstances and on General Management's assessment of the risks incurred and the adequacy of their coverage.

TOTAL believes that its insurance coverage is in line with industry practice and sufficient to cover normal risks in its operations. However, the Group is not insured against all potential risks. In the event of a major environmental disaster, for example, TOTAL's liability may exceed the maximum coverage provided by its third-party liability insurance. The loss TOTAL could suffer in the event of such disaster would depend on all the facts and circumstances of the event and would be subject to a whole range of uncertainties, including legal uncertainty as to the scope of liability for consequential damages, which may include economic damage not directly connected to the disaster. The Group cannot guarantee that it will not suffer any uninsured loss and there can be no guarantee, particularly in the event of a major environmental disaster or industrial accident, that such loss would not have a material adverse effect on the Group.

3.5 Vigilance Plan

3.5.1 Introduction

3.5.1.1 Background and Group commitments

In accordance with Article L. 225-102-4 of the French Commercial Code, the vigilance plan (hereafter referred to as the "Vigilance Plan") aims to set out the reasonable measures of vigilance put in place within the Group in order to identify the risks and prevent severe impacts on human rights and fundamental freedoms, human health and safety and the environment resulting from the activities of the Company and the companies it controls as defined in point II of Article L. 233-16 of the French Commercial Code, directly or indirectly, together with the activities of subcontractors or suppliers with which it has an established commercial relationship, where such activities are linked to this relationship.

TOTAL operates in over 130 countries in a variety of complex economic and socio-cultural contexts and in business areas that can present risks that fall within the scope of the Vigilance Plan.

The "One Total" company project, which embodies the Group's ambition to become the responsible energy major, is based specifically on Safety and Respect for Each Other, the two core values central to the Group's collective principles. Although compliance with applicable regulations in each country where the Group operates is most often consistent with the protection of the objectives of the Vigilance Plan, TOTAL, having noted that minimum fundamental principles are necessary for a uniform application of these objectives, notably adhered to the United Nations Global Compact in 2002 and committed to comply with the UN Guiding Principles on Business and Human Rights following their adoption in 2011. TOTAL has also committed to support the United Nations' recommendations for the implementation of the Sustainable Development Goals (SDGs) and launched in 2017 a project to identify and prioritize the SDGs to which it can make the most significant contribution and to define public commitments.

Chapter 5 of this Registration Document sets out the Group's social, environmental and societal strategy, actions and performance indicators.

3.5.1.2 Method and preparation of the Vigilance Plan

The Vigilance Plan covers the activities (hereafter referred to as the "Activities") of TOTAL S.A. and its fully consolidated subsidiaries (hereafter referred to as the "Subsidiaries"). The companies Hutchinson, Saft Groupe and SunPower have set up risk management and severe impact prevention measures specific to their organizations and activities; those measures related to Article L. 225-102-4 of the French Commercial Code are stated in the Group's Vigilance Plan.

The Vigilance Plan also covers the activities of suppliers of goods and services with which TOTAL S.A. and its Subsidiaries have an established commercial relationship, where such activities are associated with this relationship (hereafter referred to as the "Suppliers"). In accordance with the legal provisions, suppliers with which the Group does not have an established commercial relationship do not fall within the scope of the Plan.

The Plan sets out the rules and measures which, as elements of the risk management systems, enable the Group to identify and prevent actual or potential severe impacts linked to its Activities and to mitigate the effects thereof as the case may be. It does not guarantee that the risks identified will not materialize. It contains the sustainable procurement principles applicable to relationships with Suppliers, but does not aim to replace the measures in place at those Suppliers.

3.5.2 Severe impact risk mapping

The mapping work presented below was carried out using the Group's existing risk management tools. This work was supplemented with regard to Suppliers by mapping of the risks related to procurement, by category of goods and services, on the basis of questionnaires completed by the managers of each purchasing category.

3.5.2.1 Human rights and fundamental freedoms

The risks of severe impacts on human rights and fundamental freedoms have been identified in accordance with the criteria set out in the UN Guiding Principles Reporting Framework, namely the scale, scope and remediability of the impact.

This identification work was carried out in 2016 in consultation with internal and external stakeholders. The process included in particular workshops with representatives of key functions within the Group and Subsidiaries operating in sensitive contexts or situations particularly exposed to risks related to human rights and fundamental freedoms, and a series of interviews with independent third parties (GoodCorporation, International Alert and Collaborative Learning Project).

As a result, the following risks of severe negative impacts on human rights and fundamental freedoms were identified:

- forced labor, which corresponds to any work or service which people are forced to do against their will, under threat of

3.5.1.3 Dialog with stakeholders

TOTAL puts in place procedures for dialog with its stakeholders at every level of its organization. Among the numerous stakeholders with which TOTAL maintains regular dialog, the Group's employees and their representatives have a privileged position and role, particularly in constructive discussions with management (refer to points 5.1.3 and 5.3.1 of chapter 5).

The Group societal directive stipulates that "each entity must regularly consult its stakeholders⁽¹⁾ regularly to gain a clearer understanding of their expectations and concerns, measure their level of satisfaction regarding the Group and identify avenues of improvement for its societal strategy".

In this context, TOTAL has deployed since 2006 its internal Stakeholder Relationship Management (SRM+) methodology. The aim is to identify and map out the main stakeholders of each Subsidiary and site (depots, refineries, etc.), schedule consultation meetings and gain a better understanding of their expectations, and then define an action plan for building a long-term trusting relationship. This methodology is used to explain the Group's Activities to communities and other stakeholders, and to gather information about their expectations and those of local individuals and groups that might be vulnerable or marginalized. It has been deployed at over 100 Subsidiaries since 2006 and the deployment continued in 2017. The system is supplemented by a network of mediators with local communities, deployed in the Exploration & Production segment to maintain a constructive dialog with neighboring communities.

punishment; and child labor, which is prohibited for any person aged under 15, or under 18 for all types of work deemed hazardous in accordance with International Labour Organization standards;

- discrimination, characterized by unfair or unfavorable treatment of people, particularly due to their origin, sex, age, disability, sexual and gender orientation, or membership of a political or religious group, trade union or minority;
- non-compliance with fair and safe working conditions, such as for example the absence of employment contracts, excessive working hours or lack of decent compensation;
- restriction of access to land by neighboring local communities, resulting from the Group having, for some of its projects, temporary or permanent access to the land that might result in the physical and/or economic displacement and relocation of these groups;
- impacts on the right to health and an adequate standard of living of local communities, such as noise and dust emissions and other impacts generated by the Activities that might have consequences for the health of local communities, their means of subsistence and their access to ecosystem services such as drinking water, for example; and
- the risk of disproportionate use of force, when intervention by government security forces or private security companies might be necessary to protect the Group's staff and facilities.

(1) "Stakeholders" means all of the people and organizations that can have an impact on the Group or be affected by its Activities.

3.5.2.2 Safety, health and environment

The Group defines the risk of a severe impact on safety, health or the environment as the probability of TOTAL's Activities having a direct and significant impact on the health or safety of employees of Group companies, employees of external contractors⁽¹⁾ and third parties, or sensitive natural environments⁽²⁾. This risk can materialize gradually or suddenly.

TOTAL has developed safety, health and environment risk assessment procedures and tools applicable to its Activities. Analyses are performed regularly at various levels (Group, activities and/or industrial sites):

- prior to approving new investment, acquisition and disposal projects, through individual identification of potential risks using methods developed by the relevant business segments within the Group, mainly the HSE (Occupational Health, Safety and Environment) and Security departments;
- during operations (safety studies, security reviews, environmental and societal impact assessments, health impact studies); and

- prior to releasing new substances on the market (toxicological and ecotoxicological studies, life cycle analyses).

These analyses have highlighted the following risks of severe impacts:

- the risks to the safety of people and the environment resulting from a major industrial accident, such as an explosion, fire or leakage of toxic substances, resulting in death or injury and/or accidental pollution on a large scale or at an environmentally sensitive site;
- the risks to the safety of people and the environment related to the physical characteristics of oil and gas fields, particularly during drilling operations, which can cause blow outs, explosions, fires or other damages; and
- the risks to the safety of people and the environment related to the overall life cycle of the products manufactured, as well as the substances and raw materials used. With regard to transportation, the likelihood of an operational accident depends not only on the hazardous nature of the products handled, but also on the volumes, the length of the journey and the sensitivity of the regions through which they are transported (quality of infrastructure, population density, environmental considerations).

3.5.3 Action Principles

The Group has frameworks that set out the Action Principles to be followed in order to respect the Group's values and prevent severe impacts on human rights and fundamental freedoms, human health and safety and the environment (the "Action Principles"). When the legal provisions applicable to the Activities provide less protection than the Group's Action Principles, TOTAL strives under all circumstances to give precedence to the latter, while seeking to ensure that it does not infringe any applicable mandatory public policy.

3.5.3.1 Code of Conduct

TOTAL's Vigilance Plan is based primarily on its Code of Conduct⁽³⁾, which is anchored in the Group's values and sets forth the Action Principles in terms of safety, security, protection of health and environment, integrity and respect for human rights and fundamental freedoms.

The Code particularly sets forth the Group's compliance with the following international standards:

- the principles of the Universal Declaration of Human Rights;
- the United Nations Guiding Principles on Business & Human Rights;
- the principles set out in the International Labour Organization's fundamental conventions;
- the principles of the United Nations Global Compact;
- the OECD Guidelines for Multinational Enterprises; and

- the Voluntary Principles on Security and Human Rights.

The Code can be consulted on the Group's website and is aimed at all employees and external stakeholders (Suppliers, host countries, customers, partners, etc.).

3.5.3.2 Safety Health Environment Quality Charter

The Group takes care to comply with the strictest safety, security, health and environment standards in the performance of its Activities. The Safety Health Environment Quality Charter sets out the principles that apply to the conduct of its operations in all of the countries where it operates⁽⁴⁾.

As such, the Group's Subsidiaries implement ⁽⁵⁾ a normative framework incorporating occupational health and safety, security, societal commitment and environment as well as associated management systems (Management And Expectations Standards Towards Robust Operations, MAESTRO).

With regard to safety at work, the Golden Rules, which were produced on the basis of feedback and simplified in 2017 into a set of "dos and don'ts", apply to all Group entities, employees and Suppliers on site. Each individual must ensure that they are adopted, strictly followed and monitored on the ground. If any of the Golden Rules is not being followed, each individual is also authorized to use his or her "Stop Card" and stop any work under way.

(1) Refer to the definition in point 5.4.4.1 of chapter 5.

(2) Sensitive natural environments include in particular remarkable or highly vulnerable natural areas, such as the Arctic, and/or areas covered by regulatory protection (integral nature reserves, central park areas, biotope orders in France, etc.), together with areas covered by significant regulatory protection such as Protected Area Categories I to IV as defined by the International Union for Conservation of Nature (IUCN).

(3) SunPower, a company listed on the NASDAQ in the United States and in which TOTAL has a majority interest, has a Code of professional conduct specific to the company that sets forth its values and the ethical principles with which all employees, suppliers and partners must comply. It covers subjects relating to compliance, integrity and protection of the company's assets, as well as certain issues relating to human rights, fundamental freedoms, human health and safety and environment.

(4) The Group's Safety Health Environment Quality Charter is currently being rolled out at Saft Groupe, which joined the TOTAL Group in the second half of 2016.

(5) Saft Groupe and SunPower have developed HSE management systems specific to their activities and organization (for example, the Environmental Health Safety & Quality Management System).

3.5.3.3 Fundamental Principles of Purchasing

The relationship between the Group and its Suppliers is based on adherence to the principles set forth in the Code of Conduct and the Fundamental Principles of Purchasing (for further information about the relationship between the Group and its suppliers, refer to point 5.3.4.1 of chapter 5).

The Fundamental Principles of Purchasing, introduced in 2010 and formally set out in a Group directive in 2014, specify the commitments that TOTAL expects from its suppliers in the following areas: respect for human rights at work, health protection, safety and security, preservation of the environment, prevention of corruption, conflicts of interest and fraud, respect for competition law, as well as the promotion of economic and social development.

The rules specified by this document, which apply to all the Group's companies⁽¹⁾, must be communicated to TOTAL's suppliers by including or transposing them into the agreements concluded with the suppliers. These principles are available for consultation by all suppliers in both French and English on TOTAL's website (under "suppliers").

3.5.3.4 CSR Global Agreement

TOTAL signed in 2015 a global agreement with the worldwide trade union federation, IndustriALL Global Union, which represents 50 million employees in 140 countries. Under this agreement, the Group is committed to maintaining minimum social standards and guarantees worldwide for all Subsidiaries in which it has more than a 50% stake.

3.5.4 Organization

The Group's organization is structured around three main levels: Holding, business segments and operational entities. This organization aims to support operational managers in the implementation of the Action Principles. Each level is involved in and accountable for identifying and implementing the reasonable vigilance measures deemed appropriate.

3.5.4.1 Ethics Committee

The Ethics Committee is made up of members representing all of the Group's business segments. One of its duties is to ensure that the Code of Conduct is distributed, understood and implemented within the Group. It is assisted in its work by the relevant Departments, as well as by local Ethics Officers. The Chairperson of the Ethics Committee reports to the Chairman and Chief Executive Officer of TOTAL. The Chairperson submits an annual report to the Executive Committee and the Governance and Ethics Committee of TOTAL S.A.'s Board of Directors.

Employees and stakeholders can refer any breach of the Code of Conduct to the Ethics Committee at any time, in accordance with the procedure described in point 3.5.7. The members of the Ethics Committee are subject to confidentiality and data protection obligations.

3.5.4.2 Human Rights Committee and Department

The Human Rights Committee is made up of representatives from different departments (including in particular safety, purchasing and

The Group also ensures that the principles of the global agreement on safety, health, human rights and fundamental freedoms are promoted among its Suppliers, particularly through the Fundamental Principles of Purchasing. In the event that a Supplier fails to observe these principles, the Group is committed to taking the necessary measures, which can include termination of the contract.

Furthermore, on December 21, 2017, the Group adhered to the Global Deal initiative, together with some 60 partners, states, trade unions, companies and international organizations. This international multi-stakeholder partnership aims at fighting against inequalities, encouraging effective social dialogue and promoting more equitable globalization. It promotes social dialogue, collective negotiations and freedom of unionization as essential tools to achieve the United Nations Sustainable Development Goals (SDGs) 8, 10 and 17.

3.5.3.5 Internal control framework

At the Group, business segment and Subsidiary level, internal controls are based on specific procedures for organization, delegation of responsibilities and staff awareness and training, based on the framework of the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

TOTAL has a framework of Group standards, completed by a series of practical recommendations and feedback. Like the Group's organization, this framework has a three-level structure: a Group level, with the REFLEX Group framework and the technical framework set out by the Corporate Technology Group, frameworks for each business segment, and a specific framework for each significant operational entity.

societal commitment) and business segments. It meets several times a year and coordinates actions relating to human rights and fundamental freedoms taken by the various business segments and Subsidiaries, in line with the road map approved by the Executive Committee in this regard.

The Human Rights Department, within the Civil Society Engagement division, supports the Group's operational managers with its expertise in implementing the Action Principles relating to human rights and fundamental freedoms.

3.5.4.3 Occupational Health, Safety and Environment division

Since 2016, a single HSE division combines the Group's Occupational Health, Safety and Environment functions. Its role is to implement a strong and unified HSE model.

Within the division, the HSE departments of the Exploration & Production, Gas, Renewables & Power, Refining & Chemicals and Marketing & Services segments are, among others, responsible for supporting the implementation of the Group's HSE policy. Specific expert units were set up in 2016 in the following areas: major risks, human and organizational factors, environmental and societal issues, transportation and storage, crisis management and pollution prevention.

(1) Saft Groupe and SunPower have defined fundamental principles of purchasing specific to their activities (for example, SunPower Supplier Sustainability Guidelines).

3.5.4.4 Procurement

Since January 1, 2017, Total Global Procurement covers a large proportion of the Group's goods and services purchasing⁽¹⁾, both for categories specific to one business activity and categories shared between several business activities. In the Subsidiaries, purchasers implement framework agreements and manage local procurement.

A Sustainable Procurement Committee, which regularly brings together the Management Committee of Total Global Procurement and the Civil Society Engagement (including the Human Rights department), HSE and Legal divisions as well as the Ethics

3.5.5 Assessment procedures

The Group has set up procedures for assessing its Subsidiaries and Suppliers, particularly in conjunction with independent bodies, in order to identify and prevent risks of severe impacts on human rights and fundamental freedoms, human health and safety.

3.5.5.1 HSE audits and industrial risk assessment

The Audit and Feedback Unit of the HSE division is a key component of HSE governance. It was formed in response to the need for internal control to:

- ensure the quality and effectiveness of risk management processes and the implementation thereof in the entities' and subsidiaries' operations to improve their risk management and contribute to operational excellence; and
- ensure compliance with the Group's HSE requirements.

The unit organizes, optimizes and conducts HSE audits within the Group, and is also responsible for analyzing major incidents in the oil and gas sector and managing feedback.

The level of risk analyzed is assessed for each industrial site operated, and an action plan is then produced to supplement the application of technical standards and local regulations. In addition, the Management Committee of each of the Group's business segments carries out an annual review of the major risk analyses and the progress of the associated action plans.

3.5.5.2 Supplier qualification and auditing

The Supplier qualification process was harmonized in 2017 by Total Global Procurement and it will be rolled out gradually throughout the Group⁽²⁾ using a consolidated database. The process covers human rights, environment, health and safety.

Depending on the results of a risk analysis carried out by Supplier, a detailed assessment is carried out. It includes questionnaires addressing the aforementioned issues and, if needed, an action plan, a technical inspection of the site by an employee or an audit of working conditions carried out by a specialist service provider with which a framework agreement was signed in 2016.

Regarding petroleum shipping activities, any operation that involves vessels calling at a terminal operated by a Group Subsidiary, carrying

Committee, monitors the implementation of the Group's Sustainable Procurement road map. The road map sets out the strategic direction of the Sustainable Procurement working group (refer to point 5.3.4 of chapter 5).

In addition, the Vetting department of Trading & Shipping, known as Total Activités Maritimes (TAM), defines and applies the selection criteria for the tankers used to transport the Group's petroleum, chemical and gas products, in order to ascertain the technical condition of the vessels, the crews' experience and the quality of the ship owners' technical management.

shipments that belong to the Group or chartered by TOTAL must be approved in advance by the Vetting department. Responses are given on the basis of technical data and independently of any commercial considerations. The audits conducted by TAM of ship owners permit the assessment of the quality of the technical management systems implemented by the operators, crew selection and training, and the support provided to vessels. With 1,200 annual inspections performed by inspectors representing the Group, TOTAL is actively involved in sharing inspection reports with other major oil companies through the SIRE (ship inspection report) Program set up by the OCIMF (Oil Companies International Marine Forum), thus contributing to the continuous improvement of petroleum shipping safety.

3.5.5.3 Ethical assessments

Since 2002, the Group has engaged GoodCorporation, a company specializing in ethical assessments, to check the application of the principles set out in the Code of Conduct at the Subsidiary level. These assessments include criteria relating to human rights and fundamental freedoms, and corruption. As part of the process, a selection of employees and external stakeholders of the Subsidiary is questioned to gain an understanding of how its Activities are perceived locally. Following the assessment, the Subsidiary in question defines and implements an action plan and a monitoring procedure.

3.5.5.4 Assessment of entities regarding human rights and fundamental freedoms

TOTAL works with the Danish Institute for Human Rights (DIHR), an independent national body for the defense and promotion of human rights and fundamental freedoms, which assesses the impact on human rights and fundamental freedoms of the Group's oil and gas exploration and production activities in sensitive contexts.

The DIHR has also developed a self-assessment tool, the Human Rights Compliance Assessment (HRCA), to help companies evaluate their compliance with international human rights standards. The Group has used the tool several times to raise awareness at the Subsidiaries and incorporate respect for human rights and fundamental freedoms into their everyday operational management.

(1) With the exception of crude oil and petroleum product purchasing by Trading & Shipping, gas and electricity purchasing by TOTAL Gas & Power Ltd, and the purchases made by Hutchinson, Saft Groupe and SunPower. TOTAL Global Procurement made purchases from over 100,000 suppliers worldwide in 2017.

(2) Crude oil and petroleum product purchasing by Trading & Shipping, gas and electricity purchasing by TOTAL Gas & Power Ltd, and the purchases made by Hutchinson, Saft Groupe and SunPower are covered by qualification processes specific to their organization and business, defined by those companies and Group entities.

3.5.5.5 Societal impact assessment

The Group⁽¹⁾ conducts baseline socioeconomic context studies and societal and human rights impact assessments for industrial projects, asset acquisition transactions and shareholding purchases that might have an impact on stakeholders.

In some cases, the Group works with independent experts such as CDA, a company specialized in preventing and managing conflict between businesses and local communities. Similarly, the Group

works with International Alert (IA), an NGO based in the United Kingdom specializing in conducting audits in conflict zones. CDA and IA's reports are published online on their websites.

In addition, an annual self-assessment questionnaire enables each of the Group's entities and business segments to measure and evaluate the level of implementation of their societal governance on the ground by identifying and analyzing their dialog initiatives, impact management and contribution to socioeconomic and cultural development.

3.5.6 Awareness and training actions

3.5.6.1 Subsidiary and Supplier awareness

The Group has put in place a variety of communication and information channels so that all employees of TOTAL S.A. and its Subsidiaries can access its Action Principles in relation to human rights and fundamental freedoms, health, safety and the environment.

The Code of Conduct is distributed to all employees and can be consulted on the Group's website. All new employees must confirm that they are familiar with it.

A number of practical guides are available on the Group's intranet, such as for example the Human Rights Guide and the Guide to dealing with religious questions within the Group, to help Group employees apply the commitments set out in the Code of Conduct to individual cases.

Tools have also been developed for employee use, for instance the "Safety +" web application in the field of HSE, which aims to provide a unique forum for sharing and promoting significant individual or collective safety actions (good practice, compliance with rules, initiatives) implemented at the Group's 750 entities⁽²⁾.

The HSE division organizes the Group's World Safety Day, which aims to bring teams on board and raise awareness of ways to put the HSE Action Principles into practice. The Group's employees implement its safety culture on a day-to-day basis through "Safety Moments" at the beginning of meetings or before hazardous operations, consisting of a short discussion to reiterate the key safety messages and focus participants on their mutual commitments.

Information for Suppliers, including the Fundamental Principles of Purchasing, is available on the Group's website. Events such as the annual Business Ethics Day are used to raise awareness among employees of TOTAL S.A. and its Subsidiaries. The theme of this event in 2016 focused on challenges in terms of human rights and anti-corruption in the supply chain, and an awareness-raising brochure was circulated on the Fundamental Principles of Purchasing.

3.5.6.2 Employee and third party training

Training courses, incorporating on-line educational programs and technical training tailored to the various business segments, are available to all Group employees (refer to point 5.1.4 of chapter 5).

Dedicated human rights and fundamental freedoms training programs have been set up for senior executives, site directors and the employees most exposed to these issues. In the field of procurement, training modules explaining the Group's ethical commitments and the Fundamental Principles of Purchasing have also been developed for Group purchasers.

Similarly, training programs in the fields of health, safety and environment have been rolled out within the Group. For example, since its launch, over 900 directors of Subsidiaries have taken the "HSE for Managers" training, which is aimed at senior operational and functional management. The Group has also introduced an HSE training course for all new recruits, lasting between 5 and 20 days; the program will be rolled out worldwide in 2018.

Training initiatives are also undertaken with the Group's Suppliers, such as the responsible security training given to safety service providers' personnel, the celebration of the 2017 World Safety Day on the theme of "our shared safety", promoting dialog with Suppliers, or the Safety Contract Owners program, which brings together more than 650 Suppliers at the Group level.

3.5.6.3 Information regarding product-related risks

All of the chemical products or substances marketed by the Group are covered by a safety data sheet for the information of carriers of dangerous goods, emergency services, poison control centers, plant health product professionals and consumers.

Each safety data sheet provides comprehensive information about a substance or mixture usable in the regulatory framework of managing chemicals in the workplace. It enables users to identify the risks linked to handling such products, particularly regarding safety and the environment, so that they can implement any measures necessary to protect people and the environment.

(1) Hutchinson, Saft Groupe and SunPower have implemented assessment processes specific to their organization and activities.

(2) Excluding Hutchinson, Saft Groupe and SunPower.

3.5.7 Whistleblowing mechanisms

To support employees on a day-to-day basis, the Group encourages a climate of dialog and trust that enables individuals to express their opinions and concerns. Employees can thus go to their line manager, an HR or other manager, their Compliance Officer or their Ethics Officer.

The Group's employees and Suppliers, as well as any other external stakeholder, can contact the Ethics Committee to ask questions or report any incident where there is a risk of non-compliance with the Code of Conduct using the generic email address (ethics@TOTAL.com). The system is supplemented by specific

whistleblowing mechanisms implemented at certain subsidiaries (SunPower, Hutchinson).

The Group's Suppliers can also contact the internal supplier mediator using a generic email address (mediation.fournisseurs@TOTAL.com). The mediator is available to Suppliers and purchasers, and restores dialog so that solutions can be found when measures taken with the usual contact have been unsuccessful.

Grievance handling procedures are also in place within the Group in order to receive and facilitate the resolution of concerns and grievances of local communities affected by its Activities.

3.5.8 Monitoring procedures

TOTAL has human rights, health, safety and environment monitoring procedures and tools in order to ensure that the Vigilance Plan is correctly applied and continuously updated.

3.5.8.1 Internal reporting system

The Group has an internal reporting system and indicators for monitoring the implementation of actions undertaken regarding human rights, health, safety and environment that are available to the Subsidiaries (refer to point 5.4 of chapter 5).

The system is based:

- for social indicators (including, in particular, health), on a guide entitled "Corporate Social Reporting Protocol and Method";
- for industrial safety indicators, on a Group rule concerning event and statistical reporting; a feedback analysis process identifies in particular events for which a structured analysis report is required in order to learn lessons in terms of design and operation; and
- for environmental indicators, on a Group reporting procedure, together with activity-specific instructions.

Consolidated objectives are defined for each key indicator (for example, TRIR, or number of recorded injuries per million hours worked) and reviewed annually. The business segments apply these indicators as appropriate to their area of responsibility, analyze the results and set out a plan.

3.5.8.2 Worldwide Human Resources Survey

Each year, TOTAL conducts an internal Worldwide Human Resources Survey. In 2017, it covered 133 companies in 57 countries, representing 87.2% of the consolidated Group's workforce (refer to point 5.4.2 of chapter 5). The survey includes indicators that cover major components of the Group's Human Resources policy, such as mobility, career management, training, working conditions, social dialog, Code of Conduct application, human rights, health,

compensation, retirement and death or disability benefits. The survey covers a representative sample of the consolidated scope.

A survey of Group employees carried out every two years is used to measure the teams' level of commitment and their understanding of and adherence to the Group's Action Principles. This survey is followed by action plans implemented by each entity in response to the areas for improvement identified.

3.5.8.3 CSR global agreement monitoring committee

A CSR global agreement monitoring committee, known as the "FAIR Committee", meets every year in the presence of representatives who are members of trade unions affiliated with the IndustriALL Global Union and appointed by this federation to monitor and implement the agreement. It identifies good practice and areas for improvement.

3.5.8.4 Reports regarding human rights and fundamental freedoms

With regard to human rights and fundamental freedoms, the Group publishes a Human Rights report that describes the Group's Activities' major impacts on human rights and fundamental freedoms and the remedial measures taken. TOTAL is the first company in the oil industry to have published this report in accordance with the UN Guiding Principles Reporting Framework. It is available on the Group's website and will be updated in 2018.

Since 2015, TOTAL also publishes a report to assess the progress made in the implementation of the Voluntary Principles on Security and Human Rights (VPSHR). TOTAL is the first company in the oil industry to make this report public. The information set out in the report is based on annual reporting organized by the Security division that brings together the results of the risk and compliance analyses for each subsidiary operating in a sensitive context.

4

REPORT ON CORPORATE GOVERNANCE

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[REDACTED SECTION: CERTAIN TEXT HAS BEEN REDACTED.]

The information set out in this chapter forms the Board of Directors' report on corporate governance, produced pursuant to Article L. 225-37 of the French Commercial Code. This report has been prepared on the basis of the deliberations of the Board of Directors, and with the assistance of several of the Company's

corporate functional divisions, including in particular the Legal, Finance and People & Social Responsibility Departments. After the sections relevant to their respective duties were reviewed by the Governance and Ethics Committee and the Compensation Committee, the report was approved by the Board of Directors.

4.1 Administration and management bodies

4.1.1 Composition of the Board of Directors

As of March 14, 2018



(a) Excluding the director representing employee shareholders and the director representing employees, in accordance with the recommendations of the AFEP-MEDEF Code (point 8.3). For more information, refer to point 4.1.1.4 of this chapter.

(b) Excluding the director representing employees, in accordance with Article L. 225-27-1 of the French Commercial Code.

The Company is administered by a Board of Directors including, amongst its members, a director representing employee shareholders elected on the proposal of the shareholders set out in Article L. 225-102 of the French Commercial Code, in accordance with the provisions of Article L. 225-23 of the French Commercial Code (hereafter referred to as the "director representing employee shareholders"), and a director representing employees appointed by the UES Amont Central Works Council – Global Services – Holding in accordance with the provisions of Article L. 225-27-1 of the French Commercial Code and the Company's bylaws.

Mr. Patrick Pouyanné is the Chairman and Chief Executive Officer of TOTAL S.A. He has served as Chairman of the Board of Directors since December 19, 2015, the date on which the functions of Chairman of the Board of Directors and Chief Executive Officer of TOTAL S.A. were combined (refer to point 4.1.5.1 of this chapter).

Ms. Patricia Barbizet has served as Lead Independent Director since December 19, 2015. Her duties are specified in the Rules of Procedure of the Board of Directors (refer to point 4.1.2.1 of this chapter).

Directors are appointed for a three-year period (Article 11 of the Company's bylaws). The terms of office of the members of the Board are staggered to space more evenly the renewal of appointments and to ensure the continuity of the work of the Board of Directors and its

Committees, in accordance with the recommendations made in the AFEP-MEDEF Code, which the Company uses as a reference. The profiles, experiences and expertises of the directors are detailed in the biographies below.

Overview of the Board of Directors

As of March 14, 2018	Age	Sex	Nationality	Independence	First appointment	Expiry of term of office	Years' service on the Board	Number of directorships held at listed companies ^(a)
Patrick Pouyanné Chairman and Chief Executive Officer	54	M			2015	2018	3	1
Patrick Artus	66	M		•	2009	2018	9	2
Patricia Barbizet Lead Independent Director	62	F		•	2008	2020	10	2
Marie-Christine Coisne-Roquette	61	F		•	2011	2020	7	1
Mark Cutifani	59	M		•	2017	2020	1	1
Maria van der Hoeven	68	F		•	2016	2019	2	2
Anne-Marie Idrac	66	F		•	2012	2018	6	4
Gérard Lamarche	56	M		•	2012	2019	6	4
Jean Lemierre	67	M		•	2016	2019	2	1
Renata Perycz ^(b)	54	F		n/a	2016	2019	2	0
Christine Renaud ^(c)	49	F		n/a	2017	2020	1	0
Carlos Tavares	59	M		•	2017	2020	1	2

(a) Number of directorships held by the director at listed companies outside his or her group, including foreign companies, assessed in accordance with the recommendations of the AFEP-MEDEF Code, point 18 (refer to point 4.1.1.3 of this chapter).
 (b) Director representing employee shareholders.
 (c) Director representing employees.

Overview of the Committees




















<p>Audit Committee</p> <p>4 members 100% independent</p> <p>Marie-Christine Coisne-Roquette* Patrick Artus Maria van der Hoeven Gérard Lamarche</p>	<p>Governance and Ethics Committee</p> <p>3 members 100% independent</p> <p>Patricia Barbizet* Anne-Marie Idrac Jean Lemierre</p>	<p>Compensation Committee</p> <p>4 members 100% independent^(a)</p> <p>Gérard Lamarche* Patricia Barbizet Marie-Christine Coisne-Roquette Renata Perycz</p>	<p>Strategic & CSR Committee</p> <p>5 members 80% independent</p> <p>Patrick Pouyanné* Patrick Artus Patricia Barbizet Anne-Marie Idrac Jean Lemierre</p>
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(a) Excluding the director representing employee shareholders, in accordance with the recommendations of the AFEP-MEDEF Code (point 8.3).

* Chairperson of the Committee.



Changes to the composition of the Board of Directors and the Committees since the Shareholders' Meeting of May 26, 2017

As of March 14, 2018	Effective date	Departure	Appointment	Renewal
Board of Directors	05/26/2017	Mr. Paul Desmarais, Jr 	Mr. Mark Cutifani ^(a) 	Ms. Patricia Barbizet ^(a) 
		Ms. Barbara Kux ^(a) 	Mr. Carlos Tavares ^(a) 	Ms. Marie-Christine Coisne-Roquette ^(a) 
		Mr. Marc Blanc ^(b) 	Ms. Christine Renaud ^(b) 	
	06/01/2018*			Mr. Patrick Pouyanné 
				Mr. Patrick Artus ^(a) 
				Ms. Anne-Marie Idrac ^(a) 
Audit Committee	05/26/2017		Ms. Maria van der Hoeven ^(a) 	
Governance and Ethics Committee	05/26/2017	Ms. Barbara Kux ^(a) 	Mr. Jean Lemierre ^(a) 	
Compensation Committee	05/26/2017		Ms. Renata Perycz ^(c) 	
Strategic & CSR Committee	05/26/2017	Ms. Barbara Kux ^(a) 	Ms. Anne-Marie Idrac ^(a) 	
		Mr. Marc Blanc ^(b) 	Mr. Jean Lemierre ^(a) 	

* Subject to the approval of the resolutions by the Shareholders' Meeting of June 1, 2018.

(a) Independent director.

(b) Director representing employees.

(c) Director representing employee shareholders.

4.1.1.1 Profile, experiences and expertises of the directors (information as of December 31, 2017)⁽¹⁾



PATRICK POUYANNÉ

**Chairman and Chief Executive Officer of TOTAL S.A.*
Chairman of the Strategic & CSR Committee**

Biography & Professional Experience

A graduate of *École Polytechnique* and a Chief Engineer of France's *Corps des Mines*, Mr. Pouyanné held, between 1989 and 1996, various administrative positions in the Ministry of Industry and other cabinet positions (technical advisor to the Prime Minister – Édouard Balladur – in the fields of the Environment and Industry from 1993 to 1995, Chief of staff for the Minister for Information and Aerospace Technologies – François Fillon – from 1995 to 1996). In January 1997, he joined TOTAL's Exploration & Production division, first as Chief Administrative Officer in Angola, before becoming Group representative in Qatar and President of the Exploration and Production subsidiary in that country in 1999. In August 2002, he was appointed President, Finance, Economy and IT for Exploration & Production. In January 2006, he became Senior Vice President, Strategy, Business Development and R&D in Exploration & Production and was appointed a member of the Group's Management Committee in May 2006. In March 2011, Mr. Pouyanné was appointed Deputy General Manager, Chemicals, and Deputy General Manager, Petrochemicals. In January 2012, he became President, Refining & Chemicals and a member of the Group's Executive Committee.

On October 22, 2014, he became Chief Executive Officer of TOTAL S.A. and Chairman of the Group's Executive Committee. On May 29, 2015, he was appointed by the Annual Shareholders' Meeting as director of TOTAL S.A. for a three-year term. At its meeting on December 16, 2015, the Board of Directors of TOTAL appointed him as Chairman of the Board of Directors as of December 19, 2015 for the remainder of his term of office as director. Mr. Patrick Pouyanné thus became the Chairman and Chief Executive Officer of TOTAL S.A.

Main function: Chairman and Chief Executive Officer of TOTAL S.A.*

Born on June 24, 1963 (French)

Director of TOTAL S.A. since the Ordinary Shareholders' Meeting of May 29, 2015

Expiry date of term of office: Ordinary Shareholders' Meeting of June 1, 2018

Number of TOTAL shares held: 85,072.

Number of Total Actionnariat France collective investment fund units held: 8,565.90 (as of 12/31/2017)

(1) Including information pursuant to Article L. 225-37-4 of the French Commercial Code or item 14.1 of Annex I of EC Regulation No. 809/2004 of April 29, 2004. For information relating to directorships, the companies marked with an asterisk are listed companies.

Business address:
TOTAL S.A.
2 place Jean Millier,
La Défense 6, 92400
Courbevoie, France

Directorships and functions held at any company during the 2017 fiscal year

Within the TOTAL Group

- Chairman and Chief Executive Officer of TOTAL S.A.* and Chairman of the Strategic & CSR Committee

Outside the TOTAL Group

- Director of Cap Gemini S.E.* (since May 10, 2017) and member of the Strategy and Investments Committee (since September 1, 2017)

Directorships that have expired in the previous five years

- Chairman and Director of Total Raffinage Chimie until 2014
- Chairman and Director of Total Petrochemicals & Refining SA/NV until 2014



PATRICK ARTUS

Independent Director
Member of the Audit Committee
Member of the Strategic & CSR Committee

Biography & Professional Experience

A graduate of *École Polytechnique*, *École Nationale de la Statistique et de l'Administration Économique* (ENSAE) and *Institut d'Études Politiques de Paris*, Mr. Artus began his career at INSEE (the French National Institute for Statistics and Economic Studies) where his work included economic forecasting and modeling. He then worked at the Economics Department of the OECD (1980), later becoming the Head of Research at the ENSAE from 1982 to 1985. He was scientific advisor at the Research Department of the Banque de France, before joining the Natixis Group as the head of the Research Department, and has been a member of its Executive Committee since May 2013. He is an associate professor at the University of Paris I, Sorbonne. He is also a member of the *Cercle des Économistes*.

Main function: Head of the Research Department and member of the Executive Committee of Natixis*

Directorships and functions held at any company during the 2017 fiscal year

Within the Natixis group

- Head of the Research Department and member of the Executive Committee of Natixis*

Outside the Natixis group

- Director of TOTAL S.A.* and member of the Audit Committee and the Strategic & CSR Committee
- Director of IPSOS*

Directorships that have expired in the previous five years

None

Born on October 14,
1951 (French)

Director of TOTAL S.A.
since the Ordinary
Shareholders' Meeting
of May 15, 2009

Last renewal: Ordinary
Shareholders' Meeting
of May 29, 2015

Expiry date of term of office:
Ordinary Shareholders'
Meeting of June 1, 2018

Number of TOTAL shares
held: 1,000 (as of 12/31/2017)

Business address:
Natixis
47 quai d'Austerlitz
75013 Paris, France



PATRICIA BARBIZET

Independent Director - Lead Independent Director
Chairwoman of the Governance and Ethics Committee
Member of the Compensation Committee
Member of the Strategic & CSR Committee

Biography & Professional Experience

A graduate of *École Supérieure de Commerce de Paris* (ESCP-Europe) in 1976, Patricia Barbizet started her career in the Treasury division of Renault Véhicules Industriels, and then as CFO of Renault Crédit International. In 1989, she joined the group of François Pinault as CFO, and was CEO of Artémis, the Pinault family's investment company, between 1992 and 2018. She was also CEO and Chairwoman of Christie's from 2014 to 2016.

Patricia Barbizet is Vice Chairwoman of the Board of Directors of Kering and Vice Chairwoman of Christie's PLC. She has been a member of the Board of Directors of TOTAL S.A. since 2008, and has also been a director of Bouygues, Air France-KLM and PSA Peugeot-Citroën. She was Chairwoman of the Investment Committee of the *Fonds Stratégique d'Investissement* (FSI) from 2008 to 2013.

Main function: Director of Artémis

Born on April 17, 1955
(French)

Director of TOTAL S.A. since
the Ordinary Shareholders'
Meeting of May 16, 2008

Last renewal:
Ordinary Shareholders'
Meeting of May 26, 2017

Expiry date of term of office:
2020 Ordinary Shareholders'
Meeting

Number of TOTAL shares
held: 1,050 (as of 12/31/2017)

Business address:
Artémis
12 rue François 1^{er},
75008 Paris, France

Directorships and functions held at any company during the 2017 fiscal year

Within the Artémis group

- Director and Chief Executive Officer of Artémis
- Director and Vice Chairwoman of the Board of Directors of Kering S.A.*
- Deputy Chairwoman of Christie's International plc
- General Manager (non-executive) and Member of the Supervisory Board of Financière Pinault
- Permanent representative of Artémis, member of the Board of Directors of Agefi
- Permanent representative of Artémis, member of the Board of Directors of Sebdo le Point
- Member of the Management Board of Société Civile du Vignoble de Château Latour
- Director of Yves Saint Laurent
- Administratore & Administratore Delegato of Palazzo Grazzi
- Member of the supervisory board of Ponant
- Permanent representative of Artémis, member of the supervisory board of Collection Pinault Paris

Outside the Artémis group

- Director of TOTAL S.A.*, Lead Independent Director, Chairwoman of the Governance and Ethics Committee, member of the Compensation Committee and member of the Strategic & CSR Committee
- Director of Groupe Fnac*

Directorships that have expired in the previous five years

- Chairwoman and CEO of Christie's International plc until December 2016
- Member of the supervisory board of Peugeot S.A.* until April 2016
- Director of Société Nouvelle du Théâtre Marigny until November 2015
- Director of Air France-KLM* until December 2013
- Director of Fonds Stratégique d'Investissement until July 2013
- Director of Bouygues* until April 2013
- Director of TF1* until April 2013
- Board member of Gucci Group NV until April 2013



MARIE-CHRISTINE COISNE-ROQUETTE

Independent Director
Chairwoman of the Audit Committee
Member of the Compensation Committee

Biography & Professional Experience

Ms. Coisne-Roquette has a Bachelor's Degree in English. A lawyer by training, with a French Master's in Law and a Specialized Law Certificate from the New York bar, she started a career as an attorney in 1981 at the Paris and New York bars, as an associate of Cabinet Sonier & Associés in Paris. In 1984 she became a member of the Board of Directors of Colam Entreprendre, a family holding company that she joined full time in 1988. As Chairwoman of the Board of Colam Entreprendre and the Sonepar Supervisory Board, she consolidated family ownership, reorganized the Group structures and reinforced the shareholders' Group to sustain its growth strategy. Chairwoman and Chief Executive Officer of Sonepar as of 2002, Marie-Christine Coisne-Roquette became Chairwoman of Sonepar S.A.S. in 2016. At the same time, she heads Colam Entreprendre as its Chairwoman and Chief Executive Officer. Formerly a member of the Young Presidents' Organization (YPO), she served the MEDEF (France's main employers' association) as Executive Committee member for 13 years and was Chairwoman of its Tax Commission from 2005 to 2013. She was a member of the Economic, Social and Environmental Council from 2013 and 2015 and is currently a Director of TOTAL S.A.

Main function: Chairwoman of Sonepar S.A.S.

Directorships and functions held at any company during the 2017 fiscal year

Within the Sonepar group

- Chairwoman of Sonepar S.A.S.
- Chairwoman of the Corporate Board of Sonepar S.A.S.
- Chairwoman and Chief Executive Officer of Colam Entreprendre
- Permanent representative of Sonepar S.A.S., Chairwoman of Sonepar International
- Permanent representative of Sonepar S.A.S., director of Sonepar France
- Permanent representative of Sonepar S.A.S., co-manager of Sonedis (*société civile*)
- Permanent representative of Colam Entreprendre, co-manager of Sonedis (*société civile*)
- Permanent representative of Colam Entreprendre, director of Sovemarco Europe (S.A.)
- Chief Executive Officer of Sonepack S.A.S.

Born on November 4, 1956
(French)

Director of TOTAL S.A. since the Ordinary Shareholders' Meeting of May 13, 2011

Last renewal:
Ordinary Shareholders' Meeting of May 26, 2017

Expiry date of term of office:
2020 Ordinary Shareholders' Meeting

Number of TOTAL shares held: 4,311 (as of 12/31/2017)

Business address:
Sonepar
25 rue d'Astorg,
75008 Paris, France

Outside the Sonepar group

- Director of TOTAL S.A.*, Chairwoman of the Audit Committee and member of the Compensation Committee
- Co-manager of Développement Mobilier & Industriel (D.M.I.) (*société civile*)
- Manager of Ker Coro (*société civile immobilière*)

Directorships that have expired in the previous five years

- Chairwoman of the Board of Directors of Sonepar S.A. until 2016
- Chairwoman of the Supervisory Board of Otra N.V. until 2013
- Chairwoman of the Supervisory Board of Sonepar Deutschland GmbH until 2013
- Director of Hagemeyer Canada, Inc., Sonepar Canada, Inc., Sonepar Iberica, Sonepar Italia Holding, Sonepar Mexico, Sonepar USA Holdings, Inc., and Feljas et Masson S.A.S. until 2013
- Member of the Supervisory Board of Sonepar Nederland B.V. until 2013
- Permanent representative of Colam Entreprendre, member of the Board of Directors at Cabus & Raulot (S.A.S.) until 2013

**MARK CUTIFANI****Independent director****Biography & Professional Experience**

Mr. Cutifani was appointed director and Chief Executive of Anglo American plc. on April 3, 2013. He is a member of the Board's Sustainability Committee and chairs the Group Management Committee. Mr. Cutifani has 41 years of experience in the mining industry in various parts of the world, covering a broad range of products. Mark Cutifani is a non-executive director of Anglo American Platinum Limited, Chairman of Anglo American South Africa and Chairman of De Beers plc. He previously held the post of Chief Executive Officer of AngloGold Ashanti Limited. Before joining AngloGold Ashanti, Mr. Cutifani was COO responsible for global nickel business of Vale. Prior to that, he held various management roles at Normandy Group, Sons of Gwalia, Western Mining Corporation, Kalgoorlie Consolidated Gold Mines and CRA (Rio Tinto).

Mr. Cutifani has a degree in Mining Engineering (with honors) from the University of Wollongong in Australia. He is a Fellow of the Royal Academy of Engineering, the Australasian Institute of Mining and Metallurgy and the Institute of Materials, Minerals and Mining in the United Kingdom.

Mr. Cutifani received an honorary doctorate from the University of Wollongong in Australia in 2013 and an honorary doctorate from Laurentian University in Canada in 2016.

Main function: Chief Executive of Anglo American plc.*

Directorships and functions held at any company during the 2017 fiscal year**Within the Anglo American group**

- Director and Chief Executive of Anglo American plc.*
- Non-executive director of Anglo American Platinum Limited
- Chairman of Anglo American South Africa
- Chairman of De Beers plc.

Outside the Anglo American group

- Director of TOTAL S.A.* since May 26, 2017

Directorships that have expired in the previous five years

- Chief Executive Officer of AngloGold Ashanti Limited

Born on May 2, 1958
(Australian)

Director of TOTAL S.A.
since the Ordinary
Shareholders' Meeting
of May 26, 2017

Expiry date of term of office:
2020 Ordinary Shareholders'
Meeting

Number of TOTAL
shares held: 2,000
(as of 12/31/2017)

Business address:
Anglo American PLC Group
20 Carlton House Terrace,
London, SW1Y5AN,
United Kingdom



MARIA VAN DER HOEVEN

Independent director
Member of the Audit Committee

Biography & Professional Experience

Ms. van der Hoeven trained as a teacher, becoming a professor in economic sciences and administration then a school counselor. She was then Executive Director of the Administrative Center for vocational training for adults in Maastricht for seven years and then Director of the Limbourg Technology Center. She was a member of the Dutch Parliament, served as Minister of Education, Culture and Science from 2002 to 2007, and was Minister of Economic Affairs of the Netherlands from 2007 to 2010. Ms. van der Hoeven then served as Executive Director of the International Energy Agency (IEA) from September 2011 to August 2015. During this period, she contributed to increasing the number of members of the Agency and emphasized the close link between climate and energy policy. In September 2015, Ms. van der Hoeven joined the Board of Trustees of Rocky Mountain Institute (USA) and in the spring of 2016, became a member of the supervisory board of Innogy SE (Germany). Since October 2016, Ms. van der Hoeven has been Vice Chairwoman of the High-level Panel of the European Decarbonisation Pathways Initiative within the European Commission.

Main function: Independent director

Directorships and functions held at any company during the 2017 fiscal year

- Director of TOTAL S.A.* and, since May 26, 2017, member of the Audit Committee
- Member of the Supervisory Board of Innogy SE*
- Member of the Board of Trustees of Rocky Mountain Institute (USA)

Directorships that have expired in the previous five years

- Member of the Supervisory Board of RWE AG (Germany)

Born on September 13, 1949 (Dutch)

Director of TOTAL S.A. since the Ordinary Shareholders' Meeting of May 24, 2016

Expiry date of term of office: 2019 Ordinary Shareholders' Meeting

Number of TOTAL shares held: 1,000 (as of 12/31/2017)

Business address: Pommardlaan 17, 6213GV Maastricht, Netherlands



ANNE-MARIE IDRAC

Independent Director
Member of the Governance and Ethics Committee
Member of the Strategic & CSR Committee

Biography & Professional Experience

A graduate of *Institut d'Études Politiques de Paris* and formerly a student at *École Nationale d'Administration* (ENA -1974), Ms. Idrac began her career holding various positions as a senior civil servant at the Ministry of Infrastructure (*Ministère de l'Équipement*) in the fields of environment, housing, urban planning and transportation. She served as Executive Director of the public institution in charge of the development of Cergy-Pontoise (*Établissement public d'Aménagement de Cergy-Pontoise*) from 1990 to 1993 and Director of land transport from 1993 to 1995. Ms. Idrac was State Secretary for Transport from May 1995 to June 1997, elected member of Parliament for Yvelines from 1997 to 2002, regional councilor for Île-de-France from 1998 to 2002 and State Secretary for Foreign Trade from March 2008 to November 2010. She also served as Chairwoman and Chief Executive Officer of RATP from 2002 to 2006 and then as Chairwoman of SNCF from 2006 to 2008.

Main function: Independent director

Directorships and functions held at any company during the 2017 fiscal year

- Chairwoman of the Supervisory Board of Toulouse-Blagnac Airport (until May 2018)
- Director of TOTAL S.A.*, member of the Governance and Ethics Committee and, since May 26, 2017, member of the Strategic & CSR Committee
- Director of Air France-KLM* since November 2017
- Director of Bouygues*
- Director of Saint Gobain*

Directorships that have expired in the previous five years

- Member of the Supervisory Board of Vallourec until 2015
- Director of Mediobanca S.p.A. (Italy) until 2014

Born on July 27, 1951 (French)

Director of TOTAL S.A. since the Ordinary Shareholders' Meeting of May 11, 2012

Last renewal: Ordinary Shareholders' Meeting of May 29, 2015

Expiry date of term of office: Ordinary Shareholders' Meeting of June 1, 2018

Number of TOTAL shares held: 1,349 (as of 12/31/2017)

Business address: 9 place Vauban, 75007 Paris, France



GÉRARD LAMARCHE

Independent Director
Chairman of the Compensation Committee
Member of the Audit Committee

Biography & Professional Experience

Mr. Lamarche graduated in economic science from Louvain-La-Neuve University and is also a graduate of INSEAD business school (Advanced Management Program for Suez Group Executives). He also attended the Global Leadership Series training course at the Wharton International Forum in 1998-99. He started his career at Deloitte Haskins & Sells in Belgium in 1983, before becoming a consultant in mergers and acquisitions in the Netherlands in 1987. In 1988, Mr. Lamarche joined Société Générale de Belgique as an investment manager. He was promoted to the position of management controller in 1989 before becoming a consultant in strategic operations from 1992 to 1995. He joined Compagnie Financière de Suez as a Project Manager for the Chairman and Secretary of the Executive Committee (1995-1997), before being appointed as the acting Managing Director in charge of Planning, Management Control and Accounts. In 2000, Mr. Lamarche moved to NALCO (the American subsidiary of the Suez group and the world leader in the treatment of industrial water) as Director and Chief Executive Officer. He was appointed Chief Financial Officer of the Suez group in 2003. In April 2011, Mr. Lamarche became a director on the Board of Directors of Groupe Bruxelles Lambert (GBL). He has been the Deputy Managing Director since January 2012. Mr. Lamarche is currently a director of LafargeHolcim Ltd (Switzerland), TOTAL S.A., SGS S.A. (Switzerland) and Umicore (Belgium).

Main function: Deputy Managing Director of Groupe Bruxelles Lambert*

Directorships and functions held at any company during the 2017 fiscal year

Within Groupe Bruxelles Lambert*

- Deputy Managing Director of Groupe Bruxelles Lambert*

Within holdings of Groupe Bruxelles Lambert

- Director of TOTAL S.A.*, Chairman of the Compensation Committee and member of the Audit Committee
- Director and Chairman of the Audit Committee of LafargeHolcim Ltd*
- Director of SGS S.A.*
- Director of Umicore*

Directorships that have expired in the previous five years

- Director of Lafarge* until 2016
- Director and Chairman of the Audit Committee of Legrand* until 2016
- Non-voting member (*censeur*) of Engie S.A.* until 2015

Born on July 15, 1961
(Belgian)

Director of TOTAL S.A.
since January 12, 2012

Last renewal:
Ordinary Shareholders'
Meeting of May 24, 2016

Expiry date of term of office:
2019 Ordinary Shareholders'
Meeting

Number of TOTAL
shares held: 2,957
(as of 12/31/2017)

Business address:
Groupe Bruxelles Lambert
24, avenue Marnix,
1000 Brussels, Belgium



JEAN LEMIERRE

Independent Director
Member of the Governance and Ethics Committee
Member of the Strategic & CSR Committee

Biography & Professional Experience

Mr. Lemierre is a graduate of the *Institut d'Études Politiques de Paris* and the *École Nationale d'Administration*; he also has a law degree. Mr. Lemierre held various positions at the French tax authority, including as Head of the Fiscal Legislation Department and Director-General of Taxes. He was then appointed as Cabinet Director at the French Ministry of Economy and Finance before becoming Director of the French Treasury in October 1995. Between 2000 and 2008, he was President of the European Bank for Reconstruction and Development (EBRD). He became an advisor to the Chairman of BNP Paribas in 2008 and has been Chairman of BNP Paribas since December 1, 2014. During his career, Mr. Lemierre has also been a member of the European Monetary Committee (1995-1998), Chairman of the European Union Economic and Financial Committee (1999-2000) and Chairman of the Paris Club (1999-2000). He then became a member of the International Advisory Council of China Investment Corporation (CIC) and the International Advisory Council of China Development Bank (CDB). He is currently Chairman of the *Centre d'Études Prospectives et d'Informations Internationales* (CEPII), and a member of the Institute of International Finance (IIF).

Main function: Chairman of the Board of Directors of BNP Paribas*

Directorships and functions held at any company during the 2017 fiscal year

Within the BNP Paribas group

- Chairman of the Board of Directors of BNP Paribas*
- Director of TEB Holding AS

Born on June 6, 1950
(French)

Director of TOTAL S.A.
since the Ordinary
Shareholders' Meeting
of May 24, 2016

Expiry date of term of office:
2019 Ordinary Shareholders'
Meeting

Number of TOTAL
shares held: 1,028
(as of 12/31/2017)

Business address:
BNP Paribas
3 rue d'Antin,
75002 Paris, France

Outside the BNP Paribas group

- Director of TOTAL S.A.* and, since May 26, 2017, member of the Governance and Ethics Committee and member of the Strategic & CSR Committee
- Chairman of *Centre d'Études Prospectives et d'Informations Internationales* (CEPII)
- Member of the Institute of International Finance (IIF)
- Member of the International Advisory Board of Orange*
- Member of the International Advisory Council of China Development Bank* (CDB)
- Member of the International Advisory Council of China Investment Corporation (CIC)
- Member of the International Advisory Panel (IAP) of the Monetary Authority of Singapore (MAS)

Directorships that have expired in the previous five years

- Director of Bank Gospodarki Zywnosciowej (BGZ) (Poland) until 2014

**RENATA PERYCZ****Director representing employee shareholders
Member of the Compensation Committee****Biography & Professional Experience**

Ms. Perycz is a graduate of the University of Warsaw, the *École des Hautes Etudes Commerciales* (HEC) and the SGH Warsaw School of Economics. Ms. Perycz entered the Group in 1993 as a logistics and sales manager for Total Polska. In 2000, she became a supplies and logistics manager before becoming head of the subsidiary's Purchasing Department in 2003.

In 2007, she became Total Polska sp. z.o.o.'s Human Resources and Purchasing director. Since 2013, Ms. Perycz has been the subsidiary's Human Resources and Internal Communications director.

She has also been an elected member, representing unit-holders, of the Supervisory Board of FCPE Total Actionariat International Capitalisation since 2012.

Main function: Human Resources and Internal Communications Director of Total Polska sp. z.o.o. (TOTAL Group)

Directorships and functions held at any company during the 2017 fiscal year

- Director representing employee shareholders of TOTAL S.A.* and, since May 26, 2017, member of the Compensation Committee

Directorships that have expired in the previous five years

None

Born on November 5, 1963
(Polish)

Director of TOTAL S.A.
since the Ordinary
Shareholders' Meeting
of May 24, 2016

Expiry date of term of office:
2019 Ordinary Shareholders'
Meeting

Number of TOTAL
shares held: 399.
Number of Total
Actionariat International
Capitalisation collective
investment fund units held:
1,349.96

Number of Total International
Capital collective investment
fund units held: 36.10 (as of
12/31/2017)

Business address:
Total Polska Sp. Z o.o.
Al. Jana Pawla II 80, 00-175
Warsaw – Poland



CHRISTINE RENAUD

Director representing employees

Biography & Professional Experience

A graduate of the *Institut Universitaire de Technologie en Chimie* at Poitiers University, Ms. Renaud began her career with the Group in 1990 as an analytical development technician for Sanofi (Ambarès site) and then the *Groupement de Recherches de Lacq* (GRL). In 2004, she joined the organic analysis laboratory at the *Pôle d'Études et de Recherches de Lacq* (PERL), before helping to set up a new research laboratory. During her time at GRL, Ms. Renaud was elected as a member of the Works Committee before holding office as a union representative and member of the Group's European Committee from 2004 to 2011. At the end of 2011, Ms. Renaud was elected as Secretary of the Group's European Committee. Her term of office was renewed in 2013 until April 5, 2017. At its meeting of March 30, 2017, the UES Amont Central Works Council – Global Services – Holding appointed Ms. Renaud as director representing employees on the Board of Directors of TOTAL S.A. as of May 26, 2017, for a period of three years expiring following the 2020 Shareholders' Meeting of TOTAL S.A.

Main function: TOTAL S.A.* employee

Directorships and functions held at any company during the 2017 fiscal year

- Director representing employees of TOTAL S.A.* since May 26, 2017

Directorships that have expired in the previous five years

None

Born on May 7, 1968
(French)

Director representing employees of TOTAL S.A. since the Ordinary Shareholders' Meeting of May 26, 2017

Expiry date of term of office:
2020 Ordinary Shareholders' Meeting

Number of TOTAL shares held: 200
Number of Total Actionnariat France collective investment fund units held: 1,565.59 (as of 12/31/2017)

Business address:
TOTAL S.A.
2 place Jean Millier,
La Défense 6,
92400 Courbevoie, France



CARLOS TAVARES

Independent director

Biography & Professional Experience

A graduate of the *École Centrale de Paris*, Mr. Carlos Tavares held various positions of responsibility within the Renault group between 1981 and 2004, before joining the Nissan group. Having been Executive Vice President, Chairman of the Management Committee Americas and President of Nissan North America, he was then Group Chief Operating Officer of the Renault Group from 2011 to 2013. He joined the Managing Board of Peugeot S.A. on January 1, 2014, and was appointed Chairman of the Managing Board on March 31, 2014.

Main function: Chairman of the Managing Board of Peugeot S.A.*

Directorships and functions held at any company during the 2017 fiscal year

Within the Peugeot group

- Chairman of the Managing Board of Peugeot S.A.*
- Director of Banque PSA Finance
- Director of Faurecia*
- Chairman of the Board of Directors of Peugeot Citroën Automobiles S.A.*

Outside the Peugeot group

- Director of TOTAL S.A.* since May 26, 2017
- Director of AIRBUS Group*

Directorships that have expired in the previous five years

- Chief Operating Officer of Renault and member of the Management Board of the Renault-Nissan Alliance
- Director of Renault Nissan B.V.
- Director of PCMA Holding B.V.
- Director of Avtovaz
- Director of Alpine-Caterham
- Chairman of the Management Committee of Nissan Americas

Born on August 14, 1958
(Portuguese)

Director of TOTAL S.A. since the Ordinary Shareholders' Meeting of May 26, 2017

Expiry date of term of office:
2020 Ordinary Shareholders' Meeting

Number of TOTAL shares held: 1,000 (as of 12/31/2017)

Business address:
Peugeot S.A.
7 rue Henri Ste Claire Deville
92500 Rueil-Malmaison,
France

Directorships of TOTAL S.A. expired in 2017**MARC BLANC**

Born on December 7, 1954
(French)

Director representing employees of TOTAL S.A. from November 4, 2014 until the Ordinary Shareholders' Meeting of May 26, 2017

Director representing employees and member of the Strategic Committee until May 26, 2017

Biography & Professional Experience

After joining the Group in 1980 as a refinery operator at the Grandpuits Refinery, Mr. Blanc has, since 1983, exercised a number of trade union functions, in particular as Secretary of the European Elf Aquitaine Committee and then at TOTAL S.A. from 1991 to 2005. From 1995 to 1997, he worked as Secretary General of the CFDT Seine-et-Marne trade union for the Chemicals industry (Syndicat Chimie CFDT), and then, from 1997 to 2001, as Deputy Secretary General of the CFDT trade union for the power and Chemicals industries in the Île-de-France region (Syndicat Énergie Chimie, SECIF), where he became Secretary General in 2001 and continued in this role until 2005. Subsequently, from 2005 to 2012, Mr. Blanc acted as Federal Secretary of the CFDT chemical and power industry federation (*Fédération Chimie Énergie*) where he was responsible first for industrial policy and then for Sustainable Development, Corporate Social Responsibility, international affairs (excluding Europe), and the oil and chemicals sectors. From 2009 to 2014, he was Director of the Chemicals and Power Industry Research and Training Institute (IDEFORCE association) as well as Advisor to the Economic, Social and Environmental Council (*Conseil Économique, Social et Environnemental*, CESE) where he sat as a member of the Economic and Finance section as well as of the Environment section. In particular, he was responsible for submitting a report on the societal challenges of biodiversity (*La biodiversité, relever le défi sociétal*) in June 2011, and was the co-author with Alain Bougrain-Dubourg of a follow-up opinion entitled "Acting for Biodiversity" (*Agir pour la Biodiversité*) submitted in 2013. Mr. Blanc was also a member of the CESE's temporary Committee on the "annual report on the state of France" in October 2013. In 2017, he also co-authored an opinion entitled "Towards a sustainable bioeconomy" (*Vers une bioéconomie durable*) with Jean-David Abel.

Main function: TOTAL S.A.* employee

Directorships and functions held at any company during the 2017 fiscal year

- Director representing employees of TOTAL S.A.* and member of the Strategic Committee until May 26, 2017

Directorships that have expired in the previous five years

- Director representing employees of TOTAL S.A.* until May 26, 2017

PAUL DESMARAIS, JR

Director until May 26, 2017

Biography & Professional Experience

A graduate of McGill University in Montreal and *Institut européen d'administration des affaires* (INSEAD) in Fontainebleau, Mr. Desmarais was first appointed as Vice President (1984), and then as President and Chief Operating Officer (1986), Executive Vice Chairman of the Board (1989), Executive Chairman of the Board (1990), Chairman of the Executive Committee (2006) and Executive Co-Chairman of the Board (2008) of Power Financial Corporation, a company he helped found in 1984. Since 1996, he has also served as Chairman of the Board and Co-Chief Executive Officer of Power Corporation of Canada.

Main function: Chairman & Co-Chief Executive Officer of Power Corporation of Canada*

Directorships and functions held at any company during the 2017 fiscal year

- Chairman & Co-Chief Executive Officer of Power Corporation of Canada*
- Executive Co-Chairman of Power Financial Corporation*
- Chairman of the Board of Directors and Co-Chief Executive Officer of Pargesa Holding S.A.*
- Director and member of the Executive Committee of Great-West Lifeco Inc.*
- Director and member of the Executive Committee of The Great-West Life Assurance Company
- Director and member of the Executive Committee of Great-West Life & Annuity Insurance Company
- Vice-Chairman of the Board, Director and member of the Standing Committee of Groupe Bruxelles Lambert S.A.*
- Director and member of the Executive Committee of Investors Group Inc.

Born on July 3, 1954
(Canadian)

Director of TOTAL S.A. from 2002 until the Ordinary Shareholders' Meeting of May 26, 2017

- Director and member of the Executive Committee of London Life Insurance Company
- Director and member of the Executive Committee of Mackenzie Inc.
- Director and Deputy Chairman of the Board of La Presse Itée
- Director and Deputy Chairman of Gesca Itée
- Director and member of the Nomination, Compensation and Governance Committee of LafargeHolcim Ltd*
- Director and member of the Executive Committee of The Canada Life Assurance Company
- Director and member of the Executive Committee of Canada Life Financial Corporation
- Director and member of the Executive Committee of IGM Financial Inc.*
- Director and member of the Executive Committee of The Canada Life Assurance Company
- Director of 152245 Canada Inc.
- Director of GWL&A Financial Inc.
- Director of Great-West Life & Annuity Insurance Company of New York
- Director of Power Communications Inc.
- Director and Chairman of the Board of Power Corporation International
- Director and member of the Executive Committee of Putnam Investments, LLC
- Member of the Supervisory Board of Power Financial Europe B.V.
- Director and member of the Executive Committee of The Canada Life Insurance Company of Canada
- Director and Deputy Chairman of the Board of Square Victoria Communications Group Inc.
- Member of the Supervisory Board of Parjointco N.V.
- Director of SGS S.A.*

Directorships that have expired in the previous five years

- Director of TOTAL S.A.* until May 26, 2017
- Director of Great West Financial Inc.
- Director and member of the Executive Committee of London Insurance Group Inc.
- Director of Great-West Financial (Nova Scotia) Co.
- Director of Canada Life Capital Corporation Inc. until 2015
- Director of Lafarge* until 2015
- Director of GDF Suez* until 2014

BARBARA KUX

Independent director and member of the Governance and Ethics Committee and the Strategic Committee until May 26, 2017

Biography & Professional Experience

Holder of an MBA (with honors) from INSEAD in Fontainebleau, Ms. Kux joined McKinsey & Company in 1984 as a Management Consultant, where she was responsible for strategic assignments for international groups. After serving as manager for development of emerging markets at ABB and then at Nestlé between 1989 and 1999, she was appointed Executive Director of Ford in Europe from 1999 to 2003. In 2003, Ms. Kux became a member of the Executive Committee of the Philips group and, starting in 2005, was in charge of the supply chain and Sustainable Development. From 2008 to 2013, she was a member of the Executive Board of Siemens AG, a global leader in high technology present in the energy and renewable energy sector. She was responsible for Sustainable Development and the supply chain of the group. Since 2013, she has been a director of various world-class international companies and is also a member of the Advisory Board of INSEAD. In 2016, she was appointed by the European Commission to the newly established high level Decarbonisation Pathways Panel. She has been director of the INSEAD Residence for Corporate Governance since 2017.

Main function: Independent director

Directorships and functions held at any company during the 2017 fiscal year

- Director of TOTAL S.A.*, member of the Governance and Ethics Committee and the Strategic Committee until May 26, 2017
- Director of Engie S.A.*
- Director of Pargesa Holding S.A.*
- Member of the Supervisory Board of Henkel*
- Vice Chairwoman of the Board of Directors of Firmenich S.A.

Directorships that have expired in the previous five years

- Director of TOTAL S.A.* until May 26, 2017
- Member of the Board of Directors of Umicore* until 2017
- Member of the Management Board of Siemens AG* until 2013

Born on February 26, 1954
(Swiss)

Director of TOTAL S.A.
from 2011 until the Ordinary
Shareholders' Meeting
of May 26, 2017

4.1.1.2 Absence of conflicts of interest or convictions

The Board of Directors' Rules of Procedure stipulate the specific rules for preventing conflicts of interest applicable to directors in the following terms (refer to point 4.1.2.1 of this chapter for the full version of the Rules of Procedure):

"2.5. Duty of Loyalty

Directors must not take advantage of their office or duties to gain, for themselves or a third party, any monetary or non-monetary benefit.

They must notify the Chairman of the Board of Directors and the Lead Independent Director, if one has been appointed, of any existing or potential conflict of interest with the Company or any Group company and they must refrain from participating in the vote relating to the corresponding resolution as well as in any discussion preceding such vote.

Directors must inform the Board of Directors of their participation in any transaction that directly involves the Company, or any Group company, before such transaction is finalized.

Directors must not assume personal responsibilities in companies or businesses having activities in competition with those of the Company or any Group company without first having informed the Board of Directors.

Directors undertake not to seek or accept from the Company, or from companies directly or indirectly connected to the Company, any advantages liable to be considered as being of a nature that may compromise their independence."

"7.2.5 Prevention of conflicts of interest

Within the Governance and Ethics Committee, the Lead Independent Director organizes the performance of due diligence in order to identify and analyze potential conflicts of interest within the Board of Directors. He informs the Chairman and Chief Executive Officer of any conflicts of interest identified as a result and reports to the Board of Directors on these activities.

Pursuant to the obligation to declare conflicts of interest set out in Article 2.5 of these Rules, any director affected by an existing or potential conflict of interest must inform the Chairman and Chief Executive Officer and the Lead Independent Director."

The Lead Independent Director has performed due diligence in order to identify and analyze potential conflicts of interest. She has informed the Chairman and Chief Executive Officer of the potential conflicts of interest identified as a result. In this regard, the Lead Independent Director was consulted in April 2017 by a director about a potential conflict of interest arising due to that director's possible membership of a gas-related Committee in a European country. The director in question decided not to take up the offer made to him to chair the Committee.

On the basis of the work carried out, the Board of Directors noted the absence of potential conflicts of interest between the directors' duties with respect to the Company and their private interests.

To the Company's knowledge, there is no family relationship among the members of the Board of Directors of TOTAL S.A., there is no arrangement or agreement with customers or suppliers under which

a director was selected, and there is no service agreement that binds a director to TOTAL S.A. or to any of its subsidiaries and provides for special benefits under the terms thereof.

The current members of the Board of Directors of the Company have declared to the Company that they have not been convicted, have not been associated with a bankruptcy, receivership or liquidation, and have not been incriminated or publicly sanctioned or disqualified, as stipulated in item 14.1 of Annex I of EC Regulation 809/2004 of April 29, 2004.

4.1.1.3 Plurality of directorships held by directors

The number of directorships held by the directors at listed companies outside their group, including foreign companies, was assessed as of December 31, 2017 in accordance with the recommendations of the AFEP-MEDEF Code, point 18, which states that "an executive officer should not hold more than two other directorships in listed corporations, including foreign corporations, not affiliated with his or her group. [This] limit [...] does not apply to directorships held by an executive officer in subsidiaries and holdings, held alone or together with others, of companies whose main activity is to acquire and manage such holdings. [...] A director should not hold more than four other directorships in listed corporations, including foreign corporations not affiliated with his or her group."

Summary of other directorships held by members of the Board of Directors

As of December 31, 2017	Number of directorships held at outside listed companies ^(a)	Compliance with the criteria of the AFEP-MEDEF Code
Patrick Pouyanné	1	✓
Patrick Artus	2	✓
Patricia Barbizet	2	✓
Marie-Christine Coisne-Roquette	1	✓
Mark Cutifani	1	✓
Maria van der Hoeven	2	✓
Anne-Marie Idrac	4	✓
Gérard Lamarche	4	✓
Jean Lemierre	1	✓
Renata Perycz	0	✓
Christine Renaud	0	✓
Carlos Tavares	2	✓

(a) In accordance with the criteria of the AFEP-MEDEF Code.

4.1.1.4 Director independence

At its meeting on February 7, 2018, the Board of Directors, on the proposal of the Governance and Ethics Committee, reviewed the independence of the Company's directors as of December 31, 2017. At the Committee's proposal, the Board considered that, pursuant to the AFEP-MEDEF Code to which the Company refers, a director is independent when "he or she has no relationship of any kind with the company, its group or its management, that may compromise the exercise of his or her freedom of judgment".

For each director, this assessment relies on the independence criteria set forth in point 8.5 of the AFEP-MEDEF Code, revised in November 2016, as described below:

- "not to be or not to have been during the course of the previous five years:
 - an employee or executive officer of the corporation,
 - an employee, executive officer of a company or a director of a company consolidated within the corporation,
 - an employee, executive officer or director of the company's parent company or a company consolidated within this parent;
- not to be an executive officer of a company in which the corporation holds a directorship, directly or indirectly, or in which an employee appointed as such or an executive officer of the corporation (currently in office or having held such office within the last five years) is a director;
- not to be a customer, supplier, commercial banker or investment banker:
 - that is material to the corporation or its group,
 - or for a significant part of whose business the corporation or its group accounts.

The evaluation of the significant or non-significant relationship with the company or its group must be debated by the Board and the quantitative criteria that lead to the evaluation (continuity, economic dependence, exclusivity, etc.) must be explicitly stated in the annual report;

- not to be related by close family ties to a company officer;
- not to have been an auditor of the corporation within the previous five years;
- not to have been a director of the corporation for more than 12 years. Loss of the status of independent director occurs on the date at which this period of 12 years is reached."

The AFEP-MEDEF Code stipulates that non-executive directors cannot be considered independent if they receive variable compensation in cash or in the form of shares or any other compensation linked to the performance of the company or group.

It also stipulates that directors representing major shareholders of the corporation or its parent company may be considered as being independent provided that these shareholders do not take part in control of the corporation. Nevertheless, beyond a 10% holding of stock or 10% of the voting rights, the board, upon a report from the nominations committee, should systematically review the qualification of a director as independent in the light of the make-up of the corporation's capital and the existence of a potential conflict of interest.

As such, concerning the independence of Mses. Barbizet, Coisne-Roquette, van der Hoeven and Idrac and Messrs. Artus, Cutifani, Lamarche, Lemierre and Tavares, it was confirmed that the independence analyses carried out previously continue to be relevant.

In particular, the following information was noticed:

- The level of activity between Group companies and companies of BNP Paribas, of which Mr. Lemierre is Chairman of the Board of Directors, did not represent a material part of the financial institution's overall business (the business of the Group companies with BNP Paribas being less than 0.1% of the bank's net banking income⁽¹⁾), or a material part of the total amount of external financing of the Group's activities (2.5%). The Board confirmed the absence of economic dependence and exclusivity in the activities

between the two groups. It thus concluded that Mr. Lemierre could be deemed to be an independent director;

- The level of activity between Group companies and companies of the Natixis group, of which Mr. Artus is a member of the Executive Committee, did not represent a material part of the group's overall business (the business of the Group companies with Natixis being less than 0.3% of the bank's net banking income⁽²⁾), or a material part of the total amount of external financing of the Group's activities (4.4%). The Board confirmed the absence of economic dependence and exclusivity in the activities between the two groups. It thus concluded that Mr. Artus could be deemed to be an independent director;
- Regarding Peugeot S.A., of which Mr. Tavares is Chairman of the Managing Board, on one hand, sales of the Group to Peugeot S.A. in 2017 (i.e., €294 million) represented 0.19% of the consolidated turnover of the Group (\$171 billion, i.e., €152 billion) and on the other hand, the amount of purchases made by the Group from Peugeot S.A. in 2017 (i.e., €53 million) represented 0.19% of the overall amount of purchases made by the Group in 2017 (€27 billion⁽³⁾). The portion of the business made by the Group with Peugeot S.A. cannot be considered to be material. Moreover, for Peugeot S.A., on one hand, the amount of purchases made by Peugeot with the Group in 2017 (i.e., €294 million) represented 1.7% of the overall amount of purchases made by Peugeot S.A. in 2017 (i.e., €17 billion) and, on the other hand, the amount of sales made by Peugeot S.A. in 2017 to the Group (i.e., €53 million) amounted to 0.01% of the 2016 consolidated turnover of Peugeot S.A. (i.e., €54 billion). The portion of the business made by Peugeot S.A. with the Group cannot be considered to be material for Peugeot S.A. The Board confirmed the absence of economic dependence and exclusivity in the activities between the two groups. It thus concluded that Mr. Tavares could be deemed to be an independent director;
- Regarding Anglo American plc., of which Mr. Cutifani is Chief Executive, on one hand, sales of the Group to Anglo American plc. in 2017 (i.e., \$313 million) represented 0.18% of the 2017 consolidated turnover of the Group (i.e., \$171 billion) and on the other hand, the amount of purchases made by the Group from Anglo American plc. in 2017 was insignificant (less than €20,000). The portion of the business made by the Group with Anglo American plc. cannot be considered to be material for the Group. Moreover, for Anglo American plc., on one hand, the amount of purchases made by Anglo American plc. with the Group in 2017 (i.e., \$313 billion) represented 3% of the overall amount of purchases made by Anglo American plc. in 2017 (i.e., \$10.2 billion) and, on the other hand, the amount of sales made by Anglo American plc. in 2017 to the Group was insignificant (less than €20,000). The portion of the business made by Anglo American plc. with the Group cannot be considered to be material for Anglo American plc. The Board confirmed the absence of economic dependence and exclusivity in the activities between the two groups. It thus concluded that Mr. Cutifani could be deemed to be an independent director;
- The level of activity between Group companies and companies of the Sonepar group, of which Ms. Coisne-Roquette is Chairwoman, did not represent a material part of the overall business of the Sonepar group (the purchases made by Group companies from the Sonepar group representing €1.6 million in 2017, i.e., 0.005% of the overall purchases made by the Group in 2017 of €27 billion). The Board confirmed the absence of economic dependence and exclusivity in the activities between the two groups. It thus concluded that Ms. Coisne-Roquette could be deemed to be an independent director;

(1) Net banking income for 2017 estimated on the basis of the accounts of BNP Paribas as of September 30, 2017.

(2) Net banking income for 2017 estimated on the basis of the accounts of Natixis as of September 30, 2017.

(3) Excluding oil products and vessel chartering by Trading & Shipping.

- The level of activity between Group companies and companies of the Artémis group, of which Ms. Barbizet is a director, did not represent a material part of the overall business of the Artémis group (the purchases made by Group companies from the Artémis group being insignificant), or a material part of the Group's purchases in 2017 (approximately 0.00014%). The Board confirmed the absence of economic dependence and exclusivity in the activities between the two groups. It thus concluded that Ms. Barbizet could be deemed to be an independent director;
- The level of the holding of stock in TOTAL S.A. by Groupe Bruxelles Lambert, of which Mr. Lamarche is Deputy Managing Director, which was less than 1% of the share capital as of December 31, 2017, was not material and did not call into question Mr. Lamarche's independence.

Accordingly, Ms. Barbizet, Coisne-Roquette, van der Hoeven and Idrac and Messrs. Artus, Cutifani, Lamarche, Lemierre and Tavares were deemed to be independent directors.

The percentage of independent directors on the Board based on its composition as of December 31, 2017 was 90%⁽¹⁾.

The rate of independence of the Board of Directors is higher than the rate of independence recommended by the AFEP-MEDEF Code, which specifies that at least half of the members of the Board in widely-held companies with no controlling shareholders must be independent.

Summary of the independence of the members of the Board of Directors

As of December 31, 2017	Compliance with the independence criteria ^(a) of the AFEP-MEDEF Code	Reason for non-compliance
Patrick Pouyanné	✗	Chairman and Chief Executive Officer of the Company
Patricia Barbizet	✓	
Marie-Christine Coisne-Roquette	✓	
Maria van der Hoeven	✓	
Anne-Marie Idrac	✓	
Patrick Artus	✓	
Mark Cutifani	✓	
Gérard Lamarche	✓	
Jean Lemierre	✓	
Carlos Tavares	✓	

(a) Excluding the director representing employee shareholders and the director representing employees, in accordance with the recommendations of the AFEP-MEDEF Code (point 8.3).

Rate of independence of the Board of Directors as of December 31, 2017 and after the 2018 Shareholders' Meeting

	Rate of independence ^(a) of the Board of Directors	Director not deemed independent
As of December 31, 2017	90%	Patrick Pouyanné
Following the Shareholders' Meeting of June 1, 2018 ^(b)	90%	Patrick Pouyanné

(a) Excluding the director representing employee shareholders and the director representing employees, in accordance with the recommendations of the AFEP-MEDEF Code (point 8.3).

(b) Subject to approval of the resolutions by the Shareholders' Meeting.

4.1.1.5 Diversity policy of the Board of Directors

The Board of Directors places a great deal of importance on its composition and the composition of its Committees. In particular, it relies on the work of the Governance and Ethics Committee, which reviews annually and proposes, as circumstances may require, desirable changes to the composition of the Board of Directors and Committees based on the Group's strategy.

The Governance and Ethics Committee conducts its work within the framework of a formal procedure so as to ensure that the directors' fields of speciality are complementary and that their profiles are diverse, to maintain an overall proportion of independent members that is appropriate to the Company's governance structure and shareholder base, to allow for a balanced representation of men and women on the Board, and to promote an appropriate representation of directors of different nationalities.

As part of an effort that began several years ago, the composition of the Board of Directors has changed significantly since 2010 to achieve better gender balance and an openness to more international profiles.

Based on its composition as of March 14, 2018, the 12 members of the Board of Directors include 5 non-French directors, 6 male directors and 6 female directors.

In accordance with Article L. 225-27-1 of the French Commercial Code, the director representing employees is not taken into account for the application of the provisions relating to the gender balance of the Board. Therefore, the proportion of women on the Board was 45.5% as of December 31, 2017 (5 women out of 11 directors).

The 40% threshold of directors from each gender required by Article L. 225-18-1 of the French Commercial Code was reached as of December 31, 2017.

(1) Excluding the director representing employee shareholders and the director representing employees, in accordance with the recommendations of the AFEP-MEDEF Code (point 8.3).

4.1.1.6 Training of directors and knowledge of the Company

Directors may ask to receive training in the specifics of the Company, its businesses and its business sector, as well as any training that may help them perform their duties as directors.

The director representing employees also receives in-house training time at the Company and/or training in economics offered by an outside body chosen by the director, after the Board Secretary has accepted the body and the training program. This training time, which was initially set at 20 hours per year, has been increased to 60 hours per year by decision of the Board of Directors at its meeting of July 26, 2017.

Since 2013, the Board of Directors has met each year at a Group site. Having been to the CSTJF (*Centre scientifique et technique Jean Féger*) in Pau, France, the Antwerp platform in Belgium, the Bu Hasa field in Abu Dhabi and the Laggan project site in the North Sea, in October 2017, the Board of Directors visited the Group's research center in Solaize, France. Meetings of the Board held at sites provide an opportunity to meet Group employees. They supplement the directors' training in the specifics of the Group and contribute to the integration of new directors.

The directors also have regular contact with Group management, including members of the Executive Committee at Board meetings and operational managers during visits to the Group's sites. These interactions between directors and managers help the directors to gain a concrete understanding of the Group's activities.

4.1.1.7 Renewal of directorships proposed to the Shareholders' Meeting of June 1, 2018

The directorships of Messrs. Patrick Pouyanné and Patrick Artus and Ms. Anne-Marie Idrac will expire at the Annual Ordinary Shareholders' Meeting of June 1, 2018.

At its meeting of March 14, 2018, the Board of Directors, on proposal by the Governance and Ethics Committee, decided to submit to the Annual Shareholders' Meeting of June 1, 2018, the renewal of the directorship of Messrs. Patrick Pouyanné and Patrick Artus and Ms. Anne-Marie Idrac for a three-year term to expire following the Annual Shareholders' Meeting held in 2021 to approve the 2020 financial statements.

Mr. Patrick Artus will continue to provide the Group with the benefit of his expertise in economics and his in-depth knowledge of the financial and energy sectors. He will maintain his commitment by continuing to contribute actively to the quality of the Board of Directors' discussions.

Ms. Anne-Marie Idrac will continue to provide the Group with the benefit of her expertise in foreign trade and international relations, and the managerial and operational experience that she has acquired throughout her career.

4

4.1.2 Practices of the Board of Directors



4.1.2.1 Working procedures of the Board of Directors

The working procedures of the Board of Directors are set out in its Rules of Procedure, which specify the mission of the Board of Directors and the rules related to the organization of its work. The Board's Rules of Procedure also specify the obligations of each director, as well as the role and powers of the Chairman and the Chief Executive Officer.

Mr. Charles Paris de Bollardière has served as Secretary of the Board of Directors since his appointment by the Board of Directors on September 15, 2009.

Since November 4, 2014, the date of the first appointment of the director representing employees on the Board of Directors, a member of the Central Works Council attends Board meetings in an advisory capacity, pursuant to Article L. 2312-75 of the French Labor Code.

The Rules of Procedure of the Board of Directors are reviewed on a regular basis to adapt them to changes in governance rules and practices. In 2014, changes were made to include, in particular, new provisions relating to information of the Board of Directors in the event of new directorships being assumed by the directors or changes in existing directorships, together with a reminder of the obligations of confidentiality inherent to the work of the Board. In December 2015, changes were made to provide for the appointment of a Lead Independent Director in the event of the combination of the functions of Chairman of the Board and Chief Executive Officer and to define his or her duties.

The text of the latest unabridged version of the Rules of Procedure of the Board of Directors, as approved by the Board of Directors at its meeting on December 16, 2015, is provided below. It is also available on the Company's website under "Our Group/Our identity/Our governance".

The Board of Directors of TOTAL S.A.⁽¹⁾ approved the following Rules of Procedure.

1. ROLE OF THE BOARD OF DIRECTORS

The Board of Directors is a collegial body that determines the strategic direction of the Company and supervises the implementation of this vision. With the exception of the powers and authority expressly reserved for shareholders and within the limits of the Company's legal purpose, the Board may address any issue related to the Company's operation and make any decision concerning the matters falling within its purview. Within this framework, the Board's duties and responsibilities include, but are not limited to, the following:

- appointing the executive directors⁽²⁾ and supervising the handling of their responsibilities;
- defining the Company's strategic orientation and, more generally, that of the Group;
- approving investments or divestments being considered by the Group that exceed 3% of shareholders' equity;
- reviewing information on significant events related to the Company's operations, in particular for investments and divestments involving amounts exceeding 1% of shareholders' equity;
- conducting any audits and investigations it deems appropriate. In particular, the Board, with the assistance of the Audit Committee, ensures that:
 - authority has been properly defined and that the various corporate bodies of the Company make proper use of their powers and responsibilities,
 - no individual is authorized to commit to pay or to make payments, on behalf of the Company, without proper supervision and control,
 - the internal control function operates properly and the statutory auditors are able to perform their mission satisfactorily, and
 - the Committees it has created duly perform their responsibilities
- ensuring the quality of the information provided to shareholders and financial markets through the financial statements that it approves as well as the annual reports, or when major transactions are conducted;
- convening and setting the agenda for Shareholders' Meetings or meetings of bond holders;
- preparing on an annual basis the list of directors it deems to be independent according to generally accepted corporate governance criteria; and
- appointing a Lead Independent Director under the conditions set out in Article 7, when the Chairman of the Board of Directors is also the Chief Executive Officer pursuant to a decision by the Board of Directors.

2. OBLIGATIONS OF THE DIRECTORS OF TOTAL S.A.

Before accepting a directorship, all candidates receive a copy of TOTAL S.A.'s bylaws and these rules of procedure. They must

ensure that they have broad knowledge of the general and particular obligations related to their duty, especially the laws and regulations governing directorships in French limited liability companies (*sociétés anonymes*) whose shares are listed in one or several regulated markets. They must also ensure that they are familiar with the guidelines set out in the Corporate Governance Code to which the Company refers.

Accepting a directorship creates an obligation to comply with applicable regulations relating in particular to the functioning of the Board of Directors, and with the ethical rules of professional conduct for directors as described in the Corporate Governance Code to which the Company refers. It also creates an obligation to comply with these rules of procedure and to uphold the Group's values as described in its Code of Conduct.

When directors participate in and vote at meetings of the Board of Directors, they are required to represent all of the Company's shareholders and to act in the interest of the Company as a whole.

2.1. Independence of judgment

Directors undertake to maintain, in all circumstances, the independence of their analysis, judgment, decision-making and actions as well as not to be unduly influenced, directly or indirectly, by other directors, particular groups of shareholders, creditors, suppliers or, more generally, any third party.

2.2. Other directorships or functions

Directors must keep the Board of Directors informed of any position they hold on the management team, board of directors or supervisory board of any other company, whether French or foreign, listed or unlisted. This includes any positions as a non-voting member (*censeur*) of a board. To this end, directors expressly undertake to promptly notify the Chairman of the Board of Directors, and the Lead Independent Director if one has been appointed, of any changes to the positions held, for any reason, whether appointment, resignation, termination or non-renewal.

2.3. Participation in the board's work

Directors undertake to devote the amount of time required to duly consider the information they are given and otherwise prepare for meetings of the Board of Directors and of the Committees of the Board of Directors on which they sit. They may request from the executive directors any additional information they deem necessary or useful to their duties. If they consider it necessary, they may request training on the Company's specificities, businesses and industry sector, and any other training that may be of use to the effective exercise of their duties as directors.

Unless unable, in which case the Chairman of the Board shall be provided advance notice, directors are to attend all meetings of the Board of Directors, meetings of Committees of the Board of Directors on which they serve and Shareholders' Meetings.

The Chairman of the Board ensures that directors receive all relevant information concerning the Company, including that of a negative nature, particularly analyst reports, press releases and the most important media articles.

2.4. Confidentiality

Directors and any other person who attends all or part of any meeting of the Board of Directors or its Committees are under the strict obligation not to disclose any details of the proceedings.

(1) TOTAL S.A. is referred to in these Rules of Procedure as the "Company" and collectively with all its direct and indirect subsidiaries as the "Group".

(2) The term "executive director" refers to the Chairman and Chief Executive Officer, if the Chairman of the Board of Directors is also responsible for the management of the Company; the Chairman of the Board of Directors and the Chief Executive Officer, if the two roles are carried out separately; and, where applicable, any Deputy Chief Executive Officers or Chief Operating Officers, depending on the organizational structure adopted by the Board of Directors.

All documents reviewed at meetings of the Board of Directors, as well as information conveyed prior to or during the meetings, are strictly confidential.

With respect to all non-public information acquired during the exercise of their functions, directors are bound by professional secrecy not to divulge such information to employees of the Group or to outside parties. This obligation goes beyond the mere duty of discretion provided for by law.

Directors must not use confidential information obtained prior to or during meetings for their own personal benefit or for the benefit of anyone else, for whatever reason. They must take all necessary steps to ensure that the information remains confidential. Confidentiality and privacy are lifted when such information is made publicly available by the Company.

2.5. Duty of loyalty

Directors must not take advantage of their office or duties to gain, for themselves or a third party, any monetary or non-monetary benefit.

They must notify the Chairman of the Board of Directors and the Lead Independent Director, if one has been appointed, of any existing or potential conflict of interest with the Company or any Group company and they must refrain from participating in the vote relating to the corresponding resolution as well as in any discussion preceding such vote.

Directors must inform the Board of Directors of their participation in any transaction that directly involves the Company, or any Group company, before such transaction is finalized.

Directors must not assume personal responsibilities in companies or businesses having activities in competition with those of the Company or any Group company without first having informed the Board of Directors.

Directors undertake not to seek or accept from the Company, or from companies directly or indirectly connected to the Company, any advantages liable to be considered as being of a nature that may compromise their independence.

2.6. Duty of expression

Directors undertake to clearly express their opposition if they deem a decision being considered by the Board of Directors is contrary to the Company's corporate interest and they must endeavor to convince the Board of Directors of the pertinence of their position.

2.7. Transactions in the Company's securities and stock exchange rules

While in office, directors are required to hold the minimum number of registered shares of the Company as set by the bylaws.

Generally speaking, directors must act with the highest degree of prudence and vigilance when completing any personal transaction involving the financial instruments of the Company, its subsidiaries or affiliates that are listed or that issue listed financial instruments.

To that end, directors must comply with the following requirements:

1. Any shares or ADRs of TOTAL S.A. or its listed subsidiaries are to be held in registered form, either with the Company or its agent,

or as administered registered shares with a French broker (or North American broker for ADRs), whose contact details are communicated by the director to the Secretary of the Board of Directors;

2. Directors shall refrain from directly or indirectly engaging in (or recommending engagement in) transactions involving the financial instruments (shares, ADRs or any other securities related to such financial instruments) of the Company or its listed subsidiaries, or any listed financial instruments for which the director has insider information.

Insider information is specific information that has not yet been made public and that directly or indirectly concerns one or more issuers of financial instruments or one or more financial instruments and which, if it were made public, could have a significant impact on the price of the financial instruments concerned or on the price of financial instruments related to them;

3. Any transaction in the Company's financial instruments (shares, ADRs or related financial instruments) is strictly prohibited during the thirty calendar days preceding the publication by the Company of its periodic results (quarterly, half-year or annual) as well as on the day of any such announcement;

4. Moreover, directors shall comply, where applicable, with the provisions of Article L. 255-197-1 of the French Commercial Code, which stipulates that free shares may not be sold:

- during the ten trading days preceding and the three trading days following the date on which the Consolidated Financial Statements or, failing that, the annual financial statements, are made public, and
- during the period from the date on which the Company's corporate bodies become aware of information that, if it were made public, could have a significant impact on the Company's share price, until ten trading days after such information is made public;

5. Directors are prohibited from carrying out transactions on any financial instruments related to the Company's share (Paris option market (MONEP), warrants, exchangeable bonds, etc.) and from buying on margin or short selling such financial instruments;

6. Directors are also prohibited from hedging the shares of the Company and any financial instruments related to them, and in particular:

- Company shares that they hold; and, where applicable,
- Company share subscription or purchase options,
- rights to Company shares that may be awarded free of charge, and
- Company shares obtained from the exercise of options or granted free of charge;

7. Directors must make all necessary arrangements to declare, pursuant to the form and timeframe provided by applicable law, to the French securities regulator (*Autorité des marchés financiers*), as well as to the Secretary of the Board of Directors, any transaction involving the Company's securities conducted by themselves or by any other person to whom they are closely related.

▶ 3. FUNCTIONING OF THE BOARD OF DIRECTORS

3.1. Board meetings

The Board of Directors meets at least four times a year and whenever circumstances require.

Prior to each Board meeting, the directors receive the agenda and, whenever possible, all other materials necessary to consider for the session.

Directors may be represented by another director at a meeting of the Board, provided that no director holds more than one proxy at any single meeting.

Whenever authorized by law, directors are considered present for quorum and majority purposes who attend Board meetings through video conferencing or other audiovisual means that are compliant with the technical requirements set by applicable regulations.

3.2. Directors' fees

The Board of Directors allocates annual directors' fees within the total amount authorized by the Annual Shareholders' Meeting. Compensation includes a fixed portion and a variable portion that takes into account each directors' actual participation in the work of the Board of Directors and its Committees together with, if applicable, the duties of the Lead Independent Director.

The Chief Executive Officer or, if the functions are combined, the Chairman and Chief Executive Officer, does not receive any director's fees for his participation in the work of the Board and its Committees.

3.3. Secretary of the Board of Directors

The Board of Directors, based on the recommendation of its Chairman, appoints a Secretary of the Board who assists the Chairman in organizing the Board's activities, and particularly in preparing the annual work program and the schedule of Board meetings.

The Secretary drafts the minutes of Board meetings, which are then submitted to the Board for approval. The Secretary is authorized to dispatch Board meeting minutes and to certify copies and excerpts of the minutes.

The Secretary is responsible for all procedures pertaining to the functioning of the Board of Directors. These procedures are reviewed periodically by the Board.

All Board members may ask the Secretary for information or assistance.

3.4. Evaluation of the functioning of the Board of Directors

The Board evaluates its functioning at regular intervals not exceeding three years. The evaluation is carried out under the supervision of the Lead Independent Director, if one has been appointed, or under the supervision of the Governance and Ethics Committee, with the assistance of an outside consultant. The Board of Directors also conducts an annual review of its practices.

▶ 4. ROLE AND AUTHORITY OF THE CHAIRMAN

The Chairman represents the Board of Directors and, except under exceptional circumstances, has sole authority to act and speak on behalf of the Board of Directors.

The Chairman organizes and oversees the work of the Board of Directors and ensures that the Company's corporate bodies operate effectively and in compliance with good governance principles. The Chairman coordinates the work of the Board of Directors and its Committees. The Chairman establishes the agenda for each Board meeting, including items suggested by the Chief Executive Officer.

The Chairman ensures that directors receive, in a timely manner and in a clear and appropriate format, the information they need to effectively carry out their duties.

In liaison with the Group's general management, the Chairman is responsible for maintaining relations between the Board of Directors and the Company's shareholders. The Chairman monitors the quality of information disclosed by the Company.

In close cooperation with the Group's General Management, the Chairman may represent the Company in high-level discussions with government authorities and major partners, both at a national and international level.

The Chairman is regularly informed by the Chief Executive Officer of significant events and situations relating to the Group, particularly with regard to strategy, organization, monthly financial reporting, major investment and divestment projects and key financial transactions. The Chairman may ask the Chief Executive Officer or other senior executives of the Company, provided that the Chief Executive Officer is informed, to supply any information that may help the Board or its Committees to carry out their duties.

The Chairman may meet with the statutory auditors in order to prepare the work of the Board of Directors and the Audit Committee.

Every year, the Chairman presents a report to the Annual Shareholders' Meeting describing the preparation and organization of the Board of Directors' work, any limits set by the Board of Directors concerning the powers of the Chief Executive Officer, and the internal control procedures implemented by the Company. To this end, the Chairman obtains the necessary information from the Chief Executive Officer.

▶ 5. AUTHORITY OF THE CHIEF EXECUTIVE OFFICER

The Chief Executive Officer is responsible for the Company's overall management. He represents the Company in its relationships with third parties and chairs the Executive Committee. The Chief Executive Officer is vested with the broadest powers to act on behalf of the Company in all circumstances, subject to the powers that are, by law, restricted to the Board of Directors and to the Annual Shareholders' Meeting, as well as to the Company's corporate governance rules and in particular these rules of procedure of the Board of Directors.

The Chief Executive Officer is responsible for presenting the Group's results and prospects to shareholders and the financial community on a regular basis.

At each meeting of the Board of Directors, the Chief Executive Officer presents an overview of significant Group events.

6. BOARD COMMITTEES

The Board of Directors approved the creation of:

- an Audit Committee;
- a Governance and Ethics Committee;
- a Compensation Committee; and
- a Strategic Committee⁽¹⁾.

The roles and composition of each Committee are set forth in their respective rules of procedure, which have been approved by the Board of Directors.

The committees perform their duties under the authority and for the benefit of the Board of Directors.

Each Committee reports on its activities to the Board of Directors.

7. LEAD INDEPENDENT DIRECTOR

7.1. Appointment of the Lead Independent Director

When the functions of the Chairman of the Board and Chief Executive Officer are combined, the Board of Directors appoints a Lead Independent Director, on the recommendation of the Governance and Ethics Committee, from among the directors considered to be independent by the Board of Directors.

The appointed Lead Independent Director holds this position while in office as director, unless otherwise decided by the Board of Directors, which may choose to terminate his duties at any time. If for any reason the director is no longer deemed to be independent, his or her position as Lead Independent Director will be terminated.

The Lead Independent Director, if one is appointed, chairs the Governance and Ethics Committee.

7.2. Duties of the Lead Independent Director

The Lead Independent Director's duties include:

1. Convening meetings of the Board of Directors – Meeting Agenda

The Lead Independent Director may request that the Chairman and Chief Executive Officer call a meeting of the Board of Directors to discuss a given agenda.

He may request that the Chairman and Chief Executive Officer include additional items on the agenda of any meeting of the Board of Directors.

2. Participation in the work of the committees

If not a member of the Compensation Committee, the Lead Independent Director is invited to attend meetings and participates in the work of the Compensation Committee relating to the annual review of the executive directors' performance and recommendations regarding their compensation.

3. Acting as Chairperson of Board of Directors' meetings

When the Chairman and Chief Executive Officer is unable to attend all or part of a meeting of the Board of Directors, the Lead Independent Director chairs the meeting. In particular, he or she chairs those Board meetings the proceedings of which relate to the evaluation of the performance of the executive directors and the determination of their compensation, which take place in their absence.

4. Evaluation of the functioning of the Board of Directors

The Lead Independent Director manages the evaluation process relating to the functioning of the Board of Directors and reports on this evaluation to the Board of Directors.

5. Prevention of conflicts of interest

Within the Governance and Ethics Committee, the Lead Independent Director organizes the performance of due diligence in order to identify and analyze potential conflicts of interest within the Board of Directors. He informs the Chairman and Chief Executive Officer of any conflicts of interest identified as a result and reports to the Board of Directors on these activities.

Pursuant to the obligation to declare conflicts of interest set out in Article 2.5 of these Rules, any director affected by an existing or potential conflict of interest must inform the Chairman and Chief Executive Officer and the Lead Independent Director.

6. Monitoring of the satisfactory functioning of the Board and compliance with the Rules of Procedure

The Lead Independent Director ensures compliance with the rules of the Corporate Governance Code to which TOTAL S.A. refers and with the Rules of Procedure of the Board of Directors. He or she may make any suggestions or recommendations that he deems appropriate to this end.

He or she ensures that the directors are in a position to carry out their tasks under optimal conditions and that they have sufficient information to perform their duties.

With the agreement of the Governance and Ethics Committee, the Lead Independent Director may hold meetings of the directors who do not hold executive or salaried positions on the Board of Directors. He reports to the Board of Directors on the conclusions of such meetings.

7. Relationships with Shareholders

The Chairman and Chief Executive Officer and the Lead Independent Director are the shareholders' dedicated contacts on issues that fall within the remit of the Board.

When a shareholder approaches the Chairman and Chief Executive Officer in relation to such issues, they may seek the opinion of the Lead Independent Director before responding appropriately to the shareholder's request.

When the Lead Independent Director is approached by a shareholder in relation to such issues, he or she must inform the Chairman and Chief Executive Officer, providing his or her opinion, so that the Chairman and Chief Executive Officer may respond appropriately to the request. The Chairman and Chief Executive Officer must inform the Lead Independent Director of the response given.

7.3. Resources, conditions of office and activity report

The Chairman and Chief Executive Officer must regularly update the Lead Independent Director on the Company's activities.

The Lead Independent Director has access to all of the documents and information necessary for the performance of his or her duties.

The Lead Independent Director may consult the Secretary of the Board and use the latter's services in the performance of his or her duties.

Under the conditions set out in Article 3.2 of these Rules and those established by the Board of Directors, the Lead Independent Director may receive additional director's fees for the duties entrusted to him or her.

The Lead Independent Director must report annually to the Board of Directors on the performance of his or her duties. During Annual General Meetings, the Chairman and Chief Executive Officer may invite the Lead Independent Director to report on his or her activities.

(1) Since September 20, 2017, the Committee has been renamed Strategic & CSR Committee and its remit has been broadened to cover Corporate Social Responsibility (CSR) and questions relating to the inclusion of climate-related issues in the Group's strategy.

4.1.2.2 Activity of the Board of Directors in 2017

Directors are generally given written notice of Board meetings during the week preceding the meetings. Whenever possible, documents to be considered for decisions to be made at Board meetings are sent with the notice of meetings. The minutes of the previous meeting are expressly approved at the following Board meeting.

The Board of Directors held nine meetings in 2017. The global attendance rate for the directors was 93.5%. The Audit Committee held 7 meetings, with an attendance rate of 92%; the Compensation Committee met 3 times, with 100% attendance; the Governance and Ethics Committee held 2 meetings, with 83.3% attendance; and the Strategic & CSR Committee met twice, with 90% attendance.

A table summarizing individual attendance at the Board of Directors and Committee meetings is provided below.

Directors' attendance at Board and Committee meetings in 2017

Directors	Board of Directors		Audit Committee		Compensation Committee		Governance and Ethics Committee		Strategic & CSR Committee	
	Attendance rate	Number of meetings	Attendance rate	Number of meetings	Attendance rate	Number of meetings	Attendance rate	Number of meetings	Attendance rate	Number of meetings
Patrick Pouyanné	100%	9/9	-	-	-	-	-	-	100%	2/2
Patrick Artus	100%	9/9	86%	6/7	-	-	-	-	50%	1/2
Patricia Barbizet	100%	9/9	-	-	100%	3/3	100%	2/2	100%	2/2
Marc Blanc ^(a)	100%	4/4	-	-	-	-	-	-	100%	1/1
Marie-Christine Coisne-Roquette	100%	9/9	100%	7/7	100%	3/3	-	-	-	2/2 ^(b)
Mark Cutifani ^(c)	100%	5/5	-	-	-	-	-	-	-	-
Paul Desmarais, Jr ^(a)	25%	1/4	-	-	-	-	-	-	-	-
Maria van der Hoeven	100%	9/9	75%	3/4	-	-	-	-	-	2/2 ^(b)
Anne-Marie Idrac	100%	9/9	-	-	-	-	100%	2/2	100% ^(c)	2/2 ^(c)
Barbara Kux ^(a)	100%	4/4	-	-	-	-	0%	0/1	100%	1/1
Gérard Lamarche	67%	6/9	100%	7/7	100%	3/3	-	-	-	1/2 ^(b)
Jean Lemierre	100%	9/9	-	-	-	-	100%	1/1	100% ^(c)	2/2 ^(c)
Renata Perycz	100%	9/9	-	-	100%	1/1	-	-	-	2/2 ^(b)
Christine Renaud ^(d)	100%	5/5	-	-	-	-	-	-	-	1/1 ^(b)
Carlos Tavares ^(d)	80%	4/5	-	-	-	-	-	-	-	-
Attendance rate	93.5%		92%		100%		83.3%		90%^(e)	

(a) Director until May 26, 2017.

(b) Voluntary participation (director not a member of the Strategic & CSR Committee).

(c) Including one voluntary participation. Member of the committee since May 26, 2017.

(d) Director since May 26, 2017.

(e) Excluding voluntary participation.

The Board meetings included, but were not limited to, a review of the following subjects:

February 8

- presentation to the Board of the work of the Audit Committee at its meeting on February 6, 2017;
- closing of the 2016 accounts (Consolidated Financial Statements, parent company accounts) after the Audit Committee's report and work performed by the statutory auditors;
- draft allocation of the profits of TOTAL S.A., setting of the dividend, ex-dividend and payment dates, option for the payment of the balance of the dividend in shares;
- main messages of financial communications, including industrial safety aspects;
- information regarding the buyback and cancellation of treasury shares;

- Board of Directors' report to the Shareholders' Meeting regarding purchases and sales of shares of the Company pursuant to Article L. 225-211 of the French Commercial Code;
- information about the results of the option to receive the payment of the second interim dividend for fiscal year 2016 in shares;
- renewal of the authorization to issue bonds;
- renewal of the authorization to issue security, commitments and guarantees;
- request for authorization to issue guarantees;
- declarations of crossing of thresholds in the Company's share capital;
- report of the Lead Independent Director on her mandate;

- debate on the Board of Directors' practices based on a formal self-assessment carried out in the form of a detailed questionnaire answered by each director, the process of which was conducted by the Lead Independent Director; suggestion of areas for improvement;
- presentation to the Board of the work of the Governance and Ethics Committee at its meeting on February 8, 2017;
- examination of the changes to the AFEP-MEDEF Code (revised in November 2016);
- proposal to appoint and renew directorships;
- assessment of the independence of the directors;
- composition of the Board's Committees;
- allocation of directors' fees for fiscal year 2016; increase in the additional amount paid per journey from a country outside France in order to encourage the internationalization of the Board of Directors;
- market abuse regulations – blackout periods; information about the new procedure set up by the Company following the entry into force of Regulation (EU) 596/2014;
- amendment of the Rules of Procedure of the Audit Committee following the entry into force of the order of March 17, 2016 transposing the provisions of Directive 2014/56/EU and Regulation (EU) 537/2014 into French law;
- information on transactions on the Company's securities by the Chairman and Chief Executive Officer;
- information on the Directors & Officers liability insurance taken out by the Company;
- review of the draft Report of the Chairman of the Board of Directors (Article L. 225-37 of the French Commercial Code);
- presentation to the Board of the work of the Compensation Committee at its meeting on February 8, 2017; and
- the Chairman and Chief Executive Officer's compensation (in his absence).

March 15

- presentation to the Board of the work of the Audit Committee at its meeting on March 13, 2017;
- presentation to the Board of the work of the Compensation Committee at its meeting on March 13, 2017;
- approval of the compensation policy for the Chairman and Chief Executive Officer for fiscal year 2017;
- confirmation of the acquisition rate of performance shares under the 2014 plan;
- approval of the Group's financial policy;
- preparation for the Annual Shareholders' Meeting: approval of the various chapters of the Registration Document forming the management report within the meaning of the French Commercial Code and of the related reports; setting of the agenda for the Shareholders' Meeting; approval of the report of the Board of Directors and draft resolutions;
- setting the schedule related to the dividend (interim dividends and balance) for fiscal year 2018;
- distribution of the third interim dividend for the 2016 fiscal year and setting of the new share issue price for this interim dividend;
- information to the Board of Directors regarding the setting of the subscription period and price for shares of the Company for the 2017 share capital increase reserved for employees; and
- requests for authorization of guarantees.

April 26

- presentation to the Board of the work of the Strategic Committee at its meeting on March 15, 2017;
- presentation of the Group's risk map;
- results for the first quarter of 2017 after the Audit Committee's report and work performed by the statutory auditors;
- presentation to the Board of the work of the Audit Committee at its meeting on April 24, 2017;
- setting a first interim dividend to be paid on the dividend for fiscal year 2017;
- preparation for the Annual Shareholders' Meeting;
- information and decisions regarding the 2017 share capital increase reserved for employees;
- information about the results of the option to receive the payment of the third interim dividend for fiscal year 2016 in shares;
- request for authorization to issue guarantees;
- information on declarations of thresholds in the Company's capital to be declared; and
- information on the appointment by the Central Works Council of Ms. Christine Renaud as director representing employees.

May 26 – pre-Shareholders' Meeting

- information to the Board of Directors on the situation regarding the Group's development project in Iran;
- preparation for and organization of the Annual Shareholders' Meeting: finalization of the responses to the written questions submitted by shareholders;
- setting of the share issue price for the payment of the balance of the 2016 dividend, subject to the approval of the third resolution by the Shareholders' Meeting on May 26, 2017;
- delegation of powers granted to the Chairman and Chief Executive Officer to operate on Company shares, subject to the approval of the fifth resolution of the Shareholders' Meeting on May 26, 2017; and
- communication of the Central Works Council's Opinion on the company's economic and financial position.

July 26

- presentation of the planned acquisition of an interest in EREN Renewable Energy (Eren RE);
- presentation of the strategic perspectives of the Refining & Chemicals segment including safety and energy efficiency aspects and prevention of major environmental risks;
- results for the second quarter 2017 and the first half of 2017 after the Audit Committee's report and work performed by the statutory auditors;
- presentation to the Board of the work of the Audit Committee at its meetings on June 14, 2017 and July 24, 2017;
- setting a second interim dividend to be paid on the dividend for fiscal year 2017;
- presentation to the Board of the work of the Governance and Ethics Committee at its meeting on July 26, 2017;
- approval of the Governance and Ethics Committee's proposal to change the amount of the directors' fees by increasing (i) the variable portion for each attendance at a meeting of the Board of Directors and (ii) the Lead Independent Director's additional fixed annual portion;
- approval of the broadening of the remit of the Strategic Committee to cover Corporate Social Responsibility (CSR) and questions relating to the inclusion of climate-related issues in the Group's strategy;

- approval of the change of the Committee's name to the Strategic & CSR Committee;
- determination of the conditions for the performance of the duties of the director representing employees;
- reminder of the rules of confidentiality applicable to the work of the Board of Directors;
- share capital increase reserved for Group employees (TOTAL CAPITAL 2018) and free grant of shares as a deferred contribution in this framework;
- performance share grants on the proposal of the Compensation Committee;
- information about the results of the votes on the resolutions at the Annual Shareholders' Meeting held on May 26, 2017 and the results of the option to receive the payment of the remaining balance of the dividend for fiscal year 2016 in shares; and
- information on declarations of thresholds in the Company's capital to be declared.

August 20

- approval in principal of the planned acquisition of Mærsk Oil & Gas A/S by TOTAL S.A. under a share (contribution of shares) and debt transaction between TOTAL S.A. and AP Møller-Mærsk A/S.

September 20

- amendment of the Rules of procedure of the Strategic & CSR Committee as part of the broadening of the remit of the Strategic Committee to cover Corporate Social Responsibility (CSR) and questions relating to the inclusion of climate-related issues in the Group's strategy; approval of the change of the Committee's name to the Strategic & CSR Committee;
- presentation to the Board of some of the work of the Strategic & CSR Committee at its meeting on September 20, 2017;
- strategic perspectives of Exploration & Production activities with a presentation of safety indicators and environmental objectives;
- presentation of the Group's five-year plan;
- mid-2017 financial communications: presentation of the outlook and objectives for the coming years;
- the company's strategic directions (Article L. 2323-10 of the French Labor Code);
- distribution of the first interim dividend for the 2017 fiscal year and setting of the new share issue price for the option to receive the interim dividend in shares;

- information on bond issues; and
- information on the powers subdelegated to the Deputy Chief Financial Officer and the Treasurer.

October 26 (at the Solaize research center)

- presentation to the Board of the work of the Strategic & CSR Committee at its meeting on September 20, 2017;
- strategic directions of the Gas, Renewables & Power segment;
- presentation of the planned acquisition of Engie's LNG business;
- presentation of the sale of the Martin Linge field (Norway);
- strategic perspectives of Marketing & Services activities, including the operational safety, technological risk and environmental aspects;
- presentation of the Company's equal opportunity and salary equality policy and comparative status of overall employment and training conditions for women and men in the Company;
- results for the third quarter of 2017 after the Audit Committee's report and work performed by the statutory auditors;
- presentation to the Board of the work of the Audit Committee at its meetings on September 21, 2017 and October 24, 2017;
- setting a third interim dividend to be paid on the dividend for fiscal year 2017;
- information on bond issues; and
- information about the results of the option to receive the payment of the first interim dividend for fiscal year 2017 in shares.

December 12

- presentation of the development project on the giant Libra field in Brazil;
- presentation of the Group's 2018 budget;
- Board of Directors' response to the Central Works Council's opinion on the Company's strategic directions;
- distribution of the second interim dividend payable for the 2017 fiscal year and setting of the new share issue price;
- agreements and commitments concluded and authorized in the preceding periods, the execution of which continued during the 2017 fiscal period;
- information on bond issues; and
- request for authorization to issue guarantees.

4.1.2.3 Committees of the Board of Directors

The Audit Committee

Composition

As of March 14, 2018	Independence	Years' service on the Board	Expiry of director's term of office
Marie-Christine Coisne-Roquette*	•	7	2020
Patrick Artus	•	9	2018
Maria van der Hoeven	•	2	2019
Gérard Lamarche	•	6	2019

* Chairperson of the Committee.

As of March 14, 2018, the Committee is made up of four members, with a 100% rate of independence.

The careers of the Committee members confirm their possession of acknowledged expertise in the financial and accounting or economic fields (refer to point 4.1.1.1 above). Ms. Coisne-Roquette was appointed "financial expert" of the Committee by the Board at its meeting of December 16, 2015.

Duties

The rules of procedure of the Audit Committee define the Committee's duties and working procedures. The rules of procedure were last modified on February 8, 2017, in order to adapt the missions of the Committee to the European audit reform. The text of the unabridged version of the rules of procedure approved by the Board of Directors on February 8, 2017 is available on TOTAL's website under "Our Group/Our identity/Our Governance".

Notwithstanding the duties of the Board of Directors, the Audit Committee is tasked with the following missions in particular:

Regarding the statutory auditors:

- making a recommendation to the Board of Directors on the statutory auditors put before the Annual Shareholders' Meeting for designation or renewal, following their selection procedure organized by General Management and enforcing the applicable regulations;
- monitoring the statutory auditors in the performance of their missions and, in particular, examining the additional report drawn up by the statutory auditors for the committee, while taking account of the observations and conclusions of the High Council of statutory auditors (*Haut Conseil du Commissariat aux comptes*) further to the inspection of the auditors in question in application of the legal provisions, where appropriate;
- ensuring that the statutory auditors meet the conditions of independence as defined by the regulations, and analyzing the risks to their independence and the measures taken to mitigate these risks; to this end, examining all the fees paid by the Group to the statutory auditors, including for services other than the certification of the financial statements, and making sure that the rules applying to the maximum length of the term of the statutory auditors and the obligation to alternate are obeyed; and
- approving the delivery by the statutory auditors of services other than those relating to the certification of the financial statements, in accordance with the applicable regulations.

Regarding accounting and financial information:

- following the process to produce financial information and, where appropriate, formulating recommendations to guarantee its integrity, where appropriate;

- monitoring the implementation and the proper workings of a disclosures committee in the Company, and reviewing its conclusions;
- examining the assumptions used to prepare the financial statements, assessing the validity of the methods used to handle significant transactions and examining the parent company financial statements and annual, half-yearly, and quarterly Consolidated Financial Statements prior to their examination by the Board of Directors, after regularly monitoring the financial situation, cash position and off-balance sheet commitments;
- guaranteeing the appropriateness and the permanence of the accounting policies and principles chosen to prepare the statutory and Consolidated Financial Statements of the Company;
- examining the scope of the consolidated companies and, where appropriate, the reasons why companies are not included;
- examining the process to validate the proved reserves of the companies included in the scope of consolidation; and
- reviewing, at the request of the Board of Directors, major transactions contemplated by the Company.

Regarding internal control and risk management procedures:

- monitoring the efficiency of the internal control and risk management systems and of internal audits, in particular with regard to the procedures relating to the production and processing of accounting and financial information, without compromising its independence, and in this respect:
 - checking that these systems exist and are deployed, and that actions are taken to correct any identified weaknesses or anomalies,
 - examining the exposure to risk and significant off-balance sheet commitments,
 - annually examining the reports on the work of the Group Risk Management Committee (formerly named Group Risk Committee) and the major issues for the Group,
 - examining the annual work program of the internal auditors and being regularly informed of their work,
 - reviewing significant litigation at least once a year,
 - overseeing the implementation of the Group's Financial Code of Ethics,
 - proposing to the Board of Directors, for implementation, a procedure for complaints or concerns of employees, shareholders and others, related to accounting, internal control or auditing matters, and monitoring the implementation of this procedure, and
 - where appropriate, examining important operations in which a conflict of interests could have arisen.

The Audit Committee reports to the Board of Directors on the performance of its duties. It also reports on the results of the statutory auditors' mission concerning the certification of the financial statements, on how this mission contributed to the integrity of the accounting and financial information and its role in the process. It informs the Board of Directors without delay of any difficulties encountered.

Organization of activities

The Committee meets at least seven times each year: each quarter to review in particular the statutory financial statements of the Company, and the annual and quarterly Consolidated Financial Statements, and at least on three other occasions to review matters not directly related to the review of the quarterly financial statements.

At each Committee meeting where the quarterly financial statements are reviewed, the Chief Financial Officer presents the Consolidated Financial Statements and the statutory financial statements of the Company, as well as the Group's financial position and, in particular, its liquidity, cash flow and debt situation. A memo describing risk exposure and off-balance sheet commitments is communicated to the Committee. This review of the financial statements includes a presentation by the statutory auditors underscoring the key points observed.

As part of monitoring the efficiency of the internal control and risk management systems, the Committee is informed of the work program of the Audit & Internal Control division and its organization, on which it may issue an opinion. The Committee also receives a summary of the internal audit reports, which is presented at each committee meeting where the quarterly financial statements are reviewed. The risk management processes implemented within the Group and updates to them are presented regularly to the Committee.

The Committee may meet with the Chairman and Chief Executive Officer or, if the functions are separate, the Chairman of the Board of Directors, the Chief Executive Officer and, if applicable, any Deputy Chief Executive Officer of the Company. It may perform inspections and consult with managers of operating or non-operating department, as may be useful in performing its duties. The Chairman of the Committee gives prior notice of such meeting to the Chairman and Chief Executive Officer or, if the functions of Chairman of the Board of Directors and Chief Executive Officer are separate, both the Chairman of the Board of Directors and the Chief Executive Officer. In particular, the Committee is authorized to consult with those involved in preparing or auditing the financial statements (Chief Financial Officer and principal Finance Department managers, Audit Department, Legal Department) by asking the Company's Chief Financial Officer to call them to a meeting.

The Committee consults with the statutory auditors regularly, including at least once a year without any Company representative present. If it is informed of a substantial irregularity, it recommends to the Board of Directors all appropriate action.

Work of the Audit Committee

In 2017, the Audit Committee met seven times, with an attendance rate of 92%. The Chairman and Chief Executive Officer did not attend any of the meetings of the Audit Committee.

The Audit Committee's work mainly focused on the following areas:

February 6

- review of the Consolidated Financial Statements and statutory financial statements of TOTAL S.A. as parent company for the fourth quarter of 2016 and the whole of the 2016 fiscal year; presentation by the statutory auditors of their work performed in accordance with French and American professional audit standards;
- review of the Group's financial position;
- update on unvalued guarantees given by TOTAL S.A.;

- update on the Sarbanes-Oxley process: self-assessment carried out by the Group and audit of the internal control related to financial reporting by the statutory auditors as part of the SOX 404 process;
- presentation of the preparation process and key validation stages of the management report; presentation of certain sections of the Registration Document: risk factors, legal proceedings, internal control and risk management procedures;
- general presentation of the Group's insurance policy: coverage for 2017 against property damage, business interruption and civil liability, update on coverage against damage resulting from a cyber attack; presentation of D&O (Directors & Officers) insurance and update on main claims;
- update on the 2016 internal audit and 2017 work schedule; and
- amendment of the audit and non-audit services policy.

March 13

- presentation on SunPower;
- presentation of the social, environmental and societal information in the Registration Document; presentation by the independent verifier of its procedures and the conclusions of its review of these issues;
- review of the hydrocarbon reserves evaluation process at the end of the 2016 fiscal year; and
- presentation and review by the statutory auditors of the report on the payments made to governments.

April 24

- review of the Consolidated Financial Statements and statutory financial statements of TOTAL S.A. as parent company for the first quarter of 2017, with a presentation by the statutory auditors of a summary of their limited review;
- presentation of the Group's financial position at the end of the quarter;
- update on the internal audits conducted in the first quarter of 2017;
- presentation of the Group's risk map; and
- presentation of the 2017 health, safety and environment audit plan.

June 14

- presentation by the Group Risk Management Committee on the main issues covered in the last year;
- presentation of the cybercrime risk;
- presentation of the fraud/compliance risk map, 2016 compliance report and 2017 plan;
- presentation of the significant Exploration & Production subsidiaries; and
- presentation of the duties of the Consolidation Department regarding accounting standards and the organization of this function within the Group, and description of how the consolidation scope is monitored and the associated control tests.

July 24

- review of the Consolidated Financial Statements and statutory financial statements of TOTAL S.A. as parent company for the second quarter of 2017 and the first half of 2017. Presentation by the statutory auditors of a summary of their limited review;
- presentation of the Group's financial position at the end of the second quarter of 2017;
- update on the internal audits conducted in the second quarter of 2017; and
- presentation of currency exposure management in the Group.

September 21 (Geneva)

- audit of the accounts as of December 31, 2017: statutory auditors' analysis of the main transverse risks to be addressed as important points in their audit plan for the closing of the 2017 accounts and reminder of the changes introduced by the European audit reform;
- review of significant litigation and status update on the main pending proceedings involving the Group;
- presentation of the Total Global Services division and Total Global Financial Services subsidiary;
- presentation of the Tax department risk map and the Group's fiscal position;
- presentation of the statutory auditors' fees and the new non-audit services policy; and
- approval by the Audit Committee of the pre-approval of audit and non-audit services policy.

October 24

- self-assessment of the Audit Committee in the absence of the Group employees and statutory auditors. As such, the Audit Committee concluded that the conditions of a genuine climate of trust existed to enable it to perform its duties, with the required access to knowledge of the subjects and situations under review;
- review of the Consolidated Financial Statements and statutory financial statements of TOTAL S.A. as parent company for the third quarter of 2017 and the first nine months of 2017. Presentation by the statutory auditors of a summary of their limited review;
- presentation of the Group's financial position at the end of the quarter;
- update on the internal audits conducted in the third quarter of 2017;

- information on compliance by relevant employees with the provisions of the Financial Code of Ethics;
- presentation of the significant Exploration & Production subsidiaries;
- presentation of future changes regarding data protection and the actions to be taken; and
- presentation on reporting by the Disclosure Committee.

The members of the Committee met with the statutory auditors without any Group employees being present.

At each meeting related to the quarterly financial statements, the Committee reviewed the Group's financial position in terms of liquidity, cash flow and debt, as well as its significant risks and off-balance sheet commitments. The Audit Committee was periodically informed of the risk management processes implemented within the Group and the work carried out by the Audit & Internal Control division, which was presented at each Committee meeting where the quarterly financial statements were reviewed.

The Audit Committee reviewed the financial statements no later than two days before they were reviewed by the Board of Directors, a sufficient amount of time as set out in the recommendations of the AFEP-MEDEF Code.

The statutory auditors attended all Audit Committee meetings held in 2017.

The Chief Financial Officer, the Vice President Accounting, the Senior Vice President Audit & Internal Control division and the Treasurer attended all Audit Committee meetings, related to their area.

The Chairman of the Committee reported to the Board of Directors on the Committee's activities.

The Governance and Ethics Committee

Composition

As of March 14, 2018	Independence	Years' service on the Board	Expiry of director's term of office
Patricia Barbizet*	•	10	2020
Anne-Marie Idrac	•	6	2018
Jean Lemierre	•	2	2019

* Chairperson of the Committee.

As of March 14, 2018, the Governance and Ethics Committee is made up of three members, with a 100% rate of independence.

The Board of Directors has also decided to appoint Mark Cutifani as a member of the Governance and Ethics Committee following the Shareholders' Meeting of June 1, 2018. The Committee will thus consist of four members as of that date, with the rate of independence remaining at 100%.

Duties

The rules of procedure of the Governance and Ethics Committee define the Committee's duties and working procedures. The text of the unabridged version of the rules of procedure approved by the Board of Directors on December 16, 2015 is available on the TOTAL's website under "Our Group/Our identity/Our Governance".

The Governance and Ethics Committee is focused on:

- recommending to the Board of Directors persons who are qualified to be appointed as directors, so as to guarantee the scope of

coverage of the directors' competencies and the diversity of their profiles;

- recommending to the Board of Directors the persons that are qualified to be appointed as executive directors;
- preparing the Company's corporate governance rules and supervising their implementation; and
- ensuring compliance with ethics rules and examining any questions related to ethics and conflicts of interest.

Its duties include:

- presenting recommendations to the Board for its membership of its committees, and independence of each candidate for director's positions on the Board of Directors;
- proposing annually to the Board of Directors the list of directors who may be considered as "independent directors";

- examining sections within its remits of reports to be sent by the Board of Directors or its Chairman to shareholders;
- assisting the Board of Directors in the selection and evaluation of the executive directors and examining the preparation of their possible successors, including cases of unforeseeable absence;
- recommending to the Board of Directors the persons that are qualified to be appointed as directors;
- recommending to the Board of Directors the persons that are qualified to be appointed as members of a Committee of the Board of Directors;
- proposing methods for the Board of Directors to evaluate its performance, and in particular preparing means of regular self-assessment of the working of the Board of Directors, and the possible assessment thereof by an external consultant;
- proposing to the Board of Directors terms and conditions for allocating directors' fees and conditions under which expenses incurred by the directors are reimbursed;
- developing and recommending to the Board of Directors the corporate governance principles applicable to the Company;
- preparing recommendations requested at any time by the Board of Directors or the general management of the Company regarding appointments or governance;
- examining the conformity of the Company's governance practices with the recommendations of the Code of Corporate Governance adopted by the Company;
- supervising and monitoring implementation of the Company's ethics and compliance program and, in this respect, ensuring that the necessary procedures for updating the Group's Code of Conduct are put in place and that this Code is disseminated and applied;
- examining any questions related to ethics and conflicts of interest; and
- examining changes in the duties of the Board of Directors.

Work of the Governance and Ethics Committee

In 2017, the Governance and Ethics Committee held two meetings, with 83.3% attendance. Its work mainly focused on the following areas:

February 8

- report of the Lead Independent Director on her mandate;
- discussion on the functioning of the Board of Directors;

- update on the revision of the AFEP-MEDEF Code of November 2016;
- proposal to the Board of Directors regarding two new directors whose appointment was put to the Annual Shareholders' Meeting of May 26, 2017;
- proposal to the Board of Directors regarding the terms of office of two directors the renewal of which was put to the Annual Shareholders' Meeting of May 26, 2017;
- proposals to the Board of Directors regarding the assessment of the independence of the directors based on the independence criteria specified in the AFEP-MEDEF Code and after reviewing the level of activity between certain directors and the Group's suppliers;
- proposals to the Board of Directors regarding the composition of the Committees;
- review of the terms and conditions for allocating directors' fees to directors and Committee members;
- update on the Market Abuse regulations (Regulation (EU) 596/2014 of April 16, 2014, which came into force on July 3, 2016);
- proposal to the Board of Directors regarding the changes to be made to the rules of procedure of the Audit Committee in order to comply with the new regulations in force;
- information update on transactions on the Company's securities by executive and non-executive directors;
- examining sections within its purview of reports to be sent by the Board of Directors or its Chairman to shareholders;
- proposal to recommend that the Board of Directors agree that the Chairman and Chief Executive Officer may accept the directorship that he has been offered; and
- succession plan for the executive directors and the Executive Committee.

July 26

- presentation by the Chairperson of the Ethics Committee of a review of the ethics program for 2016;
- proposals to the Board of Directors regarding the conditions for the performance of the duties of the director representing employees;
- update on the confidentiality applicable to the work of the Board of Directors; and
- proposals to the Board of Directors regarding directors' fees.

The Compensation Committee

Composition

As of March 14, 2018	Independence	Years' service on the Board	Expiry of director's term of office
G�rard Lamarche*	•	6	2019
Patricia Barbizet	•	10	2020
Marie-Christine Coisne-Roquette	•	7	2020
Renata Perycz, director representing employee shareholders	n/a ^(a)	2	2019

* Chairperson of the Committee.
(a) In accordance with the recommendations of the AFEP-MEDEF Code (point 8.3).

As of March 14, 2018, the Compensation Committee is made up of four members, with a 100% rate of independence⁽¹⁾.

The Board of Directors has also decided to appoint Carlos Tavares as a member of the Compensation Committee following the Shareholders' Meeting of June 1, 2018. The Committee will thus consist of five members as of that date, with the rate of independence remaining at 100%.

Duties

The rules of procedure of the Compensation Committee define the Committee's duties and working procedures. The text of the unabridged version of the rules of procedure approved by the Board of Directors on February 9, 2012 is available on TOTAL's website under "Our Group/Our identity/Our Governance".

The Committee is focused on:

- examining the executive compensation policies implemented by the Group and the compensation of members of the Executive Committee;
- evaluating the performance and recommending the compensation of each executive director; and
- preparing reports which the Company must present in these areas.

Its duties include:

- examining the main objectives proposed by the Company's general management regarding compensation of the Group's executive directors, including stock option plans and restricted shares grant plans and equity-based plans, and advising on this subject;
- presenting recommendations and proposals to the Board of Directors concerning:
 - compensation, pension and life insurance plans, in-kind benefits and other compensation (including severance benefits) for the executive directors of the Company; in particular, the Committee proposes compensation structures that take into account the Company's strategy, objectives and earnings and market practices,
 - stock options and restricted share grants, particularly grants of restricted shares to the executive directors;
- examining the compensation of the members of the Executive Committee, including stock option plans, free share plans and equity-based plans, pension and insurance plans and in-kind benefits;
- preparing and presenting reports in accordance with its rules of procedure;

- examining for the parts within its remit of reports to be sent by the Board of Directors or its Chairman to the shareholders;
- preparing recommendations requested at any time by the Chairman of the Board of Directors or the general management of the Company regarding compensation.

Work of the Compensation Committee

In 2017, the Compensation Committee held three meetings, with 100% attendance. The Chairman and Chief Executive Officer does not attend the Committee's deliberations regarding his own situation.

Its work mainly focused on the following areas:

February 8

- determination of the variable portion of the compensation to be paid to the Chairman and Chief Executive Officer for his performance in fiscal year 2016;
- proposed compensation for the Chairman and Chief Executive Officer (fixed and variable portion for fiscal year 2017);
- examining sections within its purview of reports to be sent by the Board of Directors or its Chairman to shareholders;
- review of compliance with the restrictions on share transfers by the Chairman and Chief Executive Officer; and
- review of the possibility and implementation conditions of a performance share and/or stock option plan in 2017.

March 13

- review of the criteria used to assess the variable portion of the Chairman and Chief Executive Officer's compensation in light of the guidance given by the Board at its meeting of February 8, 2017;
- confirmation of the acquisition rate of performance shares under the 2014 plan; and
- review of the Executive Committee members' compensation.

July 26

- proposal related to the capital increase reserved for Group employees (TOTAL CAPITAL 2018);
- proposal of allocation of free shares as a contribution as part of the capital increase reserved for Group employees;
- proposals regarding the 2017 performance share plan; proposal regarding the grant of performance shares to the Chairman and Chief Executive Officer.

(1) Excluding the director representing employee shareholders, in accordance with the recommendations of the AFEP-MEDEF Code (point 8.3).

The Strategic & CSR Committee

Composition

As of March 14, 2018	Independence	Years' service on the Board	Expiry of director's term of office
Patrick Pouyanné*		3	2018
Patrick Artus	•	9	2018
Patricia Barbizet	•	10	2020
Anne-Marie Idrac	•	6	2018
Jean Lemierre	•	2	2019

* Chairperson of the Committee.

As of March 14, 2018, the Strategic & CSR Committee is made up of five members, including four independent directors.

The Board of Directors has also decided to appoint Christine Renaud (director representing employees) as a member of the Strategic & CSR Committee following the Shareholders' Meeting of June 1, 2018. The Committee will thus consist of six members as of that date.

Duties

The rules of procedure of the Strategic & CSR Committee define the Committee's duties and working procedures. The text of the unabridged version of the rules of procedure approved by the Board of Directors on September 20, 2017 is available on TOTAL's website under "Our Group/Our identity/Our Governance".

To allow the Board of Directors of TOTAL S.A. to ensure the Group's development, the Strategic & CSR Committee's duties include:

- examining the Group's overall strategy proposed by the Company's Chief Executive Officer;
- examining operations that are of particular strategic importance;

- reviewing competition and the resulting medium and long-term outlook for the Group;
- examining questions relating to the Group's Corporate Social Responsibility (CSR); and
- examining questions relating to including climate-related issues in the Group's strategy.

Work of the Strategic & CSR Committee

In 2017, the Strategic & CSR Committee held two meetings, with 90% attendance. Its work mainly focused on the following areas:

March 15

- analysis of the strategy of one of the Group's major competitors;
- comparison of major oil companies' 2016 results; and
- presentation of the Group's new organization (in place as of January 1, 2017).

September 20

- analysis of long-term changes in demand for oil; and
- strategic directions of the Gas, Renewables & Power segment.

4.1.3 Report of the Lead Independent Director on her mandate

During the Board meeting of February 7, 2018, Ms. Barbizet presented a report on her mandate as Lead Independent Director. The Lead Independent Director indicated that she exercised her duties during the 2017 fiscal year as follows:

- Contact with the Chairman and Chief Executive Officer:

The Lead Independent Director has been a privileged interlocutor of the Chairman and Chief Executive Officer with respect to significant matters concerning the Group's business and preparing meetings of the Board of Directors. The Lead Independent Director thus met the Chairman and Chief Executive Officer very regularly on a monthly basis, and before each meeting of the Board of Directors.

- Assessment of the Board of Directors' practices:

The Lead Independent Director conducted the assessment of the Board of Directors' practices (refer to point 4.1.4 of this chapter).

- Avoidance of conflicts of interest:

The Lead Independent Director put in place the diligence intended to identify and analyze potential conflicts of interest. She brought to the attention of the Chairman and Chief Executive Officer the potential conflicts of interest that had been identified. In April 2017, a director thus consulted the Lead Independent Director concerning a potential conflict of interest that could arise due to the director's potential participation on a gas-related Committee in

a European country. The director decided to not accept the offer to participate in the Committee.

- Monitoring of the Board's practices:

The Lead Independent Director held a meeting of the independent directors on December 12, 2017. At the meeting, the discussions related in particular to increasing the senior executives' knowledge of the Group, with a particular view to the succession plans, and to analyzing the impact of disruptive scenarios on the Group's situation.

- Relationships with shareholders:

The Chairman and Chief Executive Officer and the Lead Independent Director are the privileged points of contacts for shareholders concerning matters under the Board's responsibility. In accordance with the provisions of the rules of procedure of the Board, when the Chairman and Chief Executive Officer is solicited in this area, he may consult the Lead Independent Director before responding.

When the Lead Independent Director was solicited in this area, she informs the Chairman and Chief Executive Officer and gives her opinion, so that the Chairman and Chief Executive Officer can give appropriate response to the request. The Chairman and Chief Executive Officer informs the Lead Independent Director of the response.

Thus, for example, on August 31, 2017, the Lead Independent Director received a letter from a shareholder regarding the Company's governance (Board of Directors, governance strategy, compensation, risk assessment), the response to which, sent on November 26, 2017, was jointly signed by the Chairman and Chief Executive Officer and the Lead Independent Director. It was followed by a conference call of both the Chairman and Chief Executive Officer and the Lead Independent Director with the shareholder.

- Visits to Group sites by the directors:

Ms. Barbizet took part in the following visits to Group sites organized for the directors:

- Leuna refinery and hydrocarbon distribution activities in Germany (March 24, 2017);
- Geneva Oil Trading center (September 21, 2017); and
- Solaize Research center (October 26, 2017).

4.1.4 Evaluation of the functioning of the Board of Directors

Once a year, the Board of Directors discusses its functioning. It also conducts a formal assessment of its own functioning at regular intervals of up to three years. The evaluation is carried out under the supervision of the Lead Independent Director, if one has been appointed, or under the supervision of the Governance and Ethics Committee, with the assistance of an outside consultant. When a Lead Independent Director is appointed, he or she oversees this evaluation process and reports on it to the Board of Directors.

At its meeting of February 7, 2018, the Board of Directors discussed its functioning. Ms. Barbizet, Lead Independent Director, managed this evaluation process in January 2018 on the basis of a formal self-assessment carried out in the form of a detailed questionnaire. The responses given by the directors were then presented to the Governance and Ethics Committee to be reviewed and summarized. This summary was then discussed by the Board of Directors. This process made it possible to confirm the quality of each director's contribution to the work of the Board and its Committees.

This formal evaluation showed a positive opinion of the functioning of the Board of Directors and the Committees. In particular, it was noted that the suggestions for improvement made by the directors in recent years had generally been taken into account. During the Board of Directors' meetings, some of which were held at certain of the Group's sites, special attention was paid at the start of each meeting to the review of the main points to be examined by the Board (financial statements, large-scale investment and divestment projects, etc.).

Furthermore, the main suggestions for improving the Board made by the directors during their January 2016 and January 2017 self-assessments have been implemented:

- monitoring risks at Board level: an annual presentation of the Group's risk map is now on the Board's agenda. Presentations were given at the Board meetings of April 26, 2016 and April 26, 2017;
- changes to the composition of the Board: the Governance and Ethics Committee's proposals to the Board of Directors met the expectations of the Board members, particularly with the addition of the experience of two chief executive officers of leading companies, who joined the Board following the Shareholders' Meeting of May 26, 2017;

- independent directors' meeting: this is now held at least once a year at the initiative of the Lead Independent Director. Meetings took place on December 21, 2016 and December 12, 2017;
- secure platform to access the Board's documents: the platform was put in place as of September 21, 2016 for Board meetings and as of April 24, 2017 for Audit Committee meetings; and
- succession plan for the executive directors: the succession plan for executive directors was reviewed at the meeting of the Governance and Ethics Committee of February 8, 2017.

The self-assessment conducted in January 2018 thus highlighted the directors' satisfaction with the functioning of the Board of Directors, both in terms of form and substance, and, in particular, concerning freedom of expression, the quality of dialog, the collegiality of decision-making and the relevance of subjects addressed. The directors appreciated notably the pace and agenda of meetings, the quality of the exchanges during lunches before the meetings and during the visits to Group sites organized for them, as well as the quality of relations with the Lead Independent Director. The Board of Directors made the following suggestions that could further improve its functioning:

- consider alternative disruptive scenarios within the framework of the strategic consideration; and
- confirm the process of the succession plan.

In this context, the Chairman and Chief Executive Officer indicated during the Board of Directors' meeting that:

- every new director can meet each member of the Executive Committee thanks to its welcome program;
- the Lead Independent Director and the Chairman and Chief Executive Officer are the points of contact between the Board of Directors and the shareholders; and
- visiting sites will keep being proposed to the directors.

4.1.5 General Management

4.1.5.1 Unified Management Form

Combination of the management positions

At its meeting on December 16, 2015, the Board of Directors decided to reunify the positions of Chairman and Chief Executive Officer of TOTAL S.A. as of December 19, 2015. As a result, since that date, Mr. Pouyanné has held the position of Chairman and Chief Executive Officer of TOTAL S.A.

Following the death of TOTAL's former Chairman and Chief Executive Officer, Mr. de Margerie, the Board of Directors decided, at its meeting on October 22, 2014, to separate the functions of Chairman and Chief Executive Officer in order to best ensure the transition of the General Management. The Board of Directors therefore appointed Mr. Pouyanné as Chief Executive Officer for a term of office expiring following the Annual Shareholders' Meeting called in 2017 to approve the 2016 financial statements⁽¹⁾, and Mr. Desmarest as Chairman of the Board of Directors for a term of office expiring on December 18, 2015, in accordance with the age limit set out in the bylaws. It was announced that, on that date, the functions of Chairman and Chief Executive Officer of TOTAL S.A. would be combined.

At the proposal of the Governance and Ethics Committee approved by the Board of Directors at the meeting of March 14, 2018, the Board of Directors will be called to renew Mr. Patrick Pouyanné's term of office as Chairman of the Board of Directors and as Chief Executive Officer at its meeting of June 1, 2018, subject to the renewal of his directorship by the Ordinary Shareholders' Meeting of June 1, 2018 and for the term of this new directorship, namely until the Shareholders' Meeting to be held in 2021 to approve the 2020 financial statements.

At the meeting of the Board of Directors of March 14, 2018, the Lead Independent Director notably reiterated that the proposal to continue to combine the positions of Chairman of the Board of Directors and Chief Executive Officer was made further to work done by the Governance and Ethics Committee in the interests of the Company. In this regard, the unified management form was deemed to be most appropriate to the Group's organization, *modus operandi* and business, and to the specific features of the oil and gas sector, particularly in light of the advantage for the Group of having a unified management in strategic negotiations with governments and the Group's partners.

4.1.5.2 Executive Committee and Group Performance Management Committee

The Executive Committee

The Executive Committee, under the responsibility of the Chairman and Chief Executive Officer, is the decision-making body of the Group.

It implements the strategy formulated by the Board of Directors and authorizes related investments, subject to the approval of the Board of Directors for investments exceeding 3% of the Group's equity or notification of the Board for investments exceeding 1% of equity.

In 2017, the Executive Committee met at least twice a month, except in August when it met once.

The Lead Independent Director also reiterated that the Group's governance structure ensures a balanced distribution of powers. To this end, at its meeting on December 16, 2015, the Board amended the provisions of its Rules of Procedure to provide for the appointment of a Lead Independent Director in the event of the combination of the positions of Chairman of the Board of Directors and Chief Executive Officer. The Lead Independent Director's duties, resources and rights are described in the Rules of Procedure of the Board of Directors.

The balance of powers within the Company's bodies is also ensured by the composition of the Board of Directors and that of its four Committees, particularly given the high proportion of members who are independent directors. It is further ensured by the directors' full involvement in the work of the Board and the Committees, and by their diverse profiles, skills and expertise.

In addition, the Board's Rules of Procedure provide that investments and divestments considered by the Group exceeding 3% of equity must be approved by the Board, which is also informed of any significant events related to the Company's operations, particularly investments and divestments in amounts exceeding 1% of equity.

Finally, the Company's bylaws also offer the necessary guarantees to ensure compliance with best governance practices under a unified Management Form. In particular, they stipulate that a Board meeting may be convened by any means, including verbally, and at short notice in case of urgency, by the Chairman or by a third of its members, at any time and as often as required to ensure the best interests of the Company.

Lead Independent Director

At its meeting on December 16, 2015, the Board of Directors appointed Ms. Barbizet as Lead Independent Director as of December 19, 2015. Pursuant to the provisions of the Rules of Procedure of the Board of Directors, she therefore chairs the Governance and Ethics Committee.

The duties of the Lead Independent Director are described in detail in the Rules of Procedure of the Board of Directors, the full version of which is provided in point 4.1.2.1 of this chapter.

As of December 31, 2017, the members of TOTAL's Executive Committee were as follows:

- Patrick Pouyanné, Chairman and Chief Executive Officer and President of the Executive Committee;
- Arnaud Breuillac, President, Exploration & Production;
- Patrick de La Chevardière, Chief Financial Officer;
- Momar Nguer, President, Marketing & Services;
- Bernard Pinatel, President, Refining & Chemicals;
- Philippe Sauquet, President, Gas, Renewables & Power, and President, Group Strategy-Innovation; and
- Namita Shah, President, People & Social Responsibility.

⁽¹⁾ The meeting of the Board of Directors of December 16, 2015 decided to extend the term of this office to the end of the 2018 Annual Shareholders' Meeting, date of expiry of the term of office of Mr. Pouyanné as director.

The Group Performance Management Committee

The mission of the Group Performance Management Committee is to examine, analyze and monitor the HSE, financial and operational results of the Group. It is chaired by the Chairman and Chief Executive Officer and meets monthly.

In addition to the members of the Executive Committee, this Committee is made up of the heads of the Group's main business units, as well as a limited number of Senior Vice Presidents of functions at the Group and business segments levels.

4.1.6 Shares held by the administration and management bodies

As of December 31, 2017, based on statements by the directors and the share register listing registered shares, all of the members of the Board of Directors and the Group's executive officers⁽¹⁾ held less than 0.5% of the share capital:

- members of the Board of Directors⁽²⁾: 101,366 shares and 11,517.55 units of the collective investment fund ("FCPE") invested in TOTAL shares;
- Chairman and Chief Executive Officer: 85,072 shares and 8,565.90 units of the FCPE invested in TOTAL shares;
- members of the Executive Committee⁽³⁾: 324,761 shares and 33,951.08 units of the FCPE invested in TOTAL shares;
- executive officers⁽³⁾: 422,437.75 shares and 72,995.30 units of the FCPE invested in TOTAL shares.

By decision of the Board of Directors:

- executive directors are required to hold a number of shares of the Company equal in value to two years of the fixed portion of their annual compensation; and
- members of the Executive Committee are required to hold a number of shares of the Company equal in value to two years of the fixed portion of their annual compensation. These shares must be acquired within three years of their appointment to the Executive Committee.

The number of TOTAL shares to be considered is comprised of TOTAL shares and units of the FCPE invested in TOTAL shares.

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(1) The Group's executive officers include the members of the Executive Committee, the four Senior Vice Presidents of the central Group functions who are members of the Group Performance Management Committee (HSE, Strategy & Climate, Communications, Legal), the Deputy Chief Financial Officer and the Treasurer.

(2) Including the Chairman and Chief Executive Officer, the director representing employee shareholders and the director representing employees.

(3) Excluding the Chairman and Chief Executive Officer.

Summary of transactions in the Company's securities (Article L. 621-18-2 of the French Monetary and Financial Code)

The following table presents transactions, of which the Company has been informed, in the Company's shares or related financial instruments carried out in 2017 by the individuals referred to in paragraphs a), b)⁽¹⁾ and c) of Article L. 621-18-2 of the French Monetary and Financial Code:

Year 2017		Acquisition	Subscription	Transfer	Exchange	Exercise of options
Patrick Pouyanné ^(a)	TOTAL shares	-	3,102.00	15,000.00	-	15,000.00
	Units in FCPE and other related financial instruments ^(b)	283.42	0.88	-	-	-
Patrick Artus ^(a)	TOTAL shares	-	-	-	-	-
	Units in FCPE and other related financial instruments ^(b)	-	-	-	-	-
Patricia Barbizet ^(a)	TOTAL shares	-	16.00	-	-	-
	Units in FCPE and other related financial instruments ^(b)	-	-	-	-	-
Marie-Christine Coisne-Roquette ^(a)	TOTAL shares	177.00	-	-	-	-
	Units in FCPE and other related financial instruments ^(b)	-	-	-	-	-
Mark Cutifani ^(a)	TOTAL shares	2,000.00	-	-	-	-
	Units in FCPE and other related financial instruments ^(b)	-	-	-	-	-
Maria van der Hoeven ^(a)	TOTAL shares	-	-	-	-	-
	Units in FCPE and other related financial instruments ^(b)	-	-	-	-	-
Anne-Marie Idrac ^(a)	TOTAL shares	-	-	-	-	-
	Units in FCPE and other related financial instruments ^(b)	-	-	-	-	-
Gérard Lamarche ^(a)	TOTAL shares	28.00	-	-	-	-
	Units in FCPE and other related financial instruments ^(b)	-	-	-	-	-
Jean Lemierre ^(a)	TOTAL shares	-	28.00	-	-	-
	Units in FCPE and other related financial instruments ^(b)	-	-	-	-	-
Renata Perycz ^(a)	TOTAL shares	-	-	-	-	-
	Units in FCPE and other related financial instruments ^(b)	61.04	-	-	-	-
Carlos Tavares ^(a)	TOTAL shares	1,000.00	-	-	-	-
	Units in FCPE and other related financial instruments ^(b)	-	-	-	-	-
Christine Renaud ^(a)	TOTAL shares	-	-	-	-	-
	Units in FCPE and other related financial instruments ^(b)	2,544.07	-	1,830.16	-	-
Arnaud Breuillac ^(a)	TOTAL shares	-	1,276.00	18,540.00	-	-
	Units in FCPE and other related financial instruments ^(b)	116.23	5,416.47	589.66	-	-
Patrick de La Chevardière ^(a)	TOTAL shares	-	6,287.00	-	-	12,000.00
	Units in FCPE and other related financial instruments ^(b)	62.36	9,191.35	8,706.89	-	-
Momar Nguer ^(a)	TOTAL shares	-	590.00	5,229.00	-	-
	Units in FCPE and other related financial instruments ^(b)	142.92	4,542.22	1,977.21	-	-
Bernard Pinatel ^(a)	TOTAL shares	-	1,421.00	-	-	6,000.00
	Units in FCPE and other related financial instruments ^(b)	23.21	4,063.91	4,185.14	-	-
Philippe Sauquet ^(a)	TOTAL shares	-	944.00	-	-	-
	Units in FCPE and other related financial instruments ^(b)	447.71	5,465.98	-	-	-
Namita Shah ^(a)	TOTAL shares	-	215.00	-	-	-
	Units in FCPE and other related financial instruments ^(b)	90.32	4,195.58	-	-	-

(a) Including related parties within the meaning of the provisions of Article R. 621-43-1 of the French Monetary and Financial Code.
(b) FCPE primarily invested in TOTAL shares.

(1) The individuals referred to in paragraph b) of Article L. 621-18-2 of the French Monetary and Financial Code include the members of the Executive Committee.

4.2 Statement regarding corporate governance

For many years, TOTAL has taken an active approach to corporate governance and at its meeting on November 4, 2008, the Board of Directors decided to refer to the AFEP-MEDEF Code of Corporate Governance for publicly traded companies (available on the AFEP and MEDEF web sites).

The AFEP-MEDEF Code was revised in June 2013 to introduce new changes regarding, in particular, a consultation procedure in which shareholders can express an opinion on the individual compensation of the executive directors (say on pay), as well as the establishment of a High Committee for corporate governance, an independent structure in charge of monitoring the implementation of the Code. It was also revised in November 2015 to introduce the principle of

consultation of the Annual Shareholders' Meeting in case of the sale of at least one half of the Company's assets and to bring the Code in line with new laws regarding supplementary pensions of executive directors. The Code was also revised in November 2016 in order to clarify and complete certain recommendations, in particular on the independence of directors, CSR and the compensation of the executive directors.

Pursuant to Article L. 225-37-4 of the French Commercial Code, the following table sets forth the sole recommendation made in the AFEP-MEDEF Code that the Company has opted not to follow and the reasons for such decision.

Recommendations not followed	Explanation – Practice followed by TOTAL
<p>Supplementary pension plan (point 24.6.2 of the Code)</p> <p>Supplementary pension schemes with defined benefits must be subject to the condition that the beneficiary must be a director or employee of the company when claiming his or her pension rights pursuant to the applicable rules.</p>	<p>It appeared justified not to deprive the relevant beneficiaries of the benefit of the pension commitments made by the Company in the particular cases of the disability or departure of a beneficiary over 55 years of age at the initiative of the Group. In addition, it should be noted that the supplementary pension plan set up by the Company was declared to URSSAF in 2004, in accordance with Articles L. 137-11 and R. 137-16 of the French Social Security Code.</p>

In recent years, the Company's practices have evolved in two areas concerning the recommendations made in the AFEP-MEDEF Code.

First, a meeting of directors not attended by the executive directors is now held annually. The recommendation made in the AFEP-MEDEF Code (point 10.3) stating that "It is recommended that a meeting not attended by the executive officers be organized each year" is thus followed.

Second, concerning the recommendation made in the AFEP-MEDEF Code concerning the composition of the Compensation Committee that one "employee director should be a member", the Board of Directors approved on February 8, 2017, the proposal of the Governance and Ethics Committee to appoint Ms. Renata Perycz as a member of the Compensation Committee as of the Shareholder Meeting of May 26, 2017. Ms. Perycz, thanks to the nature of her salaried duties in the Group, brings in particular to the Compensation Committee her experience in Human Resources.

4.3 Compensation for the administration and management bodies

4.3.1 Board members' compensation

Aggregate amount of directors' fees

The conditions applicable to Board members' compensation are defined by the Board of Directors on the proposal of the Governance and Ethics Committee, subject to the aggregate maximum amount of directors' fees authorized by the Annual Shareholders' Meeting of May 17, 2013 and set at €1.4 million per fiscal year.

In 2017, the aggregate amount of directors' fees due to the members of the Board of Directors (12 directors on December 31, 2017) was €1.28 million.

Rules for allocating directors' fees

The directors' fees for fiscal year 2017 are allocated according to a formula comprised of fixed compensation and variable compensation based on fixed amounts per meeting, which makes it possible to take into account each director's actual attendance at the meetings of the Board of Directors and its Committees, subject to the conditions below:

- a fixed annual portion of €20,000 per director⁽¹⁾;
- a fixed annual portion⁽¹⁾ of €30,000 for the Chairman of the Audit Committee⁽²⁾;
- a fixed annual portion⁽¹⁾ of €25,000 for the Audit Committee members⁽²⁾;
- a fixed annual portion⁽¹⁾ of €25,000 for the Chairman of the Governance and Ethics Committee and for the Chairman of the Compensation Committee⁽²⁾;
- an additional fixed annual portion⁽¹⁾ of €15,000, increased to €30,000 from July 26, 2017 for the Lead Independent Director (beyond amounts above);
- an amount of €5,000, increased to €7,500 from July 26, 2017, per director for each Board of Directors' meeting actually attended (in view of the additional workload of the Board);
- an amount of €3,500 per director for each Governance and Ethics Committee, Compensation Committee or Strategic and CSR Committee meeting actually attended;
- an amount of €7,000 per director for each Audit Committee meeting actually attended; and
- a premium of €2,000, increased to €4,000 since January 1, 2017, for travel from outside France to attend a Board of Directors' or Committee meeting.

The Chairman and Chief Executive Officer does not receive directors' fees for his work on the Board and Committees of TOTAL S.A.

The total amount paid to each director is determined after taking into consideration the director's actual presence at each Board of Directors' or Committee meeting and, if appropriate, after prorating the amount set for each director such that the overall amount paid remains within the maximum limit set by the Shareholders' Meeting. Directors' fees for each fiscal year are paid following a decision by the Board of Directors, on the proposal of the Governance and Ethics Committee, at the beginning of the following fiscal year.

The director representing employee shareholders and the director representing employees receive directors' fees according to the same terms and conditions as any other director.

The table below presents the total compensation and including in-kind benefits due and paid to each executive and non-executive director during the previous two fiscal years.

Mr. Marc Blanc, the director representing employees until May 26, 2017, participates in the internal defined contribution pension plan applicable to all TOTAL S.A. employees, known as RECOSUP (*Régime collectif et obligatoire de retraite supplémentaire à cotisations définies*), governed by Article L. 242-1 of the French Social Security Code. The Company's commitment is limited to its share of the contribution paid to the insurance company that manages the plan. For fiscal year 2017, this pension plan represented a booked expense to TOTAL S.A. in favor of Mr. Blanc of €780.

Mr. Blanc, who joined the Elf Aquitaine Group in 1980, also participates in a supplementary defined benefit pension plan, known as CREA, set up and financed by the Company. This plan covers former employees of the Elf Aquitaine Group and was closed on December 31, 1994. It does not require a presence condition within the Group at the time of retirement. The commitments made by the Group in favor of Mr. Blanc under this plan represent, at December 31, 2017, a gross annual pension, payable to his spouse within a limit of 60% in case of death of the beneficiary, estimated at €4,924. Nearly the full amount of the Group's commitments under the CREA plan is outsourced to an insurance company and the non-outsourced balance is evaluated annually and adjusted through a provision in the accounts. The amount of these commitments at December 31, 2017 in favor of Mr. Blanc is €142.5 thousand. This amount represents the gross value of the Group's commitments to this beneficiary based on the gross annual pension estimated as of December 31, 2017, as well as a statistical life expectancy of the beneficiary and his spouse.

Ms. Christine Renaud, the director representing employees since May 26, 2017, also participates in the internal defined contribution pension plan applicable to all TOTAL S.A. employees, known as RECOSUP (*Régime collectif et obligatoire de retraite supplémentaire à cotisations définies*), governed by Article L. 242-1 of the French Social Security Code. The Company's commitment is limited to its share of the contribution paid to the insurance company that manages the plan. For fiscal year 2017, this pension plan represented a booked expense to TOTAL S.A. in favor of Ms. Renaud of €629.

During the past two years, the directors currently in office have not received any compensation or in-kind benefits from TOTAL S.A. or from its controlled companies other than those mentioned in the table below.

Moreover, there is no service contract between a director and TOTAL S.A. or any of its controlled companies that provides for the grant of benefits under such a contract.

(1) Calculated on a prorata basis, in the event of change in the course of the year.

(2) To be substituted to the €20,000 fixed annual portion per director. In case of accumulation of the functions of director and/or Audit Committee member and/or Chairman of a Committee (Audit, Governance and Ethics, Compensation), the difference between the fixed annual portion per director and the fixed annual portion of the others functions is added.

Table of directors' fees and other compensation due and paid to the executive and non-executive directors (AMF position-recommendation No. 2009-16 – AMF Table No. 3)

Gross amount (€)	For the year ended December 31, 2016		For the year ended December 31, 2017	
	Amounts paid	Amounts due	Amounts paid	Amounts due
Patrick Pouyanné				
Directors' fees	-	-	-	-
Other compensation	(a)	(a)	(a)	(a)
Patrick Artus				
Directors' fees	121,000	88,000	128,000	121,000
Other compensation	-	-	-	-
Patricia Barbizet				
Directors' fees	109,500	130,644	128,534	109,500
Other compensation	-	-	-	-
Marc Blanc				
Directors' fees ^{(b)(c)}	73,500	72,000	31,500	73,500
Other compensation	76,443	76,443	77,997	77,997
Marie-Christine Coisne-Roquette				
Directors' fees	146,500	122,679	154,000	146,500
Other compensation	-	-	-	-
Mark Cutifani				
Directors' fees ^(d)	-	-	53,500	-
Other compensation	-	-	-	-
Paul Desmarais, Jr				
Directors' fees ^(e)	49,500	61,000	17,000	49,500
Other compensation	-	-	-	-
María van der Hoeven				
Directors' fees	43,576	-	148,500	43,576
Other compensation	-	-	-	-
Anne-Marie Idrac				
Directors' fees	84,000	79,000	91,500	84,000
Other compensation	-	-	-	-
Barbara Kux				
Directors' fees ^(e)	100,000	102,500	39,500	100,000
Other compensation	-	-	-	-
Gérard Lamarche				
Directors' fees	150,000	147,000	181,000	150,000
Other compensation	-	-	-	-
Jean Lemierre				
Directors' fees	32,076	-	88,000	32,076
Other compensation	-	-	-	-
Renata Perycz				
Directors' fees	48,576	-	120,000	48,576
Other compensation	53,158	53,158	57,946	57,946
Christine Renaud				
Directors' fees ^{(c)(f)}	-	-	53,000	-
Other compensation	-	-	60,789	60,789
Carlos Tavares				
Directors' fees ^(d)	-	-	42,000	-
Other compensation	-	-	-	-
TOTAL	1,087,829	932,424	1,472,766	1,154,960

(a) For more information concerning compensation, refer to the summary tables presented in point 4.2.3 of this chapter.

(b) Director representing employees until May 26, 2017.

(c) Mr. Blanc and Ms. Renaud chose to pay all their directors' fees to their trade union membership organizations for the entire term of their directorship.

(d) Director since May 26, 2017.

(e) Director until May 26, 2017.

(f) Director representing employees since May 26, 2017.

4.3.2 Chairman and Chief Executive Officer's compensation

4.3.2.1 Compensation of Mr. Patrick Pouyanné for fiscal year 2017

This report by the Board of Directors, on the proposal of the Compensation Committee, and in application of Article L. 225-37-3 of the French Commercial Code, presents the total compensation and benefits of all kinds, paid to the Chairman and Chief Executive Officer in the fiscal year 2017⁽¹⁾. It makes the distinction between the fixed, variable and extraordinary components of the total compensation and benefits, as well as the criteria used to calculate them or the circumstances due to which they were attributed. This report also mentions all the commitments of all kinds made by the Company in favor of the Chairman and Chief Executive Officer corresponding to the components of compensation, indemnities or benefits due or likely to be due upon acceptance, termination or change in duties or after the discharge thereof, in particular pension commitments and other annuities.

The payment to the Chairman and Chief Executive Officer of the variable component for fiscal year 2017, the only variable or exceptional component of the compensation policy of the Chairman and Chief Executive Officer for fiscal year 2017, is conditional on the approval of the Ordinary Shareholders' Meeting on June 1, 2018 of the compensation components of the Chairman and Chief Executive Officer, under the conditions stipulated in Articles L. 225-37-2, L. 225-100, and R. 225-29-1 of the French Commercial Code (decree No. 2017-340 of March 16, 2017, applicable since March 18, 2017).

The Ordinary Shareholders' Meeting on June 1, 2018 will be called on to approve the fixed, variable and extraordinary components of the total compensation and the benefits of any kind paid or attributed to the Chairman and Chief Executive Officer for the fiscal year 2017, in application of Article L. 225-100 of the French Commercial Code.

Table of the compensation of the Chairman and Chief Executive Officer (AMF position-recommendation No. 2009-16 – AMF Table No. 2)

(in €)	For the year ended December 31, 2016		For the year ended December 31, 2017	
	Amount due for the fiscal year	Amount paid during the fiscal year ^(a)	Amount due for the fiscal year	Amount paid during the fiscal year ^(a)
Patrick Pouyanné Chairman and Chief Executive Officer				
Fixed compensation	1,400,000	1,400,000	1,400,000	1,400,000
Annual variable compensation	2,339,400	1,814,400	2,400,300	2,339,400
Multi-year variable compensation	-	-	-	-
Extraordinary compensation	-	-	-	-
Directors' fees	-	-	-	-
In-kind benefits ^(b)	58,945	58,945	67,976	67,976
TOTAL	3,798,345	3,273,345	3,868,276	3,807,376

(a) Variable portion paid for the prior fiscal year.

(b) Company car and the life insurance and health care plans paid for by the Company.

Summary of the compensation, options and shares granted to the Chairman and Chief Executive Officer (AMF position-recommendation No. 2009-16 – AMF Table No. 1)

(in €, except the number of shares)	For the year ended December 31, 2016	For the year ended December 31, 2017
Patrick Pouyanné Chairman and Chief Executive Officer		
Compensation due for the fiscal year (details in AMF Table No. 2 above)	3,798,345	3,868,276
Valuation of multi-year variable compensation paid during the fiscal year	-	-
Accounting valuation of the options granted during the fiscal year	-	-
Accounting valuation of the performance shares granted during the fiscal year ^(a)	2,122,200 ^(b)	2,134,200 ^(c)
Number of performance shares granted during the fiscal year	60,000	60,000
TOTAL	5,920,545	6,002,476

Note: The valuations of the options and performance shares correspond to a valuation performed in accordance with IFRS 2 (see Note 9 to the Consolidated Financial Statements) and not to any compensation actually received during the fiscal year. Entitlement to performance shares is subject to the fulfillment of performance conditions assessed over a three-year period.

(a) For detailed information, refer to AMF Table No. 6 below. The valuation of the shares was calculated on the grant date (see Note 9 to the Consolidated Financial Statements).

(b) The amount of €2,122,200 corresponds to the fair value of the 60,000 shares granted in 2016, calculated using the market price at the grant date (€42.685), minus the total estimated amount of the dividends likely to be paid during the vesting period (or a unitary fair value of €35.37) in accordance with IFRS 2. The amount of €2,561,100 erroneously mentioned in AMF table No. 1 in the 2016 Registration Document corresponds to the closing price of TOTAL shares on the grant date (€42.685), multiplied by 60,000 shares.

(c) The amount of €2,134,200 corresponds to the fair value of the 60,000 shares granted in 2017, calculated using the market price at the grant date (€43.220), minus the total estimated amount of the dividends likely to be paid during the vesting period (or a unitary fair value of €35.57) in accordance with IFRS 2.

(1) Including attributions in the form of stock, securities or rights giving access to the Company's share capital or rights to the attribution of securities of the Company or of the companies mentioned in Articles L. 228-13 and L. 228-93 of the French Commercial Code.

AMF position-recommendation No. 2009-16 – AMF table No. 11

Executive directors	Employment contract	Supplementary pension plan	Payments or benefits due or likely to be due upon termination or change in duties	Benefits related to a non-compete agreement
Patrick Pouyanné, Chairman and Chief Executive Officer Start of term of office: December 19, 2015 End of term of office: Shareholders' Meeting on June 1, 2018 to approve the financial statements for fiscal year 2017	NO	YES Internal supplementary defined benefit pension plan ^(a) and defined contribution pension plan known as RECOSUP	YES ^(a) Severance benefit and retirement benefit	NO

(a) Payment subject to a performance condition under the terms approved by the Board of Directors on December 16, 2015. Details of these commitments are provided below. The retirement benefit cannot be combined with the severance benefit.

Summary table of the components of the 2017 compensation for Mr. Patrick Pouyanné, Chairman and Chief Executive Officer of TOTAL S.A.

Components of compensation	Amount or accounting valuation submitted for vote	Presentation																																													
Components of total compensation paid or granted for fiscal year 2017																																															
Fixed compensation	€1,400,000 (amount paid in 2017)	The fixed compensation due to Mr. Pouyanné for his duties as Chairman and Chief Executive Officer for fiscal year 2017 was €1,400,000 (unchanged from fiscal year 2016).																																													
Annual variable compensation	€2,400,300 (amount paid in 2018)	The variable portion of Mr. Pouyanné's compensation for his duties as Chairman and Chief Executive Officer for fiscal year 2017 has been set at €2,400,300, corresponding to 171.45% (of a maximum of 180%) of his fixed annual compensation based on his performance. At its meeting on February 7, 2018, the Board of Directors reviewed the level of achievement of the economic parameters based on the quantifiable targets set by the Board of Directors at its meeting on March 15, 2017. The Board of Directors also assessed the Chairman and Chief Executive Officer's personal contribution on the basis of the four target criteria set during its meeting on March 15, 2017 to qualitatively assess his management.																																													
Annual variable compensation due for fiscal year 2017 (expressed as a percentage of the base salary)																																															
		<table border="1"> <thead> <tr> <th></th> <th>Maximum percentage</th> <th>Percentage allocated</th> </tr> </thead> <tbody> <tr> <td>Economic parameters (quantifiable targets)</td> <td>140%</td> <td>131.45%</td> </tr> <tr> <td>- Safety</td> <td>20%</td> <td>20%</td> </tr> <tr> <td>- TRIR</td> <td>12%</td> <td>12%</td> </tr> <tr> <td>- FIR, by comparison</td> <td>4%</td> <td>4%</td> </tr> <tr> <td>- Evolution of the number of Tier 1 + Tier 2 incidents</td> <td>4%</td> <td>4%</td> </tr> <tr> <td>- Return on equity (ROE)</td> <td>30%</td> <td>21.45%</td> </tr> <tr> <td>- Net debt-to-equity ratio</td> <td>40%</td> <td>40%</td> </tr> <tr> <td>- Adjusted net income (ANI) – comparative</td> <td>50%</td> <td>50%</td> </tr> <tr> <td>Personal contribution (qualitative criteria)</td> <td>40%</td> <td>40%</td> </tr> <tr> <td>- Steering of the strategy and successful strategic negotiations with producing countries</td> <td>10%</td> <td>10%</td> </tr> <tr> <td>- Achievement of production and reserve targets</td> <td>10%</td> <td>10%</td> </tr> <tr> <td>- Performance and outlook with respect to Downstream activities</td> <td>10%</td> <td>10%</td> </tr> <tr> <td>- Corporate Social Responsibility (CSR) performance</td> <td>10%</td> <td>10%</td> </tr> <tr> <td>TOTAL</td> <td>180%</td> <td>171.45%</td> </tr> </tbody> </table>		Maximum percentage	Percentage allocated	Economic parameters (quantifiable targets)	140%	131.45%	- Safety	20%	20%	- TRIR	12%	12%	- FIR, by comparison	4%	4%	- Evolution of the number of Tier 1 + Tier 2 incidents	4%	4%	- Return on equity (ROE)	30%	21.45%	- Net debt-to-equity ratio	40%	40%	- Adjusted net income (ANI) – comparative	50%	50%	Personal contribution (qualitative criteria)	40%	40%	- Steering of the strategy and successful strategic negotiations with producing countries	10%	10%	- Achievement of production and reserve targets	10%	10%	- Performance and outlook with respect to Downstream activities	10%	10%	- Corporate Social Responsibility (CSR) performance	10%	10%	TOTAL	180%	171.45%
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TOTAL	180%	171.45%																																													

Components of compensation	Amount or accounting valuation submitted for vote	Presentation
		<p>The Board of Directors assessed achievement of the targets set for the economic parameters as follows:</p> <ul style="list-style-type: none"> - The safety criterion was assessed for a maximum of 20% through (i) the achievement of the annual TRIR (Total Recordable Injury Rate) target, for a maximum of 12%; (ii) the number of accidental deaths per million hours worked, FIR (Fatality Incident Rate) compared to those of the four large competitor oil companies⁽¹⁾, for a maximum of 4%, as well as through changes in the Tier 1 + Tier 2 indicator⁽²⁾, for a maximum of 4%. <p>In particular, the Board of Directors noted that the target of a TRIR lower than 1.0 was fully achieved in 2017. The TRIR in 2017 was 0.88. It also noted that the number of accidental deaths per million hours worked, FIR (Fatality Incident Rate), the best amongst the panel of majors, was achieved in full in 2017. Finally, the Board noted that the annual target of Tier 1 + Tier 2 incidents equal to or fewer than 130 was achieved in full in 2017; the number of incidents was 103.</p> <p>It therefore set the portion for this criterion at 20% of the fixed compensation (maximum of 20%);</p> <ul style="list-style-type: none"> - For the return on equity (ROE) criterion⁽³⁾, the Board of Directors noted that the target of an ROE equal to or higher than 13% in 2017 was partly achieved. Since the ROE stood at 10.15% in 2017, the Board of Directors set the portion awarded for this criterion at 21.45% of the fixed compensation for the fiscal year 2017 (maximum of 30%); - For the net debt-to-equity ratio criterion⁽⁴⁾, the Board of Directors noted that the objective of maintaining a debt ratio equal to or lower than 30% in 2017 was achieved in full, which led the portion for this criterion to be set at 40% of the fixed compensation for fiscal year 2017 (maximum of 40%); - The criterion related to the change in the Group's adjusted net income (ANI) was assessed by comparison with those of the four large oil companies on the basis of estimates calculated by a group of leading financial analysts⁽⁵⁾. The Board of Directors noted that the increase in the Group's three-year average ANI was better than that of the panel, which led the portion for this criterion to be set at 50% of the fixed compensation for fiscal year 2017 (maximum of 50%). <p>Regarding the Chairman and Chief Executive Officer's personal contribution, the Board of Directors determined that the targets set were largely achieved in fiscal year 2017, particularly those related to:</p> <ul style="list-style-type: none"> - steering of the strategy and successful strategic negotiations with producing countries. The following points in particular were noted during the period: <ul style="list-style-type: none"> - a global partnership agreement with Sonatrach in Algeria consolidating the existing partnership, - the development of the unconventional resources of the Vaca Muerta in Argentina, accompanied by an increase of the Group's stake in the permit from 27.27% to 41%, - an agreement to develop the production of phase 11 of the South Pars gas field in Iran, - the acquisition of Mærsk Oil, - the resumption of offshore exploration in Angola with the Zinia 2 project on block 17, the extension of cooperation with Sonangol on the Kaombo project,

(1) ExxonMobil, Royal Dutch Shell, BP and Chevron.

(2) Tier 1 and Tier 2: indicator of the number of loss of primary containment events, with more or less significant consequences, as defined by the API 754 (for downstream) and IOGP 456 (for upstream) standards. Excluding acts of sabotage and theft.

(3) The Group measures the ROE as the ratio of adjusted consolidated net income to average adjusted shareholders' equity between the beginning and the end of the period. Adjusted shareholders' equity for fiscal year 2017 is calculated after payment of a dividend of €2.48 per share, subject to approval by the Annual Shareholders' Meeting on June 1, 2018. In 2016, the ROE was 8.7%.

(4) For its internal management and external communication purposes, the Group calculates a net debt-to-equity ratio by dividing its net financial debt by its adjusted shareholders' equity. Adjusted shareholders' equity for 2017 is calculated after payment of a dividend of €2.48 per share, subject to approval by the Annual Shareholders' Meeting on June 1, 2018. In 2017, the net debt-to-equity ratio was 13.8%. In 2016, it was 27.1%.

(5) Adjusted results are defined as income at replacement cost, excluding non-recurring items and excluding the impact of fair value changes. The annual ANI of each peer used for the calculation is determined by taking the average of the ANIs published by a panel of six financial analysts: UBS, Crédit Suisse, Barclays, Bank of America Merrill Lynch, JP Morgan and Deutsche Bank. If any of these analysts is unable to publish the results of one or more peers for a given year, it will be replaced, for the year and for the peer(s) in question, in the order listed, by an analyst included in the following additional list: Jefferies, HSBC, Société Générale, Goldman Sachs and Citi. The ANIs used will be set according to these analysts' last publications two business days after the publication of the press release announcing the "fourth quarter and annual results" of the last peer.

Components of compensation	Amount or accounting valuation submitted for vote	Presentation
		<ul style="list-style-type: none"> - the signing of two agreements for the exploration and operation of deep offshore oil concessions offshore from Senegal and of a cooperation agreement with Petrosen and the Senegalese Ministry of Energy, - an exploration-production contract in Mauritania for block C7 with the Société Mauritanienne des Hydrocarbures et de Patrimoine Minier (SMHPM); - the increase of hydrocarbon production and reserves: an increase in the production of hydrocarbons in 2017 of 4.65% compared with 2016 and an increase of reserves booked on December 31, 2017; - the performance and outlook with respect to Downstream activities. The following points were noted in 2017: <ul style="list-style-type: none"> - in March 2017, the signing of an agreement to create a joint venture, in which the Group holds a 50% interest, for the construction of an ethane-based steam cracker on the American coast of the Gulf of Mexico and a new polyethylene plant, - the acquisition of a 23% stake in Eren Renewable Energy, which develops power plants producing electricity of renewable origin (solar and wind). The acquisition of this stake in renewable energies constitutes a diversification reflecting the inclusion of climate-related issues in the Group's strategy, - a distribution agreement signed with the Mexican government in October 2017, - the announcement of the acquisition of Engie's LNG business in November 2017, - the launch of the Total Spring offer in France, - the agreement with CMA CGM to supply LNG, - the acquisition of PitPoint for a deployment in the vehicle natural gas sector; - CSR performance, notably taking into account climate issues in the Group's strategy as well as the Group's reputation in the domain of Corporate Social Responsibility. Different actions were noted that aim to reduce the environmental footprint of the Group's operations (such as the signing of the Statoil/Shell/Total agreement to develop a project to capture, store and utilize CO₂ in Norway, or the signing of a Group commitment to compensate for carbon emissions produced by air travel by the Group's employees with the support of the GoodPlanet Foundation). Different actions were also noted that aim to provide the Group's customers with an energy product mix with a carbon intensity that is regularly reduced (investments in gas, with the announcement of the acquisition of Engie's LNG business and acquisitions in renewable energies, such as Eren RE and Greenflex). Finally, it was noted that the Global Compact appointed the Chairman and Chief Executive Officer as an SDG Pioneer in recognition of the commitments made by the Group to develop partnerships and invest in low carbon energies. In the development of the Group's societal policy, the adhesion of TOTAL to the Global Deal initiative, the revision of the "Human rights" roadmap, the publication of a guide to religion in the workplace and the commitment to increase the budget of the Total Corporate Foundation (€50 million to €125 million over 3 years) were noted in particular. <p>Regarding the development of the Group's relations with its stakeholders and its reputation in the field of Corporate Social Responsibility, the election of the Chairman and Chief Executive Officer as the 2016 Energy Intelligence Petroleum Executive of the Year was noted. Regarding the extra-financial rating agencies, it was noted that TOTAL maintained its position in the main ESG indexes (DJSI World and Europe; FTSE4Good) and its ratings (MSCI; CDP Climate Change and CDP Water), and that it figured for the first time, in 31st position, in the Corporate Knights Global 100 rankings of the Most sustainable companies, and in 3rd place in the extraction sector and in 1st place in the Oil & Gas sector of the Corporate Human Rights Benchmark published in 2017.</p> <p>The Chairman and Chief Executive Officer's personal contribution was therefore set at 40% of the fixed compensation (maximum of 40%).</p>
Multi-year or deferred variable compensation	n/a	The Board of Directors has not granted any multi-year or deferred variable compensation.
Extraordinary compensation	n/a	The Board of Directors has not granted any extraordinary compensation.

Components of compensation	Amount or accounting valuation submitted for vote	Presentation
Directors' fees	n/a	Mr. Pouyanné does not receive directors' fees for his duties at TOTAL S.A. or at the companies it controls.
Stock options, performance shares (and all other forms of long-term compensation)	€2,134,200 ⁽¹⁾ (accounting valuation)	<p>On July 26, 2017, Mr. Pouyanné was granted 60,000 existing shares of the Company (corresponding to 0.0024% of the share capital) pursuant to the authorization of the Company's Combined Shareholders' Meeting of May 24, 2016 (twenty-fourth resolution) subject to the conditions set out below. These shares were granted under a broader share plan approved by the Board of Directors on July 26, 2017, relating to 0.23% of the share capital in favor of more than 10,000 beneficiaries. The definitive grant of all the shares is subject to the beneficiary's continued presence within the Group during the vesting period and to performance conditions as described below.</p> <p>The definitive number of shares granted will be based on the comparative TSR (Total Shareholder Return) and the annual variation in net cash flow per share for fiscal years 2017 to 2019, applied as follows:</p> <ul style="list-style-type: none"> - the Company will be ranked each year against its peers (ExxonMobil, Royal Dutch Shell, BP and Chevron) during the three vesting years (2017, 2018 and 2019) based on the TSR criterion using the average closing market price expressed in dollars over one quarter at the beginning and end of each three-year period (Q4 year N vs./Q4 year N-3). The dividend will be considered reinvested based on the last market price on the ex-dividend date. $TSR\ N = (\text{average price Q4 N} - \text{average price Q4 N-3} + \text{reinvested dividends}) / (\text{average price Q4 N-3})$; - the Company will be ranked each year against its peers (ExxonMobil, Royal Dutch Shell, BP and Chevron) using the annual variation in net cash flow per share expressed in dollars criterion. Net cash flow is defined as cash flow from operating activities minus cash flow from investing activities including acquisitions and divestments. This data expressed in dollars will come from the consolidated statements of cash flow taken from the annual Consolidated Financial Statements of the Company and its peers for the fiscal years in question (based on the accounting standards applicable at the time of the closing of the accounts for such fiscal years). The number of shares used to calculate net cash flow per share will be the weighted-average number of diluted shares for the Company and each of its peers. <p>Based on the ranking, a grant rate will be determined for each year: 1st: 180% of the grant; 2nd: 130% of the grant; 3rd: 80% of the grant; 4th and 5th: 0%. For each of the criteria, the average of the three grant rates obtained (for each of the three fiscal years for which the performance conditions are assessed) will be rounded to the nearest 0.1 whole percent (0.05% being rounded to 0.1%) and capped at 100%. Each criterion will have a weight of 50% in the definitive grant rate. The definitive grant rate will be rounded to the nearest 0.1 whole percent (0.05% being rounded to 0.1%). The number of shares definitively granted, after confirmation of the performance conditions, will be rounded to the nearest whole number of shares in case of a fractional lot.</p> <p>In application of Article L. 225-197-1 of the French Commercial Code, Mr. Pouyanné will, until the end of his term, be required to retain in the form of registered shares 50% of the gains on the acquired shares net of tax and national insurance contributions related to the shares granted in 2017. When Mr. Pouyanné holds⁽²⁾ a volume of shares representing five times the fixed portion of his gross annual compensation, this percentage will be equal to 10%. If this condition is no longer met, the above-mentioned 50% holding requirement will again apply.</p> <p>In addition, the Board of Directors has noted that, pursuant to the Board's Rules of Procedure applicable to all directors, the Chairman and Chief Executive Officer is not allowed to hedge the shares of the Company or any related financial instruments and has taken note of Mr. Pouyanné's commitment to abstain from such hedging operations with regard to the performance shares granted.</p>

(1) The amount of €2,134,200 corresponds to the fair value of the 60,000 shares granted, calculated using the market price at the grant date (€43.220) minus the total estimated amount of the dividends likely to be paid during the vesting period (or €35.57) in accordance with IFRS 2.

(2) In the form of shares or units of mutual funds invested in shares of the Company.

Components of compensation	Amount or accounting valuation submitted for vote	Presentation
		The grant of performance shares to Mr. Pouyanné is subject to the same requirements applicable to the other beneficiaries of the performance share plan and were approved by the Board at its meeting on July 26, 2017. In particular, these provisions stipulate that the shares definitively granted at the end of the three-year vesting period will, after confirmation of fulfillment of the presence and performance conditions, be automatically recorded as pure registered shares on the start date of the two-year holding period and will remain non-transferable and unavailable until the end of the holding period.
Payment for assuming a position	n/a	Mr. Pouyanné was not granted any payment for assuming his position.
Components of total compensation paid or granted for fiscal year 2017 subject to a vote by the Annual Shareholders' Meeting as per the procedure regarding regulated agreements and undertakings		
Valuation of in-kind benefits	€67,976 (accounting valuation)	<p>The Chairman and Chief Executive Officer is entitled to a company vehicle. He is covered by the following life insurance plans provided by various life insurance companies:</p> <ul style="list-style-type: none"> - an "incapacity, disability, life insurance" plan applicable to all employees, partly paid for by the Company, that provides for two options in case of death of a married employee: either the payment of a lump sum equal to five times the annual compensation up to 16 times the PASS, corresponding to a maximum of €3,178,560 in 2018, plus an additional amount if there is a dependent child or children, or the payment of a lump sum equal to three times the annual compensation up to 16 times the PASS, plus a survivor's pension and education allowance; - a second "disability and life insurance" plan, fully paid by the Company, applicable to executive officers and senior executives whose annual gross compensation is more than 16 times the PASS. This contract, signed on October 17, 2002, amended on January 28 and December 16, 2015, guarantees the beneficiary the payment of a lump sum, in case of death, equal to two years of compensation (defined as the gross annual fixed reference compensation (base France), which corresponds to 12 times the monthly gross fixed compensation paid during the month prior to death or sick leave, to which is added the highest amount in absolute value of the variable portion received during one of the five previous years of activity), which is increased to three years in case of accidental death and, in case of accidental permanent disability, a lump sum proportional to the degree of disability. Death benefits are increased by 15% for each dependent child. Payments due under this contract are made after the deduction of any amount paid under the above-mentioned plan applicable to all employees. <p>The Chairman and Chief Executive Officer also benefits from the health care plan applicable to all employees.</p>
Severance benefit	None	<p>The Chairman and Chief Executive Officer is entitled to a benefit equal to two years of his gross compensation if he is removed from office or his term of office is not renewed by the Company. The calculation is based on the gross compensation (fixed and variable) of the 12 months preceding the date of termination or non-renewal of his term of office.</p> <p>The severance benefit will only be paid in the event of a forced departure related to a change of control or strategy. It will not be due in case of gross negligence or willful misconduct or if the Chairman and Chief Executive Officer leaves the Company of his own volition, accepts new responsibilities within the Group or may claim full retirement benefits within a short time period.</p> <p>These undertakings were subject to the procedure for regulated agreements, as provided for by Article L. 225-38 of the French Commercial Code. They were approved by the Annual Shareholders' Meeting held on May 24, 2016.</p> <p>Pursuant to the provisions of Article L. 225-42-1 of the French Commercial Code, receipt of this severance benefit is contingent upon a performance-related condition applicable to the beneficiary, which is deemed to be fulfilled if at least two of the following criteria are met:</p> <ul style="list-style-type: none"> - the average ROE (return on equity) for the three years preceding the year in which the Chairman and Chief Executive Officer retires is at least 10%; - the average net debt-to-equity ratio for the three years preceding the year in which the Chairman and Chief Executive Officer retires is less than or equal to 30%; - growth in TOTAL's oil and gas production is greater than or equal to the average growth rate of four oil companies (ExxonMobil, Royal Dutch Shell, BP and Chevron) during the three years preceding the year in which the Chairman and Chief Executive Officer retires.

Components of compensation	Amount or accounting valuation submitted for vote	Presentation
Retirement benefit	None	<p>The Chairman and Chief Executive Officer is entitled to a retirement benefit equal to those available to eligible members of the Group under the French National Collective Bargaining Agreement for the Petroleum Industry. This benefit is equal to 25% of the fixed and variable annual compensation received during the 12 months preceding retirement. Pursuant to the provisions of Article L. 225-42-1 of the French Commercial Code, receipt of this retirement benefit is contingent upon a performance-related condition applicable to the beneficiary, which is deemed to be fulfilled if at least two of the following criteria are met:</p> <ul style="list-style-type: none"> - the average ROE (return on equity) for the three years preceding the year in which the Chairman and Chief Executive Officer retires is at least 10%; - the average net debt-to-equity ratio for the three years preceding the year in which the Chairman and Chief Executive Officer retires is less than or equal to 30%; - growth in TOTAL's oil and gas production is greater than or equal to the average growth rate of four oil companies (ExxonMobil, Royal Dutch Shell, BP and Chevron) during the three years preceding the year in which the Chairman and Chief Executive Officer retires. The retirement benefit cannot be combined with the severance benefit described above.
Non-compete compensation	n/a	Mr. Pouyanné has not received any non-compete compensation.
Supplementary pension plan	None	<p>Pursuant to applicable legislation, the Chairman and Chief Executive Officer is eligible for the basic French Social Security pension and for pension benefits under the ARRCO and AGIRC supplementary pension plans. He also participates in the internal defined contribution pension plan applicable to all TOTAL S.A. employees, known as RECOSUP (<i>Régime collectif et obligatoire de retraite supplémentaire à cotisations définies</i>), covered by Article L. 242-1 of the French Social Security Code. The Company's commitment is limited to its share of the contribution paid to the insurance company that manages the plan. For fiscal year 2017, this pension plan represented a booked expense to TOTAL S.A. in favor of the Chairman and Chief Executive Officer of €2,354.</p> <p>The Chairman and Chief Executive Officer also participates in a supplementary defined benefit pension plan, covered by Article L. 137-11 of the French Social Security Code, set up and financed by the Company and approved by the Board of Directors on March 13, 2001, for which management is outsourced to two insurance companies effective January 1, 2012. This plan applies to all TOTAL S.A. employees whose compensation exceeds eight times the annual ceiling for calculating French Social Security contributions (PASS), set at €39,228 for 2017 (<i>i.e.</i>, €313,824), and above which there is no conventional pension plan.</p> <p>To be eligible for this supplementary pension plan, participants must have served for at least five years, be at least 60 years old and exercised his or her rights to retirement from the French Social Security. The benefits under this plan are subject to a presence condition under which the beneficiary must still be employed at the time of retirement. However, the presence condition does not apply a beneficiary aged 55 or older leaves the Company at the Company's initiative or in case of disability.</p> <p>The length of service acquired by Mr. Pouyanné as a result of his previous salaried duties held at the Group since January 1, 1997 has been maintained for the benefit of this plan.</p> <p>The compensation taken into account to calculate the supplementary pension is the average gross annual compensation (fixed and variable portion) over the last three years. This pension plan provides a pension for its beneficiaries equal to 1.8% of the portion of the compensation falling between 8 and 40 times the PASS and 1% for the portion of the compensation falling between 40 and 60 times the PASS, multiplied by the number of years of service up to a maximum of 20 years.</p> <p>The sum of the annual supplementary pension plan benefits and other pension plan benefits (other than those set up individually and on a voluntary basis) may not exceed 45% of the average gross compensation (fixed and variable portion) over the last three years. In the event that this percentage is exceeded, the supplementary pension is reduced accordingly.</p> <p>The amount of the supplementary pension determined in this way is indexed to the ARRCO pension point.</p> <p>The supplementary pension includes a clause whereby 60% of the amount will be paid to beneficiaries in the event of death after retirement.</p>

Components of compensation	Amount or accounting valuation submitted for vote	Presentation
		<p>To ensure that the acquisition of additional pension rights under this defined-benefit pension plan is subject to performance conditions to be defined pursuant to the provisions of Article L. 225-42-1 of the French Commercial Code amended by law No. 2015-990 of August 6, 2015, at the meeting on December 16, 2015, the Board of Directors noted the existence of the Chief Executive Officer's pension rights under the above-mentioned pension plan, immediately before his appointment as Chairman, for the period from January 1, 1997 to December 18, 2015.</p> <p>The conditional rights granted for the period from January 1, 1997 to December 18, 2015 (inclusive), acquired without performance conditions, correspond to a replacement rate equal to 34.14% for the portion of the base compensation falling between 8 and 40 times the PASS and a replacement rate of 18.96% for the portion of the base compensation falling between 40 and 60 times the PASS.</p> <p>The conditional rights granted for the period from December 19, 2015 to December 31, 2016 are subject to the performance condition described below and correspond to a maximum replacement rate equal to 1.86% for the portion of the base compensation falling between 8 and 40 times the PASS and a replacement rate equal to 1.04% for the portion of the base compensation falling between 40 and 60 times the PASS.</p> <p>These undertakings regarding the supplementary pension plan were subject to the procedure for regulated agreements, as per Article L. 225-38 of the French Commercial Code, and they were approved by the Company's Annual Shareholders' Meeting on May 24, 2016.</p> <p>Pursuant to the provisions of Article L. 225-42-1 of the French Commercial Code, the acquisition of these supplementary pension rights under the terms of the pension plan for the period from December 19, 2015 to December 31, 2016, was submitted by the Board of Directors meeting on December 16, 2015, to a condition related to the beneficiary's performance, which is considered fulfilled if the variable portion of the Chairman and Chief Executive Officer's compensation paid in 2017 for fiscal year 2016 reaches 100% of the base salary due for fiscal year 2016. Should the variable portion not reach 100% of his base compensation, the rights will be awarded on a pro rata basis.</p> <p>On February 8, 2017, the meeting of the Board of Directors noted that the specified performance condition was fully met and therefore confirmed the acquisition by Mr. Pouyanné of additional pension rights for the period from December 19, 2015 to December 31, 2016.</p> <p>The Board also noted that Mr. Pouyanné can no longer acquire additional pension rights under this plan given the rules for determining pension rights set out in the plan and the 20 years of service of Mr. Pouyanné as of December 31, 2016.</p> <p>The conditional rights granted for the period from January 1, 1997 to December 31, 2016 (inclusive), therefore correspond to a replacement rate equal to 36% for the portion of the base compensation falling between 8 and 40 times the PASS and a replacement rate of 20% for the portion of the base compensation falling between 40 and 60 times the PASS.</p> <p>The commitments made by TOTAL S.A. to its Chairman and Chief Executive Officer regarding the supplementary defined benefit and similar pension plans therefore represent, at December 31, 2017, a gross annual pension estimated at €608,819 based on the length of service acquired as of December 31, 2017 (i.e., capped at 20 years), corresponding to 16.02% of Mr. Pouyanné's gross annual compensation consisting of the annual fixed portion for 2017 (i.e., €1,400,000) and the variable portion to be paid⁽¹⁾ in 2018 for fiscal year 2017 (i.e., €2,400,300).</p> <p>Nearly the full amount of TOTAL S.A.'s commitments under these supplementary and similar retirement plans (including the retirement benefit) is outsourced for all beneficiaries to insurance companies and the non-outsourced balance is evaluated annually and adjusted through a provision in the accounts. The amount of these commitments as of December 31, 2017 is €17.4 million for the Chairman and Chief Executive Officer (€17.7 million for the Chairman and Chief Executive Officer, the current and former executive and non-executive directors covered by these plans). These amounts represent the gross value of TOTAL S.A.'s commitments to these beneficiaries based on the estimated gross annual pensions as of December 31, 2017 and the statistical life expectancy of the beneficiaries.</p>

4

(1) Subject to the approval of the Ordinary Shareholders' Meeting on June 1, 2018.

Components of compensation	Amount or accounting valuation submitted for vote	Presentation
		<p>The total amount of all the pension plans in which Mr. Pouyanné participates represents, at December 31, 2017, a gross annual pension estimated at €704,550 based on the length of service acquired as of December 31, 2017, corresponding to 18.54% of Mr. Pouyanné's gross annual compensation defined above (annual fixed portion for 2017 and variable portion to be paid in 2018 for fiscal year 2017).</p> <p>In line with the principles for determining the compensation of executive directors as set out in the AFEP-MEDEF Code which the Company uses as a reference, the Board of Directors took into account the benefit accruing from participation in the pension plans when determining the Chairman and Chief Executive Officer's compensation.</p>
Approval by the Shareholders' Meeting	-	The commitments made to the Chairman and Chief Executive Officer regarding the pension and insurance plans, the retirement benefit and the severance benefit (in the event of forced departure related to a change of control or strategy) were authorized by the Board of Directors on December 16, 2015 and approved by the Shareholders' Meeting on May 24, 2016.

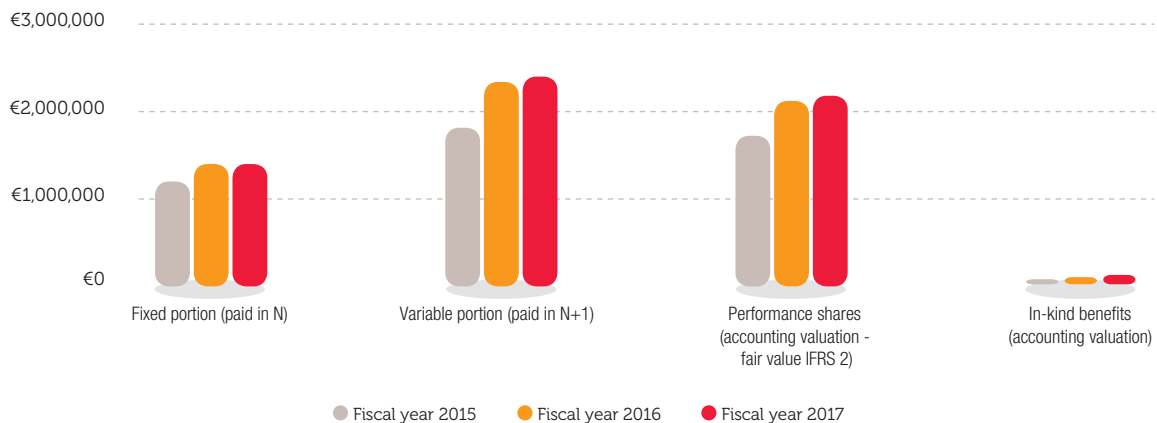
Draft resolution prepared by the Board of Directors in accordance with Article L. 225-100 of the French Commercial Code submitted to the Ordinary Shareholders' Meeting of June 1, 2018

Approval of the fixed, variable and extraordinary components of the total compensation and the in-kind benefits paid or granted to the Chairman and Chief Executive Officer for fiscal year 2017

Voting under the conditions of quorum and majority required for Ordinary Shareholders' Meetings and in accordance with Article L. 225-100 of the French Commercial Code, the shareholders approve the fixed, variable and extraordinary components of the total compensation and in-kind benefits paid

or granted to the Chairman and Chief Executive Officer for fiscal year 2017, as presented in the report on corporate governance, covered by Article L. 225-37 of the French Commercial Code and in the 2017 Registration Document (chapter 4, point 4.3.2.1).

Compensation due to the Chairman and Chief Executive Officer for the last three fiscal years



4.3.2.2 Principles and criteria for the determination, breakdown and allocation of the fixed, variable and extraordinary components of the total compensation (including in-kind benefits) attributable to the Chairman and Chief Executive Officer (Article L. 225-37-2 of the French Commercial Code)

This report, issued by the Board of Directors further to a proposal by the Compensation Committee, in accordance with the provisions of Article L. 225-37-2 of the French Commercial Code, describes the principles and criteria for the determination, breakdown and allocation of the fixed, variable and extraordinary components of the total compensation (including in-kind benefits) attributable to the Chairman and Chief Executive Officer as a result of his duties.

The compensation policy for the Chairman and Chief Executive Officer was approved by the Board of Directors, on the proposal of the Compensation Committee, at its meeting on March 14, 2018. It was based on the general principles for determining the compensation of the executive directors described below, and on a comparative study of the compensation of the Chairman and Chief

Executive Officer by an external consultant, to which the members of the Compensation Committee referred.

At its meeting on March 14, 2018, and on the proposal of the Compensation Committee, the Board of Directors also decided that the amount of the fixed component of the compensation of the Chairman and Chief Executive Officer, the maximum percentage of the variable part of his compensation, and the annual number of performance shares attributed to the Chairman and Chief Executive Officer in 2018 will not be changed throughout his next term of office as Chairman and Chief Executive Officer, after the renewal by the Board of Directors, in other words, until the General Shareholders' Meeting held in 2021 to approve the accounts of fiscal year ending December 31, 2020.

4

General principles for determining the compensation of the executive directors

The general principles for determining the compensation and other benefits granted to the executive directors of TOTAL S.A. are as follows:

- Compensation and benefits for the executive directors are set by the Board of Directors on the proposal of the Compensation Committee. Such compensation must be reasonable and fair, in a context that values both teamwork and motivation within the Company. Compensation for the executive directors is based on the market, the work performed, the results obtained and the responsibilities assumed.
- Compensation for the executive directors includes a fixed portion and a variable portion. The fixed portion is reviewed at least every two years.
- The amount of the variable portion is reviewed each year and may not exceed a stated percentage of the fixed portion. Variable compensation is determined based on pre-defined quantifiable and qualitative criteria that are periodically reviewed by the Board of Directors. Quantifiable criteria are limited in number, objective, measurable and adapted to the Company's strategy.
- The variable portion rewards short-term performance and the progress made toward paving the way for medium-term development. It is determined in a manner consistent with the annual performance review of the executive directors and the Company's medium-term strategy.
- The Board of Directors monitors the change in the fixed and variable portions of the executive directors' compensation over several years in light of the Company's performance.
- There is no specific pension plan for the executive directors. They are eligible for retirement benefits and pension plans available to certain employee categories in the Group under conditions determined by the Board.
- In line with the principles for determining the compensation of executive directors as set out in the AFEP-MEDEF Code which the Company uses as a reference, the Board of Directors takes into account the benefit accruing from participation in the pension plans when determining the compensation policy of the executive directors.
- Stock options and performance shares are designed to align the interests of the executive directors with those of the shareholders over the long term.

The grant of options and performance shares to the executive directors is reviewed in light of all the components of compensation of the person in question. No discount is applied when stock options are granted.

Stock options and performance shares are granted at regular intervals to prevent any opportunistic behavior.

The exercise of options and the definitive grant of performance shares to which the executive directors are entitled are subject to conditions of presence in the Company and performance that must be met over several years. The departure of executive directors from the Group results in the inapplicability of share options and the rights to the definitive attribution of performance shares. Under exceptional circumstances, the Board of Directors can decide to maintain the share options and the rights to the definitive attribution of performance shares after the executive's departure, if the decision of the Board of Directors is specially justified and taken in the Company's interest.

The Board of Directors determines the rules related to holding a portion of the shares resulting from the exercise of options and the performance shares definitively granted, which apply to the executive directors until the end of their term of office.

The executive directors cannot be granted stock options or performance shares when they leave office.

- After three years in office, the executive directors are required to hold at least the number of Company shares set by the Board.
- The components of compensation of the executive directors are made public after the Board of Directors' meeting at which they are approved.
- The executive directors do not take part in any discussions or deliberations of the corporate bodies regarding items on the agenda of Board of Directors' meetings related to the assessment of their performance or the determination of the components of their compensation.
- When a new executive director is nominated, the Board of Directors decides on his or her compensation and benefits, further to a proposal by the Compensation Committee, and in accordance with the above general principles for determining the compensation of the executive directors. Exceptional compensation or specific benefits when taking office are forbidden, unless the Board of Directors decides otherwise for particular reasons, in the Company's interest and within the limits of the exceptional circumstances.

Compensation policy for the Chairman and Chief Executive Officer for fiscal year 2018

The compensation policy for the Chairman and Chief Executive Officer for fiscal year 2018, as approved by the Board of Directors on March 14, 2018, is presented below.

Base salary of the Chairman and Chief Executive Officer (fixed compensation)

The Board of Directors decided to maintain Mr. Pouyanné's annual base salary (fixed compensation) for his duties as Chairman and Chief Executive Officer for fiscal year 2018 at €1,400,000 (same as the fixed portion due for fiscal year 2017).

The level of the Chairman and Chief Executive Officer's fixed compensation was set based on the responsibilities assumed and the compensation levels applied for executive directors of comparable companies (particularly CAC 40 companies).

Annual variable portion of the Chairman and Chief Executive Officer's compensation

The Board of Directors also decided to maintain the maximum amount of the variable portion that could be paid to the Chairman and Chief Executive Officer for fiscal year 2018 at 180% of his base salary (same percentage as in fiscal year 2017). This ceiling was set based on the level applied by a benchmark sample of companies operating in the energy sectors.

As in 2017, the formula for calculating the variable portion of the Chairman and Chief Executive Officer's compensation for fiscal year 2018 uses economic parameters that refer to quantifiable targets reflecting the Group's performance as well as the Chairman and Chief Executive Officer's personal contribution allowing a qualitative assessment of his management.

Annual variable compensation due for fiscal year 2018 (expressed as a percentage of the base salary)

	Maximum percentage
Economic parameters (quantifiable targets):	140%
- Safety	20%
- TRIR	12%
- FIR, by comparison	4%
- Evolution of the number of Tier 1 + Tier 2 incidents	4%
- Return on equity (ROE)	30%
- Net debt-to-equity ratio ^(a)	40%
- Adjusted net income (ANI) – comparative	50%
Personal contribution (qualitative criteria):	40%
- steering of the strategy and successful strategic negotiations with producing countries	
- achievement of production and reserve targets	15%
- performance and outlook with respect to Downstream activities (Refining & Chemicals / Marketing & Services)	
- the Group's gas-electricity-renewables growth strategy	10%
- Corporate Social Responsibility (CSR) performance	15%
TOTAL	180%

(a) Net debt/shareholders' equity + net debt before IFRS 16 impact.

The parameters used include:

- change in safety, for up to 20% of the base salary, assessed through the achievement of an annual TRIR (Total Recordable Injury Rate) target and the number of accidental deaths per million hours worked, FIR (Fatality Incident Rate) compared to those of four large competitor oil companies⁽¹⁾, as well as through changes in the Tier 1 + Tier 2 indicator⁽²⁾:
 - the maximum weighting of the TRIR criterion is 12% of the base salary. The maximum weighting will be reached if the TRIR is below 0.9; the weighting of the criterion will be zero if the TRIR is above or equal to 1.5. The interpolations are linear between these points of reference;
 - the maximum weighting of the FIR criterion is 4% of the base salary. The maximum weighting will be reached if the FIR is the best of the panel of the majors, and zero if the FIR is the worst of the panel. The interpolations are linear between these two points and depend on the ranking;

- the maximum weighting of the changes in the number of Tier 1 + Tier 2 incidents is 4% of the base salary. The maximum weighting will be reached if the number of Tier 1 + Tier 2 incidents equals 100 or below. The weighting of the parameter will be zero if the number of Tier 1 + Tier 2 incidents is equal to or higher than 200. The interpolations are linear between these two points of reference.
- return on equity (ROE) as published by the Group on the basis of its balance sheet and consolidated statement of income, for up to 30% of the base salary:
 - the maximum weighting of the criterion is reached if the ROE is higher than or equal to 13%;
 - the weighting of the criterion is zero if the ROE is lower than or equal to 6%;
 - the weighting of the criterion is 50% of the maximum of 30% if the ROE is 8%;
 - the interpolations are linear between these three points of reference.

(1) ExxonMobil, Royal Dutch Shell, BP and Chevron.

(2) Tier 1 and Tier 2: indicator of the number of loss of primary containment events, with more or less significant consequences, as defined by the API 754 (for downstream) and IOGP 456 (for upstream) standards. Excluding acts of sabotage and theft.

- net debt-to-equity ratio (net debt/shareholders' equity + net debt before IFRS 16 impact⁽¹⁾) as published by the Group on the basis of its balance sheet and consolidated statement of income, for up to 40% of the base salary:
 - the maximum weighting of the criterion is reached for a debt ratio equal to or below 20%,
 - the weighting of the criterion is zero for a debt ratio of 30%,
 - the interpolations are linear between these two points of reference.
- change in adjusted net income (ANI), for up to 50% of the base salary, determined on the basis of the financial statements published by the Group (in accordance with the accounting standards applicable at the time of the closing of the accounts for the fiscal years in question) and compared with the ANI values of four major oil companies (ExxonMobil, Royal Dutch Shell, BP and Chevron) determined on the basis of estimates calculated by a group of leading financial analysts⁽²⁾.

The comparison is made on the average three-year progress of the ANI:

- if the Group does better than the value observed for the panel, plus 12%, the weighting of the criterion is equal to the maximum of 50% of base salary,
- the weighting of the criterion is 60% of this maximum if the performance of the Group is identical to that of the panel,
- the weighting of the criterion is zero if the performance of the Group is identical to that of the panel, minus 12%,
- the interpolations are linear between these points of reference.

For the ANI indicator, a sliding three-year average of the ANI for each of the four companies in the panel will apply, and the arithmetical average of these four averages is then calculated and compared with the changes in TOTAL's ANI.

The Chairman and Chief Executive Officer's personal contribution, which may represent up to 40% of the base salary, is evaluated based on the following criteria:

- steering of the strategy and successful strategic negotiations with producing countries; and achievement of production and reserve targets, for up to 15%;
- performance and outlook with respect to Downstream activities (Refining & Chemicals / Marketing & Services) and the Group's gas-electricity-renewables growth strategy, for up to 10%;
- CSR performance, notably taking into account climate issues in the Group's Strategy, the Group's reputation in the domain of Corporate Social Responsibility as well as the policy concerning all aspects of diversity, for up to 15%.

Pursuant to Articles R. 225-29-1, L. 225-37-2 and L. 225-100 of the French Commercial Code, this annual variable component, the only variable element of the Chairman and Chief Executive Officer's compensation for the fiscal year 2018, can only be paid with the approval of the Annual Shareholders' Meeting called in 2019 to approve the accounts of fiscal year 2018.

Performance shares

The granting of performance shares to the Chairman and Chief Executive Officer constitutes the long-term component of his total compensation. They are structured over a five-year period: a three-year vesting period, followed by a two-year period holding period. The definitive grant of shares is subject to a presence condition and performance conditions assessed at the end of the three-year vesting period.

Performance shares are granted to the Chairman and Chief Executive Officer each year as part of plans that are not specific to him and concern more than 10,000 employees, a large majority of which are non-executive employees (97% of the beneficiaries in 2017).

At its meeting on July 27, 2016, the Board of Directors decided to grant a volume of performance shares increased by almost 20% for the 2016 plan. The Board of Directors adopts this proactive policy in an effort to strengthen the sense of belonging to the Group of the beneficiaries, to identify them more closely with its performances and to encourage their investment in the Company's share capital. The Chairman and Chief Executive Officer also benefited from this increase in the volume of performance shares granted in 2016, since he was granted 60,000 shares in 2016, compared to 48,000 in 2015. The number of shares granted as part of the plan of July 26, 2017 remained stable.

The compensation policy proposed for fiscal year 2018 also includes the granting of performance shares. On the proposal of the Compensation Committee, the Board of Directors decided at its meeting on March 14, 2018, to grant 72,000 performance shares to the Chairman and Chief Executive Officer (a number of shares up by 20% compared with 2017), as part of a 2018 plan⁽³⁾ that is not specific to him, to take account of the Chairman and Chief Executive Officer's performance in fiscal year 2017. The increase in the number of shares granted to the Chairman and Chief Executive Officer also takes account of the fact that his terms of office as the Chairman and Chief Executive Officer could be renewed by the Board of Directors following the General Shareholders' Meeting on June 1, 2018 for three years, *i.e.*, until 2021 (if the said Shareholders' Meeting approves the renewal of Mr. Pouyanné's mandate as a director), and that, consequently, the number of performance shares likely to be granted annually by the Board to the Chairman and Chief Executive Officer until the end of his next term of office in 2021 will remain stable each year. The granted performance shares will be subject to the same provisions as those applicable to the other senior executive beneficiaries of the grant plans.

The performance conditions applicable to the shares granted in 2018 will be based, on one hand, on the comparative TSR (Total Shareholder Return) and the annual variation in net cash flow per share for fiscal years 2018 to 2020, applied as follows:

- the Company will be ranked each year against its peers (ExxonMobil, Royal Dutch Shell, BP and Chevron) during the three vesting years (2018, 2019 and 2020) based on the TSR criterion using the average closing market price expressed in dollars over one quarter at the beginning and end of each three-year period (Q4 year N vs./Q4 year N-3). The dividend will be considered reinvested based on the last market price on the ex-dividend date.

(1) Instead of the net debt-to-equity ratio in 2017.

(2) The annual ANI of each peer used for the calculation is determined by taking the average of the ANIs published by a panel of six financial analysts: UBS, Crédit Suisse, Barclays, Bank of America Merrill Lynch, JP Morgan and Deutsche Bank. If any of these analysts is unable to publish the results of one or more peers for a given year, it will be replaced, for the year and for the peer(s) in question, in the order listed, by an analyst included in the following additional list: Jefferies, HSBC, Société Générale, Goldman Sachs and Citi. The ANIs used will be set according to these analysts' last publications two business days after the publication of the press release announcing the "fourth quarter and annual results" of the last peer.

(3) Since 2012, the performance shares were granted in July each year. The meeting of the Board of Directors on March 14, 2018 decided to grant the performance shares for 2018 in March, so that they coincide with the individual pay-related measures taken each year in March.

$TSR\ N = \frac{\text{average price Q4 N} - \text{average price Q4 N-3} + \text{reinvested dividends}}{\text{average price Q4 N-3}}$;

- the Company will be ranked each year against its peers (ExxonMobil, Royal Dutch Shell, BP and Chevron) during the three vesting years (2018, 2019 and 2020) using the annual variation in net cash flow per share criterion expressed in dollars. Net cash flow is defined as cash flow from operating activities minus cash flow from investing activities including acquisitions and disposals. This data expressed in dollars will come from the consolidated statements of cash flow taken from the annual Consolidated Financial Statements of the Company and its peers for the fiscal years in question (based on the accounting standards applicable at the time of the closing of the accounts for such fiscal years). The number of shares used to calculate net cash flow per share will be the weighted-average number of diluted shares for the Company and each of its peers.

Based on the ranking, a grant rate will be determined for each year: 1st: 180% of the grant; 2nd: 130% of the grant; 3rd: 80% of the grant; 4th and 5th: 0%. For each of the criteria, the average of the three grant rates obtained (for each of the three fiscal years for which the performance conditions are assessed) will be rounded to the nearest 0.1 whole percent (0.05% being rounded to 0.1%) and capped at 100%. Each criterion will have a weight of 50% in the definitive grant rate. The definitive grant rate will be rounded to the nearest 0.1 whole percent (0.05% being rounded to 0.1%). The number of shares definitively granted, after confirmation of the performance conditions, will be rounded to the nearest whole number of shares in case of a fractional lot.

Following the 3-year acquisition period, shares that have been definitively granted could not be disposed of before the end of a 2-year holding period.

Commitments made by the Company to the Chairman and Chief Executive Officer

The Board of Directors decided on March 14, 2018, on the Compensation Committee's proposal, to maintain unchanged the commitments made to the Chairman and Chief Executive Officer regarding the pension plans, the retirement benefit and the severance benefit to be paid in the event of forced departure related to a change of control or strategy, as well as the life insurance and health care benefits presented below. They were approved by the Board of Directors on December 16, 2015, and by the Annual General Meeting on May 24, 2016, and then by the Board of Directors on February 8, 2017. They will be subject to the approval of the Annual Shareholders' Meeting on June 1, 2018, in accordance with the provisions of Article L. 225-42-1 of the French Commercial Code.

It should be noted that Mr. Pouyanné already benefited from all these provisions when he was an employee of the Company, except for the commitment to pay severance benefits in the event of forced departure related to a change of control or strategy. It should also be noted that Mr. Pouyanné, who joined the Group on January 1, 1997, ended the employment contract that he previously had with TOTAL S.A. through his resignation at the time of his appointment as Chief Executive Officer on October 22, 2014.

- Pension plans

Pursuant to applicable legislation, the Chairman and Chief Executive Officer is eligible for the basic French Social Security pension and for pension benefits under the ARRCO and AGIRC supplementary pension plans.

He also participates in the internal defined contribution pension plan applicable to all TOTAL S.A. employees, known as RECOUP (*Régime collectif et obligatoire de retraite supplémentaire à cotisations définies*), covered by Article L. 242-1 of the French Social

Security Code. The Company's commitment is limited to its share of the contribution paid to the insurance company that manages the plan. For fiscal year 2017, this pension plan represented a booked expense to TOTAL S.A. in favor of the Chairman and Chief Executive Officer of €2,354.

The Chairman and Chief Executive Officer also participates in a supplementary defined benefit pension plan, covered by Article L. 137-11 of the French Social Security Code, set up and financed by the Company and approved by the Board of Directors on March 13, 2001, for which management is outsourced to two insurance companies effective January 1, 2012. This plan applies to all TOTAL S.A. employees whose compensation exceeds eight times the annual ceiling for calculating French Social Security contributions (PASS), set at €39,228 for 2017 (*i.e.*, €313,824), and above which there is no conventional pension plan.

To be eligible for this supplementary pension plan, participants must have served for at least five years, be at least 60 years old and exercised his or her rights to retirement from the French Social Security. The benefits under this plan are subject to a presence condition under which the beneficiary must still be employed at the time of retirement. However, the presence condition does not apply a beneficiary aged 55 or older leaves the Company at the Company's initiative or in case of disability.

The length of service acquired by Mr. Pouyanné as a result of his previous salaried duties held at the Group since January 1, 1997 has been maintained for the benefit of this plan.

The compensation taken into account to calculate the supplementary pension is the average gross annual compensation (fixed and variable portion) over the last three years. The amount paid under this plan is equal to 1.8% of the compensation falling between 8 and 40 times the PASS and 1% for the portion of the compensation falling between 40 and 60 times this ceiling, multiplied by the number of years of service up to a maximum of 20 years, subject to the performance condition set out below applicable to the Chairman and Chief Executive Officer.

The sum of the annual supplementary pension plan benefits and other pension plan benefits (other than those set up individually and on a voluntary basis) may not exceed 45% of the average gross compensation (fixed and variable portion) over the last three years. In the event that this percentage is exceeded, the supplementary pension is reduced accordingly. The amount of the supplementary pension determined in this way is indexed to the ARRCO pension point.

The supplementary pension includes a clause whereby 60% of the amount will be paid to beneficiaries in the event of death after retirement.

To ensure that the acquisition of additional pension rights under this defined-benefit pension plan is subject to performance conditions to be defined pursuant to the provisions of Article L. 225-42-1 of the French Commercial Code amended by law No. 2015-990 of August 6, 2015, the Board of Directors noted the existence of the Chief Executive Officer's pension rights under the above-mentioned pension plan, immediately before his appointment as Chairman, for the period from January 1, 1997 to December 18, 2015.

The conditional rights granted for the period from January 1, 1997 to December 18, 2015 (inclusive), acquired without performance conditions, correspond to a replacement rate equal to 34.14% for the portion of the base compensation falling between 8 and 40 times the PASS and a replacement rate of 18.96% for the portion of the base compensation falling between 40 and 60 times the PASS.

The conditional rights granted for the period from December 19, 2015 to December 31, 2016 are subject to the performance condition described below and correspond to a maximum replacement rate equal to 1.86% for the portion of the base compensation falling between 8 and 40 times the PASS and a replacement rate equal to 1.04% for the portion of the base compensation falling between 40 and 60 times the PASS.

These undertakings regarding the supplementary pension plan were subject to the procedure for regulated agreements, as per Article L. 225-38 of the French Commercial Code, and they were approved by the Company's Annual Shareholders' Meeting on May 24, 2016.

Pursuant to the provisions of Article L. 225-42-1 of the French Commercial Code, at its meeting on December 16, 2015 the Board of Directors decided to make the acquisition of these conditional rights for the period from December 19, 2015 to December 31, 2016, subject to a condition related to the beneficiary's performance, which is considered fulfilled if the variable portion of the Chairman and Chief Executive Officer's compensation paid in 2017 for fiscal year 2016 reaches 100% of the base salary due for fiscal year 2016. Should the variable portion not reach 100% of his base compensation, the rights will be awarded on a prorata basis.

On February 8, 2017, the Board of Directors noted that the specified performance condition was fully met and therefore confirmed the acquisition by Mr. Pouyanné of additional pension rights for the period from December 19, 2015 to December 31, 2016.

The Board also noted that Mr. Pouyanné is longer able to acquire additional pension rights under this plan given the rules for determining pension rights set out in the plan and more than 20 years of service of Mr. Pouyanné as of December 31, 2017.

The conditional rights granted to Mr. Patrick Pouyanné for the period from January 1, 1997 to December 31, 2016 are now equal to a reference rate of 36% for the portion of the base compensation falling between 8 and 40 times the PASS and 20% for the portion of the base compensation falling between 40 and 60 times the PASS.

The commitments made by TOTAL S.A. to its Chairman and Chief Executive Officer regarding the supplementary defined benefit and similar pension plans therefore represent, at December 31, 2017, a gross annual pension estimated at €608,819 based on the length of service acquired as of December 31, 2017 (i.e., capped at 20 years), corresponding to 16.02% of Mr. Pouyanné's gross annual compensation consisting of the annual fixed portion for 2017 (i.e., €1,400,000) and the variable portion to be paid in 2018⁽¹⁾ for fiscal year 2017 (i.e., €2,400,300).

Nearly the full amount of TOTAL S.A.'s commitments under these supplementary and similar retirement plans (including the retirement benefit) is outsourced for all beneficiaries to insurance companies and the non-outsourced balance is evaluated annually and adjusted through a provision in the accounts. The amount of these commitments as of December 31, 2017 is €17.4 million for the Chairman and Chief Executive Officer (€17.7 million for the Chairman and Chief Executive Officer, the current and former executive and non-executive directors covered by these plans). These amounts represent the gross value of TOTAL S.A.'s commitments to these beneficiaries based on the estimated gross annual pensions as of December 31, 2017 and the statistical life expectancy of the beneficiaries.

The total amount of all the pension plans in which Mr. Pouyanné participates represents, at December 31, 2017, a gross annual pension estimated at €704,550 based on the length of service acquired as of December 31, 2017, corresponding to 18.54% of Mr. Pouyanné's gross annual compensation defined above (annual fixed portion for 2017 and variable portion to be paid in 2018 for fiscal year 2017).

- Retirement benefit

The Chairman and Chief Executive Officer is entitled to a retirement benefit equal to those available to eligible members of the Group under the French National Collective Bargaining Agreement for the Petroleum Industry. This benefit is equal to 25% of the fixed and variable annual compensation received during the 12 months preceding retirement.

Pursuant to the provisions of Article L. 225-42-1 of the French Commercial Code, receipt of this retirement benefit is contingent upon a performance-related condition applicable to the beneficiary, which is deemed to be fulfilled if at least two of the following criteria are met:

- the average ROE (return on equity) for the three years preceding the year in which the Chairman and Chief Executive Officer retires is at least 10%;
- the average net debt-to-equity ratio for the three years preceding the year in which the Chairman and Chief Executive Officer retires is less than or equal to 30%; and
- growth in TOTAL's oil and gas production is greater than or equal to the average growth rate of four oil companies (ExxonMobil, Royal Dutch Shell, BP and Chevron) during the three years preceding the year in which the Chairman and Chief Executive Officer retires.

The retirement benefit cannot be combined with the severance benefit described below.

- Severance benefit

The Chairman and Chief Executive Officer is entitled to a benefit equal to two years of his gross compensation in the event of a forced departure related to a change of control or strategy. The calculation is based on the gross compensation (fixed and variable) of the 12 months preceding the date of termination or non-renewal of his term of office.

The severance benefit will only be paid in the event of a forced departure related to a change of control or strategy. It will not be due in case of gross negligence or willful misconduct or if the Chairman and Chief Executive Officer leaves the Company of his own volition, accepts new responsibilities within the Group or may claim full retirement benefits within a short time period.

Pursuant to the provisions of Article L. 225-42-1 of the French Commercial Code, receipt of this severance benefit is contingent upon a performance-related condition applicable to the beneficiary, which is deemed to be fulfilled if at least two of the following criteria are met:

- the average ROE (return on equity) for the three years preceding the year in which the Chairman and Chief Executive Officer retires is at least 10%;
- the average net debt-to-equity ratio for the three years preceding the year in which the Chairman and Chief Executive Officer retires is less than or equal to 30%; and
- growth in TOTAL's oil and gas production is greater than or equal to the average growth rate of four oil companies (ExxonMobil, Royal Dutch Shell, BP and Chevron) during the three years preceding the year in which the Chairman and Chief Executive Officer retires.

- Life insurance and health care plans

The Chairman and Chief Executive Officer is covered by the following life insurance plans provided by various life insurance companies:

- an "incapacity, disability, life insurance" plan applicable to all employees, partly paid for by the Company, that provides for two options in case of death of a married employee: either the payment of a lump sum equal to five times the annual compensation up to 16 times the PASS, corresponding to a maximum of €3,178,560 in 2018, plus an additional amount if there is a dependent child or

(1) Subject to the approval of the Ordinary General Meeting of June 1, 2018.

children, or the payment of a lump sum equal to three times the annual compensation up to 16 times the PASS, plus a survivor's pension and education allowance;

- a second "disability and life insurance" plan, fully paid by the Company, applicable to executive officers and senior executives whose annual gross compensation is more than 16 times the PASS. This contract, signed on October 17, 2002, amended on January 28 and December 16, 2015, guarantees the beneficiary the payment of a lump sum, in case of death, equal to two years of compensation (defined as the gross annual fixed reference compensation (base France), which corresponds to 12 times the monthly gross fixed compensation paid during the month prior to death or sick leave, to which is added the highest amount in

absolute value of the variable portion received during one of the five previous years of activity), which is increased to three years in case of accidental death and, in case of accidental permanent disability, a lump sum proportional to the degree of disability. Death benefits are increased by 15% for each dependent child.

Payments due under this contract are made after the deduction of any amount paid under the above-mentioned plan applicable to all employees.

The Chairman and Chief Executive Officer also has the use of a company car and is covered by the health care plan available to all employees.

Draft resolution prepared by the Board of Directors in accordance with Article L. 225-37-2 of the French Commercial Code submitted to the Ordinary Shareholders' Meeting of June 1, 2018

Approval of the principles and criteria for the determination, breakdown and allocation of the fixed, variable and extraordinary components of the total compensation (including in-kind benefits) attributable to the Chairman and Chief Executive Officer

Voting under the conditions of quorum and majority required for Ordinary Shareholders' Meetings and in accordance with Article L. 225-37-2 of the French Commercial Code (paragraph 1), the shareholders approve the principles and criteria for the determination, breakdown and allocation of the fixed, variable and extraordinary components of the total

compensation (including in-kind benefits) attributable to the Chairman and Chief Executive Officer, as presented in the report on corporate governance, covered by Article L. 225-37 of the French Commercial Code and in the 2017 Registration Document (chapter 4, point 4.3.2.2).

4.3.3 Executive officers' compensation

The Group's executive officers include the members of the Executive Committee, the four Senior Vice Presidents of the central Group functions who are members of the Group Performance Management Committee (HSE, Strategy & Climate, Communications, Legal), the Deputy Chief Financial Officer and the Treasurer.

As of December 31, 2017, the list of the Group's executive officers was as follows (13 people, or one person more than on December 31, 2016):

- Patrick Pouyanné Chairman and Chief Executive Officer;
- Arnaud Breuillac, President, Exploration & Production, member of the Executive Committee;
- Patrick de La Chevardière, Chief Financial Officer, member of the Executive Committee;
- Momar Nguer, President, Marketing & Services, member of the Executive Committee;
- Bernard Pinatel, President, Refining & Chemicals, member of the Executive Committee;
- Philippe Sauquet, President, Gas, Renewables & Power, and President, Group Strategy-Innovation, member of the Executive Committee;

- Namita Shah, President, People & Social Responsibility, member of the Executive Committee;
- Bernadette Spinoy, Senior Vice President Industrial Safety;
- Ladislas Paszkiewicz, Senior Vice President Strategy & Climate;
- Jacques-Emmanuel Saulnier, Senior Vice President Communication;
- Aurélien Hamelle, Senior Vice President Legal;
- Jean-Pierre Sbraire, Deputy Chief Financial Officer; and
- Antoine Larenaudie, Treasurer.

In 2017, the aggregate amount paid directly or indirectly by the Group's French and foreign companies as compensation to the Group's executive officers in office as of December 31, 2017 (13 people, or one more than in 2016) was €13.66 million (compared to €11.98 million in 2016), including €10.45 million paid to the members of the Executive Committee (seven people). The variable component (based on economic, HSE performance and personal contribution criteria) represented 47.97% of this global amount of €13.66 million.

4.3.4 Stock option and free share grants

4.3.4.1 General policy

In addition to its employee shareholding development policy, TOTAL S.A. has implemented a policy to involve employees and senior executives in the Group's future performance which entails granting free performance shares each year. TOTAL S.A. may also grant stock options, although no plan has been put in place since September 14,

2011. These shares are granted under selective plans based on a review of individual performance at the time of each grant.

The stock option and free share plans offered by TOTAL S.A. concern only TOTAL shares and no free shares of the Group's listed subsidiaries or options on them are granted by TOTAL S.A.

All grants are approved by the Board of Directors, on the proposal of the Compensation Committee. For each plan, the Compensation Committee recommends a list of beneficiaries, the conditions and the number of options or shares granted to each beneficiary. The Board of Directors then gives final approval for this list and the grant conditions.

- Grant of performance shares

Grants of free performance shares under selective plans become definitive only at the end of a three-year vesting period, subject to fulfillment of the applicable presence and performance conditions. At the end of the vesting period, and provided that the conditions are met, the TOTAL shares are definitively granted to the beneficiaries, who must then hold them for at least two years (holding period). All shares granted are subject to presence condition.

For beneficiaries employed by a non-French company on the grant date, the vesting period for free shares may be increased to four years, in which case there is no mandatory holding period. Since 2011, all shares granted to senior executives have been subject to performance conditions.

- Stock options

Stock options have a term of eight years, with a strike price set at the average of the closing TOTAL share prices on Euronext Paris during the 20 trading days preceding the grant date, without any discount. Exercise of the options is subject to a presence condition and performance conditions, related to the Group's return on equity (ROE), which vary depending on the plan and category of beneficiary.

All options granted in 2011 have been subject to performance conditions. For options granted pursuant to the authorization given by the Extraordinary Shareholders' Meeting of May 24, 2016 (twenty-fifth resolution), the performance conditions will be assessed over a minimum period of three consecutive fiscal years. For earlier option

plans, and subject to the applicable presence and performance conditions being met, options may be exercised only at the end of an initial two-year period and the shares resulting from the exercise may only be disposed of at the end of a second two-year period.

Moreover, for the 2007 to 2011 option plans, the shares resulting from the exercise of options by beneficiaries employed by a non-French company on the grant date may be disposed of or converted to bearer form at the end of the first two-year vesting period.

4.3.4.2 Follow-up of grants to the executive directors

Stock options

No stock options have been granted since September 14, 2011. Until that date, the Company's executive directors in office at the time of the decision were granted stock options as part of broader grant plans approved by the Board of Directors for certain Group employees and senior executives. The options granted to the executive directors were subject to the same requirements applicable to the other beneficiaries of the grant plans.

For the options granted between 2007 and 2011, the Board of Directors made the exercise of the options granted to the executive directors in office contingent upon a presence condition and performance conditions based on the Group's ROE and ROACE. The grant rate of the performance-related options under the 2009, 2010 and 2011 plans was 100%. It had been 60% for the 2008 plan.

All the options granted to Mr. Pouyanné outstanding at December 31, 2017 represented 0.00124% of the Company's share capital⁽¹⁾ on that date.

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Stock options granted in 2017 to each executive director by the issuer and by any Group company (AMF position-recommendation No. 2009-16 – AMF Table No. 4)

Executive directors	Plan No. and date	Type of options (purchase or subscription)	Valuation of options (€) ^(a)	Number of options granted during the fiscal year	Exercise price	Exercise period
Patrick Pouyanné , Chairman and Chief Executive Officer	-	-	-	-	-	-

(a) According to the method used for the Consolidated Financial Statements.

Stock options exercised in fiscal year 2017 by each executive director (AMF position-recommendation No. 2009-16 – AMF Table No. 5)

	Plan No. and date	Number of options exercised during the fiscal year	Exercise price
Patrick Pouyanné Chairman and Chief Executive Officer since December 19, 2015	2010 Plan 09/14/2010	15,000	38.20

(1) Based on a capital of 2,528,989,616 shares.

Grant of performance shares

Mr. Pouyanné is granted performance shares as part of the broader grant plans approved by the Board of Directors for certain Group employees. The performance shares granted to him are subject to

the same requirements applicable to the other beneficiaries of the grant plans.

Summary tables

Free shares granted to each director^(a) in fiscal year 2017 by the issuer and by any Group company (AMF position-recommendation No. 2009-16 – AMF Table No. 6)

	Plan No. and date	Number of shares granted during the fiscal year	Valuation of the shares (€) ^(b)	Acquisition date	Date of transferability	Performance conditions
Patrick Pouyanné Chairman and Chief Executive Officer	2017 Plan 07/26/2017	60,000	2,134,200	07/27/2020	07/28/2022	The performance conditions are based: – for 50% of the performance shares granted, the Company will be ranked each year against its peers ^(c) during the three vesting years (2017, 2018 and 2019) based on the TSR criterion using the average closing market price expressed in dollars over one quarter at the beginning and end of each three-year period (Q4 year N vs./Q4 year N-3); – for 50% of the performance shares granted, the Company will be ranked each year against its peers ^(c) using the annual variation in net cash flow per share expressed in dollars criterion. For further details, refer to point 4.3.2.1 of this chapter.
Marc Blanc Director representing employees until May 26, 2017	2017 Plan 07/26/2017	n/a	n/a	n/a	n/a	
Renata Perycz Director representing employee shareholders since May 24, 2016	2017 Plan 07/26/2017	260	9,248.2	07/27/2020	07/28/2022	
Christine Renaud Director representing employees since May 26, 2017	2017 Plan 07/26/2017	-	-	-	-	
TOTAL		60,260	2,143,448.2			

(a) List of executive and non-executive directors who had this status during fiscal year 2017.

(b) The valuation of the shares was calculated on the grant date according to the method used for the Consolidated Financial Statements.

(c) ExxonMobil, Royal Dutch Shell, BP and Chevron.

Free shares that have become transferable for each director^(a) (AMF position-recommendation No. 2009-16 – AMF Table No. 7)

	Plan No. and date	Number of shares that become transferable during the fiscal year	Vesting conditions
Patrick Pouyanné Chairman and Chief Executive Officer	2014 Plan 07/30/2017	9,500	Shares are subject to a performance condition based on the Group's average ROE in fiscal years 2014, 2015 and 2016. For beneficiaries other than senior executives, the performance condition applies to shares in excess of the first 100. For the 2014 plan, pursuant to performance condition, the acquisition rate was 38%.
Marc Blanc Director representing employees until May 26, 2017	2014 Plan 07/30/2017	n/a	
Renata Perycz Director representing employee shareholders since May 24, 2016	2014 Plan 07/30/2017	119	
Christine Renaud Director representing employees since May 26, 2017	2014 Plan 07/30/2017	0	

(a) List of executive and non-executive directors who had this status during fiscal year 2017.

4.3.4.3 Follow-up of TOTAL stock option plans as of December 31, 2017

Breakdown of TOTAL stock option grants by category of beneficiary

The breakdown of TOTAL stock options granted by category of beneficiary (executive officers, other senior executives and other employees) for each of the plans in effect during fiscal year 2017 is as follows:

		Number of beneficiaries	Number of notified options	Percentage	Average number of options per beneficiary
2009 Plan^(a): Subscription options Decision of the Board of Directors of September 15, 2009 Strike price: €39.90; discount: 0.0%	Executive officers ^(b)	26	1,201,500	27.4%	46,212
	Senior executives	284	1,825,540	41.6%	6,428
	Other employees	1,742	1,360,460	31.0%	781
	TOTAL	2,052	4,387,500	100%	2,138
2010 Plan^(a): Subscription options Decision of the Board of Directors of September 14, 2010 Strike price: €38.20; discount: 0.0%	Executive officers ^(b)	25	1,348,100	28.2%	53,924
	Senior executives	282	2,047,600	42.8%	7,261
	Other employees	1,790	1,392,720	29.0%	778
	TOTAL	2,097	4,788,420	100%	2,283
2011 Plan^(a): Subscription options Decision of the Board of Directors of September 14, 2011 Strike price: €33.00; discount: 0.0%	Executive officers ^(b)	29	846,600	55.7%	29,193
	Senior executives	177	672,240	44.3%	3,798
	Other employees	-	-	-	-
	TOTAL	206	1,518,840	100%	7,373

(a) The grant rate of performance-related options was 100% for the 2009, 2010 and 2011 plans.

(b) Members of the Management Committee and the Treasurer, as defined on the date of the Board meeting granting the performance shares.

For the 2009 stock option plan, the Board of Directors decided that for each beneficiary of more than 25,000 options, one third of the options granted in excess of that number would be subject to a performance condition.

For the 2010 stock option plan, a portion of the options granted to beneficiaries of more than 3,000 options are subject to a

performance condition. For the 2011 stock option plan, all the options are subject to a performance condition.

Since September 14, 2011, the Board of Directors has not granted any stock options.

Breakdown of TOTAL stock option plans

History of stock option grants – Information on stock options (AMF position-recommendation No. 2009-16 – AMF Table No. 8)

	2009 Plan	2010 Plan	2011 Plan	Total
Type of options	Subscription options	Subscription options	Subscription options	
Date of the Shareholders' Meeting	05/11/2007	05/21/2010	05/21/2010	
Date of the Board meeting/grant date ^(a)	09/15/2009	09/14/2010	09/14/2011	
Total number of options granted by the Board of Directors, including to:	4,387,620	4,788,420	1,518,840	10,694,880
Executive and non-executive directors ^(b)	30,000	40,000	30,400	100,400
- P. Pouyanné	30,000	40,000	30,400	100,400
- M. Blanc	n/a	n/a	n/a	n/a
- C. Renaud	n/a	n/a	n/a	n/a
- R. Perycz	n/a	n/a	n/a	n/a
Date as of which the options may be exercised:	09/16/2011	09/15/2012	09/15/2013	
Expiry date	09/15/2017	09/14/2018	09/14/2019	
Strike price (€) ^(c)	39.90	38.20	33.00	
Cumulative number of options exercised as of December 31, 2017	4,159,730	2,746,851	1,023,872	7,930,453
Cumulative number of options canceled as of December 31, 2017	277,890	91,197	4,400	373,487
Number of options:				
- Outstanding as of January 1, 2017	1,779,053	2,880,237	626,328	5,285,618
- Granted in 2017	-	-	-	-
- Canceled in 2017 ^(d)	195,370	-	-	195,370
- Exercised in 2017	1,583,683	929,865	135,760	2,649,308
EXISTING OPTIONS AS OF DECEMBER 31, 2017	-	1,950,372	490,568	2,440,940

(a) The grant date is the date of the Board meeting granting the options.

(b) List of executive and non-executive directors who had this status during fiscal year 2017. Mr. Blanc's term of office as a director came to an end on May 26, 2017. Ms. Renaud has been a director representing employees since May 26, 2017.

(c) The strike price is the average closing price of TOTAL's share on Euronext Paris during the 20 trading days preceding the option grant date, without any discount.

(d) The 194,510 options canceled in 2017 were unexercised options that expired on September 15, 2017 due to the expiration of the 2009 stock option plan and 860 were cancellations due to succession.

If all the stock options outstanding at December 31, 2017 were exercised, the corresponding shares would represent 0.10%⁽¹⁾ of the Company's share capital on that date.

Stock options granted to the 10 employees (other than executive or non-executive directors) receiving the largest number of options/Stock options exercised by the ten employees (other than executive or non-executive directors) exercising the largest number of options (AMF position-recommendation No. 2009-16 – AMF Table No. 9)

	Total number of options granted/ exercised	Average weighted strike price (€)	2009 Plan 09/15/2009	2010 Plan 09/14/2010	2011 Plan 09/14/2011
Options granted in fiscal year 2017 by TOTAL S.A. and its affiliates ^(a) to each of the 10 employees of TOTAL S.A. and its affiliates (other than executive or non-executive directors) receiving the largest number of options (aggregate – not individual information)	-	-	-	-	-
Options held on TOTAL S.A. and its affiliates ^(a) and exercised in fiscal year 2017 by the 10 employees of TOTAL S.A. and its affiliates (other than executive or non-executive directors at the date of the exercises) who purchased or subscribed for the largest number of shares (aggregate – not individual information)	398,680	38.28	152,900	202,100	43,680

(a) Pursuant to the conditions of Article L. 225-180 of the French Commercial Code.

(1) Based on a capital of 2,528,989,616 shares.

4.3.4.4 Follow-up of TOTAL free share grants as of December 31, 2017

Breakdown of TOTAL performance share grants by category of beneficiary

The following table gives a breakdown of TOTAL performance share grants by category of beneficiary (executive officers, other senior executives and other employees):

		Number of beneficiaries	Number of notified shares	Percentage	Average number of shares per beneficiary
2013 Plan^(a)	Executive officers ^(b)	32	422,600	9.5%	13,206
Decision of the Board of Directors of July 25, 2013	Senior executives	277	934,500	20.9%	3,374
	Other employees ^(c)	9,625	3,107,100	69.6%	323
	TOTAL	9,934	4,464,200	100%	449
2014 Plan^(a)	Executive officers ^(b)	32	421,200	9.4%	13,163
Decision of the Board of Directors of July 29, 2014	Senior executives	281	975,300	21.7%	3,471
	Other employees ^(c)	9,624	3,089,800	68.9%	321
	TOTAL	9,937	4,486,300	100%	451
2015 Plan^(a)	Executive officers ^(d)	13	264,600	5.6%	20,354
Decision of the Board of Directors of July 28, 2015	Senior executives	290	1,132,750	23.8%	3,906
	Other employees ^(c)	10,012	3,364,585	70.6%	336
	TOTAL	10,315	4,761,935	100%	462
2016 Plan	Executive officers ^(d)	12	269,900	4.8%	22,492
Decision of the Board of Directors of July 27, 2016	Senior executives	279	1,322,300	23.4%	4,739
	Other employees ^(c)	10,028	4,047,200	71.8%	404
	TOTAL	10,319	5,639,400	100%	547
2017 Plan	Executive officers ^(d)	12	266,500	4.7%	22,208
Decision of the Board of Directors of July 26, 2017	Senior executives	277	1,321,200	23.3%	4,770
	Other employees ^(c)	10,288	4,092,249	72.0%	398
	TOTAL	10,577	5,679,949	100%	537

(a) For the 2013 and 2014 plans, the shares acquisition rate related to the ROE performance condition was 63% and 38%, respectively. For the 2015 plan, the shares acquisition rate related to a comparison of ROE and ANI was 82%.

(b) Members of the Management Committee and the Treasurer, as defined on the date of the Board meeting granting the performance shares.

(c) Mr. Keller, a TOTAL S.A. employee and a TOTAL S.A. director representing employee shareholders from May 17, 2013 to May 24, 2016, was granted 400 performance shares under the 2013 plan and 400 performance shares under the 2014 plan. He was not granted any shares under the 2015 or 2016 plans. Mr. Blanc, a TOTAL S.A. employee and a TOTAL S.A. director representing employees from November 4, 2014 to May 26, 2017, was not granted any shares under the 2014, 2015 and 2016 plans. Ms. Perycz, an employee of the Group and a TOTAL S.A. director representing employee shareholders since May 24, 2016, was granted 160 shares under the 2016 plan and 260 shares under the 2017 plan. Ms. Renaud, an employee of the Group and a TOTAL S.A. director representing employee shareholders since May 26, 2017, was not granted any shares under the 2017 plan.

(d) Group's executive officers as defined on the date of the Board meeting granting the performance shares. The Group's executive officers on this date included the members of the Executive Committee, the four Senior Vice Presidents of the central Group functions who are members of the Group Performance Management Committee (HSE, Strategy & Climate, Communications, Legal) and the Treasurer.

The performance shares, which were previously bought back by the Company on the market, are definitively granted to their beneficiaries at the end of a three-year vesting period from the grant date. For the shares granted under the 2012 plan, the vesting period was two years.

The definitive grant of performance shares is subject to a presence condition and performance conditions.

For the 2017 plan, the applicable performance conditions are the following:

- for 50% of the performance shares granted, the Company will be ranked each year against its peers⁽¹⁾ during the three vesting years

(2017, 2018 and 2019) based on the TSR criterion using the average closing market price expressed in dollars over one quarter at the beginning and end of each three-year period (Q4 year N vs./Q4 year N-3). The dividend will be considered reinvested based on the last market price on the ex-dividend date; and

- for 50% of the performance shares granted, the Company will be ranked each year against its peers⁽¹⁾ using the annual variation in net cash flow per share expressed in dollars criterion.

In addition, shares that have been definitively granted cannot be disposed of before the end of a mandatory two-year holding period.

(1) ExxonMobil, Royal Dutch Shell, BP and Chevron.

Breakdown of TOTAL performance share plans

History of TOTAL performance share grants – Information on performance shares granted (AMF position-recommendation No. 2009-16 – AMF Table No. 10)

	2013 Plan	2014 Plan	2015 Plan	2016 Plan	2017 Plan
Date of the Shareholders' Meeting	05/13/2011	05/16/2014	05/16/2014	05/24/2016	05/24/2016
Date of Board meeting/grant date	07/25/2013	07/29/2014	07/28/2015	07/27/2016	07/26/2017
Closing price on grant date	€40.005	€52.220	€43.215	€42.685	€43.220
Average purchase price per share paid by the Company	€40.560	€48.320	€45.150	€45.38	n/a
Total number of performance shares granted, including to:	4,464,200	4,486,300	4,761,935	5,639,400	5,679,949
Executive and non-executive directors ^(a)	22,500	25,000	48,000	60,160	60,260
- P. Pouyanné	22,500 ^(b)	25,000 ^(b)	48,000	60,000	60,000
- M. Blanc ^(c)	n/a	-	-	-	n/a
- R. Perycz ^(d)	n/a	n/a	n/a	160	260
- C. Renaud ^(e)	n/a	n/a	n/a	n/a	-
Start of the vesting period	07/25/2013	07/29/2014	07/28/2015	07/27/2016	07/26/2017
Definitive grant date, subject to the conditions set (end of the vesting period)	07/26/2016	07/30/2017	07/29/2018	07/28/2019	07/27/2020
Disposal possible from (end of the mandatory holding period)	07/26/2018	07/30/2019	07/29/2020	07/29/2021	07/28/2022
Number of free shares:					
- Outstanding as of January 1, 2017	-	4,364,500	4,730,735	5,637,560	-
- Notified in 2017	-	-	-	-	5,679,949
- Canceled in 2017	-	(2,157,820)	(31,480)	(29,050)	(910)
- Definitively granted in 2017 ^(e)	-	(2,206,680)	(1,950)	(1,410)	-
EXISTING OPTIONS AS OF DECEMBER 31, 2017	-	-	4,697,305	5,607,100	5,679,039

(a) List of executive and non-executive directors who had this status during fiscal year 2017.

(b) Shares granted in respect of his previous salaried duties.

(c) Mr. Blanc, a TOTAL S.A. employee and a TOTAL S.A. director representing employees from November 4, 2014 to May 26, 2017. Ms. Renaud, a TOTAL S.A. employee and a TOTAL S.A. director representing employees since May 26, 2017.

(d) Ms. Perycz, a TOTAL Polska sp. Z.o.o. employee and a TOTAL S.A. director representing employee shareholders since May 24, 2016.

(e) Definitive grants completed early following the death of the beneficiaries of shares for the respective plan.

If all the performance shares outstanding at December 31, 2017 were definitively granted, they would represent 0.63%⁽¹⁾ of the Company's share capital on that date.

Performance shares granted to the 10 employees (other than executive and non-executive directors) receiving the largest number of performance shares

	Number of performance shares notified/definitively granted	Date of the award	Date of the final award (end of the vesting period)	Date of transferability (end of the holding period)
Free performance share grants approved by the Board of Directors at its meeting on July 26, 2017 to the ten employees of TOTAL S.A. and its affiliates (other than executive or non-executive directors at the date of the exercises) who purchased or subscribed for the largest number of shares (aggregate – not individual information) ^(a)	224,000	07/26/2017	07/27/2020	07/28/2022
Performance shares definitively granted in fiscal year 2017 to the 10 employees of TOTAL S.A. and its affiliates (other than executive and non-executive directors on the date of the decision) receiving the largest number of performance shares	61,750	07/29/2014	07/30/2017	07/30/2019

(a) These shares will be definitively granted to their beneficiaries at the end of a three-year vesting period, i.e., on July 27, 2020, subject to two performance conditions being met. The free shares that have been definitively granted cannot be disposed of before the end of a two-year holding period, i.e., from July 28, 2022.

(1) Based on a capital of 2,528,989,616 shares.

4.4 Additional information about corporate governance

4.4.1 Regulated agreements and undertakings and related-party transactions

Regulated agreements and undertakings

[REDACTED SECTION: CERTAIN TEXT HAS BEEN REDACTED.]

In addition, to TOTAL's knowledge there exists no agreement, other than the agreements related to its ordinary course of business and signed under normal conditions, engaged, directly or through an intermediary, between, on the one hand, any director or shareholder holding more than 10% of TOTAL S.A.'s voting rights and, on the other hand, a company of which TOTAL S.A. directly or indirectly owns more than half the capital.

Related-party transactions

Details of transactions with related parties as specified by the regulations adopted under EC regulation 1606/2002, entered into by the Group companies during fiscal years 2015, 2016 or 2017, are provided in Note 8 to the Consolidated Financial Statements (refer to point 8.7 of chapter 8).

These transactions primarily concern equity affiliates and non-consolidated companies.

4.4.2 Delegations of authority and powers granted to the Board of Directors with respect to share capital increases and authorization for share cancellation

Table compiled in accordance with Article L. 225-37-4 3° of the French Commercial Code summarizing the use of delegations of authority and powers granted to the Board of Directors with respect to share capital increases as of December 31, 2017:

Type	Cap on par value, or number of shares or expressed as % of share capital	Use in 2017, by value, or number of shares	Available balance as of 12/31/2017 by value, or number of shares	Date of delegation of authority or authorization by the Extraordinary Shareholders' Meeting (ESM)	Expiry date and term of authorization granted to the Board of Directors	
Maximum cap for the issuance of securities granting immediate or future rights to share capital	Debt securities representing rights to capital	€10 Bn in securities	-	€10 Bn	May 24, 2016 (18 th , 19 th , 20 th and 22 nd resolutions)	July 24, 2018 26 months
	Nominal share capital	An overall cap of €2.5 Bn (i.e., a maximum of 1,000 million shares issued with a pre-emptive subscription right), from which can be deducted:	125.1 million shares ^(a)	€2.187 Bn (i.e., 874.9 million shares)	May 24, 2016 (18 th resolution)	July 24, 2018 26 months
		1/ a specific cap of €600 million, i.e., a maximum of 240 million shares for issuances without pre-emptive subscription rights (with potential use of a greenshoe), including in compensation with securities contributed within the scope of a public exchange offer, provided that they meet the requirements of Article L. 225-148 of the French Commercial Code, from which can be deducted:	-	€356.2 million	May 24, 2016 (19 th and 21 st resolutions)	July 24, 2018 26 months
		1/a a sub-cap of €600 million with a view to issuing, through an offer as set forth in Article L. 411-2 II of the French Monetary and Financial Code, shares and securities resulting in a share capital increase, without a shareholders' pre-emptive subscription right	-	€356.2 million	May 24, 2016 (20 th and 21 st resolutions)	July 24, 2018 26 months
		1/b a sub-cap of €600 million through in-kind contributions when provisions of Article L. 225-148 of the French Commercial Code are not applicable	97.5 million shares ^(c)	€356.2 million	May 24, 2016 (22 nd resolution)	July 24, 2018 26 months
		2/ a specific cap of 1.5% of the share capital on the date of the Board ^(b) decision for share capital increases reserved for employees participating in a Company savings plan	27.5 million shares ^(d)	10.4 million shares	May 24, 2016 (23 rd resolution)	July 24, 2018 26 months
		0.75% of share capital ^(b) on the date of the Board decision to grant options	-	19.0 million shares	May 24, 2016 (25 th resolution)	July 24, 2019 38 months
Restricted shares awarded to Group employees and to executive directors	0.8% of share capital ^(b) on the date of the Board decision to grant the restricted shares	11.3 million shares ^(e)	8.9 million shares ^(e)	May 24, 2016 (24 th resolution)	July 24, 2019 38 months	

(a) The number of new shares authorized under the 18th resolution of the ESM held on May 24, 2016 cannot exceed 1,000 million shares. Pursuant to the 22nd resolution of the ESM held on May 24, 2016, the Board of Directors decided on February 7, 2018, subject to the fulfillment of the conditions precedent stipulated in the contribution agreement concluded with A.P. Møller-Mærsk A/S on the same day, a share capital increase of of the Company by issuing 97,522,593 shares in compensation of the contribution of the shares of Mærsk Olie og Gas A/S in 2018 (see note (c) below). Pursuant to the 23rd resolution of the ESM held on May 24, 2016, the Board of Directors decided on July 27, 2016 to proceed with a share capital increase reserved for Group employees in 2017 (see note (d) below). Pursuant to the 23rd resolution of the ESM held on May 24, 2016, the Board of Directors decided on July 26, 2017 to proceed with a share capital increase reserved for Group employees in 2018 (see note (c) below). As a result, the available balance under this authorization was 874,945,217 new shares as of December 31, 2017.

(b) Share capital as of December 31, 2017: 2,528,989,616 shares.

(c) The number of new shares authorized under the 22nd resolution of the ESM held on May 24, 2016 cannot exceed 240 million shares. Refer to note (a).

(d) The number of new shares authorized under the 23rd resolution of the May 24, 2016 ESM may not exceed 1.5% of the share capital on the date when the Board of Directors decides to use the delegation. Pursuant to the subscription requests made by employees, on April 26, 2017, the Chairman and Chief Executive Officer exercised his powers delegated by the Board of Directors on July 27, 2016 to observe a capital increase by issuing 9,532,190 shares. The meeting of the Board of Directors of July 26, 2017 decided to proceed with a share capital increase in 2018 with a cap of 18,000,000 shares (subscription to the shares under this operation is planned for the first quarter of 2018, subject to the decision of the Chairman and Chief Executive Officer). As a result, the available balance under this authorization was 10,402,654 new shares as of December 31, 2017.

(e) The number of shares that may be awarded as restricted share grants under the 24th resolution of the May 24, 2016 ESM may not exceed 0.8% of the share capital on the date when the restricted shares are awarded by the Board of Directors. 5,639,400 shares were awarded by the Board of Directors on July 27, 2016. 10,393 shares as a deferred contribution under the 2017 ACRS were attributed by the Board of Directors on April 26, 2017. 5,679,949 shares were awarded by the Board of Directors on July 26, 2017. As a result, the number of shares that could still be awarded as of December 31, 2017 was 8,902,174 shares. In addition, the shares awarded under presence and performance conditions to the Company's executive directors under the 24th resolution of the ESM held on May 24, 2016, cannot exceed 0.01% of the outstanding share capital on the date of the decision of the Board of Directors to proceed with the grant. Taking into account the 60,000 existing shares awarded under presence and performance conditions to the Chairman and Chief Executive Officer by the meeting of the Board of Directors of July 27, 2016, and of the 60,000 existing shares granted under presence and performance conditions to the Chairman and Chief Executive Officer by the Board of Directors on July 26, 2017, the remaining number of shares that may still be awarded to the executive directors is 132,898 shares.

Authorization to cancel shares of the Company

Pursuant to the terms of the 13th resolution of the Annual Shareholders' Meeting held on May 26, 2017, the Board of Directors is authorized to cancel shares of the Company up to a maximum of 10% of the share capital of the Company existing as of the date of the operation within a 24-month period. This authorization is effective until the Shareholders' Meeting held to approve the financial statements for the year ending December 31, 2021.

Based on 2,528,989,616 shares outstanding on December 31, 2017, the Company may, up until the conclusion of the Annual Shareholders' Meeting called to approve the financial statements for the fiscal year ending on December 31, 2021, cancel a maximum of 252,898,961 shares, before reaching the cancellation threshold of 10% of share capital canceled over a 24-month period.

4.4.3 Provisions of the bylaws governing shareholders' participation to General Meetings

4.4.3.1 Calling of shareholders to Shareholders' Meetings

Shareholders' Meetings are convened and conducted under the conditions provided for by law.

The Ordinary Shareholders' Meeting is called to take any decisions that do not modify the Company's bylaws. It is held at least once a year within six months of the closing date of each fiscal year to approve the financial statements of that year. It may only deliberate, at its first meeting, if the shareholders present, represented or participating by remote voting hold at least one fifth of the shares that confer voting rights. No quorum is required at its second meeting. Ordinary Shareholders' Meeting decisions are made with the majority of votes of shareholders present, represented or participating by remote voting.

Only the Extraordinary Shareholders' Meeting is authorized to modify the bylaws. It may not, however, increase shareholders' commitments. It may only deliberate, at its first meeting, if the shareholders present, represented or participating by remote voting hold at least one quarter, and, at the second meeting, one fifth, of the shares that confer voting rights. Decisions of Extraordinary Shareholders' Meeting are made with a two thirds majority of votes of shareholders present, represented or participating by remote voting.

One or several shareholders holding a certain percentage of the Company's share capital (calculated using a decreasing scale based on the share capital) may ask for items or resolution drafts to be added to the agenda of a Shareholders' Meeting under the forms, terms and deadlines set forth by the French Commercial Code. Requests to add items or resolution drafts to the agenda must be sent no later than 20 days after the publication of the notice of meeting that the Company must publish in the French official journal of legal notices (*Bulletin des annonces légales obligatoires*, BALO). Any request to add an item to the agenda must be justified. Any

request to add a draft resolution must be accompanied by the draft resolution text and brief summary of the grounds for this request. Requests made by shareholders must be accompanied by a proof of their share ownership and their ownership of the portion of capital as required by the regulations. Review of the item or draft resolution filed pursuant to regulatory conditions is subject to those making the request providing a new attestation justifying the shares being recorded in a book-entry form in the same accounts on the second working date preceding the date of the meeting.

The Central Works Council may also request the addition of draft resolutions to the meeting agendas under the forms, terms and deadlines set by the French Labor Code. In particular, requests to add draft resolutions must be sent within 10 business days following the date the notice of meeting was published.

4.4.3.2 Admission of shareholders to Shareholders' Meetings

Participation in any form in Shareholders' Meetings is subject to registration of participating shares, either in the registered account maintained by the Company (or its securities agent) or recorded in bearer form in a securities account maintained by a financial intermediary. Proof of this registration is obtained under a certificate of participation (attestation de participation) delivered to the shareholder. Registration of the shares must be effective no later than midnight (Paris time) on the second business day preceding the date of the Shareholders' Meeting. If, after having received such a certificate, shares are sold or transferred prior to this record date, the certificate of participation will be canceled and the votes sent by mail or proxies granted to the Company for such shares will be canceled accordingly. If shares are sold or transferred after this record date, the certificate of participation will remain valid and votes cast or proxies granted will be taken into account.

4.4.4 Information about factors likely to have an impact in the event of a public offering or exchange

In accordance with Article L. 225-37-5 of the French Commercial Code, information relating to factors likely to have an impact in the event of a public offering is provided below.

- Structure of the share capital

The structure of the Company's share capital and the interests that the Company is aware of pursuant to Articles L. 233-7 and L. 233-12 of the French Commercial Code are presented in points 6.4.1 to 6.4.3 in chapter 6.

- Restrictions on the exercise of voting rights and transfers of shares provided in the bylaws – Clauses of the agreements of which the Company has been informed in accordance with Article L. 233-11 of the French Commercial Code

The provisions of the bylaws relating to shareholders' voting rights are mentioned in point 7.2.4 of chapter 7. The Company has not been informed of any clauses as specified in paragraph 2 of Article L. 225-37-4 of the French Commercial Code.

- Holders of securities conferring special control rights

Article 18 of the bylaws stipulates that double voting rights are granted to all the shares held in the name of the same shareholder for at least two years. Subject to this condition, there are no securities conferring special control rights as specified in paragraph 4 of Article L. 225-37-5 of the French Commercial Code.

- Control mechanisms specified in an employee shareholding system

The rules relating to the exercise of voting rights within the Company collective investment funds are presented in point 6.4.2 of this chapter 6.

- Shareholder agreements of which the Company is aware and that could restrict share transfers and the exercise of voting rights

The Company is not aware of any agreements between shareholders as specified in paragraph 6 of Article L. 225-37-5 of the French Commercial Code which could result in restrictions on the transfer of shares and exercise of the voting rights of the Company.

- Rules applicable to the appointment and replacement of members of the Company's Board of Directors and amendment of the bylaws

No provision of the bylaws or an agreement made between the Company and a third party contains a specific provision relating to the appointment and/or replacement of the Company's directors that is likely to have an impact in the event of a public offering.

- Powers of the Board of Directors in the event of a public offering

The delegations of authority or authorizations granted by the Shareholders' Meeting that are currently in effect limit the powers of the Board of Directors over the Company's shares, which expire during a public offering.

- Agreements to which the Company is party and which are altered or terminated in the event of a change of control of the Company – Agreements providing for the payment of compensation to members of the Board of Directors or employees in the event of their resignation or dismissal without real and serious cause or if their employment were to be terminated as a result of a tender offer

Although a number of agreements made by the Company contain a change in control clause, the Company believes that there are no agreements as specified in paragraph 9 of Article L. 225-37-5 of the French Commercial Code. The Company also believes that there are no agreements as specified in paragraph 10 of Article L. 225-37-5 of the French Commercial Code. For commitments made for the Chairman and Chief Executive Officer in the event of a forced departure owing to a change of control or strategy, refer to point 4.2.2 of this chapter.

4.4.5 Statutory auditors

4.4.5.1 Auditor's term of office

Statutory auditors

ERNST & YOUNG Audit

1/2, place des Saisons, 92400 Courbevoie-Paris-La Défense, Cedex 1

Appointed: May 14, 2004. Appointment renewed on May 24, 2016 for an additional 6-fiscal year term.

Yvon Salaün, Laurent Miannay

KPMG S.A.

Tour EQHO, 2 avenue Gambetta, CS 60055, 92066 Paris La Défense Cedex

Appointed: May 13, 1998. Appointment renewed on May 24, 2016 for an additional 6-fiscal year term.

Jacques-François Lethu, Eric Jacquet

Alternate auditors

Cabinet Auditex

1/2, place des Saisons, 92400 Courbevoie-Paris-La Défense, Cedex 1

Appointed: May 21, 2010 for a 6-fiscal year term. Appointment renewed on May 24, 2016 for an additional 6-fiscal year term.

KPMG Audit IS

Tour EQHO, 2 avenue Gambetta, CS 60055, 92066 Paris La Défense Cedex

Appointed: May 21, 2010 for a 6-fiscal year term. Appointment renewed on May 24, 2016 for an additional 6-fiscal year term.

French law provides that the statutory and alternate auditors are appointed for renewable 6-fiscal year terms. The terms of office of the statutory auditors and of the alternate auditors will expire at the end of the Annual Shareholders' Meeting called in 2022 to approve the financial statements for fiscal year 2021.

4.4.5.2 Fees received by the statutory auditors (including members of their networks)

	ERNST & YOUNG Audit				KPMG S.A.			
	Amount in M\$ (excluding VAT)		%		Amount in M\$ (excluding VAT)		%	
	2016	2017	2016	2017	2016	2017	2016	2017
Audit								
Statutory auditors, certification, examination of the parent company and consolidated accounts	20.2	22.3	63.6	74.5	16.5	17.7	70.2	76.3
TOTAL S.A.	3.2	3.3	10.2	10.9	3.0	3.3	12.8	14.2
Fully consolidated subsidiaries	17.0	19.0	53.4	63.6	13.5	14.4	57.4	62.1
Other work and services directly related to the mission of the statutory auditors	5.0	2.8	15.6	9.3	4.5	3.8	19.1	16.4
TOTAL S.A.	0.7	0.9	2.2	3.1	0.5	0.7	2.1	3.0
Fully consolidated subsidiaries	4.3	1.9	13.4	6.2	4.0	3.1	17.0	13.4
SUBTOTAL	25.2	25.1	79.2	83.8	21.0	21.5	89.4	92.7
Other services provided by the networks to fully consolidated subsidiaries								
Legal, tax, labor law	6.1	4.2	19.1	13.9	2.4	1.5	10.2	6.5
Others	0.5	0.7	1.6	2.3	0.1	0.2	0.4	0.9
SUBTOTAL	6.6	4.9	20.8	16.2	2.5	1.7	10.6	7.3
TOTAL	31.8	30.0	100	100	23.5	23.2	100	100

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SOCIAL, ENVIRONMENTAL AND SOCIETAL INFORMATION

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TOTAL puts Corporate Social Responsibility (CSR) at the heart of its activities and conducts its operations according to the following principles of:

- protecting the safety and security of people and its facilities;
- limiting its environmental footprint;
- ensuring that its Code of Conduct is applied in its sphere of operations;
- incorporating the challenges of sustainable development in the exercise of its activities;
- increasing its local integration by placing dialogue with its stakeholders at the heart of its policy and contributing to the economic and social development of the regions where the Group has operations with the objective of creating shared value;
- promoting equal opportunities and fostering diversity and cultural mix among its personnel.

The Group's CSR performance is measured by non-financial rating agencies. TOTAL has been included continuously in the FTSE4Good index (London Stock Exchange) since 2001 and in the Dow Jones Sustainability World Index (DJSI World – New York Stock Exchange) since 2004. TOTAL has been listed on DJSI Europe every year since 2005, excepting 2015. TOTAL was third of the extractive sector and first of the Oil & Gas sector in the first ranking of Corporate Human Rights Benchmark published in 2017.

In terms of reporting, TOTAL refers to the IPIECA (global oil and gas industry association for environmental and social issues) guidance and to the Global Reporting Initiative (GRI). Detailed information on these reporting guidelines is available on the Group's website (sustainable-performance.total.com).

The reporting scopes and method concerning the information in this chapter are presented in point 5.4 of this chapter. The data presented in this section are provided on a current-scope basis.

TOTAL's ambition is to become the responsible energy major by supplying affordable energy to a growing population, taking the issue of climate into consideration.

TOTAL and the United Nations' Sustainable Development Goals

In 2015, the United Nations adopted the 17 Sustainable Development Goals (SDGs). These goals acknowledge the decisive role corporations can play in economic development and growth and ask

them to show creativity and innovation in finding solutions to global sustainable development challenges.

In 2016, TOTAL committed to contributing to the achievement of the SDGs. To this end, the Group started by identifying the goals to which it already contributes, in particular through the following initiatives:

- **climate change** (SDG 13): In May 2016, TOTAL published a detailed report specifying how climate-related challenges are integrated in its strategy, and setting a 20-year ambition that takes into account the IEA's Sustainable Development Scenario (2°C) (refer to point 5.2.3 of this chapter). An update of this report was published in May 2017, and another update will be published in 2018;
- **decent work and human rights** (SDGs 8 and 16): In July 2016, TOTAL became the first oil and gas company to publish a detailed report specifying how the Group incorporates respect for human rights in its activities. TOTAL strives to communicate transparently and indicate which actions have been taken to rise to the challenges the Group is facing (refer to point 5.3.5.2 in this chapter). An update of this report will be published in 2018;
- **access to energy** (SDG 7): TOTAL's ambition is to supply affordable energy to growing populations (refer to point 5.2.3.5 in this chapter); and
- **biodiversity** (SDGs 14 and 15): TOTAL pursues an active policy to reduce the environmental footprint of its activities by paying particularly close attention to protected and sensitive zones (refer to point 5.2.2.5 in this chapter).

In 2017, TOTAL launched a project to identify and prioritize the SDGs to which it can make the most significant contribution and make public commitments in a show of its support for the United Nations' recommendations for the implementation of the SDGs.

In 2017, the Global Compact appointed TOTAL's Chairman and Chief Executive Officer as an SDG Pioneer in recognition of the commitments made by the Group for driving partnerships for low carbon investments.

TOTAL also actively contributed to the definition by IPIECA of a common framework describing the contributions that the oil industry can make to the SDGs.

Information on the Group's current contributions per SDG can be found on the Group's website (sustainable-performance.total.com).

The SDG pictograms are included in this chapter to illustrate TOTAL's contributions.

5.1 Social information

The quantitative information set out below regarding the Group's employees worldwide covers all the entities that are fully consolidated in the Group's financial statements⁽¹⁾. However, some of the data come from the Group's Worldwide Human Resources Survey (WHRS), which gathers approximately 100 indicators measuring important aspects of TOTAL's human resources policy. The WHRS is performed on a sample of employees from representative consolidated companies at the business segment and regional levels;

when WHRS is mentioned in this document, reference is made to data related to this sample, representing 87.2% of the Group's employees at 133 subsidiaries in 2017, which was relatively stable compared to 2016 (87.5%) and 2015 (91%).

The 2016 and 2015 segment-based data in this point 5.1 has been recalculated on the basis of the reorganization of the Group, which took full effect on January 1, 2017 (refer to point 1.6.2 in chapter 1).

5.1.1 Employment



5.1.1.1 Group employees

As of December 31, 2017, the Group had 98,277 employees belonging to 313 employing companies and subsidiaries located in 105 countries. The tables below present the breakdown of employees by the following categories: gender, nationality, business segment, region and age bracket.

Group registered headcount as of December 31,	2017	2016	2015
TOTAL NUMBER OF EMPLOYEES	98,277	102,168	96,019
Women	33.3%	32.4%	32.0%
Men	66.7%	67.6%	68.0%
French	31.8%	31.0%	31.2%
Other nationalities	68.2%	69.0%	68.8%
Breakdown by business segment			
Exploration & Production segment	14.3%	14.6%	17.1%
Gas, Renewables & Power segment	11.8%	12.7%	9.8%
Refining & Chemicals segment	49.8%	50.4%	50.2%
Refining & Chemicals	49.1%	49.8%	49.6%
Trading & Shipping	0.7%	0.6%	0.6%
Marketing & Services segment	21.6%	20.4%	21.3%
Corporate	2.5%	1.9%	1.7%

Group registered headcount as of December 31,	2017	2016	2015
Breakdown by region			
France	32.1%	31.1%	31.5%
French overseas departments and territories	0.4%	0.4%	0.4%
Rest of Europe	26.1%	25.2%	24.5%
Africa	10.1%	9.9%	10.5%
North America	7.1%	7.1%	6.4%
Latin America	12.5%	11.8%	10.5%
Asia	10.5%	13.4%	14.8%
Middle East	1.0%	1.0%	1.3%
Oceania	0.2%	0.1%	0.1%

Group registered headcount as of December 31,	2017	2016	2015
Breakdown by age bracket			
< 25 years	6.9%	7.0%	6.6%
25 to 34 years	26.4%	27.8%	28.8%
35 to 44 years	29.9%	29.3%	29.1%
45 to 54 years	23.5%	22.7%	22.6%
> 55 years	13.3%	13.2%	12.9%

At year-end 2017, the countries with the most employees were France, Mexico, Poland, the United States, Belgium and China.

The drop in the number of employees between 2016 and 2017 was principally due to the sale of Atotech finalized in January 2017 and the reduction of the headcount of the SunPower activity. The increase in the number of employees between 2015 and 2016 was principally due to the acquisitions of Saft Groupe and Lampiris.

The breakdown by gender and nationality of managers or equivalent positions (≥ 300 Hay points⁽²⁾) is as follows:

Breakdown of managers or equivalent as of December 31,	2017	2016	2015
TOTAL NUMBER OF MANAGERS	28,369	29,243	27,624
Women	26.3%	25.5%	25.1%
Men	73.7%	74.5%	74.9%
French	41.9%	41.2%	39.1%
Other nationalities	58.1%	58.8%	60.9%

(1) Refer to point 5.4.3.2 of this chapter.

(2) The Hay method is a unique reference framework used to classify and assess jobs.

The table below presents the breakdown by business segment of the Group employees present⁽¹⁾.

Breakdown by business segment of the Group employees present as of December 31,	2017	2016	2015
Exploration & Production segment	13,023	13,975	15,366
Gas, Renewables & Power segment	11,492	12,841	9,390
Refining & Chemicals segment	47,985	49,838	47,224
Refining & Chemicals	47,350	50,442	46,661
Trading & Shipping	635	604	563
Marketing & Services segment	20,932	20,402	19,923
Corporate	2,433	1,951	1,568

5.1.1.2 Employees joining and leaving TOTAL

As of December 31,	2017	2016	2015
TOTAL NUMBER HIRED ON OPEN-ENDED CONTRACTS	12,141	10,940	9,022
Women	38.6%	36.9%	34.9%
Men	61.4%	63.1%	65.1%
French	9.7%	6.6%	6.5%
Other nationalities	90.3%	93.4%	93.5%

Amid an economic downturn related to oil prices, the policy of limiting the hiring of employees under open-ended contracts that began in 2015 continued in 2016 and 2017. Nevertheless, hiring by the consolidated companies rose by 11% in comparison with 2016 (+1,201 employees). The geographical areas that hired the most employees were Latin America (43%), with a particularly sharp increase in Mexico, Europe, excluding France (19%), Asia (14.1%), followed distantly by France (9.5%).

Refining & Chemicals remained the largest recruiter, with 52.2% of Group hires, of which 49.8% by Hutchinson, in particular in Europe (Romania and Poland).

In 2017, the fully consolidated Group companies also hired 5,287 employees on fixed-term contracts, compared with 4,433 in 2016 by the consolidated companies. Almost 51% of employees hired on fixed-term contracts were in Europe, excluding France, and in particular by Hutchinson. Close to 409,491 job applications were received by the companies covered by the WHRS.

As of December 31,	2017	2016	2015
TOTAL NUMBER OF DEPARTURES^(a)	13,111	11,058	7,724
Deaths	90	90	128
Resignations	7,379	5,868	4,719
Dismissals/negotiated departures	5,492	4,958	2,754
<i>Ruptures conventionnelles</i> (specific negotiated departures in France)	150	142	123
TOTAL DEPARTURES/TOTAL EMPLOYEES	13.3%	10.8%	8%

(a) Excluding retirements, transfers, early retirements, voluntary departures and expiration of short-term contracts.

(1) Employees present as defined in point 5.4.3.2 of this chapter.

(2) i.e., the following companies in France: TOTAL S.A., Elf Exploration Production, Total Exploration Production France, CDF Énergie, Total Marketing Services, Total Marketing France, Total Additifs et Carburants Spéciaux, Total Lubrifiants, Total Fluides, Total Raffinage-Chimie, Total Petrochemicals France, Total Raffinage France and Total Global Information Technology Services, and since January 1, 2017, Total Global Financial Services, Total Global Procurement, Total Global Human Resources Services, Total Learning Solutions, Total Facilities Management Services and Total Consulting.

(3) ExxonMobil, Royal Dutch Shell, BP and Chevron.

The increase in the number of departures from 2016 to 2017 was mainly due to a high turnover in SunPower and Hutchinson.

5.1.1.3 Compensation

The Group's Human Resources policy applies to all companies in which TOTAL S.A. holds the majority of voting rights. In terms of compensation, the aim of this policy is to ensure external competitiveness and internal fairness, reinforce the link to individual performance, increase employee share ownership and fulfill the Group's CSR commitments.

A large majority of employees benefit from laws that guarantee a minimum wage, and, whenever this is not the case, the Group's policy ensures that compensation is above the minimum wage observed locally. Regular benchmarking is used to assess compensation based on the external market and the entity's competitive environment. Each entity's positioning relative to its reference market is assessed by the Human Resources department of each business segment, which monitors evolutions in payroll, turnover and consistency with the market.

Fair treatment is ensured within the Group through the widespread implementation of a job level evaluation using a common method (the Hay method), which associates a salary range to each job level. Performance of the Group's employees (attainment of set targets, skills assessment, overall evaluation of job performance) is evaluated during an annual individual review and formalized in accordance with principles common to the entire Group.

The compensation structure of the Group's employees is based on the following components, depending on the country:

- **a base salary**, which each year, in addition to a general salary-raise campaign, is subject to a merit-based salary-raise campaign intended to compensate employees' individual performance according to the targets set during the annual individual review, including at least one HSE (Health, Safety, Environment) target; and
- **individual variable compensation** starting at a certain level of responsibility, which is intended to compensate individual performance (quantitative and qualitative attainment of previously set targets) and the employee's contribution to collective performance evaluated among others according to HSE targets set for each business segment, which represent up to 10% of the variable portion. In 2017, 85% of the Group's entities (WHRs scope) included HSE criteria in the variable compensation.

Complementary collective variable compensation programs are implemented in some countries, such as France, via incentives and profit-sharing that also incorporates HSE criteria. According to the agreement signed for 2015-2017 applicable to the oil and petrochemicals⁽²⁾ (scope of more than 18,000 employees in 2017) sector in France, the amount available for employee incentive is determined based on financial parameters (the Group's return on equity and the evolution of the net adjusted income compared to the other major oil companies⁽³⁾) and the attainment of safety targets (injury rate and accidental deaths). This agreement must be renegotiated before June 30, 2018 for the period 2018-2020.

The Group also offers **pension and employee benefit programs** (health and death) meeting the needs of the subsidiaries and the Group's standards. These programs, which supplement those that may be provided for by local regulations, allow each employee to:

- benefit, in case of illness, from coverage that is at least equal to the median amount for the national industrial market;
- save or accumulate income substitution benefits for retirement;
- arrange for the protection of family members in case of the employee's death via insurance that provides for the payment of a benefit recommended to equal two years' gross salary.

These programs are reviewed on a regular basis and adjusted when necessary.

Employee shareholding, one of the pillars of the Group's Human Resources policy, is extended via three main mechanisms: the grant of performance shares, share capital increases reserved for employees, and employee savings. In this way, TOTAL wishes to encourage employee shareholding, strengthen their sense of belonging to the Group and give them a stake in the Group's performance by allowing them to benefit from their involvement.

Each year since 2005, TOTAL has granted performance shares to many of its employees (approximately 10,000 each year since 2009). The definitive granting of these shares depends on the fulfillment of performance conditions assessed at the end of a vesting period extended to three years in 2013 (refer to point 4.3.4 of chapter 4). The 2017 plan approved by the Board of Directors of TOTAL S.A. in July 2017 granted a more than 20% higher volume of performance shares compared with 2015 and ensured a significant replenishment rate: 43% of plan beneficiaries had not received performance shares the previous year. Almost 10,570 employees were concerned by this plan, with more than 97% of non-senior executive employees.

TOTAL also invites employees of companies more than 50% owned in terms of voting rights, and subscribing to the Shareholder Group Savings Plan (PEG-A) created in 1999 for this purpose, to subscribe

each year to capital increases reserved for employees. Depending on the offerings chosen and the employees' location, these operations are completed either through Company Savings Plans⁽¹⁾ (FCPE) or by subscribing directly for shares or for American depository receipts (ADRs) in the United States.

Pursuant to the authorization given by the Annual Shareholders' Meeting of May 24, 2016, the Board of Directors of TOTAL S.A. approved, at its meeting on July 26, 2017, the principle of a share capital increase reserved for employees to be completed in 2018. This operation will concern approximately 110 countries. As in 2017, two offerings are proposed: a traditional scheme with a 20% discount and a leveraged scheme in all countries where permitted by law. Employees will receive a matching contribution of five free shares for the first five shares subscribed. The shares subscribed will give holders current dividend rights. The subscription period will close at the start of April 2018.

More than 41,000 employees from 98 countries took part in the preceding operation finalized in 2017.

Employee savings are also developed via the TOTAL Group Savings Plan (PEGT) and the Complementary Company Savings Plan (PEC), both open to employees of the Group's French companies that have subscribed to the plans under the agreements signed in 2002 and 2004 and their amendments. These plans allow investments in a wide range of mutual funds, including the Total Actionnariat France fund that is invested in TOTAL shares. A Collective Retirement Savings Plan (PERCO) is open to employees of the Group's French companies covered by the 2004 Group agreement on provisions for retirement savings. Other saving plans and PERCO are open in some French companies covered by specific agreements. Employees can make discretionary contributions in the framework of this various plans, which the Group's companies may supplement under certain conditions through a matching contribution. The Group's companies made gross matching contributions that totaled €71.3 million in 2017.

5

5.1.2 Organization of work



The average work week is determined in accordance with applicable local law and limits set by International Labor Organization (ILO) conventions. It is less than 40 hours in most subsidiaries located in Europe, Japan and Qatar. It is 40 hours in most subsidiaries located in Asian, African and North American countries. It is above 40 hours, without exceeding 48 hours, in subsidiaries located in Latin America (mainly Argentina, Mexico, Brazil), a few countries in Asia (India, Cambodia, Philippines) and Africa (mainly South Africa, Equatorial Guinea and Morocco).

In addition, there are two specific employment regimes within the Group, the "shift⁽²⁾" regime and the "rotational⁽³⁾" regime. Most shift workers are employed in the Gas, Renewables & Power, Refining & Chemicals and Marketing & Services business segments, while the rotational regime concerns the Exploration & Production segment.

Depending on local law, there are several programs that aim to favor a better balance between work and private life and equal career opportunities. In France, teleworking was introduced in 2012.

(1) Total Actionnariat France, Total France Capital+, Total Actionnariat International Capitalisation, Total International Capital.

(2) For employees providing a continual activity with relays between teams to maintain production (two or three 8-hour shifts), for example in plants or refineries.

(3) For employees working at a location (town or worksite) far from their place of residence with alternating periods of work and rest.

As of December 31, 2017, the number of teleworkers in France (WHRS scope) was 952, 32.1% of whom were men, compared to 746 in 2016 and 454 in 2015.

	WHRS 2017	WHRS 2016	WHRS 2015
% of companies offering the option of teleworking	24.1%	18.5%	17.2%
% of employees involved in teleworking of those given the option	4.1%	3.4%	2.5%

The sickness absenteeism rate is one of the indicators monitored in the WHRS:

	WHRS 2017	WHRS 2016	WHRS 2015
Sickness absenteeism rate	2.4%	2.4%	2.1%

5.1.3 Dialogue with employees



Among the numerous stakeholders with which TOTAL maintains regular dialogue (refer also to point 5.3.1 of this chapter), the Group's employees and their representatives have a privileged position and role, particularly in constructive discussions with management. In countries where employee representation is not required by law (for example in Myanmar and Brunei), the Group companies strive to set up such representation. There are therefore employee representatives in the majority of Group companies, most of whom are elected. The subjects covered by dialogue with employees vary from company to company, but some are shared throughout, such as health and safety, work time, compensation, training and equal opportunity.

Within the Group, organizational changes are made in consultation with the employee representatives. Consequently, several thousand employees were consulted about the project to relocate the registered office to new premises at La Défense (France), following the presentation of models and 3D simulations of the planned projects.

Furthermore, at the end of 2017, there were 256 active agreements signed with employee representatives, of which 160 in France⁽¹⁾.

	WHRS 2017	WHRS 2016	WHRS 2015
Percentage of companies with employee representation	78.9%	78.5%	76.9%
Percentage of employees covered by collective agreements	73.1%	68.9%	65.5%

In December 2017, TOTAL joined the worldwide Global Deal initiative, a multi-stakeholder partnership that aims to incite governments, companies, unions and other organizations to make concrete commitments to favoring dialogue with employees. Social dialogue includes all types of negotiations, consultations or exchanges of information between the representatives of governments, employers and workers on questions pertaining to economic and social policy that are of a common interest. The Global Deal promotes the idea that effective social dialogue can contribute to decent work and quality jobs and, as a consequence, to more equality and inclusive growth from which workers, companies and societies benefit.

In 2015, TOTAL signed a global agreement with the worldwide trade union federation, IndustriALL Global Union, which represents 50 million employees in 140 countries. Under this agreement, the Group made a commitment to maintain minimum Corporate Social Responsibility (CSR) standards and guarantees worldwide for subsidiaries in which it has more than a 50% stake (occupational health and safety, human rights in the workplace, enhancement of the dialogue with employees, life insurance, professional equality, social responsibility and assistance with organizational changes). The Group also ensures that the principles of the agreement on health, safety and human rights are disclosed to and promoted among its service providers and suppliers. The implementation of this agreement is monitored annually with representatives who are members of trade unions affiliated with the IndustriALL Global Union and appointed by this federation. An initial follow-up meeting was therefore held in July 2017 to assess the implementation of the agreement and identify certain areas of improvement and actions to be taken.

A European Committee (single representative body for the employees at the Group level) has been set up in order to inform employees and hold discussions on the Group's strategy, its social, economic and financial situation, as well as questions of sustainable development, environmental and societal responsibility, and safety on a European scale. It examines any significant proposed organizational change concerning at least two companies in two European countries, to express its opinion, in addition to the procedures initiated before the national representative bodies. A new agreement was reached in July 2017 that contains some innovative measures allowing for better dialogue with the members of the European Committee (field safety visits and learning expeditions to discuss the Group's strategy directly on site).

In addition, every other year, TOTAL carries out an internal survey (Total Survey) among its employees to gather their views and expectations with regard to their work situation and perception of the Company, locally and as a Group. The results of the survey conducted in 2017 among 70,000 employees in 124 countries demonstrated that employees have a commitment rate of 78% and that 85% of them are proud to work for TOTAL.

(1) Some agreements cover several companies at once (for example, agreements in the Social and Economic Units -Unités Économiques et Sociales- or agreements in group of companies).

5.1.4 Training



The Group's actions in the field of training address five major issues:

- sharing TOTAL's corporate values, particularly with respect to HSE, ethics, leadership, innovation and digital technology;
- supporting the development of existing activities and creating new ones in order to achieve the Group's ambitions over the next 20 years;
- increasing key skills in all business areas to maintain a high level of operating performance;
- promoting employees' integration and career development through Group induction and training on management and personal development; and
- supporting the policy of diversity and mobility within the Group through language and intercultural training.

The Group's training efforts remain significant in 2017, with 77% of employees having taken at least one training course during the year. Within the WHRS scope, 243,019 days of training were offered on-site, compared to 274,858 days in 2016, for a total training budget starting to be stabilized of approximately €167 million, compared to €164 million in 2016 and €170 million in 2015.

The increase in e-learning programs within the Group that began in 2015 aims to improve the effectiveness of the courses and impact the largest number of people as quickly as possible.

It was accompanied by the launch in 2016 of a digital passport program to support the Group's goals in this area. Nearly 26,000 people have already obtained the passport. The aim of this digital path is to educate employees of the Group about the digitalization of technologies in the world.

Approximately 28,747 people received remote training in 2017, compared to 42,142 in 2016 and 42,000 in 2015. This decrease was due to several mandatory remote learning campaigns having been launched in the past several years and it was not necessary to renew them in 2017.

In addition, TOTAL restructured the organization of its support functions at the Group level by creating TGS (Total Global Services) on January 1, 2017 with a dedicated affiliate for learning, Total Learning Solutions, the mission of which is to ensure engineering training (on Business, Industry, Management and Transversal) and to put it in place. As a Shared Services Center, the volume managed would finally allow the deployment of high quality learning programs with a more competitive global cost.

To be noted: 2017 WHRS training scope is slightly inferior compared to previous years to explain some variations. In 2017, the results of 127 companies were introduced representing a total headcount of 81,001 employees, as against 135 companies representing total headcount of 86,515 employees in 2016.

Average number of training days/year per employee^(a)
(excluding "Companion" apprenticeships and e-learning)

	WHRS 2017	WHRS 2016	WHRS 2015
GROUP AVERAGE	3.0	3.2	3.3
By segment			
Exploration & Production segment	5.3	6.2	6.4
Gas, Renewables & Power segment	1.8	1.9	3.8
Refining & Chemicals segment	2.5	2.7	2.2
Refining & Chemicals	2.5	2.7	2.3
Trading & Shipping	2.0	1.7	1.4
Marketing & Services segment	2.9	2.5	2.4
Corporate	2.0	2.6	2.5
By area			
Africa	4.9	5.2	5.5
North America	3.0	3.0	1.1
Latin America	2.7	2.8	3.7
Asia-Pacific	3.7	3.6	4.9
Europe	2.6	2.8	2.7
Middle East	5.6	4.8	2.9
Oceania	0.4	0.4	0.7
French overseas departments and territories	2.7	1.7	3.2
Breakdown by type of training given			
Technical	36%	38%	37%
Health, Safety, Environment, Quality (HSEQ)	28%	23%	22%
Language	7%	8%	11%
Other (management, personal development, intercultural, etc.)	28%	31%	30%

(a) This number is calculated using the number of training hours, where 7.6 hours equal one day.

5.1.5 Equal opportunity



TOTAL is an international Group in terms of both its operations and its team members. The diversity of its employees and management is crucial to the Group's competitiveness, innovative capacity and attractiveness.

For this reason, TOTAL develops its employees' skills and careers while prohibiting any discrimination related to origin, gender, sexual orientation or identity, disability, age or affiliation with a political, labor or religious organization. This policy is upheld by the Diversity Council, which is chaired by a member of the Group's Executive Committee.

Each entity is responsible for creating a suitable work environment to fully benefit from skills and diverse approaches. This commitment is supported at the highest level to ensure that all employees, regardless of their gender or nationality, are offered the same career opportunities.

5.1.5.1 Equal treatment for women and men

Equal treatment for men and women is promoted in the Group through a global policy of gender diversity, ambitious goals set by General Management, a demanding HR process that takes the issue of gender into consideration, agreements in favor of a balance between work and private life (such as the agreement on teleworking in France) and awareness-raising and training actions.

TOTAL's commitment stretches from recruitment to the end of a career. It guarantees equal treatment for women and men in the process to identify high-potential employees and to appoint executive officers. In terms of compensation, specific measures have been in place since 2010 to prevent and correct unjustified salary gaps.

The Group's target for 2020 is:

- women represent 25% of senior executives (having represented approximately 5% in 2004 and 21.1% in 2017);
- non-French nationals represent 40% of senior executives (having represented approximately 19% in 2004 and 28.9% in 2017); and
- women represent more than 20% of Management Committee members (head office and subsidiaries) (having represented 21% in 2017).

In 2010, TOTAL signed the "Women's Empowerment Principles – Equality Means Business" set out in the United Nations Global Compact, and its commitment to equal opportunities and the treatment of women and men is regularly embodied in agreements,

such as the global agreement signed in 2015 with IndustriALL, or the Global Deal to which TOTAL has adhered more recently in 2017.

In 2016, TOTAL, along with 20 other oil and gas companies, made a commitment at the World Economic Forum by signing "Closing the Gender Gap – a Call to Action". This joint declaration is based on seven action principles: involvement of management; expectation and goal setting; program dedicated to the fields of Science, Technology, Engineering and Mathematics (STEM); clear responsibilities; recruitment, retention and promotion policy; inclusive corporate culture; and work environment and work-life balance.

The Group also promotes gender diversity in its professions. In France, TOTAL has partnered with "Elles bougent" since 2011 and served as honorary Chairman in 2015. Some 130 female engineers regularly inform high-school girls about careers in science. An event entitled "Elles bougent pour l'énergie" was attended by more than 2,000 participants throughout France.

In line with the objective of promoting the development of women in the Group, in particular towards management positions, the TWICE network (Total Women's Initiative for Communication and Exchange) aims to help women to further their careers. Created in 2006, it is currently in place in France and abroad (20 local networks) and has over 3,000 members. Since 2010, almost 550 women have benefited from the network's mentoring program, in France and internationally, which helps them to better negotiate the key phases of their careers.

TOTAL also participates in the "BoardWomen Partners" program, which aims to increase the proportion of women on boards of directors in large European companies. At the end of 2017, women accounted for 45.5%⁽¹⁾ of TOTAL S.A.'s Board members (above the 40% required by Article L. 225-18-1 of the French Commercial Code and applicable since 2017) compared to 54.5% at the end of 2016 and 36.4% at the end of 2015.

% of women	2017	2016	2015
Open-ended contract recruitment	38.6%	36.9%	34.9%
Managers (JL ≥ 10) ^(a) recruitment	31.9%	29.7%	30.6%
Employees	33.3%	32.4%	32.0%
Managers (JL ≥ 10) ^(a)	26.3%	25.5%	25.1%
Senior executives	21.1%	19.9%	18.6%

(a) Job Level of the position according to the Hay method. JL10 corresponds to junior manager (*cadre débutant*) (≥300 Hay points).

(1) Excluding the director representing employees, in accordance with Article L. 225-27-1 of the French Commercial Code.

5.1.5.2 Internationalization of management

With employees representing over 150 nationalities, TOTAL enjoys broad cultural diversity and believes that it is important to reflect this at all levels of its activities. In 2017, 90.3% of employees hired by the Group and 68.0% of managers hired were non-French nationals.

The Group has set a target of having local managers representing 50% to 75% of the subsidiaries' Management Committee members by 2020 (having represented 54% in 2017 like in 2016).

Several measures have been put in place to internationalize management, including training courses to internationalize careers, increasing the number of foreign postings for employees of all nationalities (nearly 4,073 employees of 108 nationalities are posted in 112 countries as of June 30, 2017), and integration and personal development training organized by large regional hubs (for example, Houston, Johannesburg and Singapore).

% of employees of non-French nationality	2017	2016	2015
Open-ended contract recruitment	90.3%	93.4%	93.5%
Managers (JL \geq 10) recruitment ^(a)	68.0%	75.3%	76.3%
Employees	68.2%	69.0%	68.8%
Managers (JL \geq 10) ^(a)	58.1%	58.8%	60.9%
Senior executives	28.9%	28.2%	27.9%

(a) Job Level of the position according to the Hay method. JL10 corresponds to junior manager (*cadre débutant*) (\geq 300 Hay points).

5.1.5.3 Measures promoting the employment and integration of people with disabilities

For over 20 years, TOTAL has expressly set out its disability policy in France through successive agreements signed with employee representatives to promote the employment of workers with disabilities. Three framework agreements signed for three years (2016-2018) with the French representative unions set out TOTAL's policy with regard to integrating people with disabilities into the work world. The average Group employment rate of people with disabilities in France (direct and indirect employment) was 5.16% in 2016⁽¹⁾ (compared to 4.99% in 2015 and 4.74% in 2014).

TOTAL promotes the direct recruitment of disabled people and cooperation with the sector for disabled workers, while at the same time taking various types of action:

- internally: integration, professional training, support and job retention, communication, awareness actions and sessions organized for managers and all the teams, Human Resources managers;
- externally: information and advertising aimed at students, cooperation with recruitment agencies, attendance at specialized forums.

5.1.5.4 Measures promoting non-discrimination

Large-scale initiatives aimed at raising employees' awareness of diversity are organized on a regular basis. After South Africa in 2016 and Berlin in 2015, in 2017, the Group Diversity Council, which is chaired by a member of the Group's Executive Committee, met in the USA with almost 65 senior executives from the American subsidiaries in an "Understand-Engage-Act" seminar to encourage them to pursue their actions in the areas of diversity and inclusion. The theme of the 2017 World Diversity Day, which takes place every two years, was "Let's Show Respect for Each Other". Workshops were organized on the themes of feminization, the internationalization of management and religion in the workplace.

TOTAL is involved in a number of initiatives to promote diversity, including the professional integration of young people in France, for example via the "La France s'engage" partnership with the French government.

In 2014, the Group also signed the LGBT (lesbian, gay, bisexual and transgender) Charter. Prepared by the "L'Autre Cercle" association, it establishes a framework for combating discrimination related to sexual orientation or identity in the workplace in France.

TOTAL has written a practical guide to religion in the Group to offer concrete answers to employees' questions about religion in the workplace and to promote tolerance of everyone's beliefs, while respecting differences at the same time. The guide, which was posted on the Group's intranet site in March 2017, offers the keys to understanding different beliefs, so that everyone can better comprehend them in their everyday activities.

(1) The rate for 2017 is not available at the date of publication of this Registration Document.

5.2 Safety, health and environment information

In line with its Code of Conduct, TOTAL has adopted a Safety Health Environment Quality Charter on which the Group relies for the conduct of its operations (available on total.com). This charter represents the common framework of the Group's management systems. Group directives define the minimum requirements expected in the areas of safety, security, industrial health and hygiene, the environment, quality and societal. They are implemented in the segments, which

subsequently factor in the specific characteristics of their operations. Recommendations, guides and manuals, which are the primary documents used for implementing and managing the Group's policies, are accessible to all employees. The HSE division supports the Group business segments and oversees the implementation of the policies that reflect the HSE principles of this charter concretely and effectively.

5.2.1 Occupational health and safety



For many years, the Group has been developing a normative framework relating to safety, security, industrial health and hygiene, the environment and societal, as well as the corresponding management systems in these areas (Management and Expectations Standards Toward Robust Operations, MAESTRO). In this respect, directives have been drawn up for occupational health and safety. These directives set out TOTAL's requirements in these areas for personnel working on its sites.

Since 2013, the Group's business segments have increased their efforts regarding the frameworks of the HSE management systems in order to provide greater overall Group-wide consistency, while at the same time respecting the businesses' specific characteristics. Starting in 2018, a MAESTRO HSE reference framework common to all branches of activity will gradually be deployed.

TOTAL's HSE division conducts MAESTRO audits of all operated sites every four years.

The Group's safety efforts are focused on preventing occupational and transport accidents, and on preventing major accidents and accidental spills (refer to point 5.2.2.2 of this chapter and to point 3.3 of chapter 3). They cover both employees of Group companies and employees of external contractors⁽¹⁾, whose safety indicators are monitored with the same vigilance.

Indicators are used to measure the main results in these areas. Monthly reporting of occupational accidents is used to monitor performance at both the global and site levels.

Safety indicators	2017	2016	2015
TRIR ^(a) : number of recorded injuries per million hours worked	0.88	0.91	1.17
Group company employees	0.89	0.83	0.92
Employees of external contractors ^(b)	0.88	0.99	1.38
LTIR ^(c) : number of lost time injuries per million hours worked	0.58	0.51	0.66
SIR ^(d) : average number of days lost per lost time injury	27.57 ^(e)	30.23	30.11
Number of occupational fatalities	1	1	9

(a) TRIR: Total Recordable Injury Rate.
(b) As defined in point 5.4.4.1 of this chapter.
(c) LTIR: Lost Time Injury Rate.
(d) SIR: Severity Injury Rate.
(e) Excluding Saft Groupe.

For more than 10 years, the TRIR and the LTIR have declined continuously. Those 2017 safety performances are relatively stable compared to 2016. The deployment of a series of measures intended to strengthen the Group's safety culture in 2015 has helped to improve the safety of employees working for external contractors. Despite these measures, in 2017 an accident during maintenance operations in the Republic of the Congo resulted in the death of an employee working for a contractor.

Safety is the subject of regular training activities, in particular at management level (refer to point 5.2.2.1 of this chapter). Since 2011, the Group has implemented a policy to recognize HSE performance, in particular by including safety-related criteria in the determination of compensation (see point 5.1.1.3 of this chapter).

Since 2010, the basic rules to be scrupulously followed by all personnel, employees and contractors alike, in all of the Group's businesses worldwide, have been set out in a safety document entitled "Safety at Work: TOTAL's Twelve Golden Rules".

According to the Group's internal statistics, in more than 60% of severe incidents or near misses with high severity potential in the workplace, at least one of the golden rules had not been followed. The proper application of these golden rules, and more generally of all occupational safety procedures, is verified through site visits and internal audits. The golden rules have been reformulated in the form of do's and don'ts to improve their adoption and facilitate the monitoring of their application. This new presentation was revealed in April 2017, on the occasion of the World Day for Safety and Health at Work. Furthermore, in 2016, the HSE organization created a department including the leading authorities on high-risk operations (work at height, lifting, high-pressure cleaning, excavations, etc.) in order to consolidate in-house know-how and relations with contractors.

(1) As defined in point 5.4.4.1 of this chapter.

One of the programs launched in 2016 to improve long-term safety performance was focused on strengthening the control of the activity of employees working for external contractors, who are statistically the main victims of accidents. The program of regular meetings with the management of external companies, launched in 2016, continued in 2017. In October 2017, the TOTAL Suppliers Day, aimed at the Group's strategic suppliers, was attended by 110 companies, with a view to sharing common policies and rules on ethics, health, safety, human rights and environmental protection. The event was an opportunity to reward three companies for the excellence of their work and the quality of their relations with the Group entities in the safety, innovation-digital technology and operational excellence categories.

Moreover, the reporting of anomalies (about 800,000 per year) and near misses on a daily basis is strongly encouraged and permanently monitored. The ability of each employee to identify anomalies or dangerous situations is one of the measures of the personnel's involvement and vigilance in accident prevention and reflects the safety culture within the Group.

An investigation is generally launched in response to any type of accident whatsoever. The method and scope of investigation depend on the actual or potential severity of the event. Consequently, a near miss with a high severity potential is treated as a serious accident, and its analysis is considered as an essential factor of progress. Depending on its relevance to the other Group entities, it triggers a safety alert and the distribution of a feedback form, depending on the circumstances.

With respect to transport safety, the Group continues to strive to improve its performance in terms of road accidents. The actions taken in recent years more than halved the rate of severe accidents between 2013 and 2017. At Marketing & Services, the program of transporters inspections is being deployed in Africa, Asia-Pacific & the Middle East and the Americas, and should be gradually extended to the East European countries in 2018. The inspection protocol has also been adapted and tested in four European countries in the Gas, Renewables & Power segment, so that it can be used in OECD-zone countries, where it will be deployed, starting in 2018.

Following the signing of the national call in favor of road safety at work in France in October 2016, the Group deployed the SafeDriver campaign to raise awareness of risks on the road and to remind drivers of the basic rules of driving and the importance of obeying them. This campaign is broken down into six themes and addresses all TOTAL and contractor employees who use a vehicle for professional purposes.

As part of the Oil Companies International Marine Forum's (OCIMF)⁽¹⁾ Marine Terminal Information System (MTIS), the Group launched an initiative to systematically record the physical characteristics of the terminals operated by Group entities. This will make it easier to assess the compatibility of ships with the Group's terminals. Elsewhere, TOTAL has decided to adopt the Marine Terminal Management Self Assessment (MTMSA), recommended by the industry, as a framework of reference for the self-assessment of

terminals, as part of its drive to improve the safety of product transfers at interfaces.

With regards to health, the Group has drawn up a policy to define TOTAL's minimum requirements in terms of the prevention of industrial risks to health and the protection of workers.

In particular, based on the Directive on industrial hygiene and occupational health, the Group's companies are expected to prepare and carry out a formal risk assessment (chemical, physical, biological, ergonomic or psychosocial), create a risk management action plan and provide medical monitoring of staff in line with the risks to which they are exposed.

The Group monitors the following indicators in this area:

Health indicators (WHRS scope)	2017	2016	2015
Percentage of employees benefiting from regular medical monitoring	98.0%	99.3%	99.3%
Number of occupational illnesses recorded in the year (in accordance with local regulations) ^(a)	143	108	145

(a) In 2016, the number of occupational illnesses was collected for companies replying to the WHRS in order to improve consistency between social and health data. In addition, this indicator, which was reported as a ratio of hours worked, is now expressed as an absolute figure.



Reporting on occupational illnesses covers only the Group's personnel (WHRS scope) and illnesses reported according to the regulations applicable in the country of operation of each entity.

Musculoskeletal disorders, the main cause of occupational illnesses, represented 68% of all recorded illnesses in 2017, slightly up on 2016.

A Medical Advisory Committee meets regularly to discuss key health issues that may affect the Group's employees. It consists of external scientific experts and brings together TOTAL's management team and the relevant members of the Group. This Committee provides scientific monitoring of health problems that could impact the Group, thus enabling the best health protection strategies to be put in place when necessary.

In support of the Group's health policy and to complement the periodic medical surveillance program organized by the Group's medical staff, an employee health observatory has also been set up. This observatory aims at establishing health indicators for keeping track over the long term of any medical conditions that could affect employees using a population-based approach. This program can be used to quickly identify the emergence of certain illnesses and, if applicable, suggest and oversee appropriate preventive measures. Approximately 13% of the Group's employees worldwide, whatever their position, age or horizon, took part anonymously in this program, thereby providing a representative sample of the Group's different business segments and professions, including administrative as much as operational staff.

(1) An industry forum including the leading worldwide oil companies.

The study entitled Sleep, shift work and cardio-metabolic illnesses was initiated on the basis of the findings of the TOTAL health observatory. The study covered the employees on four Refining & Chemicals industrial sites in France (Carling, Donges, La Mède and Normandy) and was conducted in collaboration with the occupational health departments on each site. The result should be published shortly, following further analysis of the data obtained in 2017. On a broader level, TOTAL is associated with promoting individual and

collective health in the countries where it operates, including flu vaccination campaigns and prevention and screening programs for certain diseases (AIDS, cancer, malaria, Ebola, etc.) for employees, their families and local communities. For several years, awareness campaigns have also been in place concerning, for example, musculoskeletal disorder prevention and lifestyle risks (anti-smoking and anti-drinking campaigns).

5.2.2 Environmental protection

5.2.2.1 General policy and environmental targets



The HSE division and the HSE departments within the Group's entities seek to ensure that both applicable local regulations and internal minimum requirements are being met. The Group steering bodies, led by the HSE division, have a threefold task:

- monitoring TOTAL's environmental performance, which is reviewed annually by the Executive Committee, for which multi-annual improvement targets are set;
- handling, in conjunction with the business segments, the various environment-related subjects of which they are in charge; and
- promoting the internal standards to be applied by the Group's operational entities as set out in the Safety Health Environment Quality Charter.

TOTAL has a goal of progressively lowering the carbon intensity of its energy mix.

The Group's environmental targets for 2010-2020 are as follows:

- continue its efforts to reduce greenhouse gas (GHG) emissions, particularly through:
 - 1. an 80% reduction of routine flaring ⁽¹⁾ with the aim to eliminate it by 2030, and
 - 2. an average 1% improvement per year in the energy efficiency of the Group's operated facilities;
- decrease SO₂ air emissions by 50%;
- maintain hydrocarbon content of water discharges below 30 mg/l for offshore sites and below 15 mg/l for onshore and coastal sites.

Moreover, the Group has committed to:

- systematically developing biodiversity action plans for production sites located in protected areas ⁽²⁾;
- refrain from conducting oil and gas exploration or production operations at natural sites included on the UNESCO World Heritage List ⁽³⁾ or in oil fields under sea ice in the Arctic.

What we have accomplished:

- 87% of routine flaring reduction between 2010 and 2017;
- Improvement by 14% of the energy efficiency of the Group's facilities between 2010 and 2017;
- More than 50% of reduction of SO₂ emissions since 2016;
- More than 100% of the Group's oil sites met the target for the quality of offshore and onshore discharges since 2016.

The environmental management systems on TOTAL's major sites are ISO 14001 certified: 100% of the 67 production sites emitting more than 10 kt of GHG per year (excluding start-ups or newly acquired sites, which have two years to be certified) are ISO 14001 certified. Overall, at year-end 2017, 252 sites had ISO 14001 certification. The Laggan Tormore (United Kingdom) and Incahuasi (Bolivia) sites were ISO 14001 certified in 2017. Group rules require certification to be obtained within two years of start-up of operations; accordingly, the Moho Nord (Republic of the Congo) and Barnett (USA) are expected to be certified in 2018 or 2019.

The environmental risks and impacts of any planned investment, disposal or acquisition subject to Executive Committee approval are assessed and reviewed before the final decision is made (also refer to point 3.3.3.1 of chapter 3).

TOTAL seeks to ensure that all employees share its environmental protection requirements. Employees receive training in the required skills. TOTAL also raises employee awareness through internal communication campaigns (e.g., in-house magazines, intranet, posters) and provides annual information about the Group's environmental performance.

(1) Routine flaring, as defined by the working group of the Global Gas Flaring Reduction program within the framework of the World Bank's Zero Routine Flaring initiative.

(2) Sites located in an IUCN I to IV or Ramsar convention protected area.

(3) Natural sites included on the UNESCO World Heritage List of June 4, 2013.

Training courses are organized for managers and senior executives. Three HSE training courses are made available to the operational entities:

- *HSE for Managers* is aimed at senior managers and operational or functional managers who are currently or will in the future be responsible for one of the Group's operational entities (five sessions were held in 2017 with 229 participants);
- *HSE Implementation* are aimed at employees whose job is specifically to handle one or more HSE or operational areas within

an operational entity (one session was held in 2017 with 20 participants). This offer completes an existing course for the same target population provided by the Group's business segments; and

- *HSE Leadership for Group Senior Executives* focusing on management styles has been organized since 2012 (two sessions were held in 2017 with 30 participants). Since 2012, close to 300 senior executives have taken part in this program.

5.2.2.2 Incident risk



The Group has management structures and systems that present similar requirements and expectations across all the entities. TOTAL strives to minimize the potential impacts of its operations on people, the environment and property through a major risk management policy. This policy draws on a shared approach in all segments that includes, on the one hand, risk identification and analysis, and on the other hand, the management of these risks.

This structured approach applies to all of the Group's operated businesses exposed to major risks. In addition to its drilling and pipeline transport operations, the Group has 202 sites and operating zones exposed to major risks corresponding to:

- all the offshore and onshore operating activities in Exploration & Production; and
- the Seveso classified industrial sites (upper and lower threshold) and their equivalents outside the EU (excluding Exploration & Production).

This approach first sets out an analysis of the risks related to the Group's industrial operations based on incident scenarios for which the probability of occurrence and the severity of the consequences are assessed.

Second, based on these parameters, a prioritization matrix is used to determine whether further measures are needed in addition to compliance with the Group's standards and local regulations. These mainly include preventive measures but can also include mitigation measures.

The management of major risks also hinges on:

- staff training and raising awareness;
- a coherent event reporting and indicators system;
- systematic, structured event analysis, particularly to learn lessons in terms of design and operation;
- regularly tested contingency plans and measures.

In terms of monitoring indicators, the Group reports the number of Tier 1 and Tier 2 events as defined by the API and the IOGP. A significant reduction in the number of losses of primary containment was observed in comparison to 2016. In addition to the 103 Tier 1 and Tier 2 operational events indicated in the table below, the Group recorded two Tier 1 events and one Tier 2 event due to sabotage or theft in 2017.

Loss of primary containment ^(a)	2017	2016	2015
Loss of primary containment (Tier 1)	28	38	51
Loss of primary containment (Tier 2)	75	101	111
Loss of primary containment (Tier 1 and 2)	103	139	162

(a) Excluding acts of sabotage and theft.

In accordance with industry best practices, TOTAL also monitors accidental liquid hydrocarbon spills of more than one barrel. Spills that exceed a predetermined severity threshold (in terms of volume spilled, toxicity of the product in question or sensitivity of the natural environment affected) are reviewed on a monthly basis and annual statistics are sent to the Group Performance Management Committee. All spills are followed by corrective actions aimed at returning the environment to its original state as quickly as possible.

Accidental hydrocarbon spills ^(a)	2017 ^(b)	2016	2015
Number of hydrocarbon spills	60	73	128
Total volume of hydrocarbon spills (thousands of m ³)	0.5	0.9	1.4

(a) Accidental spills with an environmental impact and of more than one barrel.

(b) In 2017, the indicator perimeter was reviewed to exclude spills due to sabotage done by a third party.

In addition, the Group has set up a crisis management process with a dedicated organization (also refer to point 3.3.3.1 of chapter 3) and a crisis management center at the head office to enable the management of two simultaneous crises. As part of this process, TOTAL regularly trains in crisis management on the basis of risk scenarios identified through analyses.

In particular, the Group has response plans and procedures in place in the event of a hydrocarbon leak or spill. For accidental spills that reach the surface, oil spill contingency plans are regularly reviewed and tested during exercises. These plans are specific to each company or site and are adapted to their structure, activities and environment while complying with Group recommendations.



Oil spill preparedness	2017	2016	2015
Number of sites whose risk analysis identified at least one risk of major accidental pollution to surface water	124	141	167
Proportion of those sites with an operational oil spill contingency plan	92% ^(a)	99%	98%
Proportion of those sites that have performed at least one oil spill response exercise during the year	95%	89% ^(b)	98%

(a) Decrease in 2017 compared to 2016 corresponds mainly to an affiliate whose global plan is currently being revised to integrate an asset in production since 2017.

(b) Decrease in 2016 compared to 2015 corresponds mainly to three affiliates which postponed their exercises to 2017.

In the event of accidental pollution, the Group companies can call on in-house human and material resources (Fast Oil Spill Team, FOST) and benefit from assistance agreements with the main third-party organizations specialized in the management of hydrocarbon spills.

Subsea capping and subsea containment equipment has been installed at different points of the world (South Africa, Brazil, Norway

and Singapore) since 2014 in order to provide solutions that can be deployed rapidly in the event of oil or gas eruptions in deep offshore drilling operations. This equipment was developed by a group of nine oil companies, including TOTAL, and is managed by Oil Spill Response Ltd (OSRL), a cooperative dedicated to the response to marine pollution by hydrocarbons. TOTAL has also designed and developed its own "Subsea Emergency Response System" to stop potential eruptions in drilling or production operations as quickly as possible. Since 2015, equipment has been installed in Angola, then the Republic of the Congo, potentially covering the entire Gulf of Guinea region.

With regard to shipping, the Group has an internal policy setting out the rules for selecting vessels. These rules are based on the OCIMF recommendations. This organization manages the Ship Inspection Report (SIRE) Program, and promotes best practices in oil shipping. TOTAL charters vessels at the highest international standards for shipping hydrocarbons and the average of the fleet of TOTAL's Shipping division is approximately seven years.

Similarly, internal rules define the centralized process for the selection of inland waterway barges. This process is also based on the OCIMF Barge Inspection Questionnaire, an integral part of the SIRE, and on the European Barge Inspection Scheme in Europe.

5.2.2.3 Environmental footprint



TOTAL implements an active policy of avoiding, reducing, managing and monitoring the environmental footprint of its operations. As part of this policy, emissions are identified and quantified by environment (water, air and soil) so that appropriate measures can be taken to better control them.

Water, air

The Group's operations generate emissions into the atmosphere from combustion plants and the various conversion processes and discharges into wastewater. In addition to complying with applicable legislation, the Group's companies actively pursue a policy aimed at reducing emissions. Sites use various reduction systems that include organizational measures (such as using predictive models to control peaks in SO₂ emissions based on weather forecast data and the improvement of combustion processes management, etc.) and technical measures (wastewater treatment plants, using low NO_x burners and electrostatic dedusters, etc.).

Chronic emissions into the atmosphere

(excluding CHG)

	2017	2016	2015
SO ₂ emissions (kt)	44	49	59
NO _x emissions (kt)	68	75	82

In 2010, SO₂ emissions totaled 99 kt, and the target for 2020 is to remain below 49.5 kt, a level reached in 2016. The improvement in 2017 is linked to the shutdown of la Mède refinery (France).

Discharged water quality	2017	2016	2015
Hydrocarbon content of offshore water discharges (in mg/l)	17,7	17.2	19.4
% of sites that meet the target for the quality of offshore discharges (30 mg/l)	100% ^(a)	100% ^(a)	100% ^(a)
Hydrocarbon content of onshore water discharges (in mg/l)	2.4	3.2	3.7
% of sites that meet the target for the quality of onshore discharges (15 mg/l)	100%	100%	97%

(a) Alwynn site (United Kingdom) excluded, as its produced water discharges are discontinuous, only occur during the maintenance periods of the water reinjection system and are subject to a specific regulatory authorization.

The improvement in the quality of onshore water discharges in 2017 is linked to a continuous improvement of discharges quality at Djeno Terminal (Republic of the Congo) and Tunu site (Indonesia).

Soil

The risks of soil pollution related to TOTAL's operations come mainly from accidental spills (refer to point 5.2.2.2 of this chapter) and waste storage (refer to point 5.2.2.4 of this chapter).

The Group's approach to preventing and controlling these types of pollution is based on four cornerstones:

- preventing leaks, by implementing industry best practices in engineering, operations and transport;
- carrying out maintenance at appropriate intervals to minimize the risk of leaks;
- overall monitoring of the environment to identify any soil and groundwater pollution;
- controlling pollution from previous activities by means of containment and reduction or elimination operations.

In addition, a Group directive defines the following minimum requirements:

- systematic identification of each site's environmental and health impacts related to possible soil and groundwater contamination;
- assessment of soil and groundwater contamination based on various factors (extent of pollution inside or outside the site's boundaries, nature and concentrations of pollutants, presence of a vector that could allow the pollution to migrate, use of the land and groundwater in and around the site); and
- management of health or environmental impacts identified based on the use of the site (current or future, if any) and the risk acceptability criteria recommended by the World Health Organization (WHO) and the Group.

Lastly, decommissioned Group facilities (*i.e.*, chemical plants, service stations, mud pits or lagoons resulting from hydrocarbon extraction operations, wasteland on the site of decommissioned refinery units, etc.) impact the landscape and may, despite all the precautions taken, be sources of chronic or accidental pollution. TOTAL has a site remediation policy with the aim to, in agreement with the authorities;

allow new operations to be set up once the future use of the land has been determined. These remediation operations are conducted by the Group's specialized entities. In 2017, TOTAL developed and patented a soil depollution technology, using only solar energy from SunPower photovoltaic panels, that is mobile and can be remotely controlled. The Group's provisions for the protection of the environment and site remediation are detailed in Note 12 to the Consolidated Financial Statements (point 8.7 of chapter 8).

Nuisances

The nuisances resulting from TOTAL's operations, including sound or odor nuisances or the result of vibrations or road, sea or river traffic, are monitored at the Group's main industrial sites.

Monitoring systems can be put in place (sound level measurements at the site perimeter or networks of "noses" to determine the origin and intensity of odors, like around the Donges platform in France). In addition, most sites have a system for receiving and handling residents' complaints, with the aim of gaining a clearer insight into the different types of nuisances and minimizing them.

5.2.2.4 Circular economy



TOTAL announced in February 2017 a circular economy action plan covering the 2017-2020 period which comprises five commitments (purchasing, waste, new ranges of polymers, solarization of service stations and improvement of energy efficiency).

Waste prevention and management

A Group directive sets out the minimum requirements related to waste management. It is carried out in four basic stages: waste identification (technical and regulatory); waste storage (soil protection and discharge management); waste traceability, from production through to disposal (*e.g.*, notes, logs, statements); and waste treatment, with technical and regulatory knowledge of the relevant processes, under the site's responsibility.

The Group's companies are also focused on controlling the waste produced at every stage in their operations. This approach is based on the following four principles, listed in decreasing order of priority:

1. reducing waste at source by designing products and processes that generate as little waste as possible, as well as minimizing the quantity of waste produced by the Group's operations;
2. reusing products for a similar purpose in order to prevent them from becoming waste;
3. recycling residual waste; and
4. recovering energy, wherever possible, from non-recycled products.

On its sites, TOTAL deploys programs to valorize (recycling and valorization) more than half of the Group's waste. Moreover, TOTAL is especially committed to managing and treating waste classified as hazardous. Due to its nature, hazardous waste is mainly treated outside the Group by specialized companies, representing 178 kt in 2017, compared to 187 kt in 2016 and 202 kt in 2015.

Waste treatment processes	2017	2016	2015
Recycling and/or valorization	52%	58%	55%
Landfill	24%	18%	14%
Others (incineration, biotreatment, etc.)	25%	24%	31%

The evolution of the valorization rate is due to the excavation of 97.5 kt of unpolluted soil as part of the Port Arthur ethane cracker project. These exceptional non-hazardous wastes have been used as a cover for a waste storage facility and are considered by regulation to not be valorized.

By way of example, in 2017, the Normandy platform in France launched a program to recover the sludge from water decarbonation in the form of liming materials for acid soil. The Antwerp platform in Belgium launched a project to recover gases from refining, previously used as fuel, as raw materials for the petrochemical units.

In 2017, all the Refining & Chemicals segment's plastic production sites worldwide also joined the CleanSweep® program, which aims to achieve zero loss of plastic pellets in handling operations. Clean Sweep® (OCS) is an international program that aims to avoid losses of plastic pellets during handling operations by the players in the plastics industry, so that they are not disseminated into the aquatic environment.

The Group is also contributing to the circular economy through its involvement in the development of channels for the recycling of used oil and photovoltaic panels. TOTAL has developed processes that allow up to 50% of recycled plastics (polyethylene and polystyrene) to be incorporated in the production of plastics. In 2017, TOTAL received Plastics Europe's award for "Innovative materials" for the production of bottles made from recycled polyethylene.

Sustainable use of resources

Fresh water

The nature of the Group's activities, and mainly those of Refining & Chemicals, and to a lesser extent those of the Exploration & Production, Gas, Renewables & Power segments, is such that they have an impact on, and are dependent on, water resources. This is especially true when the activity is located in an environment that is sensitive in terms of water resources.

TOTAL is aware of these challenges and takes water resources into account in its guidelines and operations:

- in the Safety Health Environment Quality Charter, which states that "TOTAL controls its use of natural resources, etc.", in particular water, which is an important natural resource; and
- in its approach to water, set within the Group's environmental framework, which incorporates the following core principles for action:
 1. identification of priority sites that are sensitive in terms of water resources,
 2. global management of risks to and impacts on water resources in the Environmental Management System, and
 3. monitoring and integration of changes in this area, especially those associated with climate change, through its stakeholders, partnerships and R&D.

To determine which facilities are most affected by the availability of fresh water, TOTAL monitors its water withdrawals and discharges across all of its sites.

TOTAL identifies the levels of risk of its sites that withdraw more than 500,000 m³ per year and are located in areas potentially exposed to water resource risks, using the Local Water Tool (LWT) from the Global Environmental Management Initiative (GEMI). This tool also helps to guide the actions taken to mitigate these risks in order to make optimal use of water resources on these sites.

The sites operated by the Group are not particularly exposed to hydric risk. 25 sites were affected at the end of 2017, the level of water risk was assessed on 17 priority Group sites (11 Refining & Chemicals, 4 Exploration & Production, 2 Gas, Renewables & Power). These assessments will gradually be extended to include other current high priority sites, of which 8 have been identified. Depending on the nature of the hydric risks and their impacts, a plan to optimize the use of water resources or of specific water-related actions may be drawn up.

In 2017, approximately 80% of the fresh water withdrawals were taken from the Refining & Chemicals segment. At refineries and petrochemicals sites, water is mainly used to produce steam and for cooling units. Increasing recycling and replacing water cooling with air cooling, such as at the Normandy (France) and Antwerp (Belgium) refineries, are TOTAL's preferred approaches for reducing fresh water withdrawals.

Elsewhere, in Exploration & Production operations, reinjecting water extracted along with hydrocarbons (known as produced water) back

into the original reservoir is one of the methods used to maintain reservoir pressure. The specifications in force in the Group stipulate that this option be prioritized over other methods.

The water used on sites producing photovoltaic panels must be very pure. These sites consume a lot of fresh water, which is the reason why they were included in the Group's LWT initiative in 2017. In 2018, the reuse of water will be investigated on one of these sites.

The Group R&D program for water management is looking into the various aspects of the protection and recovery of water resources. By way of example, studies were made of the reuse of water on the Gonfreville petrochemicals site as part of the E4Water program using the water re-use tool developed by TOTAL's R&D department. This tool uses the life cycle analysis to define a reuse for water that entails the best forms of recovery, from the societal, economic and technical perspectives. Finally, the development of technical solutions well adapted to the challenges, such as the recently patented BIOMEM process, significantly improve the performance of the biological treatments used, especially on production water.

The Group works with a number of professional organizations, such as the IPIECA, the CONCAWE⁽¹⁾ and the EpE⁽²⁾, and, more locally, with the GIZ⁽³⁾ in Uganda, on a water resource sanitary with local communities. The Group's indicators relating to water generally follow the IPIECA framework. The main indicator is aggregate withdrawals.

Water-related indicator	2017	2016	2015
Fresh water withdrawals excluding cooling water (million m ³)	113	120	118

The decrease in water withdrawals between 2016 and 2017 is mainly due to the shutdown of la Mède refinery (France) et a major turnaround at Carville petrochemical site (USA).

Soil

TOTAL uses the ground surface that it needs to safely conduct its industrial operations and, in 2017, did not make extensive use of ground surfaces that could substantially conflict with various natural ecosystems or agriculture.

For open-pit oil sands mining projects, TOTAL strives to ensure that environmental issues are managed by the operator, in particular with regard to the reclamation of affected soils.

TOTAL has set up a working group to look into the conditions and the impacts of supplies of vegetable oil to the La Mède biorefinery, which is due to start up in mid-2018.

Raw materials

Hydrocarbons, the Group's main raw material, are a form of energy. Losses of this raw material are divided mainly into 4 categories: gas flaring (point 5.2.3.4 of this chapter); cold venting (point 5.2.3.4 of this chapter); hydrocarbons discharged in low quantities through aqueous effluents, which amounted to 625 t in 2017; and accidental oil spills (point 5.2.2.2 of this chapter). These raw material losses remain negligible with respect to the Group's production in 2017.

(1) Environmental Science for the European Refining Industry.

(2) Entreprises pour l'environnement.

(3) Gesellschaft für industrielle Zusammenarbeit.

5.2.2.5 Protecting biodiversity and ecosystems



Due to their nature, the Group's activities, and particularly its Exploration & Production activities, may be located in sensitive natural environments. TOTAL's operations can therefore have an impact on ecosystems and their biodiversity.

TOTAL is aware of these challenges and takes biodiversity and ecosystems into account in its guidelines and operations:

- in the Safety Health Environment Quality Charter, which specifies that TOTAL "is committed to managing (...) its use of natural resources and its impact on biodiversity" and ecosystems;
- in the biodiversity approach, set within the Group's environmental framework, which incorporates the following core principles for action:
 - 1. **deploy the mitigation hierarchy "avoid-mitigate-compensate"**: TOTAL applies this approach for the duration of its projects' lifecycle to minimize the impact of its activities on biodiversity,
 - 2. **take into consideration the sensitivity of ecosystems**: In the course of its business, TOTAL identifies and takes into account the diversity and sensitivity of various environments in terms of biodiversity,
 - 3. **manage biodiversity**: TOTAL incorporates the biodiversity impact and risk management into its environmental management systems and refers to good practices within the industry,
 - 4. **report**: TOTAL reports to its stakeholders on its biodiversity performance,
 - 5. **improve knowledge of biodiversity**: TOTAL participates in the improvement of knowledge of biodiversity and ecosystems as well as managing the stakes involved, through R&D initiatives taken with local and international partners and professional associations.

The Group made a commitment not to engage in oil and gas exploration or extraction operations at natural sites included on the UNESCO World Heritage List of June 4, 2013. In the Democratic Republic of the Congo, TOTAL made the commitment to not carry out any exploration activity in the Virunga National Park, partly located in Block III of the Graben Albertine. The Group publishes the list of its licenses in the Arctic zone on its web site, and TOTAL does not conduct any exploration activities of oil fields under sea ice in the Arctic.

TOTAL conducts sensitivity and impact analyses for the development of all its projects. A biodiversity action plan is developed for operated production sites located in the most sensitive protected areas, corresponding to the UICN I to IV or Ramsar categories.

The biodiversity action plan developed in 2015 for Djeno in the Republic of the Congo is currently being deployed. A second plan had been developed on the Atora site in Gabon, which was sold in 2017. Other plans will be developed in the short term, in particular in Italy (the Tempa Rossa project), or in the medium term, in Uganda (the Tilenga project), in Tanzania (the EACOP project) and in Papua New Guinea (the PAPUA LNG project).

In addition to applying the general principles of the Group's biodiversity policy, TOTAL has agreed to meet the performance standards of the International Finance Corporation (IFC, World Bank) for its Tilenga, Papua LNG and EACOP projects, in order to take the particularly sensitive biodiversity of certain sites into consideration. In this respect, TOTAL can set itself a target of a net gain in biodiversity due to the possible impacts of these projects on critical habitats, by adopting the "Avoid-Mitigate-Compensate" approach, and by avoiding wherever possible. Teams manned by specialists in biodiversity and ecosystem services have been formed to focus on societal matters and the environment. For the most sensitive projects, like the one in Uganda, for example, "Biodiversity and means of subsistence" committees have been set up with external stakeholders from national and international organizations, who are specialized in the protection of nature and relations between communities and the wild fauna. These committees are tasked with ensuring that best practices are properly implemented by TOTAL in its operations, so that it achieves its targets of net gains in biodiversity, which are currently one of the best biodiversity management practices.

The Group actively contributes to the development of best practices related to biodiversity and ecosystem management in the extractive industry through its partnerships with IPIECA, the Cross-Sector Biodiversity Initiative (which brings together the Equator Principles signatory banks and the mining and oil industries), the United Nations Environment Program's World Conservation Monitoring (UNEP-WCMC) and other work groups on biodiversity bringing together stakeholders from beyond the private sector, such as the Business and Biodiversity Offset Program (BBOP), which includes international NGOs, governments, universities, the World Bank, etc. In France, TOTAL continues its partnership with the *Fondation pour la Recherche sur la Biodiversité* (Foundation for biodiversity research) and the *Centre Vétérinaire de la Faune Sauvage et des Ecosystèmes des Pays de la Loire* (France).

5.2.3 Climate change



The Group's strategy incorporates the challenges of climate change and adopts the International Energy Agency's (IEA) Sustainable Development Scenario (2°), which is compatible with limiting global warming to 2°C, as its reference framework. TOTAL's challenge is to increase access to affordable energy to satisfy the needs of a growing population, while providing concrete solutions to help limit the effects of climate change and supplying its clients with an energy mix featuring a progressively decreasing carbon intensity.

TOTAL focuses its action around the following priority areas:

- developing natural gas as the primary energy source due to its lower carbon intensity among fossil energies;
- given the carbon budget allocated in a 2°C scenario, selecting and developing hydrocarbon projects based on their economic merit order, which incorporates their resistance to low price scenarios;
- developing the solar energy offer as the renewable energy of choice in the evolution of the energy mix, as well as the production of biofuels from biomass;
- improving the energy efficiency of the Group's facilities, products and services, and maintaining efforts to reduce direct emissions of greenhouse gases (GHG);
- increasing access to more sustainable energy, for as many people as possible, particularly by means of innovative solar energy solutions;
- stimulating initiatives in the oil and gas sector and supporting the implementation of an international framework on climate.

5.2.3.1 The role of gas

The percentage of natural gas in the Group's production rose from approximately 35% in 2005 to nearly 48% in 2017, and, taking account of market developments in particular, this percentage is expected to increase over the coming years.

In 2016, the Group acquired the Belgian company Lampiris in line with the goal to expand over the entire gas value chain until the end customer. Within a few years, Lampiris became the third-largest⁽¹⁾ supplier of natural gas, green power and energy services (e.g., insulation, boiler maintenance, wood and pellets for heating, smart thermostats, etc.) in the Belgian market and is starting to extend its business in France. In October 2017, TOTAL also launched its new Total Spring natural gas and green electricity offer for private individuals in France. This offer aims to quickly win over three million customers.

In November 2017, the Group signed an agreement with Engie relating to the planned acquisition of its portfolio of upstream liquefied natural gas (LNG) assets. This portfolio includes stakes in liquefaction

plants, and in particular an interest in the Cameron LNG project in the United States, long-term LNG sale and purchase agreements, a fleet of LNG tankers and access rights to regasification terminals in Europe. The acquisition of Engie's upstream LNG business offered TOTAL an opportunity to speed up its integrated gas chain strategy.

The Group believes in the essential role of natural gas as one of the solutions to climate change issues. Replacing coal with natural gas at power plants could help reduce worldwide CO₂ emissions by 5 Bt/y, i.e., approximately 10% of world emissions⁽²⁾. Strengthening the position of gas in the energy mix must however be accompanied by a greater focus on control of methane emissions. To preserve the advantage that gas offers in terms of GHG emissions compared to coal for electricity generation, it is necessary to strictly reduce the methane emissions associated with the production and transportation of gas.

TOTAL's methane emissions specifically associated with gas production are less than 0.5% of the Group's marketed operated gas production. Improving measurement of these emissions and their reduction is a priority for TOTAL in terms of environmental impact.

On this basis, since 2014 the Group has been a member of the partnership between governments and industrial companies for the improvement of tools to measure and control methane emissions set up by the Climate and Clean Air Coalition and promoted by UN Environment and the non-profit organization Environmental Defense Fund. The Group also took several actions as part of the Oil & Gas Climate Initiative (refer to point 5.2.3.6 of this chapter) and signed the guiding principles on the reduction of methane emissions by the gas value chain⁽³⁾.

5.2.3.2 Project selection

In its strategy for growth, TOTAL prioritizes its projects by focusing on assets with moderate production and processing costs, while respecting the highest safety and environment standards.

Furthermore, the Group ensures sustainability of its projects and long-term strategy relative to climate change issues by the incorporation into financial evaluations of its investments submitted to the Executive Committee a long-term CO₂ price of \$30 to \$40 per ton (depending on the crude price), or the current CO₂ price if this is higher in a given country. This price is consistent with promoting gas over coal in power generation and encouraging investment in research on low-carbon technologies.

Moreover, with respect to coal, the Group ceased all production activity in 2015 and all marketing activity in 2016. In 2016, the Group withdrew from a project involving construction of a coal-based facility, coal-to-olefins, in China.

(1) Company data.

(2) Source: IEA.

(3) Signatory companies: BP, Statoil, Eni, Shell, ExxonMobil, TOTAL, Repsol, Wintershall.

5.2.3.3 Developing renewable energies

For some 15 years, TOTAL has been committed to developing renewable energies.

Solar power is the Group's preferred area of development. These activities are owned by the Gas, Renewables & Power segment and are presented in point 2.2 of chapter 2.

This segment is also present in energy storage through its Saft Groupe subsidiary, specialized in high-technology batteries, which are essential to the development of intermittent renewables.

In parallel, in November 2016, the Marketing & Services segment launched a five-year program to equip 5,000 service stations across the world with photovoltaic panels, including 800 in France. The project corresponds to an installed capacity of around 200 MW, equivalent to the electricity used by a city with a population of 200,000.

In addition to solar energy, biomass is TOTAL's second strategic development area in the field of renewable energies. In general, biomass represents approximately 10% of worldwide energy consumption and is mostly used for heating or cooking purposes. Biomass is the only directly substitutable renewable alternative to fossil resources for the provision of liquid fuel for transport (biodiesel, bioethanol, biokerosene), lubricants and base molecules for chemicals (solvents or polymers). These activities are owned by the Refining & Chemicals segment and are presented in point 2.3.1 of chapter 2.

5.2.3.4 Energy efficiency and eco-performance

In its scope of activities, TOTAL has made reducing GHG emissions one of its priorities. Since 2010, the Group has reduced the GHG emissions produced by its operated activities by 30%. This reduction entails reducing associated gas flaring and improving energy efficiency.

GHG emissions (in Mt CO ₂ eq) ^(a)	2017	2016	2015
Scope 1: Operated direct GHG emissions (100% of emissions from sites operated by the Group)	36	39	42
Scope 1: Group share of direct GHG emissions	50	51	50
Scope 2: Indirect emissions attributable to energy consumption by sites	4	4	4
Scope 3: Other indirect emissions Use by customers of products sold for end use	400	420	410

(a) For further information on the methods involved for these indicators, refer to point 5.4.4.2 of this chapter.

Reducing flaring

Reducing routine flaring has been a long-standing goal of the Group, with a commitment made in 2000 to have no continuous flaring of associated gas incorporated into the design of its new projects. Furthermore, the Group has supported the World Bank in developing and launching the Zero Routine Flaring initiative involving oil & gas companies, producing countries and international institutions. The initiative aims to support elimination of routine flaring by 2030.

To ensure progression, an objective to decrease by 80% has been defined for 2020 compared to 2010, in other words, to achieve an average of 1.5 Mm³/d. This objective is reached in 2017.

Furthermore, as part of the Global Gas Flaring Reduction program, TOTAL has worked alongside the World Bank for over 10 years to help producing countries and industrial players control routine flaring of associated gas.

Flaring	2017	2016	2015
Global volumes of flared gas flared (in Mm ³ /d)	5.4	7.1	7.2
Including routine flaring (in Mm ³ /d)	1.0	1.7 ^(a)	2.3 ^(b)

(a) Volume estimated based on data as of end of 2016, according to the new routine flaring definition published in June 2016 by the working group of the Global Gas Flaring Reduction program.

(b) Volumes estimated based on available historical data.

The decrease of the global flaring is mainly due to a significant improve in West of Africa, particularly in Angola, where compression upsets have been solved.

Improving the energy efficiency of the Group's facilities

One of the Group's performance targets is to better control energy consumption. Since the beginning of 2013, a Group directive has defined the requirements to be met at operated sites using more than 50,000 tons of oil equivalent per year of primary energy (approximately 40 sites). At year-end 2017, 100% of the concerned sites reported compliance or had engaged the actions to meet compliance with this directive.

Energy efficiency is a key factor for improvement of economic, environmental and industrial performance. Since 2013 the Group has used a Group Energy Efficiency Index (GEEI) to assess its performance in this area. It consists of a combination of energy intensity ratios (ratio of net primary energy consumption to the level of activity) per business.

The Group's objective for the 2010-2020 period is to improve the energy efficiency of its operated facilities by on average 1% per year. By design, the base value of the GEEI was defined as 100 in 2010 and the goal is to reach 90.4 in 2020.

Energy efficiency	2017	2016	2015
Net primary energy consumption (TWh)	137	146	153
Group Energy Efficiency Index GEEI (base 100 in 2010)	85.7	91.0	90.8

The achievement of this objective in 2017 is mainly due to the significative decrease of the global gas flaring in 2017.

In addition to the mandatory audits conducted in Europe as per transposition of the European Energy Efficiency Directive 2012/27/EU, the Group is implementing energy management systems based on ISO 50001. The Leuna refinery and the bitumen plant in Brunsbüttel (Germany) have been certified for several years, and the French refining and petrochemicals plants have been ISO 50001 certified since 2017. The Zeeland refinery (the Netherlands), in which TOTAL holds a 55% stake, was also certified in 2017. In the Marketing & Services segment, the industrial site in Brunsbüttel (Germany) and the lubricants blending plant in Dubai (United Arab Emirates) have been ISO 50001 certified for several years. The blending plant at Ertvelde (Belgium) was audited at the end of 2017 with a view to obtaining ISO 50001 certification. In France, the scope of Total Marketing France's ISO 50001 certification covers 179 stations, 7 oil depots and 2 office buildings housing the management of the Nantes and Lyon regions.

In the coming years, the certification process will be deployed more broadly in Europe in a more global manner. In Exploration & Production, Total ABK (Abu Dhabi) also obtained this certification in early 2016.

TOTAL uses the most appropriate architectures and equipment and introduces technological innovations. For example, on offshore production barges, offshore platforms and onshore facilities, heat recovery systems at gas turbine exhausts have been implemented thereby avoiding the need for furnaces or boiler systems.

Improving the environmental footprint of products and services

Approximately 85% of GHG related to the use of oil and gas are emitted during the customer usage phase, compared to 15% during the production phase⁽¹⁾. For this reason, in addition to the measures taken by TOTAL at its industrial sites, the Group believes that improving the environmental footprint of its products is a key factor in the fight against climate change.

The Group offers its customers solutions (products and services) for responsible energy use. In terms of energy services, TOTAL draws in particular on the know-how of its Tenag joint venture in Germany (49% owned) and BHC Energy in France acquired in 2014. These service companies work mainly for European customers, as well as in Africa and the Middle East. They use results obtained in-house to give industrial customers advice on improving their performance and energy efficiency. In 2017, the Group also acquired Greenflex, in a move to speed up the development of its offer on the energy efficiency market.

Through the "Total Ecosolutions" program, the Group is also developing innovative products and services that perform above market standards on the environmental front, in particular in terms of reducing energy use, GHG emissions and the impact on human health. At year-end 2017, 93 products and services bore the "Total Ecosolutions" label. They relate to a variety of sectors, including mobility, agriculture, buildings, packaging, infrastructure and industrial manufacturing. Some of the products result in reduced energy consumption, such as TOTAL Excellium fuel, the TOTAL Quartz Fuel Economy lubricant, and the Azalt[®] ECO² and Styrelf[®] ECO² bitumen ranges. Others, such as the new BioLife range of special fluids derived from raw materials from fully certified renewable sources, enable a significant reduction in environmental impact (compared to the fossil equivalent).

The CO₂ eq emissions avoided throughout the life cycle by the use of "Total Ecosolutions" products and services, compared to the use of benchmark products on the market and for an equivalent level of service, are measured annually based on sales volumes. This represented 1.85 Mt CO₂ eq in 2017.

In addition to its efforts on facilities and solutions offered to its customers, since 2012 the Group has provided support for its employees in France on improving the energy efficiency of their homes through advice and help with the necessary investment. Since this offer was launched, the Group has helped about 2,600 energy renovation operations.

In November 2017, TOTAL signed an agreement with the Fondation GoodPlanet, chaired by Yann Arthus-Bertrand, for the implementation of a program to neutralize the carbon emissions from air travel by Group employees, over a 10-year period. This project will

avoid 50,000 t of CO₂ emissions into the atmosphere per year. It will entail the creation and operation of 8,400 biodigesters in India.

Progressing in carbon capture, usage and storage technologies

The development of carbon capture, utilization and storage technologies (CCUS) has been a long-standing Group commitment, in particular through its Lacq pilot project conducted from 2010 to 2013 (oxy-combustion capture and storage in a depleted reservoir). The Group systematically studies opportunities to re-inject the CO₂ contained in the deposits it exploits and is looking at use of CO₂ to improve hydrocarbon recovery. Building on these experiences, TOTAL believes it is important to continue its R&D efforts in various fields including maturity of capture technologies, availability and location of storage capacities, CO₂ usage, technical feasibility on the scale needed and reducing costs of technologies. With this goal in mind, TOTAL intends to devote up to 10% of its R&D investments to CCUS and has initiated work alongside its peers, within the Oil & Gas Climate Initiative, on the issues of marketability, capture technologies and world storage capacities.

In October 2017, Statoil, Shell and TOTAL entered a partnership agreement to develop a CO₂ storage project on the Norwegian continental plate. The project is one of the initiatives taken by the Norwegian authorities to develop Carbon Capture and Storage in Norway on an industrial scale.

5.2.3.5 Access to energy

Since 2010, almost 50 Group subsidiaries have been part of the "Total Access to Energy" program, a source of initiatives for identifying and testing solutions that facilitate access to energy for the poorest populations.

The World Bank estimate for the number of people without access to electricity has exceeded 1 billion. In 2011, as part of its access to energy program, TOTAL launched a commercial offer of decentralized energy solutions for the populations of emerging countries, mainly in Africa.

First launched in four pilot countries in 2011, TOTAL's solar solutions for access to energy were distributed in 45 countries by 2017. By the end of 2017, 2.3 million lamps and solar kits had been sold, improving the day-to-day lives of nearly 10 million people. The distribution channels used are both TOTAL's traditional networks (service stations) and "last mile" networks built with local partners to bring these solutions to isolated areas. Reseller networks are then set up and economic programs developed with the support of external partners to recruit and train young solar resellers.

The model is based on innovative partnerships with various stakeholders: in 2017, approximately 50 business partnerships were launched with such varied stakeholders as NGOs, development agencies, professional customers (retailers, TOTAL key account customers, etc.), telecommunications operators or international organizations.

The Group's goal is to further develop this program and reach out to 25 million people in Africa by 2020 on a continent that is at the core of TOTAL's global strategy.

(1) Source: IPCC and IEA.

5.2.3.6 Sector initiatives and international framework

In 2014, TOTAL decided to join the call of the UN Global Compact, which encourages companies to consider a CO₂ price internally and publicly support the importance of such a price via regulation mechanisms suited to the local context. TOTAL is also working with the World Bank as part of the Carbon Pricing Leadership Coalition (CPLC). In particular, TOTAL advocates the emergence of a balanced, progressive international agreement that prevents the distortion of competition between industries or regions of the world. Drawing attention to future constraints on GHG emissions is crucial to changing the energy mix. TOTAL therefore encourages the setting of a worldwide price for each ton of carbon emitted, while ensuring fair treatment of “sectors exposed to carbon leakage” (as defined by the EU). To this end, six oil & gas industry leaders, including the Group’s Chairman and Chief Executive Officer, called for the setting up of carbon pricing mechanisms at the UN Framework Convention on Climate Change in June 2015. In June 2017, TOTAL also became a founder member of the Climate Leadership Council, an initiative launched mainly by businesses, but also by personalities, to demonstrate the importance of finding solutions to the climate challenge that will support the economy and protect the environment.

Substituting coal with gas in the electricity-generating sector is one fastest and cheapest way of reducing worldwide CO₂ emissions. This solution is immediately available and offers the necessary flexibility to electric networks, supplementing intermittent energies. As a result, TOTAL supports standards that impose emission ceilings on electricity generation, such as those in force in the United Kingdom.

In 2014, TOTAL was actively involved in launching and developing the Oil & Gas Climate Initiative (OGCI), a global industry partnership. At year-end 2017, this initiative involved 10 major international energy players. Its purpose is to share experiences, advance technological solutions and catalyze meaningful action in order to assist the evolution of the energy mix in a manner that takes into account

climate change issues. In 2016, the OGCI announced the creation of a one-billion-dollar investment fund over 10 years. This OGCI Climate Investments fund will finance startups and projects demonstrating high potential in terms of reducing greenhouse gas emissions. In October 2017, OGCI Climate Investments announced its first investments in CCUS and energy efficiency in transport. The OGCI also announced its ambition to aim for almost zero methane emissions.

TOTAL is the technical partner of the Breakthrough Energy Coalition (a \$1 billion fund), and in this capacity should help identify investment priorities and evaluate viable technologies.

TOTAL also actively participates in the debate on climate issues, thanks to its partnerships with key stakeholders. For example, TOTAL funds research programs in France conducted by the ADEME, Paris-Saclay and the Climate Economics Chair at Paris-Dauphine University, as well as the Massachusetts Institute of Technology (MIT) in the United States. Lastly, TOTAL offers training and makes presentations at several universities, thereby taking part in the debate.

5.2.3.7 Adapting to climate change

The Group ensures that it assesses the vulnerability of its facilities to climate hazards so that the consequences do not affect the integrity of the facilities, or the safety of people. More generally, natural hazards (climate-related risks as well as seismic, tsunami, soil strength and other risks) are taken into account in the conception of industrial facilities, which are designed to withstand both normal and extreme conditions. The Group carries out a systematic assessment of the possible repercussions of climate change on its future projects. These analyses include a review by type of risk (e.g., sea level, storms, temperature, permafrost) and take into account the lifespan of the projects and their capacity to gradually adapt. These internal studies have not identified any facilities that cannot withstand the consequences of climate change known today.

5

5.2.4 TCFD (Task Force on Climate-related Financial Disclosures)



In June 2017, the TCFD (Task Force on Climate-related Financial Disclosures) of the G20’s Financial Stability Board published its final recommendations on information pertaining to climate to be released by companies. These recommendations include additional details for certain sectors, such as energy.

After analyzing the final report, TOTAL publicly announced its support for the TCFD and its recommendations during the summer of 2017, while noting that it is up to companies to define the information about climate-related risks and opportunities that is material, which should, consequently, be disclosed in financial filings, and the additional information that they choose to report on a voluntary basis. TOTAL also believes that the quantification of impacts of different scenarios may not be relevant to investors as assumptions made by different companies may strongly diverge. The Group considers that companies have a major role to play in shaping how these issues

evolve and that the modalities of the application of scenarios and the use of metrics should be further studied.

TOTAL is continuing to dialogue as part of the Oil & Gas Preparer Forum set up by the TCFD in the autumn of 2017 with a view to publishing best applicable practices, in particular for the oil and gas sector. TOTAL also joined the initiative launched by the WBCSD in December 2017 by signing the “CEO Guide to Climate-related Financial Disclosures”.

Below, TOTAL gives details of how the Group implements the TCFD’s recommendations, according to the four pillars, and how it intends to launch an initiative for continual improvement in this field.

The table in point 5.2.4.5 of this chapter identifies the actions taken by the Group with regard to all of these recommendations.

5.2.4.1 Governance

TOTAL's strategic approach takes full account of climate-related issues, which are also taken into consideration in the changes brought to the organization of the Group. The Group's ambition to become the leader in responsible energy is reflected by the implementation of the One Total project, which gave rise to a new organization that came into full effect on January 1, 2017, and includes in particular:

- a new Gas, Renewables & Power business segment, whose President is a member of the Executive Committee, which spearheads the Group's ambitions in low-carbon and energy efficiency businesses; and
- a Strategy-Innovation corporate division, which includes a Strategy & Climate division tasked with incorporating climate issues into the Group's strategy.

Oversight by the Board of Directors

TOTAL's Board of Directors ensures that climate-related issues are incorporated into the Group's strategy. Since 2008, these major issues for the Group have no longer been treated as one component of environmental risks, but rather on an independent basis.

Every year, the Board of Directors reviews the main issues related to climate change in the strategic outlook review of the Group's business segments, which are presented by the respective general management structures.

Also, the Audit Committee does more specific work on the climatic and environmental reporting processes in the review of the performance indicators published by TOTAL in its annual reports and audited by an independent third-party organization.

In 2016, the Compensation Committee also decided to introduce changes to the variable compensation of the Chairman and Chief Executive Officer to take better account of the achievement of Corporate Societal Responsibility (CSR) and HSE targets.

Finally, in September 2017, the Board of Directors decided to change the regulations of the Strategic Committee in order to broaden its missions in the realm of CSR and in questions relating to the inclusion of climate-related issues in the Group's strategy. This committee is now called the Strategic & CSR Committee.

The Board of Directors is fully mobilized by this issue in order to support the development of TOTAL, and it approved the publication of the first Climate Report in March 2016. This report is updated every year.

Role of management

TOTAL's Chairman and Chief Executive Officer deploys the Group's climate strategy in keeping with the long-term strategic guidelines defined by the Board of Directors.

General Management calls on the Senior Vice President Strategy & Climate, who is the highest-ranking person in the organization with a day-to-day responsibility for issues related to climate change. In particular, this includes the development of the climate road map for the Group, its implementation and the definition of targets to reduce the carbon footprint. He reports directly to the Senior Vice President Strategy & Innovation, who sits on TOTAL's Executive Committee (refer to the Group organization chart in chapter 1).

The Executive Committee relies on the work done by the Group Risk Management Committee to have a map of the climate-related risks to which the Group is exposed, and to make sure that the risk management measures in place are efficient.

Moreover, the Risk Committee (CORISK) assesses investment projects, the risks and the corresponding climate-related issues (flaring, greenhouse gas emissions, sensitivity to CO₂ prices) before they are presented to the Executive Committee.

Finally, the Senior Vice President Climate chairs the Climate-Energy steering committee, which includes transverse Holding functions and representatives of Strategy and HSE management from the various business segments. The mission of this committee consists of structuring the Group's approach to the climate, and in particular of:

- developing and periodically adjusting the Group's climate-energy roadmap;
- proposing the targets that the Group sets itself (in terms of energy efficiency, GHG emission reductions, etc.);
- keeping a watch of the existing or emerging CO₂ markets; and
- initiating or driving the technological roadmaps corresponding to these subjects (energy efficiency, capture and storage of CO₂, for example).

5.2.4.2 Strategy

Identification of climate-related risks and opportunities

The risks and opportunities related to climate change are analyzed according to different timescales: short term (until 2020), medium term (until 2030) and long term (beyond 2030).

As mentioned in point 5.2.4.1 of this chapter, the risks related to climate change are identified in the analysis of investment projects and their impact is also examined for the entire Group portfolio. These risks are presented in detail in point 3.1.2 of chapter 3.

Climate change also provides TOTAL with opportunities:

- in the coming decades, demand for electricity will grow faster than the global demand for energy, and the contribution of renewables and gas to the production of electricity is essential to the success of the 2°C scenario. This represents an opportunity for TOTAL. Access to energy and decentralized production are part of this opportunity;
- but electricity alone will not be sufficient to meet all the needs, and in particular those of transport: gas and biofuels are amongst the solutions that the Group intends to develop;
- speeding up the development of CO₂ capture, utilization and storage technologies (CCUS) is a source of opportunities to meet the needs of various industries (electricity generation, but also cement works, steel works, waste treatment, etc.); and
- helping customers to reduce their energy costs and environmental impact also offers opportunities, as part of a trend that will be accelerated by digital technology. TOTAL intends to innovate in order to provide them with new product and service offers that will support their energy options and their usages. The promotion of hybrid solutions combining hydrocarbons and renewables is part of this approach. Similarly, services can be offered to optimize energy for industrial sites. The Group aims to develop this approach for industrial and mobility applications.

Impact of climate-related risks and opportunities

Climate-related issues are at the heart of the strategic vision implemented by the company, on the basis of the International Energy Agency's Sustainable Development Scenario (2°C).

Beyond the reorganization of the Group, the impact of the risks and opportunities related to climate change is reflected in TOTAL's climate strategy by the following paths of action:

- 1. Improving the carbon intensity of the hydrocarbon production mix with at least 60% of gas in 20 years:
 - developing an offensive strategy for gas, while limiting methane emissions. In 2017, TOTAL has announced the acquisition of the LNG assets portfolio of Engie,
 - selecting and developing hydrocarbons projects that are amongst the most competitive in terms of meeting the highest safety and environmental standards (reduction of exposure in oil shale in Canada; no oil exploration activities in oil fields under sea ice in the Arctic),
 - progressing in CO₂ capture, utilization and storage technologies: up to 10% of R&D investments dedicated to CCUS and the work done by the OGCI (marketability issues, capture technologies and worldwide storage capacities),
 - supporting the introduction of carbon pricing mechanisms: since 2008, TOTAL has incorporated a long-term CO₂ price of \$30 to 40/t in the economic assessment of its investments, according to the crude oil scenario, or the applicable price, if higher in a given country,
 - halt of coal activities since 2016.
- 2. Developing low-carbon activities to supply electricity. TOTAL intends that the low-carbon activities that contribute in particular to the production of electricity, will account for almost 20% of its portfolio in 20 years. This includes the downstream gas-electricity chain, renewables and energy storage. TOTAL also promotes the use of biofuels. The objectives are:
 - to continue developing renewable energies. TOTAL has developed solar energy since 2011, through SunPower. Since 2016 the acquisition of Lampiris supports the strategy to develop gas and electricity marketing activities. In 2017, the entering into of an agreement with EREN Renewable Energy continues this approach,
 - developing energy storage activities: the acquisition of Saft Groupe in 2016 shall enable the integration of activities related to electricity storage solutions, which are essential to the development of renewables,
 - developing bioenergies: TOTAL has been producing bioenergy for more than 20 years. With the start-up of La Mède, the Group will have a world-scale biorefinery (500,000 t/year). TOTAL has also set up a JV with Corbion Plastics (100% biodegradable polymers from renewable sources),
 - favoring access to energy: TOTAL has deployed an affordable solar lamps offer since 2011. The aim of the Group is to provide access to electricity to 25 million people in Africa by 2020.
- 3. Improving energy efficiency:
 - continuing the drive to cut greenhouse gas emissions from the Group's facilities,
 - providing responsible energy usage solutions for customers (acquisition of GreenFlex in 2017).

In parallel to these three paths of action, TOTAL is actively committed to these issues in international organizations and initiatives, and in particular the OGCI, which has an ambitious working program for the years to come. OGCI Climate Investments is a one-billion-dollar fund set up by the members of the OGCI, who wanted to make a concrete commitment to the climate together. They represent 20% of worldwide production of oil and gas and 10% of worldwide energy production. This fund was set up to support projects and technologies that can significantly cut emissions. Priority will go to the capture, utilization and storage of CO₂, the reduction of methane emissions and energy efficiency.

Resilience of the organization's strategy

The Group's strategy incorporates the challenges of climate change, using as a point of reference the 2°C Sustainable Development scenario of the IEA and its impact on energy markets.

The Group ensures sustainability of its projects and long-term strategy relative to climate change issues by the incorporation into financial evaluations of its investments submitted to the Executive Committee a long-term CO₂ price of \$30 to \$40 per ton (depending on the crude price), or the current CO₂ price if this is higher in a given country.

Regulations designed to gradually limit fossil fuel use may, depending on the GHG emission limits and time horizons set, negatively and significantly affect the development of projects, as well as the economic value of certain of the Group's assets. Internal studies conducted by TOTAL have shown that a long-term CO₂ price of \$40/t⁽¹⁾ applied worldwide would have a negative impact of around 5% on the discounted present value of the Group's assets (upstream and downstream)⁽²⁾. [REDACTED SECTION: CERTAIN TEXT HAS BEEN REDACTED.]

5

5.2.4.3 Risk management

Processes to identify and assess risks related to climate change

As described in point 5.2.4.1, the risks related to climate issues belong to the major risks identified and analyzed by the Group Risk Management Committee, which assists the Executive Committee. The Risk Committee (CORISK) also checks the analysis of the various risks incurred by investment projects before they are submitted to the Executive Committee, and climate-related risks in particular.

Processes to manage risks related to climate change

TOTAL's risk management procedures are described in point 5.3.4 of chapter 3.

Integration of climate-related risks into global risk management

The risks related to climate issues are part of the major risks identified and analyzed by the Group Risk Management Committee, and they are fully integrated in TOTAL's global risk management processes.

(1) As from 2021 or the current price in a given country.

(2) Sensitivity calculated for a crude oil price of \$60/80/b compared to a reference scenario that takes into account a CO₂ price in the regions already covered by a carbon pricing system.

5.2.4.4 Metrics and targets

Metrics to measure climate-related risks and opportunities

TOTAL uses the indicators described in detail in point 5.2.3 of this chapter to measure its performance in terms of climate change.

GHG emissions and related risks

Scope 1 and 2 GHG emissions, and the most significant items in Scope 3 of TOTAL's GHG emissions are addressed in detail in

point 5.2.3 of this chapter. All this data and the related risks are also reported to the CDP once a year, and TOTAL's response to the CDP questionnaire is posted on the Group's website (total.com).

Targets used to manage climate-related risks and opportunities

The objectives defined and the indicators used by TOTAL to measure its performance in terms of climate change are described in detail in point 5.2.3 of this chapter.

5.2.4.5 TCFD correspondence table

Thematic area	Recommended TCFD disclosures	Source of information in TOTAL's reporting
Governance		
Disclose the organization's governance around climate-related risks and opportunities.	a) Describe the board's oversight of climate-related risks and opportunities.	RD 2017 – 5.2.4.1 CC p. 9
	b) Describe management's role in assessing and managing climate-related risks and opportunities.	RD 2017 – 5.2.4.1 CC pp. 5-8 – CDP p. 3
Strategy		
Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	RD 2017 – 5.2.4.2 CDP pp. 21-35
	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	RD 2017 – 5.2.4.2 CDP pp. 8-9
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	RD 2017 – 5.2.4.2 CC p. 30
Risk Management		
Disclose how the organization identifies, assesses, and manages climate-related risks.	a) Describe the organization's processes for identifying and assessing climate-related risks.	
	b) Describe the organization's processes for managing climate-related risks.	RD 2017 – 5.2.4.3 CDP pp. 6-9
	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	
Metrics & targets		
Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	RD 2017 – 5.2.4.4 CC p. 48 CDP pp. 36-50
	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	
	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	RD 2017 – 5.2.4.4 CC p. 22-38 CDP pp. 13-19

Key:

CC = TOTAL's 2017 Climate Report

CDP = TOTAL's 2017 response to the CDP Climate Change questionnaire (available on total.com)

5.3 Societal information

The Group's societal actions contribute to the achievement of its goal to become a major in responsible energy. TOTAL puts its societal responsibility at the heart of its activities, in keeping with its values and the principles formally set forth in its Code of Conduct and its Safety Health Environment Quality Charter, with a view to controlling its impacts and providing concrete solutions, in order to create value shared with all its stakeholders.

The Group's integration policy in the regions where it operates is founded on three pillars:

- dialogue and involvement of local stakeholders;
- control of the societal impacts of the Group's activities; and
- acting as a socio-economic partner in the territories where the Group is present.

In line with the strategic directions defined by the General Management, annual internal reporting tools are used to track and monitor overall societal performance.

5.3.1 Dialogue and involvement of local stakeholders



Openness, dialogue and engagement are essential for developing long-term, constructive and transparent relations with stakeholders. For the past 20 years or so, changes in the regulatory framework have promoted information, consultation and dialogue prior to high-impact investment decisions being made.

5.3.1.1 Stakeholder consultation

In addition to complying with regulations, TOTAL encourages dialogue at every level of its organization. The Group societal directive stipulates that each entity regularly consults its stakeholders to gain a clearer understanding of their expectations and concerns, measure their level of satisfaction regarding the Group and identify avenues of improvement for its societal approach.

As a preliminary step, the stakeholders are identified, mapped out and prioritized depending notably on their expectations. The entity or the subsidiary engages in structured dialogue with its stakeholders in four iterative steps:

- information (on the activities of the entity that could produce negative impacts, the actions taken to mitigate these impacts and the benefits produced by the current or planned activities);
- consultation (listening to opinions, concerns, perceptions and expectations);
- consideration of the consultation (inclusion in the action plans);
- feedback to the stakeholders (on the actions taken).

In Exploration & Production, dialogue is initiated within the framework of societal baseline studies carried out to identify at a very early stage (even before the start of operational activities) stakeholders that may potentially be affected and to understand the human socioeconomic context of the area in question. The Community Liaison Officer (CLO) maintains a dialogue between the subsidiary and the local communities. CLOs, who are employees of TOTAL and come from the local community and therefore speak the local language and understand local customs; as such they often play a key role in integrating the Company into the local context. To formalize and organize relations with stakeholders, agreements may also be signed and meetings held, such as public consultations.

By way of example, in the EACOP project to build a pipeline between Uganda and Tanzania, two CLOs were recruited on the Ugandan

side, and six on the Tanzanian side, to establish continual dialogue with the impacted communities. Nine more CLOs should be recruited in 2018.

In addition to holding regulatory forums for dialogue, Refining & Chemicals has set up voluntary structures for dialogue with local stakeholders (such as Community Advisory Panels in the United States and special local commissions for some European platforms). In application of the worldwide Responsible Care® voluntary charter covering the scope of its worldwide petrochemical activities, Refining & Chemicals consults its stakeholders in order to understand their concerns and offer an appropriate response.

These instances of dialogue aim to establish constructive and lasting exchanges with the stakeholders on subjects of mutual interest: security and safety, nuisances, the environment, but also local events organized by the stakeholders.

These meetings are opportunities for the site management to get to know the local stakeholders and understand their concerns, to build trustful relations with them and a common industrial culture that favors the acceptability of the activities of the Group's entities.

5.3.1.2 Deploy efficient societal management systems

To put its societal approach on a professional footing, TOTAL has applied its internal Stakeholder Relationship Management (SRM+) methodology since 2006. The aim is to identify and map out the main stakeholders and the societal issues in the local context, understand their views and issues, and then define an action plan for building a long-term trusting relationship. These discussions allow the Group to better address the expectations and consolidate the societal strategy of the subsidiaries and sites. Since 2006, SRM+ has been implemented in over 100 entities, and the deployment continued in 2017:

- in two subsidiaries of Exploration & Production (in Nigeria, which is in the production phase, and Uganda, where the subsidiary is currently in the pre-project phase);
- at Refining & Chemicals, on the Grandpuits-Gargenville and Carling platforms in France. In this latter case, the deployment took place following the implementation of a project to prepare the transformation of the industrial activities on the site in the future.

At Marketing & Services, a specific module, developed in 2012, has now been deployed in almost all the countries in the scope. At the end of 2016 and 2017 it was deployed notably in Bangladesh, Brazil, China, Côte d'Ivoire, France, Poland, Romania and Vietnam.

The Group also developed the MOST (Management Operational Societal Tool) tool that allows users to manage stakeholder relations, site-related grievances and societal projects. Specific modules

(access to land, compensation and employment) can be added to this common framework. Societal data is georeferenced, with automatic display in a geographic information system. MOST generates reports that serve as a basis for the analysis of societal performance. Using this tool, a new version of which was released in 2016, is part of the process to raise the standards of professionalism of the local teams. In 2017, 15 subsidiaries use the MOST tool.

5.3.2 Control of the societal impacts of the Group's activities



The societal initiative is integrated into operational processes using the internal management system covering occupational health and safety, security, societal commitment and the environment, known as MAESTRO (Management And Expectations Standards Towards Robust Operations). Audits conducted with MAESTRO give rise to recommendations and strengthen efforts in order to better manage the Group's operations.

5.3.2.1 Conducting impact assessments

An understanding of the socioeconomic context is gained through a baseline study, which is generally accompanied by a consultation phase involving local stakeholders.

These societal studies, which are a systematic prerequisite for Exploration & Production projects, are made before any start-up of operations in an effort to avoid, reduce, compensate or remedy any negative impacts. By way of example, in Papua New Guinea, the environmental and societal baseline assessment lasted two years, from September 2015 to September 2017. It covered areas such as the socio-cultural, economic and real estate context and ecosystem services.

5.3.2.2 Handling grievances from local communities

TOTAL works to provide responses to local communities and to reduce the nuisances that may be caused by its activities.

Grievance management systems are in place on every Refining & Chemicals platform. On the platforms in Feyzin, Belgium and Gonfreville, France, the gas flare safety torches have been equipped with systems to limit noise levels.

Some grievances can also be addressed with the participation of the local communities: by way of example, programs to monitor odors in the vicinity of industrial zones have been developed by the Donges and Gonfreville platforms in France in partnership with NGOs and volunteers. These programs include training in the characterization of the odors by a panel of volunteer "noses", which then take part in the monitoring of the smells coming from the sites.

At Exploration & Production, the subsidiaries received a toolkit containing a standard online procedure to handle grievances in line with the United Nations' guidelines for companies and human rights.

Three new subsidiaries (Brazil, Mauritania and Brunei) used this toolkit to set up a grievance management system in 2017. In a continual improvement initiative, the subsidiaries have also agreed to take measures to improve the performance of their grievance management systems.

A guide to raise awareness of grievance management has been available at Marketing & Services since 2014 to allow the subsidiaries and operating sites to introduce a dedicated system separate from the one used to handle commercial complaints.

In 2017, an operational grievance management system was in place in more than 135 Group subsidiaries and sites.

TOTAL acknowledges the specificities of indigenous and tribal peoples (as referred to in International Labor Organization's Convention No. 169) and has developed a Charter of Principles and Guidelines Regarding Indigenous and Tribal Peoples to be followed with communities that are in contact with its subsidiaries. This Charter encourages the use of experts in order to identify and understand these peoples' expectations and specificities, consult with them and contribute to their socioeconomic development.

In Papua New Guinea, the first stage of the application for the environmental permit for the Papua LNG project was completed in October 2016. Innovative consultations were organized with all the stakeholders. The interactive dialogue allowed for exchanges with the local communities on the content of the environmental, societal and health impact assessment (ESHIA):

- In the capital, Port Moresby, 200 people (representatives of the authorities, business, universities, local organizations and the general public) came together for two days around stands that were arranged to optimize the consultations. In this way, the visitors were able to interact freely with the Total E&P PNG Ltd. Personnel;
- In the Gulf province, a two-week tour of more than 30 villages was organized in the zone impacted by the project in order to meet more than 2,000 people. The content of the presentations was translated into the local dialects, so that all the members of the local communities could understand them and voice their comments and questions.

The comments made by all the stakeholders were then sent to the Conservation and Environment Protection Authority (CEPA), which approved the specifications of the ESHIA in December 2016.

5.3.3 Acting as a partner in the socio-economic development of the territories where the Group is present



TOTAL, which is present in 130 countries, contributes to the social and economic development of the regions that host its activities. The Group has particular responsibilities towards the communities living in the vicinity of its facilities, and strives to turn its activities into sources of concrete opportunities and solutions for them.

The Group is building a global, integrated local development approach ("in-country value") that creates synergies among all the value-creating elements for host countries (employment, subcontracting, infrastructure, support for local industries, socioeconomic development projects, education, access to energy, etc.) by promoting the Group's industrial know-how. TOTAL promotes actions that help to strengthen the capacity of individuals and local organizations to organize their development independently and durably, by favoring co-construction and partnerships with local players.

In 2017, societal actions global expenses amounts to €243 million. The perimeter used to identify societal actions evolved in 2017 in order to, on the one hand, include all actions related to dialogue, handling of impact and socio-economic development and, on the other hand, to exclude expenses linked to taxes and projects directly managed by hosting countries. According to this procedure, the amount for 2016 was €191 million. This difference is mainly due to the increasing effort made in France by the Group to help vulnerable people suffering from fuel poverty to realise fuel savings thanks to energy renovation work. In 2017, the Group also contributed to significant solidarity actions following the Harvey Hurricane disaster.

5.3.3.1 Contributing to the development of local economic activity

Developing an approach to create shared value

The Group is committed to increasing its use of local labor and subcontractors that meet the operational requirements of its activities, in particular through programs designed to train and support SMEs and important players in the local economy. TOTAL contributes to the diversification of the economy in the territories where it operates by supporting multiple local initiatives, with a particular emphasis on the improvement of skills and education.

For example, Total E&P Congo has set up an organization dedicated to the development of local content, which identifies and rates local companies that are potential subcontractors. In an effort to improve the skills of the local workforce and facilitate skills transfers, training programs have been set up to meet the needs of the Moho North project and the subsidiary's local content strategy: more than 900,000 hours of training have been delivered to managers and technicians working on the project, and to 49 technical and engineering university lecturers who will then deliver the training themselves, and to 25 local companies.

The development of local content, which focuses mainly on the supply chain, was included in an in-country value initiative to develop more local value. Still in the Republic of the Congo, a training center for future electricians was launched in cooperation with Schneider Electric, the ICAM and Don Bosco to extend the training actions beyond the project development phase. This center was inaugurated

in Pointe Noire in 2017. In the same spirit, a pilot was finalized with Bayard to develop a training module to improve young people's skills in mathematics and to give them a taste for, and access to, technical trades.

Finally, the control of local content/in-country value, which was originally driven by Exploration & Production, was centralized in 2017 in a new cross-functional management entity called Total Global Services. This organizational change will spread the expertise acquired to all of the Group's activities.

Boosting regional development and supporting major industrial changes to the Group's platforms

In addition to the jobs generated by its activities, the Group, as a responsible company, supports small and medium-sized enterprises (SMEs), particularly in France, through its Total Développement Régional (TDR) subsidiary. To help and support the economic development of SMEs and the regions, TOTAL has set up a program to examine applications for funding from French SMEs in accordance with the Group's standards.

This support is a major element in TOTAL's commitment to its industrial and economic responsibilities and takes a number of different forms within TDR that help create long-term jobs:

- financial assistance for the setting up, development or takeover of SMEs in the form of loans;
- industrial conversion assistance alongside local development bodies; and
- assistance in the development of export activities and international trade, and help for innovative SMEs.

Between 2014 and 2017, TDR has issued a total of €25.5 million in loans to 475 SME projects, thereby supporting nearly 9,600 jobs.

The Group relies on TDR for the local implementation of agreements signed with governmental authorities in connection with its industrial conversion projects. These included, for example, the future Carling and La Mède platform projects.

In Carling (France), the second steam cracker was permanently shut down in October 2015. To adapt the platform and ensure its future by restoring its competitiveness, TOTAL invested €190 million in order to develop new activities in the growing hydrocarbon resins (Cray Valley) and polymers markets. TOTAL has made a commitment to implement this industrial conversion without any lay-offs and to fulfill all of its contractual obligations with its clients and partner companies, particularly through a support fund for subcontractors.

TOTAL is committed to improving the Carling industrial platform's attractiveness by developing a shared services offer, with the aim of helping new industrial stakeholders become established at the platform. A first industrial project (SNF Coagulants, €19 million of investments and 25 direct industrial jobs) was launched on the Carling platform in 2017. In this way, TOTAL confirms its responsibility towards the employment areas in which the Group operates as well as its commitment to maintain a strong and sustainable industrial presence in the Lorraine region.

Plans to convert the La Mède refinery (France) through an investment greater than €275 million are underway to create the first French biorefinery, establish an 8 MW solar farm and set up a training center in partnership with the IFP New Energies. This project will be completed without any lay-offs.

TDR is particularly involved in providing support to the subcontractors and putting the Group's commitments into action. TDR became a qualified member of the Caban Tonkin Industrial and Innovation Platform (PIICTO) and organized a bioindustries working group from April 2016 to September 2017, hosted by the PIICTO, with the particular aim of targeting the profile of new enterprises that could become a part of the industrial fabric of the Etang de Berre.

In September 2017, the Group signed an MOU with Ecoslops, with a view to setting up an oil residue regeneration unit on the La Mède platform to produce fuels and light bitumen. This first project will support the industrial redeployment of the La Mède platform.

In Carling and La Mède, these commitments to local authorities have been set out in a Voluntary Agreement for Economic and Social Development, including Group support for SMEs (e.g., subcontractors, loans to SMEs) and industrial initiatives (e.g., improved platform structure and greater appeal, search and examination of third-party industrial projects).

On the Lacq platform in France, a TDR unit has been set up as part of Sobegi, the platform's controller, to improve the platform's marketing offer and to identify and examine third-party industrial projects that could join the platform.

In Dunkirk, in accordance with the 2012-2014 regional development framework agreement to maintain industrial activities and jobs once refining operations at the Flanders facility end, two industrial projects have been completed: the construction of a dietary phosphate production plant inaugurated in 2017 (Ecophos), and the construction of a pilot biodiesel and biofuel production plant in which the Group has a stake (BioTFuel).

Support for African entrepreneurs

At Marketing & Services, following the first "Start-upper of the year by TOTAL" challenge in 34 African countries launched in 2016 and aiming to support young entrepreneurs, 2017 was given over to supporting the 102 winners.

An entailed professional support of each winner was carried out by the subsidiaries, for each of the 50 new business projects and the 52 start-ups (less than two years old) in a range of varied sectors (agri-business, access to energy, healthcare, education and business, the environment, transport/mobility, construction/public works/real estate, video games and leisure, etc.).

The four start-uppers from the continent were supported by Bond'Innov, 10 business partnerships (sales in service stations, purchase of services, etc.) were set up, 20 external events were organized by the subsidiaries to heighten the visibility of the start-ups, 25 incubators and universities were involved, 35 customers and investors were introduced thanks to the support of TOTAL, and around 100 hours of coaching were delivered in nine countries by Seedstars.

In Africa and the Middle East, TOTAL is pursuing the "Young Dealers" program that aims to help young service station employees gain promotion to management positions.

5.3.3.2 Contribution to human and social development

Built on constructive dialogue and the determination to forge long-term relationships of trust with stakeholders, partnerships with local institutions and organizations guarantee the long-term success of projects. In all its actions, TOTAL ensures that it respects local authorities' prerogatives and teams up with NGOs that have field experience.

Local initiatives working to benefit communities

Following an analysis of the circumstances and consultation with their stakeholders, the Group's entities define their own societal action plan and become involved in a number of projects and initiatives in response to local issues, such as road safety, access to education, energy or healthcare, environmental protection, and solidarity and neighborly relations, with the emphasis on projects that promote cooperation and skills development. The involvement of stakeholders right from the start is often a key element in the success of these projects.

At Exploration & Production, more than 400 people work in societal matters, over 360 of which on a full-time basis. Several in-house training modules have been created for all Group employees. In 2017, two training sessions were organized specifically for CLOs in Uganda (15 participants) and Papua New Guinea (18 participants).

In addition, specific training courses for societal correspondents and operational managers are organized throughout the year and incorporated into the HSE training program.

In order to reach a wider in-house audience on the Group's sites and at the subsidiaries, a societal e-learning module has been put on line. It uses various examples of good practice to explain and illustrate the societal approach.

Promoting mobility for as many people as possible and fighting fuel poverty

As a driving force for mobility, in association with other companies (Renault, Allianz, La Poste, etc.), TOTAL is testing a "mobility club" scheme to support individuals who need a business vehicle and are in financial difficulties due to their personal situation. The member companies of the club offer a lease solution with an option to buy, combined with finance, servicing and a fuel deal via a GR AXEANE card.

Alongside Siplec (E.Leclerc), TOTAL funds the *Alvéole* program, led by the French Federation of Bicycle Users (FUBicy). Aimed at social landlords, the scheme aims to promote bicycle use among occupants of social housing in order to facilitate access to employment. It is funded through "fuel poverty" Energy Efficiency Certificates (CEE). The aim is to raise awareness among 2,500 households, with 150 social housing properties equipped with bicycles in the 2017/2018 period.

TOTAL is actively involved in the fight against fuel poverty in France by supporting and guiding low-income households in improving thermal insulation in their homes. The Group works alongside the French government and other energy suppliers in the "Living Better" program and the *Coup de pouce économies d'énergie* (energy saving boost) initiative launched in February 2017.

5.3.3.3 Engaging with citizenship initiatives

TOTAL is also engaged in the community through public interest initiatives in all of its host regions. These initiatives expand and build on the way TOTAL maximizes the positive and minimizes the negative impacts of its business activities. TOTAL's citizenship commitment policy is set by the Civil Society Engagement Division, which runs the Company Foundation programs and other corporate philanthropy programs and provides impetus to community support projects run by affiliates.

A new citizenship commitment policy

In the face of growing inequality and today's environmental challenges, TOTAL wished to strengthen its public interest initiatives. This strong commitment is part of TOTAL's ambition to become the responsible energy major.

In 2017, the Group drew up a new citizenship commitment policy, aligned with its history, values and businesses, to intensify its impact. This program aims to structure all solidarity initiatives undertaken around the world, both by its sites and subsidiaries and by the Total Company Foundation.

From 2018, TOTAL will therefore gradually reorient citizenship initiatives to focus on two priority sectors and four focus areas.

Two priority sectors:

- TOTAL's host regions: because TOTAL is a stakeholder in its host regions, which have helped make it the company it is today, the Group wants to do its part to contribute to their vitality and sustainability;
- young people: TOTAL's initiatives will give priority to young people, because by giving them the resources they need to develop personally and professionally, they can build a better tomorrow.

Four focus areas have been chosen, because they are essential to the sustainable development of all regions:

- forests and climate: committed to a beneficial environment for humans by:
 - protecting forests and sensitive ecosystems (mangroves, wetlands),
 - reforestation and tree planting,
 - educating young people about environmental protection;
- youth inclusion and skills: committed to empowering young people in socially vulnerable situations, through:
 - initiatives that build their self-confidence,
 - education and professional and technical training,
 - support and coaching in career planning and entrepreneurship;
- safety on roads: committed to promoting safer mobility through:
 - prevention and education initiatives, especially for young people,
 - training,
 - advocacy and support to public authorities;
- cultures and heritage: committed to promoting cultural dialogue through initiatives that:
 - preserve and pass on architectural heritage,
 - showcase cultural heritage,
 - provide access to culture,
 - support young contemporary artists.

Total Company Foundation 2017 report

The Total Company Foundation has a 2013-2017 five-year budget of €50 million, and was active in four fields: health, solidarity, oceans and marine biodiversity, and culture and heritage.

With regard to health, the Total Company Foundation continued its support for the Pasteur Institute, a leading player in global biomedical science research in the fight against infectious diseases. The aim of this partnership, which came to an end in 2017, was to support the fight against childhood diseases through research programs and field actions in partnership with the Group's subsidiaries. Projects are focused on providing training to local actors and are mainly carried out in Africa and South-East Asia.

In the field of solidarity, the Total Company Foundation supports the "Clé des champs" program, managed by non-profit organization *Les Naturenautes*, which takes school children from priority education zones on free residential trips to three holiday centers owned by the Group, with teaching transplanted to a completely different setting (seaside, mountains or countryside). In 2017, 1,235 children benefited from the program. In addition, four innovative schemes were started in 2017 aimed at increasing the occupational and social integration of young people, namely *Eloquentia*, *Wi-filles*, *Les Entrepreneariales* and the Foundation for Innovation in Apprenticeships (FIPA).

With regard to marine biodiversity, the Total Company Foundation supported research programs undertaken to improve knowledge about marine species and ecosystems and challenges related to their protection and enhancement. 56 projects were supported in 2017, including a number dedicated to the sharing of knowledge through awareness and education campaigns.

In the culture field, the Total Company Foundation partly funded nine exhibitions in 2017 that helped to showcase the cultures of the countries in which the Group operates. In addition, convinced that access to culture from a very young age is key to self-confidence and respect for others, the Total Company Foundation supports numerous initiatives designed to instruct young people in the worlds of art and culture. These include the *Petite Galerie* at the Louvre, the "10 months of school and opera" scheme run by the academy of the Paris Opera, the lyric drama educational programs of the Aix-en-Provence Festival, the Lyon Opera's "*Duo des métiers*" scheme and the El Camino project in Pau. In total, nearly 17,000 children from metropolitan France and the Overseas Departments have benefited from these projects.

Regarding heritage, the fourth three-year partnership between the Total Company Foundation and the *Fondation du patrimoine* (heritage foundation) reached its conclusion at the end of 2017. The partnership primarily focused its activities on the rehabilitation of the country's built heritage converted for sociocultural purposes and on work sites designed to further professional training and social integration. Since 2006, some 210 projects, including 41 worksites for employment integration, throughout France have received nearly €29.2 million in funding from this partnership. The partnership will be renewed for the 2018 to 2020 period.

On November 7, 2017, the *Hauts-de-Seine* prefecture extended the Total Company Foundation's accreditation for the new five-year period 2018-2022. The fund for its multi-year action program has been increased to €125 million for the five years, and its new areas of intervention have been amended.

TOTAL S.A. Philanthropy 2017 report

In the field of solidarity, TOTAL has forged a number of major institutional partnerships in France. Since 2009, the Group has worked with the French government and the ministry responsible for youth to promote innovative social initiatives that are beneficial to all. The program, developed under the “La France s'Engage” label since 2014, benefited over 780,000 people in 2017. This partnership, with an overall budget of €58.7 million and the experimental youth development fund as its primary technical and financial tool, has enabled the financing of 19 projects in 2017. Having decided to extend its commitment, in 2017 TOTAL S.A. became one of the founder members of the “La France s'Engage” public interest foundation alongside BNP Paribas, the Andros group and Artémis. TOTAL will contribute €7.3 million to the foundation between 2018 and 2022.

The Group also supports “TOTAL associate teachers”, an organization run by current or retired employees of the Group who teach courses free of charge in schools and universities. 260 teachers give lessons and lectures in the fields of oil, natural gas, chemistry and energy in general. During 2017, over 16,000 students throughout the world benefited from this expertise.

Following the success of the previous two courses, in 2017 TOTAL ran a third edition of its free Massive Open On-line Course (MOOC) on the oil chain, entitled Oil & Gas: from Exploration to Distribution, in partnership with IFP School. A total of 24,500 people from 140 countries enrolled on the course.

The Group also encouraged employees to engage with the community in 2017 through support for projects championed by non-profit organizations with which they volunteer on a personal basis. In 2017, the Foundation supported 40 employee projects in 18 countries.

The Group celebrated 10 years of partnership with the French Society of Sea Rescuers (SNSM) in 2017, and renewed its support for the organization for a three-year period at the Paris boat show in December. Through its funding and expertise, it plays a role in improving the safety of rescue operations and training volunteers. Thanks to its support, the Sea Rescuers have a center equipped with a state-of-the-art navigation and vessel handling simulator. Every year, over 500 rescuers access this training and are provided with increasingly effective protective equipment. In addition to demanding technical content, these training courses give young people a sense of commitment and responsibility.

Since 2014, the Group has supported Action Tank Social & Business through its initiatives to fight poverty. The partnership aims to promote the development of innovative, financially viable projects that have an impact on reducing poverty and exclusion and can be implemented on a large scale. In 2017, TOTAL helped to expand the program with a pilot project in Senegal to launch Action Tank Africa. This co-construction approach, which brings together public and private bodies, academic institutions and non-profit organizations, aims to enable the initiation of independent, long-term local activity. The purpose of the initiative is to develop entrepreneurship and the local industrial fabric and thus build lasting links with civil society.

As a driving force for mobility, in 2013 TOTAL and its partner the Wimoov association created the Inclusive Mobility Laboratory (IML), which brings together 16 entities from the public and private sectors and civil society. The Laboratory's three main activities are research into mobility, experimentation and lobbying public authorities. As such, the IML took part in the Assises Nationales de la Mobilité conference organized by the French Ministry for Transport. As a result of the IML's recommendations, including support for mobility platforms aimed at addressing the transport needs of vulnerable people, mobility advice and solutions are offered to 7,500 people a year, 50% of whom find jobs or new employment.

Other partnerships 2017 report

A commitment to improve road safety worldwide

Safety is one of the Group's core values. As a result of its numerous transport-related activities, TOTAL has acquired genuine expertise in road safety, and has therefore decided to make it one of the main focuses of its societal action. The Group's ambition to actively take part to the reduction in the numbers of victims of road accidents is reflected by the numerous lobbying actions taken as part of the United Nations Decade of Action for Road Safety (2011-2020), of which TOTAL is a partner.

The Group is a member of the Global Road Safety Partnership (GRSP), which aims to encourage the development of multi-sector partnerships that will spread good practices on the road all over the world. In July 2017, the Group hosted the GRSP information day on the theme of Technology and Innovation; in October it took part in a seminar held in Cape Town (South Africa) on the challenges and opportunities represented by the SDGs. The GRSP is also helping TOTAL to improve its program to raise children's awareness of dangers on the road and providing local support in some countries, such as Vietnam, where employees have received training to give talks in schools.

TOTAL is continuing its actions through the Safe Way Right Way platforms designed to mobilize partners, raise funds, develop training and awareness-raising actions, or to contribute to improving the regulations and their application along two major highways between Kenya and Uganda on one hand, and in Cameroon on the other. This year, SWRW Uganda received the prestigious Prince Michael International Road Safety Award for its action to promote the protection of road users and its ability to develop synergies between government and private bodies.

In 2016, in France, TOTAL and 20 other major companies signed the national appeal in favor of road safety and work, initiated by the French Ministry of the Interior, and the Group is involved in actions and discussions aimed at engaging with businesses with a view to reinforcing prevention amongst employees through concrete commitments.

For several years now, in more than 35 countries, TOTAL has been deploying a game-based and educational cube-shaped tool designed by TOTAL for teachers (the “Cube Sécurité”) that is also easy to use in communities. Over 750 schools around the world use the cube, and 1,000 more cubes were distributed in 2017.

Promoting energy knowledge

Because energy is central to the challenges of the future, and everyone is seeking to form their own opinion, in 2005 TOTAL set up Planet Energy, an initiative that aims to provide the younger generation and their teachers, as well as anybody interested in energy issues, with the basic tools for understanding all types of energy. Planet Energy is an on-line platform that publishes explanatory articles produced by a dedicated independent editorial team, together with news from media partners. The site covers all types of energy. It explores the history, future prospects and all of the impacts and applications of energy, including everyday life (housing, transport, consumption), technological innovation, economic balance, the environment, global warming and the development of emerging countries. The site's editorial advisers, experts from a variety of disciplines, ensure the quality and openness of the site.

In 2016, more than 193 lectures were delivered to primary and secondary school children. Over 10,000 teachers have registered on the Planet Energy site and can access free on-line educational resources. The site has an average of 130,000 visitors per month.

5.3.4 Contractors and suppliers



TOTAL's activities generate hundreds of thousands of direct and indirect jobs worldwide. The Group's purchases of goods and services (excluding oil products and vessel chartering by Trading & Shipping) represented approximately \$31 billion worldwide in 2017. Approximately 32% of these expenditures were for goods (e.g., products, materials) and approximately 68% were for services (including consulting services, work with supply of materials and transport). The number of hours worked by subcontractors is monitored for large projects. This involves a range of environmental, social and societal impact concerns addressed by TOTAL when dealing with its suppliers via its principles, purchasing commitments and sustainable procurement initiatives.

TOTAL's societal commitment is shared by the Group's employees, partners, customers and suppliers, in particular by employing more local staff and subcontracting more work to local businesses wherever the operating constraints of its activities allow. The Group's societal directive stipulates that purchasing processes must be adapted as required in cases where a societal action plan has been implemented.

As part of the "One Total" company project, the Procurement functions of the business segments have been combined since January 1, 2017 into an transversal subsidiary, Total Global Procurement. This new entity has a global approach to managing supplier relations and aims to improve the integration of supply chains into the Group's processes.

5.3.4.1 Monitoring responsible practices among suppliers

In its Code of Conduct, TOTAL states that it works with its suppliers to ensure the protection of the interests of both parties on the basis of clear and fairly negotiated contractual conditions. This relationship is founded on three key principles: dialogue, professionalism and adherence to commitments.

TOTAL expects its suppliers to:

- adhere to principles equivalent to those in its own Code of Conduct, such as those set out in the Fundamental Principles of Purchasing directive; and
- agree to be audited, be particularly attentive to the human rights-related aspects of their standards and procedures, in particular their employees' working conditions, and ensure that their own suppliers and contractors respect equivalent principles.

The Fundamental Principles of Purchasing, launched in 2010 and formally set out in a Group directive in 2014, specify the commitments that TOTAL expects of the Group entities' suppliers in the following areas: respect for human rights at work, health protection, assurance of safety and security, preservation of the environment, prevention of corruption, conflicts of interest and fraud, respect for competition law, as well as the promotion of economic and social development. The rules set out in the directive must be included or transposed into the agreements concluded with suppliers. These principles are available for consultation by all suppliers in both French and English on TOTAL's website (under "Suppliers").

In 2015, TOTAL signed a global agreement with the worldwide trade union federation, IndustriALL Global Union, which contains two clauses specifying suppliers' environmental and social requirements. The Group entities have therefore disclosed the principles of this agreement to their main suppliers and service providers.

The deployment of the anti-corruption policy in purchasing also continued in 2017 with awareness-raising sessions held for over 100 strategic suppliers at the Supplier Day. In addition to numerous initiatives in previous years, in 2017 around 250 suppliers underwent a supplier analysis through the issuing and examination of specific questionnaires, and in some cases, external inspections. At the same time, in-house awareness-raising sessions were held for procurement community staff.

Finally, pursuant to Rule 13p-1 of the Securities Exchange Act of 1934, as amended, which implemented certain provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, TOTAL has submitted since 2014 to the SEC an annual document relating to certain minerals (deemed "conflict minerals"⁽¹⁾ by this Rule) sourced from the Democratic Republic of the Congo or a neighboring country. The document indicates whether TOTAL S.A. or one of its affiliates had, during the preceding calendar year, used any such minerals that were necessary to the functionality or production of a product manufactured or contracted to be manufactured by the Group. The document also states whether such minerals were sourced from the Democratic Republic of the Congo or a neighboring country. The main objective of the rule's obligation to publish this information is to prevent the direct or indirect funding of armed groups in central Africa. For more information, refer to TOTAL's most recent publication available at:

<http://www.sustainable-performance.total.com/fr/enieux/supply-chain-management> or <http://www.sec.gov/>.

5.3.4.2 Promoting sustainable procurement

An interdisciplinary working group dedicated to the issue of sustainable procurement is tasked with strengthening TOTAL's policy in this area based on initiatives developed by each segment.

The Group's buyers take part in international working groups on sustainable procurement. TOTAL is an active member of IPIECA's Supply Chain Task Force. Building on the workshops held in 2015 and 2016, TOTAL continued to participate in the Operationalization of the UN Guiding Principles work organized by the IPIECA, aimed at both oil and gas companies and engineering, procurement and construction (EPC) contractors.

In France, the Group's purchases from the disabled and protected employment sectors enabled the achievement of an indirect employment rate of nearly 1% in 2017. TOTAL is a member of the Pas@Pas association and provides its buyers with an online directory that can be used to identify potential suppliers and service providers from the disabled or protected employment sectors by geographical area and by category. In 2017, themed workshops were organized for internal customers and buyers, providing an opportunity to reiterate the Group's commitments and meet suppliers in the segment during speed meetings.

(1) Rule 13p-1 defines "conflict minerals" as follows (irrespective of their geographical origin): columbite-tantalite (coltan), cassiterite, gold, wolframite and their derivatives, which are limited to tantalum, tin and tungsten.

5.3.4.3. Acting as a responsible partner in relation with suppliers

TOTAL received the “Responsible supplier relationships” label in 2014 (maintained in 2015, 2016 and 2017) for its Holding and Marketing & Services activities in France. This label, awarded by the French authorities, recognizes companies that maintain sustainable and balanced relationships with their suppliers.

To contribute toward the development of good practices in business relations, TOTAL launched an initiative to raise its employees’ awareness of mediation as an alternative method for resolving disputes. Each year since 2013, a training day run by professional mediators to raise awareness of mediation has been organized in

French and English. In 2017, an open day for employees of the Group, lawyers and suppliers, enabled participants to learn about the benefits of mediation. A brochure designed to increase awareness of the mediation process is available to all employees.

In addition, an email address is available on the Group website (under “Suppliers”). It can be used to contact the Group’s internal mediator, whose task is to facilitate relations between the Group and its French and international suppliers. Finally, the general purchase terms and conditions also mention the possibility of recourse to mediation.

The payment terms for invoices from suppliers and customers of TOTAL S.A. as of December 31, 2017, in application of the provisions of Article D. 441-4 of the French Commercial Code, are as follows:

As of December 31, 2017

(in ME)

	SUPPLIERS						CLIENTS					
	Invoices <u>received</u> and outstanding at the closing date of the previous fiscal year						Invoices <u>issued</u> and outstanding at the closing date of the previous fiscal year					
	0 days (provisional)	1 to 30 days	31 to 60 days	61 to 90 days	91 days or more	Total (1 day or more)	0 days (provisional)	1 to 30 days	31 to 60 days	61 to 90 days	91 days or more	Total (1 day or more)
(A) Late payment brackets												
Number of invoices affected	3,766					1,862	173					10,702
Total value of invoices affected (including tax)	24	22	1	1	1	49	14	122	177	97	266	676
Percentage of the total value of purchases for the fiscal year (including tax)						1.3%						
Percentage of sales for the fiscal year (including tax)												18.3%
(B) Invoices excluded from (A) relating to disputed or unrecorded liabilities and receivables												
Number of invoices excluded				None							None	
Total value of invoices excluded				None							None	
(C) Reference payment terms used (contractual or legal - Article L.441-6 or Article L.443-1 of the French Commercial Code)												
Payment terms used for late payment penalties				Legal payment terms							Legal payment terms	

TOTAL supports its suppliers in the different countries in which it does business.

For example, in Uganda, Total E&P Uganda organized a one-day forum for suppliers (290 participants). The suppliers invited heard presentations on the contracting process, and in particular the HSE and ethics aspects, to help them take these subjects into account.

Every year, one of the departments of the IPO (TOTAL’s International Procurement Office in Shanghai, China) organizes a compliance day and invites one of its approved suppliers. It can explain the actions it takes regarding anti-corruption compliance, the concrete problems encountered and how it deals with them. The discussions, based on case studies and topical issues, are enlightening for all. In 2017, this event was held in December, on the same day as the Business Ethics Day (refer also to point 5.3.5.1 of this chapter).

In addition, in October 2017 the Marketing & Services segment organized a two-day conference that brought together almost 75 suppliers of one of its subsidiaries in China. The topics covered included HSE and anti-corruption.

Regarding the support given to French SMEs, TOTAL is a member of the “Pacte PME” association and took part in its supplier survey in 2017. The Group supports the international development of SMEs, occasionally including its own suppliers, through *Total Développement Régional* (refer to point 5.3.3.1 of this chapter).

In October 2017, the first transversal Suppliers Day brought together 110 strategic suppliers to the various business segments (refer to point 5.2.1 of this chapter).

5.3.5. Fair operating practices

5.3.5.1 Preventing corruption



The oil industry must be particularly vigilant concerning the risk of corruption, especially given the scale of investments and the number of countries in which operations are conducted. Preventing corruption is therefore a major challenge for the Group and all its employees.

As stated in its Code of Conduct, TOTAL rejects corruption in all its forms. The Group adopts a 'zero tolerance' approach to corruption and adheres to the strictest integrity standards. This Code sets out the business principles and individual behavior that everyone must follow both in their day-to-day decision-making and in their relations with the Company's stakeholders. In it, TOTAL also reiterates its support for the OECD Guidelines and the Tenth Principle of the United Nations Global Compact, which urges businesses to work against corruption in all its forms.

The Group's commitment is embodied by a robust anti-corruption compliance program, in accordance with the undertakings made by the Group to the United States authorities as part of the monitorship (2013-2016) and with the requirements of the French law of December 9, 2016 on transparency, the fight against corruption, modernization of the economy.

This program is implemented by a dedicated organization, which includes the Compliance and Social Responsibility department, and is deployed by a network of more than 360 Compliance Officers located in the countries where TOTAL operates.

The pillars of this anti-corruption program are, among others, the following:

- processes to identify and evaluate corruption risks;
- a framework of internal standards, including a policy updated in 2016 that sets out the details of the program and more specific rules relating to representatives dealing with public officials, purchasing/sales, gifts/invitations, donations/sponsorships, acquisitions/divestments, joint ventures, conflicts of interest and Human Resources. Employees can refer to these standards to identify risky situations, carry out due diligence on third parties and put in place the appropriate mitigation measures;

- a strong and consistent commitment from General Management, expressed through significant communication activities such as the Business Ethics Day, held every year to mark the UN's International Anti-Corruption Day and Human Rights Day in December; the third of these events was held in 2017. It is organized at the Group level and relayed locally by the subsidiaries to remind employees how to react appropriately and to encourage dialogue;
- activities designed to raise awareness among all employees: an initial e-learning course was rolled out in 2011 in 12 languages, followed by a more in-depth e-learning module in 2015. This module is accessible to all employees and mandatory for the targeted personal (approximately 30,000 employees);
- more targeted training activities intended for the most highly exposed positions and in-depth training for all Compliance Officers;
- the prohibition of "facilitation payments";
- regular reporting processes to ensure the periodic feedback of information and incident feedback mechanisms, including a whistleblowing system for reporting any breach of the Code of Conduct (such as by emailing ethics@total.com);
- control mechanisms including site compliance reviews (six to eight per year) covering the Group's various activities. These reviews are followed-up with regards to the recommendations made. In addition, the audits carried out by the Audit & Internal Control Division include, depending on their purpose, controls to check the implementation of the compliance processes;
- the application of suitable sanctions.

Following the monitorship, at the end of 2016 the United States authorities deemed that the Group had implemented an appropriate compliance program and fulfilled its commitments, thus bringing the proceedings against TOTAL to a close. The Group is still committed and pursuing its efforts in a bid to ensure the sustainability, development and continuous improvement of the anti-corruption compliance program.

5.3.5.2 Respect for human rights



Activities of companies can affect the human rights of employees, suppliers and partners, customers, local communities and other stakeholders in numerous ways. TOTAL's proactive approach to human rights reflects its ethical commitment and helps to establish and maintain successful relationships with all stakeholders, which is essential for the Group to operate effectively.

TOTAL's approach to respect for human rights is based on several pillars, described below.

Written commitments

The Group's Code of Conduct was revised in 2014 to reinforce TOTAL's commitments in terms of respect for human rights. It sets out the Group's adherence to international standards such as the UN Guiding Principles on Business and Human Rights and the Voluntary Principles on Security and Human Rights (VPSHR). In the event of any discrepancy between legal provisions and the Code of Conduct, the highest standard of protection of human rights applies.

In addition to its values, respect for human rights is one of the Group's priority business principles, alongside integrity (preventing corruption and fraud and anti-competitive practices) and HSE standards. The Group ensures that employees' rights are protected and prohibits any form of discrimination against them, including due to sexual orientation or identity. It demands that they themselves respect human rights. TOTAL expects its suppliers to respect standards equivalent to its own and pay particular attention to their employees' working conditions. In particular in 2015 TOTAL signed a global agreement with the worldwide trade union federation, IndustriALL Global Union, which represents 50 million employees in 140 countries. Under this agreement, the Group is committed to maintaining minimum Corporate Social Responsibility (CSR) standards and guarantees worldwide for subsidiaries in which it has more than a 50% stake. The Group also ensures that the principles of the agreement on health, safety and human rights are disclosed to and promoted among its service providers and suppliers. The implementation of this agreement is monitored annually.

Furthermore, while respecting the sovereignty of the host countries in which it operates, the Group reserves the right to express its conviction on the importance of respecting human rights in matters concerning it. Finally, TOTAL respects the rights of local communities by identifying, preventing and limiting the impacts of its activities on their way of life and remediating them.

Some of these principles are set out in the "To find out more" section of the Code of Conduct and are detailed in TOTAL's Human Rights Guide, as updated in 2015 (available at total.com).

In 2013, the Executive Committee approved TOTAL's first strategic roadmap and an action plan for 2013-2015. The aim was to systematically incorporate respect for human rights into the various risk management systems. In this context, a guide was published in 2015 to help the Group's lawyers responsible for business mergers and acquisitions to improve how human rights are incorporated into the various applicable due diligence processes. In addition,

easy-to-use tools (inspired by the VPSHR) have been developed and were deployed since 2016 at 46 exposed entities, to help them more effectively identify and evaluate the risks/impacts relating to security and human rights and put in place the appropriate corrective actions.

With a view to continuous improvement, the updated human rights roadmap and a new action plan for 2017-2018 were adopted by the Executive Committee in January 2017. The updated human rights roadmap focuses on the following priority areas:

- consolidate the integration of human rights into operational decisions at the local level;
- improve management's awareness level and accountability with regard to human rights at all levels of the Company;
- strengthen the process for evaluating the Group entities at risk, the tools made available to them and their monitoring.

A dedicated organization

The Ethics Committee and the Human Rights Division advise employees, help operatives and monitor efforts to promote respect for human rights. In particular, they run a human rights committee that coordinates the actions taken internally and externally by the various Group entities.

The Ethics Committee is a central, independent structure that represents all of TOTAL's business segments. Its role is to listen and support. Both employees and people outside the Group can refer matters to it by email at ethics@total.com. The Committee maintains confidentiality with regard to referrals, which can only be lifted with the agreement of the person in question.

At the local level, mechanisms for handling grievances raised by local communities are also implemented by subsidiaries exposed to societal risks in accordance with the UN Guiding Principles on Business and Human Rights (UNGPR) (refer to point 5.3.2.2 of this chapter).

Awareness and training

To ensure its adopted principles are disseminated in-house, TOTAL raises employee awareness via corporate communications channels, such as the platform for sharing best practices and challenges in the area of respect for human rights accessible to Group employees on the TOTAL intranet, and through events such as the annual Business Ethics Day. In December 2017, the theme of the Business Ethics Day was the Group's value, "Respect for Others", and ethical dilemmas. The new Guide to taking into account religious teachings in the Group was distributed. TOTAL also offers some employees special training tailored to the challenges faced in the field, such as the Responsible Leadership for Sustainable Business program and human rights training sessions for HSE experts and Community Liaison Officers (CLO) organized with the Danish Institute for Human Rights (DIHR). Finally, actions are taken to raise awareness among the Group's external stakeholders, such as training related to the VPSHR for its security providers.

Assessments and reporting

Tools are used to regularly assess the subsidiaries' human rights practices and the risks they may have to face. Their objective is to analyze the societal impacts of a project at the local level or to verify that the subsidiaries' practices are in line with the Group's ethical standards. Almost 120 subsidiaries were evaluated since 2002. These assessments are undertaken by GoodCorporation a qualified ethics expert. The assessment framework related to human rights and anti-corruption is used on site, and numerous internal and external stakeholders are interviewed by GoodCorporation, which then issues a final report identifying points for improvement and good practices. The entity is then given several months to correct any issues that have been identified. A follow-up report is issued by GoodCorporation for the entities that were assessed. Following a call for tenders in 2017, GoodCorporation was once again selected to support the Group in this area.

In 2017, a self-assessment tool was developed and will be used to enable subsidiaries to measure their maturity and progress in terms of ethics.

In addition, other non-profit partner organizations, such as the CDA Corporate Engagement Project, also contribute by evaluating the societal impact of the Group's activities on nearby local communities, for example by surveying the populations in question. CDA's reports are published online on their website. The Group is also working with International Alert (IA), an independent British organization that specializes in conflict resolution and peacebuilding, to assess the Group's impacts on human rights and conflict risks at a local level. The Group additionally conducts human rights impact assessments at the subsidiaries with the help of the Danish Institute for Human Rights, a Danish public non-profit organization. For example, at the end of 2015, TOTAL worked with the DIHR in Nigeria to assess the human rights practices of its E&P subsidiary, thus identifying the main areas for improvement and recommendations. In 2017, a process was carried out to monitor the progress made by the subsidiary in implementing the recommendations. The DIHR also worked in Papua New Guinea in 2017 to carry out a local human rights impact assessment.

In July 2016, TOTAL published its first dedicated Human Rights report (available at www.sustainable-performance.total.com) based on the UN Guiding Principles Reporting Framework, becoming the first oil & gas company to do so. This information document, an update of which is planned for 2018, presents TOTAL's approach to integrate respect for human rights into its operations and business relations.

It focuses on the three key topics for the Group and presents the most important subjects and risks for each topic:

- human rights in the workplace, concerning TOTAL's employees as well as its suppliers, contractors, partners, and their subcontractors. The salient subjects identified are forced labor and child labor, discrimination, fair and just working conditions and safety;
- human rights and local communities. The salient subjects identified are issues of access to land and the right to health and an adequate standard of living;
- human rights and security, concerning measures to protect against the risks and threats to which the Group's employees and facilities are exposed, while ensuring that the salient risk of disproportionate use of force is avoided.

For each of these six subject areas and salient risks, the information document summarizes TOTAL's policies, the training and awareness-raising actions taken, and the due diligence measures implemented in response to the identified issues.

In June 2017, the Group's subsidiaries in the United Kingdom published Anti-Slavery and Human Trafficking Statements in accordance with Section 54(1) of the Modern Slavery Act 2015.

Corporate Human Rights Benchmark

TOTAL is the first major oil company in the Corporate Human Rights Benchmark rankings published in March 2017. This initiative, developed jointly by various NGOs and supported by investors managing several billion dollars, is based on a complex questionnaire that evaluates companies' maturity regarding human rights issues.

Practical guide to dealing with religious questions within the Group

In June 2017, a guide to taking into account religious teachings in the Group was distributed in-house. The guide provides concrete answers to the questions that managers and employees might have in this regard, and is based on feedback from subsidiaries in the field in the different countries where the Group operates. The guide promotes respect for differences and tolerance of other people's beliefs.

Participation in external initiatives

TOTAL is actively involved in numerous initiatives and working groups on human rights that bring together various stakeholders including Global Compact, Global Compact LEAD (initiative for sustainable leadership), Global Business Initiative on Human Rights, IPIECA, VPSHR and non-profit organizations such as Shift.

5

5.3.5.3 Consumer health and safety



Many of the products that TOTAL markets pose potential risks; for example, if they are used incorrectly. The Group therefore aims to meet its current and future obligations with regard to information and prevention in order to minimize the risks throughout its products' life cycle. TOTAL's health and products directive sets out the minimum requirements for marketing the Group's products worldwide in order to reduce potential risks to consumer health and the environment.

TOTAL identifies and assesses the risks inherent to its products and their use, and then informs customers and users of these risks and the applicable prevention and protection measures. The material safety data sheets (MSDS) that accompany all products marketed by the Group (in at least one of the languages used in the country) and product labels are two key sources of information in this regard. All new products comply fully with the regulatory requirements in the countries and markets for which they are intended.

5.4 Reporting scopes and method

5.4.1 Reporting guidance

The Group's reporting is based:

- for social indicators, on a practical handbook titled "Corporate Social Reporting Protocol and Method";
- for Industrial Safety indicators, on the Corporate Guidance on Event and Statistical Reporting;

- for environmental indicators, on a Group reporting procedure, together with segment-specific instructions.

These documents are available to all TOTAL companies and can be consulted at Corporate headquarters, in the relevant departments.

5.4.2 Scopes

In 2017, **environmental reporting** covered all activities, sites and industrial assets in which TOTAL S.A., or one of the companies it controls, is the operator, *i.e.* either operates or contractually manages the operations ("operated domain"): 796 sites at year-end 2017. Greenhouse gas (GHG) emissions "based on the Group's equity interest" are the only data which are published for the "equity interest" scope. This scope, which is different from the "operated domain", includes all the assets in which the consolidated entities have a financial interest or rights to production.

Safety reporting covers all TOTAL employees, employees of contractors working at Group-operated sites and employees of transport companies under long-term contracts. Each site submits its safety reporting to the relevant operational entity. The data is then consolidated at the business level and every month at the Group level. In 2017, the Group safety reporting scope covered 461 million hours worked, equivalent to approximately 260,000 people.

Reporting on occupational illnesses follows the scope of the Worldwide Human Resources Survey (see below).

Social reporting is based on two surveys: the Global Workforce Analysis, and the complementary Worldwide Human Resources Survey. Two centralized tools (Sogreat and HR4U) facilitate performance of the above surveys.

The **Global Workforce Analysis** is conducted twice a year, on June 30 and December 31, in all fully consolidated companies at least 50% owned and consolidated by the global integration method. The survey mainly covers worldwide workforces, hiring under permanent and fixed-term contracts (non-French equivalents of *contrats à durée déterminée* or *indéterminée*) as well as employee turnover. This survey produces a breakdown of the workforce by gender, professional category (managers and other employees), age and nationality.

The **Worldwide Human Resources Survey (WHRS)** is an annual survey which comprises approximately 100 indicators in addition to those used in the Global Workforce Analysis. The indicators are selected in cooperation with the relevant counterparties and cover

major components of the Group Human Resources policy, such as mobility, career management, training, work conditions, employee dialogue, Code of Conduct application, human rights, health, compensation, retirement benefits and insurance. The survey covers a representative sample of the consolidated scope. The data published in this document are extracted from the most recent survey, carried out in December 2017 and January 2018; 133 companies in 57 countries, representing 87.2% of the consolidated Group workforce (85,652 employees) replied to the survey. With regard to training only, this scope covers 82.4% of the Group's consolidated workforce and 127 companies.

5.4.2.1 Consolidation method

For the scopes defined above, safety indicators and social data are fully consolidated. Environmental indicators consolidate 100% of the emissions of Group operated sites for the "operated" indicators. GHG emissions are also published on an equity interest basis, *i.e.*, by consolidating the Group share of the emissions of all assets in which the Group has a financial interest or rights to production.

5.4.2.2 Changes in scope

Social and environmental indicators are calculated on the basis of the consolidated scope of the Group as of December 31, 2017.

These data are presented on the basis of the operational business segments identified in the 2017 Consolidated Financial Statements.

For environmental indicators, acquisitions are taken into account as from January 1 of the current year as far as possible or as from the next fiscal year. Any facility sold before December 31 is excluded from the Group's reporting scope for the current year.

For safety indicators, acquisitions are taken into account as soon as possible and at the latest on January 1 of the following year, and divestments are taken into account at the end of the quarter preceding their effective date of implementation.

5.4.3 Principles

5.4.3.1 Indicator selection and relevance

The data published in the Registration Document are intended to inform stakeholders about TOTAL's Corporate Social Responsibility performance for the year in question. The environmental indicators include Group performance indicators referring to the IPIECA reporting guidelines, updated in 2015. The indicators have been selected in order to monitor:

- TOTAL's commitments and policies, and their effects on matters of safety, environment, social, etc.;
- performance relative to TOTAL's main challenges and impacts;
- information required by laws and regulations (Article L. 225-102-1 of the French Commercial Code).

5.4.3.2 Terminology used in social reporting

Outside of France, "management staff" refers to any employee whose job level is the equivalent of 300 or more Hay points. Permanent contracts correspond to *contrats à durée indéterminée* (CDI) and fixed-term contracts to *contrats à durée déterminée* (CDD), according to the terminology used in the Group's social reporting.

Managed scope: all subsidiaries in which one or more Group companies own a stake of 50% or more, *i.e.*, 471 companies in 127 countries as of December 31, 2017.

Consolidated scope: all companies fully consolidated by the global integration method, *i.e.*, 313 companies having employees in 105 countries as of December 31, 2017.

Employees present: employees present are employees on the payroll of the consolidated scope, less employees who are not present, *i.e.*, persons who are under suspended contract (sabbatical, business development leave, etc.), absent on long-term sick leave (more than six months), assigned to a company outside the Group, etc.

5.4.4 Details of certain indicators

5.4.4.1 Industrial Safety definitions and indicators

TRIR (Total Recordable Injury Rate): number of recorded injuries per million hours worked.

LTIR (Lost Time Injury Rate): number of lost time injuries per million hours worked.

SIR (Severity Injury Rate): average number of days lost per lost time injury.

Employees of external contractors: any employee of a service provider working at a Group-operated site or assigned by a transport company under a long-term contract.

Tier 1 and Tier 2: indicator of the number of loss of primary containment events, with more or less significant consequences, as defined by the API 754 (for downstream) and IOGP 456 (for upstream) standards.

Near miss: event which, under slightly different circumstances, could have resulted in a serious accident. The term "potential severity" is used for near misses.

Incidents and near misses are assessed in terms of actual or potential severity based on a scale that consists of six levels. Events with an actual or potential severity level of four or more are considered serious.

5.4.3.3 Methods

The methods may be adjusted to reflect the diversity of TOTAL's activities, recent integration of subsidiaries, lack of regulations or standardized international definitions, practical procedures for collecting data, or changes in methods.

Restatement of previous years' published data, unless there is a specific statement, is now limited to changes of methodology.

5.4.3.4 Consolidation and internal controls

Environmental, social and industrial safety data are consolidated and checked by each business unit and business segment, and then at Group level. Data pertaining to certain specific indicators are calculated directly by the business segments. These processes undergo regular internal audits.

[REDACTED SECTION: CERTAIN TEXT HAS BEEN REDACTED.]

5.4.4.2 Environmental indicators

Safety flaring: flaring to ensure the safe performance of operations conducted at the production site.

Continuous flaring of associated gas: flaring during normal production operations conducted in the absence of sufficient facilities or adequate geological conditions permitting the reinjection, on-site utilization or commercialization of produced gas. Continuous flaring of associated gas includes neither safety flaring nor very low-pressure gas.

Routine flaring: as defined by the working group of the Global Gas Flaring Reduction program within the framework of the World Bank's Zero Routine Flaring initiative. Flaring that includes the continuous flaring of associated gas (see above) and very low-pressure gas generated during the production process, the reuse of which is neither technically nor economically feasible. Continuous flaring does not include safety flaring.

Fresh water: water with salinity below 1.5 g/l.

Hydrocarbon spills: spills with a volume greater than 1 barrel (≈ 159 liters) are counted. These are accidental spills of which at least part of the volume spilled reaches the natural environment (including non-waterproof ground). Spills resulting from sabotage or malicious acts are included. Spills which remain in a confined watertight containment system are excluded.

Waste: the contaminated soil excavated and removed from active sites to be treated externally is counted as waste. Drilling debris, mining cuttings or soil polluted in inactive sites are not counted as waste.

GEEI (Group Energy Efficiency Index): a combination of energy intensity ratios (ratio of net primary energy consumption to the level of activity) per business reduced to base 100 in 2010 and consolidated with a weighting by each business's net primary energy consumption.

GHG: the six gases of the Kyoto protocol, which are CO₂, CH₄, N₂O, HFCs, PFCs and SF₆, with their respective GWP (Global Warming Potential) as described in the 2007 GIEC report. PFCs and SF₆ are virtually absent from the Group's emissions.

GHG based on the Group's equity interest: GHG emissions of non-significant assets are generally excluded, *i.e.*, assets in which the Group's equity interest is less than 10% and for which the Group share of emissions are less than 50 kt CO₂ eq/year. For non-operated assets, TOTAL relies on information provided by its partner operators. In cases where this information is not available, estimates are made based on past data, budget data or by pro rata with similar assets.

GHG scope 1 emissions: direct GHG emissions from sources located within the boundaries of a site coming under the operated domain or in which TOTAL holds a financial interest.

GHG scope 2 emissions: indirect emissions attributable to brought-in energy (electricity, heat, steam), excluding purchased industrial gases (H₂).

GHG scope 3 emissions: other indirect emissions. The Group follows the Oil & Gas industry reporting guidelines published by IPIECA and which conform to the GHG Protocol methodologies. In

this Registration Document, only item 11 of Scope 3 (use of sold products), which is the most significant, is reported. Emissions for this item are calculated based on sales of finished products for which the next stage is end use, in other words combustion of the products to obtain energy. A stoichiometric emission factor is applied to these sales (oxidation of molecules to carbon dioxide) to obtain an emission volume.

Material loss: this is represented by the following four indicators: safety or operational gas flaring (Exploration & Production only), cold venting (Exploration & Production only), total volume of oil and gas discharged in wastewater (Exploration & Production and Refining & Chemicals only), and accidental hydrocarbon spills.

Oil spill preparedness:

- an oil spill scenario is deemed "important" as soon as its consequences are on a small scale and with limited impacts on the environment (orders of magnitude of several hundred meters of beaches impacted, and several tons of hydrocarbons);
- an oil spill preparedness plan is deemed operational if it describes the alert mechanisms, if it is based on pollution scenarios that stem from risk analyses and if it describes mitigation strategies that are adapted to each scenario, if it defines the technical and organizational means, internal and external, to be implemented and, lastly, if it mentions elements to be taken into account to implement a follow-up of the environmental impacts of the pollution; and
- oil spill preparedness exercise: only exercises conducted on the basis of one of the scenarios identified in the oil spill preparedness plan and which are played out until the stage of equipment deployment are included for this indicator.

6

TOTAL AND ITS SHAREHOLDERS

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6.1 Listing details

6.1.1 Listing

Stock Exchanges

Paris, New York, London and Brussels.

Codes

ISIN	FR0000120271
Reuters	TOTF.PA
Bloomberg	FP FP
Mn�mo	FP

Included in the following stock indexes

CAC 40, Euro Stoxx 50, Stoxx Europe 50 and DJ Global Titans.

Weighting in the main stock indexes as of December 31, 2017

CAC 40	9.4%	1 st largest component in the index
Euro Stoxx 50	4.9%	1 st largest component in the index
Stoxx Europe 50	3.1%	8 th largest component in the index
DJ Global Titans	1.2%	39 th largest component in the index

Included in the following ESG (Environment, Social, Governance) indexes

Corporate Human Rights Benchmark, DJSI World, DJSI Europe, FTSE4Good and Nasdaq Global Sustainability.

Market capitalization on Euronext Paris and in the Euro zone as of December 31, 2017

TOTAL S.A. has the second-largest capitalization on the Euronext Paris regulated market. Based on the market capitalization of the companies that make up the Euro Stoxx 50, the largest market capitalizations in the Euro zone are as follows^(a):

As of December 31, 2017 ( B)

AB InBev	188.1
Unilever	137.7
LVMH	124.4
TOTAL^(b)	116.4
SAP SE	114.8
L'Or�al	103.6

(a) Source: Bloomberg for companies other than TOTAL S.A.

(b) Shares composing the share capital on December 31, 2017: 2,528,989,616.
TOTAL closing share price on Euronext Paris on December 31, 2017:  46.045.

Market capitalization as of December 31, 2017⁽¹⁾

 116.4 billion⁽²⁾.

\$139.8 billion⁽³⁾.

Percentage of free float

As of December 31, 2017, the free float factor determined by Euronext Paris for calculating TOTAL S.A.'s weight in the CAC 40 was 95%. The free float factor determined by Stoxx for calculating TOTAL's weight in the Euro Stoxx 50 was 100%.

Par value

 2.50.

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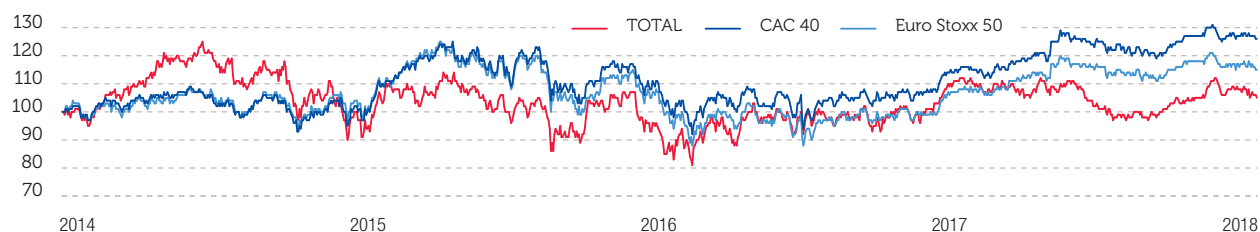
(1) Shares composing the share capital on December 31, 2017: 2,528,989,616.

(2) TOTAL closing share price on Euronext Paris on December 31, 2017:  46.045.

(3) TOTAL closing ADR price on NYSE on December 31, 2017: \$55.28.

6.1.2 Share performance

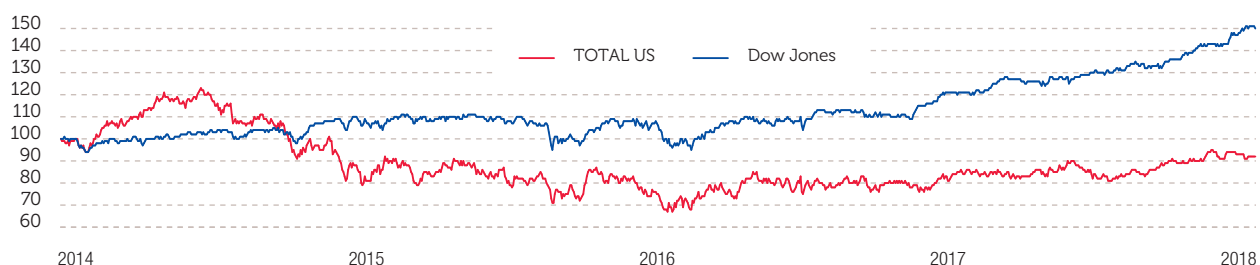
TOTAL share price on Euronext Paris (2014-17)



Base 100 in 2014.

Sources: Euronext Paris, Bloomberg.

TOTAL ADR price on NYSE (2014-17)



Base 100 in 2014.

Sources: NYSE, Bloomberg.

6

6.1.2.1 Arkema spin-off

Within the framework of the spin-off of Arkema's chemical activities from the Group's other chemical activities, TOTAL's Annual Shareholders' Meeting of May 12, 2006, approved TOTAL S.A.'s contribution to Arkema, under the regulation governing spin-offs, of all its interests in the businesses included under Arkema's scope, as well as the allocation for each TOTAL share of an allotment right for Arkema shares, with ten allotment rights entitling the holder to one Arkema share. Since May 18, 2006, Arkema's shares have been traded on Euronext Paris.

Pursuant to the provisions of the notice prior to the sale of unclaimed shares (*Avis préalable à la mise en vente de titres non réclamés*) published on August 3, 2006, in the French newspaper *Les Échos*,

Arkema shares corresponding to allotment rights for fractional shares which were unclaimed as of August 3, 2008, were sold on Euronext Paris at an average price of €32.5721 per share. As a result, from August 3, 2008, the indemnity price per share of allotment rights for Arkema shares is €3.25721 (NYSE Euronext notice No. PAR-20080812-02958-EUR). BNP Paribas Securities Services paid an indemnity to the financial intermediaries on remittance of corresponding allotment rights for Arkema shares.

As from August 4, 2018, the unclaimed amounts will be transferred to the French *Caisse des dépôts et consignations* where the holders will still be able to claim them for a period of 20 years. After this time limit, the amounts will permanently become the property of the French State.

6.1.2.2 Change in share prices from January 1, 2017, to December 31, 2017

In Europe, for the major European oil and gas companies

(closing price in local currency)

TOTAL (euro)	-5.5%
Royal Dutch Shell A (euro)	6.9%
Royal Dutch Shell B (pound sterling)	6.6%
BP (pound sterling)	2.6%
ENI (euro)	-10.8%

Source: Bloomberg.

In the United States (ADR quotes for European companies), for the major international oil and gas companies

(closing price in dollars)

TOTAL	8.5%
ExxonMobil	-7.3%
Chevron	6.4%
Royal Dutch Shell A	22.7%
Royal Dutch Shell B	17.8%
BP	12.4%
ENI	2.9%

Source: Bloomberg.

6.1.2.3 Annual total return

As of December 31, 2017, for every €1,000 invested in TOTAL shares by an individual residing in France, assuming that the net dividends are reinvested in TOTAL shares, and excluding tax and social withholding:

Investment term	Annual total return		Value as of December 31, 2017, of €1,000 invested	
	TOTAL ^(a)	CAC 40 ^(b)	TOTAL	CAC 40
1 year	-0.30%	12.54%	997	1,125
5 years	9.28%	11.42%	1,559	1,718
10 years	3.52%	3.21%	1,413	1,371
15 years	7.35%	7.29%	2,896	2,872

(a) TOTAL's share prices, used for the calculation of the total return, take into account the adjustment made by Euronext Paris in 2006 following the detachment of Arkema's share allocation rights.

(b) CAC 40 quotes taken into account to calculate the total return include all dividends distributed by the companies that are in the index.

Sources: Euronext Paris, Bloomberg.

6.1.2.4 Market information summary

Share price (in €)	2013	2014	2015	2016	2017
Highest (during trading session)	45.67	54.71	50.30	48.89	49.50
Lowest (during trading session)	35.18	38.25	36.92	35.21	42.23
End of the year (closing)	44.53	42.52	41.27	48.72	46.05
Average of the last 30 trading sessions (closing)	43.60	44.32	43.57	46.22	47.00
Trading volume (average per session)^(a)					
Euronext Paris	4,439,725	5,519,597	7,412,179	6,508,817	5,380,909
NYSE (number of ADRs)	1,371,780	1,277,433	1,853,669	2,109,802	1,667,928

(a) Number of shares traded.

Sources: Euronext Paris, NYSE.

TOTAL share price at closing on Euronext Paris (2016-17)

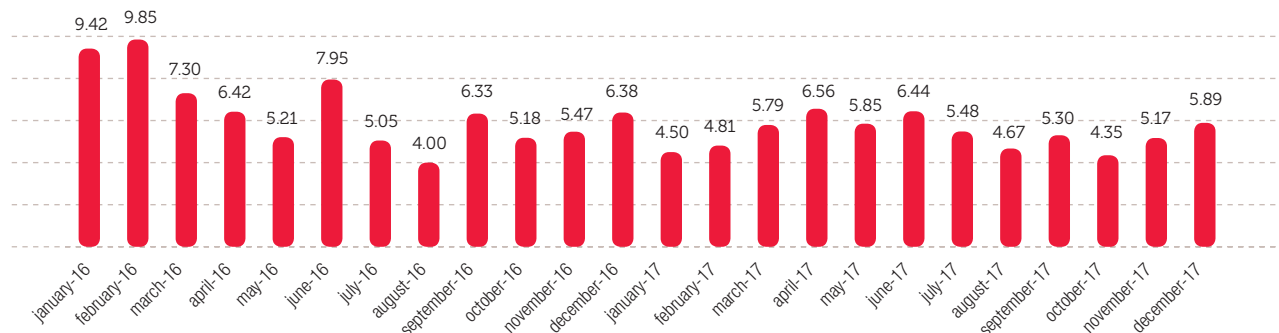
(in €)



Source : Euronext Paris.

TOTAL average daily volume traded on Euronext Paris

(in millions of shares)



Source: Euronext Paris.

6.2 Dividend

6.2.1 Dividend policy

6.2.1.1 Dividend payment policy

On October 28, 2010, TOTAL S.A.'s Board of Directors adopted a policy based on quarterly dividend payments starting in fiscal year 2011.

The decision of TOTAL S.A.'s subsidiaries to declare dividends is made by their relevant Shareholders' Meetings and is subject to the provisions of applicable local laws and regulations. As of December 31, 2017, there is no restriction under such provisions that would materially restrict the distribution to TOTAL S.A. of the dividends declared by those subsidiaries.

6.2.1.2 Fiscal year 2017 and 2018 dividends

TOTAL has distributed and paid the following interim dividends with respect to fiscal year 2017:

- on September 20, 2017, the Board of Directors decided on the payment of the first interim dividend for fiscal year 2017 of €0.62 per share. The ex-dividend date was September 25, 2017, and the payment in cash or new shares was made on October 12, 2017. The issuance price of these newly issued shares was set by the Board of Directors on September 20, 2017, at €41.12 per share, equal to the average Euronext Paris opening price of the shares for the 20 trading days preceding the Board of Directors meeting, reduced by the amount of the first interim dividend, with a 5% discount and rounded up to the nearest cent;

- on December 12, 2017, the Board of Directors decided on the payment of the second interim dividend for fiscal year 2017 of €0.62 per share. The ex-dividend date was December 19, 2017, and the payment in cash or new shares was made on January 11, 2018. The issuance price of these newly issued shares was set by the Board of Directors on December 12, 2017, at €46.55 per share, equal to the average Euronext Paris opening price of the shares for the 20 trading days preceding the Board of Directors meeting, reduced by the amount of the second interim dividend, without a discount and rounded up to the nearest cent.

On March 14, 2018, the Board of Directors decided on the payment of the third interim dividend for fiscal year 2017 of €0.62 per share. The ex-dividend date will be March 19, 2018 and this interim dividend will be paid on April 9, 2018.

After closing the 2017 statutory accounts, the Board of Directors decided on February 7, 2018, to propose to the Shareholders' Meeting on June 1, 2018, an annual dividend of €2.48 per share for fiscal year 2017. In light of the first three interim dividends decided by the Board of Directors, the balance of the dividend for fiscal year 2017 will be €0.62 per share, which is stable relative to the three preceding interim dividends.

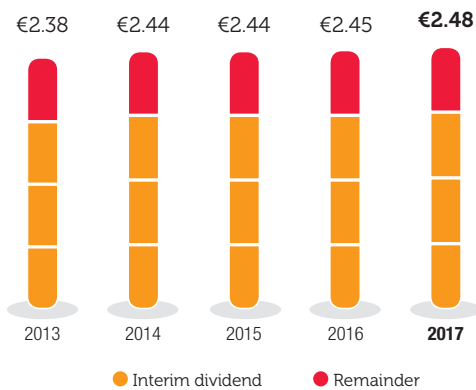
The Board of Directors also decided on February 7, 2018 to propose to the shareholders the option of receiving the remaining 2017 dividend payment in new shares of the Company without discount. Pending the approval at the Shareholders' Meeting, the ex-dividend date would be June 11, 2018, and the payment date for the cash dividend or the delivery of the new shares, depending on the election of the shareholder, would be set for June 28, 2018.

Subject to the applicable legislative and regulatory provisions, and pending the approval by the Board of Directors and at the Shareholders' Meeting to be held on June 1, 2018, the ex-date calendar for the interim dividends and the final dividend for fiscal year 2018 is expected to be as follows:

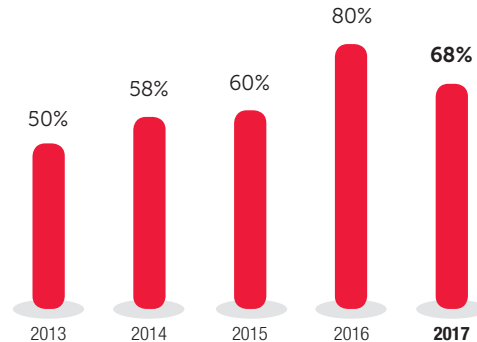
	Ex-dividend date
First interim dividend	September 25, 2018
Second interim dividend	December 18, 2018
Third interim dividend	March 19, 2019
Remaining dividend	June 11, 2019

The provisional ex-dividend dates above relate to the TOTAL shares traded on Euronext Paris.

Dividends for the last five fiscal years⁽¹⁾



In 2017, TOTAL's pay-out ratio was 68%⁽²⁾. Changes in the pay-out ratio⁽³⁾ over the past five fiscal years are as follows:



6.2.1.3 Shareholder return policy for next three years

The Board of Directors met on February 7, 2018, after arrested the Group's 2017 accounts, reviewed the cash flow allocation, including the shareholder return policy, for the next three years.

Despite a volatile environment over the past three years, TOTAL has successfully reset its business model, delivering solid results in 2017 thanks to strong operational performance and reducing its pre-dividend organic breakeven to \$27/b Brent.

After five years of heavy investment, TOTAL is now delivering strong cash-accretive production growth. The Group has also invested counter-cyclically to acquire resources at attractive prices and is emerging stronger, with clear visibility on growing cash flow and a net-debt-to-capital ratio reduced to 12% at end-2017 that provides increased financial flexibility.

Confident in the ability of the Group's teams to seize value-adding growth opportunities, the Board of Directors confirms the priority to implement its long term growth strategy.

In this context, the Board of Directors has decided to provide visibility on cash flow allocation and shareholder return for the next three years. The Board of Directors confirms a capital investment program of \$15-17 billion per year, set an objective to maintain the net-debt-to-capital ratio below 20%, and maintain its grade A credit rating and further proposes the following measures:

- Increasing the dividend by 10% over the next three years
 - The full-year 2017 dividend will be proposed to the Combined Shareholders' Meeting at €2.48 per share, corresponding to a final quarterly dividend of €0.62 per share and an increase of 1.2% compared to the full-year 2016 dividend.
 - The 2018 interim dividends will be increased by 3.2% to €0.64 per share, with the intention of proposing to the Combined Shareholders' Meeting a full-year 2018 dividend of €2.56 per share.
 - The target for the full-year 2020 dividend would be €2.72 per share.
- Buying back shares issued with no discount as part of the scrip dividend option
 - Maintain the scrip dividend option, with no discount on the price, since certain shareholders prefer to take their dividend in shares.
 - Buy back the newly issued share with the intention to cancel them. No dilution linked to the scrip dividend from 2018.
 - The buyback of the shares issued in January 2018 as part of the 2nd 2017 interim dividend payment will start immediately.
- Buying back up to \$5 billion of shares over the period 2018-2020
 - The objective is to share with investors the benefits of the oil price upside.
 - The amount of buyback will be adjusted to the oil price.
 - This is in addition to the scrip share buyback.

(1) Pending approval at the Shareholders' Meeting on June 1, 2018. As from January 1, 2018, dividends received by individuals having their tax residence in France are subject to a 30% flat-rate on gross amount (including 17.2% of social security contributions). However, taxpayer can opt for the taxation of his dividend income at the progressive scale of the income tax, after a 40% rebate.

(2) Based on adjusted fully diluted earnings per share of €3.65 and a dividend of €2.48 per share pending approval at the Shareholders' Meeting on June 1, 2018.

(3) Based on adjusted fully diluted earnings for the relevant year.

6.2.2 Dividend payment

BNP Paribas Securities Services manages the payment of the dividend, which is made through financial intermediaries using the Euroclear France direct payment system.

JP Morgan Chase Bank (4 New York Plaza, New York, NY 10005-1401, USA) manages the payment of dividends to holders of TOTAL American depository receipts (ADRs).

Dividend payment on stock certificates

TOTAL issued stock certificates (*certificats représentatifs d'actions*, CRs) as part of the public exchange offer for Total Petrochemicals & Refining SA/NV (formerly PetroFina) shares.

The CR is a stock certificate provided for by French rules, issued by Euroclear France, intended to circulate exclusively outside of France, and which may not be held by French residents. The CR is freely

convertible from a physical certificate into a security registered on a custody account and vice-versa. However, in compliance with the Belgian law of December 14, 2005, on the dematerialization of securities in Belgium, CRs may only be delivered in the form of a dematerialized certificate as of January 1, 2008. In addition, ING Belgique is the bank handling the payment of all coupons detached from outstanding CRs.

No fees are applicable to the payment of coupons detached from CRs, except for any income or withholding taxes; the payment may be received on request at the following bank branches:

- ING Belgique, Avenue Marnix 24, 1000 Brussels, Belgium;
- BNP Paribas Fortis, Avenue des Arts 45, 1040 Brussels, Belgium;
- KBC BANK N.V., Avenue du Port 2, 1080 Brussels, Belgium.

6.2.3 Coupons

Fiscal year	Ex-dividend date	Date of payment	Date of expiration	Type of coupon	Net amount (€)
2011	09/19/2011	09/22/2011	09/22/2016	Interim dividend	0.57
	12/19/2011	12/22/2011	12/22/2016	Interim dividend	0.57
	03/19/2012	03/22/2012	03/22/2017	Interim dividend	0.57
	06/18/2012	06/21/2012	06/21/2017	Remaining dividend	0.57
2012	09/24/2012	09/27/2012	09/27/2017	Interim dividend	0.57
	12/17/2012	12/20/2012	12/20/2017	Interim dividend	0.59
	03/18/2013	03/21/2013	03/21/2018	Interim dividend	0.59
	06/24/2013	06/27/2013	06/27/2018	Remaining dividend	0.59
2013	09/24/2013	09/27/2013	09/27/2018	Interim dividend	0.59
	12/16/2013	12/19/2013	12/19/2018	Interim dividend	0.59
	03/24/2014	03/27/2014	03/27/2019	Interim dividend	0.59
	06/02/2014	06/05/2014	06/05/2019	Remaining dividend	0.61
2014	09/23/2014	09/26/2014	09/26/2019	Interim dividend	0.61
	12/15/2014	12/17/2014	12/17/2019	Interim dividend	0.61
	03/23/2015	03/25/2015	03/25/2020	Interim dividend	0.61
	06/08/2015	07/01/2015	07/01/2020	Remaining dividend	0.61
2015	09/28/2015	10/21/2015	10/21/2020	Interim dividend	0.61
	12/21/2015	01/14/2016	01/14/2021	Interim dividend	0.61
	03/21/2016	04/12/2016	04/12/2021	Interim dividend	0.61
	06/06/2016	06/23/2016	06/23/2021	Remaining dividend	0.61
2016	09/27/2016	10/14/2016	10/14/2021	Interim dividend	0.61
	12/21/2016	01/12/2017	01/12/2022	Interim dividend	0.61
	03/20/2017	04/06/2017	04/06/2022	Interim dividend	0.61
	06/05/2017	06/22/2017	06/22/2022	Remaining dividend	0.62
2017 ^(a)	09/25/2017	10/12/2017	10/12/2022	Interim dividend	0.62
	12/19/2017	01/11/2018	01/11/2023	Interim dividend	0.62
	03/19/2018	04/09/2018	04/09/2023	Interim dividend	0.62
	06/11/2018	06/28/2018	06/28/2023	Remaining dividend	0.62

(a) A resolution will be submitted to the Annual Shareholders' Meeting on June 1, 2018, to pay a dividend of €2.48 per share for fiscal year 2017, including a remaining dividend of €0.62 per share, with an ex-dividend date on June 11, 2018, and a payment date set for June 28, 2018, in cash or in new shares with no discount.

6.3 Share buybacks

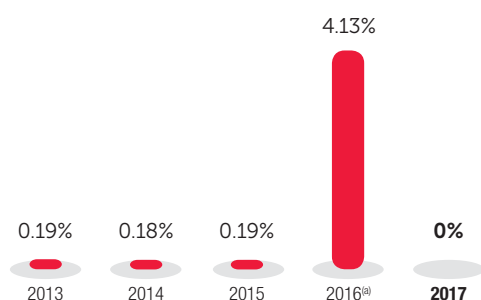
Upon presentation of the report of the Board of Directors, the Annual Shareholders' Meeting of May 26, 2017 authorized the Board of Directors, with the possibility to sub-delegate such authority under the terms provided for by French law, pursuant to the provisions of Article L. 225-209 of the French Commercial Code, of Regulation (EU) N°596/2014 of April 16, 2014, on market abuse and of the General Regulation (*règlement général*) of the French Financial

Markets Authority (*Autorité des marchés financiers*, AMF), to buy or sell shares of the Company within the framework of a share buyback program. The maximum purchase price was set at €80 per share. The number of shares acquired may not exceed 10% of the share capital. This authorization was granted for a period of 18 months and replaced the previous authorization granted by the Shareholders' Meeting of May 24, 2016.

6.3.1 Share buybacks and cancellations in 2017

In 2017, TOTAL S.A. did not buy back or cancel any shares.

Percentage of share capital bought back



(a) Buyback of treasury shares off-market immediately followed by their cancellation.

6.3.2 Board of Directors' report on share buybacks and sales

6.3.2.1 Share buybacks during fiscal year 2017

In 2017, TOTAL S.A. did not buy back any shares.

6.3.2.2 Cancellation of Company shares during fiscal years 2015, 2016 and 2017

TOTAL S.A. did not cancel any shares during fiscal years 2015 and 2017.

At its meeting on December 15, 2016, and pursuant to the authorization of the combined Shareholders' Meeting of May 11, 2012, the Board of Directors of TOTAL S.A. decided to reduce the share capital by a global nominal amount of €250,828,170.00 by canceling 100,331,268 treasury shares that TOTAL S.A. had previously bought back under the share buyback program, as authorized by the Annual Shareholders' Meeting of May 24, 2016.

6.3.2.3 Transfer of shares during fiscal year 2017

2,210,040 TOTAL shares were transferred during fiscal year 2017 following the final award of TOTAL shares under the restricted share grant plans.

6.3.2.4 Shares held in the name of the Company and its subsidiaries as of December 31, 2017

As of December 31, 2017, the Company held 8,376,756 treasury shares, representing 0.33% of TOTAL S.A.'s share capital including 8,345,847 shares held to cover the performance share grant plans and 30,909 shares to be awarded under new share purchase option plans or new restricted share grant plans. In accordance with French law, these shares are deprived of voting rights and dividend rights.

For shares bought back to be allocated to Company or Group employees in line with the objectives referred to Regulation (EU) N°596/2014 of the European Parliament and the Council of April 16, 2014 on market abuse, note that, when such shares are held to cover share purchase option plans that have expired or performance share grants that have not been awarded at the end of the vesting period, they will be allocated to new TOTAL share purchase option plans or restricted share grant plans that may be approved by the Board of Directors.

6.3.2.5 Reallocation for other purposes during fiscal year 2017

During fiscal year 2017, treasury shares held by the Company were not reallocated for any other purposes other than those initially planned when they were purchased.

6.3.2.6 Conditions for the buyback and use of derivative products

The Company did not use any derivative products as part of the share buyback programs successively authorized by the Annual Shareholders' Meetings of May 24, 2016 and May 26, 2017. Further, there was no open purchase or sale position as of December 31, 2017.

Transactions completed by TOTAL S.A. involving its treasury shares from January 1, 2017 to December 31, 2017

	Cumulative gross movements	
	Purchases	Sales/Transfers
Number of shares	-	2,210,040 ^(a)
Transaction price (€)	-	-
Average strike price	-	-
Amounts (M€)	-	-

(a) Corresponding to final award of TOTAL shares under the restricted share grant plans.

Treasury shares as of December 31, 2017

Percentage of share capital held by TOTAL S.A.	0.33%
Number of shares held in portfolio	8,376,756 ^(a)
Nominal value of the portfolio (M€)	20.9 ^(b)
Book value of portfolio (M€)	378.9
Market value of the portfolio (M€)	385.7 ^(c)

(a) Including 8,345,847 shares held to cover the performance share grant plans and 30,909 shares to be awarded under new share purchase option plans or new restricted share grant plans.

(b) Based on TOTAL shares nominal value of €2.50.

(c) Based on a closing price of €46.045 per share as of December 31, 2017.

6.3.3 2018-2019 share buyback program

6.3.3.1 Description of the share buyback program under Article 241-1 et seq. of the General Regulation of the French Financial Markets Authority

The objectives of the share buyback program are as follows:

- reduce the Company's capital through the cancellation of shares;
- honor the Company's obligations related to securities convertible or exchangeable into Company shares;
- honor the Company's obligations related to stock option programs or other share grants to the Company's executive directors or to employees of the Company or a Group subsidiary; and
- stimulate the secondary market or the liquidity of the TOTAL share under a liquidity agreement.

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6.3.3.2 Legal framework

Implementation of this share buyback program, which is covered by Articles L. 225-209 et seq. of the French Commercial Code, Article 241-1 et seq. of the General Regulation of the French Financial

Markets Authority (*Autorité des marchés financiers* – AMF), and the provisions of Regulation (EU) N°596/2014 on market abuse, is subject to approval by the TOTAL S.A. Annual Shareholders' Meeting of June 1, 2018 through the 5th resolution that reads as follows:

“Upon presentation of the report by the Board of Directors and information appearing in the description of the program prepared pursuant to Articles 241-1 et seq. of the General Regulation (*règlement général*) of the French Financial Markets Authority (*Autorité des marchés financiers*, AMF), and voting under the conditions of quorum and majority required for Ordinary General Meetings, the shareholders hereby authorize the Board of Directors, with the possibility to sub-delegate such authority under the terms provided for by French law, pursuant to the provisions of Article L. 225-209 of the French Commercial Code, of Regulation (EU) N°596/2014 of April 16, 2014 on market abuse and of the General Regulation of the AMF, to buy or sell shares of the Company within the framework of a share buyback program.

The purchase, sale or transfer of such shares may be transacted by any means on regulated markets, multilateral trading facilities or over the counter, including the purchase or sale by block-trades, in accordance with the regulations of the relevant market authorities. Such transactions may include the use of any financial derivative instrument traded on regulated markets, multilateral trading facilities or over the counter, and implementing option strategies.

These transactions may be carried out at any time, in accordance with the applicable rules and regulations at the date of the operations under consideration, except during any public offering periods applying to the Company's share capital.

The maximum purchase price is set at €80 per share.

In the case of a share capital increase by incorporation of reserves or share grants for no consideration and in the case of a stock-split or a reverse-stock-split, this maximum price shall be adjusted by applying the ratio of the number of shares outstanding before the transaction to the number of shares outstanding after the transaction.

Pursuant to the provisions of Article L. 225-209 of the French Commercial Code, the maximum number of shares that may be bought back under this authorization may not exceed 10% of the total number of shares composing the capital as of the date on which this authorization is used. This limit of 10% is applicable to the share capital of the Company which may be adjusted from time to time as a result of transactions after the date of the present Meeting. Purchases made by the Company may under no circumstances result in the Company holding more than 10% of the share capital, either directly or indirectly through subsidiaries.

As of December 31, 2017, out of the 2,528,989,616 shares outstanding, the Company held 8,376,756 shares directly. Under these circumstances, the maximum number of shares that the Company could buy back is 244,522,205 shares and the maximum amount that the Company may spend to acquire such shares is €19,561,776,400 (excluding acquisition fees).

The purpose of this share buyback program is to reduce the number of shares outstanding or to allow the Company to fulfill its engagements in connection with:

- convertible or exchangeable securities that may give holders rights to receive shares of the Company upon conversion or exchange; or
- share purchase option plans, employee shareholding plans, Company savings plans or other share allocation programs for executive directors or employees of the Company or Group companies.

The purpose of buybacks may also be the implementation of the market practice accepted by the French Financial Markets Authority (*Autorité des marchés financiers*), i.e., support the secondary market or the liquidity of TOTAL shares by an investment services provider by means of a liquidity agreement compliant with the deontology charter recognized by the French Financial Markets Authority (*Autorité des marchés financiers*).

This program may also be used by the Company to trade in its own shares, either on or off the market, for any other purpose that is authorized under the applicable law or any other permitted market practice that may be authorized at the date of the operations under consideration. In case of transactions other than the above-mentioned intended purposes, the Company will inform its shareholders in a press release.

According to the intended purposes, the treasury shares that are acquired by the Company through this program may, in particular, be:

- canceled, up to the maximum legal limit of 10% of the total number of shares composing the capital on the date of the operation, per each 24-month period;
- granted for no consideration to the employees and to the executive directors of the Company or of other companies of the Group;
- delivered to the beneficiaries of the Company's shares purchase options having exercised such options;
- sold to employees, either directly or through the intermediary of Company savings funds;
- delivered to the holders of securities that grant such rights to receive such shares, either through redemption, conversion, exchange, presentation of a warrant or in any other manner; and
- used in any other way consistent with the purposes stated in this resolution.

While they are bought back and held by the Company, such shares will be deprived of voting rights and dividend rights.

This authorization is granted for a period of 18 months from the date of this Meeting. It renders ineffective, up to the unused portion, any previous authorization having the same purpose.

The Board of Directors is hereby granted full authority, with the right to subdelegate such authority, to undertake all actions authorized by this resolution.”

6.3.3.3 Conditions

Maximum share capital to be purchased and maximum funds allocated to the transaction

The maximum number of shares that may be purchased under the authorization proposed to the Annual Shareholders' Meeting of June 1, 2018, may not exceed 10% of the total number of shares composing the capital, with this limit applying to an amount of the Company's share capital that will be adjusted, if necessary, to include transactions affecting the share capital subsequent to this Meeting. Purchases made by the Company may under no circumstances result in the Company holding more than 10% of the share capital, either directly or indirectly through subsidiaries.

Before any share cancellation under the authorization given by the Annual Shareholders' Meeting of June 1, 2018, based on the number of shares outstanding as of December 31, 2017 (2,528,989,616 shares), and given the 8,376,756 shares held by the Group as of December 31, 2017, *i.e.*, 0.33% of the share capital, the maximum number of shares that may be purchased would be 244,522,205, representing a theoretical maximum investment of €19,561,776,400 (excluding acquisition fees) based on the maximum purchase price of €80.

Conditions for buybacks

Such shares may be bought back by any means on regulated markets, multilateral trading facilities or over the counter, including

through the purchase or sale of blocks of shares, under the conditions authorized by the relevant market authorities. These means include the use of any financial derivative instrument traded on a regulated market or over the counter and the implementation of option strategies, with the Company taking measures, however, to avoid increasing the volatility of its stock. The portion of the program carried out through the purchase of blocks of shares will not be subject to quota allocation, up to the limit set by this resolution. These transactions may be carried out at any time, in accordance with the applicable rules and regulations, except during any public offering periods applying to the Company's share capital.

Duration and schedule of the share buyback program

In accordance with the 5th resolution, which will be submitted to the Annual Shareholders' Meeting of June 1, 2018, the share buyback program may be implemented over an 18-month period following the date of this Meeting, and therefore expires on November 30, 2019.

Transactions carried out under the previous program

Transactions carried out under the previous program are listed in the special report of the Board of Directors on share buybacks (refer to point 6.3.2 of this chapter).

6.4 Shareholders

6.4.1 Major shareholders

6.4.1.1 Changes in major shareholders' holdings

TOTAL's major shareholders⁽¹⁾ as of December 31, 2017, 2016 and 2015 were as follows:

As of December 31,	2017			2016		2015	
	% of share capital	% of voting rights	% of theoretical voting rights ^(a)	% of share capital	% of voting rights	% of share capital	% of voting rights
BlackRock, Inc. ^(b)	6.3	5.5	5.5	5.6	4.9	5.5	5
Group employees ^(c)	5.0	8.8	8.7	4.8	8.6	4.9	9
<i>of which FCPE Total Actionnariat France</i>	3.5	6.4	6.4	3.5	6.4	3.5	6.7
Other shareholders	88.7	85.7	85.8	89.6	86.5	89.6	86
<i>of which holders of ADRs^(d)</i>	7.9	7.4	7.4	9.1	8.6	7.2	7.2

(a) Pursuant to Article 223-11 of the AMF General Regulation, the number of theoretical voting rights is calculated on the basis of all outstanding shares to which voting rights are attached, including treasury shares that are deprived of voting rights.

(b) Information taken from Schedule 13G filed by BlackRock, Inc. ("BlackRock") with the SEC on February 1, 2017, in which BlackRock declared a holding of 159,257,811 shares of the Company as of December 31, 2017 (*i.e.*, 6.3% of the Company's share capital). BlackRock stated that it has the exclusive right to dispose of the holding, together with an amount of 146,653,028 voting rights (*i.e.*, 5.5% of the Company's voting rights). In addition, BlackRock stated that it does not have any joint voting rights or joint right to dispose of these shares.

(c) On the basis of the definition of employee shareholding set forth in Article L. 225-102 of the French Commercial Code. Amundi, the Holding company of Amundi Asset Management, which in turn manages the Total Actionnariat France collective investment fund (see below), filed a Schedule 13G with the SEC on February 14, 2018, declaring a holding of 237,635,765 shares of the Company as of December 31, 2017 (*i.e.*, 9.4% of the Company's share capital). Amundi stated that it does not have any exclusive voting rights or exclusive right to dispose of these shares and that it has joint voting rights on 111,935,867 of these shares (*i.e.*, 4.4% of the Company's share capital) and a joint right to dispose of all of these shares. In addition, a director representing the employees and a director representing employee shareholders sit on the Board of Directors of TOTAL S.A.

(d) Including all of the ADS represented by ADR listed on the NYSE.

(1) Major shareholders are defined herein as shareholders whose interest (in the share capital or voting rights) exceeds 5%.

As of December 31, 2017, the holdings of the major shareholders were calculated based on 2,528,989,616 shares, representing 2,678,015,444 voting rights exercisable at Shareholders' Meetings, or 2,686,392,200 theoretical⁽¹⁾ voting rights including 8,376,756 voting rights attached to the 8,376,756 TOTAL shares held by TOTAL S.A. that are deprived of voting rights.

For prior years, the holdings of the major shareholders were calculated on the basis of 2,430,365,862 shares to which 2,572,363,626 voting rights exercisable at Shareholders' Meetings were attached as of December 31, 2016, and 2,440,057,883 shares to which 2,460,619,275 voting rights exercisable at Shareholders' Meetings were attached as of December 31, 2015.

6.4.1.2 Holdings above the legal thresholds

In accordance with Article L. 233-13 of the French Commercial Code, to TOTAL's knowledge, two known shareholders hold 5% or more of TOTAL's share capital or voting rights at year-end 2017.

As of December 31, 2017, the Total Actionnariat France collective investment fund held 3.48% of the share capital representing 6.37% of the voting rights exercisable at Shareholders' Meetings and 6.35% of the theoretical voting rights.

As of December 31, 2017, BlackRock held 6.30% of the share capital representing 5.48% of the voting rights exercisable at Shareholders' Meetings and 5.46% of the theoretical voting rights.

6.4.1.3 Legal threshold notifications in fiscal year 2017

N° AMF disclosure	Date on which thresholds were breached	Company	Number of shares	% share capital	% voting rights	Comments	Share capital	Number of voting rights
217C0669	03/15/2017	BlackRock	128,596,522	5.24%	4.93%	Crossed downward the 5% threshold in the Company's voting rights	2,453,807,693	2,605,925,718
217C0694	03/21/2017	BlackRock	131,040,586	5.34%	5.03%	Crossed upward the 5% threshold in the Company's voting rights	2,453,807,693	2,605,925,718
217C2958	12/12/2017	JP Morgan Chase & Co.	128,819,605	5.09%	4.81%	Crossed upward the 5% threshold in the Company's capital shares	2,528,814,376	2,677,900,746
217C2969	12/13/2017	JP Morgan Chase & Co.	150,712,345	5.96%	5.61%	Crossed upward the 5% threshold in the Company's voting rights	2,528,814,376	2,686,277,502
217C3006	12/19/2017	JP Morgan Chase & Co.	101,969,739	4.03%	3.80%	Crossed downward the 5% threshold in the Company's capital shares and voting rights	2,528,814,376	2,686,277,502

6.4.1.4 Threshold notifications required by the bylaws

In addition to the legal obligation to inform the Company and the French Financial Markets Authority when the number of shares (or securities similar to shares or voting rights pursuant to Article L. 233-9 of the French Commercial Code) held represents more than 5%, 10%, 15%, 20%, 25%, 30%, one third, 50%, two thirds, 90% or 95% of the share capital or theoretical voting rights, such information being made at the latest on the close of the fourth trading day after the threshold is exceeded (Article L. 233-7 of the French Commercial Code and Article 223-14 of the AMF General Regulation), any individual or legal entity who directly or indirectly comes to hold a percentage of the share capital, voting rights or rights giving future access to the Company's share capital that is equal to or greater than 1%, or a multiple of this percentage, is required to notify the Company, within 15 days of the date on which each of the above thresholds is exceeded, by registered mail with return receipt requested, and indicate the number of shares held.

In case the shares above these thresholds are not declared, any shares held in excess of the threshold that should have been declared will be deprived of voting rights at Shareholders' Meetings if, at a Shareholders' Meeting, the failure to make a declaration is acknowledged and if one or more shareholders holding collectively at least 3% of the Company's share capital or voting rights so request at that Meeting.

Any individual or legal entity is also required to notify the Company in due form and within the time limits stated above when their direct or indirect holdings fall below each of the aforementioned thresholds.

Notifications must be sent to the Senior Vice President of Investor Relations in London (contact details in point 6.6.6 of this chapter).

6.4.1.5 Temporary transfer of securities

Pursuant to legal provisions, any legal entity or individual (with the exception of those described in paragraph IV-3 of Article L. 233-7 of the French Commercial Code) holding alone or in concert a number of shares representing more than 0.5% of the Company's voting rights pursuant to one or more temporary transfers or similar operations as described in Article L. 225-126 of the aforementioned Code is required to notify the Company and the French Financial Markets Authority (*Autorité des marchés financiers*) of the number of shares temporarily owned no later than the second business day preceding the Shareholders' Meeting at midnight.

Notifications must be e-mailed to the Company at the following address: holding.df-declarationdeparticipation@total.com

If no notification is sent, any shares acquired under any of the above temporary transfer operations will be deprived of voting rights at the relevant Shareholders' Meeting and at any Shareholders' Meeting that may be held until such shares are transferred again or returned.

(1) Pursuant to Article 223-11 of the AMF General Regulation, the number of theoretical voting rights is calculated on the basis of all outstanding shares to which voting rights are attached, including treasury shares that are deprived of voting rights.

6.4.1.6 Shareholders' agreements

TOTAL S.A. is not aware of any agreements among its shareholders.

6.4.2 Employee shareholding

The total number of TOTAL shares held directly or indirectly by the Group's employees as of December 31, 2017, were as follows:

FCPE Total Actionnariat France	88,117,966
FCPE Total Actionnariat International Capitalisation	25,195,337
FCPE Total France Capital +	6,351,752
FCPE Total International Capital	2,664,836
Shares subscribed by employees in the U.S.	797,908
Group Caisse Autonome (Belgium)	468,736
TOTAL shares from the exercise of the Company's stock options and held as registered shares within a Company Savings Plan	3,307,463
TOTAL SHARES HELD BY EMPLOYEES	126,903,998

As of December 31, 2017, the Group's employees held, on the basis of the definition of employee shareholding set forth in Article L. 225-102 of the French Commercial Code, 126,903,998 TOTAL shares, representing 5.02% of the Company's share capital and 8.78% of the voting rights. The management of each of the Collective investment funds (FCPEs) mentioned above is controlled by a dedicated Supervisory Board, two thirds of its members representing holders of fund units and one third representing the Company. The Supervisory Board is responsible for reviewing the Collective investment fund's management report and annual financial statements, as well as the financial, administrative and accounting management of the fund, exercising voting rights attached to portfolio securities, deciding contributions of securities in case of a public tender offer, deciding mergers, spin-offs or liquidations, and granting

its approval prior to changes in the rules and procedures of the Collective investment fund in the conditions provided for by the rules and procedures.

These rules and procedures also stipulate a simple majority vote for decisions, except for decisions requiring a qualified majority vote of two-thirds plus one related to a change in a fund's rules and procedures, its conversion or disposal.

For employees holding shares outside of the employee collective investment funds mentioned in the table above, voting rights are exercised individually.

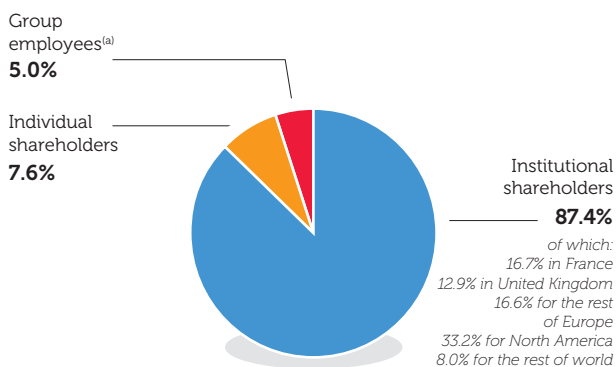
The information regarding shares held by the administration and management bodies is set forth in point 4.1.6 of chapter 4.

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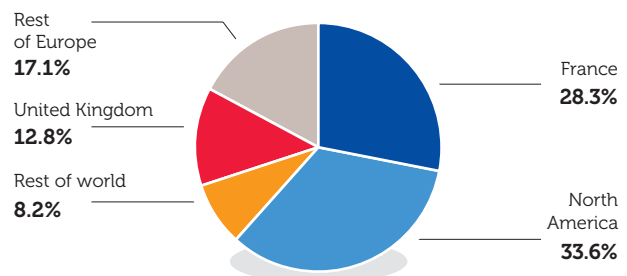
6.4.3 Shareholding structure

Estimates below are as of December 31, 2017, excluding treasury shares, based on the survey of identifiable holders of bearer shares conducted on that date.

By shareholder type



By area



(a) On the basis of employee shareholdings as defined in Article L. 225-102 of the French Commercial Code, treasury shares excluded (5.0% of the total share capital, refer to point 6.4.1 of this chapter).

The number of French individual TOTAL shareholders is estimated at approximately 450,000.

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6.6 Investor relations

6.6.1 Documents on display

Information and documents regarding TOTAL S.A., its bylaws and the Company's Statutory and Consolidated Financial Statements for the year ended December 31, 2017, or previous fiscal years, may be consulted at its registered office pursuant to the legal and regulatory provisions in force, and on the Company website.

In addition, the French version of TOTAL S.A.'s Registration Documents (including the annual financial reports) and mid-year financial reports filed with the French Financial Markets Authority (*Autorité des marchés financiers*) for each of the past 10 financial

years are available on its website total.com (under Investors/Publications and regulated information). The Group's biannual presentations of its results and outlook, as well as the quarterly financial information, are also available on its website.

In addition, in order to meet its obligations related to the listing of its shares in the United States, the Company also files an annual report on Form 20-F, in English, with the SEC. This report is also available on the Company website.

6.6.2 Relationships with institutional investors, financial analysts and individual shareholders

Members of the Group's General Management and Investor Relations regularly meet with institutional investors and financial analysts in the leading financial centers throughout the world. In 2017, the Group organized more than 1,000 meetings.

Each year, two main presentations are given to the financial community: one in February following the publication of the results for the previous fiscal year, and one in September to present the Group's outlook and objectives. A series of meetings is held after each of these presentations. In addition, each year the Chief Financial Officer hosts three conference calls to discuss results for the first, second and third quarters of the year.

The information presented and broadcast at these events is available on the Group's website.

With a dedicated team, the Group maintains an active dialog with shareholders in the field of Corporate Social Responsibility (CSR) and governance. Around 100 meetings covering these themes were organized in France and worldwide in 2017.

The Group also has a team dedicated to relationships with individual shareholders. This department, which is ISO 9001 certified, offers a comprehensive communication package, featuring:

- a direct line, e-mail address, and postal address (refer to point 6.6.6 of this chapter);
- documentation and material provided for individual shareholders (e.g., the shareholders' newsletter, individual shareholders pages available on the Company's website, and a Total Investors mobile app for digital tablets and smartphones);
- shareholder meetings and investor fairs held in France and worldwide;
- the Shareholders' Club, which organizes visits to industrial facilities, visits to natural sites and cultural events sponsored by the Total Foundation, and conferences about the Group;
- the Shareholders' e-Advisory Committee, which expresses its views on the communication service as a whole.

This team also organizes the Annual Shareholders' Meeting, which was held on May 26, 2017, at the *Palais des Congrès* in Paris and attended by 3,000 people.

The documentation on relationships with individual shareholders is available on the Company's website total.com (under Investors/Individual shareholders).

6.6.3 Registered shareholding

TOTAL shares can be held in bearer form or registered form. In the latter case, shareholders are identified by TOTAL S.A., in its capacity as the issuer, or by its agent, BNP Paribas Securities Services, which is responsible for keeping the register of shareholders' registered shares.

Registered shares

There are two forms of registration:

- administered registered shares: shares are registered with TOTAL through BNP Paribas Securities Services, but the holder's financial intermediary continues to administer them (sales, purchases, coupons, etc.);
- pure registered shares: TOTAL holds and directly administers shares on behalf of the holder through BNP Paribas Securities Services (sales, purchases, coupons, Shareholders' Meeting

notices, etc.), so that the shareholder does not need to appoint a financial intermediary.

Main advantages of registered shares

The advantages of registered shares include:

- double voting rights if the shares are held continuously for two successive years (refer to point 7.2.4.1 of chapter 7);
- a number for all contacts with BNP Paribas Securities Services (a toll-free call within France from a landline): 0 800 117 000 or +33 1 40 14 80 61 (from outside France); from Monday to Friday (business days), from 8:45 a.m. to 6:00 p.m., GMT+1;
- registration as a recipient of all information published by the Group for its shareholders;

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- the ability to join the TOTAL Shareholders' Club by holding at least 50 shares.

The advantages of pure registered shares, in addition to those of administered registered shares, include:

- no custodial fees;
- easier placement of market orders⁽¹⁾ (phone, mail, fax, internet);

- brokerage fees of 0.20% (before tax) of the gross amount of the trade, with no minimum charge and up to €1,000 per trade;
- the option to view and manage shareholdings online and via the Planetshares app for digital tablets.

To convert TOTAL shares into pure registered shares, shareholders must fill out a form that can be obtained upon request from the Individual Shareholder Relations Department and send it to their financial intermediary.

6.6.4 2018 financial calendar

February 8	Results of the fourth quarter and full year 2017, and Investors' Day – London
March 19	Ex-dividend date for the 2017 third interim dividend
April 26	Results of the first quarter 2018
June 1	2018 Annual Shareholders' Meeting in Paris (Palais des Congrès)
June 11	Ex-dividend date for the 2017 remaining dividend ^(a)
July 26	Results of the second quarter and first half 2018
September 25	Investors' Day (outlook and objectives)
September 25	Ex-dividend date for the 2018 first interim dividend ^(b)
October 26	Results of the third quarter and first nine months of 2018
December 18	Ex-dividend date for the 2018 second interim dividend ^(b)

(a) Subject to approval at the Annual Shareholders' Meeting on June 1, 2018.
 (b) Subject to the Board of Directors' decision.

The full calendar including shareholders' meetings and investor fairs is available on the Company's website total.com (under Investors).

6.6.5 2019 financial calendar

March 19	Ex-dividend date for the 2018 third interim dividend ^(a)
May 29	2019 Annual Shareholders' Meeting in Paris (Palais des Congrès)
June 11	Ex-dividend date for the 2018 remaining dividend ^(b)

(a) Subject to the Board of Directors' decision.
 (b) Subject to approval at the Annual Shareholders' Meeting on May 29, 2019.

6.6.6 Investor Relations contacts

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- from France: 0 800 039 039 (toll-free number from a landline)
- from Belgium: 02 288 3309
- from the United Kingdom: 020 7719 6084
- from Germany: 30 2027 7700
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(1) Provided the subscriber has signed the market service agreement. Signing this agreement is free of charge.

7

GENERAL INFORMATION

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7.1 Share capital

7.1.1 Share capital as of December 31, 2017

€6,322,474,040 consisting of 2,528,989,616 fully paid ordinary shares.

7.1.2 Features of the shares

There is only one class of shares, and the par value of each share is €2.50. A double voting right is granted under certain conditions (refer to point 7.2.4.1 of this chapter) to every shareholder.

The shares are in bearer or registered form at the shareholder's discretion. The shares are in book-entry form and registered in an account.

7.1.3 Potential share capital as of December 31, 2017

Securities granting rights to TOTAL shares through exercise are TOTAL share subscription options amounting to 2,440,940 as of December 31, 2017, divided into:

- 1,950,372 options awarded on September 14, 2010, under the plan decided by the Board of Directors;

- 490,568 options awarded on September 14, 2011, under the plan decided by the Board of Directors.

The potential share capital (*i.e.*, the existing share capital plus rights and securities that could result in the issuance of new TOTAL shares through exercise), *i.e.*, 2,531,430,556 shares, represents 100.10% of the share capital as of December 31, 2017 ⁽¹⁾.

7.1.4 Share capital history (since January 1, 2015)

For fiscal year 2015

April 27, 2015	Acknowledgment of the issuance of 10,479,410 new shares, par value €2.50 per share, as part of the share capital increase reserved for Group employees approved by the Board of Directors on July 29, 2014, raising the share capital by €26,198,525 from €5,963,168,812.50 to €5,989,367,337.50.
July 1, 2015	Acknowledgment of the issuance of 18,609,466 new shares, par value €2.50 per share and a share price of €42.02 (<i>i.e.</i> , a par value of €2.50 value and issue premium of €39.52) for the payment of the 2014 remaining dividend in shares, raising the share capital by €46,523,665 from €5,989,367,337.50 to €6,035,891,002.50.
October 21, 2015	Acknowledgment of the issuance of 24,231,876 new shares, par value €2.50 per share and a share price of €35.63 (<i>i.e.</i> , a par value of €2.50 value and issue premium of €33.13) for the payment of the first interim dividend for fiscal year 2015 in shares, raising the share capital by €60,579,690 from €6,035,891,002.50 to €6,096,470,692.50.

For fiscal year 2016

January 14, 2016	Acknowledgment of the issuance of 1,469,606 new shares, par value €2.50 per share, through the exercise of stock options between January 1 and December 31, 2015, raising the share capital by €3,674,015 from €6,096,470,692.50 to €6,100,144,707.50. Acknowledgment of the issuance of 13,945,709 new shares, par value €2.50 per share and a share price of €39.77 (<i>i.e.</i> , a par value of €2.50 value and issue premium of €37.27) for the payment of the second interim dividend for fiscal year 2015 in shares, raising the share capital by €34,864,272.50 from €6,100,144,707.50 to €6,135,008,980.
April 12, 2016	Acknowledgment of the issuance of 24,752,821 new shares, par value €2.50 per share and a share price of €36.24 (<i>i.e.</i> , a par value of €2.50 value and issue premium of €33.74) for the payment of the third interim dividend for fiscal year 2015 in shares, raising the share capital by €61,882,052.50 from €6,135,008,980 to €6,196,891,032.50.
June 23, 2016	Acknowledgment of the issuance of 24,372,848 new shares, par value €2.50 per share and a share price of €38.26 (<i>i.e.</i> , a par value of €2.50 value and issue premium of €35.76) for the payment of the 2015 remaining dividend in shares, raising the share capital by €60,932,120 from €6,196,891,032.50 to €6,257,823,152.50.

(1) On the basis of 2,528,989,616 TOTAL shares constituting the share capital as of December 31, 2017, and 2,440,940 TOTAL shares that could be issued upon the exercise of TOTAL options.

- October 14, 2016 Acknowledgment of the issuance of 25,329,951 new shares, par value €2.50 per share and a share price of €38.00 (*i.e.*, a par value of €2.50 value and issue premium of €35.50) for the payment of the first interim dividend for fiscal year 2016 in shares, raising the share capital by €63,324,877.50 from €6,257,823,152.50 to €6,321,148,030.
- December 15, 2016 Reduction of the share capital by 100,331,268 shares, par value €2.50 per share for the cancellation of treasury shares, reducing the share capital by €250,828,170 from €6,321,148,030 to €6,070,319,860.

For fiscal year 2017

- January 12, 2017 Acknowledgment of the issuance of 2,237,918 new shares, par value €2.50 per share, through the exercise of stock options between January 1 and December 31, 2016, raising the share capital by €5,594,795 from €6,070,319,860 to €6,075,914,655.
- Acknowledgment of the issuance of 23,206,171 new shares, par value €2.50 per share and a share price of €41.87 (*i.e.*, a par value of €2.50 value and issue premium of €39.37) for the payment of the second interim dividend for fiscal year 2016 in shares, raising the share capital by €58,015,427.50 from €6,075,914,655 to €6,133,930,082.50.
- April 6, 2017 Acknowledgment of the issuance of 19,800,590 new shares, par value €2.50 per share and a share price of €44.64 (*i.e.*, a par value of €2.50 value and issue premium of €42.14) for the payment of the third interim dividend for fiscal year 2016 in shares, raising the share capital by €49,501,475 from €6,133,930,082.50 to €6,183,431,557.50.
- April 26, 2017 Acknowledgment of the issuance of 9,532,190 new shares, par value €2.50 per share, as part of the share capital increase reserved for Group employees approved by the Board of Directors on July 27, 2016, raising the share capital by €23,830,475 from €6,183,431,557.50 to €6,207,262,032.50.
- June 22, 2017 Acknowledgment of the issuance of 17,801,936 new shares, par value €2.50 per share and a share price of €44.86 (*i.e.*, a par value of €2.50 value and issue premium of €42.36) for the payment of the 2016 remaining dividend in shares, raising the share capital by €44,504,840 from €6,207,262,032.50 to €6,251,766,872.50.
- October 12, 2017 Acknowledgment of the issuance of 25,633,559 new shares, par value €2.50 per share and a share price of €41.12 (*i.e.*, a par value of €2.50 value and issue premium of €38.62) for the payment of the first interim dividend for fiscal year 2017 in shares, raising the share capital by €64,083,897.50 from €6,251,766,872.50 to €6,315,850,770.

For fiscal year 2018

- January 11, 2018 Acknowledgment of the issuance of 2,649,308 new shares, par value €2.50 per share, through the exercise of stock options between January 1 and December 31, 2017, raising the share capital by €6,623,270 from €6,315,850,770 to €6,322,474,040.
- Acknowledgment of the issuance of 7,087,904 new shares, par value €2.50 per share and a share price of €46.55 (*i.e.*, a par value of €2.50 value and issue premium of €44.05) for the payment of the second interim dividend for fiscal year 2017 in shares, raising the share capital by €17,719,760.00 from €6,322,474,040 to €6,340,193,800.00.
- March 8, 2018 Acknowledgment of the issuance of 97,522,593 new shares, par value €2.50 per share as part of the acquisition of Mærsk Oil, raising the share capital by €243,806,482.50 from €6,340,193,800.00 to €6,584,000,282.50. For additional information, refer to point 2.1.1 in chapter 2.

7.2 Articles of incorporation and bylaws; other information

7.2.1 General information concerning the Company

The Company's name is TOTAL S.A.

TOTAL S.A. is a French limited liability company (*société anonyme*). It is headquartered at 2, place Jean Millier, La Défense 6, 92400 Courbevoie, France. It is registered in the French trade registry in Nanterre under No. 542 051 180 RCS.

The Company's term was extended for 99 years from March 22, 2000, to expire on March 22, 2099, unless dissolved prior to this date or extended.

Fiscal year: from January 1 to December 31 of each year.

EC Registration Number: FR 59 542 051 180.

APE Code (NAF): 111Z until January 7, 2008; 7010Z since January 8, 2008.

The Company's bylaws are on file with K.L. Associés, Notaries in Paris.

Its telephone number is +33 (0)1 47 44 45 46 and its internet address is total.com.

7.2.2 Summary of the Company's corporate purpose

The direct and indirect purpose of the Company is to search for and extract mining deposits in all countries, particularly hydrocarbons in all forms, and to perform industrial refining, processing and trading in said materials as well as their derivatives and by-products, as well as

all activities relating to production and distribution of all forms of energy, as well as the chemicals sector in all of its forms and to the rubber and health sectors. The complete details of the Company's corporate purpose are set forth in Article 3 of the bylaws.

7.2.3 Provisions of the bylaws governing the administration and management bodies

7.2.3.1 Election of directors and term of office

Directors are elected by the Shareholders' Meeting for a 3-year term up to a maximum number of directors authorized by law (currently 18), subject to the legal provisions that allow the term to be extended until the next Ordinary Shareholders' Meeting called to approve the financial statements for the previous fiscal year.

In addition, one director representing the employee shareholders is also elected by the Shareholders' Meeting for a 3-year term from a list of at least two candidates pre-selected by the employee shareholders under the conditions provided for by the laws, regulations and bylaws in force. However, his or her term shall expire automatically once this Director is no longer an employee or a shareholder. The Board of Directors may meet and conduct valid deliberations until the date his or her replacement is named.

Furthermore, a director representing the employees is designated by the Company's Central Works Council. Where the number of directors appointed by the Shareholders' Meeting is greater than 12⁽¹⁾, a second director representing the employees is designated by the Company's European Works Council. In accordance with applicable legal provisions, the director elected by the Central Works Council must have held an employment contract with the Company or one of its direct or indirect subsidiaries, whose registered office is based in mainland France, for at least two years prior to appointment. The second director elected by the European Works Council must have held an employment contract with the Company or one of its direct or indirect subsidiaries for at least two years prior to appointment. The term of office for a director representing the

employees is three years. However, the term of office ends following the Ordinary Shareholders' Meeting called to approve the financial statements for the last fiscal year and held in the year during which the said director's term of office expires.

7.2.3.2 Age limit of directors

On the closing date of each fiscal year, the number of individual directors over the age of 70 may not be greater than one third of the directors in office. If this percentage is exceeded, the oldest Board member is automatically considered to have resigned. The director permanent representative of a legal entity must be under 70 years old.

7.2.3.3 Age limit of the Chairman of the Board and the Chief Executive Officer

The duties of the Chairman of the Board automatically cease on his or her 70th birthday at the latest.

To hold this office, the Chief Executive Officer must be under the age of 67. When the age limit is reached during his or her duties, such duties automatically cease, and the Board of Directors elects a new Chief Executive Officer. However, his or her duties as Chief Executive Officer will continue until the date of the Board of Directors' meeting aimed at electing his or her successor. Subject to the age limit specified above, the Chief Executive Officer can always be re-elected.

The age limits specified above are stipulated in the Company's bylaws. They were approved by the Annual Shareholders' Meeting held on May 16, 2014.

(1) Neither the director representing employee shareholders, elected by the Annual Shareholders' Meeting, nor the director(s) representing employees are taken into consideration when calculating the 12-member threshold, which is assessed on the date on which the employee director(s) is/are elected.

7.2.3.4 Minimum interest in the Company held by directors

Each director (other than the director representing the employee shareholders or the director representing the employees) must own at least 1,000 shares during his or her term of office. If, however, any director ceases to own the required number of shares, they may adjust their position subject to the conditions set by law. The director representing employee shareholders must hold, during his or her term of office, either individually or through a Company Savings Plan (*Fonds Commun de Placement d'Entreprise*, FCPE) governed by Article L. 214-165 of the French Monetary and Financial Code, at least one share or a number of units in said fund equivalent to at least one share. The director representing the employees is not bound to be a shareholder.

7.2.3.5 Majority rules for Board meetings

Decisions are adopted by a majority vote of the directors present or represented. In the event of a tie vote, the person chairing the meeting shall cast the deciding vote.

7.2.4 Rights, privileges and restrictions attached to the shares

In addition to the right to vote, each share entitles the holder to a portion of the corporate assets, distributions of profits and liquidation dividend that is proportional to the number of shares issued, subject to the laws and regulations in force and the bylaws.

With the exception of double voting rights, no privilege is attached to a specific class of shares or to a specific class of shareholders.

7.2.4.1 Double voting rights

Double voting rights, in relation to the portion of share capital they represent, are granted to all fully paid-up registered shares held continuously in the name of the same shareholder for at least two years⁽¹⁾, and to additional registered shares allotted to a shareholder in connection with a share capital increase by capitalization of reserves, profits or premiums on the basis of the existing shares which entitle the shareholder to a double voting right.

7.2.4.2 Limitation of voting rights

Article 18 of the Company's bylaws provides that at Shareholders' Meetings, no shareholder may cast, by himself or through his agent, on the basis of the single voting rights attached to the shares he holds directly or indirectly and the shares for which he holds powers, more than 10% of the total number of voting rights attached to the Company's shares. In the case of double voting rights, by himself or through his agent, this limit may be exceeded, taking only the resulting additional voting rights into account, provided that the total voting rights that he exercises do not exceed 20% of the total voting rights associated with the shares in the Company.

Moreover, Article 18 of the bylaws also provides that the limitation on voting rights no longer applies, absent any decision of the Shareholders' Meeting, if an individual or a legal entity acting solely or

7.2.3.6 Rules of procedure and Committees of the Board of Directors

Refer to point 4.1.2 of chapter 4 of this Registration Document.

7.2.3.7 Form of management

Management of the Company is assumed either by the Chairman of the Board of Directors (who then holds the title of the Chairman and Chief Executive Officer), or by another person appointed by the Board of Directors with the title of Chief Executive Officer. It is the responsibility of the Board of Directors to choose between these two forms of management under the majority rules described above.

At its meeting on December 16, 2015, the Board of Directors decided to reunify the positions of Chairman and Chief Executive Officer of TOTAL S.A. as of December 19, 2015. As of such date, Mr. Pouyanné was appointed Chairman and Chief Executive Officer of TOTAL S.A. For further information on the governance structure, refer to point 4.1.5.1 of chapter 4.

together with one or more individuals or entities acquires at least two thirds of the Company's shares following a public tender offer for all the Company's shares. In that case, the Board of Directors acknowledges that the limitation no longer applies and carries out the necessary procedure to modify the Company's bylaws accordingly.

Once acknowledged, the fact that the limitation no longer applies is final and applies to all Shareholders' Meetings following the public tender offer under which the acquisition of at least two thirds of the overall number of shares of the Company was made possible, and not solely to the first meeting following that public tender offer.

Since in such circumstances the limitation no longer applies, such limitation on voting rights cannot prevent or delay any takeover of the Company, except in case of a public tender offer where the bidder does not acquire at least two thirds of the Company's shares.

7.2.4.3 Fractional rights

Whenever it is necessary to own several shares in order to exercise a right, a number of shares less than the number required does not give the owners any right with respect to the Company; in such case, the shareholders are responsible for aggregating the required number of shares.

7.2.4.4 Statutory allocation of profits

The Company may distribute dividends under the conditions provided for by the French Commercial Code and the Company's bylaws.

The net profit for the period is equal to the net income minus general expenses and other personnel expenses, all amortization and depreciation of the assets, and all provisions for commercial and industrial contingencies.

(1) This term is not interrupted and the right acquired is retained in case of a conversion of bearer to bearer pursuant to intestate or testamentary succession, share of community property between spouses or donation to the spouse or relatives entitled to inherit (Article 18 § 6 of the bylaws).

From this profit, minus prior losses, if any, the following items are deducted in the order indicated:

- 5% to constitute the legal reserve fund, until said fund reaches 10% of the share capital;
- the amounts set by the Shareholders' Meeting to fund reserves for which it determines the allocation or use; and
- the amounts that the Shareholders' Meeting decides to retain.

The remainder is paid to the shareholders as dividends.

The Board of Directors may pay interim dividends.

The Shareholders' Meeting held to approve the financial statements for the fiscal year may decide to grant shareholders an option, for all or part of the dividend or interim dividends, between payment of the dividend in cash or in shares.

The Shareholders' Meeting may decide at any time, but only based on a proposal by the Board of Directors, to make a full or partial distribution of the amounts in the reserve accounts, either in cash or in Company shares.

Dividends that have not been claimed at the end of a 5-year period are forfeited to the French State.

7.2.5 Amending shareholders' rights

Any amendment to the bylaws must be approved or authorized by the Shareholders' Meeting voting with the quorum and majority

required by the laws and regulations governing Extraordinary Shareholders' Meetings.

7.2.6 Shareholders' Meetings

Refer to point 4.4.3 in chapter 4 for the terms and conditions of the notice and admission to Shareholders' meetings.

7.2.7 Identification of the holders of bearer shares

In accordance with Article 9 of its bylaws, TOTAL S.A. is authorized, to the extent permitted under applicable law, to identify the holders of

securities that grant immediate or future voting rights at the Company's Shareholders' Meetings.

7.2.8 Thresholds to be declared according to the bylaws

Any individual or entity who directly or indirectly acquires a percentage of the share capital, voting rights or rights giving future access to the share capital of the Company that is equal to or greater than 1%, or a multiple of this percentage, is required to notify the Company within 15 days by registered mail with return receipt requested, and declare the number of securities held.

In case the shares above these thresholds are not declared, as specified in the preceding paragraph, any shares held in excess of, the threshold that should have been declared will be deprived of

voting rights at Shareholders' Meetings if, at a Shareholders' Meeting, the failure to make a declaration is acknowledged and if one or more shareholders holding collectively at least 3% of the Company's share capital or voting rights so request at that meeting.

All individuals and entities are also required to notify the Company, in due form and within the time limits stated above, when their direct or indirect holdings fall below each of the thresholds mentioned in the first paragraph.

7.2.9 Changes in the share capital

The Company's share capital may be changed only under the conditions stipulated by the legal and regulatory provisions in force. No provision of the bylaws, charter, or internal regulations provide for more stringent conditions than the law governing changes in the Company's share capital.

The French Commercial Code stipulates that shareholders hold, in proportion to their number of shares, a preemptive subscription right to shares issued for cash to increase the share capital. The Extraordinary Shareholders' Meeting can decide, under the conditions provided for by law, to remove this preemptive subscription right.

8

CONSOLIDATED FINANCIAL STATEMENTS

[REDACTED SECTION: CERTAIN TEXT HAS BEEN REDACTED.]

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8.2 Consolidated statement of income

TOTAL

For the year ended December 31,

(M\$)^(a)

		2017	2016	2015
Sales	(Notes 3, 4, 5)	171,493	149,743	165,357
Excise taxes	(Notes 3, 5)	(22,394)	(21,818)	(21,936)
Revenues from sales	(Notes 3, 5)	149,099	127,925	143,421
Purchases, net of inventory variation	(Note 5)	(99,411)	(83,377)	(96,671)
Other operating expenses	(Note 5)	(24,966)	(24,302)	(24,345)
Exploration costs	(Note 5)	(864)	(1,264)	(1,991)
Depreciation, depletion and impairment of tangible assets and mineral interests	(Note 5)	(16,103)	(13,523)	(17,720)
Other income	(Note 6)	3,811	1,299	3,606
Other expense	(Note 6)	(1,034)	(1,027)	(1,577)
Financial interest on debt		(1,396)	(1,108)	(967)
Financial income and expense from cash & cash equivalents		(138)	4	94
Cost of net debt	(Note 15)	(1,534)	(1,104)	(873)
Other financial income	(Note 6)	957	971	882
Other financial expense	(Note 6)	(642)	(636)	(654)
Net income (loss) from equity affiliates	(Note 8)	2,015	2,214	2,361
Income taxes	(Note 11)	(3,029)	(970)	(1,653)
CONSOLIDATED NET INCOME		8,299	6,206	4,786
Group share		8,631	6,196	5,087
Non-controlling interests		(332)	10	(301)
Earnings per share (\$)		3.36	2.52	2.17
Fully-diluted earnings per share (\$)		3.34	2.51	2.16

(a) Except for per share amounts.

8.3 Consolidated statement of comprehensive income

TOTAL

For the year ended December 31, <i>(M\$)</i>	2017	2016	2015
CONSOLIDATED NET INCOME	8,299	6,206	4,786
Other comprehensive income			
Actuarial gains and losses (Note 10)	823	(371)	557
Tax effect	(390)	55	(278)
Currency translation adjustment generated by the parent company (Note 9)	9,316	(1,548)	(7,268)
ITEMS NOT POTENTIALLY RECLASSIFIABLE TO PROFIT AND LOSS	9,749	(1,864)	(6,989)
Currency translation adjustment (Note 9)	(2,578)	(1,098)	2,456
Available for sale financial assets (Note 8)	7	4	9
Cash flow hedge (Notes 15, 16)	324	239	(185)
Share of other comprehensive income of equity affiliates, net amount (Note 8)	(677)	935	120
Other	-	1	1
Tax effect	(100)	(76)	53
ITEMS POTENTIALLY RECLASSIFIABLE TO PROFIT AND LOSS	(3,024)	5	2,454
TOTAL OTHER COMPREHENSIVE INCOME (NET AMOUNT)	6,725	(1,859)	(4,535)
COMPREHENSIVE INCOME	15,024	4,347	251
Group share	15,312	4,336	633
Non-controlling interests (Note 9)	(288)	11	(382)

8.4 Consolidated balance sheet

TOTAL

ASSETS

As of December 31, (M\$)		2017	2016	2015
Non-current assets				
Intangible assets, net	(Notes 4, 7)	14,587	15,362	14,549
Property, plant and equipment, net	(Notes 4, 7)	109,397	111,971	109,518
Equity affiliates: investments and loans	(Note 8)	22,103	20,576	19,384
Other investments	(Note 8)	1,727	1,133	1,241
Non-current financial assets	(Note 15)	679	908	1,219
Deferred income taxes	(Note 11)	5,206	4,368	3,982
Other non-current assets	(Note 6)	3,984	4,143	4,355
TOTAL NON-CURRENT ASSETS		157,683	158,461	154,248
Current assets				
Inventories, net	(Note 5)	16,520	15,247	13,116
Accounts receivable, net	(Note 5)	14,893	12,213	10,629
Other current assets	(Note 5)	14,210	14,835	15,843
Current financial assets	(Note 15)	3,393	4,548	6,190
Cash and cash equivalents	(Note 15)	33,185	24,597	23,269
Assets classified as held for sale	(Note 2)	2,747	1,077	1,189
TOTAL CURRENT ASSETS		84,948	72,517	70,236
TOTAL ASSETS		242,631	230,978	224,484

LIABILITIES & SHAREHOLDERS' EQUITY

As of December 31, (M\$)		2017	2016	2015
Shareholders' equity				
Common shares		7,882	7,604	7,670
Paid-in surplus and retained earnings		112,040	105,547	101,528
Currency translation adjustment		(7,908)	(13,871)	(12,119)
Treasury shares		(458)	(600)	(4,585)
TOTAL SHAREHOLDERS' EQUITY – GROUP SHARE	(Note 9)	111,556	98,680	92,494
Non-controlling interests		2,481	2,894	2,915
TOTAL SHAREHOLDERS' EQUITY		114,037	101,574	95,409
Non-current liabilities				
Deferred income taxes	(Note 11)	10,828	11,060	12,360
Employee benefits	(Note 10)	3,735	3,746	3,774
Provisions and other non-current liabilities	(Note 12)	15,986	16,846	17,502
Non-current financial debt	(Note 15)	41,340	43,067	44,464
TOTAL NON-CURRENT LIABILITIES		71,889	74,719	78,100
Current liabilities				
Accounts payable		26,479	23,227	20,928
Other creditors and accrued liabilities	(Note 5)	17,779	16,720	16,884
Current borrowings	(Note 15)	11,096	13,920	12,488
Other current financial liabilities	(Note 15)	245	327	171
Liabilities directly associated with the assets classified as held for sale	(Note 2)	1,106	491	504
TOTAL CURRENT LIABILITIES		56,705	54,685	50,975
TOTAL LIABILITIES & SHAREHOLDERS' EQUITY		242,631	230,978	224,484

8.5 Consolidated statement of cash flow

TOTAL

For the year ended December 31,
(M\$)

	2017	2016	2015
CASH FLOW FROM OPERATING ACTIVITIES			
Consolidated net income	8,299	6,206	4,786
Depreciation, depletion, amortization and impairment (Note 5.3)	16,611	14,423	19,334
Non-current liabilities, valuation allowances, and deferred taxes (Note 5.5)	(384)	(1,559)	(2,563)
(Gains) losses on disposals of assets	(2,598)	(263)	(2,459)
Undistributed affiliates' equity earnings	42	(643)	(311)
(Increase) decrease in working capital (Note 5.5)	827	(1,119)	1,683
Other changes, net	(478)	(524)	(524)
CASH FLOW FROM OPERATING ACTIVITIES	22,319	16,521	19,946
CASH FLOW USED IN INVESTING ACTIVITIES			
Intangible assets and property, plant and equipment additions (Note 7)	(13,767)	(18,106)	(25,132)
Acquisitions of subsidiaries, net of cash acquired	(800)	(1,123)	(128)
Investments in equity affiliates and other securities	(1,368)	(180)	(513)
Increase in non-current loans	(961)	(1,121)	(2,260)
Total expenditures	(16,896)	(20,530)	(28,033)
Proceeds from disposals of intangible assets and property, plant and equipment	1,036	1,462	2,623
Proceeds from disposals of subsidiaries, net of cash sold	2,909	270	2,508
Proceeds from disposals of non-current investments	294	132	837
Repayment of non-current loans	1,025	1,013	1,616
Total divestments	5,264	2,877	7,584
CASH FLOW USED IN INVESTING ACTIVITIES	(11,632)	(17,653)	(20,449)
CASH FLOW FROM FINANCING ACTIVITIES			
Issuance (repayment) of shares:			
- Parent company shareholders	519	100	485
- Treasury shares	-	-	(237)
Dividends paid:			
- Parent company shareholders	(2,643)	(2,661)	(2,845)
- Non-controlling interests	(141)	(93)	(100)
Issuance of perpetual subordinated notes (Note 9)	-	4,711	5,616
Payments on perpetual subordinated notes (Note 9)	(276)	(133)	-
Other transactions with non-controlling interests	(4)	(104)	89
Net issuance (repayment) of non-current debt (Note 15)	2,277	3,576	4,166
Increase (decrease) in current borrowings	(7,175)	(3,260)	(597)
Increase (decrease) in current financial assets and liabilities	1,903	1,396	(5,517)
CASH FLOW FROM/(USED IN) FINANCING ACTIVITIES	(5,540)	3,532	1,060
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	5,147	2,400	557
Effect of exchange rates	3,441	(1,072)	(2,469)
Cash and cash equivalents at the beginning of the period	24,597	23,269	25,181
CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD (Note 15)	33,185	24,597	23,269

8.6 Consolidated statement of changes in shareholders' equity

TOTAL

(M\$)	Common shares issued		Paid-in surplus and retained earnings	Currency translation adjustment	Treasury shares		Shareholders' equity – controlling Group share	Non-interests	Total shareholders' equity
	Number	Amount			Number	Amount			
AS OF JANUARY 1, 2015	2,385,267,525	7,518	94,646	(7,480)	(109,361,413)	(4,354)	90,330	3,201	93,531
Net income 2015	-	-	5,087	-	-	-	5,087	(301)	4,786
Other comprehensive income	-	-	185	(4,639)	-	-	(4,454)	(81)	(4,535)
Comprehensive income	-	-	5,272	(4,639)	-	-	633	(382)	251
Dividend	-	-	(6,303)	-	-	-	(6,303)	(100)	(6,403)
Issuance of common shares	54,790,358	152	2,159	-	-	-	2,311	-	2,311
Purchase of treasury shares	-	-	-	-	(4,711,935)	(237)	(237)	-	(237)
Sale of treasury shares ^(a)	-	-	(6)	-	105,590	6	-	-	-
Share-based payments	-	-	101	-	-	-	101	-	101
Share cancellation	-	-	-	-	-	-	-	-	-
Issuance of perpetual subordinated notes	-	-	5,616	-	-	-	5,616	-	5,616
Payments on perpetual subordinated notes	-	-	(114)	-	-	-	(114)	-	(114)
Other operations with non-controlling interests	-	-	23	-	-	-	23	64	87
Other items	-	-	134	-	-	-	134	132	266
AS OF DECEMBER 31, 2015	2,440,057,883	7,670	101,528	(12,119)	(113,967,758)	(4,585)	92,494	2,915	95,409
Net income 2016	-	-	6,196	-	-	-	6,196	10	6,206
Other comprehensive income	-	-	(108)	(1,752)	-	-	(1,860)	1	(1,859)
Comprehensive income	-	-	6,088	(1,752)	-	-	4,336	11	4,347
Dividend	-	-	(6,512)	-	-	-	(6,512)	(93)	(6,605)
Issuance of common shares	90,639,247	251	3,553	-	-	-	3,804	-	3,804
Purchase of treasury shares	-	-	-	-	-	-	-	-	-
Sale of treasury shares ^(a)	-	-	(163)	-	3,048,668	163	-	-	-
Share-based payments	-	-	112	-	-	-	112	-	112
Share cancellation	(100,331,268)	(317)	(3,505)	-	100,331,268	3,822	-	-	-
Issuance of perpetual subordinated notes	-	-	4,711	-	-	-	4,711	-	4,711
Payments on perpetual subordinated notes	-	-	(203)	-	-	-	(203)	-	(203)
Other operations with non-controlling interests	-	-	(98)	-	-	-	(98)	(43)	(141)
Other items	-	-	36	-	-	-	36	104	140
AS OF DECEMBER 31, 2016	2,430,365,862	7,604	105,547	(13,871)	(10,587,822)	(600)	98,680	2,894	101,574
Net income 2017	-	-	8,631	-	-	-	8,631	(332)	8,299
Other comprehensive income	-	-	718	5,963	-	-	6,681	44	6,725
Comprehensive income	-	-	9,349	5,963	-	-	15,312	(288)	15,024
Dividend	-	-	(6,992)	-	-	-	(6,992)	(141)	(7,133)
Issuance of common shares	98,623,754	278	4,431	-	-	-	4,709	-	4,709
Purchase of treasury shares	-	-	-	-	-	-	-	-	-
Sale of treasury shares ^(a)	-	-	(142)	-	2,211,066	142	-	-	-
Share-based payments	-	-	151	-	-	-	151	-	151
Share cancellation	-	-	-	-	-	-	-	-	-
Issuance of perpetual subordinated notes	-	-	-	-	-	-	-	-	-
Payments on perpetual subordinated notes	-	-	(302)	-	-	-	(302)	-	(302)
Other operations with non-controlling interests	-	-	(8)	-	-	-	(8)	4	(4)
Other items	-	-	6	-	-	-	6	12	18
AS OF DECEMBER 31, 2017	2,528,989,616	7,882	112,040	(7,908)	(8,376,756)	(458)	111,556	2,481	114,037

(a) Treasury shares related to the restricted stock grants.

Changes in equity are detailed in Note 9.

8.7 Notes to the Consolidated Financial Statements

On February 7, 2018, the Board of Directors established and authorized the publication of the Consolidated Financial Statements of TOTAL S.A. for the year ended December 31, 2017, which will be submitted for approval to the Shareholders' Meeting to be held on June 1, 2018.

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Basis of preparation of the Consolidated Financial Statements

The Consolidated Financial Statements of TOTAL S.A. and its subsidiaries (the Group) are presented in U.S. dollars and have been prepared on the basis of IFRS (International Financial Reporting Standards) as adopted by the European Union and IFRS as issued by the IASB (International Accounting Standard Board) as of December 31, 2017.

The accounting policies and principles applied in the Consolidated Financial Statements as of December 31, 2017 were the same as those that were used as of December 31, 2016 except for standards, amendments and interpretations of IFRS which were mandatory for the periods beginning after January 1, 2017 (and not early adopted). Their application did not have a significant impact on the financial statements as of December 31, 2017.

Major judgments and accounting estimates

The preparation of financial statements in accordance with IFRS for the closing as of December 31, 2017 requires the executive management to make estimates, assumptions and judgments that affect the information reported in the Consolidated Financial Statements and the Notes thereto.

These estimates, assumptions and judgments are based on historical experience and other factors believed to be reasonable at the date of preparation of the financial statements. They are reviewed on an on-going basis by management and therefore could be revised as circumstances change or as a result of new information.

Different estimates, assumptions and judgments could significantly affect the information reported, and actual results may differ from the amounts included in the Consolidated Financial Statements and the Notes thereto.

The following summary provides further information about the key estimates, assumptions and judgments that are involved in preparing the Consolidated Financial Statements and the Notes thereto. It should be read in conjunction with the sections of the Notes mentioned in the summary.

Estimation of hydrocarbon reserves

The estimation of oil and gas reserves is a key factor in the Successful Efforts method used by the Group to account for its oil and gas activities.

The Group's oil and gas reserves are estimated by the Group's petroleum engineers in accordance with industry standards and SEC (*U.S. Securities and Exchange Commission*) regulations.

Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geosciences and engineering data, can be determined with reasonable certainty to be recoverable (from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations), prior to the time at which contracts providing the rights to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation.

Proved oil and gas reserves are calculated using a 12-month average price determined as the unweighted arithmetic average of the first-day-of-the-month price for each month of the relevant year unless prices are defined by contractual arrangements, excluding escalations based upon future conditions. The Group reassesses its oil and gas reserves at least once a year on all its properties.

The Successful Efforts method and the mineral interests and property and equipment of exploration and production are presented in Note 7 – Intangible and tangible assets.

Impairment of assets

As part of the determination of the recoverable value of assets for impairment (IAS 36), the estimates, assumptions and judgments mainly concern hydrocarbon prices scenarios, operating costs, production volumes and oil and gas proved reserves, refining margins and product marketing conditions (mainly petroleum, petrochemical and chemical products as well as solar industry products). The estimates and assumptions used by the executive management are determined in specialized internal departments in light of economic conditions and external expert analysis. The discount rate is reviewed annually.

Asset impairment and the method applied are described in Note 3 – Business segment information.

Employee benefits

The benefit obligations and plan assets can be subject to significant volatility due in part to changes in market values and actuarial assumptions. These assumptions vary between different pension plans and thus take into account local conditions. They are determined following a formal process involving expertise and Group internal judgments, in financial and actuarial terms, and also in consultation with actuaries and independent experts.

The assumptions for each plan are reviewed annually and adjusted if necessary to reflect changes from the experience and actuarial advices.

Payroll, staff and employee benefits obligations and the method applied are described in Note 10 – Payroll, staff and employee benefits obligations.

Asset retirement obligations

Asset retirement obligations, which result from a legal or constructive obligation, are recognized based on a reasonable estimate in the period in which the obligation arises.

This estimate is based on information available in terms of costs and work program. It is regularly reviewed to take into account the changes in laws and regulations, the estimates of reserves and production, the analysis of site conditions and technologies.

The discount rate is reviewed annually.

Asset retirement obligations and the method used are described in Note 12 – Provisions and other non-current liabilities.

Income Taxes

A tax liability is recognized when a future payment, in application of a tax regulation, is considered probable and can be reasonably estimated. The exercise of judgment is required to assess the impact of new events on the amount of the liability.

Deferred tax assets are recognized in the accounts to the extent that their recovery is considered probable. The amount of these assets is determined based on taxable profits existing at the closing date and future taxable profits which estimation is inherently uncertain and subject to change over time. The exercise of judgment is required to

assess the impact of new events on the value of these assets and including changes in estimates of future taxable profits and the deadlines for their use.

In addition, these tax positions may depend on interpretations of tax laws and regulations in the countries where the Group operates. These interpretations may have uncertain nature. Depending on the circumstances, they are final only after negotiations or resolution of disputes with authorities that can last several years.

Incomes taxes and the accounting methods are described in Note 11 – Income taxes.

Judgments in case of transactions not addressed by any accounting standard or interpretation

Furthermore, when the accounting treatment of a specific transaction is not addressed by any accounting standard or interpretation, the management applies its judgment to define and apply accounting

policies that provide information consistent with the general IFRS concepts: faithful representation, relevance and materiality.

NOTE 1 General accounting policies

1 Accounting policies

A) Principles of consolidation

Entities that are directly controlled by the parent company or indirectly controlled by other consolidated entities are fully consolidated.

Investments in joint ventures are consolidated under the equity method. The Group accounts for joint operations by recognizing its share of assets, liabilities, income and expenses.

Investments in associates, in which the Group has significant influence, are accounted for by the equity method. Significant influence is presumed when the Group holds, directly or indirectly (e.g. through subsidiaries), 20% or more of the voting rights. Companies in which ownership interest is less than 20%, but over which the Company is deemed to exercise significant influence, are also accounted for by the equity method.

All internal balances, transactions and income are eliminated.

B) Business combinations

Business combinations are accounted for using the acquisition method. This method requires the recognition of the acquired identifiable assets and assumed liabilities of the companies acquired by the Group at their fair value.

The value of the purchase price is finalized up to a maximum of one year from the acquisition date.

The acquirer shall recognize goodwill at the acquisition date, being the excess of:

- The consideration transferred, the amount of non-controlling interests and, in business combinations achieved in stages, the fair value at the acquisition date of the investment previously held in the acquired company;
- Over the fair value at the acquisition date of acquired identifiable assets and assumed liabilities.

If the consideration transferred is lower than the fair value of acquired identifiable assets and assumed liabilities, an additional analysis is performed on the identification and valuation of the identifiable

elements of the assets and liabilities. After having completed such additional analysis, any goodwill is recorded as income.

Non-controlling interests are measured either at their proportionate share in the net assets of the acquired company or at fair value.

In transactions with non-controlling interests, the difference between the price paid (received) and the book value of non-controlling interests acquired (sold) is recognized directly in equity.

C) Foreign currency translation

The presentation currency of the Group’s Consolidated Financial Statements is the US dollar. However the functional currency of the parent company is the euro. The resulting currency translation adjustments are presented on the line “currency translation adjustment generated by the parent company” of the consolidated statement of comprehensive income, within “items not potentially reclassifiable to profit and loss”. In the balance sheet, they are recorded in “currency translation adjustment”.

The financial statements of subsidiaries are prepared in the currency that most clearly reflects their business environment. This is referred to as their functional currency.

(i) Monetary transactions

Transactions denominated in currencies other than the functional currency of the entity are translated at the exchange rate on the transaction date. At each balance sheet date, monetary assets and liabilities are translated at the closing rate and the resulting exchange differences are recognized in the statement of income.

(ii) Translation of financial statements

Assets and liabilities of entities denominated in currencies other than dollar are translated into dollar on the basis of the exchange rates at the end of the period. The income and cash flow statements are translated using the average exchange rates for the period. Foreign exchange differences resulting from such translations are either recorded in shareholders’ equity under “Currency translation adjustments” (for the Group share) or under “Non-controlling interests” (for the share of non-controlling interests) as deemed appropriate.



1.2 Significant accounting policies applicable in the future

The standards or interpretations published respectively by the International Accounting Standards Board (IASB) and the International Financial Reporting Standards Interpretations Committee (IFRS IC) which were not yet in effect at December 31, 2017, are as follows:

- Standards adopted by the European Union at December 31, 2017

- In May 2014, the IASB issued standard IFRS 15 “Revenue from contracts with customers” that includes requirements for the recognition of revenue from contracts with customers. The standard is applicable for annual periods starting on or after January 1, 2018. An analysis was performed at Group level in order to evaluate the impacts of the standard. Main issues analyzed are related to take or pay, incoterms, excise duties, principal vs agent considerations, variable price adjustment clause. Impact of the standard is expected to be not significant for the Group. The Group will apply the partial retrospective method: comparative information will not be restated and the cumulative impact of the first application will be presented as an adjustment to opening equity at January 1, 2018.

- In July 2014, the IASB issued standard IFRS 9 “Financial Instruments” that includes requirements for the recognition and measurement of financial instruments. This standard brings together three phases: classification and measurement, impairment of financial assets and hedge accounting excluding macro-hedging. The standard is applicable for annual periods starting on or after January 1, 2018. The impacts related to the application of this standard are currently the subject of analytical work, in particular on the depreciation of financial assets issue. The expected impacts are not significant for the Group. The Group will not restate the comparative information and will present the impacts related to the first application in opening equity at January 1, 2018.
- In January 2016, the IASB issued standard IFRS 16 “Leases”, which sets out the principles for recognition of leases contracts. The standard is applicable for annual periods starting on or after January 1, 2019. The working group, set up to evaluate the impacts of the application of this standard and to manage the transition, proceeded to the inventory of existing leases as of December 31, 2016. Analysis and quantification of expected impacts across the Group will continue in 2018 on the basis of the contracts as at December 31, 2017. At this stage the transition method has not yet been decided.

NOTE 2 Changes in the Group structure

2.1 Main acquisitions and divestments

In 2017, the main changes in the Group structure were as follows:

Exploration & Production

- In October 2017, TOTAL finalized the sale to Perenco of its interests and the transfer of operatorship in various mature assets in Gabon.
- In November 2017, TOTAL finalized the sale to Kuwait Foreign Petroleum Exploration Company (KUFPEC) of its remaining 15% interest in the Gina Krog field in Norway.

Gas, Renewables & Power

- In January 2017, TOTAL acquired a 23% interest in the company Tellurian to develop an integrated gas project in the United States for an amount of \$207 million.
- In September 2017, TOTAL signed an agreement with EREN Renewable Energy (EREN RE) to acquire an indirect 23% stake by subscribing to a capital increase of €238 million. As of December 31, 2017, TOTAL paid €119 million. The remaining portion will be paid in 2018.

Refining & Chemicals

- On January 31, 2017, TOTAL closed the sale of Atotech to the Carlyle Group for an amount of \$3.2 billion.

Marketing & Services

- On March 28, 2017, TOTAL announced the closing of the acquisition of the assets of Gulf Africa Petroleum Corporation in Kenya, Uganda and Tanzania.

2.2 Divestment projects

ACCOUNTING POLICIES

Pursuant to IFRS 5 “Non-current assets held for sale and discontinued operations”, assets and liabilities of affiliates that are held for sale are presented separately on the face of the balance sheet. Depreciation of assets ceases from the date of classification in “Non-current assets held for sale”.

Exploration & Production

- On November 27, 2017, TOTAL has agreed to sell all of its interests in the Martin Linge field (51%) and Garantiana discovery (40%) on the Norwegian Continental Shelf to Statoil. The transaction remains subject to final due diligence and approval from the relevant authorities. At December 31, 2017 the assets and liabilities have been respectively classified in the consolidated balance sheet in “assets classified as held for sale” for an amount of \$2,581 million and “liabilities directly associated with the assets classified as held for sale” for an amount of \$1,106 million. The assets concerned mainly include tangible assets.

Marketing & Services

- On November 3, 2017 TOTAL and Erg have announced the signing of an agreement with the Italian Group API to sell the TotalErg joint venture (Erg 51%, TOTAL 49%). At December 31, 2017 the shares have been classified in the consolidated balance sheet in “assets classified as held for sale” for an amount of \$166 million. As of January 10, 2018, all required authorizations being obtained, the transaction was closed.

NOTE 3 Business segment information

Description of the business segments

Financial information by business segment is reported in accordance with the internal reporting system. It shows internal segment information that is used to manage and measure the performance of Total and which is reviewed by the main operational decision-making body of the Group, namely the Executive Committee.

The operational profit and assets are broken down by business segment prior to the consolidation and inter-segment adjustments.

Sales prices between business segments approximate market prices.

TOTAL has implemented a new organization fully effective since January 1, 2017, structured around four following business segments:

- An Exploration & Production segment;
- A Gas, Renewables & Power segment including downstream Gas activities, New Energies activities (excluding biotechnologies) and Energy Efficiency division;
- A Refining & Chemicals segment constituting a major industrial hub comprising the activities of refining, petrochemicals and specialty chemicals. This segment also includes the activities of oil Supply, Trading and marine Shipping;
- A Marketing & Services segment including the global activities of supply and marketing in the field of petroleum products.

In addition, the Corporate segment includes holdings operating and financial activities.

Certain figures for the years 2015 and 2016 have been restated in order to reflect the new organization with four business segments.

Definition of the indicators

(i) Operating income (measure used to evaluate operating performance)

Revenue from sales after deducting cost of goods sold and inventory variations, other operating expenses, exploration expenses and depreciation, depletion, and impairment of tangible assets and mineral interests.

Operating income excludes the amortization of intangible assets other than mineral interests, currency translation adjustments and gains or losses on the disposal of assets.

(ii) Net operating income (measure used to evaluate the return on capital employed)

Operating income after taking into account the amortization of intangible assets other than mineral interests, currency translation adjustments, gains or losses on the disposal of assets, as well as all other income and expenses related to capital employed (dividends from non-consolidated companies, income of equity affiliates, capitalized interest expenses), and after income taxes applicable to the above.

The only income and expense not included in net operating income but included in net income Group share are interest expenses related to net financial debt, after applicable income taxes (net cost of net debt) and non-controlling interests.

(iii) Adjusted income

Operating income, net operating income, or net income excluding the effect of adjustment items described below.

(iv) Capital employed

Non-current assets and working capital, at replacement cost, net of deferred income taxes and non-current liabilities.

(v) ROACE (Return on Average Capital Employed)

Ratio of adjusted net operating income to average capital employed between the beginning and the end of the period.

Performance indicators excluding the adjustment items, such as adjusted income and ROACE are meant to facilitate the analysis of the financial performance and the comparison of income between periods.

Adjustment items

Adjustment items include:

(i) Special items

Due to their unusual nature or particular significance, certain transactions qualified as "special items" are excluded from the business segment figures. In general, special items relate to transactions that are significant, infrequent or unusual. However, in certain instances, transactions such as restructuring costs or assets disposals, which are not considered to be representative of the normal course of business, may be qualified as special items although they may have occurred within prior years or are likely to occur again within the coming years.

(ii) The inventory valuation effect

The adjusted results of the Refining & Chemicals and Marketing & Services segments are presented according to the replacement cost method. This method is used to assess the segments' performance and facilitate the comparability of the segments' performance with those of its main competitors.

In the replacement cost method, which approximates the LIFO (Last-In, First-Out) method, the variation of inventory values in the statement of income is, depending on the nature of the inventory, determined using either the month-end prices differential between one period and another or the average prices of the period rather than the historical value. The inventory valuation effect is the difference between the results according to the FIFO (First-In, First-Out) and the replacement cost.

(iii) Effect of changes in fair value

The effect of changes in fair value presented as adjustment items reflects for some transactions differences between internal measure of performance used by TOTAL's management and the accounting for these transactions under IFRS.

IFRS requires that trading inventories be recorded at their fair value using period end spot prices. In order to best reflect the management of economic exposure through derivative transactions, internal indicators used to measure performance include valuations of trading inventories based on forward prices.

Furthermore, TOTAL, in its trading activities, enters into storage contracts, which future effects are recorded at fair value in Group's internal economic performance. IFRS precludes recognition of this fair value effect.

A) Information by business segment

For the year ended December 31, 2017 (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Intercompany	Total
Non-Group sales	8,477	12,854	75,505	74,634	23	-	171,493
Intersegment sales	22,837	1,180	26,844	857	374	(52,092)	-
Excise taxes	-	-	(3,008)	(19,386)	-	-	(22,394)
REVENUES FROM SALES	31,314	14,034	99,341	56,105	397	(52,092)	149,099
Operating expenses	(14,672)	(13,828)	(94,097)	(53,629)	(1,107)	52,092	(125,241)
Depreciation, depletion and impairment of tangible assets and mineral interests	(13,850)	(482)	(1,074)	(657)	(40)	-	(16,103)
OPERATING INCOME	2,792	(276)	4,170	1,819	(750)	-	7,755
Net income (loss) from equity affiliates and other items	1,546	31	2,979	497	54	-	5,107
Tax on net operating income	(2,233)	(140)	(944)	(561)	540	-	(3,338)
NET OPERATING INCOME	2,105	(385)	6,205	1,755	(156)	-	9,524
Net cost of net debt							(1,225)
Non-controlling interests							332
NET INCOME – GROUP SHARE							8,631

For the year ended December 31, 2017 (adjustments) ^(a) (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Intercompany	Total
Non-Group sales	-	(20)	-	-	-	-	(20)
Intersegment sales	-	-	-	-	-	-	-
Excise taxes	-	-	-	-	-	-	-
REVENUES FROM SALES	-	(20)	-	-	-	-	(20)
Operating expenses	(119)	(389)	167	(11)	(64)	-	(416)
Depreciation, depletion and impairment of tangible assets and mineral interests	(4,308)	(291)	(53)	(10)	-	-	(4,662)
Operating income^(b)	(4,427)	(700)	114	(21)	(64)	-	(5,098)
Net income (loss) from equity affiliates and other items	(328)	(116)	2,177	102	-	-	1,835
Tax on net operating income	875	(54)	124	(2)	(114)	-	829
Net operating income^(b)	(3,880)	(870)	2,415	79	(178)	-	(2,434)
Net cost of net debt							(29)
Non-controlling interests							516
NET INCOME – GROUP SHARE							(1,947)

(a) Adjustments include special items, inventory valuation effect and the effect of changes in fair value.

(b) Of which inventory valuation effect

On operating income	-	-	344	13	-	
On net operating income	-	-	298	(3)	-	

For the year ended December 31, 2017 (adjusted) (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Intercompany	Total
Non-Group sales	8,477	12,874	75,505	74,634	23	-	171,513
Intersegment sales	22,837	1,180	26,844	857	374	(52,092)	-
Excise taxes	-	-	(3,008)	(19,386)	-	-	(22,394)
REVENUES FROM SALES	31,314	14,054	99,341	56,105	397	(52,092)	149,119
Operating expenses	(14,553)	(13,439)	(94,264)	(53,618)	(1,043)	52,092	(124,825)
Depreciation, depletion and impairment of tangible assets and mineral interests	(9,542)	(191)	(1,021)	(647)	(40)	-	(11,441)
ADJUSTED OPERATING INCOME	7,219	424	4,056	1,840	(686)	-	12,853
Net income (loss) from equity affiliates and other items	1,874	147	802	395	54	-	3,272
Tax on net operating income	(3,108)	(86)	(1,068)	(559)	654	-	(4,167)
ADJUSTED NET OPERATING INCOME	5,985	485	3,790	1,676	22	-	11,958
Net cost of net debt							(1,196)
Non-controlling interests							(184)
ADJUSTED NET INCOME – GROUP SHARE							10,578

For the year ended December 31, 2017 (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Intercompany	Total
Total expenditures	12,802	797	1,734	1,457	106	-	16,896
Total divestments	1,918	73	2,820	413	40	-	5,264
Cash flow from operating activities	11,459	993	7,440	2,130	297	-	22,319
Balance sheet as of December 31, 2017							
Property, plant and equipment, intangible assets, net	103,639	2,873	10,820	6,253	399	-	123,984
Investments & loans in equity affiliates	16,820	835	4,010	438	-	-	22,103
Other non-current assets	6,975	1,709	677	1,060	496	-	10,917
Working capital	3,224	123	876	792	(3,650)	-	1,365
Provisions and other non-current liabilities	(24,212)	(848)	(3,839)	(1,544)	(106)	-	(30,549)
Assets and liabilities classified as held for sale	1,475	-	-	166	-	-	1,641
CAPITAL EMPLOYED (BALANCE SHEET)	107,921	4,692	12,544	7,165	(2,861)	-	129,461
Less inventory valuation effect	-	-	(1,499)	(236)	1	-	(1,734)
CAPITAL EMPLOYED (BUSINESS SEGMENT INFORMATION)	107,921	4,692	11,045	6,929	(2,860)	-	127,727
ROACE as a percentage	6%	10%	33%	26%	-	-	9%

For the year ended December 31, 2016 (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Intercompany	Total
Non-Group sales	7,629	10,124	65,632	66,351	7	-	149,743
Intersegment sales	17,759	1,009	21,467	744	307	(41,286)	-
Excise taxes	-	-	(3,544)	(18,274)	-	-	(21,818)
REVENUES FROM SALES	25,388	11,133	83,555	48,821	314	(41,286)	127,925
Operating expenses	(14,236)	(10,993)	(77,562)	(46,432)	(1,006)	41,286	(108,943)
Depreciation, depletion and impairment of tangible assets and mineral interests	(11,583)	(301)	(1,002)	(600)	(37)	-	(13,523)
OPERATING INCOME	(431)	(161)	4,991	1,789	(729)	-	5,459
Net income (loss) from equity affiliates and other items	1,375	71	779	170	426	-	2,821
Tax on net operating income	401	(4)	(1,244)	(541)	164	-	(1,224)
NET OPERATING INCOME	1,345	(94)	4,526	1,418	(139)	-	7,056
Net cost of net debt							(850)
Non-controlling interests							(10)
NET INCOME – GROUP SHARE							6,196

For the year ended December 31, 2016 (adjustments) ^(a) (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Intercompany	Total
Non-Group sales	-	(231)	-	-	-	-	(231)
Intersegment sales	-	-	-	-	-	-	-
Excise taxes	-	-	-	-	-	-	-
REVENUES FROM SALES	-	(231)	-	-	-	-	(231)
Operating expenses	(691)	(79)	625	(136)	-	-	(281)
Depreciation, depletion and impairment of tangible assets and mineral interests	(2,089)	(139)	-	(1)	-	-	(2,229)
Operating income^(b)	(2,780)	(449)	625	(137)	-	-	(2,741)
Net income (loss) from equity affiliates and other items	(200)	(135)	(93)	(40)	(4)	-	(472)
Tax on net operating income	1,108	51	(201)	36	1	-	995
Net operating income^(b)	(1,872)	(533)	331	(141)	(3)	-	(2,218)
Net cost of net debt							(23)
Non-controlling interests							150
NET INCOME – GROUP SHARE							(2,091)

(a) Adjustments include special items, inventory valuation effect and the effect of changes in fair value.

(b) Of which inventory valuation effect

On operating income	-	-	695	(43)	-	
On net operating income	-	-	500	(13)	-	

For the year ended December 31, 2016 (adjusted) (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Intercompany	Total
Non-Group sales	7,629	10,355	65,632	66,351	7	-	149,974
Intersegment sales	17,759	1,009	21,467	744	307	(41,286)	-
Excise taxes	-	-	(3,544)	(18,274)	-	-	(21,818)
REVENUES FROM SALES	25,388	11,364	83,555	48,821	314	(41,286)	128,156
Operating expenses	(13,545)	(10,914)	(78,187)	(46,296)	(1,006)	41,286	(108,662)
Depreciation, depletion and impairment of tangible assets and mineral interests	(9,494)	(162)	(1,002)	(599)	(37)	-	(11,294)
ADJUSTED OPERATING INCOME	2,349	288	4,366	1,926	(729)	-	8,200
Net income (loss) from equity affiliates and other items	1,575	206	872	210	430	-	3,293
Tax on net operating income	(707)	(55)	(1,043)	(577)	163	-	(2,219)
ADJUSTED NET OPERATING INCOME	3,217	439	4,195	1,559	(136)	-	9,274
Net cost of net debt							(827)
Non-controlling interests							(160)
ADJUSTED NET INCOME – GROUP SHARE							8,287

For the year ended December 31, 2016 (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Intercompany	Total
Total expenditures	16,085	1,221	1,861	1,245	118	-	20,530
Total divestments	2,187	166	88	424	12	-	2,877
Cash flow from operating activities	9,010	538	4,585	1,754	634	-	16,521
Balance sheet as of December 31, 2016							
Property, plant and equipment, intangible assets, net	109,617	2,834	9,293	5,225	364	-	127,333
Investments & loans in equity affiliates	15,853	883	3,303	537	-	-	20,576
Other non-current assets	6,835	1,222	568	962	57	-	9,644
Working capital	1,451	869	2,641	701	(3,314)	-	2,348
Provisions and other non-current liabilities	(26,139)	(832)	(3,569)	(1,330)	218	-	(31,652)
Assets and liabilities classified as held for sale	-	-	446	-	-	-	446
CAPITAL EMPLOYED (BALANCE SHEET)	107,617	4,976	12,682	6,095	(2,675)	-	128,695
Less inventory valuation effect	-	-	(1,064)	(211)	3	-	(1,272)
Capital Employed (business segment information)	107,617	4,976	11,618	5,884	(2,672)	-	127,423
ROACE as a percentage	3%	9%	38%	27%	-	-	7%

For the year ended December 31, 2015 (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Intercompany	Total
Non-Group sales	10,297	9,149	70,623	75,282	6	-	165,357
Intersegment sales	18,419	1,246	26,794	911	218	(47,588)	-
Excise taxes	-	-	(4,107)	(17,829)	-	-	(21,936)
REVENUES FROM SALES	28,716	10,395	93,310	58,364	224	(47,588)	143,421
Operating expenses	(15,725)	(10,265)	(87,674)	(56,065)	(866)	47,588	(123,007)
Depreciation, depletion and impairment of tangible assets and mineral interests	(15,660)	(307)	(1,092)	(634)	(27)	-	(17,720)
OPERATING INCOME	(2,669)	(177)	4,544	1,665	(669)	-	2,694
Net income (loss) from equity affiliates and other items	1,944	(75)	1,724	467	558	-	4,618
Tax on net operating income	(361)	19	(1,106)	(537)	172	-	(1,813)
NET OPERATING INCOME	(1,086)	(233)	5,162	1,595	61	-	5,499
Net cost of net debt							(713)
Non-controlling interests							301
NET INCOME – GROUP SHARE							5,087

For the year ended December 31, 2015 (adjustments) ^(a) (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Intercompany	Total
Non-Group sales	-	(519)	-	-	-	-	(519)
Intersegment sales	-	-	-	-	-	-	-
Excise taxes	-	-	-	-	-	-	-
REVENUES FROM SALES	-	(519)	-	-	-	-	(519)
Operating expenses	(559)	(38)	(1,035)	(283)	-	-	(1,915)
Depreciation, depletion and impairment of tangible assets and mineral interests	(6,591)	(192)	(70)	(24)	-	-	(6,877)
OPERATING INCOME^(b)	(7,150)	(749)	(1,105)	(307)	-	-	(9,311)
Net income (loss) from equity affiliates and other items	(273)	(184)	1,165	224	(19)	-	913
Tax on net operating income	2,007	133	263	87	7	-	2,497
NET OPERATING INCOME^(b)	(5,416)	(800)	323	4	(12)	-	(5,901)
Net cost of net debt							(11)
Non-controlling interests							481
NET INCOME – GROUP SHARE							(5,431)

(a) Adjustments include special items, inventory valuation effect and the effect of changes in fair value.

(b) Of which inventory valuation effect

On operating income	-	-	(859)	(254)	-	
On net operating income	-	-	(590)	(169)	-	

For the year ended December 31, 2015 (adjusted) (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Intercompany	Total
Non-Group sales	10,297	9,668	70,623	75,282	6	-	165,876
Intersegment sales	18,419	1,246	26,794	911	218	(47,588)	-
Excise taxes	-	-	(4,107)	(17,829)	-	-	(21,936)
REVENUES FROM SALES	28,716	10,914	93,310	58,364	224	(47,588)	143,940
Operating expenses	(15,166)	(10,227)	(86,639)	(55,782)	(866)	47,588	(121,092)
Depreciation, depletion and impairment of tangible assets and mineral interests	(9,069)	(115)	(1,022)	(610)	(27)	-	(10,843)
ADJUSTED OPERATING INCOME	4,481	572	5,649	1,972	(669)	-	12,005
Net income (loss) from equity affiliates and other items	2,217	109	559	243	577	-	3,705
Tax on net operating income	(2,368)	(114)	(1,369)	(624)	165	-	(4,310)
ADJUSTED NET OPERATING INCOME	4,330	567	4,839	1,591	73	-	11,400
Net cost of net debt							(702)
Non-controlling interests							(180)
ADJUSTED NET INCOME – GROUP SHARE							10,518

For the year ended December 31, 2015 (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Intercompany	Total
Total expenditures	24,233	588	1,875	1,267	70	-	28,033
Total divestments	2,880	418	3,494	767	25	-	7,584
Cash flow from operating activities	11,567	(384)	6,435	2,323	5	-	19,946
Balance sheet as of December 31, 2015							
Property, plant and equipment, intangible assets, net	108,204	1,248	9,317	4,989	309	-	124,067
Investments & loans in equity affiliates	14,711	1,126	3,075	472	-	-	19,384
Other non-current assets	7,230	1,245	640	964	(501)	-	9,578
Working capital	885	1,363	1,828	675	(2,975)	-	1,776
Provisions and other non-current liabilities	(27,720)	(643)	(3,784)	(1,339)	(150)	-	(33,636)
Assets and liabilities classified as held for sale	482	-	-	344	-	-	826
CAPITAL EMPLOYED (BALANCE SHEET)	103,791	4,340	11,076	6,105	(3,317)	-	121,995
Less inventory valuation effect	-	-	(622)	(230)	-	-	(852)
Capital Employed (business segment information)	103,791	4,340	10,454	5,875	(3,317)	-	121,143
ROACE as a percentage	4%	13%	40%	25%	-	-	9%

B) Reconciliation of the information by business segment with Consolidated Financial Statements

The table below presents the impact of adjustment items on the consolidated statement of income:

For the year ended December 31, 2017 (M\$)	Adjusted	Adjustments ^(a)	Consolidated statement of income
Sales	171,513	(20)	171,493
Excise taxes	(22,394)	-	(22,394)
Revenues from sales	149,119	(20)	149,099
Purchases, net of inventory variation	(99,534)	123	(99,411)
Other operating expenses	(24,427)	(539)	(24,966)
Exploration costs	(864)	-	(864)
Depreciation, depletion and impairment of tangible assets and mineral interests	(11,441)	(4,662)	(16,103)
Other income	772	3,039	3,811
Other expense	(389)	(645)	(1,034)
Financial interest on debt	(1,367)	(29)	(1,396)
Financial income and expense from cash & cash equivalents	(138)	-	(138)
Cost of net debt	(1,505)	(29)	(1,534)
Other financial income	957	-	957
Other financial expense	(642)	-	(642)
Net income (loss) from equity affiliates	2,574	(559)	2,015
Income taxes	(3,858)	829	(3,029)
CONSOLIDATED NET INCOME	10,762	(2,463)	8,299
Group share	10,578	(1,947)	8,631
Non-controlling interests	184	(516)	(332)

(a) Adjustments include special items, inventory valuation effect and the effect of changes in fair value.

For the year ended December 31, 2016 (M\$)	Adjusted	Adjustments ^(a)	Consolidated statement of income
Sales	149,974	(231)	149,743
Excise taxes	(21,818)	-	(21,818)
Revenues from sales	128,156	(231)	127,925
Purchases, net of inventory variation	(83,916)	539	(83,377)
Other operating expenses	(23,832)	(470)	(24,302)
Exploration costs	(914)	(350)	(1,264)
Depreciation, depletion and impairment of tangible assets and mineral interests	(11,294)	(2,229)	(13,523)
Other income	964	335	1,299
Other expense	(537)	(490)	(1,027)
Financial interest on debt	(1,085)	(23)	(1,108)
Financial income and expense from cash & cash equivalents	4	-	4
Cost of net debt	(1,081)	(23)	(1,104)
Other financial income	971	-	971
Other financial expense	(636)	-	(636)
Net income (loss) from equity affiliates	2,531	(317)	2,214
Income taxes	(1,965)	995	(970)
CONSOLIDATED NET INCOME	8,447	(2,241)	6,206
Group share	8,287	(2,091)	6,196
Non-controlling interests	160	(150)	10

(a) Adjustments include special items, inventory valuation effect and the effect of changes in fair value.

For the year ended December 31, 2015 (M\$)	Adjusted	Adjustments ^(a)	Consolidated statement of income
Sales	165,876	(519)	165,357
Excise taxes	(21,936)	-	(21,936)
Revenues from sales	143,940	(519)	143,421
Purchases, net of inventory variation	(95,558)	(1,113)	(96,671)
Other operating expenses	(23,984)	(361)	(24,345)
Exploration costs	(1,550)	(441)	(1,991)
Depreciation, depletion and impairment of tangible assets and mineral interests	(10,843)	(6,877)	(17,720)
Other income	1,468	2,138	3,606
Other expense	(405)	(1,172)	(1,577)
Financial interest on debt	(956)	(11)	(967)
Financial income and expense from cash & cash equivalents	94	-	94
Cost of net debt	(862)	(11)	(873)
Other financial income	882	-	882
Other financial expense	(654)	-	(654)
Net income (loss) from equity affiliates	2,414	(53)	2,361
Income taxes	(4,150)	2,497	(1,653)
CONSOLIDATED NET INCOME	10,698	(5,912)	4,786
Group share	10,518	(5,431)	5,087
Non-controlling interests	180	(481)	(301)

(a) Adjustments include special items, inventory valuation effect and the effect of changes in fair value.

C) Additional information on adjustment items

The main adjustment items for 2017 are the following:

- 1) The line "Gains (losses) on disposals of assets" includes the 2017 gains and losses on disposals, mainly, in the Refining & Chemicals segment with the sale of Atotech for an amount of \$2,139 million;
- 2) The line "Asset impairment charges" amounting to \$(4,662) million in operating income and \$(3,884) million in net income Group share includes non-current assets impairment charges recorded in 2017. Impairment testing methodology and

asset impairment charges recorded during the year are detailed in the paragraph D of Note 3;

- 3) "Other elements" amount to \$(724) million in operating income and \$(715) million in net income, Group share and especially include a provision for future expenses related to an "agreement on the transition from work to retirement" in France (\$201) million in operating income and \$(132) million in net income, Group share) and the impact of the tax rate reform in the US (\$97) million in net income, Group share).

Adjustments to operating income

For the year ended December 31, 2017 (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Total
Inventory valuation effect	-	-	344	13	-	357
Effect of changes in fair value	-	(20)	-	-	-	(20)
Restructuring charges	(42)	-	(4)	(3)	-	(49)
Asset impairment charges	(4,308)	(291)	(53)	(10)	-	(4,662)
Other items	(77)	(389)	(173)	(21)	(64)	(724)
TOTAL	(4,427)	(700)	114	(21)	(64)	(5,098)

Adjustments to net income, Group share

For the year ended December 31, 2017 (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Total
Inventory valuation effect	-	-	295	(13)	-	282
Effect of changes in fair value	-	(16)	-	-	-	(16)
Restructuring charges	(11)	(11)	(42)	(2)	-	(66)
Asset impairment charges	(3,583)	(238)	(53)	(10)	-	(3,884)
Gains (losses) on disposals of assets	188	-	2,139	125	-	2,452
Other items	(287)	(293)	73	(30)	(178)	(715)
TOTAL	(3,693)	(558)	2,412	70	(178)	(1,947)

Adjustments to operating income

For the year ended December 31, 2016 (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Total
Inventory valuation effect	-	-	695	(43)	-	652
Effect of changes in fair value	-	(4)	-	-	-	(4)
Restructuring charges	(19)	(18)	-	-	-	(37)
Asset impairment charges	(2,089)	(139)	-	(1)	-	(2,229)
Other items	(672)	(288)	(70)	(93)	-	(1,123)
TOTAL	(2,780)	(449)	625	(137)	-	(2,741)

Adjustments to net income, Group share

For the year ended December 31, 2016 (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Total
Inventory valuation effect	-	-	498	(19)	-	479
Effect of changes in fair value	-	(3)	-	-	-	(3)
Restructuring charges	(4)	(28)	-	-	-	(32)
Asset impairment charges	(1,867)	(131)	(78)	(18)	(3)	(2,097)
Gains (losses) on disposals of assets	287	5	-	(25)	-	267
Other items	(293)	(237)	(91)	(84)	-	(705)
TOTAL	(1,877)	(394)	329	(146)	(3)	(2,091)

Adjustments to operating income

For the year ended December 31, 2015 (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Total
Inventory valuation effect	-	-	(859)	(254)	-	(1,113)
Effect of changes in fair value	-	(16)	-	-	-	(16)
Restructuring charges	(43)	-	-	(5)	-	(48)
Asset impairment charges	(6,591)	(192)	(70)	(24)	-	(6,877)
Other items	(516)	(541)	(176)	(24)	-	(1,257)
TOTAL	(7,150)	(749)	(1,105)	(307)	-	(9,311)

Adjustments to net income, Group share

For the year ended December 31, 2015 (M\$)	Exploration & Production	Gas, Renewables & Power	Refining & Chemicals	Marketing & Services	Corporate	Total
Inventory valuation effect	-	-	(590)	(157)	-	(747)
Effect of changes in fair value	-	(9)	-	-	-	(9)
Restructuring charges	(10)	(5)	(52)	(5)	-	(72)
Asset impairment charges	(5,057)	(270)	(59)	(49)	(12)	(5,447)
Gains (losses) on disposals of assets	162	-	1,288	360	-	1,810
Other items	(148)	(421)	(264)	(133)	-	(966)
TOTAL	(5,053)	(705)	323	16	(12)	(5,431)

D) Asset impairment

▶ ACCOUNTING PRINCIPLES

The recoverable amounts of intangible assets and property, plant and equipment are tested for impairment as soon as any indication of impairment exists. This test is performed at least annually for goodwill.

The recoverable amount is the higher of the fair value (less costs to sell) or its value in use.

Assets are grouped into cash-generating units (or CGUs) and tested. A CGU is a homogeneous set of assets that generates cash inflows that are largely independent of the cash inflows from other groups of assets.

The value in use of a CGU is determined by reference to the discounted expected future cash flows, based upon the

management’s expectation of future economic and operating conditions. When this value is less than the carrying amount of the CGU, an impairment loss is recorded. It is allocated first to goodwill with a corresponding amount in “Other expenses”. Any further losses are then allocated to property, plant and mineral interests with a corresponding amount in “Depreciation, depletion and impairment of tangible assets and mineral interests” and to other intangible assets with a corresponding amount in “Other expenses”.

Impairment losses recognized in prior periods can be reversed up to the original carrying amount, had the impairment loss not been recognized. Impairment losses recognized for goodwill cannot be reversed.

For the financial year 2017, asset impairments were recorded for an amount of \$4,662 million in operating income and \$3,884 million in net income, Group share. These impairments were qualified as adjustments items of the operating income and net income, Group share.

Impairments relate to certain cash-generating units (CGUs) for which indicators of impairment have been identified, due to changes in operating conditions or the economic environment of the activities concerned.

The principles applied are as follows:

- the future cash flows were determined using the assumptions included in the 2018 budget and in the long-term plan of the Group approved by the Group Executive Committee and the Board of Directors. These assumptions, including in particular future prices of products, operational costs, estimation of oil and gas reserves, future volumes produced and marketed, represent the best estimate of the Group management of all economic and technical conditions over the remaining life of the assets;
- the Group, notably relying on data on global energy demand from the “World Energy Outlook” issued by IEA in 2016 and on its own supply assessments, determines the oil & gas prices scenarios based on assumptions about the evolution of core indicators of the Upstream activity (demand for oil & gas products in different markets, investment forecasts, decline in production fields, changes in oil & gas reserves and supply by area and by nature of oil & gas products), of the Downstream activity (changes in refining capacity and demand for petroleum products) and by integrating the climate issue.

These price scenarios, first prepared within the Strategy and Climate Department, are also reviewed by the Group segments which bring their own expertise. They also integrate studies issued by international agencies, banks and independent consultants. They are then eventually approved by the Executive Committee and the Board of Directors.

The IEA 2017 World Energy Outlook anticipates three scenarios (New Policies Scenario (NPS), Current Policies Scenario (CPS) and Sustainable Development Scenario (SDS)). Among these scenarios, the Group uses as main references the New Policies Scenario (central scenario of the IEA) and Sustainable Development Scenario (which replaces the scenario 450 or 2 ° of WEO 2016).

The New Policies Scenario takes into account the measures already implemented by countries in the energy field as well as the effects of the policies announced by these within the framework of officially communicated objectives. In particular, the Nationally Determined Contributions (NDC) decided under the Paris Climate

Agreement support the IEA estimates in this scenario. The Sustainable Development Scenario takes into account the measures needed to achieve the energy-related goals set in the 2030 Agenda for Sustainable Development adopted in 2015 by the UN members.

- Based on the same economic and demographic assumptions, the NPS sees a significant increase in demand for oil and gas until 2025 and then a slower growth until 2040 (despite a significant penetration of electric vehicles revised up in 2017), while the SDS sees declining demand after 2025 for oil and after 2030 for gas due to substitution efforts and efficiency gains assumed by the IEA. At the same time, ample shale gas and oil resources in North America (whose estimates have been revised upwards between 2016 and 2017) mitigate the impact of demand growth during the first half of the forecast. Despite the revisions that led the IEA to correct its prices slightly downward versus 2016, the Group is comforted in its price assumptions by the IEA’s main scenarios which take into account climate policies.

In this context:

- for crude oil, the price level used for 2018 to determine the recoverable value of CGUs in 2017 amounts to 50 dollars per barrel of Brent. This price rises progressively from 2018 to reach 80 dollars in 2021 and inflates after 2023,
- for gas, the Group estimates that due to new market dynamics that emerged in 2017, in particular a strong increase in supply, prices will strengthen like those of crude oil prices. The price level used in determining the recoverable value of concerned CGUs for 2018 amounts to \$5 per million BTU for the NBP price (Europe). It reaches \$7 per million BTU in 2020, and will inflate after 2023;
- the future operational costs were determined by taking into account the existing technologies, the fluctuation of prices for petroleum services in line with market developments and the internal cost reduction programs effectively implemented;
- the future cash flows are estimated over a period consistent with the life of the assets of the CGUs. They are prepared post-tax and take into account specific risks related to the CGUs’ assets. They are discounted using a 7% post-tax discount rate, this rate being the weighted-average cost of capital estimated from historical market data. This rate was 7% in 2016 and 2015. The value in use calculated by discounting the above post-tax cash flows using a 7% post-tax discount rate is not materially different from the value in use calculated by discounting pre-tax cash flows using a pre-tax discount rate determined by an iterative computation from the post-tax value in use. These pre-tax discount rates range from 7% to 16% in 2017.



The CGUs for the Exploration & Production segment are defined as oil and gas fields or groups of oil and gas fields with industrial assets enabling the production, treatment and evacuation of the oil and gas. For the year 2017, impairments of assets were recognized over CGUs of the Exploration & Production segment for an impact of \$4,308 million in operating income and \$3,583 million in net income, Group share. These impairments were mainly recognized on the following assets:

- Fort Hills project assets, in Canada – following the operator announcement of the increase of the project's costs – for an amount of \$1,544 million in operating income and \$1,312 million in net income, Group share;
- gas assets related to the GLNG project in Australia for an amount of \$509 million in operating income and \$381 million in net income, Group share;
- oil assets in Congo for an amount of \$1,392 million in operating income and \$1,220 million in net income, Group share;
- gas assets in the United Kingdom for \$451 million in operating income and \$271 million in net income, Group share;
- and other assets in the United States and in Norway.

As for the sensitivity analysis:

- a decrease by one point in the discount rate would have a positive impact of approximately \$0.5 billion in operating income and \$0.3 billion in net income, Group share;
- an increase by one point in the discount rate would have an additional negative impact of approximately \$1 billion in operating income and approximately \$0.8 billion in net income, Group share;
- a variation of (10)% of the oil and gas prices over the long term plan would have an additional negative impact of approximately \$4.9 billion in operating income and \$4.2 billion in net income, Group share.

The most sensitive assets would be:

- the assets already impaired in 2017 or before (impact of approximately \$2.8 billion in operating income and \$2.7 billion in net income, Group share), especially GLNG in Australia and assets in Congo;
- other assets (impact of approximately \$2.1 billion in operating income and \$1.5 billion in net income, Group share), especially in Canada.

The CGUs of the Gas, Renewables & Power segment are subsidiaries or groups of subsidiaries organized by activity or geographical area. In year 2017, the Group recorded impairments on CGUs in the Gas, Renewables & Power segment for \$291 million in operating income and \$238 million in net income, Group share. These impairments mainly concern SunPower in the United States given the depressed economic environment of the solar activity.

The CGUs for the Refining & Chemicals segment are defined as legal entities with operational activities for refining and petrochemicals activities. Future cash flows are based on the gross contribution margin (calculated on the basis of net sales after purchases of crude oil and refined products, the effect of inventory valuation and variable costs). The other activities of the segment are global divisions, each division gathering a set of businesses or homogeneous products for strategic, commercial and industrial plans. Future cash flows are determined from the specific margins of these activities, unrelated to the price of oil. In year 2017, the Group recorded impairments on CGUs in the Refining and Chemicals segment for \$53 million in net income, Group share. A variation of (5)% or +5% of the gross margin on variable costs under identical operating conditions or (1)% or +1% of the discount rate would have no impact on the operating profit or the net profit, Group share.

The CGUs of the Marketing & Services segment are subsidiaries or groups of subsidiaries organized by geographical area. In year 2017 no significant impairment has been recorded.

For year 2016, the Group recorded impairments in Exploration & Production, Gas, Renewables & Power and Marketing & Services segments for an amount of \$2,229 million in operating income and \$2,097 million in net income, Group share. These impairments were qualified as adjustments items of the operating income and net income, Group share.

In 2015, the Group recognized impairments of assets in the Exploration & Production, Refining & Chemicals and Marketing & Services segments for an impact of \$6,877 million in operating income and of \$5,447 income and net income, Group share. These impairments were qualified as adjustments items of the operating income and net income, Group share.

No significant reversal of impairment was accounted for in respect of the years 2015, 2016 and 2017.

NOTE 4 Segment Information by geographical area

<i>(M\$)</i>	France	Rest of Europe	North America	Africa	Rest of the world	Total
For the year ended December 31, 2017						
Non-Group sales	39,032	83,255	16,889	17,581	14,736	171,493
Property, plant and equipment, intangible assets, net	6,397	18,260	18,469	42,849	38,009	123,984
Capital expenditures	1,193	2,805	2,916	5,030	4,952	16,896
For the year ended December 31, 2016						
Non-Group sales	33,472	71,551	15,383	15,294	14,043	149,743
Property, plant and equipment, intangible assets, net	5,361	20,647	19,154	45,032	37,139	127,333
Capital expenditures	1,835	3,842	2,825	6,859	5,169	20,530
For the year ended December 31, 2015						
Non-Group sales	36,536	79,463	14,857	17,612	16,889	165,357
Property, plant and equipment, intangible assets, net	4,123	22,354	17,169	43,536	36,885	124,067
Capital expenditures	980	4,783	3,493	9,154	9,623	28,033

NOTE 5 Main items related to operating activities

Items related to the statement of income

5.1 Net sales

ACCOUNTING POLICIES

Sales of goods

Revenues from sales are recognized when the significant risks and rewards of ownership have been passed to the buyer and when the amount is recoverable and can be reasonably measured.

Revenues from sales of crude oil and natural gas are recorded upon transfer of title, according to the terms of the sales contracts.

Revenues from the production of crude oil and natural gas properties, in which the Group has an interest with other producers, are recognized based on actual volumes sold during the period. Any difference between volumes sold and entitlement volumes, based on the Group net working interest, is recognized as “Other current assets” or “Other creditors and accrued liabilities”, as appropriate.

Quantities delivered that represent production royalties and taxes, when paid in cash, are included in oil and gas sales, except for the United States and Canada.

Certain transactions within the trading activities (contracts involving quantities that are purchased from third parties then resold to third parties) are shown at their net value in sales.

Exchanges of crude oil and petroleum products within normal trading activities do not generate any income and therefore these flows are shown at their net value in both the statement of income and the balance sheet.

Sales of services

Revenues from services are recognized when the services have been rendered.

Revenues from gas transport are recognized when services are rendered. These revenues are based on the quantities transported and measured according to procedures defined in each service contract.

Shipping revenues and expenses from time-charter activities are recognized on a pro rata basis over a period that commences upon the unloading of the previous voyage and terminates upon the unloading of the current voyage. Shipping revenue recognition starts only when a charter has been agreed to by both the Group and the customer.

Solar Farm Development Projects

SunPower develops and sells solar farm projects. This activity generally contains a property component (land ownership or an interest in land rights). The revenue associated with the development of these projects is recognized when the project-entities and land rights are irrevocably sold.

Revenues under contracts for construction of solar systems are recognized based on the progress of construction works, measured according to the percentage of costs incurred relative to total forecast costs.

Excise taxes

Sales include excise taxes collected by the Group within the course of its oil distribution operations. Excise taxes are deducted from sales in order to obtain the “Revenues from sales” indicator.

Excise taxes are rights or taxes which amount is calculated based on the quantity of oil and gas products put on the market. Excise taxes are determined by the states. They are paid directly to the customs and tax authorities and then invoiced to final customers by being included in the sales price.

The analysis of the criteria set by IAS 18 led the Group to determine that it was acting as principal in these transactions. On this basis, the sales presented include the amount of excise taxes invoiced to the customers.

5.2 Operating expenses and research and development

ACCOUNTING POLICIES

The Group applies IFRS 6 “Exploration for and Evaluation of Mineral Resources”. Oil and gas exploration and production properties and assets are accounted for in accordance with the Successful Efforts method.

Geological and geophysical costs, including seismic surveys for exploration purposes are expensed as incurred in exploration costs.

Costs of dry wells and wells that have not found proved reserves are charged to expense in exploration costs.

5.2.1 Operating expenses

For the year ended December 31,

(M\$)

	2017	2016	2015
Purchases, net of inventory variation ^{(a)(b)}	(99,411)	(83,377)	(96,671)
Exploration costs	(864)	(1,264)	(1,991)
Other operating expenses ^(c)	(24,966)	(24,302)	(24,345)
<i>of which non-current operating liabilities (allowances) reversals</i>	280	369	858
<i>of which current operating liabilities (allowances) reversals</i>	66	(58)	(86)
OPERATING EXPENSES	(125,241)	(108,943)	(123,007)

(a) Includes taxes paid on oil and gas production in the Exploration & Production segment, amongst others royalties.

(b) The Group values under/over lifting at market value.

(c) Principally composed of production and administrative costs (see in particular the payroll costs as detailed in Note 10 to the Consolidated Financial Statements "Payroll, staff and employee benefits obligations").

5.2.2 Research and development costs

▶ ACCOUNTING POLICIES

Research costs are charged to expense as incurred.

Development expenses are capitalized when the criteria of IAS 38 are met.

Research and development costs incurred by the Group in 2017 and booked in operating expenses amount to \$912 million (\$1,050 million in 2016 and \$980 million in 2015), corresponding to 0.53% of the sales.

The staff dedicated in 2017 to these research and development activities are estimated at 4,132 people (4,939 in 2016 and 4,248 in 2015).

5.3 Amortization, depreciation and impairment of tangible assets and mineral interests

The amortization, depreciation and impairment of tangible assets and mineral interests are detailed as follows:

For the year ended December 31,

(M\$)

	2017	2016	2015
Depreciation and impairment of tangible assets	(14,782)	(12,615)	(15,727)
Amortization and impairment of mineral assets	(1,321)	(908)	(1,993)
TOTAL	(16,103)	(13,523)	(17,720)

Items related to balance sheet

5.4 Working capital

5.4.1 Inventories

▶ ACCOUNTING POLICIES

Inventories are measured in the Consolidated Financial Statements at the lower of historical cost or market value. Cost prices for petroleum and petrochemical products are determined according to the FIFO (First-In, First-Out) method or weighted-average cost method and other inventories are measured using the weighted-average cost method.

In addition stocks held for trading are measured at fair value less costs of sale.

Refining & Chemicals

Petroleum product inventories are mainly comprised of crude oil and refined products. Refined products principally consist of gasoline, distillate and fuel produced by the Group's refineries. The turnover of petroleum products does not exceed more than two months on average.

Crude oil costs include raw material and receiving costs. Refining costs principally include crude oil costs, production costs (energy, labor, depreciation of producing assets) and an allocation of production overheads (taxes, maintenance, insurance, etc.).

Costs of chemical product inventories consist of raw material costs, direct labor costs and an allocation of production overheads. Start-up costs, general administrative costs and financing costs are excluded from the cost prices of refined and chemicals products.

Marketing & Services

The costs of refined products include mainly raw materials costs, production costs (energy, labor, depreciation of producing assets) and an allocation of production overheads (taxes, maintenance, insurance, etc.).

General administrative costs and financing costs are excluded from the cost price of refined products.

Product inventories purchased from entities external to the Group are valued at their purchase cost plus primary costs of transport.

Carbon dioxide emission rights

In the absence of a current IFRS standard or interpretation on accounting for emission rights of carbon dioxide, the following principles are applied:

- emission rights are managed as a cost of production and as such are recognized in inventories:
 - emission rights allocated for free are booked in inventories with a nil carrying amount,
 - purchased emission rights are booked at acquisition cost,
 - sales or annual restorations of emission rights consist of decreases in inventories recognized based on a weighted average cost,
 - if the carrying amount of inventories at closing date is higher than the market value, an impairment loss is recorded;
- at each closing, a provision is recorded in order to materialize the obligation to surrender emission rights related to the emissions of the period. This provision is calculated based on estimated emissions of the period, valued at weighted average cost of the inventories at the end of the period. It is reversed when the emission rights are surrendered;

- if emission rights to be surrendered at the end of the compliance period are higher than emission rights recorded in inventories, the shortage is accounted for as a liability at market value;
- forward transactions are recognized at their fair market value in the balance sheet. Changes in the fair value of such forward transactions are recognized in the statement of income.

Energy savings certificates

In the absence of current IFRS standards or interpretations on accounting for energy savings certificates (ESC), the following principles are applied:

- if the obligations linked to the sales of energy are greater than the number of ESC's held then a liability is recorded. These liabilities are valued based on the price of the last transactions;
- in the event that the number of ESC's held exceeds the obligation at the balance sheet date this is accounted for as inventory;
- ESC inventories are valued at weighted average cost (acquisition cost for those ESC's acquired or cost incurred for those ESC's generated internally).

If the carrying value of the inventory of certificates at the balance sheet date is higher than the market value, an impairment loss is recorded.

As of December 31, 2017

(M\$)

	Gross value	Valuation allowance	Net value
Crude oil and natural gas	2,658	-	2,658
Refined products	5,828	(36)	5,792
Chemicals products	1,089	(58)	1,031
Trading inventories	4,320	-	4,320
Other inventories	3,632	(913)	2,719
TOTAL	17,527	(1,007)	16,520

As of December 31, 2016

(M\$)

	Gross value	Valuation allowance	Net value
Crude oil and natural gas	2,215	(7)	2,208
Refined products	4,577	(30)	4,547
Chemicals products	877	(58)	819
Trading inventories	4,613	-	4,613
Other inventories	3,936	(876)	3,060
TOTAL	16,218	(971)	15,247

As of December 31, 2015

(M\$)

	Gross value	Valuation allowance	Net value
Crude oil and natural gas	1,788	(59)	1,729
Refined products	4,177	(130)	4,047
Chemicals products	989	(72)	917
Trading inventories	3,168	-	3,168
Other inventories	4,062	(807)	3,255
TOTAL	14,184	(1,068)	13,116

Changes in the valuation allowance on inventories are as follows:

For the year ended December 31, (M\$)	Valuation allowance as of January 1,	Increase (net)	Currency translation adjustment and other variations	Valuation allowance as of December 31
2017	(971)	9	(45)	(1,007)
2016	(1,068)	41	56	(971)
2015	(1,395)	256	71	(1,068)

5.4.2 Accounts receivable and other current assets

As of December 31, 2017 (M\$)	Gross value	Valuation allowance	Net value
Accounts receivable	15,469	(576)	14,893
Recoverable taxes	4,029	-	4,029
Other operating receivables	9,797	(461)	9,336
Prepaid expenses	786	-	786
Other current assets	59	-	59
Other current assets	14,671	(461)	14,210

As of December 31, 2016 (M\$)	Gross value	Valuation allowance	Net value
Accounts receivable	12,809	(596)	12,213
Recoverable taxes	3,180	-	3,180
Other operating receivables	10,618	(400)	10,218
Prepaid expenses	1,399	-	1,399
Other current assets	38	-	38
Other current assets	15,235	(400)	14,835

As of December 31, 2015 (M\$)	Gross value	Valuation allowance	Net value
Accounts receivable	11,173	(544)	10,629
Recoverable taxes	3,328	-	3,328
Other operating receivables	11,335	(426)	10,909
Prepaid expenses	1,554	-	1,554
Other current assets	52	-	52
Other current assets	16,269	(426)	15,843

Changes in the valuation allowance on “Accounts receivable” and “Other current assets” are as follows:

For the year ended December 31, (M\$)	Valuation allowance as of January 1,	Increase (net)	Currency translation adjustments and other variations	Valuation allowance as of December 31
Accounts receivable				
2017	(596)	53	(33)	(576)
2016	(544)	(17)	(35)	(596)
2015	(602)	5	53	(544)
Other current assets				
2017	(400)	(58)	(3)	(461)
2016	(426)	33	(7)	(400)
2015	(367)	(79)	20	(426)



As of December 31, 2017, the net portion of the overdue receivables included in “Accounts receivable” and “Other current assets” was \$3,156 million, of which \$1,682 million was due in less than 90 days, \$235 million was due between 90 days and 6 months, \$350 million was due between 6 and 12 months and \$889 million was due after 12 months.

As of December 31, 2016, the net portion of the overdue receivables included in “Accounts receivable” and “Other current assets” was \$3,525 million, of which \$1,273 million was due in less than 90 days,

\$1,013 million was due between 90 days and 6 months, \$538 million was due between 6 and 12 months and \$701 million was due after 12 months.

As of December 31, 2015, the net portion of the overdue receivables included in “Accounts receivable” and “Other current assets” was \$3,159 million, of which \$1,313 million was due in less than 90 days, \$460 million was due between 90 days and 6 months, \$570 million was due between 6 and 12 months and \$816 million was due after 12 months.

5.4.3 Other creditors and accrued liabilities

As of December 31, (M\$)	2017	2016	2015
Accruals and deferred income	419	424	342
Payable to States (including taxes and duties)	5,786	5,455	5,363
Payroll	1,439	1,225	1,265
Other operating liabilities	10,135	9,616	9,914
TOTAL	17,779	16,720	16,884

As of December 31, 2017, the heading “Other operating liabilities” includes mainly the second quarterly interim dividend for the fiscal year 2017 for \$1,883 million, which was paid in January 2018 and the third quarterly interim dividend for the fiscal year 2017 for \$1,912 million, which will be paid in April 2018.

As of December 31, 2016, the heading “Other operating liabilities” included mainly the second quarterly interim dividend for the fiscal year 2016 for \$1,592 million, which was paid in January 2017 and

the third quarterly interim dividend for the fiscal year 2016 for \$1,593 million, which was paid in April 2017.

As of December 31, 2015, the heading “Other operating liabilities” included mainly the second quarterly interim dividend for the fiscal year 2015 for \$1,560 million, which was paid in January 2016 and the third quarterly interim dividend for the fiscal year 2015 for \$1,584 million, which was paid in April 2016.

Items related to the cash flow statement

5.5 Cash flow from operating activities

ACCOUNTING POLICIES

The Consolidated Statement of Cash Flows prepared in currencies other than dollar has been translated into dollars using the exchange rate on the transaction date or the average exchange rate for the period. Currency translation differences arising from the translation of monetary assets and liabilities

denominated in foreign currency into dollars using the closing exchange rates are shown in the Consolidated Statement of Cash Flows under “Effect of exchange rates”. Therefore, the Consolidated Statement of Cash Flows will not agree with the figures derived from the Consolidated Balance Sheet.

The following table gives additional information on cash paid or received in the cash flow from operating activities:

Detail of interest, taxes and dividends

For the year ended December 31, (M\$)	2017	2016	2015
Interests paid	(1,305)	(1,028)	(862)
Interests received	82	90	113
Income tax paid ^(a)	(4,013)	(2,892)	(4,937)
Dividends received	2,219	1,702	2,309

(a) These amounts include taxes paid in kind under production-sharing contracts in Exploration & Production.

Detail of changes in working capital

For the year ended December 31, (M\$)	2017	2016	2015
Inventories	(476)	(2,475)	888
Accounts receivable	(1,897)	(1,916)	4,153
Other current assets	1,274	185	(726)
Accounts payable	2,339	2,546	(2,235)
Other creditors and accrued liabilities	(413)	541	(397)
NET AMOUNT, DECREASE (INCREASE)	827	(1,119)	1,683

Detail of changes in provisions and deferred taxes

As of December 31, (M\$)	2017	2016	2015
Accruals	3	382	336
Deferred taxes	(387)	(1,941)	(2,899)
TOTAL	(384)	(1,559)	(2,563)

NOTE 6 Other items from operating activities

6.1 Other income and other expense

For the year ended December 31, (M\$)	2017	2016	2015
Gains on disposal of assets	2,784	479	2,658
Foreign exchange gains	785	548	663
Other	242	272	285
OTHER INCOME	3,811	1,299	3,606
Losses on disposal of assets	(186)	(216)	(199)
Foreign exchange losses	-	-	(102)
Amortization of other intangible assets (excl. mineral interests)	(192)	(344)	(332)
Other	(656)	(467)	(944)
OTHER EXPENSE	(1,034)	(1,027)	(1,577)

Other income

In 2017, gains on disposal of assets are mainly related to the sale of Atotech in the Refining & Chemicals segment and to the sale of assets in Gabon in the Exploration & Production segment.

In 2016, gains on disposal of assets mainly related to sales of assets in United-Kingdom in the Exploration & Production segment.

In 2015, gains on disposal of assets mainly related to sales of assets in Nigeria in the Exploration & Production segment, to sales of interests in Geosel and the Schwedt refinery in the Refining & Chemicals segment, to the sale of the Bostik adhesives activity, also in the Refining & Chemicals segment, and to the sale of 100% of Totalgaz in the Marketing & Services segment.

Other expense

In 2017, losses on disposals are mainly related to the sale of 15% interests in the Gina Krog field in Norway. The heading "Other" mainly consists of the impairment of non-consolidated shares and loans

granted to non-consolidated subsidiaries and equity affiliates for an amount of \$172 million and \$64 million of restructuring charges in the Exploration & Production, Gas Renewables & Power and Refining & Chemicals segments.

In 2016, the loss on disposals mainly related to the sale of 20% of interests in Kharyaga in Russia. The heading "Other" mainly consisted of the impairment of non-consolidated shares and loans granted to non-consolidated subsidiaries and equity affiliates for an amount of \$142 million and \$37 million of restructuring charges in the Refining & Chemicals and Marketing & Services segments.

In 2015, the loss on disposals mainly related to the sale of 20% of interests in fields in the United Kingdom. The heading "Other" mainly consisted of the impairment of non-consolidated shares and loans granted to non-consolidated subsidiaries and equity affiliates for an amount of \$409 million, \$180 million of restructuring charges in the Exploration & Production, Refining & Chemicals and Marketing & Services segments as well as \$162 million for expenses relating to a litigation in Qatar.

6.2 Other financial income and expense

As of December 31, (M\$)	2017	2016	2015
Dividend income on non-consolidated subsidiaries	167	170	267
Capitalized financial expenses	460	477	364
Other	330	324	251
OTHER FINANCIAL INCOME	957	971	882
Accretion of asset retirement obligations	(544)	(523)	(513)
Other	(98)	(113)	(141)
OTHER FINANCIAL EXPENSE	(642)	(636)	(654)

6.3 Other non-current assets

As of December 31, 2017 (M\$)	Gross value	Valuation allowance	Net value
Loans and advances ^(a)	3,237	(359)	2,878
Other non-current financial assets related to operational activities	937	-	937
Other	169	-	169
TOTAL	4,343	(359)	3,984

As of December 31, 2016 (M\$)	Gross value	Valuation allowance	Net value
Loans and advances ^(a)	3,334	(286)	3,048
Other non-current financial assets related to operational activities	1,069	-	1,069
Other	26	-	26
TOTAL	4,429	(286)	4,143

As of December 31, 2015 (M\$)	Gross value	Valuation allowance	Net value
Loans and advances ^(a)	3,687	(280)	3,407
Other non-current financial assets related to operational activities	891	-	891
Other	57	-	57
TOTAL	4,635	(280)	4,355

(a) Excluding loans to equity affiliates.

Changes in the valuation allowance on loans and advances are detailed as follows:

For the year ended December 31, (M\$)	Valuation allowance as of January 1,	Increases	Decreases	Currency translation adjustment and other variations	Valuation allowance as of December 31,
2017	(286)	(50)	11	(34)	(359)
2016	(280)	(15)	7	2	(286)
2015	(672)	(62)	393	61	(280)

NOTE 7 Intangible and tangible assets

7.1 Intangible assets

ACCOUNTING POLICIES

Exploration costs

The Group applies IFRS 6 “Exploration for and Evaluation of Mineral Resources”. Oil and gas exploration and production properties and assets are accounted for in accordance with the Successful Efforts method.

Mineral interests are tested for impairment on a regular basis, property-by-property, based on the results of the exploratory activity and the management’s evaluation.

In the event of a discovery, the unproved mineral interests are transferred to proved mineral interests at their net book value as soon as proved reserves are booked.

Exploratory wells are tested for impairment on a well-by-well basis and accounted for as follows:

- costs of exploratory wells which result in proved reserves are capitalized and then depreciated using the unit-of-production method based on proved developed reserves;
- costs of exploratory wells are temporarily capitalized until a determination is made as to whether the well has found proved reserves if both of the following conditions are met:
 - the well has found a sufficient quantity of reserves to justify, if appropriate, its completion as a producing well, assuming that the required capital expenditures are made,
 - the Group is making sufficient progress assessing the reserves and the economic and operating viability of the project. This progress is evaluated on the basis of indicators such as whether additional exploratory works are under way or firmly

planned (wells, seismic or significant studies), whether costs are being incurred for development studies and whether the Group is waiting for governmental or other third-party authorization of a proposed project, or availability of capacity on an existing transport or processing facility.

Costs of exploratory wells not meeting these conditions are charged to exploration costs.

Proved mineral interests are depreciated using the unit-of-production method based on proved reserves.

The corresponding expense is recorded as depreciation of tangible assets and mineral interests.

Goodwill and other intangible assets excluding mineral interests

Other intangible assets include goodwill, patents, trademarks, and lease rights.

Intangible assets are carried at cost, after deducting any accumulated amortization and accumulated impairment losses.

Guidance for calculating goodwill is presented in Note 1.1 paragraph B to the Consolidated Financial Statements. Goodwill is not amortized but is tested for impairment at least annually and as soon as there is any indication of impairment.

Intangible assets (excluding mineral interests) that have a finite useful life are amortized on a straight-line basis over three to twenty years depending on the useful life of the assets. The corresponding expense is recorded under other expense.

As of December 31, 2017
(M\$)

	Cost	Amortization and impairment	Net
Goodwill	2,442	(1,015)	1,427
Proved mineral interests	13,081	(7,674)	5,407
Unproved mineral interests	11,686	(5,324)	6,362
Other intangible assets	4,831	(3,440)	1,391
TOTAL INTANGIBLE ASSETS	32,040	(17,453)	14,587

As of December 31, 2016
(M\$)

	Cost	Amortization and impairment	Net
Goodwill	2,159	(1,002)	1,157
Proved mineral interests	13,347	(6,985)	6,362
Unproved mineral interests	11,582	(5,130)	6,452
Other intangible assets	4,182	(2,791)	1,391
TOTAL INTANGIBLE ASSETS	31,270	(15,908)	15,362

As of December 31, 2015 (M\$)	Cost	Amortization and impairment	Net
Goodwill	1,597	(971)	626
Proved mineral interests	12,800	(6,436)	6,364
Unproved mineral interests	11,751	(5,082)	6,669
Other intangible assets	4,059	(3,169)	890
TOTAL INTANGIBLE ASSETS	30,207	(15,658)	14,549

Change in net intangible assets is analyzed in the following table:

(M\$)	Net amount as of January 1	Increases	Disposals	Amortization and impairment	Currency translation adjustment	Other	Net amount as of December 31
2017	15,362	404	(23)	(1,512)	234	122	14,587
2016	14,549	1,039	(117)	(1,252)	(187)	1,330	15,362
2015	14,682	2,750	(343)	(2,324)	(200)	(16)	14,549

In 2017, the heading “Amortization and impairment” includes the impact of exceptional asset impairments for an amount of \$785 million (see Note 3 paragraph D to the Consolidated Financial Statements).

In 2016, the heading “Amortization and impairment” included the accounting impact of exceptional asset impairments for an amount of \$543 million (see Note 3 paragraph D to the Consolidated Financial Statements).

In 2016, the heading “Other” principally corresponded to the effect of the entries in the consolidation scope (including SAFT Group and Lampiris) for \$1,394 million and to the reclassification of assets classified in accordance with IFRS 5 “Non-current assets held for sale and discontinued operations”.

In 2015, the heading “Amortization and impairment” included the accounting impact of exceptional asset impairments for an amount of \$1,482 million (see Note 3 paragraph D to the Consolidated Financial Statements).

A summary of changes in the carrying amount of goodwill by business segment for the year ended December 31, 2017 is as follows:

(M\$)	Net goodwill as of January 1, 2017	Increases	Impairments	Other	Net goodwill as of December 31, 2017
Exploration & Production	-	-	-	-	-
Gas, Renewables & Power	556	16	-	78	650
Refining & Chemicals	462	-	-	29	491
Marketing & Services	113	146	-	(3)	256
Corporate	26	-	-	4	30
TOTAL	1,157	162	-	108	1,427

7.2 Property, plant and equipment

ACCOUNTING POLICIES

Exploration & Production Oil and Gas producing assets

Development costs incurred for the drilling of development wells and for the construction of production facilities are capitalized, together with borrowing costs incurred during the period of construction and the present value of estimated future costs of asset retirement obligations. The depletion rate is equal to the ratio of oil and gas production for the period to proved developed reserves (unit-of-production method).

In the event that, due to the price effect on reserves evaluation, the unit-of-production method does not reflect properly the useful life of the asset, an alternative depreciation method is applied based on the reserves evaluated with the price of the previous year.

With respect to phased development projects or projects subject to progressive well production start-up, the fixed assets' depreciable amount, excluding production or service wells, is adjusted to exclude the portion of development costs attributable to the undeveloped reserves of these projects.

With respect to production sharing contracts, the unit-of-production method is based on the portion of production and reserves assigned to the Group taking into account estimates based on the contractual clauses regarding the reimbursement of exploration, development and production costs (cost oil/gas) as well as the sharing of hydrocarbon rights (profit oil/gas).

Hydrocarbon transportation and processing assets are depreciated using the unit-of-production method based on throughput or by using the straight-line method whichever best reflects the duration of use of the economic life of the asset.

Other property, plant and equipment excluding Exploration & Production

Other property, plant and equipment are carried at cost, after deducting any accumulated depreciation and accumulated impairment losses. This cost includes borrowing costs directly attributable to the acquisition or production of a qualifying asset incurred until assets are placed in service. Borrowing costs are capitalized as follows:

- if the project benefits from a specific funding, the capitalization of borrowing costs is based on the borrowing rate;
- if the project is financed by all the Group's debt, the capitalization of borrowing costs is based on the weighted average borrowing cost for the period.

Routine maintenance and repairs are charged to expense as incurred. The costs of major turnarounds of refineries and large petrochemical units are capitalized as incurred and depreciated over the period of time between two consecutive major turnarounds.

Other property, plant and equipment are depreciated using the straight-line method over their useful lives, which are as follows:

Furniture, office equipment, machinery and tools	3-12 years
Transportation equipment	5-20 years
Storage tanks and related equipment	10-15 years
Specialized complex installations and pipelines	10-30 years
Buildings	10-50 years

As of December 31, 2017
(M\$)

	Cost	Depreciation and impairment	Net
Exploration & Production properties			
Proved properties	174,336	(112,113)	62,223
Unproved properties	1,980	(152)	1,828
Work in progress	30,286	(2,537)	27,749
SUBTOTAL	206,602	(114,802)	91,800
Other property, plant and equipment			
Land	1,809	(652)	1,157
Machinery, plant and equipment (including transportation equipment)	33,554	(25,774)	7,780
Buildings	9,203	(5,859)	3,344
Work in progress	2,310	(1)	2,309
Other	9,463	(6,456)	3,007
SUBTOTAL	56,339	(38,742)	17,597
TOTAL PROPERTY, PLANT AND EQUIPMENT	262,941	(153,544)	109,397

As of December 31, 2016
(M\$)

	Cost	Depreciation and impairment	Net
Exploration & Production properties			
Proved properties	163,860	(100,959)	62,901
Unproved properties	1,996	-	1,996
Work in progress	33,860	(2,075)	31,785
SUBTOTAL	199,716	(103,034)	96,682
Other property, plant and equipment			
Land	1,578	(567)	1,011
Machinery, plant and equipment (including transportation equipment)	28,620	(22,940)	5,680
Buildings	7,977	(4,979)	2,998
Work in progress	2,780	(10)	2,770
Other	8,296	(5,466)	2,830
SUBTOTAL	49,251	(33,962)	15,289
TOTAL PROPERTY, PLANT AND EQUIPMENT	248,967	(136,996)	111,971

As of December 31, 2015 (M\$)	Cost	Depreciation and impairment	Net
Exploration & Production properties			
Proved properties	153,530	(94,843)	58,687
Unproved properties	2,423	-	2,423
Work in progress	36,246	(2,284)	33,962
SUBTOTAL	192,199	(97,127)	95,072
Other property, plant and equipment			
Land	1,551	(581)	970
Machinery, plant and equipment (including transportation equipment)	28,723	(22,975)	5,748
Buildings	7,655	(5,018)	2,637
Work in progress	2,705	(128)	2,577
Other	8,182	(5,668)	2,514
SUBTOTAL	48,816	(34,370)	14,446
TOTAL PROPERTY, PLANT AND EQUIPMENT	241,015	(131,497)	109,518

Change in net property, plant and equipment is analyzed in the following table:

(M\$)	Net amount as of January 1	Increases	Disposals	Depreciation and impairment	Currency translation adjustment	Other	Net amount as of December 31
2017	111,971	13,363	(1,117)	(15,099)	2,302	(2,023)	109,397
2016	109,518	17,067	(1,869)	(13,171)	(1,057)	1,483	111,971
2015	106,876	22,382	(1,842)	(17,010)	(3,449)	2,561	109,518

In 2017, the heading “Disposals” mainly includes the impact of sales in the Exploration & Production segment (sale of interests in Gina Krog in Norway, and in Gabon).

In 2017, the heading “Depreciation and impairment” includes the impact of impairments of assets recognized for an amount of \$3,901 million (see Note 3 paragraph D to the Consolidated Financial Statements).

In 2017, the heading “Other” principally corresponds to the impact of \$855 million of finance lease contracts, the decrease of the asset for site restitution for an amount of \$(773) million and the reclassification of assets classified in accordance with IFRS 5 “Non-current assets held for sale and discontinued operations” for \$(2,604) million, related to the Martin Linge field in Norway.

In 2016, the heading “Disposals” mainly included the impact of sales in the Exploration & Production segment (sale of interests in the FUKA and SIRGE gas pipelines, and the St. Fergus gas terminal in the United Kingdom, and sale of a 20% stake in Kharyaga, Russia.).

In 2016, the heading “Depreciation and impairment” included the impact of impairments of assets recognized for an amount of \$1,780 million (see Note 3 paragraph D to the Consolidated Financial Statements).

In 2016, the heading “Other” principally corresponded to the effect of the entries in the consolidation scope (including SAFT Group and Lampiris) for \$751 million, to the reclassification of assets in accordance with IFRS 5 “Non-current assets held for sale and discontinued operations” for \$(365) million and the reversal of the reclassification under IFRS 5 as at December 31, 2015 for \$627 million corresponding to disposals.

In 2015, the heading “Disposals” mainly included the impact of sales in the Exploration & Production segment (sale of 4 blocks in Nigeria, West of Shetland fields in United Kingdom and a part of Fort Hills in Canada).

In 2015, the heading “Depreciation and impairment” included the impact of impairments of assets recognized for an amount of \$5,544 million (see Note 3 paragraph D to the Consolidated Financial Statements).

In 2015, the heading “Other” principally corresponded to the increase of the asset for site restitution for an amount of \$956 million and the reclassification of assets classified in accordance with IFRS 5 “Non-current assets held for sale and discontinued operations” for \$1,128 million, primarily related to the Usan field in Nigeria.

Property, plant and equipment presented above include the following amounts for facilities and equipment under finance leases:

As of December 31, 2017 (M\$)	Cost	Depreciation and impairment	Net
Machinery, plant and equipment	1,140	(468)	672
Buildings	124	(57)	67
Other	378	(58)	320
TOTAL	1,642	(583)	1,059

As of December 31, 2016 (M\$)	Cost	Depreciation and impairment	Net
Machinery, plant and equipment	426	(391)	35
Buildings	109	(38)	71
Other	179	(41)	138
TOTAL	714	(470)	244

As of December 31, 2015 (M\$)	Cost	Depreciation and impairment	Net
Machinery, plant and equipment	426	(384)	42
Buildings	95	(38)	57
Other	175	(31)	144
TOTAL	696	(453)	243

NOTE 8 Equity affiliates, other investments and related parties

8.1 Equity affiliates: investments and loans

ACCOUNTING PRINCIPLES

Under the equity method, the investment in the associate or joint venture is initially recognized at acquisition cost and subsequently adjusted to recognize the Group's share of the net income and other comprehensive income of the associate or joint venture.

Unrealized gains on transactions between the Group and its equity-accounted entities are eliminated to the extent of the Group's interest in the equity accounted entity.

In equity affiliates, goodwill is included in investment book value.

In cases where the group holds less than 20% of the voting rights in another entity, the determination of whether the Group exercises significant influence is also based on other facts and circumstances: representation on the Board of Directors or an equivalent governing body of the entity, participation in policy-making processes, including participation in decisions relating to dividends or other distributions, significant transactions between the investor and the entity, exchange of management personnel, or provision of essential technical information.

The contribution of equity affiliates in the consolidated balance sheet, consolidated statement of income and consolidated statement of comprehensive income is presented below:

Equity value As of December 31, (M\$)	2017	2016	2015
Total Associates	12,177	11,819	11,255
Total Joint ventures	4,791	4,039	3,751
TOTAL	16,968	15,858	15,006
Loans	5,135	4,718	4,378
TOTAL	22,103	20,576	19,384

Profit/(loss) As of December 31, (M\$)	2017	2016	2015
Total Associates	1,694	1,530	2,004
Total Joint ventures	321	684	357
TOTAL	2,015	2,214	2,361

Other comprehensive income As of December 31, (M\$)	2017	2016	2015
Total Associates	(801)	847	139
Total Joint ventures	124	88	(19)
TOTAL	(677)	935	120

A) Information related to associates

Information (100% gross) related to significant associates is as follows:

Exploration & Production

(M\$)	Novatek ^(a)			Liquefaction entities			PetroCedeño		
	2017	2016	2015	2017	2016	2015	2017	2016	2015
Non current assets	14,232	13,981	9,768	29,656	31,044	33,294	5,551	5,515	6,916
Current assets	3,404	2,409	2,237	7,875	5,790	7,427	4,291	4,166	3,437
TOTAL ASSETS	17,636	16,390	12,005	37,531	36,834	40,721	9,842	9,681	10,353
Shareholder's equity	12,842	11,015	6,745	22,804	22,886	25,941	5,178	5,515	5,538
Non current liabilities	3,187	3,574	3,014	10,291	10,839	9,373	13	10	10
Current liabilities	1,607	1,801	2,246	4,436	3,109	5,407	4,651	4,156	4,805
TOTAL LIABILITIES	17,636	16,390	12,005	37,531	36,834	40,721	9,842	9,681	10,353
Revenue from sales	10,022	7,779	7,130	20,401	15,557	22,731	1,708	1,398	1,840
NET INCOME	1,950	3,137	1,755	5,781	1,472	7,720	204	277	399
OTHER COMPREHENSIVE INCOME	580	1,651	(1,682)	-	-	-	-	-	-
% owned	18.90%	18.90%	18.90%				30.32%	30.32%	30.32%
Revaluation identifiable assets on equity affiliates	1,804	1,811	1,580	6	-	-	-	-	-
Equity value	4,231	3,893	2,855	3,768	3,755	4,183	1,570	1,672	1,679
Profit/(loss)	263	494	229	735	147	978	62	84	121
Share of Other Comprehensive Income, net amount	(491)	808	(135)	(194)	23	156	-	-	-
Dividends paid to the Group	128	111	102	672	479	1,072	164	91	139

(a) Information includes the best Group's estimates of results at the date of TOTAL's financial statements.

Novatek, listed in Moscow and London, is the 2nd largest producer of natural gas in Russia. The Group share of Novatek's market value amounted to \$6,721 million as at December 31, 2017. Novatek is consolidated by the equity method. TOTAL considers, in fact, that it exercises significant influence particularly via its representation on the Board of Directors of Novatek and its interest in the major project of Yamal LNG.

The Group is not aware of significant restrictions limiting the ability of OAO Novatek to transfer funds to its shareholder, be it under the form of dividends, repayment of advances or loans made.

The Group's interests in associates operating liquefaction plants are combined. The amounts include investments in: Nigeria LNG (15.00%), Angola LNG (13.60%), Yemen LNG (39.62%), Qatar Liquefied Gas Company Limited (Qatargas) (10.00%), Qatar Liquefied Gas Company Limited II (16.70%), Oman LNG (5.54%), and Abu Dhabi Gas Lc (5.00%).

PetroCedeño produces and upgrades extra-heavy crude oil in Venezuela.

Refining & Chemicals

	Saudi Aramco Total Refining & Petrochemicals			Qatar		
	2017	2016	2015	2017	2016	2015
<i>(M\$)</i>						
Non current assets	11,601	12,056	12,536	4,405	4,152	2,530
Current assets	2,021	1,531	960	1,696	1,404	968
TOTAL ASSETS	13,622	13,587	13,496	6,101	5,556	3,498
Shareholder's equity	2,424	2,302	2,011	3,200	3,393	2,803
Non current liabilities	9,029	9,466	9,873	1,895	1,349	356
Current liabilities	2,169	1,819	1,612	1,006	814	339
TOTAL LIABILITIES	13,622	13,587	13,496	6,101	5,556	3,498
Revenue from sales	9,049	7,134	8,032	7,388	4,665	1,823
NET INCOME	222	289	339	490	615	631
OTHER COMPREHENSIVE INCOME	20	2	-	80	(11)	2
% owned	37.50%	37.50%	37.50%			
Revaluation identifiable assets on equity affiliates	-	-	-	-	-	-
Equity value	909	863	754	814	832	818
Profit/(loss)	83	108	127	190	211	208
Share of Other Comprehensive Income, net amount	(82)	22	77	(12)	6	28
Dividends paid to the Group	45	-	-	201	292	248

Saudi Aramco Total Refining & Petrochemicals is an entity including a refinery in Jubail, Saudi Arabia, with a capacity of 400,000 barrels/day with integrated petrochemical units.

The Group's interests in associates of the Refining & Chemicals segment, operating steam crackers and polyethylene lines in Qatar have been combined: Qatar Petrochemical Company Ltd. (20.00%), Qatofin (49.09%), Laffan Refinery (10.00%) and Laffan Refinery II (10.00%).

B) Information related to joint ventures

The information (100% gross) related to significant joint ventures is as follows:

(M\$)	Liquefaction entities (Exploration & Production)			Hanwha Total Petrochemicals (Refining & Chemicals)		
	2017	2016	2015	2017	2016	2015
Non current assets	59,422	47,014	35,341	3,989	3,454	3,543
Current assets excluding cash and cash equivalents	966	922	455	2,258	1,506	1,501
Cash and cash equivalents	1,258	703	501	283	473	240
TOTAL ASSETS	61,646	48,639	36,297	6,530	5,433	5,284
Shareholder's equity	4,037	2,961	1,840	3,612	2,947	2,609
Other non current liabilities	504	327	349	148	120	107
Non current financial debts	55,566	43,980	32,996	1,078	1,105	1,388
Other current liabilities	1,539	1,371	1,112	1,144	764	713
Current financial debts	-	-	-	548	497	467
TOTAL LIABILITIES	61,646	48,639	36,297	6,530	5,433	5,284
Revenue from sales	37	52	32	8,565	7,057	7,307
Depreciation and depletion of tangible assets and mineral interests	(10)	(12)	(14)	(264)	(259)	(247)
Interest income	16	5	10	-	-	-
Interest expense	(15)	(7)	(10)	(3)	(3)	(64)
Income taxes	338	(29)	(81)	(369)	(338)	(192)
NET INCOME	(1,730)	449	279	973	930	514
OTHER COMPREHENSIVE INCOME	97	166	61	398	(79)	(186)
% owned				50.00%	50.00%	50.00%
Revaluation identifiable assets on equity affiliates	905	905	965	-	-	-
Equity value	2,049	1,555	1,355	1,806	1,474	1,305
Profit/(loss)	(348)	88	55	486	465	257
Share of Other Comprehensive Income, net amount	29	50	18	170	22	(75)
Dividends paid to the Group	-	-	-	353	256	20

The Group's interests in joint ventures operating liquefaction plants have been combined. The amounts include investments in Yamal LNG in Russia (20.02% direct holding) and Ichthys LNG in Australia (30.00%).

Hanwha Total Petrochemicals is a South Korean company that operates a petrochemical complex in Daesan, South Korea (condensate separator, steam cracker, styrene, paraxylene, polyolefins).

Off balance sheet commitments relating to joint ventures are disclosed in Note 13 of the Consolidated Financial Statements.

C) Other equity consolidated affiliates

In Group share, the main aggregated financial items in equity consolidated affiliates including assets held for sale, which have not been presented individually are as follows:

As of December 31, (M\$)	2017		2016		2015	
	Associates	Joint ventures	Associates	Joint ventures	Associates	Joint ventures
Non Current assets	2,908	2,428	3,047	1,971	3,491	2,005
Current assets	1,156	1,150	1,365	825	1,440	860
TOTAL ASSETS	4,064	3,578	4,412	2,796	4,931	2,865
Shareholder's equity	885	1,102	804	1,010	966	1,091
Non current liabilities	2,171	1,281	2,369	985	2,612	951
Current liabilities	1,008	1,195	1,239	801	1,353	823
TOTAL LIABILITIES	4,064	3,578	4,412	2,796	4,931	2,865

For the year ended December 31, (M\$)	2017		2016		2015	
	Associates	Joint ventures	Associates	Joint ventures	Associates	Joint ventures
Revenues from sales	2,226	4,358	2,603	3,181	2,661	3,362
NET INCOME	361	183	486	131	341	45
Share of other comprehensive income items	(22)	(75)	(12)	16	13	38
Equity value	885	936	804	1,010	966	1,091
Dividends paid to the Group	328	147	308	30	442	22

8.2 Other investments

ACCOUNTING POLICIES

These assets are classified as financial assets available for sale and therefore measured at their fair value.

For securities traded in active markets, this fair value is equal to the market price. Changes in fair value are recorded in other comprehensive income. If there is any evidence of a significant or

long-lasting impairment loss, a loss is recorded in the statement of income. This impairment is irreversible.

For other securities, if the fair value is not reliably determinable, the securities are recorded at their historical value.

As of December 31, 2017 (M\$)	Carrying amount	Unrealized gain (loss)	Balance sheet value
Equity securities publicly traded in active markets	8	42	50
Total equity securities publicly traded in active markets^(a)	8	42	50
BBPP	62	-	62
BTC Limited	55	-	55
DUNKERQUE LNG SAS	144	-	144
Tellurian Investments Inc.	207	-	207
Total Eren Holding SA ^(b)	285	-	285
Greenflex ^(b)	76	-	76
Other equity securities (unit value below \$50 million)	848	-	848
TOTAL OTHER EQUITY SECURITIES^(a)	1,677	-	1,677
OTHER INVESTMENTS	1,685	42	1,727

As of December 31, 2016 (M\$)	Carrying amount	Unrealized gain (loss)	Balance sheet value
Areva	17	-	17
Other equity securities publicly traded in active markets	8	29	37
Total equity securities publicly traded in active markets^(a)	25	29	54
BBPP	62	-	62
BTC Limited	121	-	121
DUNKERQUE LNG SAS	133	-	133
Other equity securities (unit value below \$50 million)	763	-	763
TOTAL OTHER EQUITY SECURITIES^(a)	1,079	-	1,079
OTHER INVESTMENTS	1,104	29	1,133

As of December 31, 2015 (M\$)	Carrying amount	Unrealized gain (loss)	Balance sheet value
Areva	22	-	22
Other equity securities publicly traded in active markets	9	28	37
Total equity securities publicly traded in active markets^(a)	31	28	59
BBPP	62	-	62
BTC Limited	121	-	121
DUNKERQUE LNG SAS	116	-	116
Other equity securities (unit value below \$50 million)	883	-	883
TOTAL OTHER EQUITY SECURITIES^(a)	1,182	-	1,182
OTHER INVESTMENTS	1,213	28	1,241

(a) Including cumulative impairments of \$2,029 million in 2017, \$1,633 million in 2016 and \$949 million in 2015.

(b) Acquisition made in the fourth quarter 2017 and to be consolidated in 2018.

8.3 Related parties

The main transactions and receivable and payable balances with related parties (principally non-consolidated subsidiaries and equity consolidated affiliates) are detailed as follows:

As of December 31, (M\$)	2017	2016	2015
Balance sheet			
<i>Receivables</i>			
Debtors and other debtors	492	492	533
Loans (excl. loans to equity affiliates)	63	65	71
<i>Payables</i>			
Creditors and other creditors	1,161	897	835
Debts	2	6	10
For the year ended December 31, (M\$)	2017	2016	2015
Statement of income			
Sales	3,407	2,270	3,062
Purchases	(7,354)	(4,882)	(6,999)
Financial income	6	6	6
Financial expense	(9)	-	-

8.4 Compensation for the administration and management bodies

The aggregate amount of direct and indirect compensation accounted by the French and foreign affiliates of the Company, for all executive officers of TOTAL as of December 31, 2017 and for the members of the Board of Directors who are employees of the Group, is detailed below.

The main Group executive officers include the members of the Executive Committee and the four directors of the corporate functions members of the Group Performance Management Committee (Communication, Legal, Health, Safety and Environment, Strategy & Climate), the Deputy Chief Financial Officer of the Group and the Group Treasurer.

For the year ended December 31,

(M\$)

	2017	2016	2015
Number of people	15	14	14
Direct or indirect compensation	15.6	13.4	12.8
Pension expenses ^(a)	10.8	6.1	3.9
Share-based payments expense (IFRS 2) ^(b)	6.5	5.3	3.5

(a) The change in the pension expenses in 2017 relates basically to the agreement on the transition from work to retirement in France for which the global impact has been booked in the Group's accounts as of June 30, 2017.

The benefits provided for executive officers of the Group and the members of the Board of Directors, employees of the Group, include severance to be paid on retirement, supplementary pension schemes and insurance plans, which represent \$119.7 million provisioned as of December 31, 2017 (against \$104.7 million as of December 31, 2016 and \$96.7 million as of December 31, 2015).

(b) Share-based payments expense computed for the executive officers and the members of the Board of Directors who are employees of the Group and based on the principles of IFRS 2 "Share-based payments" described in Note 9.

The compensation allocated to members of the Board of Directors for directors' fees totaled \$1.44 million in 2017 (against \$1.22 million in 2016 and \$1.34 million in 2015).

NOTE 9 Shareholders' equity and share-based payments

9.1 Shareholders' equity

Number of TOTAL shares

There is only one category of shares of TOTAL S.A., and the shares have a par value of €2.50, as of December 31, 2017. Shares may be held in either bearer or registered form.

Double voting rights are assigned to shares that are fully-paid and held in registered form in the name of the same shareholder for at least two years, with due consideration for the total portion of the share capital represented. Double voting rights are also assigned, in the event of an increase in share capital by incorporation of reserves, profits or premiums, to registered shares granted for free to a shareholder due to shares already held that are entitled to this rights.

Pursuant to the Company's bylaws (Statutes), no shareholder may cast a vote at a Shareholders' Meeting, either by himself or through an agent, representing more than 10% of the total voting rights for the Company's shares. This limit applies to the aggregated amount of voting rights held directly, indirectly or through voting proxies. However, in the case of double voting rights, this limit may be extended to 20%.

These restrictions no longer apply if any individual or entity, acting alone or in concert, acquires at least two-thirds of the total share

capital of the Company, directly or indirectly, following a public tender offer for all of the Company's shares.

The authorized share capital amounts to 3,434,245,369 shares as of December 31, 2017 compared to 3,449,682,749 shares as of December 31, 2016 and 3,467,448,093 as of December 31, 2015. As of December 31, 2017, the share capital of TOTAL S.A. amounted to €6,322,474,040.

Share cancellation

TOTAL S.A. did not cancel any shares in 2017.

In 2016, TOTAL S.A. reduced the Company's capital through the cancellation of shares.

At the meeting held on December 15, 2016, and pursuant to the authorization of the Extraordinary Shareholders' Meeting of May 11, 2012, the Board of Directors of TOTAL S.A. decided to cancel 100,331,268 treasury shares that TOTAL S.A. had previously bought back off-market from four of its 100% indirectly controlled subsidiaries. Following this transaction the Group affiliates no longer hold treasury shares. This buyback of shares had no impact on the Consolidated Financial Statements of TOTAL S.A., the fully-diluted weighted-average shares and the earnings per share.

TOTAL S.A. did not cancel any shares in 2015.

Variation of the share capital

AS OF DECEMBER 31, 2014	2,385,267,525
Shares issued in connection with:	
Capital increase reserved for employees	10,479,410
Capital increase within stock dividend (2014 remainder and first interim dividend for 2015)	42,841,342
Exercise of TOTAL share subscription options	1,469,606
AS OF DECEMBER 31, 2015^(a)	2,440,057,883
Shares issued in connection with:	
Capital increase within stock dividend (second interim dividend for 2015, third interim dividend for 2015, 2015 remainder and first interim dividend for 2016)	88,401,329
Exercise of TOTAL share subscription options	2,237,918
Cancellation of treasury shares	(100,331,268)
AS OF DECEMBER 31, 2016^(b)	2,430,365,862
Shares issued in connection with:	
Capital increase reserved for employees	9,532,190
Capital increase within stock dividend (second interim dividend for 2016, third interim dividend for 2016, 2016 remainder and first interim dividend for 2017)	86,442,256
Exercise of TOTAL share subscription options	2,649,308
AS OF DECEMBER 31, 2017^(c)	2,528,989,616

(a) Including 113,967,758 treasury shares deducted from consolidated shareholders' equity.

(b) Including 10,587,822 treasury shares deducted from consolidated shareholders' equity.

(c) Including 8,376,756 treasury shares deducted from consolidated shareholders' equity.

Capital increase reserved for Group employees

The Combined General Meeting of May 24, 2016, delegated to the Board of Directors in its twenty-third resolution, the authority to carry out, a capital increase, in one or more occasions within a maximum period of twenty-six months, reserved to members of a company or group savings plan of the Company.

Pursuant to this delegation, the Board of Directors, during its meeting on July 26, 2017, decided to proceed with a capital increase reserved for employees and retirees of the Company that included a classic offering and a leveraged offering depending on the employees' choice, within the limit of 18 million shares with immediate dividend rights. The Board of Directors has delegated all powers to the Chairman and Chief Executive Officer to determine the opening and closing of the subscription period and the subscription

price. This capital increase, to be open in 2018, is expected to be completed before the General Meeting of 2018.

In 2017, TOTAL S.A. proceeded with a capital increase reserved for employees and retirees of the Company which resulted in the subscription of 9,350,220 shares with a par value of €2.50 at a unit price of €38.10 and of the issuance of 181,970 shares with a par value of €2.50 granted as free shares. The issuance of the shares was acknowledged on April 26, 2017. Moreover, the Board of Directors, during its meeting on April 26, 2017, based on the twenty-fourth resolution of the Combined General Meeting of May 24, 2016, decided to grant 10,393 free shares to 2,086 beneficiaries subject to a continued employment condition during the five-year acquisition period that will end on April 26, 2022, as a deferred contribution.

Treasury shares

ACCOUNTING POLICIES

Treasury shares of the parent company held by its subsidiaries or itself are deducted from consolidated shareholders' equity. Gains or losses on sales of treasury shares are excluded from the determination of net income and are recognized in shareholders' equity.

TOTAL shares held by TOTAL S.A.

As of December 31,	2017	2016	2015
Number of treasury shares	8,376,756	10,587,822	13,636,490
Percentage of share capital	0.33%	0.44%	0.56%
<i>Of which shares allocated to TOTAL share grant plans for Group employees</i>	8,345,847	10,555,887	13,603,525
<i>Of which shares intended to be allocated to new TOTAL share purchase option plans or to new share grant plans</i>	30,909	31,935	32,965

TOTAL shares held by Group subsidiaries

As of December 31,	2017	2016	2015
Number of shares held by Group subsidiaries	-	-	100,331,268
Percentage of share capital	-	-	4.11%
<i>Of which shares held by a consolidated subsidiary, Total Nucléaire, 100% indirectly controlled by TOTAL S.A.</i>	-	-	2,023,672
<i>Of which shares held by subsidiaries of Elf Aquitaine (Financière Valorgest, Sogapar and Fingestval), 100% indirectly controlled by TOTAL S.A.</i>	-	-	98,307,596

Paid-in surplus

In accordance with French law, the paid-in surplus corresponds to premiums related to shares issuances, contributions or mergers of the parent company which can be capitalized or used to offset losses if the legal reserve has reached its minimum required level. The amount of the paid-in surplus may also be distributed subject to taxation except in cases of a refund of shareholder contributions.

As of December 31, 2017, paid-in surplus relating to TOTAL S.A. amounted to €32,882 million (€28,961 million as of December 31, 2016 and €30,265 million as of December 31, 2015).

Reserves

Under French law, 5% of net income must be transferred to the legal reserve until the legal reserve reaches 10% of the nominal value of the share capital. This reserve cannot be distributed to the shareholders other than upon liquidation but can be used to offset losses.

If wholly distributed, the unrestricted reserves of the parent company would be taxed for an approximate amount of \$750 million as of December 31, 2017 (\$569 million as of December 31, 2016 and \$630 million as of December 31, 2015) with regards to additional corporation tax to be applied on regulatory reserves so that they become distributable.

Earnings per share

ACCOUNTING POLICIES

Earnings per share is calculated by dividing net income (Group share) by the weighted-average number of common shares outstanding during the period, excluding TOTAL shares held by TOTAL S.A. (Treasury shares) and TOTAL shares held by the Group subsidiaries which are deducted from consolidated shareholders' equity.

Diluted earnings per share is calculated by dividing net income (Group share) by the fully-diluted weighted-average number of common shares outstanding during the period. Treasury shares held by the parent company, TOTAL S.A., and TOTAL shares held by the Group subsidiaries are deducted from consolidated shareholders' equity. These shares are not considered outstanding for purposes of this calculation which also takes into account the dilutive effect of stock options, share grants and capital increases with a subscription period closing after the end of the fiscal year.

The weighted-average number of fully-diluted shares is calculated in accordance with the treasury stock method provided for by IAS 33. The proceeds, which would be recovered in the event of an exercise of rights related to dilutive instruments, are presumed to be a share buyback at the average market price over the period. The number of shares thereby obtained leads to a reduction in the total number of shares that would result from the exercise of rights.

In compliance with IAS 33, earnings per share and diluted earnings per share are based on the net income after deduction of the remuneration due to the holders of deeply subordinated Notes.

The variation of both weighted-average number of shares and weighted-average number of diluted shares respectively used in the calculation of earnings per share and fully-diluted earnings per share is detailed as follows:

	2017	2016	2015
NUMBER OF SHARES AS OF JANUARY 1,	2,430,365,862	2,440,057,883	2,385,267,525
<i>Number of shares issued during the year (pro rated)</i>			
Exercise of TOTAL share subscription options	1,198,036	538,621	662,351
Exercise of TOTAL share purchase options	-	-	-
TOTAL performance shares	1,105,796	1,524,172	103,131
Capital increase reserved for employees	6,354,793	-	6,986,273
Capital increase within stock dividend	53,365,971	51,029,237	13,343,379
Buyback of treasury shares on December 15, 2016	-	4,180,470	-
Cancellation of treasury shares on December 15, 2016	-	(4,180,470)	-
TOTAL shares held by TOTAL S.A. or by its subsidiaries and deducted from shareholders' equity	(10,587,822)	(113,967,758)	(111,324,719)
WEIGHTED-AVERAGE NUMBER OF SHARES	2,481,802,636	2,379,182,155	2,295,037,940
<i>Dilutive effect</i>			
TOTAL share subscription and purchase options	727,864	630,474	1,168,644
TOTAL performance shares	10,238,411	9,058,264	7,647,690
Capital increase reserved for employees	1,987,502	843,043	581,268
WEIGHTED-AVERAGE NUMBER OF DILUTED SHARES	2,494,756,413	2,389,713,936	2,304,435,542

Earnings per share in euros

The earnings per share in euros, obtained from the earnings per share in dollars, converted by using the average exchange rate euro/dollar, is €2.97 per share for 2017 closing (€2.28 for 2016 closing). The fully-diluted earnings per share calculated by using the same method is €2.96 per share for 2017 closing (€2.27 for 2016 closing).

Dividend

For the fiscal year 2017, TOTAL S.A. already paid two quarterly interim dividends:

- payment of the first interim dividend for the fiscal year 2017 of €0.62 per share, decided by the Board of Directors on September 20, 2017 has been done in cash or in shares on October 12, 2017 (the ex-dividend date was September 25, 2017). The number of shares issued in lieu of the cash dividend was based on the dividend amount divided by €41.12 per share, equal to the average Euronext Paris opening price of the shares for the 20 trading days preceding the Board of the Directors meeting on September 20, 2017 reduced by the amount of the first interim dividend, with a 5% discount. On October 12, 2017, 25,633,559 shares have been issued at a price of €41.12 per share.

- payment of the second interim dividend for the fiscal year 2017 of €0.62 per share, decided by the Board of Directors on December 12, 2017 has been done in cash or in shares on January 11, 2018 (the ex-dividend date was December 19, 2017). The number of shares issued in lieu of the cash dividend was based on the dividend amount divided by €46.55 per share, equal to the average Euronext Paris opening price of the shares for the 20 trading days preceding the Board of Directors meeting, reduced by the amount of the second interim dividend, without any discount. On January 11, 2018, 7,087,904 shares have been issued at a price of €46.55 per share.

The Board of Directors, during its October 26, 2017 meeting, decided to set the third quarterly interim dividend for the fiscal year 2017 at €0.62 per share. This interim dividend will be paid in cash or in shares on April 9, 2018 (the ex-dividend date will be March 19, 2018).

A resolution will be submitted at the Shareholders' Meeting on June 1, 2018 to pay a dividend of €2.48 per share for the 2017 fiscal year, as a balance of €0.62 per share to be distributed after deducting the three quarterly interim dividends of €0.62 per share that will have already been paid.

Issuance of perpetual subordinated notes

The Group did not issue any perpetual subordinated notes in 2017.

In 2016, the Group issued three tranches of perpetual subordinated notes in euros through TOTAL S.A.:

- deeply subordinated note 3.875% perpetual maturity callable after 6 years (€1,750 million);
- deeply subordinated note 2.708% perpetual maturity callable after 6.6 years (€1,000 million);
- deeply subordinated note 3.369% perpetual maturity callable after 10 years (€1,500 million).

In 2015, the Group issued two tranches of perpetual subordinated notes in euros through TOTAL S.A.:

- deeply subordinated note 2.250% perpetual maturity callable after 6 years (€2,500 million);
- deeply subordinated note 2.625% perpetual maturity callable after 10 years (€2,500 million).

Based on their characteristics (mainly no mandatory repayment and no obligation to pay a coupon except in the event of a dividend distribution) and in compliance with IAS 32 standard – Financial instruments – Presentation, these notes were recorded in equity.

As of December 31, 2017, the amount of the perpetual deeply subordinated note booked in the Group shareholders' equity is \$10,328 million. The coupons attributable to the holders of these securities are booked in deduction of the Group shareholders' equity for an amount of \$302 million for fiscal year 2017 closing. The tax saving due to these coupons is booked in the statement of income.

Other comprehensive income

Detail of other comprehensive income showing both items potentially reclassifiable and those not potentially reclassifiable from equity to net income is presented in the table below:

For the year ended December 31, (M\$)	2017	2016	2015
Actuarial gains and losses	823	(371)	557
Tax effect	(390)	55	(278)
Currency translation adjustment generated by the parent company	9,316	(1,548)	(7,268)
SUB-TOTAL ITEMS NOT POTENTIALLY RECLASSIFIABLE TO PROFIT & LOSS	9,749	(1,864)	(6,989)
Currency translation adjustment	(2,578)	(1,098)	2,456
- Unrealized gain/(loss) of the period	(2,408)	(543)	3,032
- Less gain/(loss) included in net income	170	555	576
Available for sale financial assets	7	4	9
- Unrealized gain/(loss) of the period	7	4	10
- Less gain/(loss) included in net income	-	-	1
Cash flow hedge	324	239	(185)
- Unrealized gain/(loss) of the period	584	186	(390)
- Less gain/(loss) included in net income	260	(53)	(205)
Share of other comprehensive income of equity affiliates, net amount	(677)	935	120
- Unrealized gain/(loss) of the period	(655)	933	118
- Less gain/(loss) included in net income	22	(2)	(2)
Other	-	1	1
Tax effect	(100)	(76)	53
SUB-TOTAL ITEMS POTENTIALLY RECLASSIFIABLE TO PROFIT & LOSS	(3,024)	5	2,454
TOTAL OTHER COMPREHENSIVE INCOME, NET AMOUNT	6,725	(1,859)	(4,535)

The currency translation adjustment by currency is detailed in the following table:

As of December 31, 2017 (M\$)	Total	Euro	Pound sterling	Ruble	Other currencies
Currency translation adjustment generated by the parent company	9,316	9,316	-	-	-
Currency translation adjustment	(2,578)	(3,275)	462	3	232
Currency translation adjustment of equity affiliates	(730)	(1,099)	(25)	207	187
TOTAL CURRENCY TRANSLATION ADJUSTMENT RECOGNIZED IN COMPREHENSIVE INCOME	6,008	4,943	436	210	419
As of December 31, 2016 (M\$)	Total	Euro	Pound sterling	Ruble	Other currencies
Currency translation adjustment generated by the parent company	(1,548)	(1,548)	-	-	-
Currency translation adjustment	(1,098)	(184)	(887)	7	(34)
Currency translation adjustment of equity affiliates	890	223	54	643	(30)
TOTAL CURRENCY TRANSLATION ADJUSTMENT RECOGNIZED IN COMPREHENSIVE INCOME	(1,756)	(1,509)	(833)	650	(64)
As of December 31, 2015 (M\$)	Total	Euro	Pound sterling	Ruble	Other currencies
Currency translation adjustment generated by the parent company	(7,268)	(7,268)	-	-	-
Currency translation adjustment	2,456	3,318	(267)	(3)	(592)
Currency translation adjustment of equity affiliates	87	903	16	(718)	(114)
TOTAL CURRENCY TRANSLATION ADJUSTMENT RECOGNIZED IN COMPREHENSIVE INCOME	(4,725)	(3,047)	(251)	(721)	(706)

Tax effects relating to each component of other comprehensive income are as follows:

For the year ended December 31, (M\$)	2017			2016			2015		
	Pre-tax amount	Tax effect	Net amount	Pre-tax amount	Tax effect	Net amount	Pre-tax amount	Tax effect	Net amount
Actuarial gains and losses	823	(390)	433	(371)	55	(316)	557	(278)	279
Currency translation adjustment generated by the parent company	9,316	-	9,316	(1,548)	-	(1,548)	(7,268)	-	(7,268)
SUB-TOTAL ITEMS NOT POTENTIALLY RECLASSIFIABLE TO PROFIT & LOSS	10,139	(390)	9,749	(1,919)	55	(1,864)	(6,711)	(278)	(6,989)
Currency translation adjustment	(2,578)	-	(2,578)	(1,098)	-	(1,098)	2,456	-	2,456
Available for sale financial assets	7	(3)	4	4	-	4	9	(5)	4
Cash flow hedge	324	(97)	227	239	(76)	163	(185)	58	(127)
Share of other comprehensive income of equity affiliates, net amount	(677)	-	(677)	935	-	935	120	-	120
Other	-	-	-	1	-	1	1	-	1
SUB-TOTAL ITEMS POTENTIALLY RECLASSIFIABLE TO PROFIT & LOSS	(2,924)	(100)	(3,024)	81	(76)	5	2,401	53	2,454
TOTAL OTHER COMPREHENSIVE INCOME	7,215	(490)	6,725	(1,838)	(21)	(1,859)	(4,310)	(225)	(4,535)

Non-controlling interests

As of December 31, 2017, no subsidiary has non-controlling interests that would be material to the Group financial statements.

9.2 Share-based payments

▶ ACCOUNTING POLICIES

The Group may grant employees stock options, create employee share purchase plans and offer its employees the opportunity to subscribe to reserved capital increases. These employee benefits are recognized as expenses with a corresponding credit to shareholders' equity.

The expense is equal to the fair value of the instruments granted. The expense is recognized on a straight-line basis over the period in which the advantages are acquired.

The fair value of the options is calculated using the Black-Scholes model at the grant date.

For restricted share plans, the fair value is calculated using the market price at the grant date after deducting the expected distribution rate during the vesting period. The number of allocated equity instruments can be revised during the vesting period in cases of non compliance with performance conditions, with the exception of those related to the market, or according to the rate of turnover of the beneficiaries.

The cost of employee-reserved capital increases is immediately expensed.

The cost of the capital increase reserved for employees consists of the cost related to the discount on all the shares subscribed using both the classic and the leveraged schemes, and the opportunity gain for the shares subscribed using the leveraged scheme. This opportunity gain corresponds to the benefit of subscribing to the leveraged offer, rather than reproducing the same economic profile through the purchase of options in the market for individual investors.

The global cost is reduced to take into account the non transferability of the shares that could be subscribed by the employees over a period of five years. The valuation method of non transferability of the shares is based on a strategy cost in two steps consisting, first, in a five years forward sale of the nontransferable shares, and second, in purchasing the same number of shares in cash with a loan financing reimbursable "in fine".

A) TOTAL share subscription option plans

	2007 Plan	2008 Plan	2009 Plan	2010 Plan	2011 Plan	Total	Weighted average Total exercise price (€)
Date of the Shareholders' Meeting	5/11/2007	5/11/2007	5/11/2007	5/21/2010	5/21/2010		
Date of the award ^(a)	7/17/2007	10/9/2008	9/15/2009	9/14/2010	9/14/2011		
Strike price	60.10	42.90	39.90	38.20	33.00		
Expiry date	7/17/2015	10/9/2016	9/15/2017	9/14/2018	9/14/2019		
Number of options^(b)							
Existing options as of January 1, 2015	5,847,965	3,215,884	3,011,269	3,701,218	859,075	16,635,411	46.85
Granted	-	-	-	-	-	-	-
Cancelled ^(b)	(5,847,965)	-	-	-	-	(5,847,965)	60.10
Exercised	-	(654,382)	(300,486)	(377,972)	(136,766)	(1,469,606)	40.16
Existing options as of January 1, 2016	-	2,561,502	2,710,783	3,323,246	722,309	9,317,840	39.58
Granted	-	-	-	-	-	-	-
Cancelled ^(b)	-	(1,794,304)	-	-	-	(1,794,304)	42.90
Exercised	-	(767,198)	(931,730)	(443,009)	(95,981)	(2,237,918)	40.30
Existing options as of January 1, 2017	-	-	1,779,053	2,880,237	626,328	5,285,618	38.16
Granted	-	-	-	-	-	-	-
Cancelled ^(b)	-	-	(195,370)	-	-	(195,370)	39.90
Exercised	-	-	(1,583,683)	(929,865)	(135,760)	(2,649,308)	38.95
EXISTING OPTIONS AS OF DECEMBER 31, 2017	-	-	-	1,950,372	490,568	2,440,940	37.15

(a) The grant date is the date of the Board meeting awarding the share subscription options, except for the grant of October 9, 2008, decided by the Board on September 9, 2008.

(b) Out of the options canceled in 2015, 2016 and 2017, 5,847,965 options that were not exercised expired on July 17, 2015 due to the expiry of the 2007 plan, 1,794,304 options that were not exercised expired on October 9, 2016 due to the expiry of the 2008 plan and 195,370 options that were not exercised expired on September 15, 2017 due to expiry of 2009 plan.

Options are exercisable, subject to a continuous employment condition, after a 2-year period from the date of the Board meeting awarding the options and expire eight years after this date. The underlying shares may not be transferred during four years from the date of grant. For the 2007 to 2011 Plans, the 4-year transfer

restriction period does not apply to employees of non-French subsidiaries as of the date of the grant, who may transfer the underlying shares after a 2-year period from the date of the grant.

Since the 2011 Plan, no new TOTAL share subscription option plan or TOTAL share purchase plan was decided.



B) TOTAL performance share grants

	2013 Plan	2014 Plan	2015 Plan	2016 Plan	2017 Plan	Total
Date of the Shareholders' Meeting	5/13/2011	5/16/2014	5/16/2014	5/24/2016	5/24/2016	
Date of the award	7/25/2013	7/29/2014	07/28/2015	7/27/2016	7/26/2017	
Date of the final award (end of the vesting period)	7/26/2016	7/30/2017	07/29/2018	7/28/2019	7/27/2020	
Transfer authorized as from	7/26/2018	7/30/2019	07/29/2020	7/29/2021	7/28/2022	
Grant date IFRS 2 fair value	€32.64	€44.66	€35.90	€35.37	€35.57	
Number of performance shares						
Outstanding as of January 1, 2015	4,434,460	4,475,030	-	-	-	8,909,490
Notified	-	-	4,761,935	-	-	4,761,935
Cancelled	(28,230)	(22,630)	(1,430)	-	-	(52,290)
Finally granted	(55,400)	(49,940)	-	-	-	(105,340)
Outstanding as of January 1, 2016	4,350,830	4,402,460	4,760,505	-	-	13,513,795
Notified	-	-	-	5,639,400	-	5,639,400
Cancelled ^(a)	(1,303,506)	(37,100)	(29,170)	(1,730)	-	(1,371,506)
Finally granted ^(a)	(3,047,324)	(860)	(600)	(110)	-	(3,048,894)
Outstanding as of January 1, 2017	-	4,364,500	4,730,735	5,637,560	-	14,732,795
Notified	-	-	-	-	5,679,949	5,679,949
Cancelled	-	(2,157,820)	(31,480)	(29,050)	(910)	(2,219,260)
Finally granted	-	(2,206,680)	(1,950)	(1,410)	-	(2,210,040)
OUTSTANDING AS OF DECEMBER 31, 2017	-	-	4,697,305	5,607,100	5,679,039	15,983,444

(a) The number of performance shares finally granted in 2016 has been adjusted by 226 performance shares granted in 2017.

The performance shares, which are bought back by the Company on the market, are finally granted to their beneficiaries after a 3-year vesting period for the 2013 Plan and following Plans, from the date of the grant. The final grant is subject to a continued employment condition and one performance condition for the 2013 and 2014 Plans and two performance conditions for the 2015 and following Plans. Moreover, the transfer of the performance shares finally granted will not be permitted until the end of a 2-year holding period from the date of the final grant.

2017 Plan

The Board of Directors decided on July 26, 2017 to proceed with TOTAL performance share grants in favor of certain employees and executive directors of the Company or companies of the Group, subject to the fulfillment of the presence conditions and of the two performance conditions.

The presence condition applies to all shares.

The performance conditions, each of them respectively representing 50% of the final grant rate, are as follows:

- the Group ranking relative to those of its peers (ExxonMobil, Royal Dutch Shell, BP and Chevron) according to the Total Shareholder Return (TSR) criteria, which is evaluated annually using the average of closing prices over one quarter, in USD, at the beginning and at the end of each three-year period (Q4 year N/Q4 year N-3). The dividend is considered as being reinvested on the closing price basis, on the ex-dividend date;
- the Group ranking relative to those of its peers (ExxonMobil, Royal Dutch Shell, BP and Chevron), which is evaluated annually using the yearly variation in net cash-flow per share, in USD, as released by companies.

Depending on TOTAL S.A.'s ranking, a grant rate is determined each year, for both criterion:

- 1st place: 180% of the grant;
- 2nd place: 130% of the grant;
- 3rd place: 80% of the grant;
- 4th and 5th places: 0% of the grant.

For both conditions, the average of the three "attribution rates" (on each of the three financial years on which the performance conditions are based), will be expressed in percentage and capped at 100%.

The performance conditions apply for all shares granted to senior executives. The first 150 shares granted to non-senior executive are not subject to the performance conditions, but all shares beyond this threshold are.

C) SunPower plans

SunPower has three stock incentive plans: the Third Amended and Restated 2005 SunPower Corporation Stock Incentive Plan ("2005 Plan"), the PowerLight Corporation Common Stock Option and Common Stock Purchase Plan ("PowerLight Plan") and the SunPower Corporation 2015 Omnibus Incentive Plan ("2015 Plan"). The PowerLight Plan was assumed by SunPower by way of the acquisition of PowerLight in fiscal 2007. Under the terms of all plans, SunPower may issue incentive or non-statutory stock options or stock purchase rights to directors, employees and consultants to purchase common stock. The 2015 Plan, which subsequently replaced the 2005 Plan, was adopted by the SunPower's Board of Directors in February 2015, and was approved by shareholders in June 2015. The 2015 Plan allows for the grant of options, as well as grant of stock appreciation rights, restricted stock grants, restricted stock units and other equity rights. The 2015 Plan also allows for tax withholding obligations related to stock option exercises or restricted stock awards to be satisfied through the retention of shares otherwise released upon vesting.

The 2015 Plan includes an automatic annual increase mechanism equal to the lower of 3% of the outstanding shares of all classes of

the SunPower’s common stock measured on the last day of the immediately preceding fiscal year, 6.0 million shares, or such other number of shares as determined by SunPower’s Board of Directors. Subsequent to the adoption of the 2015 Plan, no new awards are being granted under the 2005 Plan or the PowerLight Plan. Outstanding awards granted under these plans continue to be governed by their respective terms. As of December 31, 2017, approximately 8.8 million shares were available for grant under the 2015 Plan.

Incentive stock options, nonstatutory stock options, and stock appreciation rights may be granted at no less than the fair value of the common stock on the date of grant. The options and rights become exercisable when and as determined by SunPower’s Board of Directors, although these terms generally do not exceed ten years for stock options. Under the 2005 Plan, the options typically vest over five years with a one-year cliff and monthly vesting thereafter. Under the PowerLight Plan, the options typically vest over five years with yearly cliff vesting. SunPower has not granted stock options since

fiscal 2008, and accordingly all outstanding options are fully vested. Under the 2005 and 2015 plans, the restricted stock grants and restricted stock units typically vest in three equal installments annually over three years.

The majority of shares issued are net of the minimum statutory withholding requirements that SunPower pays on behalf of its employees. During fiscal year 2017, 2016 and 2015, SunPower withheld 0.6 million, 1.0 million and 1.4 million shares, respectively, to satisfy the employees’ tax obligations. SunPower pays such withholding requirements in cash to the appropriate taxing authorities. Shares withheld reduce the number of shares outstanding upon vesting.

There were no options outstanding and exercisable as of December 31, 2017 and 322 options exercised in fiscal year 2017. The intrinsic value of options exercised in fiscal years 2017, 2016 and 2015 were \$1.7 thousand, zero, and \$1.0 million, respectively. There were no stock options granted in fiscal years 2017, 2016 and 2015.

The following table summarizes SunPower’s restricted stock activities:

Restricted Stock Awards and Units

	Shares <i>(in thousands)</i>	Weighted-Average Grant Date Fair Value Per Share <i>(in \$)^(a)</i>
OUTSTANDING AS OF DECEMBER 28, 2014	6,555	18.88
Granted	2,695	29.77
Vested ^(b)	(3,560)	15.31
Forfeited	(627)	22.99
OUTSTANDING AS OF JANUARY 3, 2016	5,063	26.68
Granted	4,978	18.81
Vested ^(b)	(2,837)	23.47
Forfeited	(1,057)	26.30
OUTSTANDING AS OF JANUARY 1, 2017	6,147	21.85
Granted	4,863	6.76
Vested ^(b)	(1,738)	25.87
Forfeited	(1,979)	18.15
OUTSTANDING AS OF JANUARY 1, 2018	7,293	21.85

(a) SunPower estimates the fair value of the restricted stock unit awards as the stock price on the grant date.

(b) Restricted stock awards and units vested include shares withheld on behalf of employees to satisfy the minimum statutory tax withholding requirements.



D) Share-based payment expense

Share-based payment expense before tax was broken down as follows:

As of December 31, (M\$)	2017	2016	2015
Total restricted shares plans	135	113	71
SunPower plans	31	28	78
Capital increase reserved for employees	16	-	30
TOTAL	182	141	179

In 2015, 2016 and 2017, no new TOTAL share subscription option plan has been decided.

During the year 2017, the main assumptions used for the valuation of the cost of the capital increase reserved for employees were the following:

For the year ended December 31,	2017
Date of the Board of Directors meeting that decided the issue	July 27, 2016
Subscription price (€) ^(a)	38.10
Share price at the reference date (€) ^(b)	46.98
Number of shares (in millions)	9.35
Risk free interest rate (%) ^(c)	0.13
Employees loan financing rate (%) ^(d)	5.02
Non transferability cost (% of the reference's share price)	20.62
Expenses (M\$)	16.00

(a) Average of the closing TOTAL share prices during the twenty trading days prior to the subscription period, after deduction of a 20% discount.

(b) Share price on March 15, 2017, date on which the Chief Executive Officer set the subscription period.

(c) Zero coupon Euro swap rate at 5 years.

(d) The employees' loan financing rate is based on a 5 year consumer's credit rate.

NOTE 10 Payroll, staff and employee benefits obligations

10.1 Employee benefits obligations

ACCOUNTING POLICIES

In accordance with the laws and practices of each country, the Group participates in employee benefit plans offering retirement, death and disability, healthcare and special termination benefits. These plans provide benefits based on various factors such as length of service, salaries, and contributions made to the governmental bodies responsible for the payment of benefits.

These plans can be either defined contribution or defined benefit pension plans and may be entirely or partially funded with investments made in various non-Group instruments such as mutual funds, insurance contracts, and other instruments.

For defined contribution plans, expenses correspond to the contributions paid.

Defined benefit obligations are determined according to the Projected Unit Method. Actuarial gains and losses may arise from differences between actuarial valuation and projected commitments (depending on new calculations or assumptions) and between projected and actual return of plan assets. Such gains and losses are recognized in the statement of comprehensive income, with no possibility to subsequently recycle them to the income statement.

The past service cost is recorded immediately in the statement of income, whether vested or unvested.

The net periodic pension cost is recognized under "Other operating expenses".

Liabilities for employee benefits obligations consist of the following:

As of December 31, (M\$)	2017	2016	2015
Pension benefits liabilities	2,877	2,948	2,926
Other benefits liabilities	705	648	627
Restructuring reserves (early retirement plans)	153	150	221
TOTAL	3,735	3,746	3,774
Net liabilities relating to assets held for sale	-	145	3

Description of plans and risk management

The Group operates, for the benefit of its current and former employees, both defined benefit plans and defined contribution plans.

The Group recognized a charge of \$128 million for defined contribution plans in 2017 (\$157 million in 2016 and \$159 million in 2015).

As of June 30, 2017, an expense of \$201 million in operating income and \$132 million in net income, Group share was recorded following the signing of an agreement on the transition from professional activity to retirement in France.

The Group's main defined benefit pension plans are located in France, the United Kingdom, the United States, Belgium and Germany. Their main characteristics, depending on the country-specific regulatory environment, are the following:

- the benefits are usually based on the final salary and seniority;
- they are usually funded (pension fund or insurer);
- they are usually closed to new employees who benefit from defined contribution pension plans;
- they are paid in annuity or in lump sum.

The pension benefits include also termination indemnities and early retirement benefits. The other benefits are employer contributions to post-employment medical care.

In order to manage the inherent risks, the Group has implemented a dedicated governance framework to ensure the supervision of the different plans. These governance rules provide for:

- the Group's representation in key governance bodies or monitoring committees;
- the principles of the funding policy;
- the general investment policy, including for most plans the establishment of a monitoring committee to define and follow the investment strategy and performance and to ensure the principles in respect of investment allocation are respected;
- a procedure to approve the establishment of new plans or the amendment of existing plans;
- principles of administration, communication and reporting.

Change in benefit obligations and plan assets

The fair value of the defined benefit obligation and plan assets in the Consolidated Financial Statements is detailed as follows:

As of December 31, (M\$)	Pension benefits			Other benefits		
	2017	2016	2015	2017	2016	2015
Change in benefit obligation						
Benefit obligation at beginning of year	12,164	12,473	14,297	648	627	845
Current service cost	263	251	271	16	13	17
Interest cost	320	373	402	17	21	22
Past service cost	239	(92)	(35)	12	-	-
Settlements	(1)	-	(58)	-	-	-
Plan participants' contributions	7	8	8	-	-	-
Benefits paid	(717)	(651)	(653)	(27)	(30)	(32)
Actuarial losses/(gains)	(450)	762	(533)	(36)	37	(71)
Foreign currency translation and other	1,047	(960)	(1,226)	75	(20)	(154)
BENEFIT OBLIGATION AT YEAR-END	12,872	12,164	12,473	705	648	627
<i>Of which plans entirely or partially funded</i>	12,140	11,376	11,742	-	-	-
<i>Of which plans not funded</i>	732	788	731	705	648	627
Change in fair value of plan assets						
Fair value of plan assets at beginning of year	(9,123)	(9,627)	(10,498)	-	-	-
Interest income	(256)	(307)	(318)	-	-	-
Actuarial losses/(gains)	(344)	(428)	48	-	-	-
Settlements	-	-	44	-	-	-
Plan participants' contributions	(7)	(8)	(8)	-	-	-
Employer contributions	(171)	(130)	(311)	-	-	-
Benefits paid	591	538	553	-	-	-
Foreign currency translation and other	(895)	839	863	-	-	-
FAIR VALUE OF PLAN ASSETS AT YEAR-END	(10,205)	(9,123)	(9,627)	-	-	-
UNFUNDED STATUS	2,667	3,041	2,846	705	648	627
Asset ceiling	40	26	27	-	-	-
NET RECOGNIZED AMOUNT	2,707	3,067	2,873	705	648	627
Pension benefits and other benefits liabilities	2,877	2,948	2,926	705	648	627
Other non-current assets	(170)	(26)	(56)	-	-	-
Net benefit liabilities relating to assets held for sale	-	145	3	-	-	-

As of December 31, 2017, the contribution from the main geographical areas for the net pension liability in the balance sheet is: 57% for the Euro area, 25% for the United Kingdom and 14% for the United States.

The amounts recognized in the consolidated income statement and the consolidated statement of comprehensive income for defined benefit plans are detailed as follows:

For the year ended December 31, (M\$)	Pension benefits			Other benefits		
	2017	2016	2015	2017	2016	2015
Current service cost	263	251	271	16	13	17
Past service cost	239	(92)	(35)	12	-	-
Settlements	(1)	-	(14)	-	-	-
Net interest cost	64	66	84	17	21	22
BENEFIT AMOUNTS RECOGNIZED ON PROFIT & LOSS	565	225	306	45	34	39
Actuarial (Gains)/Losses						
- Effect of changes in demographic assumptions	(16)	(56)	(41)	3	(7)	(10)
- Effect of changes in financial assumptions	(241)	1,008	(384)	(5)	48	(27)
- Effect of experience adjustments	(193)	(190)	(108)	(34)	(4)	(34)
- Actual return on plan assets (excluding interest income)	(344)	(421)	48	-	-	-
Effect of asset ceiling	7	(7)	(1)	-	-	-
BENEFIT AMOUNTS RECOGNIZED ON EQUITY	(787)	334	(486)	(36)	37	(71)
TOTAL BENEFIT AMOUNTS RECOGNIZED ON COMPREHENSIVE INCOME	(222)	559	(180)	9	71	(32)

Expected future cash out flows

The average duration of accrued benefits is approximately 14 years for defined pension benefits and 17 years for other benefits. The Group expects to pay contributions of \$176 million in respect of funded pension plans in 2018.

Estimated future benefits either financed from plan assets or directly paid by the employer are detailed as follows:

Estimated future payments (M\$)	Pension benefits	Other benefits
2018	857	30
2019	691	29
2020	702	29
2021	699	29
2022	657	29
2023-2027	3,349	142

Type of assets

Asset allocation As of December 31,	Pension benefits		
	2017	2016	2015
Equity securities	26%	27%	28%
Debt securities	43%	42%	42%
Monetary	3%	2%	4%
Annuity contracts	20%	21%	21%
Real estate	8%	8%	5%

Investments on equity and debt markets are quoted on active markets.

Main actuarial assumptions and sensitivity analysis

Assumptions used to determine benefits obligations

As of December 31,	Pension benefits			Other benefits		
	2017	2016	2015	2017	2016	2015
Discount rate (weighted average for all regions)	2.48%	2.60%	3.25%	2.52%	2.51%	3.00%
Of which Euro zone	1.71%	1.69%	2.18%	1.93%	1.85%	2.42%
Of which United States	3.75%	4.00%	4.25%	3.75%	4.00%	4.25%
Of which United Kingdom	2.50%	2.75%	3.75%	-	-	-
Inflation rate (weighted average for all regions)	2.40%	2.41%	2.43%	-	-	-
Of which Euro zone	1.50%	1.50%	1.75%	-	-	-
Of which United States	2.50%	2.50%	2.50%	-	-	-
Of which United Kingdom	3.50%	3.50%	3.25%	-	-	-

The discount rate retained is determined by reference to the high quality rates for AA-rated corporate bonds for a duration equivalent to that of the obligations. It derives from a benchmark per monetary area of different market data at the closing date.

Sensitivity to inflation in respect of defined benefit pension plans is not material in the United States.

A 0.5% increase or decrease in discount rates – all other things being equal – would have the following approximate impact on the benefit obligation:

(M\$)	0.5% Increase	0.5% Decrease
Benefit obligation as of December 31, 2017	(857)	974

A 0.5% increase or decrease in inflation rates – all other things being equal – would have the following approximate impact on the benefit obligation:

(M\$)	0.5% Increase	0.5% Decrease
Benefit obligation as of December 31, 2017	637	(586)

10.2 Payroll and staff

For the year ended December 31,	2017	2016	2015
Personnel expenses (M\$)			
Wages and salaries (including social charges)	7,985	8,238	8,088
Group employees at December 31,			
France			
- Management	11,880	12,057	11,000
- Other	19,372	19,567	19,219
International			
- Management	16,489	17,186	16,624
- Other	50,536	53,358	49,176
TOTAL	98,277	102,168	96,019

The number of employees includes only employees of fully consolidated subsidiaries.

NOTE 11 Income taxes

ACCOUNTING POLICIES

Income taxes disclosed in the statement of income include the current tax expenses (or income) and the deferred tax expenses (or income).

The expense (or income) of current tax is the estimated amount of the tax due for the taxable income of the period.

The Group uses the method whereby deferred income taxes are recorded based on the temporary differences between the carrying amounts of assets and liabilities recorded in the balance sheet and their tax bases, and on carry-forwards of unused tax losses and tax credits.

Deferred tax assets and liabilities are measured using the tax rates that have been enacted or substantially enacted at the balance sheet date. The tax rates used depend on the timing of reversals of temporary differences, tax losses and other tax credits. The effect of a change in tax rate is recognized either in the Consolidated Statement of Income or in shareholders' equity depending on the item it relates to.

Deferred tax resulting from temporary differences between the carrying amounts of equity-method investments and their tax bases are recognized. The deferred tax calculation is based on the expected future tax effect (dividend distribution rate or tax rate on capital gains).

Income taxes are detailed as follows:

For the year ended December 31, (M\$)	2017	2016	2015
Current income taxes	(3,416)	(2,911)	(4,552)
Deferred income taxes	387	1,941	2,899
TOTAL INCOME TAXES	(3,029)	(970)	(1,653)

Before netting deferred tax assets and liabilities by fiscal entity, the components of deferred tax balances are as follows:

As of December 31, (M\$)	2017	2016	2015
Net operating losses and tax carry forwards	3,014	3,267	3,100
Employee benefits	1,153	1,257	1,251
Other temporary non-deductible provisions	6,344	5,862	6,279
Differences in depreciations	(13,387)	(14,952)	(17,213)
Other temporary tax deductions	(2,746)	(2,126)	(1,795)
NET DEFERRED TAX LIABILITY	(5,622)	(6,692)	(8,378)

The reserves of TOTAL subsidiaries that would be taxable if distributed but for which no distribution is planned, and for which no deferred tax liability has therefore been recognized, totaled \$10,738 million as of December 31, 2017.

Deferred tax assets not recognized as of December 31, 2017 amount to \$2,900 million as their future recovery was not regarded as probable given the expected results of the entities; in particular in the Exploration & Production segment, when the affiliate or the field

concerned is in its exploration phase, the net operating losses created during this phase will be useable only if a final investment and development decision is made, accordingly, the time limit for the utilization of those net operating losses is not known.

Deferred tax assets not recognized relate notably to France for an amount of \$479 million, to Australia for an amount of \$423 million, to Nigeria for an amount of \$303 million and to Canada for an amount of \$241 million.

After netting deferred tax assets and liabilities by fiscal entity, deferred taxes are presented on the balance sheet as follows:

As of December 31, (M\$)	2017	2016	2015
Deferred tax assets, non-current	5,206	4,368	3,982
Deferred tax liabilities, non-current	(10,828)	(11,060)	(12,360)
NET AMOUNT	(5,622)	(6,692)	(8,378)

The net deferred tax variation in the balance sheet is analyzed as follows:

As of December 31, (M\$)	2017	2016	2015
OPENING BALANCE	(6,692)	(8,378)	(10,731)
Deferred tax on income	387	1,941	2,899
Deferred tax on shareholders' equity ^(a)	(490)	(21)	(225)
Changes in scope of consolidation ^(b)	1,154	(370)	(552)
Currency translation adjustment	19	136	231
CLOSING BALANCE	(5,622)	(6,692)	(8,378)

(a) This amount includes mainly deferred taxes on actuarial gains and losses, current income taxes and deferred taxes for changes in fair value of listed securities classified as financial assets available for sale, as well as deferred taxes related to the cash flow hedge (see Note 9 to the Consolidated Financial Statements).

(b) Changes in scope of consolidation include, as of December 31, 2017 the impact of reclassifications in assets and liabilities classified as held for sale for \$1,063 million.

Reconciliation between provision for income taxes and pre-tax income

For the year ended December 31, (M\$)	2017	2016	2015
Consolidated net income	8,299	6,206	4,786
Provision for income taxes	3,029	970	1,653
PRE-TAX INCOME	11,328	7,176	6,439
French statutory tax rate	44.43%	34.43%	38.00%
THEORETICAL TAX CHARGE	(5,033)	(2,471)	(2,447)
Difference between French and foreign income tax rates	(633)	5	(6)
Tax effect of equity in income (loss) of affiliates	888	761	897
Permanent differences	1,491	(76)	(371)
Adjustments on prior years income taxes	(91)	54	100
Adjustments on deferred tax related to changes in tax rates	(309)	234	483
Changes in valuation allowance of deferred tax assets	658	523	(309)
NET PROVISION FOR INCOME TAXES	(3,029)	(970)	(1,653)

The French statutory tax rate includes the standard corporate tax rate (33.33%), additional and exceptional applicable taxes that bring the overall tax rate to 44.43% (versus 34.43% in 2016 and 38% in 2015).

Permanent differences are mainly due to impairment of goodwill and to dividends from non-consolidated companies as well as the specific taxation rules applicable to certain activities.

Net operating losses and carried forward tax credits

Deferred tax assets related to carried forward tax credits on net operating losses expire in the following years:

As of December 31, (M\$)	2017	2016	2015
2016			175
2017		130	114
2018	75	109	56
2019	64	60	
2020 ^(a)	60		850
2021 ^(b)	24	1,154	
2022 and after	1,330		
Unlimited	1,461	1,814	1,905
TOTAL	3,014	3,267	3,100

(a) 2020 and after for 2015.

(b) 2021 and after for 2016.

As of December 31, 2017 the schedule of deferred tax assets related to carried forward tax credits on net operating losses for the main countries is as follows:

As of December 31, 2017, (M\$)	Tax				
	Canada	Australia	France	United States	Netherlands
2018					
2019					
2020					
2021					
2022 and after	708			340	219
Unlimited	90	515	498		
TOTAL	798	515	498	340	219

NOTE 12 Provisions and other non-current liabilities

12.1 Provisions and other non-current liabilities

ACCOUNTING POLICIES

A provision is recognized when the Group has a present obligation (legal or constructive) as a result of a past event for which it is probable that an outflow of resources will be required and when a reliable estimate can be made regarding the amount of the obligation. The amount of the liability corresponds to the best possible estimate.

Provisions and non-current liabilities are comprised of liabilities for which the amount and the timing are uncertain. They arise from environmental risks, legal and tax risks, litigation and other risks.

As of December 31, (M\$)	2017	2016	2015
Litigations and accrued penalty claims	706	1,123	1,120
Provisions for environmental contingencies	964	938	909
Asset retirement obligations	12,240	12,665	13,314
Other non-current provisions	1,370	1,455	1,357
<i>of which restructuring activities (Refining & Chemicals and Marketing & Services)</i>	160	184	223
<i>of which financial risks related to non-consolidated and equity consolidated affiliates</i>	59	63	216
<i>of which contingency reserve on solar panels warranties (SunPower)</i>	177	168	166
Other non-current liabilities	706	665	802
TOTAL	15,986	16,846	17,502

In 2017, litigation reserves amount to \$706 million of which \$512 million in the Exploration & Production, notably in Angola and Nigeria.

In 2017, other non-current liabilities mainly include debts (whose maturity is more than one year) related to fixed assets acquisitions.

In 2016, litigation reserves amounted to \$1,123 million of which \$959 million in the Exploration & Production, notably in Angola and Nigeria.

In 2016, other non-current liabilities mainly included debts (whose maturity is more than one year) related to fixed assets acquisitions.

In 2015, litigation reserves amounted to \$1,120 million of which \$895 million was in the Exploration & Production, notably in Angola and Nigeria.

In 2015, other non-current liabilities mainly included debts (whose maturity is more than one year) related to fixed assets acquisitions.

Changes in provisions and other non-current liabilities

Changes in provisions and other non-current liabilities are as follows:

(M\$)	As of January 1,	Allowances	Reversals	Currency translation adjustment	Other	As of December 31,
2017	16,846	1,172	(1,612)	681	(1,101)	15,986
<i>of which asset retirement obligations (accretion for allowances)</i>		544	(330)			
<i>of which environmental contingencies (Marketing & Services, Refining & Chemicals)</i>		37	(120)			
<i>of which restructuring of activities</i>		48	(84)			
2016	17,502	1,569	(1,268)	(484)	(473)	16,846
<i>of which asset retirement obligations (accretion for allowances)</i>		523	(502)			
<i>of which environmental contingencies (Marketing & Services, Refining & Chemicals)</i>		29	(82)			
<i>of which restructuring of activities</i>		25	(68)			
2015	17,545	1,280	(1,236)	(958)	871	17,502
<i>of which asset retirement obligations (accretion for allowances)</i>		513	(566)			
<i>of which environmental contingencies (Marketing & Services, Refining & Chemicals)</i>		105	(95)			
<i>of which restructuring of activities</i>		134	(60)			

Changes in the asset retirement obligation

ACCOUNTING POLICIES

Asset retirement obligations, which result from a legal or constructive obligation, are recognized based on a reasonable estimate in the period in which the obligation arises.

The associated asset retirement costs are capitalized as part of the carrying amount of the underlying asset and depreciated over the useful life of this asset.

An entity is required to measure changes in the liability for an asset retirement obligation due to the passage of time (accretion) by applying a risk-free discount rate to the amount of the liability. Given the long term nature of expenditures related to our asset retirement obligations, the rate is determined by reference to the high quality rates for AA-rated Corporate bonds on the USD area for a long-term horizon. The increase of the provision due to the passage of time is recognized as "Other financial expense".

The discount rate used in 2017 for the valuation of asset retirement obligation is 4.5% as in 2016 and 2015 (the expenses are estimated at current currency values with an inflation rate of 2%). A decrease of 0.5% of this rate would increase the asset retirement obligation by \$1,066 million, with a corresponding impact in tangible assets, and

with a negative impact of approximately \$82 million on the following years net income. Conversely, an increase of 0.5% would have a nearly symmetrical impact compared to the effect of the decrease of 0.5%.

Changes in the asset retirement obligation are as follows:

(M\$)	As of January 1,	Accretion	Revision in estimates	New obligations	Spending on existing obligations	Currency translation adjustment	Other	As of December 31,
2017	12,665	544	(1,107)	334	(330)	448	(314)	12,240
2016	13,314	523	(558)	375	(502)	(395)	(92)	12,665
2015	13,121	513	685	271	(566)	(676)	(34)	13,314

12.2 Other risks and contingent liabilities

TOTAL is not currently aware of any exceptional event, dispute, risks or contingent liabilities that could have a material impact on the assets and liabilities, results, financial position or operations of the Group.

Alitalia

In the Marketing & Services segment, a civil proceeding was initiated in Italy, in 2013, against TOTAL S.A. and its subsidiary Total Aviazione Italia Srl before the competent Italian civil court. The plaintiff claims against TOTAL S.A., its subsidiary and other third parties, damages that it estimates to be nearly €908 million. This proceeding follows practices that had been condemned by the Italian competition authority in 2006. The parties have exchanged preliminary findings. The existence and the assessment of the alleged damages in this procedure involving multiple defendants remain contested.

Blue Rapid and the Russian Olympic Committee – Russian regions and Interneft

Blue Rapid, a Panamanian company, and the Russian Olympic Committee filed a claim for damages with the Paris Commercial Court against Elf Aquitaine, alleging a so-called non-completion by a former subsidiary of Elf Aquitaine of a contract related to an exploration and production project in Russia negotiated in the early 1990s. Elf Aquitaine believed this claim to be unfounded and opposed it. On January 12, 2009, the Commercial Court of Paris rejected Blue Rapid's claim against Elf Aquitaine and found that the Russian Olympic Committee did not have standing in the matter. On June 30, 2011, the Court of Appeal of Paris dismissed as inadmissible the claim of Blue Rapid and the Russian Olympic Committee against Elf Aquitaine, notably on the grounds of the contract having lapsed. The judgment of the Court of Appeal of Paris is now final and binding following two decisions issued on February 18, 2016 by the French Supreme Court to put an end to this proceeding.

In connection with the same facts, and fifteen years after the aforementioned exploration and production contract was rendered null and void ("*caduc*"), a Russian company, which was held not to be the contracting party to the contract, and two regions of the Russian Federation that were not even parties to the contract, launched an arbitration procedure against the aforementioned former subsidiary of Elf Aquitaine that was liquidated in 2005, claiming alleged damages of \$22.4 billion. The arbitral tribunal issued its decision on June 19, 2017 and entirely dismissed this claim.

The Group has lodged a criminal complaint to denounce the fraudulent claim of which the Group believes it is a victim and, has taken and reserved its rights to take all actions and measures to defend its interests.

FERC

The Office of Enforcement of the U.S. Federal Energy Regulatory Commission (FERC) began in 2015 an investigation in connection with the natural gas trading activities in the United States of Total Gas & Power North America, Inc. (TGPNA), a U.S. subsidiary of the Group. The investigation covered transactions made by TGPNA between June 2009 and June 2012 on the natural gas market. TGPNA received a Notice of Alleged Violations from FERC on September 21, 2015. On April 28, 2016, FERC issued an order to show cause to TGPNA and two of its former employees, and to TOTAL S.A. and Total Gas & Power Ltd., regarding the same facts. TGPNA contests the claims brought against it.

A class action has been launched to seek damages from these three companies and was dismissed by a judgment of the U.S. District court of New York issued on March 15, 2017. The claimants appealed this judgment.

Yemen

Due to the security conditions in the vicinity of Balhaf, Yemen LNG, in which the Group holds a stake of 39.62%, stopped its commercial production and export of LNG in April 2015, when it declared Force Majeure to its various stakeholders. The plant is in a preservation mode.

NOTE 13 Off Balance sheet commitments and lease contracts

13.1 Off balance sheet commitments and contingencies

As of December 31, 2017 (M\$)	Maturity and installments			
	Total	Less than 1 year	Between 1 and 5 years	More than 5 years
Non-current debt obligations net of hedging instruments (Note 15)	39,544	-	19,540	20,004
Current portion of non-current debt obligations net of hedging instruments (Note 15)	4,646	4,646	-	-
Finance lease obligations (Note 13.2)	1,156	39	261	856
Asset retirement obligations (Note 12)	12,240	485	2,165	9,590
CONTRACTUAL OBLIGATIONS RECORDED IN THE BALANCE SHEET	57,586	5,170	21,966	30,450
Operating lease obligations (Note 13.2)	6,441	1,401	2,886	2,154
Purchase obligations	86,366	8,605	23,917	53,844
CONTRACTUAL OBLIGATIONS NOT RECORDED IN THE BALANCE SHEET	92,807	10,006	26,803	55,998
TOTAL OF CONTRACTUAL OBLIGATIONS	150,393	15,176	48,769	86,448
Guarantees given for excise taxes	2,073	1,938	29	106
Guarantees given against borrowings	16,080	411	10,607	5,062
Indemnities related to sales of businesses	341	120	61	160
Guarantees of current liabilities	321	91	109	121
Guarantees to customers/suppliers	4,180	1,100	268	2,812
Letters of credit	2,965	2,680	102	183
Other operating commitments	17,431	1,165	637	15,629
TOTAL OF OTHER COMMITMENTS GIVEN	43,391	7,505	11,813	24,073
Mortgages and liens received	89	23	26	40
Sales obligations	67,014	6,263	21,513	39,238
Other commitments received	7,398	3,549	1,111	2,738
TOTAL OF COMMITMENTS RECEIVED	74,501	9,835	22,650	42,016
<i>Of which commitments given relating to joint ventures</i>	<i>36,847</i>	<i>160</i>	<i>12,225</i>	<i>24,462</i>
<i>Of which commitments given relating to associates</i>	<i>20,629</i>	<i>580</i>	<i>5,991</i>	<i>14,058</i>

As of December 31, 2016 (M\$)	Maturity and installments			
	Total	Less than 1 year	Between 1 and 5 years	More than 5 years
Non-current debt obligations net of hedging instruments (Note 15)	41,848	-	18,449	23,399
Current portion of non-current debt obligations net of hedging instruments (Note 15)	4,614	4,614	-	-
Finance lease obligations (Note 13.2)	319	8	103	208
Asset retirement obligations (Note 12)	12,665	685	2,269	9,711
CONTRACTUAL OBLIGATIONS RECORDED IN THE BALANCE SHEET	59,446	5,307	20,821	33,318
Operating lease obligations (Note 13.2)	6,478	1,582	2,953	1,943
Purchase obligations	105,208	10,898	20,570	73,740
CONTRACTUAL OBLIGATIONS NOT RECORDED IN THE BALANCE SHEET	111,686	12,480	23,523	75,683
TOTAL OF CONTRACTUAL OBLIGATIONS	171,132	17,787	44,344	109,001
Guarantees given for excise taxes	1,887	1,740	58	89
Guarantees given against borrowings	14,666	215	664	13,787
Indemnities related to sales of businesses	375	158	59	158
Guarantees of current liabilities	391	89	99	203
Guarantees to customers/suppliers	3,997	1,038	225	2,734
Letters of credit	1,457	1,215	81	161
Other operating commitments	3,592	1,319	409	1,864
TOTAL OF OTHER COMMITMENTS GIVEN	26,365	5,774	1,595	18,996
Mortgages and liens received	77	20	19	38
Sales obligations	82,756	7,331	21,356	54,069
Other commitments received	6,799	3,133	1,124	2,542
TOTAL OF COMMITMENTS RECEIVED	89,632	10,484	22,499	56,649
<i>Of which commitments given relating to joint ventures</i>	<i>48,257</i>	<i>61</i>	<i>3,211</i>	<i>44,985</i>

As of December 31, 2016 (M\$)	Maturity and installments			
	Total	Less than 1 year	Between 1 and 5 years	More than 5 years
<i>Of which commitments given relating to associates</i>	21,959	603	3,265	18,091

As of December 31, 2015 (M\$)	Maturity and installments			
	Total	Less than 1 year	Between 1 and 5 years	More than 5 years
Non-current debt obligations net of hedging instruments (Note 15)	42,950	-	19,448	23,502
Current portion of non-current debt obligations net of hedging instruments (Note 15)	4,518	4,518	-	-
Finance lease obligations (Note 13.2)	336	41	81	214
Asset retirement obligations (Note 12)	13,314	707	2,117	10,490
CONTRACTUAL OBLIGATIONS RECORDED IN THE BALANCE SHEET	61,118	5,266	21,646	34,206
Operating lease obligations (Note 13.2)	5,973	1,430	2,825	1,718
Purchase obligations	123,968	14,728	24,612	84,628
CONTRACTUAL OBLIGATIONS NOT RECORDED IN THE BALANCE SHEET	129,941	16,158	27,437	86,346
TOTAL OF CONTRACTUAL OBLIGATIONS	191,059	21,424	49,083	120,552
Guarantees given for excise taxes	2,982	2,604	57	321
Guarantees given against borrowings	12,872	3,553	547	8,772
Indemnities related to sales of businesses	371	109	103	159
Guarantees of current liabilities	501	102	229	170
Guarantees to customers/suppliers	4,405	1,364	194	2,847
Letters of credit	1,081	785	45	251
Other operating commitments	3,655	1,586	248	1,821
TOTAL OF OTHER COMMITMENTS GIVEN	25,867	10,103	1,423	14,341
Mortgages and liens received	359	23	7	329
Sales obligations	72,278	7,889	24,589	39,800
Other commitments received	7,158	2,602	1,601	2,955
TOTAL OF COMMITMENTS RECEIVED	79,795	10,514	26,197	43,084
<i>Of which commitments given relating to joint ventures</i>	46,178	544	2,925	42,709

A) Contractual obligations

Debt obligations

“Non-current debt obligations” are included in the items “Non-current financial debt” and “Non-current financial assets” of the Consolidated Balance Sheet. It includes the non-current portion of swaps hedging bonds, and excludes non-current finance lease obligations of \$1,117 million.

The current portion of non-current debt is included in the items “Current borrowings”, “Current financial assets” and “Other current financial liabilities” of the Consolidated Balance Sheet. It includes the current portion of swaps hedging bonds, and excludes the current portion of finance lease obligations of \$39 million.

The information regarding contractual obligations linked to indebtedness is presented in Note 15 to the Consolidated Financial Statements.

Lease contracts

The information regarding operating and finance leases is presented in Note 13.2 to the Consolidated Financial Statements.

Asset retirement obligations

This item represents the discounted present value of Exploration & Production asset retirement obligations, primarily asset removal costs at the completion date. The information regarding contractual obligations linked to asset retirement obligations is presented in Note 12 to the Consolidated Financial Statements.

Purchase obligations

Purchase obligations are obligations under contractual agreements to purchase goods or services, including capital projects. These obligations are enforceable and legally binding on the Company and specify all significant terms, including the amount and the timing of the payments.

These obligations mainly include: unconditional hydrocarbon purchase contracts (except where an active, highly-liquid market exists and when the hydrocarbons are expected to be re-sold shortly after purchase), reservation of transport capacities in pipelines, unconditional exploration works and development works in the Exploration & Production segment, and contracts for capital investment projects in the Refining & Chemicals segment.

B) Other commitments given

Guarantees given for excise taxes

These consist of guarantees given by the Group to customs authorities in order to guarantee the payments of taxes and excise duties on the importation of oil and gas products, mostly in France.

Guarantees given against borrowings

The Group guarantees bank debt and finance lease obligations of certain non-consolidated subsidiaries and equity affiliates. Maturity dates vary, and guarantees will terminate on payment and/or cancellation of the obligation. A payment would be triggered by failure of the guaranteed party to fulfill its obligation covered by the guarantee, and no assets are held as collateral for these guarantees. As of December 31, 2017, the maturities of these guarantees are up to 2053.

As of December 31, 2017, the guarantees provided by TOTAL S.A. in connection with the financing of the Ichthys LNG project amounted to \$8,500 million. As of December 31, 2016, the guarantees amounted to \$7,800 million.

Guarantees given against borrowings also include the guarantee given in 2017 by TOTAL S.A. in connection with the financing of the Yamal LNG project for an amount of \$4,038 million by TOTAL S.A. As of December 31, 2016, the guarantees amounted to \$3,147 million.

In 2017, TOTAL S.A. has confirmed and extended guarantees for TOTAL Refining SAUDI ARABIA SAS shareholders' advances for an amount of \$1,462 million. As of December 31, 2016, the guarantees amounted to \$1,230 million.

As of December 31, 2017, the guarantee given in 2008 by TOTAL S.A. in connection with the financing of the Yemen LNG project amounts to \$551 million as in 2016.

Indemnities related to sales of businesses

In the ordinary course of business, the Group executes contracts involving standard indemnities for the oil industry and indemnities specific to transactions such as sales of businesses. These indemnities might include claims against any of the following: environmental, tax and shareholder matters, intellectual property rights, governmental regulations and employment-related matters, dealer, supplier, and other commercial contractual relationships.

Performance under these indemnities would generally be triggered by a breach of terms of the contract or by a third party claim. The Group regularly evaluates the probability of having to incur costs associated with these indemnities.

Other guarantees given

Non-consolidated subsidiaries

The Group also guarantees the current liabilities of certain non-consolidated subsidiaries. Performance under these guarantees would be triggered by a financial default of the entity.

Operating agreements

As part of normal ongoing business operations and consistent with generally accepted and recognized industry practices, the Group enters into numerous agreements with other parties. These commitments are often entered into for commercial purposes, for regulatory purposes or for other operating agreements.

C) Commitments received

Sales obligations

These amounts represent binding obligations under contractual agreements to sell goods, including in particular unconditional hydrocarbon sales contracts (except where an active, highly-liquid market exists and when the volumes are expected to be re-sold shortly after purchase).

13.2 Lease contracts

ACCOUNTING PRINCIPLES

A finance lease transfers substantially all the risks and rewards incidental to ownership from the lessor to the lessee. These contracts are capitalized as assets at fair value or, if lower, at the present value of the minimum lease payments according to the contract. A corresponding financial debt is recognized as a financial liability. These assets are depreciated over the corresponding useful life used by the Group.

Leases that are not finance leases as defined above are recorded as operating leases.

Certain arrangements do not take the legal form of a lease but convey the right to use an asset or a group of assets in return for fixed payments. Such arrangements are accounted for as leases and are analyzed to determine whether they should be classified as operating leases or as finance leases.

The Group leases real estate, retail stations, ships, and other equipment (see Note 7 to the Consolidated Financial Statements).

The future minimum lease payments on operating and finance leases to which the Group is committed are as follows:

For the year ended December 31, 2017 (M\$)	Operating leases	Finance leases
2018	1,401	76
2019	988	67
2020	814	67
2021	623	65
2022	462	65
2023 and beyond	2,153	864
TOTAL MINIMUM PAYMENTS	6,441	1,204
Less financial expenses		(48)
NOMINAL VALUE OF CONTRACTS		1,156
Less current portion of finance lease contracts		(39)
NON-CURRENT FINANCE LEASE LIABILITIES		1,117

For the year ended December 31, 2016

(M\$)	Operating leases	Finance leases
2017	1,582	24
2018	1,054	26
2019	777	44
2020	687	27
2021	435	25
2022 and beyond	1,943	247
TOTAL MINIMUM PAYMENTS	6,478	393
Less financial expenses		(74)
NOMINAL VALUE OF CONTRACTS		319
Less current portion of finance lease contracts		(8)
NON-CURRENT FINANCE LEASE LIABILITIES		311

For the year ended December 31, 2015

(M\$)	Operating leases	Finance leases
2016	1,430	57
2017	1,049	23
2018	784	23
2019	550	23
2020	442	23
2021 and beyond	1,718	242
TOTAL MINIMUM PAYMENTS	5,973	391
Less financial expenses		(55)
NOMINAL VALUE OF CONTRACTS		336
Less current portion of finance lease contracts		(41)
NON-CURRENT FINANCE LEASE LIABILITIES		295

Net rental expense incurred under operating leases for the year ended December 31, 2017 is \$1,467 million (against \$1,629 million in 2016 and \$1,282 million in 2015).

NOTE 14 Financial assets and liabilities analysis per instrument class and strategy

The financial assets and liabilities disclosed in the balance sheet are detailed as follows:

As of December 31, 2017 (M\$)	Financial instruments related to financing and operational activities						Other financial instruments	Total	Fair value
	Amortized cost	Fair value					Amortized cost		
	Available for sale ^(a)	Held for trading	Financial debt ^(b)	Hedging of Financial Debt	Cash flow hedge	Net investment hedge and other			
ASSETS/(LIABILITIES)									
Equity affiliates: loans	5,135	-	-	-	-	-	-	5,135	5,135
Other investments	-	1,727	-	-	-	-	-	1,727	1,727
Non-current financial assets	-	-	73	-	337	269	-	679	679
Other non-current assets	3,765	50	-	-	-	-	-	3,815	3,815
Accounts receivable, net ^(c)	-	-	-	-	-	-	14,893	14,893	14,893
Other operating receivables	-	-	1,977	-	-	12	-	7,347	9,336
Current financial assets	2,970	-	251	-	172	-	-	3,393	3,393
Cash and cash equivalents	-	-	-	-	-	-	-	33,185	33,185
TOTAL FINANCIAL ASSETS	11,870	1,777	2,301	-	509	281	-	55,425	72,163
TOTAL NON-FINANCIAL ASSETS	-	-	-	-	-	-	-	170,468	-
TOTAL ASSETS	-	-	-	-	-	-	-	242,631	-
Non-current financial debt	(18,470)	-	(20)	(21,768)	(951)	(131)	-	(41,340)	(42,886)
Accounts payable ^(c)	-	-	-	-	-	-	(26,479)	(26,479)	(26,479)
Other operating liabilities	-	-	(1,794)	-	-	-	(8,341)	(10,135)	(10,135)
Current borrowings	(6,925)	-	-	(4,171)	-	-	-	(11,096)	(11,095)
Other current financial liabilities	-	-	(88)	-	(157)	-	-	(245)	(245)
TOTAL FINANCIAL LIABILITIES	(25,395)	-	(1,902)	(25,939)	(1,108)	(131)	-	(34,820)	(89,295)
TOTAL NON-FINANCIAL LIABILITIES	-	-	-	-	-	-	-	(153,336)	-
TOTAL LIABILITIES	-	-	-	-	-	-	-	(242,631)	-

(a) Financial assets available for sale are measured at their fair value except for unlisted securities and listed securities on non active markets (see Note 8 to the Consolidated Financial Statements).

(b) The financial debt is adjusted to the hedged risks value (currency and interest rate) as part of hedge accounting (see Note 15 to the Consolidated Financial Statements).

(c) The impact of offsetting on accounts receivable, net is \$(3,471) million and \$3,471 million on accounts payable.

As of December 31, 2016 (M\$)	Financial instruments related to financing and operational activities							Other financial instruments	Total	Fair value
	Amortized cost	Fair value					Amortized cost			
		Available for sale ^(a)	Held for trading	Financial debt ^(b)	Hedging of Financial Debt	Cash flow hedge		Net investment hedge and other		
ASSETS/(LIABILITIES)										
Equity affiliates: loans	4,718	-	-	-	-	-	-	-	4,718	4,718
Other investments	-	1,133	-	-	-	-	-	-	1,133	1,133
Non-current financial assets	-	-	63	-	716	129	-	-	908	908
Other non-current assets	4,051	66	-	-	-	-	-	-	4,117	4,117
Accounts receivable, net ^(c)	-	-	-	-	-	-	-	12,213	12,213	12,213
Other operating receivables	-	-	2,425	-	-	4	-	7,789	10,218	10,218
Current financial assets	4,413	-	94	-	41	-	-	-	4,548	4,548
Cash and cash equivalents	-	-	-	-	-	-	-	24,597	24,597	24,597
TOTAL FINANCIAL ASSETS	13,182	1,199	2,582	-	757	133	-	44,599	62,452	62,452
TOTAL NON-FINANCIAL ASSETS	-	-	-	-	-	-	-	-	168,526	-
TOTAL ASSETS	-	-	-	-	-	-	-	-	230,978	-
Non-current financial debt	(11,188)	-	(5)	(28,223)	(3,007)	(644)	-	-	(43,067)	(44,168)
Accounts payable ^(c)	-	-	-	-	-	-	-	(23,227)	(23,227)	(23,227)
Other operating liabilities	-	-	(2,001)	-	-	(107)	-	(7,508)	(9,616)	(9,616)
Current borrowings	(9,700)	-	-	(4,220)	-	-	-	-	(13,920)	(13,920)
Other current financial liabilities	-	-	(115)	-	(212)	-	-	-	(327)	(327)
TOTAL FINANCIAL LIABILITIES	(20,888)	-	(2,121)	(32,443)	(3,219)	(751)	-	(30,735)	(90,157)	(91,258)
TOTAL NON-FINANCIAL LIABILITIES	-	-	-	-	-	-	-	-	(140,821)	-
TOTAL LIABILITIES	-	-	-	-	-	-	-	-	(230,978)	-

(a) Financial assets available for sale are measured at their fair value except for unlisted securities and listed securities on non active markets (see Note 8 to the Consolidated Financial Statements).

(b) The financial debt is adjusted to the hedged risks value (currency and interest rate) as part of hedge accounting (see Note 15 to the Consolidated Financial Statements).

(c) The impact of offsetting on accounts receivable, net is \$(1,828) million and \$1,828 million on accounts payable.

As of December 31, 2015 (M\$)	Financial instruments related to financing and operational activities							Other financial instruments	Total	Fair value
	Amortized cost	Fair value					Amortized cost			
	Available for sale ^(a)	Held for trading	Financial debt ^(b)	Hedging of Financial Debt	Cash flow hedge	Net investment hedge and other				
ASSETS/(LIABILITIES)										
Equity affiliates: loans	4,378	-	-	-	-	-	-	4,378	4,378	
Other investments	-	1,241	-	-	-	-	-	1,241	1,241	
Non-current financial assets	-	-	-	1,075	144	-	-	1,219	1,219	
Other non-current assets	4,298	-	-	-	-	-	-	4,298	4,298	
Accounts receivable, net ^(c)	-	-	-	-	-	-	10,629	10,629	10,629	
Other operating receivables	-	-	3,379	-	9	-	7,521	10,909	10,909	
Current financial assets	5,858	-	112	-	220	-	-	6,190	6,190	
Cash and cash equivalents	-	-	-	-	-	-	23,269	23,269	23,269	
TOTAL FINANCIAL ASSETS	14,534	1,241	3,491	-	1,295	153	-	41,419	62,133	
TOTAL NON-FINANCIAL ASSETS	-	-	-	-	-	-	-	162,351	-	
TOTAL ASSETS	-	-	-	-	-	-	-	224,484	-	
Non-current financial debt	(7,810)	-	-	(33,762)	(2,891)	(1)	-	(44,464)	(45,294)	
Accounts payable ^(c)	-	-	-	-	-	-	(20,928)	(20,928)	(20,928)	
Other operating liabilities	-	-	(1,609)	-	(103)	-	(8,202)	(9,914)	(9,914)	
Current borrowings	(8,230)	-	-	(4,258)	-	-	-	(12,488)	(12,488)	
Other current financial liabilities	-	-	(44)	-	(127)	-	-	(171)	(171)	
TOTAL FINANCIAL LIABILITIES	(16,040)	-	(1,653)	(38,020)	(3,018)	(104)	-	(29,130)	(88,795)	
TOTAL NON-FINANCIAL LIABILITIES	-	-	-	-	-	-	-	(136,519)	-	
TOTAL LIABILITIES	-	-	-	-	-	-	-	(224,484)	-	

(a) Financial assets available for sale are measured at their fair value except for unlisted securities and listed securities on non active markets (see Note 8 to the Consolidated Financial Statements).

(b) The financial debt is adjusted to the hedged risks value (currency and interest rate) as part of hedge accounting (see Note 15 to the Consolidated Financial Statements).

(c) The impact of offsetting on accounts receivable, net is \$(1,044) million and \$1,044 million on accounts payable.

NOTE 15 Financial structure and financial costs

15.1 Financial debt and related financial instruments

A) Non-current financial debt and related financial instruments

As of December 31, 2017

(MS) (ASSETS)/ LIABILITIES	Secured	Unsecured	Total
Non-current financial debt	1,310	40,030	41,340
<i>of which hedging instruments of non-current financial debt (liabilities)</i>	-	1,082	1,082
Non-current financial assets	-	(679)	(679)
<i>of which hedging instruments of non-current financial debt (assets)</i>	-	(606)	(606)
NON-CURRENT FINANCIAL DEBT AND RELATED FINANCIAL INSTRUMENTS	1,310	39,351	40,661
Bonds after fair value hedge	-	20,620	20,620
Fixed rate bonds and bonds after cash flow hedge	-	16,469	16,469
Other floating rate debt	70	1,692	1,762
Other fixed rate debt	123	623	746
Financial lease obligations	1,117	-	1,117
Non-current instruments held for trading	-	(53)	(53)
NON-CURRENT FINANCIAL DEBT AND RELATED FINANCIAL INSTRUMENTS	1,310	39,351	40,661

As of December 31, 2016

(MS) (ASSETS)/ LIABILITIES	Secured	Unsecured	Total
Non-current financial debt	572	42,495	43,067
<i>of which hedging instruments of non-current financial debt (liabilities)</i>	-	3,651	3,651
Non-current financial assets	-	(908)	(908)
<i>of which hedging instruments of non-current financial debt (assets)</i>	-	(845)	(845)
NON-CURRENT FINANCIAL DEBT AND RELATED FINANCIAL INSTRUMENTS	572	41,587	42,159
Bonds after fair value hedge	-	29,147	29,147
Fixed rate bonds and bonds after cash flow hedge	-	10,315	10,315
Other floating rate debt	76	1,291	1,367
Other fixed rate debt	185	892	1,077
Financial lease obligations	311	-	311
Non-current instruments held for trading	-	(58)	(58)
NON-CURRENT FINANCIAL DEBT AND RELATED FINANCIAL INSTRUMENTS	572	41,587	42,159

As of December 31, 2015

(MS) (ASSETS)/ LIABILITIES	Secured	Unsecured	Total
Non-current financial debt	655	43,809	44,464
<i>of which hedging instruments of non-current financial debt (liabilities)</i>	-	2,891	2,891
Non-current financial assets	-	(1,219)	(1,219)
<i>of which hedging instruments of non-current financial debt (assets)</i>	-	(1,219)	(1,219)
NON-CURRENT FINANCIAL DEBT AND RELATED FINANCIAL INSTRUMENTS	655	42,590	43,245
Bonds after fair value hedge	-	34,435	34,435
Fixed rate bonds and bonds after cash flow hedge	-	6,494	6,494
Other floating rate debt	34	1,110	1,144
Other fixed rate debt	326	551	877
Financial lease obligations	295	-	295
Non-current instruments held for trading	-	-	-
NON-CURRENT FINANCIAL DEBT AND RELATED FINANCIAL INSTRUMENTS	655	42,590	43,245

The fair value of bonds, as of December 31, 2017, after taking into account currency and interest rates swaps, is detailed as follows:

Bonds after fair value hedge and variable rate bonds (M\$)	Currency of issuance	Fair value after hedging as of December 31, 2017	Fair value after hedging as of December 31, 2016	Fair value after hedging as of December 31, 2015	Range of current maturities	Range of initial current rate before hedging instruments
Bond	USD	7,266	11,036	13,754	2018-2024	1.450%-3.750%
Bond	USD	1,385	1,385	2,385	2018-2020	USLIBOR 3 mois +0.03%
Bond	CHF	391	1,441	1,910	2018	USLIBOR 3 mois +0.75%
Bond	NZD	252	251	251	2019-2020	3.135%
Bond	AUD	850	1,211	1,360	2018-2025	4.750%-5.000%
Bond	EUR	8,266	10,958	11,365	2019-2044	3.750%-4.250%
Bond	EUR	1,639	1,638	1,638	2020	0.250%-4.875%
Bond	CAD	188	289	289	2018-2020	EURIBOR 3 mois +0.30%
Bond	GBP	1,855	2,215	2,225	2018-2022	EURIBOR 3 mois +0.31%
Bond	GBP	470	469	469	2019	2.125%-2.375%
Bond	NOK	103	355	566	2018	2.250%-3.875%
Bond	HKD	212	392	394	2019-2025	GBLIB3M+0.30%
Bond	SEK			95		2.500%
Current portion (less than one year)		(4,156)	(4,391)	(4,164)		2.920%-4.180%
Total Principal Financing Entities^(a)		18,721	27,249	32,537		
TOTAL S.A. ^(b)		1,201	1,200	1,200	2022	0.500%
Other consolidated subsidiaries		698	698	698		
TOTAL BONDS AFTER FAIR VALUE HEDGE		20,620	29,147	34,435		

Bonds after cash flow hedge and fixed rate bonds (M\$)	Currency of issuance	Fair value after hedging as of December 31, 2017	Fair value after hedging as of December 31, 2016	Fair value after hedging as of December 31, 2015	Range of current maturities	Range of initial current rate before hedging instruments
Bond	EUR	9,337	5,248	2,077	2019-2029	0.750%-5.125%
Bond	USD	5,000	4,250	3,750	2020-2024	2.750%-4.450%
Bond	CNY	164	153	164	2018	3.750%
Bond	HKD	188			2026	3.090%
Bond	CHF	1,037			2024-2027	0.510%-1.010%
Bond	GBP	324			2024	1.250%
Current portion (less than one year)		(164)				
Total Principal Financing Entities^(a)		15,886	9,651	5,991		
Other consolidated subsidiaries		583	664	503		
TOTAL BONDS AFTER CASH FLOW HEDGE AND FIXED RATE BONDS		16,469	10,315	6,494		

(a) All debt securities issued through the following subsidiaries are fully and unconditionally guaranteed by TOTAL S.A. as to payment of principal, premium, if any, interest and any other amounts due:

- TOTAL CAPITAL is a wholly-owned subsidiary of TOTAL S.A.. It acts as a financing vehicle for the Group.
- TOTAL CAPITAL CANADA Ltd. is a wholly-owned subsidiary of TOTAL S.A.. It acts as a financing vehicle for the activities of the Group in Canada.
- TOTAL CAPITAL INTERNATIONAL is a wholly-owned subsidiary of TOTAL S.A.. It acts as a financing vehicle for the Group.

(b) Debt financing of \$1.2 billion through a structure combining the issue of cash-settled convertible bonds with the purchase of cash-settled call options to hedge TOTAL's exposure to the exercise of the conversion rights under the bonds.

Loan repayment schedule (excluding current portion)

As of December 31, 2017 (M\$)	Non-current financial debt	of which hedging instruments of non-current financial debt (liabilities)	Non-current financial assets	of which hedging instruments of non-current financial debt (assets)	Non-current financial debt and related financial instruments	%
2019	6,005	164	(75)	(68)	5,930	15%
2020	5,119	222	(2)	-	5,117	13%
2021	3,810	96	(15)	-	3,795	9%
2022	5,026	165	(67)	(67)	4,959	12%
2023 and beyond	21,380	435	(520)	(471)	20,860	51%
TOTAL	41,340	1,082	(679)	(606)	40,661	100%

As of December 31, 2016 (M\$)	Non-current financial debt	of which hedging instruments of non-current financial debt (liabilities)	Non-current financial assets	of which hedging instruments of non-current financial debt (assets)	Non-current financial debt and related financial instruments	%
2018	4,572	249	(252)	(235)	4,320	10%
2019	5,812	327	(110)	(104)	5,702	14%
2020	4,956	564	(4)	-	4,952	12%
2021	3,609	237	(31)	(7)	3,578	8%
2022 and beyond	24,118	2,274	(511)	(499)	23,607	56%
TOTAL	43,067	3,651	(908)	(845)	42,159	100%

As of December 31, 2015 (M\$)	Non-current financial debt	of which hedging instruments of non-current financial debt (liabilities)	Non-current financial assets	of which hedging instruments of non-current financial debt (assets)	Non-current financial debt and related financial instruments	%
2017	4,729	213	(127)	(127)	4,602	11%
2018	4,803	218	(383)	(383)	4,420	10%
2019	5,716	124	(174)	(174)	5,542	13%
2020	4,965	434	-	-	4,965	11%
2021 and beyond	24,251	1,902	(535)	(535)	23,716	55%
TOTAL	44,464	2,891	(1,219)	(1,219)	43,245	100%

Analysis by currency and interest rate

These analyses take into account interest rate and foreign currency swaps to hedge non-current financial debt.

As of December 31, (M\$)	2017	%	2016	%	2015	%
U.S. Dollar	38,703	95%	39,963	95%	40,337	93%
Euro	724	2%	977	2%	1,681	4%
Norwegian krone	975	2%	928	2%	907	2%
Other currencies	259	1%	291	1%	320	1%
TOTAL	40,661	100%	42,159	100%	43,245	100%

As of December 31, (M\$)	2017	%	2016	%	2015	%
Fixed rate	18,332	45%	11,703	28%	7,666	18%
Floating rate	22,329	55%	30,456	72%	35,579	82%
TOTAL	40,661	100%	42,159	100%	43,245	100%

B) Current financial assets and liabilities

Current borrowings consist mainly of commercial paper or treasury bills or drawings on bank loans. These instruments bear interest at rates that are close to market rates.

As of December 31, (M\$) (ASSETS)/ LIABILITIES	2017	2016	2015
Current financial debt ^(a)	6,396	9,469	7,836
Current portion of non-current financial debt	4,700	4,451	4,652
CURRENT BORROWINGS (Note 14)	11,096	13,920	12,488
Current portion of hedging instruments of debt (liabilities)	157	212	127
Other current financial instruments (liabilities)	88	115	44
OTHER CURRENT FINANCIAL LIABILITIES (Note 14)	245	327	171
Current deposits beyond three months	(2,970)	(4,413)	(5,858)
Current portion of hedging instruments of debt (assets)	(172)	(41)	(220)
Other current financial instruments (assets)	(251)	(94)	(112)
CURRENT FINANCIAL ASSETS (Note 14)	(3,393)	(4,548)	(6,190)
CURRENT BORROWINGS AND RELATED FINANCIAL ASSETS AND LIABILITIES, NET	7,948	9,699	6,469

(a) As of December 31, 2017, December 31, 2016 and December 31, 2015, the current financial debt includes a commercial paper program in Total Capital Canada Ltd.. Total Capital Canada Ltd. is a wholly-owned subsidiary of TOTAL S.A. It acts as a financing vehicle for the activities of the Group in Canada. Its debt securities are fully and unconditionally guaranteed by TOTAL S.A. as to payment of principal, premium, if any, interest and any other amounts due.

C) Cash flow from (used in) financing activities

The variations of financial debt are detailed as follows:

(M\$)	As of January 1, 2017	Cash changes	Non-cash changes					Other	As of December 31, 2017
			Change in scope, including IFRS 5 reclassification	Foreign currency	Changes in fair value	Reclassification Non-current/ Current			
Non-current financial instruments – assets ^(a)	(908)	-	-	(62)	291	-	-	(679)	
Non-current financial debt	43,067	2,277	2	203	(451)	(4,713)	955	41,340	
NON-CURRENT FINANCIAL DEBT AND RELATED FINANCIAL INSTRUMENTS	42,159	2,277	2	141	(160)	(4,713)	955	40,661	
Current financial instruments – assets ^(a)	(135)	-	-	(34)	(254)	-	-	(423)	
Current borrowings	13,920	(7,175)	(50)	(585)	290	4,713	(17)	11,096	
Current financial instruments – liabilities ^(a)	327	-	-	18	(100)	-	-	245	
CURRENT FINANCIAL DEBT AND RELATED FINANCIAL INSTRUMENTS	14,112	(7,175)	(50)	(601)	(64)	4,713	(17)	10,918	
Financial debt classified as held for sale	21	-	(21)	-	-	-	-	-	
FINANCIAL DEBT	56,292	(4,898)	(69)	(460)	(224)	-	938	51,579	

(a) Fair value or cash flow hedge instruments and other non-hedge debt-related derivative instruments.

Monetary changes in non-current financial debt are detailed as follows:

For the year ended December 31, (M\$)	2017	2016	2015
Issuance of non-current debt	2,959	4,096	4,468
Repayment of non-current debt	(682)	(520)	(302)
NET AMOUNT	2,277	3,576	4,166

D) Cash and cash equivalents

▶ ACCOUNTING POLICIES

Cash and cash equivalents are comprised of cash on hand and highly liquid short-term investments that are easily convertible into known amounts of cash and are subject to insignificant risks of changes in value.

Investments with maturity greater than three months and less than twelve months are shown under “Current financial assets”.

Changes in current financial assets and liabilities are included in the financing activities section of the Consolidated Statement of Cash Flows.

Cash and cash equivalents are detailed as follows:

For the year ended December 31, (M\$)	2017	2016	2015
Cash	13,427	12,129	12,291
Cash equivalents	19,758	12,468	10,978
TOTAL	33,185	24,597	23,269

Cash equivalents are mainly composed of deposits less than three months deposited in government institutions or deposit banks selected in accordance with strict criteria.

As of December 31, 2017, the cash and cash equivalents include \$1,487 million subject to restrictions particularly due to a regulatory framework or due to the fact they are owned by affiliates located in countries with exchange controls.

E) Net-debt-to-equity ratio

For its internal and external communication needs, the Group calculates a debt ratio by dividing its net financial debt by equity. Adjusted shareholders' equity for the year ended December 31, 2017 is calculated after payment of a 2017 dividend of €2.48 per share, subject to approval by the Shareholders' Meeting on June 1, 2018.

The net-debt-to-equity ratio is calculated as follows:

As of December 31, (M\$) (ASSETS)/LIABILITIES	2017	2016	2015
Current borrowings	11,096	13,920	12,488
Other current financial liabilities	245	327	171
Current financial assets	(3,393)	(4,548)	(6,190)
Net financial assets and liabilities held for sale or exchange	-	(140)	141
Non-current financial debt	41,340	43,067	44,464
Non-current financial assets	(679)	(908)	(1,219)
Cash and cash equivalents	(33,185)	(24,597)	(23,269)
NET FINANCIAL DEBT	15,424	27,121	26,586
Shareholders' equity – Group share	111,556	98,680	92,494
Distribution of the income based on existing shares at the closing date	(1,874)	(1,581)	(1,545)
Non-controlling interests	2,481	2,894	2,915
ADJUSTED SHAREHOLDERS' EQUITY	112,163	99,993	93,864
NET-DEBT-TO-EQUITY RATIO	13.8%	27.1%	28.3%

15.2 Fair value of financial instruments (excluding commodity contracts)

ACCOUNTING POLICIES

The Group uses derivative instruments to manage its exposure to risks of changes in interest rates, foreign exchange rates and commodity prices. Changes in fair value of derivative instruments are recognized in the statement of income or in other comprehensive income and are recognized in the balance sheet in the accounts corresponding to their nature, according to the risk management strategy. The derivative instruments used by the Group are the following:

Cash management

Financial instruments used for cash management purposes are part of a hedging strategy of currency and interest rate risks within global limits set by the Group and are considered to be used for transactions (held for trading). Changes in fair value are systematically recorded in the statement of income. The balance sheet value of those instruments is included in “Current financial assets” or “Other current financial liabilities”.

Long-term financing

When an external long-term financing is set up, specifically to finance subsidiaries, and when this financing involves currency and interest rate derivatives, these instruments are qualified as:

- 1) Fair value hedge of the interest rate risk on the external debt and of the currency risk of the loans to subsidiaries. Changes in fair value of derivatives are recognized in the statement of income as are changes in fair value of underlying financial debts and loans to subsidiaries.

The fair value of those hedging instruments of long-term financing is included in assets under “Non-current financial assets” or in liabilities under “Non-current financial debt” for the non-current portion. The current portion (less than one year) is accounted for in “Current financial assets” or “Other current financial liabilities”.

In case of the anticipated termination of derivative instruments accounted for as fair value hedges, the amount paid or received is recognized in the statement of income and:

- If this termination is due to an early cancellation of the hedged items, the adjustment previously recorded as revaluation of those hedged items is also recognized in the statement of income,
- If the hedged items remain in the balance sheet, the adjustment previously recorded as a revaluation of those hedged items is spread over the remaining life of those items;

- 2) Cash flow hedge when the Group implements a strategy of fixing interest rate on the external debt. Changes in fair value are recorded in Other comprehensive Income for the effective portion of the hedging and in the statement of income for the ineffective portion of the hedging. Amounts recorded in equity are transferred to the income statement when the hedged transaction affects profit or loss.

The fair value of those hedging instruments of long-term financing is included in assets under “Non-current financial assets” or in liabilities under “Non-current financial debt” for the non-current portion. The current portion (less than one year) is accounted for in “Current financial assets” or “Other current financial liabilities”.

If the hedging instrument expires, is sold or terminated by anticipation, gains or losses previously recognized in equity remain in equity. Amounts are recycled to the income statement only when the hedged transaction affects profit or loss.

Foreign subsidiaries’ equity hedge

Certain financial instruments hedge against risks related to the equity of foreign subsidiaries whose functional currency is not the euro (mainly the dollar). These instruments qualify as “net investment hedges” and changes in fair value are recorded in other comprehensive income for the effective portion of the hedging and in the statement of income for the ineffective portion of the hedging. Gains or losses on hedging instruments previously recorded in equity, are reclassified to the statement of income in the same period as the total or partial disposal of the foreign activity.

The fair value of these instruments is recorded under “Current financial assets” or “Other current financial liabilities”.

Commitments to purchase shares held by non-controlling interests (put options written on minority interests)

Put options granted to non-controlling-interest shareholders are initially recognized as financial liabilities at the present value of the exercise price of the options with a corresponding reduction in shareholders’ equity. The financial liability is subsequently measured at fair value at each balance sheet date in accordance with contractual clauses and any variation is recorded in the statement of income (cost of debt).

A) Impact on the statement of income per nature of financial instruments

Assets and liabilities from financing activities

The impact on the statement of income of financing assets and liabilities mainly includes:

- Financial income on cash, cash equivalents, and current financial assets (notably current deposits beyond three months) classified as “Loans and receivables”;
- Financial expense of long term subsidiaries financing, associated hedging instruments (excluding ineffective portion of the hedge detailed below) and financial expense of short term financing classified as “Financing liabilities and associated hedging instruments”;
- Ineffective portion of bond hedging; and

- Financial income, financial expense and fair value of derivative instruments used for cash management purposes classified as “Assets and liabilities held for trading”.

Financial derivative instruments used for cash management purposes (interest rate and foreign exchange) are considered to be held for trading. Based on practical documentation issues, the Group did not elect to set up hedge accounting for such instruments. The impact on income of the derivatives is offset by the impact of loans and current liabilities they are related to. Therefore these transactions taken as a whole do not have a significant impact on the Consolidated Financial Statements.

For the year ended December 31,
(M\$)

	2017	2016	2015
Loans and receivables	53	82	121
Financing liabilities and associated hedging instruments	(1,395)	(1,111)	(965)
Fair value hedge (ineffective portion)	(1)	3	(1)
Assets and liabilities held for trading	(191)	(78)	(28)
IMPACT ON THE COST OF NET DEBT	(1,534)	(1,104)	(873)

B) Impact of the hedging strategies

Fair value hedge

The impact on the Statement of Income of the bond hedging instruments which is recorded in the item “Financial interest on debt” in the Consolidated Statement of Income is detailed as follows:

For the year ended December 31,
(M\$)

	2017	2016	2015
Revaluation at market value of bonds	(2,519)	693	2,133
Swap hedging of bonds	2,518	(690)	(2,134)
INEFFECTIVE PORTION OF THE FAIR VALUE HEDGE	(1)	3	(1)

The ineffective portion is not representative of the Group’s performance considering the Group’s objective to hold swaps to maturity. The current portion of the swaps valuation is not subject to active management.

Net investment hedge

These instruments are recorded directly in other comprehensive income under “Currency translation adjustments”. The variations of the period are detailed in the table below:

For the year ended December 31,
(M\$)

	As of January 1,	Variations	Disposals	As of December 31
2017	(658)	(104)	-	(762)
2016	(674)	16	-	(658)
2015	(511)	(163)	-	(674)

As of December 31, 2017, 2016 and 2015 the Group had no open forward contracts under these hedging instruments.

Cash flow hedge

The impact on the Statement of Income and Other Comprehensive Income of the hedging instruments qualified as cash flow hedges is detailed as follows:

For the year ended December 31,
(M\$)

	2017	2016	2015
Profit (Loss) recorded in equity during the period	253	308	(185)
Recycled amount from equity to the income statement during the period	266	(52)	(205)

As of December 31, 2017, 2016 and 2015, the ineffective portion of these financial instruments is nil.

C) Maturity of derivative instruments

The maturity of the notional amounts of derivative instruments, excluding the commodity contracts, is detailed in the following table:

For the year ended December 31, 2017 (M\$)	Fair value	Notional value 2018	Fair value	2019 and after	Notional value schedule				
					2019	2020	2021	2022	2023 and after
Fair value hedge									
Swaps hedging bonds (assets)	172	2,391	337	5,075					
Swaps hedging bonds (liabilities)	(157)	1,840	(951)	14,669					
TOTAL SWAPS HEDGING BONDS	15	4,231	(614)	19,744	3,247	3,346	1,945	4,336	6,870
Cash flow hedge									
Swaps hedging bonds (assets)	-	-	269	9,466					
Swaps hedging bonds (liabilities)	-	-	(131)	11,288					
TOTAL SWAPS HEDGING BONDS	-	-	138	20,754	969	-	-	-	19,785
Forward exchange contracts related to operational activities (assets)	2	55	-	28					
Forward exchange contracts related to operational activities (liabilities)	-	-	-	-					
TOTAL FORWARD EXCHANGE CONTRACTS RELATED TO OPERATING ACTIVITIES	2	55	-	28	24	4	-	-	-
Held for trading									
Other interest rate swaps (assets)	32	36,775	64	2,300					
Other interest rate swaps (liabilities)	(17)	13,905	(3)	370					
TOTAL OTHER INTEREST RATE SWAPS	15	50,680	61	2,670	41	50	1,000	-	1,579
Currency swaps and forward exchange contracts (assets)	219	15,132	9	175					
Currency swaps and forward exchange contracts (liabilities)	(71)	6,048	(17)	229					
TOTAL CURRENCY SWAPS AND FORWARD EXCHANGE CONTRACTS	148	21,180	(8)	404	222	128	46	7	1

Notional amounts set the levels of commitment and are indicative nor of a contingent gain or loss neither of a related debt.

For the year ended December 31, 2016 (M\$)	Fair value	Notional value 2017	Fair value	2018 and after	Notional value schedule				
					2018	2019	2020	2021	2022 and after
Fair value hedge									
Swaps hedging bonds (assets)	41	2,213	716	7,618					
Swaps hedging bonds (liabilities)	(212)	2,175	(3,007)	20,549					
TOTAL SWAPS HEDGING FIXED-RATES BONDS	(171)	4,388	(2,291)	28,167	4,097	3,172	3,346	1,945	15,607
Cash flow hedge									
Swaps hedging bonds (assets)	-	-	129	3,457					
Swaps hedging bonds (liabilities)	-	-	(644)	5,679					
TOTAL SWAPS HEDGING BONDS	-	-	(515)	9,136	-	969	-	-	8,167
Forward exchange contracts related to operational activities (assets)	3	30	1	13					
Forward exchange contracts related to operational activities (liabilities)	(26)	296	(5)	80					
TOTAL FORWARD EXCHANGE CONTRACTS RELATED TO OPERATING ACTIVITIES	(23)	326	(4)	93	93	-	-	-	-
Held for trading									
Other interest rate swaps (assets)	7	16,582	35	1,859					
Other interest rate swaps (liabilities)	(5)	24,642	(4)	603					
TOTAL OTHER INTEREST RATE SWAPS	2	41,224	31	2,462	1,291	-	-	1,000	171
Currency swaps and forward exchange contracts (assets)	87	6,714	28	578					
Currency swaps and forward exchange contracts (liabilities)	(110)	3,803	(1)	6					
TOTAL CURRENCY SWAPS AND FORWARD EXCHANGE CONTRACTS	(23)	10,517	27	584	322	137	80	43	2

Notional amounts set the levels of commitment and are indicative nor of a contingent gain or loss neither of a related debt.

For the year ended December 31, 2015 (M\$)	Notional value schedule								2021 and after
	Fair value	Notional value 2016	Fair value	2017 and after	2017	2018	2019	2020	
Fair value hedge									
Swaps hedging bonds (assets)	220	2,709	1,075	11,701					
Swaps hedging bonds (liabilities)	(127)	579	(2,891)	21,835					
TOTAL SWAPS HEDGING BONDS	93	3,288	(1,816)	33,536	4,410	4,129	3,190	3,346	18,461
Cash flow hedge									
Swaps hedging bonds (assets)	-	-	144	2,221					
Swaps hedging bonds (liabilities)	-	-	(1)	36					
TOTAL SWAPS HEDGING BONDS	-	-	143	2,257	-	-	969	-	1,288
Forward exchange contracts related to operational activities (assets)	9	145	-	-					
Forward exchange contracts related to operational activities (liabilities)	(61)	497	(42)	376					
TOTAL FORWARD EXCHANGE CONTRACTS RELATED TO OPERATIONAL ACTIVITIES	(52)	642	(42)	376	296	80	-	-	-
Held for trading									
Other interest rate swaps (assets)	7	17,220	1	90					
Other interest rate swaps (liabilities)	(9)	26,914	-	59					
TOTAL OTHER INTEREST RATE SWAPS	(2)	44,134	1	149	82	67	-	-	-
Currency swaps and forward exchange contracts (assets)	82	5,476	22	627					
Currency swaps and forward exchange contracts (liabilities)	(35)	3,970	-	33					
TOTAL CURRENCY SWAPS AND FORWARD EXCHANGE CONTRACTS	47	9,446	22	660	290	226	58	41	45

Notional amounts set the levels of commitment and are indicative nor of a contingent gain or loss neither of a related debt.

D) Fair value hierarchy

ACCOUNTING POLICIES

Fair values are estimated for the majority of the Group’s financial instruments, with the exception of publicly traded equity securities and marketable securities for which the market price is used.

Estimations of fair value, which are based on principles such as discounting future cash flows to present value, must be weighted by the fact that the value of a financial instrument at a given time may be influenced by the market environment (liquidity especially), and also the fact that subsequent changes in interest rates and exchange rates are not taken into account.

As a consequence, the use of different estimates, methodologies and assumptions could have a material effect on the estimated fair value amounts.

The methods used are as follows:

- Financial debts, swaps

The market value of swaps and of bonds that are hedged by those swaps has been determined on an individual basis by discounting future cash flows with the zero coupon interest rate curves existing at year-end.

- Other financial instruments

The fair value of the interest rate swaps and of FRA’s (Forward Rate Agreements) are calculated by discounting future cash flows on the basis of zero coupon interest rate curves existing at year-end after adjustment for interest accrued but unpaid. Forward exchange contracts and currency swaps are valued on the basis of a comparison of the negotiated forward rates with the rates in effect on the financial markets at year-end for similar maturities.

Exchange options are valued based on the Garman-Kohlhagen model including market quotations at year-end.

The fair value hierarchy for financial instruments, excluding commodity contracts, is as follows:

As of December 31, 2017 (M\$)	Quoted prices in active markets for identical assets (level 1)	Prices based on observable data (level 2)	Prices based on non observable data (level 3)	Total
Fair value hedge instruments	-	(599)	-	(599)
Cash flow hedge instruments	-	140	-	140
Assets and liabilities held for trading	-	216	-	216
Assets available for sale	100	-	-	100
TOTAL	100	(243)	-	(143)

As of December 31, 2016 (M\$)	Quoted prices in active markets for identical assets (level 1)	Prices based on observable data (level 2)	Prices based on non observable data (level 3)	Total
Fair value hedge instruments	-	(2,462)	-	(2,462)
Cash flow hedge instruments	-	(542)	-	(542)
Assets and liabilities held for trading	-	37	-	37
Assets available for sale	120	-	-	120
TOTAL	120	(2,967)	-	(2,847)

As of December 31, 2015 (M\$)	Quoted prices in active markets for identical assets (level 1)	Prices based on observable data (level 2)	Prices based on non observable data (level 3)	Total
Fair value hedge instruments	-	(1,723)	-	(1,723)
Cash flow hedge instruments	-	49	-	49
Assets and liabilities held for trading	-	68	-	68
Assets available for sale	59	-	-	59
TOTAL	59	(1,606)	-	(1,547)

15.3 Financial risks management

Financial markets related risks

As part of its financing and cash management activities, the Group uses derivative instruments to manage its exposure to changes in interest rates and foreign exchange rates. These instruments are mainly interest rate and currency swaps. The Group may also occasionally use futures contracts and options. These operations and their accounting treatment are detailed in Notes 14, 15.1 and 15.2 to the Consolidated Financial Statements.

Risks relative to cash management operations and to interest rate and foreign exchange financial instruments are managed according to rules set by the Group's senior management, which provide for regular pooling of available cash balances, open positions and management of the financial instruments by the Treasury Department. Excess cash of the Group is deposited mainly in government institutions, deposit banks, or major companies through deposits, reverse repurchase agreements and purchase of commercial paper. Liquidity positions and the management of financial instruments are centralized by the Treasury Department, where they are managed by a team specialized in foreign exchange and interest rate market transactions.

The Cash Monitoring-Management Unit within the Treasury Department monitors limits and positions per bank on a daily basis and results of the Front Office. This unit also prepares marked-to-market valuations of used financial instruments and, when necessary, performs sensitivity analysis.

Counterparty risk

The Group has established standards for market transactions under which bank counterparties must be approved in advance, based on an assessment of the counterparty's financial soundness (multi-criteria analysis including a review of market prices and of the Credit Default Swap (CDS), its ratings with Standard & Poor's and Moody's, which must be of high quality, and its overall financial condition).

An overall authorized credit limit is set for each bank and is allotted among the subsidiaries and the Group's central treasury entities according to their needs.

To reduce the market value risk on its commitments, in particular for swaps set as part of bonds issuance, the Treasury Department has concluded margin call contracts with counterparties.

Short-term interest rate exposure and cash

Cash balances, which are primarily composed of euros and dollars, are managed according to the guidelines established by the Group's senior management (to maintain an adequate level of liquidity, optimize revenue from investments considering existing interest rate yield curves, and minimize the cost of borrowing) over a less than twelve-month horizon and on the basis of a daily interest rate benchmark, primarily through short-term interest rate swaps and short-term currency swaps, without modifying currency exposure.

Interest rate risk on non-current debt

The Group’s policy consists, according to general corporate needs, of incurring non-current debt at a floating rate or at a fixed rate, depending on the interest rates at the time of issue, in dollars or in euros. Long-term interest rate and currency swaps may be used to hedge bonds at their issuance in order to create a variable or fixed rate synthetic debt. In order to partially modify the interest rate structure of the long-term debt, TOTAL may also enter into long-term interest rate swaps.

Currency exposure

The Group generally seeks to minimize the currency exposure of each entity to its functional currency (primarily the dollar, the euro, the pound sterling and the Norwegian krone).

For currency exposure generated by commercial activity, the hedging of revenues and costs in foreign currencies is typically performed using currency operations on the spot market and, in some cases, on the forward market. The Group rarely hedges future cash flows, although it may use options to do so.

With respect to currency exposure linked to non-current assets, the Group has a hedging policy of financing these assets in their functional currency.

Net short-term currency exposure is periodically monitored against limits set by the Group’s senior management.

The non-current debt described in Note 15.1 to the Consolidated Financial Statements is generally raised by the corporate treasury entities either directly in dollars or in euros, or in other currencies which are then exchanged for dollars or euros through swap issues to appropriately match general corporate needs. The proceeds from these debt issuances are loaned to affiliates whose accounts are kept in dollars or in euros. Thus, the net sensitivity of these positions to currency exposure is not significant.

The Group’s short-term currency swaps, the notional value of which appears in Note 15.2 to the Consolidated Financial Statements, are used to attempt to optimize the centralized cash management of the Group. Thus, the sensitivity to currency fluctuations which may be induced is likewise considered negligible.

Sensitivity analysis on interest rate and foreign exchange risk

The tables below present the potential impact of an increase or decrease of 10 basis points on the interest rate yield curves for each of the currencies on the fair value of the current financial instruments as of December 31, 2017, 2016 and 2015.

ASSETS/(LIABILITIES) <i>(M\$)</i>	Carrying amount	Estimated fair value	Change in fair value due to a change in interest rate by	
			+10 basis points	-10 basis points
AS OF DECEMBER 31, 2017				
Bonds (non-current portion, before swaps)	(36,613)	(38,159)	191	(191)
<i>Swaps hedging fixed-rates bonds (liabilities)</i>	(1,082)	(1,082)	-	-
<i>Swaps hedging fixed-rates bonds (assets)</i>	606	606	-	-
Total swaps hedging fixed-rates bonds (assets and liabilities)	(476)	(476)	(83)	83
Current portion of non-current debt after swap (excluding capital lease obligations)	(4,646)	(4,645)	1	(1)
Other interest rates swaps	76	76	12	(12)
Currency swaps and forward exchange contracts	142	142	-	-
AS OF DECEMBER 31, 2016				
Bonds (non-current portion, before swaps)	(36,656)	(37,757)	221	(221)
<i>Swaps hedging fixed-rates bonds (liabilities)</i>	(3,651)	(3,651)	-	-
<i>Swaps hedging fixed-rates bonds (assets)</i>	845	845	-	-
Total swaps hedging fixed-rates bonds (assets and liabilities)	(2,806)	(2,806)	(117)	117
Current portion of non-current debt after swap (excluding capital lease obligations)	(4,614)	(4,614)	5	(4)
Other interest rates swaps	33	33	7	(7)
Currency swaps and forward exchange contracts	(23)	(23)	-	-
AS OF DECEMBER 31, 2015				
Bonds (non-current portion, before swaps)	(39,257)	(40,087)	156	(156)
<i>Swaps hedging fixed-rates bonds (liabilities)</i>	(2,891)	(2,891)	-	-
<i>Swaps hedging fixed-rates bonds (assets)</i>	1,219	1,219	-	-
Total swaps hedging fixed-rates bonds (assets and liabilities)	(1,672)	(1,672)	(144)	144
Current portion of non-current debt after swap (excluding capital lease obligations)	(4,518)	(4,518)	5	(5)
Other interest rates swaps	(1)	(1)	8	(8)
Currency swaps and forward exchange contracts	(26)	(26)	-	-



The impact of changes in interest rates on the cost of net debt before tax is as follows:

For the year ended December 31, (M\$)	2017	2016	2015
Cost of net debt	(1,534)	(1,104)	(873)
Interest rate translation of:			
+10 basis points	(6)	(17)	(20)
-10 basis points	6	17	20
+100 basis points	(63)	(172)	(204)
-100 basis points	63	172	204

As a result of the policy for the management of currency exposure previously described, the Group's sensitivity to currency exposure is primarily influenced by the net equity of the subsidiaries whose functional currency is the euro and the ruble, and to a lesser extent, the pound sterling, the Norwegian krone.

This sensitivity is reflected in the historical evolution of the currency translation adjustment recorded in the statement of changes in consolidated shareholders' equity which, over the course of the last three years, is essentially related to the fluctuation of the euro, the ruble and the pound sterling and is set forth in the table below:

	Dollar/Euro exchange rates	Dollar/Pound sterling exchange rates	Dollar/Ruble exchange rates
DECEMBER 31, 2017	0.83	0.74	57.86
December 31, 2016	0.95	0.81	61.00
December 31, 2015	0.92	0.67	74.10

As of December 31, 2017 (M\$)	Total	Euro	Dollar	Pound sterling	Ruble	Other currencies
Shareholders' equity at historical exchange rate	119,450	44,930	51,674	6,467	7,366	9,013
Currency translation adjustment before net investment hedge	(7,908)	(1,903)		(1,543)	(3,076)	(1,386)
Net investment hedge – open instruments	14	14				
Shareholders' equity at exchange rate as of December 31, 2017	111,556	43,041	51,674	4,924	4,290	7,627

As of December 31, 2016 (M\$)	Total	Euro	Dollar	Pound sterling	Ruble	Other currencies
Shareholders' equity at historical exchange rate	112,551	38,645	51,863	5,997	7,227	8,819
Currency translation adjustment before net investment hedge	(13,871)	(6,845)		(1,978)	(3,286)	(1,762)
Net investment hedge – open instruments						
Shareholders' equity at exchange rate as of December 31, 2016	98,680	31,800	51,863	4,019	3,941	7,057

As of December 31, 2015 (M\$)	Total	Euro	Dollar	Pound sterling	Ruble	Other currencies
Shareholders' equity at historical exchange rate	104,613	37,345	46,272	5,926	6,816	8,254
Currency translation adjustment before net investment hedge	(12,119)	(5,337)		(1,145)	(3,936)	(1,701)
Net investment hedge – open instruments						
Shareholders' equity at exchange rate as of December 31, 2015	92,494	32,008	46,272	4,781	2,880	6,553

Based on the 2017 financial statements, a conversion using rates different from + or -10% for each of the currencies below would have the following impact on shareholders equity and net income (Group share):

As of December 31, 2017 (M\$)	Euro	Pound sterling	Ruble
Impact of an increase of 10% of exchange rates on:			
- shareholders equity	4,304	492	429
- net income (Group share)	465	19	29
Impact of a decrease of 10% of exchange rates on:			
- shareholders equity	(4,304)	(492)	(429)
- net income (Group share)	(465)	(19)	(29)

Stock market risk

The Group holds interests in a number of publicly-traded companies (see Note 8 to the Consolidated Financial Statements). The market value of these holdings fluctuates due to various factors, including stock market trends, valuations of the sectors in which the companies operate, and the economic and financial condition of each individual company.

As of December 31, 2017, these lines of credit amounted to \$11,478 million, of which \$11,478 million was unused. The agreements for the lines of credit granted to TOTAL S.A. do not contain conditions related to the Company's financial ratios, to its financial ratings from specialized agencies, or to the occurrence of events that could have a material adverse effect on its financial position. As of December 31, 2017, the aggregate amount of the principal confirmed lines of credit granted by international banks to Group companies, including TOTAL S.A., was \$12,323 million, of which \$12,205 million was unused. The lines of credit granted to Group companies other than TOTAL S.A. are not intended to finance the Group's general needs; they are intended to finance either the general needs of the borrowing subsidiary or a specific project.

Liquidity risk

TOTAL S.A. has confirmed lines of credit granted by international banks, which are calculated to allow it to manage its short-term liquidity needs as required.

The following tables show the maturity of the financial assets and liabilities of the Group as of December 31, 2017, 2016 and 2015 (see Note 15 to the Consolidated Financial Statements).

As of December 31, 2017 ASSETS/(LIABILITIES) (M\$)	Less than one year	1-2 years	2-3 years	3-4 years	4-5 years	More than 5 years	Total
Non-current financial debt (notional value excluding interests)	-	(5,930)	(5,117)	(3,795)	(4,959)	(20,860)	(40,661)
Current borrowings	(11,096)	-	-	-	-	-	(11,096)
Other current financial liabilities	(245)	-	-	-	-	-	(245)
Current financial assets	3,393	-	-	-	-	-	3,393
Assets and liabilities available for sale or exchange	-	-	-	-	-	-	-
Cash and cash equivalents	33,185	-	-	-	-	-	33,185
NET AMOUNT BEFORE FINANCIAL EXPENSE	25,237	(5,930)	(5,117)	(3,795)	(4,959)	(20,860)	(15,424)
Financial expense on non-current financial debt	(805)	(779)	(636)	(545)	(454)	(1,093)	(4,312)
Interest differential on swaps	(193)	(223)	(257)	(245)	(198)	(681)	(1,797)
NET AMOUNT	24,239	(6,932)	(6,010)	(4,585)	(5,611)	(22,634)	(21,533)

As of December 31, 2016 ASSETS/(LIABILITIES) (M\$)	Less than one year	1-2 years	2-3 years	3-4 years	4-5 years	More than 5 years	Total
Non-current financial debt (notional value excluding interests)	-	(4,320)	(5,702)	(4,952)	(3,578)	(23,607)	(42,159)
Current borrowings	(13,920)	-	-	-	-	-	(13,920)
Other current financial liabilities	(327)	-	-	-	-	-	(327)
Current financial assets	4,548	-	-	-	-	-	4,548
Assets and liabilities available for sale or exchange	140	-	-	-	-	-	140
Cash and cash equivalents	24,597	-	-	-	-	-	24,597
NET AMOUNT BEFORE FINANCIAL EXPENSE	15,038	(4,320)	(5,702)	(4,952)	(3,578)	(23,607)	(27,121)
Financial expense on non-current financial debt	(799)	(783)	(682)	(552)	(465)	(1,271)	(4,552)
Interest differential on swaps	(79)	(56)	(201)	(253)	(272)	(910)	(1,771)
NET AMOUNT	14,160	(5,159)	(6,585)	(5,757)	(4,315)	(25,788)	(33,444)

As of December 31, 2015 ASSETS/(LIABILITIES) (M\$)	Less than one year	1-2 years	2-3 years	3-4 years	4-5 years	More than 5 years	Total
Non-current financial debt (notional value excluding interests)	-	(4,602)	(4,420)	(5,542)	(4,965)	(23,716)	(43,245)
Current borrowings	(12,488)	-	-	-	-	-	(12,488)
Other current financial liabilities	(171)	-	-	-	-	-	(171)
Current financial assets	6,190	-	-	-	-	-	6,190
Assets and liabilities available for sale or exchange	(141)	-	-	-	-	-	(141)
Cash and cash equivalents	23,269	-	-	-	-	-	23,269
NET AMOUNT BEFORE FINANCIAL EXPENSE	16,659	(4,602)	(4,420)	(5,542)	(4,965)	(23,716)	(26,586)
Financial expense on non-current financial debt	(763)	(813)	(747)	(663)	(524)	(1,104)	(4,614)
Interest differential on swaps	131	171	48	(55)	(126)	(610)	(441)
NET AMOUNT	16,027	(5,244)	(5,119)	(6,260)	(5,615)	(25,430)	(31,641)

The following table sets forth financial assets and liabilities related to operating activities as of December 31, 2017, 2016 and 2015 (see Note 14 of the Notes to the Consolidated Financial Statements).

As of December 31, ASSETS/(LIABILITIES) (M\$)	2017	2016	2015
Accounts payable	(26,479)	(23,227)	(20,928)
Other operating liabilities	(10,135)	(9,616)	(9,914)
including financial instruments related to commodity contracts	(1,794)	(2,077)	(1,609)
Accounts receivable, net	14,893	12,213	10,629
Other operating receivables	9,336	10,218	10,909
including financial instruments related to commodity contracts	1,987	2,425	3,379
TOTAL	(12,385)	(10,412)	(9,304)

These financial assets and liabilities mainly have a maturity date below one year.

Credit risk

Credit risk is defined as the risk of the counterparty to a contract failing to perform or pay the amounts due.

The Group is exposed to credit risks in its operating and financing activities. The Group’s maximum exposure to credit risk is partially related to financial assets recorded on its balance sheet, including energy derivative instruments that have a positive market value.

The following table presents the Group’s maximum credit risk exposure:

As of December 31, ASSETS/(LIABILITIES) <i>(M\$)</i>	2017	2016	2015
Loans to equity affiliates <i>(Note 8)</i>	5,135	4,718	4,378
Loans and advances <i>(Note 6)</i>	2,878	3,048	3,407
Other non-current financial assets related to operational activities <i>(Note 6)</i>	937	1,069	891
Non-current financial assets <i>(Note 15.1)</i>	679	908	1,219
Accounts receivable <i>(Note 5)</i>	14,893	12,213	10,629
Other operating receivables <i>(Note 5)</i>	9,336	10,218	10,909
Current financial assets <i>(Note 15.1)</i>	3,393	4,548	6,190
Cash and cash equivalents <i>(Note 15.1)</i>	33,185	24,597	23,269
TOTAL	70,436	61,319	60,892

The valuation allowance on accounts receivable, other operating receivables and on loans and advances is detailed in Notes 5 and 6 to the Consolidated Financial Statements.

As part of its credit risk management related to operating and financing activities, the Group has developed margining agreements with certain counterparties. As of December 31, 2017, the net margin call paid amounted to \$870 million (against \$2,605 million paid as of December 31, 2016 and \$124 million paid as of December 31, 2015).

The Group has established a number of programs for the sale of receivables, without recourse, with various banks, primarily to reduce its exposure to such receivables. As a result of these programs the Group retains no risk of payment default after the sale, but may continue to service the customer accounts as part of a service arrangement on behalf of the buyer and is required to pay to the buyer payments it receives from the customers relating to the receivables sold. As of December 31, 2017, the net value of receivables sold amounted to \$7,845 million. The Group has substantially transferred all the risks and rewards related to receivables. No financial asset or liability remains recognized in the consolidated balance sheet after the date of sale.

Furthermore, in 2017 the Group conducted several operations of reverse factoring for a value of \$300 million.

Credit risk is managed by the Group’s business segments as follows:

- Exploration & Production segment

Risks arising under contracts with government authorities or other oil companies or under long-term supply contracts necessary for the development of projects are evaluated during the project approval process. The long-term aspect of these contracts and the high-quality of the other parties lead to a low level of credit risk.

Risks related to commercial operations, other than those described above (which are, in practice, directly monitored by subsidiaries), are subject to procedures for establishing credit limits and reviewing outstanding balances.

Customer receivables are subject to provisions on a case-by-case basis, based on prior history and management’s assessment of the facts and circumstances.

- Gas, Renewables & Power segment

- Gas activities

Trading Gas activities deal with counterparties in the energy, industrial and financial sectors throughout the world. Financial institutions providing credit risk coverage are highly rated international bank and insurance groups.

Potential counterparties are subject to credit assessment and approval before concluding transactions and are thereafter subject to regular review, including re-appraisal and approval of the limits previously granted.

The creditworthiness of counterparties is assessed based on an analysis of quantitative and qualitative data regarding financial standing and business risks, together with the review of any relevant third party and market information, such as data published by rating agencies. On this basis, credit limits are defined for each potential counterparty and, where appropriate, transactions are subject to specific authorizations.

Credit exposure, which is essentially an economic exposure or an expected future physical exposure, is permanently monitored and subject to sensitivity measures.

Credit risk is mitigated by the systematic use of industry standard contractual frameworks that permit netting, enable requiring added security in case of adverse change in the counterparty risk, and allow for termination of the contract upon occurrence of certain events of default.

About the Professionals and Retail Gas and Power Sales activities, credit risk management policy is adapted to the type of customer either through the use of procedures of prepayments and appropriate collection, especially for mass customers or through credit insurances and sureties/guarantees obtaining. For the Professionals segment, the separation of responsibilities between the commercial and financial teams allows a “a priori” positions risky control.

- Renewables & Power

Internal procedures for the Renewables division and the Innovation & Energy Efficiency division include rules on credit risk management. Procedures to monitor customer risk are defined at the local level, especially for SunPower and Saft (rules for the approval of credit limits, use of guarantees, monitoring and assessment of the receivables portfolio, provisioning of doubtful debts...).

- **Refining & Chemicals segment**

- Refining & Chemicals

Credit risk is primarily related to commercial receivables. Internal procedures of Refining & Chemicals include rules for the management of credit describing the fundamentals of internal control in this domain. Each Business Unit implements the procedures of the activity for managing and provisioning credit risk according to the size of the subsidiary and the market in which it operates. The principal elements of these procedures are:

- implementation of credit limits with different authorization procedures,
- use of insurance policies or specific guarantees (letters of credit),
- regular monitoring and assessment of overdue accounts (aging balance), including collection procedures,
- provisioning of bad debts on a customer-by-customer basis, according to payment delays and local payment practices (provisions may also be calculated based on statistics).

Counterparties are subject to credit assessment and approval prior to any transaction being concluded. Regular reviews are made for all active counterparties including a re-appraisal and renewing of the granted credit limits. The limits of the counterparties are assessed based on quantitative and qualitative data regarding financial standing, together with the review of any relevant third party and market information, such as that provided by rating agencies and insurance companies;

- Trading & Shipping

Trading & Shipping deals with commercial counterparties and financial institutions located throughout the world. Counterparties to physical and derivative transactions are primarily entities involved in the oil and gas industry or in the trading of energy commodities, or financial institutions. Credit risk coverage is

arranged with financial institutions, international banks and insurance groups selected in accordance with strict criteria.

The Trading & Shipping division applies a strict policy of internal delegation of authority governing establishment of country and counterparty credit limits and approval of specific transactions. Credit exposures contracted under these limits and approvals are monitored on a daily basis.

Potential counterparties are subject to credit assessment and approval prior to any transaction being concluded and all active counterparties are subject to regular reviews, including re-appraisal and approval of granted limits. The creditworthiness of counterparties is assessed based on an analysis of quantitative and qualitative data regarding financial standing and business risks, together with the review of any relevant third party and market information, such as ratings published by Standard & Poor's, Moody's Investors Service and other agencies.

Contractual arrangements are structured so as to maximize the risk mitigation benefits of netting between transactions wherever possible and additional protective terms providing for the provision of security in the event of financial deterioration and the termination of transactions on the occurrence of defined default events are used to the greatest permitted extent.

Credit risks in excess of approved levels are secured by means of letters of credit and other guarantees, cash deposits and insurance arrangements. In respect of derivative transactions, risks are secured by margin call contracts wherever possible.

- **Marketing & Services segment**

Internal procedures for the Marketing & Services division include rules on credit risk that describe the basis of internal control in this domain, including the separation of authority between commercial and financial operations.

Credit policies are defined at the local level and procedures to monitor customer risk are implemented (credit committees at the subsidiary level, the creation of credit limits for corporate customers, etc.). Each entity also implements monitoring of its outstanding receivables. Risks related to credit may be mitigated or limited by subscription of credit insurance and/or requiring security or guarantees.

Bad debts are provisioned on a case-by-case basis at a rate determined by management based on an assessment of the risk of credit loss.

NOTE 16 Financial instruments related to commodity contracts

16.1 Financial instruments related to commodity contracts

ACCOUNTING POLICIES

Financial instruments related to commodity contracts, including crude oil, petroleum products, gas, and power purchase/sales contracts within the trading activities, together with the commodity contract derivative instruments such as energy contracts and forward freight agreements, are used to adjust the Group's exposure to price fluctuations within global trading limits. According to the industry practice, these instruments are considered as held for trading. Changes in fair value are recorded in the statement of income. The fair value of these instruments is recorded in "Other current assets" or "Other creditors and accrued liabilities" depending on whether they are assets or liabilities.

The valuation methodology is to mark-to-market all open positions for both physical and paper transactions. The valuations are determined on a daily basis using observable market data based on organized and over the counter (OTC) markets. In particular cases when market data is not directly available, the valuations are derived from observable data such as arbitrages, freight or spreads and market corroboration. For valuation of risks which are the result of a calculation, such as options for example, commonly known models are used to compute the fair value.

As of December 31, 2017 (M\$) ASSETS/(LIABILITIES)	Gross value before offsetting – assets	Gross value before offsetting – liabilities	Amounts offset – assets ^(c)	Amounts offset – liabilities ^(c)	Net balance sheet value presented – assets	Net balance sheet value presented – liabilities	Other amounts not offset	Net carrying amount	Fair value ^(b)
Crude oil, petroleum products and freight rates activities									
Petroleum products, crude oil and freight rate swaps	244	(333)	(102)	102	142	(231)	-	(89)	(89)
Forwards ^(a)	109	(113)	(12)	12	97	(101)	-	(4)	(4)
Options	82	(163)	(52)	52	30	(111)	-	(81)	(81)
Futures	-	-	-	-	-	-	-	-	-
Options on futures	202	(251)	(155)	155	47	(96)	-	(49)	(49)
Other/Collateral	-	-	-	-	-	-	63	63	63
TOTAL CRUDE OIL, PETROLEUM PRODUCTS AND FREIGHT RATES	637	(860)	(321)	321	316	(539)	63	(160)	(160)
Gas, Renewables & Power activities									
Swaps	76	(7)	(3)	3	73	(4)	-	69	69
Forwards ^(a)	1,717	(1,345)	(92)	92	1,625	(1,253)	-	372	372
Options	6	(30)	(33)	33	(27)	3	-	(24)	(24)
Futures	-	(1)	-	-	-	(1)	-	(1)	(1)
Other/Collateral	-	-	-	-	-	-	(86)	(86)	(86)
TOTAL GAS, RENEWABLES & POWER	1,799	(1,383)	(128)	128	1,671	(1,255)	(86)	330	330
TOTAL	2,436	(2,243)	(449)	449	1,987	(1,794)	(23)	170	170
Total of fair value non recognized in the balance sheet									-

(a) Forwards: contracts resulting in physical delivery are accounted for as derivative commodity contracts and included in the amounts shown.

(b) When the fair value of derivatives listed on an organized exchange market (futures, options on futures and swaps) is offset with the margin call received or paid in the balance sheet, this fair value is set to zero.

(c) Amounts offset in accordance with IAS 32.

As of December 31, 2016 (M\$) ASSETS/(LIABILITIES)	Gross value before offsetting – assets	Gross value before offsetting – liabilities	Amounts offset – assets ^(c)	Amounts offset – liabilities ^(c)	Net balance sheet value presented – assets	Net balance sheet value presented – liabilities	Other amounts not offset	Net carrying amount	Fair value ^(b)
Crude oil, petroleum products and freight rates activities									
Petroleum products, crude oil and freight rate swaps	464	(266)	(140)	140	324	(126)	-	198	198
Forwards ^(a)	172	(214)	(8)	8	164	(206)	-	(42)	(42)
Options	194	(207)	(125)	125	69	(82)	-	(13)	(13)
Futures	-	-	-	-	-	-	-	-	-
Options on futures	151	(164)	(150)	150	1	(14)	-	(13)	(13)
Other/Collateral	-	-	-	-	-	-	(220)	(220)	(220)
TOTAL CRUDE OIL, PETROLEUM PRODUCTS AND FREIGHT RATES	981	(851)	(423)	423	558	(428)	(220)	(90)	(90)
Gas, Renewables & Power activities									
Swaps	63	(39)	(3)	3	60	(36)	-	24	24
Forwards ^(a)	1,879	(1,672)	(61)	61	1,818	(1,611)	-	207	207
Options	15	(28)	(26)	26	(11)	(2)	-	(13)	(13)
Futures	-	-	-	-	-	-	-	-	-
Other/Collateral	-	-	-	-	-	-	(97)	(97)	(97)
TOTAL GAS, RENEWABLES & POWER	1,957	(1,739)	(90)	90	1,867	(1,649)	(97)	121	121
TOTAL	2,938	(2,590)	(513)	513	2,425	(2,077)	(317)	31	31
Total of fair value non recognized in the balance sheet									
									-

(a) Forwards: contracts resulting in physical delivery are accounted for as derivative commodity contracts and included in the amounts shown.

(b) When the fair value of derivatives listed on an organized exchange market (futures, options on futures and swaps) is offset with the margin call received or paid in the balance sheet, this fair value is set to zero.

(c) Amounts offset in accordance with IAS 32.

As of December 31, 2015 (M\$) ASSETS/(LIABILITIES)	Gross value before offsetting – assets	Gross value before offsetting – liabilities	Amounts offset – assets ^(c)	Amounts offset – liabilities ^(c)	Net balance sheet value presented – assets	Net balance sheet value presented – liabilities	Other amounts not offset	Net carrying amount	Fair value ^(b)
Crude oil, petroleum products and freight rates activities									
Petroleum products, crude oil and freight rate swaps	1,517	(498)	(350)	350	1,167	(148)	-	1,019	1,019
Forwards ^(a)	68	(130)	(25)	25	43	(105)	-	(62)	(62)
Options	660	(468)	(460)	460	200	(8)	-	192	192
Futures	9	-	-	-	9	-	-	9	9
Options on futures	127	(128)	(127)	127	-	(1)	-	(1)	(1)
Other/Collateral	-	-	-	-	-	-	(1,145)	(1,145)	(1,145)
TOTAL CRUDE OIL, PETROLEUM PRODUCTS AND FREIGHT RATES	2,381	(1,224)	(962)	962	1,419	(262)	(1,145)	12	12
Gas, Renewables & Power activities									
Swaps	50	(175)	(19)	19	31	(156)	-	(125)	(125)
Forwards ^(a)	2,255	(1,498)	(320)	320	1,935	(1,178)	-	757	757
Options	5	(24)	(11)	11	(6)	(13)	-	(19)	(19)
Futures	-	-	-	-	-	-	-	-	-
Other/Collateral	-	-	-	-	-	-	23	23	23
TOTAL GAS, RENEWABLES & POWER	2,310	(1,697)	(350)	350	1,960	(1,347)	23	636	636
TOTAL	4,691	(2,921)	(1,312)	1,312	3,379	(1,609)	(1,122)	648	648
Total of fair value non recognized in the balance sheet									
									-

(a) Forwards: contracts resulting in physical delivery are accounted for as derivative commodity contracts and included in the amounts shown.

(b) When the fair value of derivatives listed on an organized exchange market (futures, options on futures and swaps) is offset with the margin call received or paid in the balance sheet, this fair value is set to zero.

(c) Amounts offset in accordance with IAS 32.

Most commitments on crude oil and refined products have a short term maturity (less than one year). The maturity of most Gas, Renewables & Power division derivatives is less than three years forward.

The changes in fair value of financial instruments related to commodity contracts are detailed as follows:

For the year ended December 31, (M\$)	Fair value as of January 1,	Impact on income	Settled contracts	Other	Fair value as of December 31,
Crude oil, petroleum products and freight rates activities					
2017	130	2,693	(3,047)	-	(223)
2016	1,157	3,013	(4,040)	-	130
2015	897	3,318	(3,058)	-	1,157
Gas, Renewables & Power activities					
2017	218	717	(554)	35	416
2016	613	392	(742)	(45)	218
2015	532	113	3	(35)	613

The fair value hierarchy for financial instruments related to commodity contracts is as follows:

As of December 31, 2017 (M\$)	Quoted prices in active markets for identical assets (level 1)	Prices based on observable data (level 2)	Prices based on non observable data (level 3)	Total
Crude oil, petroleum products and freight rates activities	(49)	(173)	-	(223)
Gas, Renewables & Power activities	288	128	-	416
TOTAL	239	(45)	-	193

As of December 31, 2016 (M\$)	Quoted prices in active markets for identical assets (level 1)	Prices based on observable data (level 2)	Prices based on non observable data (level 3)	Total
Crude oil, petroleum products and freight rates activities	(22)	152	-	130
Gas, Renewables & Power activities	409	(191)	-	218
TOTAL	387	(39)	-	348

As of December 31, 2015 (M\$)	Quoted prices in active markets for identical assets (level 1)	Prices based on observable data (level 2)	Prices based on non observable data (level 3)	Total
Crude oil, petroleum products and freight rates activities	15	1,142	-	1,157
Gas, Renewables & Power activities	79	534	-	613
TOTAL	94	1,676	-	1,770

The description of each fair value level is presented in Note 15 to the Consolidated Financial Statements.

Cash Flow hedge

The impact on the statement of income and other comprehensive income of the hedging instruments related to commodity contracts and qualified as cash flow hedges is detailed as follows:

As of December 31, (M\$)	2017	2016	2015
Profit (Loss) recorded in equity during the period	71	(69)	-
Recycled amount from equity to the income statement during the period	(6)	(1)	-

These financial instruments are mainly one year term Henry Hub derivatives.

As of December 31, 2017, the ineffective portion of these financial instruments is nil (in 2016 the ineffective portion of these financial instruments was a loss of \$5 million and in 2015, the ineffective portion of these financial instruments was nil).

16.2 Oil and Gas market related risks management

Oil and gas market related risks

Due to the nature of its business, the Group has significant oil and gas trading activities as part of its day-to-day operations in order to optimize revenues from its oil and gas production and to obtain favorable pricing to supply its refineries.

In its international oil trading business, the Group follows a policy of not selling its future production. However, in connection with this trading business, the Group, like most other oil companies, uses energy derivative instruments to adjust its exposure to price fluctuations of crude oil, refined products, natural gas, and power. The Group also uses freight rate derivative contracts in its shipping business to adjust its exposure to freight-rate fluctuations. To hedge against this risk, the Group uses various instruments such as futures, forwards, swaps and options on organized markets or

over-the-counter markets. The list of the different derivatives held by the Group in these markets is detailed in Note 16.1 to the Consolidated Financial Statements.

The Trading & Shipping division measures its market risk exposure, *i.e.* potential loss in fair values, on its crude oil, refined products and freight rates trading activities using a value-at-risk technique. This technique is based on an historical model and makes an assessment of the market risk arising from possible future changes in market values over a 24-hour period. The calculation of the range of potential changes in fair values is based on the end-of-day exposures and historical price movements of the last 400 business days for all traded instruments and maturities. Options are systematically re-evaluated using appropriate models.

The “value-at-risk” represents the most unfavorable movement in fair value obtained with a 97.5% confidence level. This means that the Group’s portfolio result is likely to exceed the value-at-risk loss measure once over 40 business days if the portfolio exposures were left unchanged.

Trading & Shipping: value-at-risk with a 97.5% probability

As of December 31,
(M\$)

	High	Low	Average	Year end
2017	28.4	4.1	15.6	6.6
2016	24.6	7.2	14.0	22.1
2015	11.6	5.5	8.6	7.4

As part of its gas and power trading activity, the Group also uses derivative instruments such as futures, forwards, swaps and options in both organized and over-the-counter markets. In general, the transactions are settled at maturity date through physical delivery. The Gas division measures its market risk exposure, *i.e.* potential loss in fair values, on its trading business using a value-at-risk technique. This technique is based on an historical model and makes an

assessment of the market risk arising from possible future changes in market values over a one-day period. The calculation of the range of potential changes in fair values takes into account a snapshot of the end-of-day exposures and the set of historical price movements for the past two years for all instruments and maturities in the global trading business.

Gas, Renewables & Power division trading: value-at-risk with a 97.5% probability

As of December 31,
(M\$)

	High	Low	Average	Year end
2017	12.5	2.8	6.3	4.2
2016	8.4	2.0	3.9	2.1
2015	15.8	2.0	7.1	8.0

The Group has implemented strict policies and procedures to manage and monitor these market risks. These are based on the separation of control and front-office functions and on an integrated information system that enables real-time monitoring of trading activities.

Limits on trading positions are approved by the Group’s Executive Committee and are monitored daily. To increase flexibility and

encourage liquidity, hedging operations are performed with numerous independent operators, including other oil companies, major energy producers or consumers and financial institutions. The Group has established counterparty limits and monitors outstanding amounts with each counterparty on an ongoing basis.

NOTE 17 Post closing events

Exploration & Production

- Acquisition of Maersk Oil

On August 21, 2017, TOTAL S.A. and the Danish company AP Møller – Maersk A/S entered into a share transfer agreement pursuant to which it was agreed that AP Møller – Maersk A/S sell to TOTAL the entire capital of its subsidiary, Maersk Olie og Gas A/S (Maersk Oil), in the context of a transaction in shares (contributions of shares) and in debt, with the payment of a cash counterpart, subject to the fulfillment of different conditions precedent.

At its meeting of February 7, 2018, the Board of Directors which approved the Group's financial statements also approved, pursuant to the delegation granted to it, subject to the fulfillment of the conditions precedent stipulated in the Share Transfer Agreement other than those already carried out at the date of the meeting of the Board of Directors, the capital increase intended to remunerate the contribution to TOTAL S.A. of the shares of Maersk Oil.

The TOTAL Group is expected to finalize the acquisition of the Maersk Oil shares in 2018 for an overall financial value consisting of three elements: (i) the fair value of the 97,522,593 TOTAL S.A. shares

issued in consideration for the Maersk Oil shares (ii) \$2.5 billion Maersk Oil debt to the Maersk group assumed by TOTAL group, and (iii) an additional cash payment related to closing elements.

- Strategic alliance with Petrobras in Brazil

On January 12, 2018, Petrobras and TOTAL finalized the transfer of rights in the Lapa and Iara concessions for an amount of \$1.95 billion.

Marketing & Services

- TotalErg

On January 10, 2018, TOTAL closed the sale of TotalErg to API Group for a Group share amount of \$174 million (€154 million).

Gas, Renewables & Power

- SunPower

The Group acknowledged the decision of the US administration on January 23, 2018, to raise tariffs on imports of solar panels in the United States (201 solar trade case). The consequences of this decision are currently being reviewed by SunPower.

NOTE 18 Consolidation scope

As of December 31, 2017, 972 entities are consolidated of which 867 are fully consolidated and 105 are accounted for under the equity method (E).

The table below sets forth the main Group consolidated entities:

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Exploration & Production					
	Abu Dhabi Gas Industries Limited	15.00%	E	United Arab Emirates	United Arab Emirates
	Abu Dhabi Gas Liquefaction Company Limited	5.00%	E	United Arab Emirates	United Arab Emirates
	Abu Dhabi Marine Areas Limited	33.33%	E	United Kingdom	United Arab Emirates
	Abu Dhabi Petroleum Company Limited	23.75%	E	United Kingdom	United Arab Emirates
	Angola Block 14 B.V.	50.01%		Netherlands	Angola
	Angola LNG Limited	13.60%	E	Bermuda	Angola
	Angola LNG Supply Services, LLC	13.60%	E	United States	United States
	Bonny Gas Transport Limited	15.00%	E	Bermuda	Nigeria
	Brass Holdings S.A.R.L.	100.00%		Luxembourg	Luxembourg
	Brass LNG Limited	20.48%	E	Nigeria	Nigeria
	Deer Creek Pipelines Limited	75.00%		Canada	Canada
	Dolphin Energy Limited	24.50%	E	United Arab Emirates	United Arab Emirates
	E.F. Oil And Gas Limited	100.00%		United Kingdom	United Kingdom
	Elf E&P	100.00%		France	France
	Elf Exploration UK Limited	100.00%		United Kingdom	United Kingdom
	Elf Petroleum Iran	100.00%		France	Iran
	Elf Petroleum UK Limited	100.00%		United Kingdom	United Kingdom
	Gas Investment and Services Company Limited	10.00%	E	Bermuda	Oman
	Ichthys LNG PTY Limited	30.00%	E	Australia	Australia
	Mabruk Oil Operations	49.02%		France	Libya
	Moattama Gas Transportation Company Limited	31.24%	E	Bermuda	Myanmar
	National Gas Shipping Company Limited	5.00%	E	United Arab Emirates	United Arab Emirates
	Nigeria LNG Limited	15.00%	E	Nigeria	Nigeria
	Norpipe Oil A/S	34.93%	E	Norway	Norway
	Norpipe Petroleum UK Limited	32.87%	E	United Kingdom	Norway
	Norsea Pipeline Limited	32.87%	E	United Kingdom	Norway
	North Oil Company	30.00%	E	Qatar	Qatar
	Novatek	18.90%	E	Russia	Russia
	Oman LNG, LLC	5.54%	E	Oman	Oman
	Pars LNG Limited	40.00%	E	Bermuda	Iran
	Petrocedaño	30.32%	E	Venezuela	Venezuela
	Private Oil Holdings Oman Limited	10.00%	E	United Kingdom	Oman
	Qatar Liquefied Gas Company Limited	10.00%	E	Qatar	Qatar
	Qatar Liquefied Gas Company Limited (II)	16.70%	E	Qatar	Qatar
	Stogg Eagle Funding B.V.	100.00%		Netherlands	Nigeria
	Terneftegas LLC ^(a)	58.64%	E	Russia	Russia
	Total (BTC) B.V.	100.00%		Netherlands	Netherlands
	Total Abu Al Bu Khoosh	100.00%		France	United Arab Emirates
	Total Austral	100.00%		France	Argentina
	Total Brazil Services B.V.	100.00%		Netherlands	Netherlands
	Total Dolphin Midstream	100.00%		France	France
	Total E&P Absheron B.V.	100.00%		Netherlands	Azerbaijan
	Total E&P Algérie	100.00%		France	Algeria
	Total E&P Americas, LLC	100.00%		United States	United States
	Total E&P Angola	100.00%		France	Angola
	Total E&P Angola Block 15/06 Limited	100.00%		Bermuda	Angola
	Total E&P Angola Block 17.06	100.00%		France	Angola
	Total E&P Angola Block 25	100.00%		France	Angola
	Total E&P Angola Block 32	100.00%		France	Angola
	Total E&P Angola Block 33	100.00%		France	Angola
	Total E&P Angola Block 39	100.00%		France	Angola
	Total E&P Angola Block 40	100.00%		France	Angola

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Exploration & Production (contd)					
	Total E&P Aruba B.V.	100.00%		Netherlands	Aruba
	Total E&P Asia Pacific Pte. Limited	100.00%		Singapore	Singapore
	Total E&P Australia	100.00%		France	Australia
	Total E&P Australia Exploration PTY Limited	100.00%		Australia	Australia
	Total E&P Australia II	100.00%		France	Australia
	Total E&P Australia III	100.00%		France	Australia
	Total E&P Azerbaijan B.V.	100.00%		Netherlands	Azerbaijan
	Total E&P Bolivie	100.00%		France	Bolivia
	Total E&P Borneo B.V.	100.00%		Netherlands	Brunei
	Total E&P Bulgaria B.V.	100.00%		Netherlands	Bulgaria
	Total E&P Cambodia	100.00%		France	Cambodia
	Total E&P Canada Limited	100.00%		Canada	Canada
	Total E&P Chine	100.00%		France	China
	Total E&P Chorey	100.00%		United States	United States
	Total E&P Colombie	100.00%		France	Colombia
	Total E&P Congo	85.00%		Republic of the Congo	Republic of the Congo
	Total E&P Côte d'Ivoire	100.00%		France	Côte d'Ivoire
	Total E&P Côte d'Ivoire CI – 514	100.00%		France	Côte d'Ivoire
	Total E&P Côte d'Ivoire CI – 515	100.00%		France	Côte d'Ivoire
	Total E&P Côte d'Ivoire CI – 516	100.00%		France	Côte d'Ivoire
	Total E&P Côte d'Ivoire CI-605 B.V.	100.00%		Netherlands	Côte d'Ivoire
	Total E&P Cyprus B.V.	100.00%		Netherlands	Cyprus
	Total E&P Deep Offshore Borneo B.V.	100.00%		Netherlands	Brunei
	Total E&P Denmark B.V.	100.00%		Netherlands	Denmark
	Total E&P Do Brasil Ltda	100.00%		Brazil	Brazil
	Total E&P Dolphin Upstream	100.00%		France	France
	Total E&P East El Burullus Offshore B.V.	100.00%		Netherlands	Egypt
	Total E&P Egypt Block 2 B.V.	100.00%		Netherlands	Egypt
	Total E&P Égypte	100.00%		France	Egypt
	Total E&P Europe and Central Asia Limited	100.00%		United Kingdom	United Kingdom
	Total E&P France	100.00%		France	France
	Total E&P Golfe Limited	100.00%		France	Qatar
	Total E&P Guyane Francaise	100.00%		France	France
	Total E&P Holding Ichthys	100.00%		France	France
	Total E&P Holdings Australia PTY Limited	100.00%		Australia	Australia
	Total E&P Holdings Russia	100.00%		France	France
	Total E&P Holdings UAE B.V.	100.00%		Netherlands	United Arab Emirates
	Total E&P Ichthys B.V.	100.00%		Netherlands	Australia
	Total E&P Indonesia Mentawai B.V.	100.00%		Netherlands	Indonesia
	Total E&P Indonesia Telen B.V.	100.00%		Netherlands	Indonesia
	Total E&P Indonésie	100.00%		France	Indonesia
	Total E&P Iraq	100.00%		France	Iraq
	Total E&P Ireland B.V.	100.00%		Netherlands	Ireland
	Total E&P Italia	100.00%		Italy	Italy
	Total E&P Kazakhstan	100.00%		France	Kazakhstan
	Total E&P Kenya B.V.	100.00%		Netherlands	Kenya
	Total E&P Kurdistan Region of Iraq (Harir) B.V.	100.00%		Netherlands	Iraq
	Total E&P Kurdistan Region of Iraq (Safen) B.V.	100.00%		Netherlands	Iraq
	Total E&P Kurdistan Region of Iraq (Taza) B.V.	100.00%		Netherlands	Iraq
	Total E&P Kurdistan Region of Iraq B.V.	100.00%		Netherlands	Iraq
	Total E&P Libye	100.00%		France	Libya
	Total E&P Malaysia	100.00%		France	Malaysia
	Total E&P Mauritania Block C18 B.V.	100.00%		Netherlands	Mauritania
	Total E&P Mauritania Block C9 B.V.	100.00%		Netherlands	Mauritania
	Total E&P Mauritania Blocks DW B.V.	100.00%		Netherlands	Mauritania
	Total E&P Mauritanie	100.00%		France	Mauritania
	Total E&P Mauritanie Block TA29 B.V.	100.00%		Netherlands	Mauritania

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Exploration & Production (contd)					
	Total E&P Mexico S.A. de C.V.	100.00%		Mexico	Mexico
	Total E&P Mozambique B.V.	100.00%		Netherlands	Mozambique
	Total E&P Myanmar	100.00%		France	Myanmar
	Total E&P Namibia B.V.	100.00%		Netherlands	Namibia
	Total E&P Nederland B.V.	100.00%		Netherlands	Netherlands
	Total E&P New Ventures Inc.	100.00%		United States	United States
	Total E&P Nigeria Deepwater A Limited	100.00%		Nigeria	Nigeria
	Total E&P Nigeria Deepwater B Limited	100.00%		Nigeria	Nigeria
	Total E&P Nigeria Deepwater C Limited	100.00%		Nigeria	Nigeria
	Total E&P Nigeria Deepwater D Limited	100.00%		Nigeria	Nigeria
	Total E&P Nigeria Deepwater E Limited	100.00%		Nigeria	Nigeria
	Total E&P Nigeria Deepwater F Limited	100.00%		Nigeria	Nigeria
	Total E&P Nigeria Deepwater G Limited	100.00%		Nigeria	Nigeria
	Total E&P Nigeria Deepwater H Limited	100.00%		Nigeria	Nigeria
	Total E&P Nigeria Limited	100.00%		Nigeria	Nigeria
	Total E&P Nigeria S.A.S.	100.00%		France	France
	Total E&P Norge AS	100.00%		Norway	Norway
	Total E&P Oman	100.00%		France	Oman
	Total E&P Philippines B.V.	100.00%		Netherlands	Philippines
	Total E&P PNG 2 B.V.	100.00%		Netherlands	Papua New Guinea
	Total E&P PNG 5 B.V.	100.00%		Netherlands	Papua New Guinea
	Total E&P PNG Limited	100.00%		Papua New Guinea	Papua New Guinea
	Total E&P Poland B.V.	100.00%		Netherlands	Poland
	Total E&P Qatar	100.00%		France	Qatar
	Total E&P RDC	100.00%		Democratic Republic of Congo	Democratic Republic of Congo
	Total E&P Research & Technology USA LLC	100.00%		United States	United States
	Total E&P Russie	100.00%		France	Russia
	Total E&P Sebuk	100.00%		France	Indonesia
	Total E&P Senegal	100.00%		France	Senegal
	Total E&P Services China Company Limited	100.00%		China	China
	Total E&P South Africa B.V.	100.00%		Netherlands	South Africa
	Total E&P South Pars	100.00%		France	Iran
	Total E&P South Sudan	100.00%		France	Republic of South Sudan
	Total E&P Syrie	100.00%		France	Syria
	Total E&P Tajikistan B.V.	100.00%		Netherlands	Tajikistan
	Total E&P Thailand	100.00%		France	Thailand
	Total E&P Timan-Pechora LLC	100.00%		Russia	Russia
	Total E&P Uganda B.V.	100.00%		Netherlands	Uganda
	Total E&P UK Limited	100.00%		United Kingdom	United Kingdom
	Total E&P Uruguay B.V.	100.00%		Netherlands	Uruguay
	Total E&P Uruguay Onshore B.V.	100.00%		Netherlands	Uruguay
	Total E&P USA Inc.	100.00%		United States	United States
	Total E&P USA Oil Shale, LLC	100.00%		United States	United States
	Total E&P Well Response	100.00%		France	France
	Total E&P Yamal	100.00%		France	France
	Total E&P Yemen	100.00%		France	Yemen
	Total E&P Yemen Block 3 B.V.	100.00%		Netherlands	Yemen
	Total East Africa Midstream B.V.	100.00%		Netherlands	Uganda
	Total Exploration M'Bridge	100.00%		Netherlands	Angola
	Total Facilities Management B.V.	100.00%		Netherlands	Netherlands
	Total Gabon	58.28%		Gabon	Gabon
	Total Gass Handel Norge AS	100.00%		Norway	Norway
	Total Gastransport Nederland B.V.	100.00%		Netherlands	Netherlands
	Total GLNG Australia	100.00%		France	Australia
	Total GLNG Australia Holdings	100.00%		France	Australia
	Total Holding Dolphin Amont	100.00%		France	France
	Total Holdings Nederland B.V.	100.00%		Netherlands	Netherlands

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Exploration & Production (contd)					
	Total Holdings Nederland International B.V.	100.00%		Netherlands	Netherlands
	Total Iran B.V.	100.00%		Netherlands	Iran
	Total LNG Angola	100.00%		France	France
	Total LNG Supply Services USA Inc.	100.00%		United States	United States
	Total Oil and Gas South America	100.00%		France	France
	Total Oil and Gas Venezuela B.V.	100.00%		Netherlands	Venezuela
	Total Pars LNG	100.00%		France	Iran
	Total Petroleum Angola	100.00%		France	Angola
	Total Profils Pétroliers	100.00%		France	France
	Total Qatar	100.00%		France	Qatar
	Total South Pars	100.00%		France	Iran
	Total Tengah	100.00%		France	Indonesia
	Total Termokarstovoye B.V.	100.00%		Netherlands	Russia
	Total UAE SERVICES	100.00%		France	United Arab Emirates
	Total Upstream Nigeria Limited	100.00%		Nigeria	Nigeria
	Total Upstream UK Limited	100.00%		United Kingdom	United Kingdom
	Total Venezuela	100.00%		France	France
	Total Yemen LNG Company Limited	100.00%		Bermuda	Bermuda
	Unitah Colorado Resources II, LLC	100.00%		United States	United States
	Yamal LNG ^(b)	29.48%	E	Russia	Russia
	Yemen LNG Company Limited	39.62%	E	Bermuda	Yemen
	Ypergas S.A.	37.33%		Venezuela	Venezuela
Gas, Renewables & Power					
	8point3 Energy Partners LP	20.54%	E	United States	United States
	8point3 General Partner, LLC	28.13%	E	United States	United States
	8point3 Holding Company, LLC	28.13%	E	United States	United States
	8point3 OpCo Holdings, LLC	56.26%	E	United States	United States
	8point3 Operating Company, LLC	20.54%	E	United States	United States
	Advanced Thermal Batteries Inc.	50.00%	E	United States	United States
	Aerospatiale Batteries (ASB)	50.00%	E	France	France
	Alcad AB	100.00%		Sweden	Sweden
	Almyros Energy Solution Malta Limited	56.26%		Malta	Malta
	Amco-Saft India Limited	100.00%		India	India
	Aragonne Solar, LLC	56.26%		United States	United States
	Arica Solar, LLC	56.26%		United States	United States
	Aton Solar Program, LLC	56.26%		United States	United States
	Badenhorst PV 2 Hold Company LLC	56.26%		United States	United States
	Bertophase (PTY) Limited	56.26%		South Africa	South Africa
	Black Mountain Solar I, LLC	56.26%		United States	United States
	Bluestem Solar LLC	56.26%		United States	United States
	BNB Bloomfield Solar, LLC	56.26%		United States	United States
	BNB Caamden Solar, LLC	56.26%		United States	United States
	Boulder Solar III, LLC	56.26%		United States	United States
	Boulder Solar IV, LLC	56.26%		United States	United States
	Boulder Solar Power Parent, LLC	56.26%		United States	United States
	Boulder Solar Power, LLC	56.26%		United States	United States
	BSP Class B Member HoldCo, LLC	56.26%		United States	United States
	BSP Class B Member, LLC	56.26%		United States	United States
	BSP Holding Company, LLC	56.26%		United States	United States
	BSP II Parent, LLC	56.26%		United States	United States
	BSPCB Class B Member, LLC	56.26%		United States	United States
	Buffalo North Star Solar, LLC	56.26%		United States	United States
	Centrale Solaire 2	56.26%		France	United States
	Cepsa Gas Comercializadora S.A.	35.00%	E	Spain	Spain
	Cogenra Solar, Inc.	56.26%		United States	United States
	Cooper Ranch Solar LLC	56.26%		United States	United States
	Core Solar SPV V, LLC	56.26%		United States	United States

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Gas, Renewables & Power (contd)					
	Corona Sands, LLC	28.13%		United States	United States
	Côte d'Ivoire GNL	34.00%	E	Côte d'Ivoire	Côte d'Ivoire
	CSMED	100.00%		France	France
	DeAar PV Hold Company LLC	56.26%		United States	United States
	Desert Equinox, LLC	56.26%	E	United States	United States
	Desert SunBurst, LLC	56.26%		United States	United States
	Diamond Energy PTY Limited	14.07%	E	Australia	Australia
	Dongfang Huansheng Photovoltaic (Jiangsu) Company Limited	56.26%	E	China	United States
	Dragonfly Systems, Inc.	56.26%		United States	United States
	Eau Chaude Réunion (ECR)	50.00%	E	France	France
	Fassett-Walker, LLC	56.26%		United States	United States
	Fast Jung KB	100.00%		Sweden	Sweden
	Fosmax LNG	27.50%	E	France	France
	Frieman & Wolf Batterietechnik GmbH	100.00%		Germany	Germany
	Gas Del Litoral SRLCV	25.00%	E	Mexico	Mexico
	Georgia Sun I, LLC	56.26%		United States	United States
	GFS I Class B Member, LLC	56.26%		United States	United States
	Gfs I Holding Company, LLC	56.26%		United States	United States
	Golden Fields Solar I Parent, LLC	56.26%		United States	United States
	Golden Fields Solar I, LLC	56.26%		United States	United States
	Golden Fields Solar II, LLC	56.26%		United States	United States
	Golden Fields Solar III, LLC	56.26%		United States	United States
	Golden Fields Solar IV, LLC	56.26%		United States	United States
	Golden Fields Solar VI, LLC	56.26%		United States	United States
	Golden Fields Solar VII, LLC	56.26%		United States	United States
	Goodfellow Solar I, LLC	56.26%		United States	United States
	Goodfellow Solar PH1, LLC	56.26%		United States	United States
	Greenbotics, Inc.	56.26%		United States	United States
	Gulf Total Tractebel Power Company PSJC	20.00%	E	United Arab Emirates	United Arab Emirates
	Hazira LNG Private Limited	26.00%	E	India	India
	Hazira Port Private Limited	26.00%	E	India	India
	Helios II Residential Solar Fund, LLC	56.26%	E	United States	United States
	Helios Residential Solar Fund, LLC	56.26%		United States	United States
	Helix Project II, LLC	56.26%		United States	United States
	Helix Project III, LLC	56.26%		United States	United States
	Heracles Solar PH1, LLC	56.26%		United States	United States
	Heracles Solar, LLC	56.26%		United States	United States
	High Plains Ranch I, LLC	56.26%		United States	United States
	Huaxia CPV (Inner Mongolia) Power Corporation, Limited	14.07%	E	China	China
	Infigen Energy US Development Corporation	56.26%		France	United States
	Infinite Sunshine 2015-1, LLC	56.26%		United States	United States
	Institut Photovoltaïque D'Ile De France (IPVF)	43.00%		France	France
	Java Solar, LLC	56.26%		United States	United States
	JBAB Solar, LLC	56.26%		United States	United States
	JDA Overseas Holdings, LLC	56.26%		United States	United States
	K2015014806 (South Africa) (PTY) Limited	56.26%		South Africa	United States
	K2015014875 (South Africa) (PTY) Limited	56.26%		South Africa	South Africa
	K2015070451 (South Africa) (PTY) Limited	56.26%		South Africa	South Africa
	K2015263261 (South Africa) (PTY) Limited	56.26%		South Africa	United States
	Kern High School District Solar (2), LLC	56.26%		United States	United States
	Kern High School District Solar, LLC	56.26%		United States	United States
	Klippgats 7 Hold Company LLC	56.26%		United States	United States
	Klippgats PV 3 Hold Company LLC	56.26%		United States	United States
	Kozani Energy Anonymi Energeiaki Etaireia (distinctive title Kozani Energy S.A.)	56.26%		Greece	Greece
	Kozani Energy Malta Limited	56.26%		Malta	Malta
	LA Basin Solar I, LLC	56.26%		United States	United States
	LA Basin Solar II, LLC	56.26%		United States	United States

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Gas, Renewables & Power (contd)					
	LA Basin Solar III, LLC	56.26%		United States	United States
	Lampiris S.A.	100.00%		Belgium	Belgium
	Lemoore Stratford Land Holdings IV, LLC	56.26%		United States	United States
	Livingston Ridge Solar LLC	56.26%		United States	United States
	Loving Solar LLC	56.26%		United States	United States
	Lucerne Valley Solar I, LLC	56.26%		United States	United States
	Lucerne Valley Solar One Holdings, LLC	56.26%		United States	United States
	Luis Solar, LLC	56.26%		United States	United States
	Luna Valley Solar I, LLC	56.26%		United States	United States
	Lux II Residential Solar Fund, LLC	56.26%	E	United States	United States
	Lux Residential Solar Fund, LLC	56.26%		United States	United States
	Malina Holdings, LLC	56.26%		United States	United States
	Meridian Solar Program, LLC	56.26%		United States	United States
	Minneola Solar I, LLC	56.26%		United States	United States
	Missiles & Space Batteries Limited	50.00%	E	United Kingdom	United Kingdom
	Mojave Solar Investment, LLC	56.26%		United States	United States
	Mulilo Prieska PV (RF) Proprietary Limited	27.00%	E	South Africa	South Africa
	Naidirem Holdings, LLC	56.26%		United States	United States
	Napa Sanitation District Solar, LLC	56.26%		United States	United States
	NorthStar Energy Management, LLC	56.26%		United States	United States
	NorthStar Macys Colorado, LLC	56.26%		United States	United States
	Northstar Macys Maryland 2015, LLC	56.26%		United States	United States
	Northstar Macys US West 2016, LLC	56.26%		United States	United States
	Northstar Santa Clara County 2016, LLC	56.26%		United States	United States
	Ochoa Solar LLC	56.26%		United States	United States
	Oro Fields Solar, LLC	56.26%		United States	United States
	Parrey Class B Member, LLC	56.26%		United States	United States
	Parrey Holding Company, LLC	56.26%		United States	United States
	Parrey Parent, LLC	56.26%		United States	United States
	Parrey, LLC	56.26%		United States	United States
	PGC Plano I, LLC	56.26%		United States	United States
	Phantom Field Resources, LLC	56.26%		United States	United States
	Photon Residential Solar Fund, LLC	56.26%	E	United States	United States
	Photovoltaic Park Malta Limited	56.26%		Malta	Malta
	Photovoltaica Parka Veroia Anonymi Etaireia	56.26%		Greece	Greece
	Plano Parent I, LLC	56.26%		United States	United States
	Pluto Acquisition Company, LLC	56.26%		United States	United States
	Project Sunday Development, LLC	56.26%		United States	United States
	Project Sunday Holdings LLC	56.26%		United States	United States
	PV Salvador SPA	20.00%	E	Chile	Chile
	Redstone Solar I, LLC	56.26%		United States	United States
	Saft (Zhuhai FTZ) Batteries Company Limited	100.00%		China	China
	Saft AB	100.00%		Sweden	Sweden
	Saft Acquisition S.A.S.	100.00%		France	France
	Saft America Inc.	100.00%		United States	United States
	Saft AS	100.00%		Norway	Norway
	Saft Australia PTY Limited	100.00%		Australia	Australia
	Saft Batterias SL	100.00%		Spain	Spain
	Saft Batterie Italia S.R.L.	100.00%		Italy	Italy
	Saft Batterien GmbH	100.00%		Germany	Germany
	Saft Batteries Pte Limited	100.00%		Singapore	Singapore
	Saft Batteries PTY Limited	100.00%		Australia	Australia
	Saft Batterijen B.V.	100.00%		Netherlands	Netherlands
	Saft Do Brasil Ltda	100.00%		Brazil	Brazil
	Saft Federal Systems Inc.	100.00%		United States	United States
	Saft Ferak AS	100.00%		Czech Republic	Czech Republic
	Saft Finance S.A.R.L.	100.00%		Luxembourg	Luxembourg



Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Gas, Renewables & Power (contd)					
	Saft Groupe S.A.	100.00%		France	France
	Saft Hong Kong Limited	100.00%		Hong Kong	Hong Kong
	Saft Japan KK	100.00%		Japan	Japan
	Saft JV Holding Company	100.00%		United States	United States
	Saft Limited	100.00%		United Kingdom	United Kingdom
	Saft LLC	100.00%		Russia	Russia
	Saft Nife ME Limited	100.00%		Cyprus	Cyprus
	Saft S.A.S.	100.00%		France	France
	Saft Sweden AB	100.00%		Sweden	Sweden
	Sahara Solar Investment, LLC	56.26%		United States	United States
	Sandy Hills Solar I, LLC	56.26%		United States	United States
	SGS Antelope Valley Development, LLC	56.26%		United States	United States
	Sgula (East) Green Energies Limited	56.26%		Israel	United States
	Shams Power Company PJSC	20.00%	E	United Arab Emirates	United Arab Emirates
	Signal Rock Solar, LLC	56.26%		United States	United States
	Société d'exploitation de centrales photovoltaïques 1	28.19%		France	France
	Solaire Generation, LLC	56.26%		United States	United States
	Solar Carport NJ, LLC	56.26%		United States	United States
	Solar Greenhouse I, LLC	56.26%		United States	United States
	Solar Star Arizona HMR-I, LLC	56.26%		United States	United States
	Solar Star Arizona I, LLC	56.26%		United States	United States
	Solar Star Arizona II, LLC	56.26%		United States	United States
	Solar Star Arizona III, LLC	56.26%		United States	United States
	Solar Star Arizona IV, LLC	56.26%		United States	United States
	Solar Star Arizona V, LLC	56.26%		United States	United States
	Solar Star Arizona VI, LLC	56.26%		United States	United States
	Solar Star Arizona VII, LLC	56.26%		United States	United States
	Solar Star Arizona XIII, LLC	56.26%		United States	United States
	Solar Star Bay City I, LLC	56.26%		United States	United States
	Solar Star California I, LLC	56.26%		United States	United States
	Solar Star California IV, LLC	56.26%		United States	United States
	Solar Star California L (2), LLC	56.26%		United States	United States
	Solar Star California L (3), LLC	56.26%		United States	United States
	Solar Star California L, LLC	56.26%		United States	United States
	Solar Star California LX, LLC	56.26%		United States	United States
	Solar Star California LXII, LLC	56.26%		United States	United States
	Solar Star California LXIII, LLC	56.26%		United States	United States
	Solar Star California LXIV, LLC	56.26%		United States	United States
	Solar Star California LXV, LLC	56.26%		United States	United States
	Solar Star California LXVI, LLC	56.26%		United States	United States
	Solar Star California LXXV, LLC	56.26%		United States	United States
	Solar Star California LXXVI, LLC	56.26%		United States	United States
	Solar Star California LXXVII, LLC	56.26%		United States	United States
	Solar Star California VII, LLC	56.26%		United States	United States
	Solar Star California XII, LLC	56.26%		United States	United States
	Solar Star California XL, LLC	56.26%		United States	United States
	Solar Star California XLI Parent, LLC	56.26%		United States	United States
	Solar Star California XLI, LLC	56.26%		United States	United States
	Solar Star California XLII, LLC	56.26%		United States	United States
	Solar Star California XLIII, LLC	56.26%		United States	United States
	Solar Star California XLIV, LLC	56.26%		United States	United States
	Solar Star California XLV, LLC	56.26%		United States	United States
	Solar Star California XLVI, LLC	56.26%		United States	United States
	Solar Star California XLVII, LLC	56.26%		United States	United States
	Solar Star California XLVIII, LLC	56.26%		United States	United States
	Solar Star California XV Parent, LLC	56.26%		United States	United States
	Solar Star California XV, LLC	56.26%		United States	United States
	Solar Star California XVI, LLC	56.26%		United States	United States

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Gas, Renewables & Power (contd)					
	Solar Star California XVII, LLC	56.26%		United States	United States
	Solar Star California XVIII, LLC	56.26%		United States	United States
	Solar Star California XXI, LLC	56.26%		United States	United States
	Solar Star California XXII, LLC	56.26%		United States	United States
	Solar Star California XXIII, LLC	56.26%		United States	United States
	Solar Star California XXIV, LLC	56.26%		United States	United States
	Solar Star California XXIX, LLC	56.26%		United States	United States
	Solar Star California XXV, LLC	56.26%		United States	United States
	Solar Star California XXVI, LLC	56.26%		United States	United States
	Solar Star California XXVII, LLC	56.26%		United States	United States
	Solar Star California XXVIII, LLC	56.26%		United States	United States
	Solar Star California XXX (2), LLC	56.26%		United States	United States
	Solar Star California XXXIV, LLC	56.26%		United States	United States
	Solar Star California XXXIX, LLC	56.26%		United States	United States
	Solar Star California XXXV, LLC	56.26%		United States	United States
	Solar Star California XXXVI, LLC	56.26%		United States	United States
	Solar Star California XXXVII, LLC	56.26%		United States	United States
	Solar Star California XXXVIII, LLC	56.26%		United States	United States
	Solar Star Colorado II, LLC	56.26%		United States	United States
	Solar Star Colorado III Parent, LLC	56.26%		United States	United States
	Solar Star Colorado III, LLC	56.26%		United States	United States
	Solar Star Connecticut I, LLC	56.26%		United States	United States
	Solar Star Hawaii I, LLC	56.26%		United States	United States
	Solar Star Hawaii IV, LLC	56.26%		United States	United States
	Solar Star HI Air, LLC	56.26%		United States	United States
	Solar Star Illinois I, LLC	56.26%		United States	United States
	Solar Star Massachusetts II, LLC	56.26%		United States	United States
	Solar Star Massachusetts III, LLC	56.26%		United States	United States
	Solar Star New Jersey IV, LLC	56.26%		United States	United States
	Solar Star New York I, LLC	56.26%		United States	United States
	Solar Star NVUSD II, LLC	56.26%		United States	United States
	Solar Star Oceanside, LLC	56.26%		United States	United States
	Solar Star Oregon I, LLC	56.26%		United States	United States
	Solar Star Oregon II Parent, LLC	56.26%		United States	United States
	Solar Star Oregon III, LLC	56.26%		United States	United States
	Solar Star Palo Alto I, LLC	56.26%		United States	United States
	Solar Star Plano I, LLC	56.26%		United States	United States
	Solar Star Rancho CWD I, LLC	56.26%		United States	United States
	Solar Star Santa Cruz, LLC	56.26%		United States	United States
	Solar Star SH MA, LLC	56.26%		United States	United States
	Solar Star Texas II, LLC	56.26%		United States	United States
	Solar Star Texas IV, LLC	56.26%		United States	United States
	Solar Star YC, LLC	56.26%		United States	United States
	Solar University, LLC	56.26%		United States	United States
	SolarBridge Technologies Inc.	56.26%		United States	United States
	SolarStorage Fund A, LLC	56.26%		United States	United States
	SolarStorage Fund B, LLC	56.26%		United States	United States
	SolarStorage Fund C, LLC	56.26%		United States	United States
	South Hook CHP	8.35%	E	United Kingdom	United Kingdom
	South Hook LNG Terminal Company Limited	8.35%	E	United Kingdom	United Kingdom
	SPML Land Inc.	56.26%		Philippines	Philippines
	SPWR Energias Renovaveis Unipessoal Ltda	56.26%		Portugal	Portugal
	SPWR EW 2013-1, LLC	0.56%		United States	United States
	SPWR MS 2013-1, LLC	28.13%		United States	United States
	SPWR SS 1, LLC	56.26%		United States	United States
	SPWR UBS 2013-1, LLC	0.56%		United States	United States
	SPWR USB 2013-2, LLC	0.56%		United States	United States



Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Gas, Renewables & Power (contd)					
	SPWR USB 2013-3, LLC	0.56%		United States	United States
	SSCA XLI Class B Member, LLC	56.26%		United States	United States
	SSCA XLI Holding Company, LLC	56.26%		United States	United States
	SSCA XXXI Managing Member, LLC	20.54%	E	United States	United States
	SSCO III Class B Holdings, LLC	56.26%		United States	United States
	SSCO III Holdings Company, LLC	56.26%		United States	United States
	SSCO III Managing Member, LLC	56.26%		United States	United States
	Strata Solar, LLC	56.26%		United States	United States
	SunFront I, LLC	56.26%		United States	United States
	SunPower Access I, LLC	56.26%		United States	United States
	SunPower AssetCo, LLC	56.26%		United States	United States
	SunPower Bermuda Holdings	56.26%		Bermuda	Bermuda
	SunPower Bobcat Solar, LLC	56.26%		United States	United States
	SunPower Capital Services, LLC	56.26%		United States	United States
	SunPower Capital, LLC	56.26%		United States	United States
	SunPower Commercial Holding Company I, LLC	20.54%	E	United States	United States
	SunPower Commercial Holding Company II, LLC	56.26%		United States	United States
	SunPower Commercial Holding Company III, LLC	56.26%		United States	United States
	SunPower Commercial Holding Company IV Parent, LLC	56.26%		United States	United States
	SunPower Commercial Holding Company IV, LLC	56.26%		United States	United States
	SunPower Commercial Holding Company V, LLC	56.26%		United States	United States
	SunPower Commercial Holding Company VI, LLC	56.26%		United States	United States
	SunPower Commercial II Class B, LLC	56.26%		United States	United States
	SunPower Commercial III Class B, LLC	56.26%		United States	United States
	SunPower Commercial Managing Member I, LLC	20.54%	E	United States	United States
	SunPower Corp Israel Limited	56.26%		Israel	Israel
	SunPower Corporation	56.26%		United States	United States
	SunPower Corporation (Switzerland) S.A.R.L.	56.26%		Switzerland	Switzerland
	SunPower Corporation Australia PTY Limited	56.26%		Australia	Australia
	SunPower Corporation Limited	56.26%		Hong Kong	Hong Kong
	SunPower Corporation Mexico, S. de R.L. de C.V.	56.26%		Mexico	Mexico
	SunPower Corporation Southern Africa (PTY) Limited	56.26%		South Africa	South Africa
	SunPower Corporation SPA	56.26%		Chile	Chile
	SunPower Corporation UK Limited	56.26%		United Kingdom	United Kingdom
	SunPower Corporation, Systems	56.26%		United States	United States
	SunPower DevCo, LLC	56.26%		United States	United States
	SunPower Development Company	56.26%		United States	United States
	SunPower El Pelicano Holding Company SPA	56.26%		Chile	Chile
	SunPower Energia SPA	56.26%		Chile	Chile
	SunPower Energy Corporation Limited	56.26%		Hong Kong	United States
	SunPower Energy Solutions France S.A.S.	56.26%		France	France
	SunPower Energy Systems Canada Corporation	56.26%		Canada	Canada
	SunPower Energy Systems Korea	56.26%		South Korea	South Korea
	SunPower Energy Systems Singapore PTE Limited	56.26%		Singapore	Singapore
	SunPower Energy Systems Southern Africa (PTY) Limited	56.26%		South Africa	South Africa
	SunPower Energy Systems Spain, SL	56.26%		Spain	Spain
	SunPower Engineering and Construction of Energy Production and Trade (Turkey)	56.26%		Turkey	Turkey
	SunPower Foundation	56.26%		United States	United States
	SunPower France S.A.S.	56.26%		France	France
	SunPower GmbH	56.26%		Germany	Germany
	SunPower Helix I, LLC	56.26%		United States	United States
	SunPower HoldCo, LLC	56.26%		United States	United States
	SunPower Italia S.R.L.	56.26%		Italy	Italy
	SunPower Japan KK	56.26%		Japan	Japan
	SunPower Malaysia Manufacturing Sdn. Bhd.	56.26%		Malaysia	Malaysia
	SunPower Malta Limited	56.26%		Malta	Malta
	SunPower Manufacturing (PTY) Limited	56.26%		South Africa	South Africa

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Gas, Renewables & Power (contd)					
	SunPower Manufacturing Corporation Limited	56.26%		Hong Kong	United States
	SunPower Manufacturing de Vernejoul	56.26%		France	France
	SunPower Miyako Parent, LLC	56.26%		United States	United States
	SunPower Muhendislik Insaat Enerji Üretim ve Ticaret A. S	56.26%		Turkey	Turkey
	SunPower Nanao Parent, LLC	56.26%		United States	United States
	SunPower Netherlands B.V.	56.26%		Netherlands	Netherlands
	SunPower Netherlands Hold Company 1 B.V.	56.26%		Netherlands	Netherlands
	SunPower Netherlands Hold Company 2 B.V.	56.26%		Netherlands	Netherlands
	SunPower Netherlands Hold Company 3 B.V.	56.26%		Netherlands	Netherlands
	SunPower Netherlands Hold Company 4 B.V.	56.26%		Netherlands	Netherlands
	SunPower Netherlands Hold Company 5 B.V.	56.26%		Netherlands	Netherlands
	SunPower Netherlands Hold Company 6 B.V.	56.26%		Netherlands	Netherlands
	SunPower Netherlands Hold Company 7 B.V.	56.26%		Netherlands	Netherlands
	SunPower Netherlands Holdings B.V.	56.26%		Netherlands	Netherlands
	SunPower North America, LLC	56.26%		United States	United States
	SunPower NY CDG 1, LLC	56.26%		United States	United States
	SunPower Philippines Limited – Regional Operating Headquarters	56.26%		Cayman Islands	Philippines
	SunPower Philippines Manufacturing Limited	56.26%		Cayman Islands	Philippines
	SunPower Residential I, LLC	20.54%	E	United States	United States
	SunPower Residential II, LLC	56.26%		United States	United States
	SunPower Revolver HoldCo I Parent, LLC	56.26%		United States	United States
	SunPower Revolver HoldCo I, LLC	56.26%		United States	United States
	SunPower Software I Inc.	56.26%		United States	United States
	SunPower Solar Energy Technology (Tianjin) Corporation, Limited	56.26%		China	China
	SunPower Solar India Private Limited	56.26%		India	India
	SunPower Solar Malaysia Sdn. Bhd.	56.26%		Malaysia	Malaysia
	SunPower SolarProgram III, LLC	56.26%		United States	United States
	SunPower SolarProgram IV, LLC	56.26%		United States	United States
	SunPower SolarProgram IX, LLC	56.26%		United States	United States
	Sunpower Solarprogram V, LLC	56.26%		United States	United States
	Sunpower Solarprogram VI, LLC	56.26%		United States	United States
	SunPower SolarProgram VII, LLC	56.26%		United States	United States
	SunPower SolarProgram VIII, LLC	56.26%		United States	United States
	SunPower Systems (Middle East Branch)	56.26%		United Arab Emirates	United Arab Emirates
	SunPower Systems Belgium SPRL	56.26%		Belgium	Belgium
	SunPower Systems International Limited	56.26%		Hong Kong	United States
	SunPower Systems Mexico S. de R.L. de C.V.	56.26%		Mexico	Mexico
	SunPower Systems S.A.R.L.	56.26%		Switzerland	Switzerland
	SunPower Systems S.A.R.L. (Dubai Branch)	56.26%		United States	United States
	SunPower Technologies France S.A.S.	56.26%		France	France
	SunPower Technology Limited	56.26%		Cayman Islands	Cayman Islands
	SunPower YC Holdings LLC	56.26%		United States	United States
	SunRise 1, LLC	31.80%		United States	United States
	Sunrise 2, LLC	56.26%		United States	United States
	Sunrise 3, LLC	56.26%		United States	United States
	Sunzil	50.00%	E	France	France
	Sunzil Caraibes	50.00%	E	France	France
	Sunzil Mayotte S.A.S.	50.00%	E	France	France
	Sunzil Ocean Indien	50.00%	E	France	France
	Sunzil Pacific	50.00%	E	France	France
	Sunzil Polynésie	50.00%	E	France	France
	Sunzil Polynésie Services	50.00%	E	France	France
	Sunzil Services Caraibes	50.00%	E	France	France
	Sunzil Services Ocean Indien	50.00%	E	France	France
	Swingletree Operations, LLC	56.26%		United States	United States
	Tadiran Batteries GmbH	100.00%		Germany	Germany
	Tadiran Batteries Limited	100.00%		Israel	Israel

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Gas, Renewables & Power (contd)					
	TEMASOL	56.26%		Morocco	Morocco
	Tenesol SPV1	56.26%		France	France
	Tenesol Venezuela	56.26%		Venezuela	Venezuela
	Texas Solar Nova 1, LLC	56.26%		United States	United States
	Tita Energy (PTY) Limited	56.26%		South Africa	United States
	Torimode (PTY) Limited	56.26%		South Africa	South Africa
	Toriprox (PTY) Limited	56.26%		South Africa	South Africa
	Torisol (PTY) Limited	56.26%		South Africa	South Africa
	Total Abengoa Solar Emirates Investment Company B.V.	50.00%	E	Netherlands	United Arab Emirates
	Total Energie Do Brasil	56.26%		Brazil	Brazil
	Total Energie Gas GmbH	100.00%		Germany	Germany
	Total Énergie Gaz	100.00%		France	France
	TOTAL ENERGY SERVICES	100.00%		France	France
	Total Energy Ventures Europe	100.00%		France	France
	Total Energy Ventures International	100.00%		France	France
	Total Gas & Power Actifs Industriels	100.00%		France	France
	Total Gas & Power Asia Private Limited	100.00%		Singapore	Singapore
	Total Gas & Power Brazil	100.00%		France	France
	Total Gas & Power Chartering Limited	100.00%		United Kingdom	United Kingdom
	Total Gas & Power Limited	100.00%		United Kingdom	United Kingdom
	Total Gas & Power North America Inc.	100.00%		United States	United States
	Total Gas & Power Services Limited	100.00%		United Kingdom	United Kingdom
	Total Gas & Power Thailand	100.00%		France	France
	Total Gas Pipeline USA Inc.	100.00%		United States	United States
	Total Gas Y Electricidad Argentina S.A.	100.00%		Argentina	Argentina
	Total Gasandes	100.00%		France	France
	Total Gaz Electricité Holdings France	100.00%		France	France
	Total Midstream Holdings UK Limited	100.00%		United Kingdom	United Kingdom
	Total New Energies Limited	100.00%		United Kingdom	United Kingdom
	Total New Energies Ventures USA, Inc.	100.00%		United States	United States
	Total Solar	100.00%		France	France
	Total Solar International	100.00%		France	France
	Total Solar Latin America SPA	100.00%		Chile	Chile
	TOTAL SPRING FRANCE	100.00%		France	France
	Total SunPower El Pelicano S.A.	56.26%		Chile	Chile
	Total SunPower Energia S.A.	56.26%		Chile	Chile
	Total Tractebel Emirates O & M Company	50.00%	E	France	United Arab Emirates
	Total Tractebel Emirates Power Company	50.00%	E	France	United Arab Emirates
	Transportadora de Gas del Mercosur S.A.	32.68%	E	Argentina	Argentina
	TSGF SpA	56.26%	E	Chile	Chile
	Vandenberg Solar I, LLC	56.26%		United States	United States
	Vega Solar 1 S.A.P.I. de C.V.	56.26%		Mexico	United States
	Vega Solar 2 S.A.P.I. de C.V.	56.26%		Mexico	United States
	Vega Solar 3 S.A.P.I. de C.V.	56.26%		Mexico	United States
	Vega Solar 4 S.A.P.I. de C.V.	56.26%		Mexico	United States
	Vega Solar 5 S.A.P.I. de C.V.	56.26%		Mexico	United States
	Victory Pass I, LLC	56.26%		United States	United States
	Whippletree Solar, LLC	56.26%		United States	United States
	White Wolf Solar, LLC	56.26%		United States	United States
	Wood Draw Solar LLC	56.26%		United States	United States
Refining & Chemicals					
	Appryl S.N.C	50.00%		France	France
	Atlantic Trading and Marketing Financial Inc.	100.00%		United States	United States
	Atlantic Trading and Marketing Inc.	100.00%		United States	United States
	Balzatex S.A.S.	100.00%		France	France
	Barry Controls Aerospace S.N.C.	100.00%		France	France
	BASF Total Petrochemicals LLC	40.00%		United States	United States
	Bay Junction Inc.	100.00%		United States	United States

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Refining & Chemicals (contd)					
	Borrachas Portalegre Ltda	100.00%		Portugal	Portugal
	BOU Verwaltungs GmbH	100.00%		Germany	Germany
	Buckeye Products Pipeline LP	14.66%	E	United States	United States
	Caoutchoucs Modernes S.A.S.	100.00%		France	France
	Catelsa-Caceres S.A.U.	100.00%		Spain	Spain
	Cie Tunisienne du Caoutchouc S.A.R.L.	100.00%		Tunisia	Tunisia
	Composite Industrie Maroc S.A.R.L.	100.00%		Morocco	Morocco
	Composite Industrie S.A.	100.00%		France	France
	Cosden, LLC	100.00%		United States	United States
	COS-MAR Company	50.00%		United States	United States
	Cray Valley (Guangzhou) Chemical Company, Limited	100.00%		China	China
	Cray Valley Czech	100.00%		Czech Republic	Czech Republic
	Cray Valley HSC Asia Limited	100.00%		China	China
	Cray Valley Italia S.R.L.	100.00%		Italy	Italy
	Cray Valley S.A.	100.00%		France	France
	CSSA – Chartering and Shipping Services S.A.	100.00%		Switzerland	Switzerland
	Espa S.A.R.L.	100.00%		France	France
	Ethylène Est	99.98%		France	France
	Feluy Immobiliari	100.00%		Belgium	Belgium
	FINA Technology, Inc.	100.00%		United States	United States
	FPL Enterprises, Inc.	100.00%		United States	United States
	Gasket (Suzhou) Valve Components Company, Limited	100.00%		China	China
	Gasket International SPA	100.00%		Italy	Italy
	Grande Paroisse S.A.	100.00%		France	France
	Gulf Coast Pipeline LP	14.66%	E	United States	United States
	Hanwha Total Petrochemical Co. Limited	50.00%	E	South Korea	South Korea
	HBA Hutchinson Brasil Automotive Ltda	100.00%		Brazil	Brazil
	Hutchinson (UK) Limited	100.00%		United Kingdom	United Kingdom
	Hutchinson (Wuhan) Automotive Rubber Products Company Limited	100.00%		China	China
	Hutchinson Aéronautique & Industrie Limited	100.00%		Canada	Canada
	Hutchinson Aeroservices S.A.S.	100.00%		France	France
	Hutchinson Aerospace & Industry Inc.	100.00%		United States	United States
	Hutchinson Aerospace GmbH	100.00%		Germany	Germany
	Hutchinson Aftermarket USA Inc.	100.00%		United States	United States
	Hutchinson Antivibration Systems Inc.	100.00%		United States	United States
	Hutchinson Argentina S.A.	100.00%		Argentina	Argentina
	Hutchinson Autopartes Mexico S.A. de C.V.	100.00%		Mexico	Mexico
	Hutchinson Borrachas de Portugal Ltda	100.00%		Portugal	Portugal
	Hutchinson Corporation	100.00%		United States	United States
	Hutchinson d.o.o Ruma	100.00%		Serbia	Serbia
	Hutchinson Do Brasil S.A.	100.00%		Brazil	Brazil
	Hutchinson Fluid Management Systems Inc.	100.00%		United States	United States
	Hutchinson GmbH	100.00%		Germany	Germany
	Hutchinson Holding GmbH	100.00%		Germany	Germany
	Hutchinson Holdings UK Limited	100.00%		United Kingdom	United Kingdom
	Hutchinson Iberia S.A.	100.00%		Spain	Spain
	Hutchinson Industrial Rubber Products (Suzhou) Company, Limited	100.00%		China	China
	Hutchinson Industrias Del Caucho SAU	100.00%		Spain	Spain
	Hutchinson Industries Inc.	100.00%		United States	United States
	Hutchinson Japan Company Limited	100.00%		Japan	Japan
	Hutchinson Korea Limited	100.00%		South Korea	South Korea
	Hutchinson Maroc S.A.R.L. AU	100.00%		Morocco	Morocco
	Hutchinson Nichirin Brake Hoses SL	30.00%	E	Spain	Spain
	Hutchinson Palamos	100.00%		Spain	Spain
	Hutchinson Poland SP ZO.O.	100.00%		Poland	Poland
	Hutchinson Polymers S.N.C.	100.00%		France	France
	Hutchinson Porto Tubos Flexiveis Ltda	100.00%		Portugal	Portugal

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Refining & Chemicals (contd)					
	Hutchinson Precision Sealing Systems Inc.	100.00%		United States	United States
	Hutchinson Rubber Products Private Limited Inde	100.00%		France	India
	Hutchinson S.A.	100.00%		France	France
	Hutchinson S.N.C.	100.00%		France	France
	Hutchinson S.R.L. (Italie)	100.00%		Italy	Italy
	Hutchinson S.R.L. (Roumanie)	100.00%		Romania	Romania
	Hutchinson Sales Corporation	100.00%		United States	United States
	Hutchinson Seal De Mexico S.A. de CV.	100.00%		Mexico	Mexico
	Hutchinson Sealing Systems Inc.	100.00%		United States	United States
	Hutchinson SRO	100.00%		Czech Republic	Czech Republic
	Hutchinson Stop – Choc GmbH & CO. KG	100.00%		Germany	Germany
	Hutchinson Suisse S.A.	100.00%		Switzerland	Switzerland
	Hutchinson Transferencia de Fluidos S.A. de C.V.	100.00%		Mexico	Mexico
	Hutchinson Tunisie S.A.R.L.	100.00%		Tunisia	Tunisia
	Hutchinson Vietnam Company Limited	100.00%		Vietnam	Vietnam
	Industrias Tecnicas De La Espuma SL	100.00%		Spain	Spain
	Industrielle Desmarquoy S.N.C.	100.00%		France	France
	Jéhier S.A.S.	99.89%		France	France
	JPR S.A.S.	100.00%		France	France
	KTN Kunststofftechnik Nobitz GmbH	100.00%		Germany	Germany
	Laffan Refinery Company Limited	10.00%	E	Qatar	Qatar
	Laffan Refinery Company Limited 2	10.00%	E	Qatar	Qatar
	LaPorte Pipeline Company LP	50.00%	E	United States	United States
	LaPorte Pipeline GP LLC	50.00%	E	United States	United States
	Le Joint Francais S.N.C.	100.00%		France	France
	Legacy Site Services LLC	100.00%		United States	United States
	Les Stratifiés S.A.S.	100.00%		France	France
	Lone Wolf Land Company	100.00%		United States	United States
	LSS Funding Inc.	100.00%		United States	United States
	Machen Land Limited	100.00%		United Kingdom	United Kingdom
	Mapa – Spontex Inc.	100.00%		United States	United States
	Naphtachimie	50.00%		France	France
	Olutex Oberlausitzer Luftfahrttextilien GmbH	100.00%		Germany	Germany
	Pamargan (Malta) Products Limited	100.00%		Malta	Malta
	Pamargan Products Limited	100.00%		United Kingdom	United Kingdom
	Paulstra S.N.C.	100.00%		France	France
	Paulstra Silentbloc S.A.	100.00%		Belgium	Belgium
	Polyblend GmbH	68.00%		Germany	Germany
	Qatar Petrochemical Company Q.S.C. (QAPCO)	20.00%	E	Qatar	Qatar
	Qatofin Company Limited	49.09%	E	Qatar	Qatar
	Résilium	100.00%		Belgium	Belgium
	Retia	100.00%		France	France
	Retia USA LLC	100.00%		United States	United States
	Ruwais Fertilizer Industries Limited	33.33%	E	United Arab Emirates	United Arab Emirates
	San Jacinto Rail Limited	17.00%	E	United States	United States
	Saudi Aramco Total Refining & Petrochemical Company	37.50%	E	Saoudia Arabia	Saoudia Arabia
	SCI Cibat	100.00%		France	France
	Sealants Europe	34.00%	E	France	France
	SigmaKalon Group B.V.	100.00%		Netherlands	Netherlands
	Société Béarnaise De Gestion Industrielle	100.00%		France	France
	Société du Pipeline Sud-Européen	35.14%	E	France	France
	Stillman Seal Corporation	100.00%		United States	United States
	Stop-Choc (UK) Limited	100.00%		United Kingdom	United Kingdom
	Techlam S.A.S.	100.00%		France	France
	Toseanergy	49.00%	E	Belgium	Belgium
	Total Activités Maritimes	100.00%		France	France
	Total Corbion PLA B.V.	50.00%	E	Netherlands	Netherlands
	Total Deutschland GmbH ^(c)	100.00%		Germany	Germany

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Refining & Chemicals (contd)					
	Total Downstream UK PLC	100.00%		United Kingdom	United Kingdom
	Total European Trading	100.00%		France	France
	Total Laffan Refinery	100.00%		France	France
	Total Laffan Refinery II B.V.	100.00%		Netherlands	Netherlands
	Total Lindsey Oil Refinery Limited	100.00%		United Kingdom	United Kingdom
	Total New Energies USA, Inc.	100.00%		United States	United States
	Total Oil Trading S.A.	100.00%		Switzerland	Switzerland
	Total Olefins Antwerp	100.00%		Belgium	Belgium
	Total Opslag En Pijpleiding Nederland NV	55.00%		Netherlands	Netherlands
	Total PAR LLC	100.00%		United States	United States
	Total Petrochemicals & Refining S.A./NV ^(a)	100.00%		Belgium	Belgium
	Total Petrochemicals & Refining USA Inc. ^(a)	100.00%		United States	United States
	Total Petrochemicals (China) Trading Company, Limited	100.00%		China	China
	Total Petrochemicals (Foshan) Limited	100.00%		China	China
	Total Petrochemicals (Hong Kong) Limited	100.00%		Hong Kong	Hong Kong
	Total Petrochemicals (Ningbo) Limited	100.00%		China	China
	Total Petrochemicals Development Feluy	100.00%		Belgium	Belgium
	Total Petrochemicals Ecaussinnes	100.00%		Belgium	Belgium
	Total Petrochemicals Feluy	100.00%		Belgium	Belgium
	Total Petrochemicals France	100.00%		France	France
	Total Petrochemicals Iberica	100.00%		Spain	Spain
	Total Petrochemicals Pipeline USA Inc.	100.00%		United States	United States
	Total Petrochemicals UK Limited	100.00%		United Kingdom	United Kingdom
	Total Polymers Antwerp	100.00%		Belgium	Belgium
	Total Raffinaderij Antwerpen N.V.	100.00%		Belgium	Belgium
	Total Raffinage France	100.00%		France	France
	Total Raffinerie Mitteldeutschland GmbH	100.00%		Germany	Germany
	Total Refining & Chemicals	100.00%		France	France
	Total Refining & Chemicals Saudi Arabia S.A.S.	100.00%		France	France
	Total Research & Technology Feluy	100.00%		Belgium	Belgium
	Total Splitter USA Inc	100.00%		United States	United States
	Total Trading and Marketing Canada LP	100.00%		Canada	Canada
	Total Trading Asia Pte Limited	100.00%		Singapore	Singapore
	Total Trading Canada Limited	100.00%		Canada	Canada
	Total Trading Products S.A.	100.00%		Switzerland	Switzerland
	Transalpes S.N.C.	67.00%		France	France
	Trans-Ethylène	99.98%		France	France
	Vibrachoc SAU	100.00%		Spain	Spain
	Zeeland Refinery NV	55.00%		Netherlands	Netherlands
Marketing & Services					
	Air Total (Suisse) S.A.	100.00%		Switzerland	Switzerland
	Air Total International S.A.	100.00%		Switzerland	Switzerland
	Alvea	100.00%		France	France
	Antilles Gaz	100.00%		France	France
	Aristea	51.00%	E	Belgium	Belgium
	Arteco	49.99%	E	Belgium	Belgium
	AS 24	100.00%		France	France
	AS 24 Tankservice GmbH	100.00%		Germany	Germany
	AS24 Belgie N.V.	100.00%		Belgium	Belgium
	AS24 Espanola S.A.	100.00%		Spain	Spain
	AS24 Fuel Cards Limited	100.00%		United Kingdom	United Kingdom
	AS24 Polska SP ZO.O.	100.00%		Poland	Poland
	Caldeo	100.00%		France	France
	Charvet La Mure Bianco	100.00%		France	France
	Compagnie Pétrolière de l'Ouest – CPO	100.00%		France	France
	CPE Énergies	100.00%		France	France
	Cristal Marketing Egypt	80.78%		Egypt	Egypt

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Marketing & Services (contd)					
	DCA-MORY-SHIP	100.00%		France	France
	Egedis	100.00%		France	France
	Elf Oil UK Aviation Limited	100.00%		United Kingdom	United Kingdom
	Elf Oil UK Properties Limited	100.00%		United Kingdom	United Kingdom
	Fioulmarket.fr	100.00%		France	France
	Gapco Kenya Limited	100.00%		Kenya	Kenya
	Gapco Tanzania Limited	100.00%		Tanzania	Tanzania
	Gapco Uganda Limited	100.00%		Uganda	Uganda
	Guangzhou Elf Lubricants Company Limited	77.00%		China	China
	Gulf Africa Petroleum Corporation	100.00%		Mauritius	Mauritius
	Lubricants Vietnam Holding Limited	100.00%		Hong Kong	Hong Kong
	Michel Mineralölhandel GmbH	100.00%		Germany	Germany
	National Petroleum Refiners Of South Africa (PTY) Limited	18.22%	E	South Africa	South Africa
	Produits Pétroliers Stela	99.99%		France	France
	Quimica Vasca S.A. Unipersonal	100.00%		Spain	Spain
	Saudi Total Petroleum Products	51.00%	E	Saoudia Arabia	Saoudia Arabia
	Servauto Nederland B.V.	100.00%		Netherlands	Netherlands
	Société des transports pétroliers par pipeline	35.50%	E	France	France
	Société d'exploitation de l'usine de Rouen	98.98%		France	France
	Société mahoraise de stockage de produits pétroliers	100.00%		France	France
	Société Urbaine des Pétroles	100.00%		France	France
	S-Oil Total Lubricants Company Limited	50.00%	E	South Korea	South Korea
	South Asia LPG Private Limited	50.00%	E	India	India
	Total (Africa) Limited	100.00%		United Kingdom	United Kingdom
	Total (Fiji) Limited	100.00%		Fiji Islands	Fiji Islands
	Total Additifs et Carburants Spéciaux	100.00%		France	France
	Total Africa S.A.	100.00%		France	France
	Total Aviation & Export Limited	100.00%		Zambia	Zambia
	Total Belgium	100.00%		Belgium	Belgium
	Total Bitumen Deutschland GmbH	100.00%		Germany	Germany
	Total Bitumen UK Limited	100.00%		United Kingdom	United Kingdom
	Total Botswana (PTY) Limited	50.10%		Botswana	Botswana
	Total Burkina	100.00%		Burkina Faso	Burkina Faso
	Total Cambodge	100.00%		Cambodia	Cambodia
	Total Cameroun	67.01%		Cameroon	Cameroon
	Total Caraïbes	100.00%		France	France
	Total Ceska Republika S.R.O.	100.00%		Czech Republic	Czech Republic
	Total China Investment Company Limited	100.00%		China	China
	Total Congo	99.70%		Republic of the Congo	Republic of the Congo
	Total Corse	100.00%		France	France
	Total Côte D'Ivoire	72.99%		Côte d'Ivoire	Côte d'Ivoire
	Total Denmark A/S	100.00%		Denmark	Denmark
	Total Deutschland GmbH ^(c)	100.00%		Germany	Germany
	Total Egypt	80.78%		Egypt	Egypt
	Total Erg SPA	49.00%	E	Italy	Italy
	Total España S.A.	100.00%		Spain	Spain
	Total Especialidades Argentina	100.00%		Argentina	Argentina
	Total Ethiopia	100.00%		Ethiopia	Ethiopia
	Total Fluides	100.00%		France	France
	Total Freeport Corporation	51.00%	E	Philippines	Philippines
	Total Fuels Wuhan Company Limited	100.00%		China	China
	Total Glass Lubricants Europe GmbH	100.00%		Germany	Germany
	Total Guadeloupe	100.00%		France	France
	Total Guinea Ecuatorial	70.00%		Equatorial Guinea	Equatorial Guinea
	Total Guinée	100.00%		Guinea	Guinea
	Total Holding Asie	100.00%		France	France
	Total Holding India	100.00%		France	France
	Total Jamaica Limited	100.00%		Jamaica	Jamaica

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Marketing & Services (contd)					
	Total Jordan PSC	100.00%		Jordan	Jordan
	Total Kenya	93.96%		Kenya	Kenya
	Total Lesotho (PTY) Limited	50.10%		Lesotho	Lesotho
	Total Liban	100.00%		Lebanon	Lebanon
	Total Liberia Inc.	100.00%		Liberia	Liberia
	Total Lubricants (China) Company Limited	77.00%		China	China
	Total Lubricants Taiwan Limited	63.00%		Taiwan	Taiwan
	Total Lubrifiants	99.98%		France	France
	Total Lubrifiants Algérie	78.90%		Algeria	Algeria
	Total Lubrifiants Service Automobile	99.98%		France	France
	Total Luxembourg S.A.	100.00%		Luxembourg	Luxembourg
	Total Madagasikara S.A.	79.44%		Madagascar	Madagascar
	Total Mali	100.00%		Mali	Mali
	Total Marine Fuels	100.00%		Singapore	Singapore
	Total Marketing Egypt	80.78%		Egypt	Egypt
	Total Marketing France	100.00%		France	France
	Total Marketing Gabon	90.00%		Gabon	Gabon
	Total Marketing Middle East Free Zone	100.00%		United Arab Emirates	United Arab Emirates
	Total Marketing Services	100.00%		France	France
	Total Marketing Tchad	100.00%		Chad	Chad
	Total Marketing Uganda	100.00%		Uganda	Uganda
	Total Maroc	55.00%		Morocco	Morocco
	Total Mauritius	55.00%		Mauritius	Mauritius
	Total Mayotte	100.00%		France	France
	Total Mexico S.A. de C.V.	100.00%		Mexico	Mexico
	Total Mineraloel und Chemie GmbH	100.00%		Germany	Germany
	Total Mineralol GmbH	100.00%		Germany	Germany
	Total Mozambique	100.00%		Mozambique	Mozambique
	Total Namibia (PTY) Limited	50.10%		Namibia	Namibia
	Total Nederland NV	100.00%		Netherlands	Netherlands
	Total Niger S.A.	100.00%		Niger	Niger
	Total Nigeria PLC	61.72%		Nigeria	Nigeria
	Total Oil Asia-Pacific Pte Limited	100.00%		Singapore	Singapore
	Total Oil India PVT Limited	100.00%		India	India
	Total Outre-Mer	100.00%		France	France
	Total Pacifique	100.00%		France	France
	Total Parco Pakistan Limited	50.00%	E	Pakistan	Pakistan
	Total Parko Marketing Limited	50.00%	E	Bahamas	Pakistan
	Total Petroleum (Shanghai) Company Limited	100.00%		China	China
	Total Petroleum Ghana Limited	76.74%		Ghana	Ghana
	Total Petroleum Puerto Rico Corp.	100.00%		Puerto Rico	Puerto Rico
	Total Philippines Corporation	51.00%	E	Philippines	Philippines
	Total Polska	100.00%		Poland	Poland
	Total Polynésie	99.54%		France	France
	Total RDC	60.00%		Democratic Republic of Congo	Democratic Republic of Congo
	Total Réunion	100.00%		France	France
	Total Romania S.A.	100.00%		Romania	Romania
	Total Sénégal	69.14%		Senegal	Senegal
	Total Sinochem Fuels Company Limited	49.00%	E	China	China
	Total Sinochem Oil Company Limited	49.00%	E	China	China
	Total South Africa (PTY) Limited	50.10%		South Africa	South Africa
	Total Specialties USA Inc.	100.00%		United States	United States
	Total Supply MS S.A.	100.00%		Switzerland	Switzerland
	Total Swaziland (PTY) Limited	50.10%		Swaziland	Swaziland
	Total Tanzania Limited	100.00%		Tanzania	Tanzania
	Total Tianjin Manufacturing Company Limited	77.00%		China	China
	Total Togo	76.72%		Togo	Togo

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Marketing & Services (contd)					
	Total Tunisie	100.00%		Tunisia	Tunisia
	Total Turkey Pazarlama	100.00%		Turkey	Turkey
	Total UAE LLC	49.00%		United Arab Emirates	United Arab Emirates
	Total Uganda Limited	100.00%		Uganda	Uganda
	Total UK Limited	100.00%		United Kingdom	United Kingdom
	Total Ukraine LLC	100.00%		Ukraine	Ukraine
	Total Union Océane	100.00%		France	France
	Total Vietnam Limited	100.00%		Vietnam	Vietnam
	Total Vostok	100.00%		Russia	Russia
	Total Zambia	100.00%		Zambia	Zambia
	Total Zimbabwe Limited	80.00%		Zimbabwe	Zimbabwe
	Totalgaz Vietnam LLC	100.00%		Vietnam	Vietnam
	Upbeatprops 100 PTY Limited	50.10%		South Africa	South Africa
	V Energy S.A.	70.00%		Dominican Republic	Dominican Republic
Corporate					
	Albatros	100.00%		France	France
	Elf Aquitaine	100.00%		France	France
	Elf Aquitaine Fertilisants	100.00%		France	France
	Elf Aquitaine Inc.	100.00%		United States	United States
	Elf Forest Products LLC	100.00%		United States	United States
	Etmofina	100.00%		Belgium	Belgium
	Omnium Reinsurance Company S.A.	100.00%		Switzerland	Switzerland
	Pan Insurance Limited	100.00%		Ireland	Ireland
	Septentrion Participations	100.00%		France	France
	Socap S.A.S.	100.00%		France	France
	Société Civile Immobilière CB2	100.00%		France	France
	Sofax Banque	100.00%		France	France
	Total American Services Inc.	100.00%		United States	United States
	Total Capital	100.00%		France	France
	Total Capital Canada Limited	100.00%		Canada	Canada
	Total Capital International	100.00%		France	France
	Total Consulting	100.00%		France	France
	Total Corporate Management (Beijing) Company Limited	100.00%		China	China
	Total Delaware Inc.	100.00%		United States	United States
	Total Développement Régional S.A.S.	100.00%		France	France
	Total Facilities Management Services (TFMS)	100.00%		France	France
	Total Finance	100.00%		France	France
	Total Finance Corporate Services Limited	100.00%		United Kingdom	United Kingdom
	Total Finance Global Services (TOFIG)	100.00%		Belgium	Belgium
	Total Finance international B.V.	100.00%		Netherlands	Netherlands
	Total Finance Nederland B.V.	100.00%		Netherlands	Netherlands
	Total Finance USA Inc.	100.00%		United States	United States
	Total Funding Nederland B.V.	100.00%		Netherlands	Netherlands
	Total Funding Nederland International B.V.	100.00%		Netherlands	Netherlands
	Total Gestion Filiales	100.00%		France	France
	Total Gestion USA	100.00%		France	France
	Total Global Financial Services	100.00%		France	France
	Total Global Human Ressources Services	100.00%		France	France
	Total Global Information Technology Services Belgium	99.98%		Belgium	Belgium
	Total Global IT Services (TGITS)	100.00%		France	France
	Total Global Procurement (TGP)	100.00%		France	France
	Total Global Procurement Belgium S.A. (TGPB)	100.00%		Belgium	Belgium
	Total Holding Allemagne	100.00%		France	France
	Total Holdings Europe	100.00%		France	France
	Total Holdings International B.V.	100.00%		Netherlands	Netherlands
	Total Holdings UK Limited	100.00%		United Kingdom	United Kingdom
	Total Holdings USA Inc.	100.00%		United States	United States
	Total International NV	100.00%		Netherlands	Netherlands

Business segment	Statutory corporate name	% Group interest	Method	Country of incorporation	Country of operations
Corporate (contd)					
	Total Learning Solutions (TLS)	100.00%		France	France
	Total Operations Canada Limited	100.00%		Canada	Canada
	Total Overseas Holding (PTY) Limited	100.00%		South Africa	Netherlands
	Total Participations	100.00%		France	France
	Total Petrochemicals & Refining S.A./NV ^(a)	100.00%		Belgium	Belgium
	Total Petrochemicals & Refining USA Inc. ^(b)	100.00%		United States	United States
	Total Petrochemicals Security USA Inc.	100.00%		United States	United States
	Total Resources (Canada) Limited	100,00%		Canada	Canada
	TOTAL S.A.	0,00%		France	France
	Total Treasury	100,00%		France	France
	Total UK Finance Limited	100,00%		United Kingdom	United Kingdom

- (a) % of control different from % of interest: 49%.
- (b) % of control different from % of interest: 20,02%.
- (c) Multi-segment entities.

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SUPPLEMENTAL OIL AND GAS INFORMATION (UNAUDITED)

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9.1 Oil and gas information pursuant to *FASB Accounting Standards Codification 932*

Proved reserves estimates are calculated according to the Securities and Exchange Commission (SEC) Rule 4-10 of Regulation S-X set forth in the “Modernization of Oil and Gas Reporting” release (SEC Release n° 33-8995) and the Financial Accounting Standard Board

(FASB) Accounting Standards Update regarding Extractive Activities – Oil and Gas (ASC 932), which provide definitions and disclosure requirements.

9.1.1 Assessment process for reserves

Reserves estimations are performed by experienced geoscientists, engineers and economists under the supervision of each affiliate’s General Management. Staff involved in reserves evaluation are trained to follow SEC-compliant internal guidelines and policies regarding criteria that must be met before reserves can be considered as proved. All of the Group’s proved reserves held in subsidiaries and equity affiliates are estimated within the affiliates of the Group with the exception of the proved reserves held by the equity affiliate PAO Novatek. The assessment of the net proved liquids and natural gas reserves of certain properties owned by PAO Novatek was completed as of December 31, 2017, in accordance with the standards applied by the Group, based on an independent third-party report from DeGolyer & MacNaughton. These independently assessed reserves account for 50% of the total net proved reserves TOTAL held in Russia as of December 31, 2017.

The technical validation process relies on a Technical Reserves Committee that is responsible for approving proved reserves changes above a certain threshold and technical evaluations of reserves associated with an investment decision that requires approval from the Exploration & Production Executive Committee. The Chairman of the Technical Reserves Committee is appointed by the Senior Management of Exploration & Production and its members represent expertise in reservoir engineering, production geology, production geophysics, reserves methodology, drilling and development studies.

An internal control process related to reserves estimation is formalized and involves the following elements:

- A central Reserve Entity the responsibility of which is: to consolidate, document and archive the Group’s reserves; to ensure coherence of evaluations worldwide; to maintain the Corporate Reserves Guidelines Standards in line with SEC guidelines and policies; to deliver training on reserves evaluation and classification; and to conduct periodically in-depth technical review of reserves for each affiliate.
- An annual review of affiliates’ reserves conducted by an internal group of specialists selected for their expertise in geosciences and engineering and their knowledge of the affiliate. All members of this group, chaired by the Reserves Vice-President (“RVP”) of the

Development and Support to Operations division and composed of at least three Technical Reserves Committee members, are knowledgeable in the SEC guidelines for proved reserves evaluation. Their responsibility is to provide an independent review of reserves changes proposed by affiliates and ensure that reserves are estimated using appropriate standards and procedures.

- At the end of the annual review carried out by the Development and Support to Operations division, an SEC Reserves Committee chaired by the Exploration & Production Senior Vice President Corporate Affairs and comprised of the Development and Support to Operations, Strategy-Business Development-R&D, Finance and Legal Senior Vice Presidents, or their representatives, as well as the Chairman of the Technical Reserves Committee and the RVP, approves the elements of the SEC reserve booking proposals concerning criteria that are not dependent upon reservoir and geosciences techniques. The results of the annual review and the proposals for including revisions or additions of SEC Proved Reserves are presented to the Exploration & Production Executive Committee for approval before final validation by the Group’s General Management and Chief Financial Officer.

The reserves evaluation and control process is audited periodically by the Group’s internal auditors.

The RVP of the Development and Support to Operations division is the technical person responsible for preparing the reserves estimates for the Group. Appointed by the President of Exploration & Production, the RVP supervises the Reserve Entity, chairs the annual review of reserves, and is a member of the Technical Reserves Committee and the SEC Reserves Committee. The current RVP has over 20 years of experience in the oil and gas industry. He previously held several management positions in the Group in reservoir engineering and geosciences, and in the field of reserves evaluation and control process. He holds an engineering degree from *École Centrale Paris*, France, and a petroleum engineering degree from *École Nationale Supérieure du Pétrole et des Moteurs* (IFP School), France. He is a member of the UNECE (United Nations Economic Commission for Europe) Expert Group on Resource Classification, and an active member of the Society of Petroleum Engineers.

9.1.2 Proved developed reserves

As of December 31, 2017, proved developed reserves of hydrocarbons (oil, bitumen and gas) were 7,010 Mboe and represented 61% of the proved reserves. As of December 31, 2016, proved developed reserves of hydrocarbons (oil, bitumen and gas) were 6,667 Mboe and represented 58% of the proved reserves. As of December 31, 2015, proved developed reserves of hydrocarbons (oil,

bitumen and gas) were 6,186 Mboe and represented 53% of the proved reserves. Over the past three years, the average of proved developed reserves renewal has remained above 1,300 Mboe per year, illustrating TOTAL’s ability to consistently transfer proved undeveloped reserves into developed status.

9.1.3 Proved undeveloped reserves

As of December 31, 2017, TOTAL's combined proved undeveloped reserves of oil and gas were 4,465 Mboe compared to 4,852 Mboe at the end of 2016. The decrease of 387 Mboe of proved undeveloped reserves was due to the addition of +371 Mboe of undeveloped reserves related to extensions and discoveries, +150 Mboe due to revisions of previous estimates, -44 Mboe related to acquisitions/divestitures and -864 Mboe due to the transfer of proved undeveloped reserves to proved developed reserves. In 2017, the cost incurred to develop proved undeveloped reserves (PUDs) was \$7.6 billion, which represented 76% of 2017 development costs incurred, and was related to projects located for the most part in Nigeria, Canada, Angola, Australia, Norway, the United Arab Emirates, the United States and Iraq.

The revisions to previous estimates of +150 Mboe were due to:

- +21 Mboe due to new information obtained from drilling and production history;
- +141 Mboe due to economic factors as a result of higher yearly average hydrocarbon prices, including primarily a rebooking of some Canadian oil sands proved undeveloped reserves, as well as a delayed economic limit on a number of other assets, partly compensated by lower entitlement share from production sharing and risked service contracts; and
- -12 Mboe due to other revisions.

The overall decrease of -44 Mboe related to acquisitions/divestitures consists of the sale of 3.15% in Fort Hills (Canada), the sale of a 15% interest in Gina Krog (Norway), assets' sales in Gabon, the acquisition by Novatek of Severneft-Urengoy and an acquisition of a 10% interest in Absheron (Azerbaijan).

Approximately 63% of the Group's proved undeveloped reserves are associated with producing projects and are located for the most part in Russia, Canada, Norway, Kazakhstan, Qatar, the United Arab Emirates and Nigeria. These reserves are expected to be developed over time as part of initial field development plans or additional development phases.

The timing to bring these proved reserves into production will depend upon several factors including reservoir performance, surface facilities or plant capacity constraints and contractual limitations on production levels. The remaining proved undeveloped reserves correspond to undeveloped fields or assets for which a development has been sanctioned or is in progress.

The Group's portfolio of projects includes a few large scale and complex developments for which reserves have remained proved undeveloped for more than five years or the Group anticipates that it may take more than five years from the time of recording proved reserves to the start of production. These specific projects represent approximately 29% of the Group's proved undeveloped reserves and include developments in deep offshore Nigeria, in offshore Australia and Norway and in oil sands in Canada.

These projects are highly complex to develop due to a combination of factors that include, among others, the nature of the reservoir rock and fluid properties, challenging market and operating environments, and the size of the projects. TOTAL has demonstrated in recent years the Group's ability to develop and bring into production similar large scale and complex projects, including the development of deep-offshore fields in Angola, Nigeria, the Republic of the Congo, West of Shetland fields in the United Kingdom, heavy oil projects in Venezuela and LNG projects in Russia, Qatar, Nigeria and Indonesia.

In addition, some projects are generally designed and optimized for a given production capacity that controls the pace at which the field is developed and the wells are drilled. At production start-up, only a portion of the proved reserves are developed in order to deliver sufficient production potential to meet capacity constraints and contractual obligations.

Under these specific circumstances, the Group believes that it is justified to report as proved reserves the level of reserves used in connection with the approved project, despite the fact that some of these PUDs may remain undeveloped for more than five years.

9.1.4 Estimated proved reserves of oil, bitumen and gas

The following tables present, for oil, bitumen and gas reserves, an estimate of the Group's oil, bitumen and gas quantities by geographic areas as of December 31, 2017, 2016 and 2015.

Quantities shown correspond to proved developed and undeveloped reserves together with changes in quantities for 2017, 2016 and 2015.

The definitions used for proved, proved developed and proved undeveloped oil and gas reserves are in accordance with the revised Rule 4-10 of SEC Regulation S-X.

All references in the following tables to reserves or production are to the Group's entire share of such reserves or production. TOTAL's worldwide proved reserves include the proved reserves of its consolidated subsidiaries as well as its proportionate share of the proved reserves of equity affiliates.

Significant changes in proved reserves between 2016 and 2017 are discussed below.

For consolidated subsidiaries, the revisions of +519 Mboe for the year 2017 were due to:

- +299 Mboe due to new information obtained from drilling and production history mainly in the United Kingdom, United Arab Emirates, Nigeria and Norway;
- +246 Mboe due to economic factors as a result of higher yearly average hydrocarbon prices, including primarily a rebooking of some Canadian oil sands proved undeveloped reserves, as well as a delayed economic limit on a number of other assets mainly in Republic of Congo, partly compensated by lower entitlement share from production sharing and risked service contracts, in particular in Iraq; and
- -26 Mboe due to other revisions.

The extensions in the Americas correspond mainly to recognition of reserves in Brazil.

The sales of reserves in place in the Americas correspond to the decrease in interest in Fort Hills (Canada).

For equity affiliates, the revisions of +56 Mboe for the year 2017 were due to:

- +77 Mboe mainly due to new information obtained from drilling and production history mainly in Qatar and Russia; and
- -21 Mboe due to economic factors related to a lower entitlement share as a result of higher yearly average hydrocarbon prices.

The extensions in Russia correspond mainly to the booking of additional gas volumes in identified markets.

9.1.4.1 Changes in oil, bitumen and gas reserves

Proved developed and undeveloped reserves <i>(in million barrels of oil equivalent)</i>	Consolidated subsidiaries						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
BALANCE AS OF DECEMBER 31, 2014 – BRENT AT 101.27 \$/b	1,965	29	2,324	557	1,888	1,050	7,813
Revisions of previous estimates	1	-	(4)	(7)	144	62	196
Extensions, discoveries and other	11	-	9	864	6	7	897
Acquisitions of reserves in place	-	-	-	-	-	-	0
Sales of reserves in place	(28)	-	(76)	-	(160)	-	(264)
Production for the YEAR	(137)	(4)	(233)	(105)	(79)	(94)	(652)
BALANCE AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/b	1,812	25	2,020	1,309	1,799	1,025	7,990
Revisions of previous estimates	49	1	1	232	(234)	39	88
Extensions, discoveries and other	47	-	11	5	33	15	111
Acquisitions of reserves in place	-	-	-	-	152	-	152
Sales of reserves in place	(27)	(13)	-	-	(21)	-	(61)
Production for the year	(155)	(2)	(230)	(104)	(90)	(97)	(678)
BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/b	1,726	11	1,802	1,442	1,639	982	7,602
Revisions of previous estimates	122	2	106	50	195	44	519
Extensions, discoveries and other	-	-	29	62	149	6	246
Acquisitions of reserves in place	9	-	2	-	-	-	11
Sales of reserves in place	(17)	-	(28)	-	(52)	-	(97)
Production for the year	(162)	(2)	(232)	(104)	(115)	(89)	(704)
BALANCE AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/b	1,678	11	1,679	1,450	1,816	943	7,577

Minority interest in proved developed and undeveloped reserves as of

December 31, 2015 – Brent at 54.17 \$/b	-	-	128	-	-	-	128
December 31, 2016 – Brent at 42.82 \$/b	-	-	105	-	-	-	105
DECEMBER 31, 2017 – BRENT AT 54.36 \$/b	-	-	102	-	-	-	102

Proved developed and undeveloped reserves <i>(in million barrels of oil equivalent)</i>	Equity affiliates						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
BALANCE AS OF DECEMBER 31, 2014 – BRENT AT 101.27 \$/b	-	2,182	73	1,219	236	-	3,710
Revisions of previous estimates	-	96	(2)	(10)	(44)	-	40
Extensions, discoveries and other	-	-	-	-	-	-	-
Acquisitions of reserves in place	-	56	-	-	-	-	56
Sales of reserves in place	-	(12)	-	-	-	-	(12)
Production for the year	-	(102)	-	(88)	(14)	-	(204)
BALANCE AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/b	-	2,220	71	1,121	178	-	3,590
Revisions of previous estimates	-	16	-	68	(1)	-	83
Extensions, discoveries and other	-	331	-	-	-	-	331
Acquisitions of reserves in place	-	-	-	190	-	-	190
Sales of reserves in place	-	(59)	-	-	-	-	(59)
Production for the year	-	(119)	(1)	(87)	(12)	-	(219)
BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/b	-	2,389	70	1,292	165	-	3,916
Revisions of previous estimates	-	17	-	45	(6)	-	56
Extensions, discoveries and other	-	124	-	-	-	-	124
Acquisitions of reserves in place	-	35	-	-	-	-	35
Sales of reserves in place	-	-	-	-	-	-	-
Production for the year	-	(114)	(7)	(100)	(12)	-	(233)
BALANCE AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/b	-	2,451	63	1,237	147	-	3,898

Proved developed and undeveloped reserves <i>(in million barrels of oil equivalent)</i>	Consolidated subsidiaries and equity affiliates						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/b							
Proved developed and undeveloped reserves	1,812	2,245	2,091	2,430	1,977	1,025	11,580
Consolidated subsidiaries	1,812	25	2,020	1,309	1,799	1,025	7,990
Equity affiliates	-	2,220	71	1,121	178	-	3,590
Proved developed reserves	1,009	1,070	1,173	2,062	626	246	6,186
Consolidated subsidiaries	1,009	16	1,161	1,070	549	246	4,051
Equity affiliates	-	1,054	12	992	77	-	2,135
Proved undeveloped reserves	803	1,175	918	368	1,351	779	5,394
Consolidated subsidiaries	803	9	859	239	1,250	779	3,939
Equity affiliates	-	1,166	59	129	101	-	1,455
AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/b							
Proved developed and undeveloped reserves	1,726	2,400	1,872	2,734	1,804	982	11,518
Consolidated subsidiaries	1,726	11	1,802	1,442	1,639	982	7,602
Equity affiliates	-	2,389	70	1,292	165	-	3,916
Proved developed reserves	1,025	1,017	1,141	2,281	979	224	6,667
Consolidated subsidiaries	1,025	7	1,132	1,158	897	224	4,443
Equity affiliates	-	1,010	9	1,123	82	-	2,224
Proved undeveloped reserves	701	1,383	731	453	825	758	4,851
Consolidated subsidiaries	701	4	670	284	742	758	3,159
Equity affiliates	-	1,379	61	169	83	-	1,692
AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/b							
Proved developed and undeveloped reserves	1,678	2,462	1,742	2,687	1,963	943	11,475
Consolidated subsidiaries	1,678	11	1,679	1,450	1,816	943	7,577
Equity affiliates	-	2,451	63	1,237	147	-	3,898
Proved developed reserves	1,100	1,344	1,206	2,256	907	197	7,010
Consolidated subsidiaries	1,100	8	1,192	1,177	836	197	4,510
Equity affiliates	-	1,336	14	1,079	71	-	2,500
Proved undeveloped reserves	578	1,118	536	431	1,056	746	4,465
Consolidated subsidiaries	578	3	487	273	979	746	3,066
Equity affiliates	-	1,115	49	158	77	-	1,399

9.1.4.2 Changes in oil reserves

The oil reserves include crude oil, condensates and natural gas liquids reserves.

Proved developed and undeveloped reserves	Consolidated subsidiaries						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
<i>(in million barrels)</i>							
BALANCE AS OF DECEMBER 31, 2014 – BRENT AT 101.27 \$/b	1,043	26	1,688	327	88	207	3,379
Revisions of previous estimates	(9)	-	3	(46)	27	10	(15)
Extensions, discoveries and other	4	-	8	856	2	-	870
Acquisitions of reserves in place	-	-	-	-	-	-	-
Sales of reserves in place	(3)	-	(58)	-	-	-	(61)
Production for the year	(59)	(3)	(191)	(86)	(16)	(12)	(367)
BALANCE AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/b	976	23	1,450	1,051	101	205	3,806
Revisions of previous estimates	22	1	6	239	(9)	6	265
Extensions, discoveries and other	14	-	11	4	11	-	40
Acquisitions of reserves in place	-	-	-	-	-	-	-
Sales of reserves in place	(13)	(11)	-	-	(2)	-	(26)
Production for the year	(63)	(3)	(185)	(84)	(16)	(11)	(362)
BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/b	936	10	1,282	1,210	85	200	3,723
Revisions of previous estimates	42	-	94	57	7	2	202
Extensions, discoveries and other	-	-	18	38	91	-	147
Acquisitions of reserves in place	3	-	2	-	-	-	5
Sales of reserves in place	(8)	-	(26)	-	-	-	(34)
Production for the year	(71)	(1)	(182)	(87)	(15)	(10)	(366)
BALANCE AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/b	902	9	1,188	1,218	168	192	3,677

Minority interest in proved developed and undeveloped reserves as of

December 31, 2015 – Brent at 54.17 \$/b	-	-	115	-	-	-	115
December 31, 2016 – Brent at 42.82 \$/b	-	-	95	-	-	-	95
DECEMBER 31, 2017 – BRENT AT 54.36 \$/b	-	-	93	-	-	-	93

Proved developed and undeveloped reserves	Equity affiliates						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
<i>(in million barrels)</i>							
BALANCE AS OF DECEMBER 31, 2014 – BRENT AT 101.27 \$/b	-	225	7	321	226	-	779
Revisions of previous estimates	-	34	6	(11)	(42)	-	(13)
Extensions, discoveries and other	-	-	-	-	-	-	-
Acquisitions of reserves in place	-	6	-	-	-	-	6
Sales of reserves in place	-	(2)	-	-	-	-	(2)
Production for the year	-	(17)	-	(50)	(14)	-	(81)
BALANCE AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/b	-	246	13	260	170	-	689
Revisions of previous estimates	-	42	-	58	(1)	-	99
Extensions, discoveries and other	-	15	-	-	-	-	15
Acquisitions of reserves in place	-	-	-	167	-	-	167
Sales of reserves in place	-	(2)	-	-	-	-	(2)
Production for the year	-	(25)	-	(53)	(12)	-	(90)
BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/b	-	276	13	432	157	-	878
Revisions of previous estimates	-	16	-	44	(6)	-	54
Extensions, discoveries and other	-	12	-	-	-	-	12
Acquisitions of reserves in place	-	4	-	-	-	-	4
Sales of reserves in place	-	-	-	-	-	-	-
Production for the year	-	(24)	(2)	(66)	(11)	-	(103)
BALANCE AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/b	-	284	11	410	140	-	845

Proved developed and undeveloped reserves <i>(in million barrels)</i>	Consolidated subsidiaries and equity affiliates						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/b							
Proved developed and undeveloped reserves^(a)	976	270	1,463	1,310	271	205	4,495
Consolidated subsidiaries	976	23	1,450	1,051	101	205	3,806
Equity affiliates	-	246	13	260	170	-	689
Proved developed reserves	445	151	836	1,061	145	17	2,655
Consolidated subsidiaries	445	15	833	846	71	17	2,227
Equity affiliates	-	136	3	215	74	-	428
Proved undeveloped reserves	531	118	627	250	126	188	1,840
Consolidated subsidiaries	531	8	617	205	30	188	1,579
Equity affiliates	-	110	10	45	96	-	261
AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/b							
Proved developed and undeveloped reserves^(a)	936	286	1,295	1,642	242	200	4,601
Consolidated subsidiaries	936	10	1,282	1,210	85	200	3,723
Equity affiliates	-	276	13	432	157	-	878
Proved developed reserves	476	152	819	1,309	151	14	2,921
Consolidated subsidiaries	476	7	816	955	73	14	2,341
Equity affiliates	-	145	3	354	78	-	580
Proved undeveloped reserves	460	134	476	333	91	186	1,680
Consolidated subsidiaries	460	3	466	255	12	186	1,382
Equity affiliates	-	131	10	78	79	-	298
AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/b							
Proved developed and undeveloped reserves^(a)	902	293	1,199	1,628	308	192	4,522
Consolidated subsidiaries	902	9	1,188	1,218	168	192	3,677
Equity affiliates	-	284	11	410	140	-	845
Proved developed reserves	541	176	853	1,321	145	10	3,046
Consolidated subsidiaries	541	8	849	1,000	77	10	2,485
Equity affiliates	-	168	4	321	68	-	561
Proved undeveloped reserves	361	117	346	307	163	182	1,476
Consolidated subsidiaries	361	2	338	217	91	182	1,191
Equity affiliates	-	115	8	90	72	-	285

(a) The tables do not include separate figures for NGL reserves because they represented less than 8.5% of the Group's proved developed and undeveloped oil reserves in each of the years 2015, 2016 and 2017.

9.1.4.3 Changes in bitumen reserves

Proved developed and undeveloped reserves <i>(in million barrels)</i>	Consolidated subsidiaries						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
BALANCE AS OF DECEMBER 31, 2014 – BRENT AT 101.27 \$/b	-	-	-	-	1,145	-	1,145
Revisions of previous estimates	-	-	-	-	130	-	130
Extensions, discoveries and other	-	-	-	-	-	-	-
Acquisitions of reserves in place	-	-	-	-	-	-	-
Sales of reserves in place	-	-	-	-	(160)	-	(160)
Production for the year	-	-	-	-	(5)	-	(5)
BALANCE AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/b	-	-	-	-	1,110	-	1,110
Revisions of previous estimates	-	-	-	-	(284)	-	(284)
Extensions, discoveries and other	-	-	-	-	-	-	-
Acquisitions of reserves in place	-	-	-	-	-	-	-
Sales of reserves in place	-	-	-	-	-	-	-
Production for the year	-	-	-	-	(13)	-	(13)
BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/b	-	-	-	-	813	-	813
Revisions of previous estimates	-	-	-	-	189	-	189
Extensions, discoveries and other	-	-	-	-	-	-	-
Acquisitions of reserves in place	-	-	-	-	-	-	-
Sales of reserves in place	-	-	-	-	(52)	-	(52)
Production for the year	-	-	-	-	(22)	-	(22)
BALANCE AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/b	-	-	-	-	928	-	928
Proved developed reserves as of							
December 31, 2015 – Brent at 54.17 \$/b	-	-	-	-	100	-	100
December 31, 2016 – Brent at 42.82 \$/b	-	-	-	-	160	-	160
DECEMBER 31, 2017 – BRENT AT 54.36 \$/b	-	-	-	-	142	-	142
Proved undeveloped reserves as of							
December 31, 2015 – Brent at 54.17 \$/b	-	-	-	-	1,010	-	1,010
December 31, 2016 – Brent at 42.82 \$/b	-	-	-	-	653	-	653
DECEMBER 31, 2017 – BRENT AT 54.36 \$/b	-	-	-	-	786	-	786

There are no bitumen reserves for equity affiliates.
There are no minority interests for bitumen reserves.

9.1.4.4 Changes in gas reserves

Proved developed and undeveloped reserves <i>(in billion cubic feet)</i>	Consolidated subsidiaries							Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific		
BALANCE AS OF DECEMBER 31, 2014 – BRENT AT 101.27 \$/b	4,934	15	3,203	1,300	3,693	4,622	17,767	
Revisions of previous estimates	55	1	(57)	197	(92)	296	400	
Extensions, discoveries and other	40	-	7	42	24	38	151	
Acquisitions of reserves in place	-	-	-	-	-	-	-	
Sales of reserves in place	(135)	-	(93)	-	-	-	(228)	
Production for the year	(424)	(1)	(212)	(110)	(324)	(471)	(1,542)	
BALANCE AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/b	4,470	15	2,848	1,429	3,301	4,485	16,548	
Revisions of previous estimates	143	(2)	(44)	(28)	347	189	605	
Extensions, discoveries and other	173	-	-	7	126	85	391	
Acquisitions of reserves in place	-	-	-	-	874	-	874	
Sales of reserves in place	(80)	(7)	-	-	(101)	-	(188)	
Production for the year	(498)	(1)	(220)	(111)	(343)	(494)	(1,667)	
BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/b	4,208	5	2,584	1,297	4,204	4,265	16,563	
Revisions of previous estimates	434	2	52	(44)	(21)	233	656	
Extensions, discoveries and other	-	-	53	131	323	35	542	
Acquisitions of reserves in place	34	-	-	-	-	-	34	
Sales of reserves in place	(49)	-	(10)	-	-	-	(59)	
Production for the year	(495)	-	(248)	(94)	(440)	(455)	(1,732)	
BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 54.36 \$/b	4,132	7	2,431	1,290	4,066	4,078	16,004	
Minority interest in proved developed and undeveloped reserves as of								
December 31, 2015 – Brent at 54.17 \$/b	-	-	64	-	-	-	64	
December 31, 2016 – Brent at 42.82 \$/b	-	-	48	-	-	-	48	
DECEMBER 31, 2017 – BRENT AT 54.36 \$/b	-	-	44	-	-	-	44	

Proved developed and undeveloped reserves <i>(in billion cubic feet)</i>	Equity affiliates							Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific		
BALANCE AS OF DECEMBER 31, 2014 – BRENT AT 101.27 \$/b	-	10,508	356	4,897	62	-	15,823	
Revisions of previous estimates	-	337	(45)	6	(11)	-	287	
Extensions, discoveries and other	-	-	-	-	-	-	-	
Acquisitions of reserves in place	-	267	-	-	-	-	267	
Sales of reserves in place	-	(52)	-	-	-	-	(52)	
Production for the year	-	(456)	-	(208)	(3)	-	(667)	
BALANCE AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/b	-	10,604	311	4,695	48	-	15,658	
Revisions of previous estimates	-	(132)	(3)	51	(1)	-	(85)	
Extensions, discoveries and other	-	1,717	-	-	-	-	1,717	
Acquisitions of reserves in place	-	-	-	132	-	-	132	
Sales of reserves in place	-	(308)	-	-	-	-	(308)	
Production for the year	-	(503)	(7)	(181)	(2)	-	(693)	
BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/b	-	11,378	301	4,697	45	-	16,421	
Revisions of previous estimates	-	3	4	3	(1)	-	9	
Extensions, discoveries and other	-	607	-	-	-	-	607	
Acquisitions of reserves in place	-	164	-	-	-	-	164	
Sales of reserves in place	-	-	-	-	-	-	-	
Production for the year	-	(481)	(29)	(187)	(2)	-	(699)	
BALANCE AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/b	-	11,671	276	4,513	42	-	16,502	

Proved developed and undeveloped reserves <i>(in billion cubic feet)</i>	Consolidated subsidiaries and equity affiliates						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/b							
Proved developed and undeveloped reserves	4,470	10,619	3,159	6,124	3,349	4,485	32,206
Consolidated subsidiaries	4,470	15	2,848	1,429	3,301	4,485	16,548
Equity affiliates	-	10,604	311	4,695	48	-	15,658
Proved developed reserves	3,021	4,890	1,657	5,511	2,153	1,378	18,610
Consolidated subsidiaries	3,021	6	1,610	1,277	2,133	1,378	9,425
Equity affiliates	-	4,884	47	4,234	20	-	9,185
Proved undeveloped reserves	1,449	5,729	1,502	613	1,196	3,107	13,596
Consolidated subsidiaries	1,449	9	1,238	152	1,168	3,107	7,123
Equity affiliates	-	5,720	264	461	28	-	6,473
AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/b							
Proved developed and undeveloped reserves	4,208	11,383	2,885	5,994	4,249	4,265	32,984
Consolidated subsidiaries	4,208	5	2,584	1,297	4,204	4,265	16,563
Equity affiliates	-	11,378	301	4,697	45	-	16,421
Proved developed reserves	2,912	4,606	1,582	5,356	3,774	1,260	19,490
Consolidated subsidiaries	2,912	3	1,545	1,157	3,751	1,260	10,628
Equity affiliates	-	4,603	37	4,199	23	-	8,862
Proved undeveloped reserves	1,296	6,777	1,303	638	475	3,005	13,494
Consolidated subsidiaries	1,296	2	1,039	140	453	3,005	5,935
Equity affiliates	-	6,775	264	498	22	-	7,559
AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/b							
Proved developed and undeveloped reserves	4,132	11,678	2,707	5,803	4,108	4,078	32,506
Consolidated subsidiaries	4,132	7	2,431	1,289	4,066	4,078	16,004
Equity affiliates ^(a)	-	11,671	276	4,514	42	-	16,502
Proved developed reserves	2,964	6,262	1,749	5,151	3,493	1,127	20,746
Consolidated subsidiaries	2,964	4	1,692	1,013	3,476	1,127	10,276
Equity affiliates	-	6,258	57	4,138	17	-	10,470
Proved undeveloped reserves	1,168	5,416	958	652	615	2,951	11,760
Consolidated subsidiaries	1,168	3	739	276	590	2,951	5,727
Equity affiliates	-	5,413	219	376	25	-	6,033

9.1.5 Results of operations for oil and gas producing activities

The following tables do not include revenues and expenses related to oil and gas transportation activities and LNG liquefaction and transportation.

	Consolidated subsidiaries						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
<i>(M\$)</i>							
2015							
Revenues Non-Group sales	1,345	-	989	2,340	970	3,013	8,657
Group sales	3,816	129	7,816	1,858	271	356	14,246
Total Revenues	5,161	129	8,805	4,198	1,241	3,369	22,903
Production costs	(1,521)	(34)	(1,779)	(659)	(497)	(456)	(4,946)
Exploration expenses	(661)	(3)	(615)	(226)	(114)	(372)	(1,991)
Depreciation, depletion and amortization and valuation allowances	(2,415)	(203)	(6,155)	(1,344)	(1,548)	(3,483)	(15,148)
Other expenses ^(a)	(350)	(16)	(722)	(2,756)	(280)	(121)	(4,245)
Pre-tax income from producing activities^(b)	214	(127)	(466)	(787)	(1,198)	(1,063)	(3,427)
Income tax	458	(4)	(220)	(123)	210	(173)	148
Results of oil and gas producing activities^(b)	672	(131)	(686)	(910)	(988)	(1,236)	(3,279)

(a) Included production taxes and accretion expense as provided for by IAS 37 (\$497 million in 2015).

(b) Including adjustment items applicable to ASC 932 perimeter, amounting to a net charge of \$7,104 million before tax and \$5,039 million after tax, mainly related to asset impairments.

2016							
Revenues Non-Group sales	1,075	-	507	613	963	2,113	5,271
Group sales	3,046	72	6,826	3,033	494	444	13,915
Total Revenues	4,121	72	7,333	3,646	1,457	2,557	19,186
Production costs	(1,083)	(30)	(1,601)	(478)	(488)	(351)	(4,031)
Exploration expenses	(512)	(3)	(108)	(368)	(196)	(77)	(1,264)
Depreciation, depletion and amortization and valuation allowances	(3,421)	(89)	(4,566)	(599)	(603)	(1,191)	(10,469)
Other expenses ^(a)	(339)	(8)	(615)	(2,328)	(224)	(97)	(3,611)
Pre-tax income from producing activities^(b)	(1,234)	(58)	443	(127)	(54)	841	(189)
Income tax	818	14	(143)	(205)	(27)	(184)	273
Results of oil and gas producing activities^(b)	(416)	(44)	300	(332)	(81)	657	84

(a) Included production taxes and accretion expense as provided for by IAS 37 (\$507 million in 2016).

(b) Including adjustment items applicable to ASC 932 perimeter, amounting to a net charge of \$1,943 million before tax and \$1,198 million after tax, mainly related to asset impairments.

2017							
Revenues Non-Group sales	1,454	-	975	934	1,335	2,160	6,858
Group sales	3,932	41	8,486	3,706	821	453	17,439
Total Revenues	5,386	41	9,461	4,640	2,156	2,613	24,297
Production costs	(1,072)	(14)	(1,350)	(434)	(601)	(318)	(3,789)
Exploration expenses	(419)	(2)	(164)	(10)	(193)	(76)	(864)
Depreciation, depletion and amortization and valuation allowances	(2,928)	(36)	(5,790)	(511)	(2,569)	(820)	(12,654)
Other expenses ^(a)	(352)	(7)	(775)	(2,619)	(338)	(121)	(4,212)
Pre-tax income from producing activities^(b)	615	(18)	1,382	1,066	(1,545)	1,278	2,778
Income tax	(776)	(2)	(853)	(469)	387	(482)	(2,195)
Results of oil and gas producing activities^(b)	(161)	(20)	529	597	(1,158)	796	583

(a) Included production taxes and accretion expense as provided for by IAS 37 (\$525 million in 2017).

(b) Including adjustment items applicable to ASC 932 perimeter, amounting to a net charge of \$3,712 million before tax and \$3,305 million after tax, essentially related to asset impairments.

(M\$)	Equity affiliates						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
2015							
Revenues Non-Group sales	-	670	-	812	380	-	1,862
Group sales	-	-	-	2,404	10	-	2,414
Total Revenues	-	670	-	3,216	390	-	4,276
Production costs	-	(127)	-	(295)	(54)	-	(476)
Exploration expenses	-	(1)	-	-	-	-	(1)
Depreciation, depletion and amortization and valuation allowances	-	(58)	-	(400)	(98)	-	(556)
Other expenses	-	(134)	-	(1,638)	(170)	-	(1,942)
Pre-tax income from producing activities	-	350	-	883	68	-	1,301
Income tax	-	(65)	-	(184)	(36)	-	(285)
Results of oil and gas producing activities	-	285	-	699	32	-	1,016
2016							
Revenues Non-Group sales	-	831	-	399	310	-	1,540
Group sales	-	-	-	2,104	(11)	-	2,093
Total Revenues	-	831	-	2,503	299	-	3,633
Production costs	-	(103)	-	(246)	(42)	-	(391)
Exploration expenses	-	(4)	-	-	-	-	(4)
Depreciation, depletion and amortization and valuation allowances	-	(137)	-	(496)	(94)	-	(727)
Other expenses	-	(109)	-	(1,274)	(116)	-	(1,499)
Pre-tax income from producing activities	-	478	-	487	47	-	1,012
Income tax	-	(80)	-	(107)	55	-	(132)
Results of oil and gas producing activities	-	398	-	380	102	-	880
2017							
Revenues Non-Group sales	-	1,027	81	1,526	351	-	2,985
Group sales	-	8	-	2,247	19	-	2,274
Total Revenues	-	1,034	81	3,774	370	-	5,259
Production costs	-	(106)	-	(283)	(55)	-	(444)
Exploration expenses	-	(5)	-	-	-	-	(5)
Depreciation, depletion and amortization and valuation allowances	-	(149)	-	(423)	(88)	-	(660)
Other expenses	-	(187)	(9)	(2,309)	(159)	-	(2,664)
Pre-tax income from producing activities	-	587	72	759	67	-	1,485
Income tax	-	(104)	-	(212)	(5)	-	(321)
Results of oil and gas producing activities	-	483	72	547	62	-	1,164

9.1.6 Cost incurred

The following tables set forth the costs incurred in the Group's oil and gas property acquisition, exploration and development activities, including both capitalized and expensed amounts. They do not include costs incurred related to oil and gas transportation and LNG liquefaction and transportation activities.

(M\$)	Consolidated subsidiaries						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
2015							
Proved property acquisition	57	-	59	1,039	-	10	1,165
Unproved property acquisition	-	4	26	1,205	199	4	1,438
Exploration costs	618	3	287	263	515	261	1,947
Development costs ^(a)	4,735	97	7,582	600	3,143	2,381	18,538
TOTAL COST INCURRED	5,410	104	7,954	3,107	3,857	2,656	23,088
2016							
Proved property acquisition	102	1	31	10	415	-	559
Unproved property acquisition	5	-	19	1	289	15	329
Exploration costs	594	3	145	93	387	166	1,388
Development costs ^(a)	3,041	30	5,977	729	2,032	898	12,707
TOTAL COST INCURRED	3,742	34	6,172	833	3,123	1,079	14,983
2017							
Proved property acquisition	47	-	1	1	14	-	63
Unproved property acquisition	13	-	56	5	153	507	734
Exploration costs	415	2	170	61	388	141	1,177
Development costs ^(a)	1,445	20	3,544	948	1,957	1,073	8,987
TOTAL COST INCURRED	1,919	22	3,771	1,014	2,512	1,721	10,959

(M\$)	Equity affiliates						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
Share of incurred costs							
2015							
Proved property acquisition	-	218	-	-	-	-	218
Unproved property acquisition	-	14	-	-	-	-	14
Exploration costs	-	-	-	8	-	-	8
Development costs ^(a)	-	405	-	398	83	-	886
TOTAL COST INCURRED	-	637	-	406	83	-	1,126
2016							
Proved property acquisition	-	-	-	35	-	-	35
Unproved property acquisition	-	-	-	-	-	-	-
Exploration costs	-	-	-	7	-	-	7
Development costs ^(a)	-	243	-	502	61	-	806
TOTAL COST INCURRED	-	243	-	544	61	-	848
2017							
Proved property acquisition	-	-	-	-	-	-	-
Unproved property acquisition	-	-	-	-	-	-	-
Exploration costs	-	-	-	4	-	-	4
Development costs ^(a)	-	219	-	625	88	-	932
TOTAL COST INCURRED	-	219	-	629	88	-	936

(a) Including asset retirement costs capitalized during the year and any gains or losses recognized upon settlement of asset retirement obligation during the year.

9.1.7 Capitalized costs related to oil and gas producing activities

Capitalized costs represent the amount of capitalized proved and unproved property costs, including support equipment and facilities, along with the related accumulated depreciation, depletion and amortization. The following tables do not include capitalized costs related to oil and gas transportation and LNG liquefaction and transportation activities.

(M\$)	Consolidated subsidiaries						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
As of December 31, 2015							
Proved properties	55,050	1,163	73,842	12,816	19,630	22,886	185,387
Unproved properties	1,018	4	4,362	2,058	8,915	997	17,354
TOTAL CAPITALIZED COSTS	56,068	1,167	78,204	14,874	28,545	23,883	202,741
Accumulated depreciation, depletion and amortization	(28,341)	(699)	(39,259)	(9,283)	(11,488)	(13,647)	(102,717)
Net capitalized costs	27,727	468	38,945	5,591	17,057	10,236	100,024
As of December 31, 2016							
Proved properties	54,611	600	78,638	11,275	23,392	23,622	192,138
Unproved properties	1,000	4	4,357	1,657	8,611	1,037	16,666
TOTAL CAPITALIZED COSTS	55,611	604	82,995	12,932	32,003	24,659	208,804
Accumulated depreciation, depletion and amortization	(29,227)	(385)	(42,988)	(7,973)	(12,764)	(14,735)	(108,072)
Net capitalized costs	26,384	219	40,007	4,959	19,239	9,924	100,732
As of December 31, 2017							
Proved properties	58,624	619	79,793	12,544	25,354	24,626	201,560
Unproved properties	1,085	4	4,289	1,331	8,265	1,630	16,604
TOTAL CAPITALIZED COSTS	59,709	623	84,082	13,874	33,619	26,256	218,163
Accumulated depreciation, depletion and amortization	(34,370)	(421)	(46,725)	(8,450)	(14,345)	(15,550)	(119,861)
Net capitalized costs	25,339	202	37,357	5,424	19,274	10,706	98,303
(M\$)	Equity affiliates						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
As of December 31, 2015							
Proved properties	-	4,573	-	4,323	1,500	-	10,396
Unproved properties	-	202	-	-	-	-	202
TOTAL CAPITALIZED COSTS	-	4,775	-	4,323	1,500	-	10,598
Accumulated depreciation, depletion and amortization	-	(655)	-	(3,192)	(403)	-	(4,250)
Net capitalized costs	-	4,120	-	1,131	1,097	-	6,348
As of December 31, 2016							
Proved properties	-	5,802	-	5,029	1,600	-	12,431
Unproved properties	-	211	-	-	-	-	211
TOTAL CAPITALIZED COSTS	-	6,013	-	5,029	1,600	-	12,642
Accumulated depreciation, depletion and amortization	-	(1,026)	-	(3,850)	(506)	-	(5,382)
Net capitalized costs	-	4,987	-	1,179	1,094	-	7,260
As of December 31, 2017							
Proved properties	-	6,232	-	5,583	1,676	-	13,491
Unproved properties	-	185	-	-	-	-	185
TOTAL CAPITALIZED COSTS	-	6,417	-	5,583	1,676	-	13,676
Accumulated depreciation, depletion and amortization	-	(1,344)	-	(4,340)	(592)	-	(6,276)
Net capitalized costs	-	5,074	-	1,243	1,084	-	7,401

9.1.8 Standardized measure of discounted future net cash flows (excluding transportation)

The standardized measure of discounted future net cash flows relating to proved oil and gas reserve quantities was developed as follows:

- estimates of proved reserves and the corresponding production profiles are based on existing technical and economic conditions;
- the estimated future cash flows are determined based on prices used in estimating the Group's proved oil and gas reserves;
- the future cash flows incorporate estimated production costs (including production taxes), future development costs and asset retirement costs. All cost estimates are based on year-end technical and economic conditions;

- future income taxes are computed by applying the year-end statutory tax rate to future net cash flows after consideration of permanent differences and future income tax credits; and
- future net cash flows are discounted at a standard discount rate of 10%.

These principles applied are those required by ASC 932 and do not reflect the expectations of real revenues from these reserves, nor their present value; hence, they do not constitute criteria for investment decisions. An estimate of the fair value of reserves should also take into account, among other things, the recovery of reserves not presently classified as proved, anticipated future changes in prices and costs and a discount factor more representative of the time value of money and the risks inherent in reserves estimates.

	Consolidated subsidiaries						
(M\$)	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	Total
As of December 31, 2015							
Future cash inflows	69,411	1,045	75,060	57,478	40,866	26,904	270,764
Future production costs	(20,263)	(512)	(27,455)	(46,510)	(24,103)	(8,355)	(127,198)
Future development costs	(20,418)	(495)	(24,843)	(5,099)	(11,104)	(6,289)	(68,248)
Future income taxes	(7,516)	(28)	(12,050)	(1,839)	(1,105)	(3,046)	(25,584)
Future net cash flows, after income taxes	21,214	10	10,712	4,030	4,554	9,214	49,734
Discount at 10%	(10,784)	18	(3,450)	(2,194)	(4,014)	(5,299)	(25,723)
Standardized measure of discounted future net cash flows	10,430	28	7,262	1,836	540	3,915	24,011
As of December 31, 2016							
Future cash inflows	46,212	365	51,677	52,891	21,520	19,209	191,874
Future production costs	(15,428)	(179)	(19,519)	(39,108)	(14,267)	(7,495)	(95,996)
Future development costs	(15,334)	(219)	(19,300)	(4,995)	(5,487)	(4,805)	(50,140)
Future income taxes	(2,599)	(1)	(7,480)	(2,517)	(989)	(955)	(14,541)
Future net cash flows, after income taxes	12,851	(34)	5,378	6,271	777	5,954	31,197
Discount at 10%	(5,172)	8	(64)	(2,986)	(815)	(2,666)	(11,695)
Standardized measure of discounted future net cash flows	7,679	(26)	5,314	3,285	(38)	3,288	19,502
As of December 31, 2017							
Future cash inflows	58,133	420	63,319	67,180	37,203	20,616	246,871
Future production costs	(16,644)	(221)	(18,554)	(50,240)	(19,372)	(5,780)	(110,811)
Future development costs	(13,302)	(115)	(15,319)	(5,648)	(6,337)	(4,044)	(44,765)
Future income taxes	(9,385)	(36)	(11,403)	(4,450)	(921)	(1,721)	(27,916)
Future net cash flows, after income taxes	18,802	47	18,043	6,843	10,572	9,070	63,377
Discount at 10%	(8,106)	(3)	(4,977)	(3,065)	(6,562)	(3,567)	(26,280)
Standardized measure of discounted future net cash flows	10,696	44	13,066	3,778	4,010	5,503	37,097

Minority interests in future net cash flows

(M\$)

As of December 31, 2015	-	-	448	-	-	-	448
As of December 31, 2016	-	-	253	-	-	-	253
AS OF DECEMBER 31, 2017	-	-	862	-	-	-	862

(M\$)	Equity affiliates						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
As of December 31, 2015							
Future cash inflows	-	21,779	52	36,231	7,736	-	65,798
Future production costs	-	(7,973)	-	(16,814)	(2,884)	-	(27,671)
Future development costs	-	(1,146)	(28)	(2,638)	(547)	-	(4,359)
Future income taxes	-	(1,450)	(29)	(2,818)	(918)	-	(5,215)
Future net cash flows, after income taxes	-	11,210	(5)	13,961	3,387	-	28,553
Discount at 10%	-	(9,186)	(98)	(7,009)	(1,759)	-	(18,052)
Standardized measure of discounted future net cash flows	-	2,024	(103)	6,952	1,628	-	10,501
As of December 31, 2016							
Future cash inflows	-	22,393	(248)	30,045	5,815	-	58,005
Future production costs	-	(5,704)	(53)	(15,846)	(2,017)	-	(23,620)
Future development costs	-	(929)	(1)	(2,339)	(392)	-	(3,661)
Future income taxes	-	(1,228)	(20)	(4,661)	-	-	(5,909)
Future net cash flows, after income taxes	-	14,532	(322)	7,199	3,406	-	24,815
Discount at 10%	-	(9,471)	139	(3,869)	(1,697)	-	(14,898)
Standardized measure of discounted future net cash flows	-	5,061	(183)	3,330	1,709	-	9,917
As of December 31, 2017							
Future cash inflows	-	30,769	365	39,518	6,719	-	77,371
Future production costs	-	(7,647)	(46)	(17,654)	(3,209)	-	(28,556)
Future development costs	-	(1,267)	(1)	(3,066)	(299)	-	(4,633)
Future income taxes	-	(2,097)	(17)	(7,459)	-	-	(9,573)
Future net cash flows, after income taxes	-	19,758	301	11,338	3,211	-	34,608
Discount at 10%	-	(12,050)	(166)	(5,901)	(1,549)	-	(19,666)
Standardized measure of discounted future net cash flows	-	7,708	135	5,437	1,662	-	14,942

9.1.9 Changes in the standardized measure of discounted future net cash flows

Consolidated subsidiaries (M\$)	2015	2016	2017
Discounted future net cash flows at January 1	60,774	24,011	19,502
Sales and transfers, net of production costs	(14,209)	(12,015)	(16,822)
Net change in sales and transfer prices and in production costs and other expenses	(88,615)	(21,189)	26,699
Extensions, discoveries and improved recovery	933	156	3,244
Changes in estimated future development costs	4,412	400	(324)
Previously estimated development costs incurred during the year	19,694	13,967	8,952
Revisions of previous quantity estimates	(4,800)	5,347	2,427
Accretion of discount	6,077	2,401	1,950
Net change in income taxes	42,252	6,304	(8,155)
Purchases of reserves in place	-	364	98
Sales of reserves in place	(2,507)	(244)	(474)
END OF YEAR	24,011	19,502	37,097
Equity affiliates (M\$)	2015	2016	2017
Discounted future net cash flows at January 1	19,093	10,501	9,917
Sales and transfers, net of production costs	(1,860)	(1,745)	(2,151)
Net change in sales and transfer prices and in production costs and other expenses	(14,821)	(3,840)	7,075
Extensions, discoveries and improved recovery	-	1,204	57
Changes in estimated future development costs	1,572	83	(1,171)
Previously estimated development costs incurred during the year	1,272	971	789
Revisions of previous quantity estimates	315	214	783
Accretion of discount	1,909	1,050	992
Net change in income taxes	2,901	(340)	(1,420)
Purchases of reserves in place	186	1,929	71
Sales of reserves in place	(66)	(110)	-
END OF YEAR	10,501	9,917	14,942

9.2 Other information

9.2.1 Net gas production, production prices and production costs

	Consolidated subsidiaries						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
2015							
Natural gas production available for sale (Bcf)^(a)	398	-	171	93	318	449	1,429
Production prices^(b)							
Oil (\$/b) ^(c)	45.91	39.83	45.33	47.63	25.68	47.38	45.12
Bitumen (\$/b)	-	-	-	-	12.16	-	12.16
Natural gas (\$/kcf)	6.00	-	1.97	1.16	2.53	6.62	4.65
Production costs per unit of production (\$/boe)^(d)							
Total liquids and natural gas	11.52	9.77	7.91	6.44	6.35	5.05	7.84
Bitumen	-	-	-	-	37.92	-	37.92
2016							
Natural gas production available for sale (Bcf)^(a)	469	-	180	94	337	471	1,551
Production prices^(b)							
Oil (\$/b) ^(c)	34.63	30.89	37.77	40.23	23.54	37.89	37.18
Bitumen (\$/b)	-	-	-	-	10.77	-	10.77
Natural gas (\$/kcf)	4.24	-	1.43	1.20	2.50	4.53	3.48
Production costs per unit of production (\$/boe)^(d)							
Total liquids and natural gas	7.25	10.90	7.20	4.76	5.52	3.78	6.14
Bitumen	-	-	-	-	19.03	-	19.03
2017							
Natural gas production available for sale (Bcf)^(a)	465	-	205	80	432	436	1,618
Production prices^(b)							
Oil (\$/b) ^(c)	47.73	40.94	50.02	52.28	31.69	48.86	49.25
Bitumen (\$/b)	-	-	-	-	20.77	-	20.77
Natural gas (\$/kcf)	4.51	-	1.45	1.29	2.68	4.99	3.60
Production costs per unit of production (\$/boe)^(d)							
Total liquids and natural gas	6.85	9.59	6.05	4.28	5.27	3.72	5.56
Bitumen	-	-	-	-	12.06	-	12.06

(a) The reported volumes are different from those shown in the reserves table due to gas consumed in operations.

(b) The volumes used for calculation of the average sales prices are the ones sold from the Group's own production.

(c) The reported price represents an average aggregate price of prices for crude oil, condensates and NGL. The table does not include separate figures for NGL production prices because the production of NGL represented less than 7.5% of the Group's total liquids production in each of the years 2015, 2016 and 2017.

(d) The volumes of liquids used for this computation are shown in the proved reserves tables of this report. The reported volumes for natural gas are different from those shown in the reserves table due to gas consumed in operations.

	Equity affiliates						Total
	Europe and Central Asia (excl. Russia)	Russia	Africa (excl. North Africa)	Middle East and North Africa	Americas	Asia-Pacific	
2015							
Natural gas production available for sale (Bcf) ^(a)	-	448	-	200	-	-	648
Production prices^(b)							
Oil (\$/b) ^(c)	-	25.37	-	48.34	32.2	-	42.69
Bitumen (\$/b)	-	-	-	-	-	-	-
Natural gas (\$/kcf)	-	1.23	-	3.28	-	-	1.99
Production costs per unit of production (\$/boe)^(d)							
Total liquids and natural gas	-	1.26	-	3.4	4.05	-	2.37
Bitumen	-	-	-	-	-	-	-
2016							
Natural gas production available for sale (Bcf) ^(a)	-	492	5	173	-	-	670
Production prices^(b)							
Oil (\$/b) ^(c)	-	19.36	-	38.61	28.49	-	32.77
Bitumen (\$/b)	-	-	-	-	-	-	-
Natural gas (\$/kcf)	-	1.21	-	1.85	-	-	1.43
Production costs per unit of production (\$/boe)^(d)							
Total liquids and natural gas	-	0.88	-	2.92	3.59	-	1.82
Bitumen	-	-	-	-	-	-	-
2017							
Natural gas production available for sale (Bcf) ^(a)	-	461	25	176	-	-	662
Production prices^(b)							
Oil (\$/b) ^(c)	-	26.28	-	50.03	34.36	-	43.51
Bitumen (\$/b)	-	-	-	-	-	-	-
Natural gas (\$/kcf)	-	1.49	2,35	2.23	-	-	1.78
Production costs per unit of production (\$/boe)^(d)							
Total liquids and natural gas	-	0.95	-	2.88	4.94	-	1.96
Bitumen	-	-	-	-	-	-	-

(a) The reported volumes are different from those shown in the reserves table due to gas consumed in operations.

(b) The volumes used for calculation of the average sales prices are the ones sold from the Group's own production.

(c) The reported price represents an average aggregate price of prices for crude oil, condensates and NGL. The table does not include separate figures for NGL production prices because the production of NGL represented less than 7.5% of the Group's total liquids production in each of the years 2015, 2016 and 2017.

(d) The volumes of liquids used for this computation are shown in the proved reserves tables of this report. The reported volumes for natural gas are different from those shown in the reserves table due to gas consumed in operations.

9.3 Report on the payments made to governments (Article L. 225-102-3 of the French Commercial Code)

Article L. 225-102-3 of the French Commercial Code⁽¹⁾ requires that large undertakings and public-interest entities that are active in the extractive industry or logging of primary forests disclose in an annual report payments of at least €100,000 made to governments in the countries in which they operate.

The consolidated report of TOTAL is presented below pursuant to the aforementioned provisions. This report covers the aforementioned payments made by the Group's extractive companies as defined below, for the benefit of each government of states or territories in which TOTAL carries out its activities, by detailing the total amount of payments made, the total amount by payment type, the total amount by project and the total amount by payment type for each project.

This report has been approved by the Board of Directors of TOTAL S.A.

Definitions

The meaning of certain terms used in this report are set forth below:

Extractive Companies: TOTAL S.A. and any company of undertaking of which the activities consist, in whole or in part, of exploration, prospection, discovery, development and extraction of minerals, crude oil and natural gas, among others, fully consolidated by TOTAL S.A.

Payment: a single payment of multiple interconnected payments of an amount equal to, or in excess of, €100,000 (or its equivalent) paid, whether in money or in kind, for extractive activities. Payment types included in this report are the following:

- **Taxes:** taxes and levies paid on income, production or profits, excluding taxes levied on consumption such as added value taxes, customs duties, personal income taxes and sales taxes.
- **Royalties:** percentage of production payable to the owner of mineral rights
- **License Fees:** license fees, surface or rental fees, and other consideration for licenses and/or concessions that are paid for access to the area where the extractive activities will be conducted.
- **License bonus:** bonuses paid for and in consideration of signature, discovery, production, awards, grants and transfers of extraction rights; bonuses related to the achievement or failure to achieve certain production levels or certain targets, and discovery of additional mineral reserves/deposits.

- **Dividends:** dividends paid to a host government holding an interest in an Extractive Company.
- **Payments for Infrastructure improvements:** payments for local development, including the improvement of infrastructure, not directly necessary for the conduct of extractive activities but mandatory pursuant to the terms of a production sharing contract or to the terms of a law relating to oil and gas activities.
- **Production entitlement:** host Government's share of production. This payment is generally made in kind.

Government: any national, regional or local authority of a country or territory, or any department, agency or undertaking controlled by that authority.

Project: operational activities governed by a single contract, license, lease, concession or similar legal agreement and that form the basis for payment liabilities with a Government. If multiple such agreements are substantially interconnected, they shall be considered as a single Project. Payments (such as company income tax when it concerns several projects which cannot be separated in application of the fiscal regulations) unable to be attributed to a Project are disclosed under the item "non-attributable".

Reporting principles

This report sets forth all payments as booked in the Extractive Companies' accounts. They are presented based on the Group share in each Project, whether the payments have been made directly by the Group Extractive Companies as operator or indirectly through third-party operating companies.

Production entitlement and Royalties that are mandatorily paid in kind and that are owed to host Governments pursuant to legal or contractual provisions (not booked in the Extractive Companies' accounts pursuant to accounting standards) are reported in proportion of the interest held by the Extractive Company in the Project as of the date on which such Production entitlements and Royalties are deemed to be acquired.

Payments in kind are estimated at fair value. Fair value corresponds to the contractual price of oil and gas used to calculate Production entitlement, market price (if available) or an appropriate benchmark price. These prices might be calculated on an averaged basis over a given period.

(1) Article L. 225-102-3 of the French Commercial Code transposes certain provisions set out in Directive 2013/34/UE of the European Parliament and of the Council of June 26, 2013 (chapter 10).

9.3.1 Reporting by country and type of Payment

<i>(in thousands of dollars)</i>	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
Europe and Central Asia	29,238	-	19,576	887	-	7,048	55,110	111,859
Azerbaijan	-	-	-	887	-	-	-	887
Italy	36	-	198	-	-	66	-	300
Kazakhstan	-	-	-	-	-	6,982	17,353	24,335
Netherlands	(14,772) ^(a)	-	1,198	-	-	-	-	(13,574)
Norway	9,127	-	12,287	-	-	-	-	21,414
Russia	14,332	-	74	-	-	-	37,757	52,163
United Kingdom	20,515	-	5,819	-	-	-	-	26,334
Africa (excluding North Africa)	2,170,112	-	193,184	31,760	5,063	87,918	2,130,443	4,618,480
Angola	867,219	-	11,202	130	-	-	1,638,020	2,516,571
Côte d'Ivoire	-	-	994	-	-	-	-	994
Democratic Republic of the Congo	-	-	900	-	-	1,027	-	1,927
Gabon	278,624	-	7,789	-	5,063	40,536	-	332,012
Mauritania	-	-	698	16,500	-	-	-	17,198
Mozambique	-	-	250	-	-	-	-	250
Nigeria	614,788	-	2,666	-	-	46,205	488,464	1,152,123
Republic of the Congo	409,481	-	168,200 ^(b)	130	-	-	3,959	581,770
Senegal	-	-	52	15,000	-	150	-	15,202
Uganda	-	-	433	-	-	-	-	433
Middle East and North Africa	4,617,139	-	2,755	4,372	-	-	1,827,394	6,451,660
Algeria	67,538	-	-	-	-	-	198,086	265,624
Cyprus	-	-	411	4,372	-	-	-	4,783
Iraq	8,269	-	-	-	-	-	-	8,269
Libya	374,811	-	-	-	-	-	1,014,437	1,389,248
Oman	191,340	-	-	-	-	-	12,418	203,758
Qatar	116,465	-	-	-	-	-	602,453	718,918
United Arab Emirates	3,858,716	-	2,344	-	-	-	-	3,861,060
Americas	407,606	57,060	37,506	59,832	-	375	24,312	586,691
Argentina	223,873	-	4,177	20,472	-	-	-	248,522
Bolivia	167,896	-	1,505	210	-	375	23,812	193,798
Brazil	-	187	812	6,224	-	-	500	7,723
Canada	(300) ^(c)	9,208	25,207	-	-	-	-	34,115
Colombia	1,267	-	-	-	-	-	-	1,267
Mexico	2,582	-	2,181	-	-	-	-	4,763
United States	12,288	47,665	3,466	32,926	-	-	-	96,345
Uruguay	-	-	158	-	-	-	-	158
Asia Pacific	522,207	-	3,635	48,732	-	-	690,064	1,264,638
Australia	5,639	-	-	-	-	-	-	5,639
Brunei	14,619	-	5	-	-	-	-	14,624
Cambodia	-	-	310	-	-	-	-	310
China	10,497	-	-	4,000	-	-	22,996	37,493
Indonesia	265,689	-	3,320	-	-	-	577,172	846,181
Myanmar	23,801	-	-	1,000	-	-	89,896	114,697
Thailand	201,962	-	-	43,732	-	-	-	245,694
TOTAL	7,746,302	57,060	256,656	145,583	5,063	95,341	4,727,323	13,033,328

(a) Refund after carry back of losses of 2016.

(b) Includes a settlement in relation with the relinquishment of permits.

(c) Reimbursement of Alberta Scientific Research Experimental Development Tax Credit.

9.3.2 Reporting of Payments by Project and by type of Payment, and by Government and by type of Payment

<i>(in thousands of dollars)</i>	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
ALGERIA								
Payments per Project								
Tin Fouyé Tabankort	67,538	-	-	-	-	-	198,086	265,624
TOTAL	67,538	-	-	-	-	-	198,086	265,624
Payments per Government								
Direction Générale des Impôts, Direction des Grandes Entreprises c/o Sonatrach	67,538	-	-	-	-	-	-	67,538
Sonatrach	-	-	-	-	-	-	198,086	198,086
TOTAL	67,538	-	-	-	-	-	198,086	265,624
ANGOLA								
Payments per Project								
Block 17	678,696	-	9,221	-	-	-	1,551,369	2,239,286
Block 0	138,570	-	824	-	-	-	-	139,394
Block 14	33,486	-	465	-	-	-	82,692	116,643
Block 14K	5,577	-	222	130	-	-	3,959	9,888
Block 32	86	-	159	-	-	-	-	245
Block 17/06	3	-	81	-	-	-	-	84
Block 25	5	-	103	-	-	-	-	108
Block 40	21	-	127	-	-	-	-	148
Block 3/85	3,344	-	-	-	-	-	-	3,344
Block 3/91	7,431	-	-	-	-	-	-	7,431
TOTAL	867,219	-	11,202	130	-	-	1,638,020	2,516,571
Payments per Government								
Caixa do Tesouro Nacional	867,219	-	519	-	-	-	-	867,738
Ministério dos Petróleos	-	-	10,683	130	-	-	-	10,813
Sonangol, E.P.	-	-	-	-	-	-	1,638,020	1,638,020
TOTAL	867,219	-	11,202	130	-	-	1,638,020	2,516,571
ARGENTINA								
Payments per Project								
Neuquen	30,695	-	300	16,217	-	-	-	47,212
Tierra del Fuego	60,870	-	3,788	4,255	-	-	-	68,913
Santa Cruz	-	-	89	-	-	-	-	89
Non-attributable	132,308	-	-	-	-	-	-	132,308
TOTAL	223,873	-	4,177	20,472	-	-	-	248,522
Payments per Government								
Administracion Federal de Ingresos Publicos	132,308	-	-	-	-	-	-	132,308
Secretaria de Energia, Republica Argentina	27,914	-	555	-	-	-	-	28,469
Provincia del Neuquen	30,695	-	300	16,217	-	-	-	47,212
Provincia de Tierra del Fuego	32,956	-	3,266	4,255	-	-	-	40,477
Provincia de Santa Cruz	-	-	56	-	-	-	-	56
TOTAL	223,873	-	4,177	20,472	-	-	-	248,522

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SUPPLEMENTAL OIL AND GAS INFORMATION

Report on the payments made to governments (Article L. 225-102-3 of the French Commercial Code)

<i>(in thousands of dollars)</i>	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
AUSTRALIA								
Payments per Project								
GLNG	5,639	-	-	-	-	-	-	5,639
TOTAL	5,639	-	-	-	-	-	-	5,639
Payments per Government								
Queensland Government, Office of State Revenue	5,639	-	-	-	-	-	-	5,639
TOTAL	5,639	-	-	-	-	-	-	5,639
AZERBAIJAN								
Payments per Project								
Absheron	-	-	-	887	-	-	-	887
TOTAL	-	-	-	887	-	-	-	887
Payments per Government								
State Oil Company of the Azerbaijan Republic	-	-	-	887	-	-	-	887
TOTAL	-	-	-	887	-	-	-	887
BOLIVIA								
Payments per Project								
Ipati	71,618	-	239	32	-	330	-	72,219
Azero	-	-	576	-	-	45	-	621
Aquio	27,251	-	135	14	-	-	-	27,400
Itau	8,238	-	115	154	-	-	-	8,507
San Alberto	14,953	-	30	-	-	-	3,114	18,097
San Antonio	45,836	-	58	10	-	-	20,698	66,602
Rio Hondo	-	-	352	-	-	-	-	352
TOTAL	167,896	-	1,505	210	-	375	23,812	193,798
Payments per Government								
Yacimientos Petroliferos Fiscales Bolivianos (YPFB)	-	-	1,505	182	-	-	23,812	25,499
Servicio de Impuestos Nacionales (SIN) c/o YPFB	107,454	-	-	-	-	-	-	107,454
Departamentos c/o YPFB	60,442	-	-	-	-	-	-	60,442
Ministerio de Hidrocarburos y Energia	-	-	-	28	-	69	-	97
Fundesoc c/o Indigenous Communities	-	-	-	-	-	306	-	306
TOTAL	167,896	-	1,505	210	-	375	23,812	193,798

SUPPLEMENTAL OIL AND GAS INFORMATION

Report on the payments made to governments (Article L. 225-102-3 of the French Commercial Code)

<i>(in thousands of dollars)</i>	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
BRAZIL								
Payments per Project								
Foz de Amazonas	-	-	34	-	-	-	-	34
Ceara (CE-M-661)	-	-	80	-	-	-	-	80
Xerelete (BC-2)	-	-	32	-	-	-	-	32
Termobahia	-	-	14	-	-	-	-	14
Lapa	-	-	82	-	-	-	-	82
Iara	-	-	14	-	-	-	-	14
Libra	-	187	-	-	-	-	500	687
Espirito Santo	-	-	13	-	-	-	-	13
Sul do Gato do Mato	-	-	-	6,224	-	-	-	6,224
Pelotas	-	-	47	-	-	-	-	47
Non-attributable	-	-	496	-	-	-	-	496
TOTAL	-	187	812	6,224	-	-	500	7,723
Payments per Government								
Agencia Nacional de Petroleo, Gas Natural e Biocombustiveis	-	-	702	6,224	-	-	-	6,926
Conselho Administrativo de Defesa Economica (CADE)	-	-	42	-	-	-	-	42
Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renovaveis (IBAMA)	-	-	68	-	-	-	-	68
Receita Federal	-	187	-	-	-	-	-	187
Pre-sal Petroleo SA (PPSA)	-	-	-	-	-	-	500	500
TOTAL	-	187	812	6,224	-	-	500	7,723
BRUNEI								
Payments per Project								
Block B	14,619	-	5	-	-	-	-	14,624
TOTAL	14,619	-	5	-	-	-	-	14,624
Payments per Government								
Brunei Government	14,619	-	5	-	-	-	-	14,624
TOTAL	14,619	-	5	-	-	-	-	14,624
CAMBODIA								
Payments per Project								
OCA – zone 3	-	-	310	-	-	-	-	310
TOTAL	-	-	310	-	-	-	-	310
Payments per Government								
Ministry of Mines and Energy	-	-	310	-	-	-	-	310
TOTAL	-	-	310	-	-	-	-	310
CANADA								
Payments per Project								
Joslyn	-	-	533	-	-	-	-	533
Surmont	(300) ^(a)	9,208	21,866	-	-	-	-	30,774
Northern Lights	-	-	40	-	-	-	-	40
Fort Hills	-	-	2,691	-	-	-	-	2,691
Other oil sands projects	-	-	63	-	-	-	-	63
Deer Creek	-	-	14	-	-	-	-	14
TOTAL	(300)	9,208	25,207	-	-	-	-	34,115
Payments per Government								
Province of Alberta	(300) ^(a)	9,208	5,095	-	-	-	-	14,003
Alberta Energy Regulator	-	-	210	-	-	-	-	210
Municipality of Wood Buffalo (Alberta)	-	-	19,478	-	-	-	-	19,478
Fort McKay First Nations (FMFN)	-	-	424	-	-	-	-	424
TOTAL	(300)	9,208	25,207	-	-	-	-	34,115

(a) Reimbursement of Alberta Scientific Research Experimental Development Tax Credit.

<i>(in thousands of dollars)</i>	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
CHINA								
Payments per Project								
Sulige	10,497	-	-	-	-	-	22,996	33,493
Taiyang				4,000				4,000
TOTAL	10,497	-	-	4,000	-	-	22,996	37,493
Payments per Government (People's Republic of China)								
China National Petroleum Company	10,497	-	-	-	-	-	22,996	33,493
China National Offshore Oil Company				2,000				2,000
Payments per Government (Taiwan)								
CPC Corporation Taiwan				2,000				2,000
TOTAL	10,497	-	-	4,000	-	-	22,996	37,493
COLOMBIA								
Payments per Project								
Non-attributable	1,267	-	-	-	-	-	-	1,267
TOTAL	1,267	-	-	-	-	-	-	1,267
Payments per Government								
Dirección de Impuestos y aduanas Nacionales	1,267	-	-	-	-	-	-	1,267
TOTAL	1,267	-	-	-	-	-	-	1,267
CÔTE D'IVOIRE								
Payments per Project								
CI-100	-	-	404	-	-	-	-	404
CI-605	-	-	590	-	-	-	-	590
TOTAL	-	-	994	-	-	-	-	994
Payments per Government								
République de Côte d'Ivoire, Direction Générale des Hydrocarbures	-	-	994	-	-	-	-	994
TOTAL	-	-	994	-	-	-	-	994
CYPRUS								
Payments per Project								
Block 11	-	-	243	-	-	-	-	243
Block 6	-	-	168	4,372	-	-	-	4,540
TOTAL	-	-	411	4,372	-	-	-	4,783
Payments per Government								
Ministry of Energy, Commerce, Industry and Tourism	-	-	411	4,372	-	-	-	4,783
TOTAL	-	-	411	4,372	-	-	-	4,783
DEMOCRATIC REPUBLIC OF THE CONGO								
Payments per Project								
Block 3	-	-	900	-	-	1,027	-	1,927
TOTAL	-	-	900	-	-	1,027	-	1,927
Payments per Government								
Ministère des Hydrocarbures	-	-	750	-	-	-	-	750
Ministère de l'Environnement	-	-	150	-	-	-	-	150
Local Communities around Block 3 (Ministère des Hydrocarbures)	-	-	-	-	-	1,027	-	1,027
TOTAL	-	-	900	-	-	1,027	-	1,927

SUPPLEMENTAL OIL AND GAS INFORMATION

Report on the payments made to governments (Article L. 225-102-3 of the French Commercial Code)

<i>(in thousands of dollars)</i>	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
GABON								
Payments per Project								
Concession Fields (Non-attributable)	18,059	-	3,498	-	-	33,824 ^(a)	-	55,381
Concession Anguille	49,922	-	-	-	-	-	-	49,922
Concession Grondin	41,019	-	-	-	-	-	-	41,019
Concession Torpille	31,152	-	-	-	-	-	-	31,152
Atora CEPP	13,597	-	169	-	-	3,767	-	17,533
Coucal CEPP	1,305	-	245	-	-	-	-	1,550
Avocette CEPP	17,122	-	593	-	-	-	-	17,715
Baudroie-Mérou CEPP	28,348	-	776	-	-	1,212	-	30,336
Hylia II CEPP	5,077	-	739	-	-	1,733	-	7,549
Diaba CEPP	-	-	385	-	-	-	-	385
Nziembou CEPP	167	-	92	-	-	-	-	259
Nziembou II CEPP	-	-	23	-	-	-	-	23
Rabi CEPP	40,856	-	1,269	-	-	-	-	42,125
Non-attributable	32,000 ^(b)	-	-	-	5,063	-	-	37,063
TOTAL	278,624	-	7,789	-	5,063	40,536	-	332,012
Payments per Government								
Trésor Public Gabonais	176,624	-	1,451	-	-	-	-	178,075
Direction Générale des Hydrocarbures	-	-	4,986	-	-	-	-	4,986
République du Gabon	102,000	-	-	-	5,063	26,603	-	133,666
Direction Générale des Impôts	-	-	884	-	-	-	-	884
Ville de Port-Gentil	-	-	468	-	-	12,311	-	12,779
Miscellaneous PID beneficiaries	-	-	-	-	-	245	-	245
Miscellaneous PIH beneficiaries	-	-	-	-	-	1,377	-	1,377
TOTAL	278,624	-	7,789	-	5,063	40,536	-	332,012

(a) Financing of projects (infrastructure, education, health) under joint control of the State and TOTAL within the framework of the Provision pour Investissements Diversifiés (contribution to diversified investments) and of the Provision pour Investissements dans les Hydrocarbures (contribution to investments in hydrocarbons)

(b) Taxes related to sale of several mature assets.

INDONESIA

Payments per Project								
Mahakam PSC	265,130	-	-	-	-	-	569,175 ^(a)	834,305
Tengah PSC	559	-	-	-	-	-	7,997	8,556
Mentawai	-	-	3,320	-	-	-	-	3,320
TOTAL	265,689	-	3,320	-	-	-	577,172	846,181
Payments per Government								
Directorate General of Taxation, Ministry of Finance	265,689	-	-	-	-	-	-	265,689
Satuan Khusus Kegiatan Usaha Hulu Minyak dan Gas Bumi (SKK Migas)	-	-	3,320	-	-	-	577,172	580,492
TOTAL	265,689	-	3,320	-	-	-	577,172	846,181

(a) Government Production entitlement for export LNG is valued on a net-back price basis (revenues less costs, such as liquefaction and transportation costs). Production entitlement includes volume of oil taken by the Government to meet domestic obligation. The fees received from the Government are deducted from the valuation of these volumes.

<i>(in thousands of dollars)</i>	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
IRAQ								
Payments per Project								
Halfaya	8,269	-	-	-	-	-	-	8,269
TOTAL	8,269	-	-	-	-	-	-	8,269
Payments per Government								
Iraq government	8,269	-	-	-	-	-	-	8,269
TOTAL	8,269	-	-	-	-	-	-	8,269
ITALY								
Payments per Project								
Gorgoglione Unified License	36	-	198	-	-	66	-	300
TOTAL	36	-	198	-	-	66	-	300
Payments per Government								
Regione Basilicata	-	-	151	-	-	-	-	151
Comune Corleto Perticara	36	-	47	-	-	66	-	149
TOTAL	36	-	198	-	-	66	-	300
KAZAKHSTAN								
Payments per Project								
Kashagan	-	-	-	-	-	6,982	17,353	24,335
TOTAL	-	-	-	-	-	6,982	17,353	24,335
Payments per Government								
Government of the Republic of Kazakhstan	-	-	-	-	-	-	17,353	17,353
Atyrau region c/o North Caspian Operating Company b.v.	-	-	-	-	-	4,225	-	4,225
Mangistau region c/o North Caspian Operating Company b.v.	-	-	-	-	-	2,757	-	2,757
TOTAL	-	-	-	-	-	6,982	17,353	24,335
LIBYA								
Payments per Project								
Areas 15, 16 & 32 (Al Jurf)	129,494	-	-	-	-	-	206,848	336,342
Areas 129 & 130	219,067	-	-	-	-	-	671,614	890,681
Areas 130 & 131	26,250	-	-	-	-	-	135,975	162,225
TOTAL	374,811	-	-	-	-	-	1,014,437	1,389,248
Payments per Government								
National Oil Corporation	245,317	-	-	-	-	-	1,014,437	1,259,754
Ministry of Finance c/o National Oil Corporation	129,494	-	-	-	-	-	-	129,494
TOTAL	374,811	-	-	-	-	-	1,014,437	1,389,248

SUPPLEMENTAL OIL AND GAS INFORMATION

Report on the payments made to governments (Article L. 225-102-3 of the French Commercial Code)

<i>(in thousands of dollars)</i>	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
MAURITANIA								
Payments per Project								
Block C9	-	-	170	-	-	-	-	170
Block TA29	-	-	140	-	-	-	-	140
Block C7	-	-	300	10,000	-	-	-	10,300
Block C18	-	-	88	6,500	-	-	-	6,588
TOTAL	-	-	698	16,500	-	-	-	17,198
Payments per Government								
Trésor Public de Mauritanie	-	-	398	16,500	-	-	-	16,898
SMHPM (Société Mauritanienne des Hydrocarbures et du Patrimoine Minier)	-	-	300	-	-	-	-	300
TOTAL	-	-	698	16,500	-	-	-	17,198
MEXICO								
Payments per Project								
Perdido Block 2	1,090	-	841	-	-	-	-	1,931
Block 15	108	-	82	-	-	-	-	190
Salina 1	581	-	445	-	-	-	-	1,026
Salina 3	803	-	614	-	-	-	-	1,417
Mexico (non attributable)	-	-	199	-	-	-	-	199
TOTAL	2,582	-	2,181	-	-	-	-	4,763
Payments per Government								
Servicio de Administracion Tributaria	2,582	-	-	-	-	-	-	2,582
Fondo Mexicano del Petroleo	-	-	1,982	-	-	-	-	1,982
Comision Nacional de Hidrocarburos	-	-	199	-	-	-	-	199
TOTAL	2,582	-	2,181	-	-	-	-	4,763
MOZAMBIQUE								
Payments per Project								
Rovuma Basin Area 3&6	-	-	250	-	-	-	-	250
TOTAL	-	-	250	-	-	-	-	250
Payments per Government								
Instituto Nacional de Petroleo	-	-	250	-	-	-	-	250
TOTAL	-	-	250	-	-	-	-	250
MYANMAR								
Payments per Project								
Blocks M5 and M6	23,801	-	-	-	-	-	89,896	113,697
Blocks YWB	-	-	-	1,000	-	-	-	1,000
TOTAL	23,801	-	-	1,000	-	-	89,896	114,697
Payments per Government								
Myanmar Ministry of Finance	23,801	-	-	-	-	-	-	23,801
Myanmar Oil and Gas Enterprise	-	-	-	1,000	-	-	89,896	90,896
TOTAL	23,801	-	-	1,000	-	-	89,896	114,697

<i>(in thousands of dollars)</i>	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
NETHERLANDS								
Payments per Project								
Non-attributable	(14,772) ^(a)	-	-	-	-	-	-	(14,772)
Offshore Blocks	-	-	1,198	-	-	-	-	1,198
TOTAL	(14,772)	-	1,198	-	-	-	-	(13,574)
Payments per Government								
Belastingdienst Nederland	(14,772) ^(a)	-	1,198	-	-	-	-	(13,574)
TOTAL	(14,772)	-	1,198	-	-	-	-	(13,574)

(a) Refund after carry back of losses of 2016.

NIGERIA

Payments per Project								
Joint ventures with NNPC, operated – Non-attributable	-	-	2,298	-	-	14,094	-	16,392
Joint ventures with NNPC, non operated – Non-attributable	61,424	-	47	-	-	8,642	-	70,113
OML58 (joint venture with NNPC, operated)	28,646	-	-	-	-	-	-	28,646
OML99 (joint venture with NNPC, operated)	32,261	-	-	-	-	-	-	32,261
OML100 (joint venture with NNPC, operated)	21,441	-	-	-	-	-	-	21,441
OML102 (joint venture with NNPC, operated)	103,263	-	-	-	-	-	-	103,263
OML102 Ekanga (joint venture with NNPC, non operated)	8,548	-	-	-	-	-	-	8,548
OML130	-	-	318	-	-	-	-	318
OML130 PSA (Akpo & Egina)	3,138	-	-	-	-	18,784	-	21,922
OML118 (Bonga)	104,723	-	-	-	-	4,189	488,464	597,376
OML138 (Usan)	26,378	-	3	-	-	496	-	26,877
Non-attributable	224,966 ^(a)	-	-	-	-	-	-	224,966
TOTAL	614,788	-	2,666	-	-	46,205	488,464	1,152,123
Payments per Government								
Federal Inland Revenue Service	234,099	-	-	-	-	-	-	234,099
Department of Petroleum Resources, Federal Government of Nigeria	255,583	-	327	-	-	-	-	255,910
Niger Delta Development Commission	-	-	-	-	-	46,205	-	46,205
Nigerian Maritime Administration & Safety Agency, Federal Government of Nigeria	-	-	2,336	-	-	-	-	2,336
Nigerian National Petroleum Corporation	-	-	-	-	-	-	488,464	488,464
Federal Inland Revenue Service c/o Nigerian National Petroleum Corporation	97,586	-	-	-	-	-	-	97,586
Department of Petroleum Resources c/o Nigerian National Petroleum Corporation	27,520	-	3	-	-	-	-	27,523
TOTAL	614,788	-	2,666	-	-	46,205	488,464	1,152,123

(a) This amount includes \$367 million which reduce the tax liability in accordance with the provisions of the Modified Carry Agreement (MCA). Under the MCA, Total E&P Nigeria is entitled to recover 85% of the Carry Capital Cost through claims of capital allowance, described in the MCA as "Carry Tax Relief". The balance of 15% is to be recovered from NNPC's share of crude oil produced.

SUPPLEMENTAL OIL AND GAS INFORMATION

Report on the payments made to governments (Article L. 225-102-3 of the French Commercial Code)

(in thousands of dollars)

	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
NORWAY								
Payments per Project								
Asgard area	-	-	4,405	-	-	-	-	4,405
Ekofisk area	-	-	2,692	-	-	-	-	2,692
Heimdal area	-	-	1,286	-	-	-	-	1,286
Oseberg area	-	-	2,047	-	-	-	-	2,047
Sleipner area	-	-	196	-	-	-	-	196
Snohvit area	-	-	844	-	-	-	-	844
Troll area	-	-	309	-	-	-	-	309
Martin Linge PL043	-	-	508	-	-	-	-	508
Non-attributable	9,127	-	-	-	-	-	-	9,127
TOTAL	9,127	-	12,287	-	-	-	-	21,414
Payments per Government								
Norwegian Tax Administration	9,127	-	-	-	-	-	-	9,127
Norwegian Petroleum Directorate	-	-	12,287 ^(a)	-	-	-	-	12,287
TOTAL	9,127	-	12,287	-	-	-	-	21,414

(a) Including licence fees payments initiated before year end 2017 and credited for the beneficiary on first business day in January 2018.

OMAN

Payments per Project								
Block 6	188,686	-	-	-	-	-	-	188,686
Block 53	2,654	-	-	-	-	-	12,418	15,072
TOTAL	191,340	-	-	-	-	-	12,418	203,758
Payments per Government								
Oman Ministry of Oil and Gas	-	-	-	-	-	-	12,418	12,418
Oman Ministry of Finance	191,340	-	-	-	-	-	-	191,340
TOTAL	191,340	-	-	-	-	-	12,418	203,758

QATAR

Payments per Project								
Al Khalij	16,494	-	-	-	-	-	-	16,494
Qatargas 1	39,096	-	-	-	-	-	47,616	86,712
Dolphin	60,875	-	-	-	-	-	554,837	615,712
TOTAL	116,465	-	-	-	-	-	602,453	718,918
Payments per Government								
Qatar Petroleum	-	-	-	-	-	-	602,453	602,453
Qatar Ministry of Finance	116,465	-	-	-	-	-	-	116,465
TOTAL	116,465	-	-	-	-	-	602,453	718,918

(in thousands of dollars)

	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
REPUBLIC OF THE CONGO								
Payments per Project								
CPP Haute Mer – Zone A	52,006	-	2,170	-	-	-	-	54,176
CPP Haute Mer – Zone B	11,246	-	236	-	-	-	-	11,482
CPP Haute Mer – Zone D	199,157	-	10,593	-	-	-	-	209,750
CPP Pointe Noire Grands Fonds (PNGF)	45,736	-	1,352	-	-	-	-	47,088
CPP Tchendo 2	-	-	8	-	-	-	-	8
Kombi, Likalala & Libondo	70,303	-	219	-	-	-	-	70,522
Litanzi & Tchibeli	-	-	(12)	-	-	-	-	(12)
Lianzi	5,577	-	222	130	-	-	3,959	9,888
Madingo	25,456	-	997	-	-	-	-	26,453
Secteur Sud	-	-	152,415 ^(a)	-	-	-	-	152,415
TOTAL	409,481	-	168,200	130	-	-	3,959	581,770
Payments per Government								
Ministère des hydrocarbures	367,792	-	-	-	-	-	-	367,792
Trésor Public	36,112	-	168,162 ^(a)	130	-	-	-	204,404
Société Nationale des Pétroles Congolais	5,577	-	38	-	-	-	3,959	9,574
TOTAL	409,481	-	168,200	130	-	-	3,959	581,770

(a) These amounts include payments made following the relinquishment of the permits of Secteur Sud (Tchibouela, Tchendo and Tchibeli Litanzi Loussima), ie discharging payments for assets retirement obligations (130 millions USD) and for the interim period (22.4 millions USD).

RUSSIA

Payments per Project								
Kharyaga	14,332	-	74	-	-	-	37,757	52,163
TOTAL	14,332	-	74	-	-	-	37,757	52,163
Payments per Government								
Nenets Tax Inspection	14,332	-	74	-	-	-	-	14,406
Ministry of Energy	-	-	-	-	-	-	37,757	37,757
TOTAL	14,332	-	74	-	-	-	37,757	52,163

SENEGAL

Payments per Project								
UDO	-	-	-	10,000	-	-	-	10,000
ROP	-	-	52	5,000	-	150	-	5,202
TOTAL	-	-	52	15,000	-	150	-	15,202
Payments per Government								
État du Sénégal (Trésorier Général)	-	-	-	5,000	-	-	-	5,000
Société des Pétroles du Sénégal	-	-	52	10,000 ^(a)	-	-	-	10,052
État du Sénégal C/O Fondation Total Sénégal	-	-	-	-	-	150	-	150
TOTAL	-	-	52	15,000	-	150	-	15,202

(a) Amount to be transferred to the State of Senegal.

SUPPLEMENTAL OIL AND GAS INFORMATION

Report on the payments made to governments (Article L. 225-102-3 of the French Commercial Code)

<i>(in thousands of dollars)</i>	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
THAILAND								
Payments per Project								
Bongkot	201,962	-	-	43,732	-	-	-	245,694
TOTAL	201,962	-	-	43,732	-	-	-	245,694
Payments per Government								
Revenue Department	110,703	-	-	-	-	-	-	110,703
Department of Mineral Fuels, Ministry Of Energy	91,259	-	-	-	-	-	-	91,259
Ministry Of Energy	-	-	-	43,732	-	-	-	43,732
TOTAL	201,962	-	-	43,732	-	-	-	245,694
UGANDA								
Payments per Project								
Block EA-1	-	-	144	-	-	-	-	144
Block EA-1A	-	-	80	-	-	-	-	80
Block EA-2	-	-	69	-	-	-	-	69
Block EA-3	-	-	140	-	-	-	-	140
TOTAL	-	-	433	-	-	-	-	433
Payments per Government								
Ministry of Energy and Mineral Development	-	-	399	-	-	-	-	399
Office of the Auditor General	-	-	34	-	-	-	-	34
TOTAL	-	-	433	-	-	-	-	433
UNITED ARAB EMIRATES								
Payments per Project								
Abu Al Bukhoosh	41,641	-	-	-	-	-	-	41,641
Abu Dhabi Gas Industries Ltd (ADNOC Gas Processing)	141,197	-	2,344	-	-	-	-	143,541
Abu Dhabi Company for Onshore Petroleum Operations Ltd (ADNOC Onshore)	2,445,936	-	-	-	-	-	-	2,445,936
Abu Dhabi Marine Areas Ltd (ADNOC Offshore)	1,229,942	-	-	-	-	-	-	1,229,942
TOTAL	3,858,716	-	2,344	-	-	-	-	3,861,060
Payments per Government								
Supreme Petroleum Council – Government of Abu Dhabi	41,641	-	-	-	-	-	-	41,641
Abu Dhabi Fiscal Authorities c/o Abu Dhabi Marine Areas Ltd	1,229,942	-	-	-	-	-	-	1,229,942
Abu Dhabi Fiscal Authorities	2,587,133	-	-	-	-	-	-	2,587,133
Petroleum Institute	-	-	2,344	-	-	-	-	2,344
TOTAL	3,858,716	-	2,344	-	-	-	-	3,861,060
UNITED KINGDOM								
Payments per Project								
Northern North Sea	-	-	1,521	-	-	-	-	1,521
Central Graben Area	18,420	-	1,125	-	-	-	-	19,545
Markham Area	-	-	136	-	-	-	-	136
Greater Laggan Area	-	-	2,890	-	-	-	-	2,890
Non-attributable	2,095	-	147	-	-	-	-	2,242
TOTAL	20,515	-	5,819	-	-	-	-	26,334
Payments per Government								
HM Revenue & Customs	20,515	-	-	-	-	-	-	20,515
Crown Estate	-	-	147	-	-	-	-	147
Department of Energy & Climate Change/Oil and Gas Authority	-	-	4,122 ^(a)	-	-	-	-	4,122
Oil and Gas Authority	-	-	1,550	-	-	-	-	1,550
TOTAL	20,515	-	5,819	-	-	-	-	26,334

(a) Responsibility for collecting fees transferred part way through 2017 between the two beneficiaries.

<i>(in thousands of dollars)</i>	Taxes	Royalties	License fees	License bonus	Dividends	Infrastructure improvements	Production entitlements	Total of Payments
UNITED STATES								
Payments per Project								
Tahiti	-	29,099	-	-	-	-	-	29,099
Barnett Shale	7,763	18,566	-	-	-	-	-	26,329
Utica	4,525	-	-	-	-	-	-	4,525
Gulf of Mexico	-	-	3,466	32,926	-	-	-	36,392
TOTAL	12,288	47,665	3,466	32,926	-	-	-	96,345
Payments per Government								
Office of Natural Resources Revenue	-	29,099	3,466	32,926	-	-	-	65,491
State of Ohio	1,871	-	-	-	-	-	-	1,871
Johnson County Tax Assessor	251	-	-	-	-	-	-	251
Tarrant County Tax Assessor	625	-	-	-	-	-	-	625
Texas State Comptroller's Office	6,887	-	-	-	-	-	-	6,887
City of Fort Worth	-	7,755	-	-	-	-	-	7,755
Dallas/Fort Worth International Airport Board	-	2,047	-	-	-	-	-	2,047
City of Arlington	-	1,183	-	-	-	-	-	1,183
Tarrant Regional Water District	-	1,240	-	-	-	-	-	1,240
State of Texas	-	914	-	-	-	-	-	914
City of North Richland Hills	-	437	-	-	-	-	-	437
Fort Worth Independant School District	-	497	-	-	-	-	-	497
Burleson Independant School District	-	338	-	-	-	-	-	338
Arlington Independant School District	-	397	-	-	-	-	-	397
Harrison County	658	-	-	-	-	-	-	658
Carroll County	1,817	-	-	-	-	-	-	1,817
Birdville Independent School District	-	748	-	-	-	-	-	748
Tarrant County College	-	499	-	-	-	-	-	499
City of Grand Prairie	-	431	-	-	-	-	-	431
Kennedale Independent School District	-	305	-	-	-	-	-	305
Tarrant County AAAA	-	273	-	-	-	-	-	273
Columbiana County	179	-	-	-	-	-	-	179
City of Cleburne	-	498	-	-	-	-	-	498
City of Burleson	-	271	-	-	-	-	-	271
Mansfield Independent School District	-	244	-	-	-	-	-	244
Crowley Independent School District	-	185	-	-	-	-	-	185
City of Crowley	-	196	-	-	-	-	-	196
White Settlement Independent School District	-	108	-	-	-	-	-	108
TOTAL	12,288	47,665	3,466	32,926	-	-	-	96,345
URUGUAY								
Payments per Project								
Block 14 (Offshore)	-	-	158	-	-	-	-	158
Blocks 1 & 2 (Onshore)	-	-	-	-	-	-	-	-
TOTAL	-	-	158	-	-	-	-	158
Payments per Government								
Administracion Nacional de Combustibles Alcohol y Portland	-	-	158	-	-	-	-	158
TOTAL	-	-	158	-	-	-	-	158

Glossary

The terms "TOTAL" and "Group" as used in this document refer to TOTAL S.A. collectively with all of its direct and indirect consolidated companies located in or outside of France. The term "Company" as used in this document exclusively refers to TOTAL S.A., which is the parent company of the Group.

Abbreviations

€:	euro
\$ or dollar:	U.S. dollar
ADR:	American depository receipt (evidencing an ADS)
ADS:	American depository share (representing a share of a company)
AMF:	<i>Autorité des marchés financiers</i> (French Financial Markets Authority)
API:	American Petroleum Institute
CNG:	compressed natural gas
DACF:	debt adjusted cash flow (refer to definition of operating cash flow before working capital changes w/o financial charges below)
ERMI:	European refining margin indicator of the Group (refer to definition below)
FPSO:	floating production, storage and offloading
GHG:	greenhouse gas
HSE:	health, safety and the environment
IFRS:	International Financial Reporting Standards
IPIECA:	International Petroleum Industry Environmental Conservation Association
LNG:	liquefied natural gas
LPG:	liquefied petroleum gas
NGL:	natural gas liquids
NGV:	natural gas vehicle
OML:	oil mining license
ROE:	return on equity
ROACE:	return on average capital employed
SEC:	United States Securities and Exchange Commission

Units of measurement

b	= barrel ⁽¹⁾
B	= billion
boe	= barrel of oil equivalent
Btu	= British thermal unit
cf	= cubic feet
CO₂ eq	= carbon dioxide equivalent
/d	= per day
GWh	= gigawatt hour
k	= thousand
km	= kilometer
m	= meter
m³ (cm)	= cubic meter ⁽¹⁾
M	= million
MW	= megawatt
MWp	= megawatt peak (direct current)
t	= (Metric) ton
TWh	= terawatt hour
W	= watt
/y	= per year

Conversion table

1 acre	≈ 0.405 hectares
1 b	= 42 U.S. gallons ≈ 159 liters
1 b/d of crude oil	≈ 50 t/y of crude oil
1 Bm³/y (1 Bcm)	≈ 0.1 Bcf/d
1 km	≈ 0.62 miles
1 m³	≈ 35.3 cf
1 Mt of LNG	≈ 48 Bcf of gas
1 Mt/y of LNG	≈ 131 Mcf/d of gas
1 t of oil	≈ 7.5 b of oil (assuming a specific gravity of 37° API)
1 boe	= 1 b of crude oil ≈ 5,396 cf of gas in 2017 ⁽²⁾ (5,403 cf in 2016 and 5,390 cf in 2015)

(1) Liquid and gas volumes are reported at international standard metric conditions (15°C and 1 atm).

(2) Natural gas is converted to barrels of oil equivalent using a ratio of cubic feet of natural gas per one barrel. This ratio is based on the actual average equivalent energy content of TOTAL's natural gas reserves during the applicable periods, and is subject to change. The tabular conversion rate is applicable to TOTAL's natural gas reserves on a Group-wide basis.

A**acreage**

Areas in which mining rights are exercised.

adjusted results

Results using replacement cost, adjusted for special items, excluding the impact of changes for fair value.

API degree

Scale established by the API to measure oil density. A high API degree indicates light oil from which a high yield of gasoline can be refined.

appraisal (delineation)

Work performed after a discovery for the purpose of determining the boundaries or extent of an oil or gas field or assessing its reserves and production potential.

asset retirement (site restitution)

Companies may have obligations related to well-abandonment, dismantlement of facilities, decommissioning of plants or restoration of the environment. These obligations generally result from international conventions, local regulations or contractual obligations.

associated gas

Gas released during oil production.

association/consortium/joint venture:

Terms used to generally describe a project in which two or more entities participate. For the principles and methods of consolidation applicable to different types of joint arrangements according to IFRS, refer to Note 1 to the Consolidated Financial Statements (point 7 of chapter 10).

B**barrel**

Unit of measurement of volume of crude oil equal to 42 U.S. gallons or 158.9 liters. Quantities of liquid hydrocarbons in barrels are expressed at 60°F.

barrel of oil equivalent (boe)

Conventional unit for measuring the energy released by a quantity of fuel by relating it to the energy released by the combustion of a barrel of oil.

biochemical conversion

Conversion of carbon resources through biological transformation (reactions involving living organisms). Fermentation of sugar into ethanol is an example.

biofuel

Liquid or gaseous fuel that can be used for transport and produced from biomass, and meeting criteria of reducing GHG compared to the fossil reference.

biomass

All organic matter from vegetal or animal sources.

Brent

Quality of crude oil (38° API) produced in the North Sea, at the Brent fields.

brownfield project

Project concerning developed existing fields.

buyback

Risk services agreement (the investments and risks are undertaken by the contractor) combined with an offset mechanism that allows the contractor to receive a portion of the production equivalent to the monetary value, with interest, of its investments and a return on its investment.

C**capacity of treatment**

Annual crude oil treatment capacity of the atmospheric distillation units of a refinery.

carbon capture, use and storage (CCUS)

Technologies designed to reduce GHG emissions by capturing (C) CO₂ and then compressing and transporting it either to use (U) it for various industrial processes (e.g., enhanced recovery of oil or gas, production of chemical products), or to permanently store (S) it in deep geological formations.

catalysts

Substances that increase a chemical reaction speed. During the refining process, they are used in conversion units (reformer, hydrocracker, catalytic cracker) and desulphurization units. Principal catalysts are precious metals (platinum) or other metals such as nickel and cobalt.

coal bed methane

Natural gas present in coal seams.

cogeneration

Simultaneous generation of electrical and thermal energies from a combustible source (gas, fuel oil or coal).

coker (deep conversion unit)

Unit that produces light products (gas, gasoline, diesel) and coke through the cracking of distillation residues.

concession contract

Exploration and production contract under which a host country grants to an oil and gas company (or a consortium) the right to explore a geographic area and develop and produce potential reserves. The oil and gas company (or consortium) undertakes the execution and financing, at its own risk, of all operations. In return, it is entitled to the entire production.

condensate

Light hydrocarbon substances produced with natural gas that exist – either in a gaseous phase or in solution – in the crude oil under the initial pressure and temperature conditions in the reservoir, and which are recovered in a liquid state in separators, on-site facilities or gas treatment units.

consortium

Refer to the definition above of “association/consortium/joint venture”.

conversion

Refining operation aimed at transforming heavy products (heavy fuel oil) into lighter or less viscous products (e.g., gasoline, jet fuels).

cost oil/gas

In a production sharing contract, the portion of the oil and gas production made available to the contractor (contractor group) and contractually reserved for reimbursement of exploration, development, operation and site restitution costs (“recoverable” costs).

The reimbursement may be capped by a contractual stop that corresponds to the maximum share of production that may be allocated to the reimbursement of costs.

cracking

Refining process that entails converting the molecules of large, complex, heavy hydrocarbons into simpler, lighter molecules using heat, pressure and, in some cases, a catalyst. A distinction is made between catalytic cracking and steam cracking, which uses heat instead of a catalyst. Cracking then produces ethylene and propylene, in particular.

crude oil

A mixture of compounds (mainly pentanes and heavier hydrocarbons) that exists in a liquid phase at original reservoir temperature and pressure and remains liquid at atmospheric pressure and ambient temperature.

D**Dated Brent**

A market term representing the minimum value of physical cargoes of Brent, Forties, Oseberg, or Ekofisk crude oil, loading between the 10th and the 25th day forward. Dated Brent prices are used, directly and indirectly, as a benchmark for a large proportion of the crude oil that is traded internationally.

debottlenecking

Change made to a facility to increase its production capacity.

desulphurization unit

Unit in which sulphur and sulphur compounds are eliminated from mixtures of gaseous or liquid hydrocarbons.

development

Operations carried out to access the proved reserves and set up the technical facilities for extraction, processing, transportation and storage of the oil and gas: drilling of development or injection wells, platforms, pipelines, etc.

distillates

Products obtained through the atmospheric distillation of crude oil or through vacuum distillation. Includes medium distillate such as aviation fuel, diesel fuel and heating oil.

E**effective tax rate**

$(\text{Tax on adjusted net operating income}) / (\text{adjusted net operating income} - \text{income from equity affiliates} - \text{dividends received from investments} - \text{impairment of goodwill} + \text{tax on adjusted net operating income})$.

effect of changes in fair value

The effect of changes in fair value presented as an adjustment item reflects, for some transactions, differences between internal measures of performance used by TOTAL's executive committee and the accounting for these transactions under IFRS. IFRS requires that trading inventories be recorded at their fair value using period-end spot prices. In order to best reflect the management of economic exposure through derivative transactions, internal indicators used to measure performance include valuations of trading inventories based on forward prices. Furthermore, TOTAL, in its trading activities, enters into storage contracts, the future effects of which are recorded at fair value in the Group's internal economic performance. IFRS precludes recognition of this fair value effect.

energy mix

The various energy sources used to meet the demand for energy.

ERMI (European Refining Margin Indicator)

A Group indicator intended to represent the margin after variable costs for a hypothetical complex refinery located around Rotterdam in Northern Europe that processes a mix of crude oil and other inputs commonly supplied to this region to produce and market the main refined products at prevailing prices in this region. The indicator margin may not be representative of the actual margins achieved by the Group in any period because of TOTAL's particular refinery configurations, product mix effects or other company-specific operating conditions.

ethane

A colorless, odorless combustible gas of the alkanes class composed of two carbon atoms found in natural gas and petroleum gas.

ethanol

Also commonly called ethyl alcohol or alcohol, ethanol is obtained through the fermentation of sugar (beetroot, sugarcane) or starch (grains). Ethanol has numerous food, chemical and energy (biofuel) applications.

ethylene/propylene

Petrochemical products derived from cracking naphtha and used mainly in the production of polyethylene and polypropylene, two plastics frequently used in packaging, the automotive industry, household appliances, healthcare and textiles.

F**fair value**

Fair value is the price that would be received to sell an asset or paid to transfer a liability in a transaction under normal conditions between market participants at the measurement date.

farm-in (or farm-out)

Acquisition (or sale) of all or part of a participating interest in an oil and gas mining property by way of an assignment of rights and obligations in the corresponding permit or license and related contracts.

farnesane

A hydrocarbon molecule containing 15 carbon atoms, which can be used to produce fuel or chemical compounds.

FEED studies (front-end engineering design)

Studies aimed at defining the project and preparing for its execution. In the TOTAL process, this covers the pre-project and basic engineering phases.

fossil energies

Energies produced from oil, natural gas and coal.

FPSO (floating production, storage and offloading)

Floating integrated offshore unit comprising the equipment used to produce, process and store hydrocarbons and offload them directly to an offshore oil tanker.

G**greenfield project**

Project concerning fields that have never been developed.

gross investments

Investments including acquisitions and increases in non-current loans.

H**hydraulic fracturing**

Technique that involves fracturing rock to improve its permeability.

hydrocarbons

Molecules composed principally of carbon and hydrogen atoms. They can be solid such as asphalt, liquid such as crude oil or gaseous such as natural gas. They may also include compounds with sulphur, nitrogen, metals, etc.

hydrocracker

A refinery unit that uses catalysts and extraordinarily high pressure, in the presence of surplus hydrogen, to convert heavy oils into lighter fractions.

I**inventory valuation effect**

The adjusted results of the Refining & Chemicals and Marketing & Services segments are presented according to the replacement cost method. This method is used to assess the segments' performance and facilitate the comparability of the segments' performance with those of its competitors. In the replacement cost method, which approximates the LIFO (Last-In, First-Out) method, the variation of inventory values in the statement of income is, depending on the nature of the inventory, determined using either the month-end price differentials between one period and another or the average prices of the period rather than the historical value. The inventory valuation effect is the difference between the results according to the FIFO (First-In, First-Out) and the replacement cost.

J**joint venture**

Refer to the definition above of "association/consortium/joint venture".

L**lignocellulose**

Lignocellulose is the main component of the wall of plant cells. It can be sourced from agricultural and farming wastes or by-products of wood transformation as well as dedicated plantations and constitutes the most abundant renewable carbon source on the planet. This abundance and its composition (very rich in polymerized sugars) makes it an excellent choice to produce biofuels. As a result, its conversion, whether by thermochemical (e.g., gasification) or biochemical techniques, is widely studied.

liquids

Liquids consist of crude oil, bitumen, condensates and NGL.

LNG (liquefied natural gas)

Natural gas, comprised primarily of methane, that has been liquefied by cooling in order to transport it.

LNG train

Facility for converting liquefying storing and off-loading natural gas.

LPG (liquefied petroleum gas)

Light hydrocarbons (comprised of butane and propane, belonging to the alkanes class and composed of three and four carbon atoms respectively) that are gaseous under normal temperature and pressure conditions and that are kept in liquid state by increasing the pressure or reducing the temperature. LPG is included in NGL.

M**mineral interests**

Rights to explore for and/or produce oil and gas in a specific area for a fixed period. Covers the concepts of "permit", "license", "title", etc.

N**naphtha**

Heavy gasoline used as a base in petrochemicals.

natural gas

Mixture of gaseous hydrocarbons, composed mainly of methane.

natural gas liquids (NGL)

A mixture of light hydrocarbons that exist in the gaseous phase at room temperature and pressure and are recovered as liquid in gas processing plants. NGL include very light hydrocarbons (ethane, propane and butane).

net cash flow

Cash flow from operating activities before working capital changes at replacement cost – net investments (including other transactions with non-controlling interests).

net financial debt

Non-current financial debt, including current portion, current borrowings, other current financial liabilities less cash and cash equivalents and other current financial assets.

net-debt-to-capital ratio

(Net debt)/(net debt + adjusted shareholders' equity).

net-debt-to-equity ratio

(Net debt)/(adjusted shareholders' equity).

net investments

Gross investments – divestments – repayment of non-current loans – other operations with non-controlling interests.

O**oil**

Generic term designating crude oil, condensates and NGL.

oil and gas

Generic term which includes all hydrocarbons (e.g., crude oil, condensates, NGL, bitumen and natural gas).

olefins

Group of products (gas) obtained after cracking of petroleum streams. Olefins are ethylene, propylene and butadiene. These products are used in the production of large plastics (polyethylene, polypropylene, PVC, etc.), in the production of elastomers (polybutadiene, etc.) or in the production of large chemical intermediates.

OPEC

Organization of the Petroleum Exporting Countries.

operating cash flow before working capital changes

Cash flow from operating activities before changes in working capital at replacement cost.

operating cash flow before working capital changes w/o financial charges (DACF)

Cash flow from operating activities before changes in working capital at replacement cost, without financial charges.

organic investments

Net investments, excluding acquisitions, divestments and other operations with non-controlling interests.

operated production

Total quantity of oil and gas produced on fields operated by an oil and gas company.

operator

Partner of an oil and gas joint venture in charge of carrying out the operations on a specific area on behalf of the joint venture. A refinery is also said to be operated by a specific partner when the operations are carried out by the partner on behalf of the joint venture that owns the refinery.

P**permit**

Area contractually granted to an oil and gas company (or a consortium) by the host country for a defined period to carry out exploration work or to exploit a field.

petcoke (or petroleum coke)

Residual product remaining after the improvement of very heavy petroleum cuts. This solid black product consists mainly of carbon and can be used as fuel.

polymers

Molecule composed of monomers bonded together by covalent bonds, such as polyolefins obtained from olefins or starch and proteins produced naturally.

pre-dividend organic breakeven

Barrel price permitting the generation of cash flow that is equal to organic investments.

price effect

The impact of changing hydrocarbon prices on entitlement volumes from production sharing and buyback contracts and on economic limits.

production costs

Costs related to the production of hydrocarbons in accordance with FASB ASC 932-360-25-15.

production plateau

Expected average stabilized level of production for a field following the production build-up.

production sharing contract/agreement (PSC/PSA)

Exploration and production contract under which a host country or, more frequently, its national company, transfers to an oil and gas company (the contractor) or a consortium (the contractor group) the right to explore a geographic area and develop the fields discovered. The contractor (or contractor group) undertakes the execution and financing, at its own risk, of all operations. In return, it is entitled to a portion of the production, called cost oil/gas, to recover its costs and investment. The remaining production, called profit oil/gas, is then shared between the contractor (contractor group), and the national company and/or host country.

project

As used in this document, "project" may encompass different meanings, such as properties, agreements, investments, developments, phases, activities or components, each of which may also informally be described as a "project". Such use is for convenience only and is not intended as a precise description of the term "project" as it relates to any specific governmental law or regulation.

proved permit

Permit for which there are proved reserves.

proved reserves (1P reserves)

Proved oil and gas reserves are those quantities of oil and gas, which, by analysis of geoscience and engineering data, can be estimated with certainty of 90% to be economically producible from a given date forward, from known reservoirs, and under existing economic conditions, operating methods, and government regulations, prior to the time at which contracts providing the right to operate expire, unless evidence indicates that renewal is reasonably certain, regardless of whether deterministic or probabilistic methods are used for the estimation.

proved developed reserves

Proved developed oil and gas reserves are proved reserves that can be expected to be recovered (i) through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and (ii) through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

proved undeveloped reserves

Proved undeveloped oil and gas reserves are proved reserves that are expected to be recovered with new investments (new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion, surface facilities).

proved and probable reserves (2P reserves)

Sum of proved reserves and probable reserves. 2P reserves are the median quantities of oil and gas recoverable from fields that have already been drilled, covered by E&P contracts and for which technical studies have demonstrated economic development in a long-term price environment. They include projects developed by mining.

R**refining**

The various processes used to produce petroleum products from crude oil (e.g., distillation, reforming, desulphurization, cracking).

renewable energies

An energy source the inventories of which can be renewed or are inexhaustible, such as solar, wind, hydraulic, biomass and geothermal energy.

reserve life

Synthetic indicator calculated from data published under ASC 932. Ratio of the proved reserves at the end of the period to the production of the past year.

reserves

Estimated remaining quantities of oil and gas and related substances expected to be economically producible, as of a given date, by application of development projects to known accumulations.

reservoirs

Porous, permeable underground rock formation that contains oil or natural gas.

resource acquisitions

Acquisition of a participating interest in an oil and gas mining property by way of an assignment of rights and obligations in the corresponding permit or license and related contracts, with a view to producing the recoverable oil and gas.

return on average capital employed (ROACE)

Ratio of adjusted net operating income to average capital employed at replacement cost between the beginning and the end of the period.

return on equity (ROE)

Ratio of adjusted consolidated net income to average adjusted shareholders' equity (after distribution) between the beginning and the end of the period. Adjusted shareholders' equity for a given period is calculated after distribution of the dividend (subject to approval by the Shareholders' Meeting).

S**seismic**

Method of exploring the subsoil that entails methodically sending vibration or sound waves and recording their reflections to assess the type, size, shape and depth of subsurface layers.

shale gas

Natural gas trapped in very compact, low-permeable rock.

shale oil

Oil in a source rock that has not migrated to a reservoir.

sidetrack

Well drilled from a portion of an existing well (and not by starting from the surface). It is used to get around an obstruction in the original well or resume drilling in a new direction or to explore a nearby geological area.

silicon

The most abundant element in Earth's crust after oxygen. It does not exist in a free state but in the form of compounds such as silica, which has long been used as an essential element of glass. Polysilicon (or crystalline silicon), which is obtained by purifying silicon and consists of metal-like crystals, is used in the construction of photovoltaic solar panels, but other minerals or alloys may be used.

special items

Due to their unusual nature or particular significance, certain transactions qualifying as "special items" are excluded from the business segment figures. In general, special items relate to transactions that are significant, infrequent or unusual. In certain instances, transactions such as restructuring costs or asset disposals, which are not considered to be representative of the normal course of business, may qualify as special items although they may have occurred in prior years or are likely to recur in following years.

steam cracker

A petrochemical plant that turns naphtha and light hydrocarbons into ethylene, propylene, and other chemical raw materials.

Sustainable Development Scenario (2°C)

Major new scenario introduced in the World Energy Outlook 2017 (WEO-2017) published by the International Energy Agency (IEA), which outlines an integrated approach to achieve the energy-related aspects of the UN Sustainable Development Goals (SDG): determined action on climate change (thus integrating the 2°C objective); universal access to modern energy by 2030; and a dramatic reduction in air pollution.

T**thermochemical conversion**

Conversion of carbon energy sources (gas, coal, biomass, waste, CO₂) through thermal transformation (chemical reactions controlled by the combined action of temperature, pressure and often of a catalyst). Gasification is an example.

turnaround

Temporary shutdown of a facility for maintenance, overhaul and upgrading.

U**unconventional hydrocarbons**

Oil and gas that cannot be produced or extracted using conventional methods. These hydrocarbons generally include shale gas, coal bed methane, gas located in very low-permeable reservoirs, methane hydrates, extra heavy oil, bitumen and liquid or gaseous hydrocarbons generated during pyrolysis of oil shale.

unitization

Creation of a new joint venture and appointment of a single operator for the development and production as single unit of an oil or gas field involving several permits/licenses or countries.

unproved permit

Permit for which there are no proved reserves.

upgrader

Refining unit where petroleum products, such as heavy oils, are upgraded through cracking and hydrogenation.

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