



# Factbook 2019







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## Need further information?

Log on to [www.total.com](http://www.total.com)  
You can consult the Factbook online, download it in PDF and the tables are also available in Excel format.



## Units of measurement and abbreviations

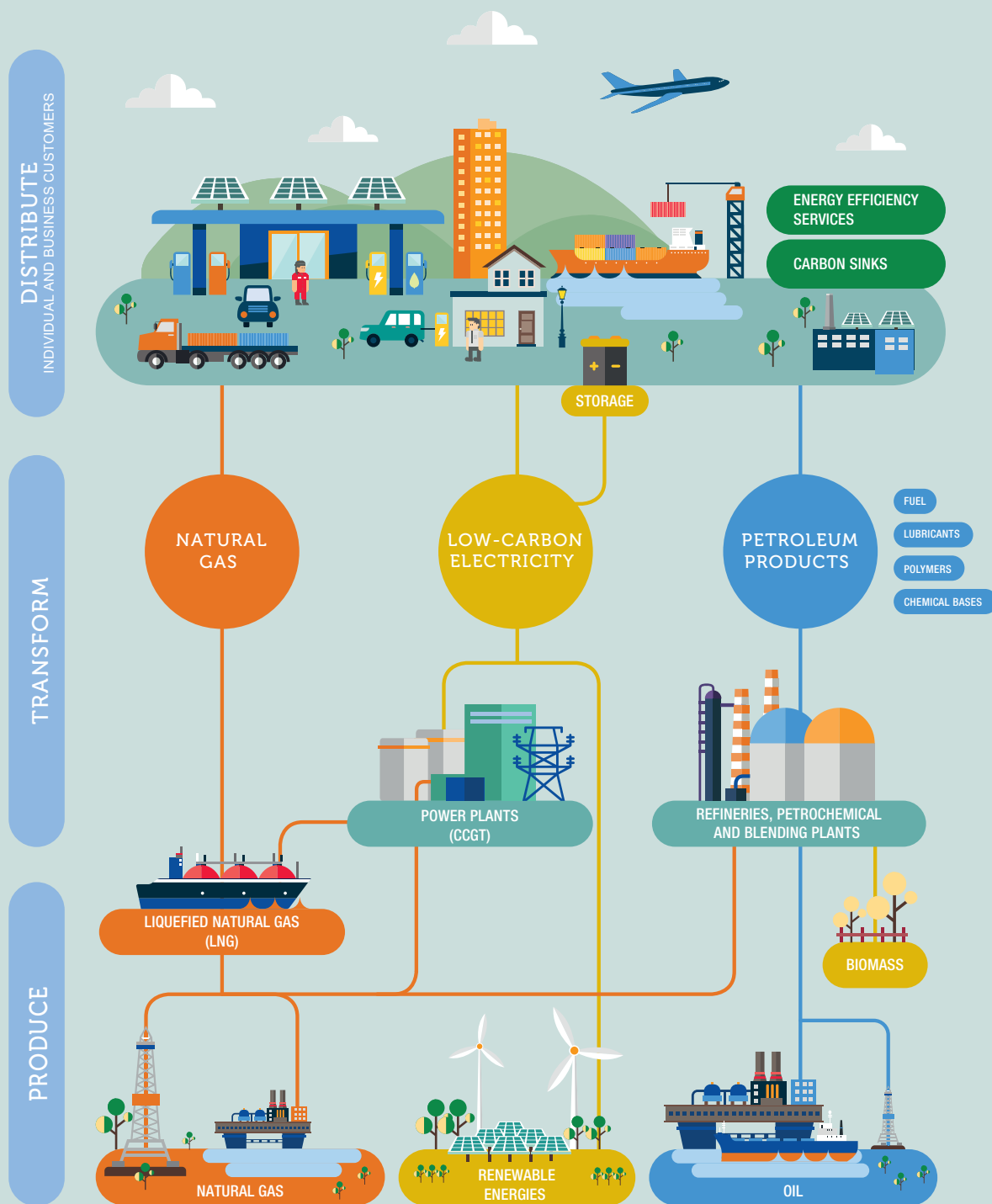
/d:	per day
/y:	per year
B:	billion
b:	barrel
boe:	barrel of oil equivalent
Btu:	British thermal unit
cf:	cubic feet
\$ and/or dollar:	U.S. dollar
€:	euro
t:	metric ton
k:	thousand
km:	kilometer
kboe/d:	thousand boe/d
kb/d:	thousand barrel/d
M:	million
m:	meter
m <sup>3</sup> or cm <sup>3</sup> :	cubic meter
MW:	megawatt
MWp:	megawatt peak
TWh:	terawatt hour
W:	watt
ADR:	American Depository Receipt
API:	American Petroleum Institute
B2B:	Business to business
B2C:	Business to consumer
CCGT:	Combined-Cycle Gas Turbine
CCUS:	Carbon Capture, Utilization and Storage
CO <sub>2</sub> :	carbon dioxide
DACF:	Debt Adjusted Cash Flow. Cash flow from operating activities before changes in working capital at replacement cost, without financial charges except those related to leases.
FEED:	Front-End Engineering and Design
FID:	Final Investment Decision
FPSO:	Floating Production Storage and Offloading
FSRU:	Floating Storage and Regasification Unit
HSE:	Health, Safety and the Environment
IEA:	International Energy Agency
IFRS:	International Financial Reporting Standards
IOC:	Integrated Oil Company
LNG:	Liquefied Natural Gas
LPG:	Liquefied Petroleum Gas
NGL:	Natural Gas Liquids
NGV:	Natural Gas Vehicles
OEM:	Original Equipment Manufacturer
OML:	Oil Mining Lease
ROE:	Return on Equity
ROACE:	Return on Average Capital Employed
SEC:	United States Securities and Exchange Commission
SPA:	Sales and Purchase Agreement
TCFD:	Task-Force on Climate-related Financial Disclosures
VCM:	Variable Cost Margin - Refining Europe

## Conversion table

1 acre = approx. 0.405 hectares
1 km = approx. 0.62 miles
1 b = 42 U.S. gallons = approx. 159 liters
1 boe = 1 b of crude oil = approx. 5,395 cf of gas in 2019
1 b/d of crude oil = approx. 50 t/y of crude oil
1 t of oil = approx. 7.5 b of oil
(assuming a specific gravity of 37° API)
1 m <sup>3</sup> = approx. 35.3 cf
1 Bm <sup>3</sup> /y (1 Bcm) = approx. 0.1 Bcf/d
1 Mt of LNG = approx. 48 Bcf of gas
1 Mt/y of LNG = approx. 131 Mcf/d of gas

# OUR ACTIVITIES

Our ambition: become the responsible energy major – with the mission to provide more affordable, more accessible and cleaner energy to as many people as possible.







# OVERVIEW

## KEY FIGURES FOR 2019

**+9%**  
Growth in production of hydrocarbons

**10.4%**  
Group ROE

**11.8 B\$**  
Adjusted Net Income

**28.5 B\$**  
Operating Cash Flow before WC changes w/o financial charges (DACF)

**17.4 B\$**  
Net investments

**16.7%**  
Gearing Ratio <sup>(1)</sup>

(1) Excluding leases.

### GROUP OVERVIEW

TOTAL, which has produced oil and gas for almost a century, is one of the world's largest integrated energy companies, with a presence in more than 130 countries on five continents.

The Group's activities extend from exploration and production of oil, gas and electricity to distribution to the end consumer through refining, liquefaction, petrochemicals, trading, energies transport and storage. More than 107,000 employees are committed to contributing to supply to as many people as possible, a more affordable, more available and cleaner energy.

### AN ESTABLISHED STRATEGY

TOTAL is one of the largest integrated energy groups in the world. Through its international presence, TOTAL has the intention to make its development a vehicle of progress that benefits as many people as possible and to be a factor of positive change for the societies and regions where it is present.

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

Consequently, the Group's strategy relies on four pillars:

- expanding along the natural gas value chain;
- developing profitable low-carbon electricity businesses;
- focusing on oil assets at a low breakeven point;
- investing in technologies and businesses that contribute to carbon neutrality.

The ambition of this strategy is to get to net-zero emissions by 2050 together with society for its global business across its production and energy products used by its customers. TOTAL takes three major steps towards achieving this ambition:

- Net Zero across TOTAL's worldwide operations by 2050 or sooner (scope 1+2);

- Net Zero across all its production and energy products used by its customers in Europe<sup>(1)</sup> by 2050 or sooner (scope 1+2+3);
- 60% or more reduction in the average carbon intensity of energy products used worldwide by TOTAL customers by 2050 – with intermediate steps of 15% by 2030 and 35% by 2040 (scope 1+2+3).

TOTAL acts on several complementary levels:

- on products, by developing energies with a lower carbon content, such as gas (including biogas and hydrogen), renewables and biofuels;
- on demand, by developing, for example, electric mobility or LNG as transport fuel;
- on emissions, by first reducing emissions from its facilities (CO<sub>2</sub> and methane), but also by advising its customers in reducing their emissions (electric mobility solutions, storage, energy efficiency consulting) and by developing carbon sinks (nature-based solutions or CCUS).

### 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, part of TOTAL's identity that is 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 require all of TOTAL's employees to act in an exemplary manner 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 strategy 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) Europe means the EU + Norway + UK.



1



2



3



4

## 2019 HIGHLIGHTS

### JANUARY

#### Nigeria – E&P <sup>1</sup>

Start-up of the production from the Egina field. At Plateau, it will produce 200 kboe/d, which represents around 10% of Nigeria's production.

#### North Sea – E&P

New discovery on the Glengorm prospect (25%) located in the Central Graben with recoverable resources estimated close to 250 Mboe.

### FEBRUARY

#### South Africa – E&P

Significant gas condensate discovery on the Brulpadda prospects in a challenging deepwater environment (45%, operator).

#### Saudi Arabia – M&S <sup>2</sup>

50/50 joint venture agreement with Saudi Aramco to develop high quality fuels and retail network in Saudi Arabia. The JV plans to invest around \$1 billion over the next six years.

#### France – iGRP

Creation of an industrial consortium with Ørsted and Elicio to submit a joint bid for the Dunkirk offshore wind farm project for a power capacity of up to 600 MW.

### MARCH

#### Russia – iGRP

Agreement with Novatek for the acquisition of a direct 10% interest in Arctic LNG 2, a major LNG development led by Novatek that will have a production capacity of 19.8 Mt/y.

### APRIL

#### Angola – E&P <sup>3</sup>

Start-up of production of Kaombo Sul, the second FPSO unit of the Kaombo project, located on Block 32, adding 115 kb/d, bringing the overall production capacity to 230 kb/d.

#### US – iGRP

Agreement with Tellurian for a \$500 million investment in the Driftwood LNG project and the purchase of 1 Mt/y of LNG, with a SPA for a further 1.5 Mt/y of LNG from Tellurian Marketing's LNG offtake. TOTAL also has the option to acquire 19.87 million shares in Tellurian for \$200 million in the event of FID.

#### China – iGRP

Saft joins forces with the Chinese Group Tianneng to grow in China and scale up its e-mobility and energy storage businesses.

#### Oman – E&P

A heads of agreement with the Ministry of Oil and Gas of the Sultanate of Oman for the award of an exploration license on Block 12 with significant prospective gas resources.

### MAY

#### Africa – E&P/iGRP

Agreement with Occidental to buy Anadarko's assets in Africa for \$8.8 billion in the event of a successful completion of Occidental's bid for Anadarko.

#### US – iGRP

Start-up of the production at Cameron LNG export terminal in Louisiana.

### JUNE

#### US – iGRP

Agreement with Toshiba to take over its portfolio of LNG. It includes a 20-year tolling agreement for 2.2 Mt/y of LNG from Freeport LNG train 3 in Texas. Total received from Toshiba a net cash consideration of \$800 million.

#### Japan – iGRP

Start-up of the commercial operation of a 25 MWp solar power plant.

#### UK – E&P <sup>4</sup>

Start-up of the production from the Culzean gas condensate field located on Block 22/25a.

#### Brazil – E&P

FID for the second phase of the Mero project (Libra Block). The Mero 2 FPSO will have a liquid treatment capacity of 180 kb/d and is expected to start up by 2022.

### JULY

#### France – R&C

Start-up of the production at the La Mède biorefinery. It was the final step in converting a former oil refinery into a New Energies complex.

#### Kazakhstan – E&P

Launch approval of Phase 3 development of the onshore Dunga field. It will consist in adding wells to the existing infrastructure and upgrading the processing plant to increase its capacity by 10%.

#### North Sea – E&P

Agreement to divest several UK non-core assets to Petrogas NEO UK Ltd. The overall consideration for this deal amounts to \$635 million. In May 2020, TOTAL reiterated its commitment to completing the sale.

#### Benin – iGRP

Agreements for the development of a LNG import floating terminal and the supply of up to 0.5 Mt/y of regasified LNG





## AUGUST

### France – R&C

Agreement to sell a 30% interest in Société des Transports Pétroliers par Pipelines (Trapil) to Pisto SAS for €260 million.

### Morocco – M&S

Inauguration of the 1,000<sup>th</sup> solarized service station powered by solar panels.

### Africa – E&P

Agreements with Qatar Petroleum under which the company will farm into TOTAL-held exploration acreage in Namibia, Guyana and Kenya.

## SEPTEMBER

### Russia – iGRP

FID for Arctic LNG 2, a major LNG development. The project will have a production capacity of 19.8 Mt/y and is expected to export its first LNG cargo by 2023.

### China – iGRP

Launching of a 50/50 joint venture company established by TOTAL and Envision Group to develop on site distributed generation solar projects for B2B customers in China.

### South Korea – R&C

Start of new ethylene production capacities at the Daesan integrated refining and petrochemicals complex. With a \$450 million investment, the site can now produce 1.4 Mt/y of ethylene, an increase of 30%.

## OCTOBER

### Norway – E&P

Start-up of the production from Phase 1 of the giant Johan Sverdrup field, with a cost reduced by more than 30%. The total investment is \$10.5 billion and plateau production is 440 kb/d.

### Japan – iGRP

Start of the construction of Miyagi Osato Solar Park, a large-scale solar plant of 52 MWp. The project is expected to start up in 2021.

### Brazil – E&P

Successful bid of the C-M-541 deep offshore Block in the 16<sup>th</sup> Bidding Round held by Brazil's National Petroleum Agency. TOTAL is the operator with a 40% interest.

### India – iGRP

Extension of partnership with the Adani Group to contribute to the development of the Indian natural gas market. The partnership includes several assets across the gas value chain notably two imports and regasification LNG terminals.

### Europe – M&S

First LNG bunker vessel launched in line with the IMO decision to drastically limit the sulfur content of marine fuels as of 2020.

## NOVEMBER

### Brazil – E&P

First oil from the lara license (Block BM-S-11A), located in the deepwater Santos Basin pre-salt. This marks the start-up of the FPSO P-68. The second, the P-70, is expected to come on stream in 2020. Each unit has a capacity of 150 kb/d.

### Asia – iGRP

Addition of 6 new solar projects with a total capacity of around 10 MWp to the renewable portfolio in Southeast Asia.

### France – iGRP

Start-up of Hélio Boulouparis 2 in New Caledonia, the largest solar power plant with energy storage in overseas France. Equipped with more than 58,000 solar panels, the plant has installed capacity of nearly 16 MWp.

## DECEMBER

### US – E&P

FID to develop the Anchor oil field and beginning of FEED for the North Platte discovery.

### Angola – E&P

Extension of all Block 17 production licenses until 2045. Block 17 has been a true success story, with almost 3 billion barrels of oil produced since 2001.

### Angola – E&P

SPA with state-owned Sonangol of Angola to acquire interests in Blocks 20/11 and 21/09.

### Suriname – E&P

Agreement with Apache Corporation to acquire a 50% working interest and operatorship in the highly prospective Block 58 offshore Suriname.



9



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11



12

## 2020 HIGHLIGHTS

### JANUARY

#### Suriname – E&P

Material oil discovery with the Maka Central-1 well on Block 58 offshore Suriname.

#### Qatar – iGRP

Agreements for the development of the Al Kharsaah Solar PV IPP Project, a 800 MWp solar plant.

#### Netherlands – M&S

Awarded Europe's largest concession contract for electric vehicles charging by MRA-Electric (up to 20,000 new public charging points in the Netherlands).

#### France – iGRP

Announcement, through TOTAL's affiliate Saft and PSA with Opel, of a plan to develop EV battery manufacturing activity in Europe.

### FEBRUARY

#### India – iGRP

Expansion of partnership with Adani Group with a creation of a 50/50 joint venture into which Adani will transfer its solar assets in operation. These projects have a cumulative capacity of over 2 GW.

#### France – iGRP

Divestment of 27.5% interest in Fosmax LNG, operator of the Fos Cavaou LNG terminal. The consideration for the transaction is around \$260 million.

#### Spain – iGRP <sup>9</sup>

Agreements with Powertis and Solarbay Renewable Energy through Total Solar International to develop nearly 2 GW of solar projects in Spain.

### MARCH

#### Thailand – iGRP

Binding contract to provide 25 MWp of solar rooftops of one of the largest food companies in Thailand, Betagro.

#### France – iGRP <sup>10</sup>

Launch of a battery-based energy storage project in Mardyck. With a storage capacity of 25 MWh and output of 25 MW of power, the new lithium-ion energy storage system will be the largest in France.

#### North Sea – E&P

Discovery with the Isabella 30/12d-11 well on the license P1820.

#### UK – iGRP

Agreement with the developer Simply Blue Energy to acquire 80% stake in the pioneering floating wind project Erebus located in the Celtic Sea. The project will have a 96 MW capacity.

#### France – iGRP

Acquisition, through Total Quadran, of 100% of Global Wind Power (GWP) France, a company with a 1,000 MW portfolio of onshore wind projects, including 250 MW scheduled to come on stream by 2025.

### APRIL

#### Suriname – E&P

Second significant discovery with the Sapakara West-1 well on Block 58 offshore Suriname.

#### Asia/Africa – E&P/M&S

Continuation of the divestments of several non-core assets in both E&P in Brunei and M&S in Sierra Leone and Liberia. These divestments represent a value of more than \$400 million.

#### France – iGRP

TOTAL, through Total Quadran, was awarded with 131 MWp of solar projects tender for ground-mounted solar parks, as well as 5.6 MWp of solar in the French Overseas departments and collectivities.

#### Uganda – E&P

Agreement to acquire Tullow's entire interests in Uganda Lake Albert development project including the East African Crude Oil Pipeline. The overall consideration paid by TOTAL to Tullow will be \$575 million.

### MAY

#### Africa – E&P/iGRP

Following Occidental's announcement of its incapacity to sell its interests in Algeria, TOTAL has decided not to pursue the completion of the purchase of the Ghana assets. The deal for the other assets in Mozambique and South Africa had already been completed, respectively in September 2019 and early 2020.

#### Spain – iGRP

Acquisition of the Energ'as de Portugal's portfolio of 2.5 million B2C customers and two gas-fired combined cycle power plants, which represent an electricity generation capacity of nearly 850 MW. The transaction with EDP is based on an enterprise value of €515 million.

### JUNE

#### UK – iGRP <sup>11</sup>

Agreement with SSE Renewables, to acquire a 51% stake in the Seagreen 1 offshore wind farm project of 1,140 MW.

#### Algeria – iGRP <sup>12</sup>

Agreement with Sonatrach to notably allow to extend the existing supply contracts for 3 additional years in order to provide 2 Mt/y of Algerian LNG to the French market, primarily through the LNG terminal at Fos Cavaou. The agreement also includes the sub-charter of an LNG tanker of TOTAL by Sonatrach.

#### Brazil – E&P

Start-up of the FPSO P-70 of the lara cluster, located in the deepwater Santos Basin pre-salt offshore Brazil. With a productive capacity of 150 kb/d of oil, this new unit double the overall production capacity of the lara cluster and will produce the reserve of the Atapu field.





**TOTAL shares the ambition to get to Net Zero by 2050 together with society for its global business (Scope 1+2+3)**

**3 major steps to get TOTAL to Net Zero**

**#1**  
**Net Zero on Operations by 2050 or sooner (scope 1+2)**

**#2**  
**Net Zero in Europe by 2050 or sooner (scope 1+2+3)**

**#3**  
**60% or more Net Carbon Intensity reduction by 2050 (scope 1+2+3)**

**Strategy**

TOTAL supports the goals of the Paris Agreement and the Board of Directors confirms that the strategy of the Group aims to be consistent with these goals: TOTAL's strategy is built around the anticipated market evolutions stemming from the Paris goals and aims at capturing business opportunities linked to the decarbonization of energy. This strategy is resilient with long-term hydrocarbon prices aligned on a scenario well below 2°.

**Getting to Net Zero**

TOTAL's Board of Directors has reviewed the achievements and ambitions of the company in the fight against climate change and decided to take additional steps towards the Paris goals, with a view for TOTAL to get to Net Zero by 2050 together with society.

TOTAL shares the ambition to get to Net Zero emissions by 2050, together with society, for its global business across its production and energy products used by its customers (scope 1+2+3). In order to help the world and TOTAL to get to Net Zero, TOTAL will develop an active advocacy for policies that support Net Zero, including carbon pricing, and will mobilize its capabilities not only to deliver its own ambitions but also to help countries and corporations get to Net Zero as well.

To achieve that ambition, where Governments in a given region commit to take policies and regulations aiming at Net Zero, TOTAL will commit to achieve Net Zero emissions by 2050 across all its production and energy products used by its customers in such a region. As the EU has set the target to achieve Net Zero emissions by 2050 and thereby lead the way for other regions to become carbon neutral over time, TOTAL takes that commitment for all its businesses in Europe<sup>(1)</sup>.

**Capital expenditure allocation**

TOTAL is committed to pursuing a resilient business strategy in its various segments, which it believes is consistent with the goals of the Paris Agreement. This includes the following:

- TOTAL will continue to stress test its portfolio, including new material capital expenditure investments, against relevant scenarios;

- to assess the resilience of its portfolio, TOTAL assumes a long-term oil and gas price scenario compatible with the Paris goals, using a price trajectory converging to the IEA Sustainable Development Scenario (SDS);
- the Upstream unit will prioritize the generation of value and cash over volume. Even if CO<sub>2</sub> prices do not currently apply in all countries where it operates, TOTAL integrates a CO<sub>2</sub> price of 40\$/t in all investment decisions and will run a sensitivity test at 100\$/t from 2030 onwards;
- TOTAL confirms its target of a renewable generation gross capacity of 25 GW in 2025 and will continue to expand its business to become a leading international player in renewable energies. TOTAL currently allocates more than 10% of its Capex to low carbon electricity, the highest level among the Majors. To actively contribute to the energy transition, TOTAL will further increase its allocation of Capex in favor of low carbon electricity to 20% by 2030 or sooner.

**Annual Reporting**

TOTAL publishes an update on its progress towards its different objectives on an annual basis. TOTAL has been an early supporter of the TCFD and will continue to support and promote the implementation of its recommendations.

At least every 5 years, TOTAL will review its ambitions, strategy and targets informed by improvements to national and international policy, updated scenarios on decarbonization trajectories and any other developments to assess societal progress in the energy transition.

**Climate policy engagement and transparency**

TOTAL recognizes the importance of ensuring that its membership in relevant trade associations does not undermine its support for the objectives of the Paris Agreement on climate change.

In 2019, TOTAL undertook and disclosed a comprehensive review of these memberships to assess alignment with the Group's stated positions.

TOTAL will continue to track and provide information about its trade association activities on climate change-related topics, areas of misalignment and actions taken in that regard.

(1) Europe means the EU + Norway + UK.





# CORPORATE



**28.5** B\$

operating cash flow  
excl. working capital  
changes and financial  
charges (DACF)  
in 2019

**11.8** B\$

adjusted net income  
(Group share) in 2019

**4.4** \$

adjusted fully-diluted  
earnings per share  
in 2019

**2.68** €

2019 dividend  
per share





## NOTE ON FINANCIAL STATEMENTS

Since January, 1, 2019, TOTAL has been structured around these four business segments: Exploration & Production; Integrated Gas, Renewables & Power; Refining & Chemicals and Marketing & Services. In addition, the Corporate Segment includes operating and financial activities.

Certain figures for years 2018 and 2017 have been restated in order to reflect this new organization. 2016 and 2015 business segments data have not been restated. Therefore, Upstream includes both the Exploration & Production and the Integrated Gas, Renewables & Power segments.

## FINANCIAL HIGHLIGHTS

(in million dollars, except percent and per share amounts)

	2019	2018	2017	2016	2015
<b>Sales</b>	<b>200,316</b>	<b>209,363</b>	<b>171,493</b>	<b>149,743</b>	<b>165,357</b>
<b>Adjusted net operating income from business segments<sup>(1)</sup></b>	<b>14,554</b>	<b>15,997</b>	<b>11,936</b>	<b>9,410</b>	<b>11,327</b>
Net income (Group share)	11,267	11,446	8,631	6,196	5,087
<b>Adjusted net income (Group share)<sup>(1)</sup></b>	<b>11,828</b>	<b>13,559</b>	<b>10,578</b>	<b>8,287</b>	<b>10,518</b>
<b>Adjusted fully-diluted earnings per share (\$) <sup>(1) (2)</sup></b>	<b>4.38</b>	<b>5.05</b>	<b>4.12</b>	<b>3.38</b>	<b>4.51</b>
<b>Dividend per share (€) <sup>(2)</sup></b>	<b>2.68</b>	<b>2.56</b>	<b>2.48</b>	<b>2.45</b>	<b>2.44</b>
<b>Dividend per ADR (\$) <sup>(2)</sup></b>	<b>2.97 <sup>(3)</sup></b>	<b>2.94</b>	<b>2.96</b>	<b>2.61</b>	<b>2.67</b>
Net-debt-to-equity ratio (as of December 31) <sup>(4)</sup>	20.7%	15.5%	11.9%	21.1%	21.8%
Return on average capital employed (ROACE) <sup>(5)</sup>	9.8%	11.8%	9.4%	7.5%	9.4%
Return on equity (ROE)	10.4%	12.2%	10.1%	8.7%	11.5%
<b>Cash flow from operating activities</b>	<b>24,685</b>	<b>24,703</b>	<b>22,319</b>	<b>16,521</b>	<b>19,946</b>
Operating cash flow before working capital changes <sup>(6)</sup>	26,432	24,529	21,135	16,988	19,376
Operating cash flow before working capital changes w/o financial charges (DACF) <sup>(7)</sup>	28,501	26,067	22,183	17,581	19,839
Gross investments <sup>(8)</sup>	19,237	22,185	16,896	20,530	28,033
Organic investments <sup>(9)</sup>	13,397	12,426	14,395	17,484	22,976
Divestments	2,060	7,239	5,264	2,877	7,584

(1) Adjusted results are defined as income at replacement cost, excluding non-recurring items, and excluding the impact of fair value changes.

(2) Based on the fully-diluted weighted-average number of common shares outstanding during the period.

(3) 2019 dividend in dollars includes the first quarterly interim ADR dividend of \$0.72 paid in October 2019, the second quarterly interim ADR dividend of \$0.73 paid in January 2020, the third quarterly interim ADR dividend of \$0.75 paid in April 2020 and the final interim ADR dividend of \$0.77 paid in July 2020.

(4) Including leases. Net-debt-to-equity ratio excluding leases impact was 16.7% at the end of 2019.

(5) Based on adjusted net operating income and average employed using replacement cost.

(6) Operating cash flow before working capital changes, previously referred to as adjusted cash flow from operations, is defined as cash flow from operating activities before changes in working capital at replacement cost.

(7) DACF = debt adjusted cash flow. Cash flow from operating activities before changes in working capital at replacement cost, without financial charges except those related to leases.

(8) Including acquisitions and increases in non-current loans.

(9) Organic investments = net investments, excluding acquisitions, divestments and other operations with non-controlling interests.

## MARKET ENVIRONMENT

	2019	2018	2017	2016	2015
Year-end euro/dollar (€/€)	1.12	1.15	1.20	1.05	1.09
Average euro/dollar (€/€)	1.12	1.18	1.13	1.11	1.11
Year-end Brent price (\$/b)	66.0	54.1	66.6	56.8	37.3
Average Brent price (\$/b)	64.2	71.3	54.2	43.7	52.4
Variable Cost Margin-Refining Europe, VCM (\$/t) <sup>(1)</sup>	34.9	38.2	45.6		

(1) Since 2019, the European refining indicator used by the Group is the VCM, which replaced the European Refining Margin Indicator (ERMI). The VCM has not been published for the years 2015 and 2016.



## OPERATIONAL HIGHLIGHTS BY QUARTER

	2019 Full Year	Quarters			
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
<i>(in million dollars)</i>					
<b>Adjusted operating income from business segments<sup>(1)</sup></b>	<b>18,132</b>	<b>4,606</b>	<b>4,370</b>	<b>4,560</b>	<b>4,596</b>
Exploration & Production	11,408	2,952	3,010	2,510	2,936
Integrated Gas, Renewables & Power	1,644	407	339	359	539
<b>Total Upstream</b>	<b>13,052</b>	<b>3,359</b>	<b>3,349</b>	<b>2,869</b>	<b>3,475</b>
Refining & Chemicals	2,986	752	537	1,153	544
Marketing & Services	2,094	495	484	538	577
<b>Adjusted net operating income from business segments<sup>(1)</sup></b>	<b>14,554</b>	<b>3,413</b>	<b>3,589</b>	<b>3,673</b>	<b>3,879</b>
Exploration & Production	7,509	1,722	2,022	1,734	2,031
Integrated Gas, Renewables & Power	2,389	592	429	574	794
<b>Total Upstream</b>	<b>9,898</b>	<b>2,314</b>	<b>2,451</b>	<b>2,308</b>	<b>2,825</b>
Refining & Chemicals	3,003	756	715	952	580
Marketing & Services	1,653	343	423	413	474

(1) Adjusted results are defined as income at replacement cost, excluding non-recurring items, and excluding the impact of fair value changes.

## FINANCIAL HIGHLIGHTS BY QUARTER

	2019 Full Year	Quarters			
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
<i>(in million dollars, except percent, per share amounts and share buybacks)</i>					
<b>Adjusted net income (Group share)<sup>(1)</sup></b>	<b>11,828</b>	<b>2,759</b>	<b>2,887</b>	<b>3,017</b>	<b>3,165</b>
Adjusted fully diluted earnings per share (\$) <sup>(1)</sup>	4.38	1.02	1.05	1.13	1.19
<b>Net income (Group share)</b>	<b>11,267</b>	<b>3,111</b>	<b>2,756</b>	<b>2,800</b>	<b>2,600</b>
<b>Net-debt-to-equity ratio (as of end of period)</b>	<b>20.7%</b>	<b>19.8%</b>	<b>20.6%</b>	<b>21.1%</b>	<b>20.7%</b>
Shares outstanding (as of end of period)	2,601,881,075	2,641,874,274	2,666,883,760	2,666,990,510	2,601,881,075
Fully-diluted weighted-average number of shares	2,618,007,888	2,620,344,617	2,625,380,839	2,613,558,611	2,607,260,234
Number of shares bought back during the period	52,389,336	8,675,188	23,656,258	8,539,761	11,518,129
Share buybacks (B\$)	2.8	0.5	1.3	0.4	0.6

	2016 Full Year	Quarters			
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
<i>(in million dollars, except percent, per share amounts and share buybacks)</i>					
<b>Adjusted net income (Group share)<sup>(1)</sup></b>	<b>8,287</b>	<b>1,636</b>	<b>2,174</b>	<b>2,070</b>	<b>2,407</b>
Adjusted fully diluted earnings per share (\$) <sup>(1)</sup>	3.38	0.68	0.9	0.84	0.96
<b>Net income (Group share)</b>	<b>6,196</b>	<b>1,606</b>	<b>2,088</b>	<b>1,954</b>	<b>548</b>
<b>Net-debt-to-equity ratio (as of end of period)</b>	<b>21.1%</b>	<b>22.6%</b>	<b>22.8%</b>	<b>23.2%</b>	<b>21.1%</b>
Shares outstanding (as of end of period)	2,430,365,862	2,454,029,976	2,503,262,274	2,504,029,528	2,430,365,862
Fully-diluted weighted-average number of shares	2,389,713,936	2,350,462,067	2,378,565,375	2,403,550,668	2,433,165,882
Number of shares bought back during the period	-	-	-	-	-
Share buybacks (B\$)	-	-	-	-	-

(1) Adjusted results are defined as income at replacement cost, excluding non-recurring items, and excluding the impact of fair value changes.

## MARKET ENVIRONMENT AND PRICE REALIZATIONS

	2019 Full Year	Quarters				2018 Full Year	Quarters			
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
<b>Market environment</b>										
Average euro-dollar (\$/€)	1.12	1.14	1.12	1.11	1.11	1.18	1.23	1.19	1.16	1.14
Brent price (\$/b)	64.2	63.1	68.9	62.0	63.1	71.3	66.8	74.4	75.2	68.8
Variable Cost Margin-Refining Europe, VCM (\$/t) <sup>(1)</sup>	34.9	33.0	27.6	47.4	30.2	38.2	29.8	33.9	47.2	40.8
<b>Price realizations<sup>(2)</sup></b>										
<b>TOTAL AVERAGE LIQUIDS PRICE (\$/b)<sup>(3)</sup></b>	<b>59.8</b>	<b>58.7</b>	<b>63.7</b>	<b>58.0</b>	<b>59.1</b>	<b>64.2</b>	<b>60.4</b>	<b>69.5</b>	<b>69.5</b>	<b>57.2</b>
<b>TOTAL AVERAGE GAS PRICE (\$/MBtu)</b>	<b>3.88</b>	<b>4.51</b>	<b>3.82</b>	<b>3.48</b>	<b>3.76</b>	<b>4.78</b>	<b>4.73</b>	<b>4.49</b>	<b>4.96</b>	<b>4.94</b>

(1) Since 2019, the European refining indicator used by the Group is the VCM, which replaced the European Refining Margin Indicator (ERMI). The VCM has not been published for the years 2015 and 2016.

(2) Consolidated subsidiaries excluding fixed margin and buy-back contracts and including hydrocarbon production overlifting/underlifting position valued at market price.

(3) Crude oil and natural gas liquids.

2018					2017				
Full Year	Quarters				Full Year	Quarters			
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
<b>19,599</b>	<b>4,217</b>	<b>5,151</b>	<b>5,808</b>	<b>4,423</b>	<b>13,539</b>	<b>3,266</b>	<b>2,897</b>	<b>3,437</b>	<b>3,939</b>
13,408	2,902	3,726	3,947	2,833	6,208				
1,174	235	217	373	349	1,435				
<b>14,582</b>	<b>3,137</b>	<b>3,943</b>	<b>4,320</b>	<b>3,182</b>	<b>7,643</b>	<b>1,830</b>	<b>1,526</b>	<b>1,732</b>	<b>2,555</b>
3,131	694	680	966	791	4,056	1,047	931	1,182	896
1,886	386	528	522	450	1,840	389	440	523	488
<b>15,997</b>	<b>3,385</b>	<b>4,179</b>	<b>4,548</b>	<b>3,885</b>	<b>11,936</b>	<b>2,767</b>	<b>2,748</b>	<b>3,062</b>	<b>3,359</b>
8,547	1,817	2,315	2,439	1,976	4,541				
2,419	481	565	697	676	1,929				
<b>10,966</b>	<b>2,298</b>	<b>2,880</b>	<b>3,136</b>	<b>2,652</b>	<b>6,470</b>	<b>1,443</b>	<b>1,454</b>	<b>1,536</b>	<b>2,037</b>
3,379	720	821	938	900	3,790	1,023	861	1,020	886
1,652	367	478	474	333	1,676	301	433	506	436

2018					2017				
Full Year	Quarters				Full Year	Quarters			
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
<b>13,559</b>	<b>2,884</b>	<b>3,553</b>	<b>3,958</b>	<b>3,164</b>	<b>10,578</b>	<b>2,558</b>	<b>2,474</b>	<b>2,674</b>	<b>2,872</b>
5.05	1.09	1.31	1.47	1.17	4.12	1.01	0.97	1.04	1.10
<b>11,446</b>	<b>2,636</b>	<b>3,721</b>	<b>3,957</b>	<b>1,132</b>	<b>8,631</b>	<b>2,849</b>	<b>2,037</b>	<b>2,724</b>	<b>1,021</b>
<b>15.5%</b>	<b>15.1%</b>	<b>16.5%</b>	<b>18.3%</b>	<b>15.5%</b>	<b>11.9%</b>	<b>18.1%</b>	<b>16.6%</b>	<b>15.0%</b>	<b>11.9%</b>
2,640,602,007	2,633,820,167	2,665,877,332	2,666,383,509	2,640,602,007	2,528,989,616	2,453,937,714	2,501,535,888	2,502,754,234	2,528,989,616
2,623,716,444	2,568,034,720	2,646,317,904	2,636,751,321	2,637,489,286	2,494,756,413	2,457,491,053	2,484,608,123	2,504,878,256	2,535,959,002
72,766,481	12,471,369	20,585,145	11,990,658	27,719,309					
4.3	0.7	1.3	0.7	1.6					

2015				
Full Year	Quarters			
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
<b>10,518</b>	<b>2,602</b>	<b>3,085</b>	<b>2,756</b>	<b>2,075</b>
4.51	1.13	1.34	1.17	0.88
<b>5,087</b>	<b>2,663</b>	<b>2,971</b>	<b>1,079</b>	<b>(1,626)</b>
<b>21.8%</b>	<b>21.5%</b>	<b>20.3%</b>	<b>20.7%</b>	<b>21.8%</b>
2,440,057,883	2,385,555,781	2,396,360,090	2,415,089,789	2,440,057,883
2,304,435,542	2,285,344,747	2,292,139,361	2,311,978,156	2,328,765,893
4,711,935	-	-	4,711,935	-
0.2	-	-	0.2	-

2017					2016					2015				
Full Year	Quarters				Full Year	Quarters				Full Year	Quarters			
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
1.13	1.06	1.10	1.17	1.18	1.11	1.10	1.13	1.12	1.08	1.11	1.13	1.11	1.11	1.10
54.2	53.7	49.6	52.1	61.3	43.7	33.9	45.6	45.9	49.3	52.4	53.9	61.9	50.5	43.8
45.6														
<b>50.2</b>	<b>49.2</b>	<b>45.1</b>	<b>48.9</b>	<b>57.6</b>	<b>40.3</b>	<b>31</b>	<b>43</b>	<b>41.4</b>	<b>46.1</b>	<b>47.4</b>	<b>49.5</b>	<b>58.2</b>	<b>44.0</b>	<b>38.1</b>
<b>4.08</b>	<b>4.10</b>	<b>3.93</b>	<b>4.05</b>	<b>4.23</b>	<b>3.56</b>	<b>3.46</b>	<b>3.43</b>	<b>3.45</b>	<b>3.89</b>	<b>4.75</b>	<b>5.38</b>	<b>4.67</b>	<b>4.47</b>	<b>4.45</b>

## CONSOLIDATED STATEMENT OF INCOME

For the year ended December 31,

(in million dollars, except per share amounts)

	2019	2018	2017	2016	2015
<b>Sales</b>	<b>200,316</b>	<b>209,363</b>	<b>171,493</b>	<b>149,743</b>	<b>165,357</b>
Excise taxes	(24,067)	(25,257)	(22,394)	(21,818)	(21,936)
Revenues from sales	176,249	184,106	149,099	127,925	143,421
Purchases, net of inventory variation	(116,221)	(125,816)	(99,411)	(83,377)	(96,671)
Other operating expenses	(27,255)	(27,484)	(24,966)	(24,302)	(24,345)
Exploration costs	(785)	(797)	(864)	(1,264)	(1,991)
Depreciation, depletion and impairment of tangible assets and mineral interests	(15,731)	(13,992)	(16,103)	(13,523)	(17,720)
Other income	1,163	1,838	3,811	1,299	3,606
Other expense	(1,192)	(1,273)	(1,034)	(1,027)	(1,577)
Financial interest on debt	(2,333)	(1,933)	(1,396)	(1,108)	(967)
Financial income and expense from cash and cash equivalents	(19)	(188)	(138)	4	94
Cost of net debt	(2,352)	(2,121)	(1,534)	(1,104)	(873)
Other financial income	792	1,120	957	971	882
Other financial expense	(764)	(685)	(642)	(636)	(654)
Equity in income (loss) of affiliates	3,406	3,170	2,015	2,214	2,361
Income taxes	(5,872)	(6,516)	(3,029)	(970)	(1,653)
<b>Consolidated net income</b>	<b>11,438</b>	<b>11,550</b>	<b>8,299</b>	<b>6,206</b>	<b>4,786</b>
Group share	11,267	11,446	8,631	6,196	5,087
Minority interests	171	104	(332)	10	(301)
Earnings per share (\$)	4.20	4.27	3.36	2.52	2.17
Fully-diluted earnings per share (\$)	4.17	4.24	3.34	2.51	2.16
<b>Adjusted net income Group share <sup>(1)</sup></b>	<b>11,828</b>	<b>13,559</b>	<b>10,578</b>	<b>8,287</b>	<b>10,518</b>
<b>Adjusted fully-diluted earnings per share (\$) <sup>(1) (2)</sup></b>	<b>4.38</b>	<b>5.05</b>	<b>4.12</b>	<b>3.38</b>	<b>4.51</b>

(1) Adjusted results are defined as income at replacement cost, excluding non-recurring items, and excluding the impact of fair value changes.

(2) Based on the fully-diluted weighted-average number of common shares outstanding during the period.



## SALES

(in million dollars)

	2019	2018	2017	2016	2015
<b>By business segment excluding inter-segment sales</b>					
Exploration & Production	7,261	9,889	6,527		
Integrated Gas, Renewables & Power	18,167	17,236	14,804		
<b>Total Upstream</b>	<b>25,428</b>	<b>27,125</b>	<b>21,331</b>	<b>17,753</b>	<b>19,446</b>
Refining & Chemicals	87,598	92,025	75,505	65,632	70,623
Marketing & Services	87,280	90,206	74,634	66,351	75,282
Corporate	10	7	23	7	6
<b>TOTAL</b>	<b>200,316</b>	<b>209,363</b>	<b>171,493</b>	<b>149,743</b>	<b>165,357</b>
<b>By business segment including inter-segment sales</b>					
Exploration & Production	38,590	40,226	28,483		
Integrated Gas, Renewables & Power	20,992	19,434	16,483		
<b>Total Upstream</b>	<b>59,582</b>	<b>59,660</b>	<b>44,966</b>	<b>36,521</b>	<b>39,111</b>
Refining & Chemicals	119,988	127,487	102,349	87,099	97,417
Marketing & Services	87,939	91,185	75,491	67,095	76,193
Corporate	135	71	397	314	224
Inter-segment sales	(67,328)	(69,040)	(51,710)	(41,286)	(47,588)
<b>TOTAL</b>	<b>200,316</b>	<b>209,363</b>	<b>171,493</b>	<b>149,743</b>	<b>165,357</b>
<b>By geographic area excluding inter-segment sales</b>					
France	43,877	47,716	39,032	33,472	36,536
Rest of Europe	99,176	99,465	83,255	71,551	79,463
North America	19,946	22,243	16,889	15,383	14,857
Africa	21,303	22,263	17,581	15,294	17,612
Rest of world	16,014	17,676	14,736	14,043	16,889
<b>TOTAL</b>	<b>200,316</b>	<b>209,363</b>	<b>171,493</b>	<b>149,743</b>	<b>165,357</b>

## DEPRECIATION, DEPLETION & IMPAIRMENT OF TANGIBLE ASSETS AND MINERAL INTERESTS BY BUSINESS SEGMENT

As of December 31,

(in million dollars)

	2019	2018	2017	2016	2015
Exploration & Production	(11,659)	(10,192)	(12,611)		
Integrated Gas, Renewables & Power	(1,492)	(1,827)	(1,721)		
<b>Total Upstream</b>	<b>(13,151)</b>	<b>(12,019)</b>	<b>(14,332)</b>	<b>(11,884)</b>	<b>(15,967)</b>
Refining & Chemicals	(1,527)	(1,222)	(1,074)	(1,002)	(1,092)
Marketing & Services	(980)	(709)	(657)	(600)	(634)
Corporate	(73)	(42)	(40)	(37)	(27)
<b>TOTAL</b>	<b>(15,731)</b>	<b>(13,992)</b>	<b>(16,103)</b>	<b>(13,523)</b>	<b>(17,720)</b>

## EQUITY IN INCOME/(LOSS) OF AFFILIATES BY BUSINESS SEGMENT

As of December 31,

(in million dollars)

	2019	2018	2017	2016	2015
Exploration & Production	996	1,140	827		
Integrated Gas, Renewables & Power	2,132	1,288	253		
<b>Total Upstream</b>	<b>3,128</b>	<b>2,428</b>	<b>1,080</b>	<b>1,155</b>	<b>1,771</b>
Refining & Chemicals	218	682	778	933	550
Marketing & Services	60	60	157	126	39
Corporate	-	-	-	-	1
<b>TOTAL</b>	<b>3,406</b>	<b>3,170</b>	<b>2,015</b>	<b>2,214</b>	<b>2,361</b>

## INCOME TAXES

(in million dollars)

	2019	2018	2017	2016	2015
Current income taxes	(5,469)	(6,971)	(3,416)	(2,911)	(4,552)
Deferred income taxes	(403)	455	387	1,941	2,899
Income taxes	(5,872)	(6,516)	(3,029)	(970)	(1,653)

## ADJUSTMENT ITEMS TO OPERATING INCOME BY BUSINESS SEGMENT

<i>(in million dollars)</i>	Exploration & Production	Integrated Gas, Renewables & Power	Total Upstream	Refining & Chemicals	Marketing & Services	Corporate	Total
<b>Year 2019</b>							
Inventory valuation effect	-	-	-	477	(31)	-	446
Effect of changes in fair value	-	(19)	(19)	-	-	-	(19)
Restructuring charges	-	(4)	(4)	-	-	-	(4)
Asset impairment of charges	(721)	(156)	(877)	(41)	(2)	-	(920)
Other	(145)	(281)	(426)	(80)	(9)	(112)	(627)
<b>TOTAL</b>	<b>(866)</b>	<b>(460)</b>	<b>(1,326)</b>	<b>356</b>	<b>(42)</b>	<b>(112)</b>	<b>(1,124)</b>
<b>Year 2018</b>							
Inventory valuation effect	-	-	-	(589)	(6)	-	(595)
Effect of changes in fair value	-	48	48	-	-	-	48
Restructuring charges	(67)	-	(67)	(3)	-	-	(70)
Asset impairment of charges	(707)	(1,065)	(1,772)	(2)	-	-	(1,774)
Other	(132)	(229)	(361)	(24)	(39)	(9)	(433)
<b>TOTAL</b>	<b>(906)</b>	<b>(1,246)</b>	<b>(2,152)</b>	<b>(618)</b>	<b>(45)</b>	<b>(9)</b>	<b>(2,824)</b>
<b>Year 2017</b>							
Inventory valuation effect	-	-	-	344	13	-	357
Effect of changes in fair value	-	(20)	(20)	-	-	-	(20)
Restructuring charges	(42)	-	(42)	(4)	(3)	-	(49)
Asset impairment of charges	(3,799)	(800)	(4,599)	(53)	(10)	-	(4,662)
Other	(77)	(389)	(466)	(173)	(21)	(64)	(724)
<b>TOTAL</b>	<b>(3,918)</b>	<b>(1,209)</b>	<b>(5,127)</b>	<b>114</b>	<b>(21)</b>	<b>(64)</b>	<b>(5,098)</b>
<b>Year 2016</b>							
Inventory valuation effect			-	695	(43)	-	652
Effect of changes in fair value			(4)	-	-	-	(4)
Restructuring charges			(37)	-	-	-	(37)
Asset impairment of charges			(2,228)	-	(1)	-	(2,229)
Other			(960)	(70)	(93)	-	(1,123)
<b>TOTAL</b>			<b>(3,229)</b>	<b>625</b>	<b>(137)</b>	<b>-</b>	<b>(2,741)</b>
<b>Year 2015</b>							
Inventory valuation effect			-	(859)	(254)	-	(1,113)
Effect of changes in fair value			(16)	-	-	-	(16)
Restructuring charges			(43)	-	(5)	-	(48)
Asset impairment of charges			(6,783)	(70)	(24)	-	(6,877)
Other			(1,057)	(176)	(24)	-	(1,257)
<b>TOTAL</b>			<b>(7,899)</b>	<b>(1,105)</b>	<b>(307)</b>	<b>-</b>	<b>(9,311)</b>

## ADJUSTMENT ITEMS TO NET INCOME, GROUPE SHARE BY BUSINESS SEGMENT

<i>(in million dollars)</i>	Exploration & Production	Integrated Gas, Renewables & Power	Total Upstream	Refining & Chemicals	Marketing & Services	Corporate	Total
<b>Year 2019</b>							
Inventory valuation effect	-	-	-	369	(23)	-	346
Effect of changes in fair value	-	(15)	(15)	-	-	-	(15)
Restructuring charges	(5)	(31)	(36)	(22)	-	-	(58)
Asset impairment of charges	(530)	105	(425)	(39)	(1)	-	(465)
Gains (losses) on asset sales	-	-	0	-	-	-	-
Other	(405)	422	17	(119)	(82)	(185)	(369)
<b>TOTAL</b>	<b>(940)</b>	<b>481</b>	<b>(459)</b>	<b>189</b>	<b>(106)</b>	<b>(185)</b>	<b>(561)</b>
<b>Year 2018</b>							
Inventory valuation effect	-	-	-	(414)	(6)	-	(420)
Effect of changes in fair value	-	38	38	-	-	-	38
Restructuring charges	(94)	(10)	(104)	(34)	-	-	(138)
Asset impairment of charges	(651)	(896)	(1,547)	(48)	-	-	(1,595)
Gains (losses) on asset sales	(14)	(2)	(16)	-	-	-	(16)
Other	252	(112)	140	(34)	(47)	(41)	18
<b>TOTAL</b>	<b>(507)</b>	<b>(982)</b>	<b>(1,489)</b>	<b>(530)</b>	<b>(53)</b>	<b>(41)</b>	<b>(2,113)</b>
<b>Year 2017</b>							
Inventory valuation effect	-	-	-	295	(13)	-	282
Effect of changes in fair value	-	(16)	(16)	-	-	-	(16)
Restructuring charges	(11)	(11)	(22)	(42)	(2)	-	(66)
Asset impairment of charges	(3,202)	(619)	(3,821)	(53)	(10)	-	(3,884)
Gains (losses) on asset sales	188	-	188	2,139	125	-	2,452
Other	(218)	(362)	(580)	73	(30)	(178)	(715)
<b>TOTAL</b>	<b>(3,243)</b>	<b>(1,008)</b>	<b>(4,251)</b>	<b>2,412</b>	<b>70</b>	<b>(178)</b>	<b>(1,947)</b>
<b>Year 2016</b>							
Inventory valuation effect			-	498	(19)	-	479
Effect of changes in fair value			(3)	-	-	-	(3)
Restructuring charges			(32)	-	-	-	(32)
Asset impairment of charges			(1,998)	(78)	(18)	(3)	(2,097)
Gains (losses) on asset sales			292	-	(25)	-	267
Other			(530)	(91)	(84)	-	(705)
<b>TOTAL</b>			<b>(2,271)</b>	<b>329</b>	<b>(146)</b>	<b>(3)</b>	<b>(2,091)</b>
<b>Year 2015</b>							
Inventory valuation effect			-	(590)	(157)	-	(747)
Effect of changes in fair value			(9)	-	-	-	(9)
Restructuring charges			(15)	(52)	(5)	-	(72)
Asset impairment of charges			(5,327)	(59)	(49)	(12)	(5,447)
Gains (losses) on asset sales			162	1,288	360	-	1,810
Other			(569)	(264)	(133)	-	(966)
<b>TOTAL</b>			<b>(5,758)</b>	<b>323</b>	<b>16</b>	<b>(12)</b>	<b>(5,431)</b>



## CONSOLIDATED BALANCE SHEET

As of December 31,

(in million dollars)

	2019	2018	2017	2016	2015
<b>ASSETS</b>					
<b>Non-current assets</b>					
Intangible assets, net	33,178	28,922	14,587	15,362	14,549
Property, plant and equipment, net	116,408	113,324	109,397	111,971	109,518
Equity affiliates: investments and loans	27,122	23,444	22,103	20,576	19,384
Other investments	1,778	1,421	1,727	1,133	1,241
Non-current financial assets	912	680	679	908	1,219
Deferred income taxes	6,216	6,663	5,206	4,368	3,982
Other non-current assets	2,415	2,509	3,984	4,143	4,355
<b>TOTAL NON-CURRENT ASSETS</b>	<b>188,029</b>	<b>176,963</b>	<b>157,683</b>	<b>158,461</b>	<b>154,248</b>
<b>Current assets</b>					
Inventories, net	17,132	14,880	16,520	15,247	13,116
Accounts receivable, net	18,488	17,270	14,893	12,213	10,629
Other current assets	17,013	14,724	14,210	14,835	15,843
Current financial instruments	3,992	3,654	3,393	4,548	6,190
Cash and cash equivalents	27,352	27,907	33,185	24,597	23,269
Assets classified as held for sale	1,288 <sup>(1)</sup>	1,364 <sup>(3)</sup>	2,747 <sup>(5)</sup>	1,077 <sup>(7)</sup>	1,189 <sup>(9)</sup>
<b>TOTAL CURRENT ASSETS</b>	<b>85,265</b>	<b>79,799</b>	<b>84,948</b>	<b>72,517</b>	<b>70,236</b>
<b>TOTAL ASSETS</b>	<b>273,294</b>	<b>256,762</b>	<b>242,631</b>	<b>230,978</b>	<b>224,484</b>
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>					
<b>Shareholders' equity</b>					
Common shares	8,123	8,227	7,882	7,604	7,670
Paid-in surplus and retained earnings	121,170	120,569	112,040	105,547	101,528
Currency translation adjustment	(11,503)	(11,313)	(7,908)	(13,871)	(12,119)
Treasury shares	(1,012)	(1,843)	(458)	(600)	(4,585)
<b>TOTAL SHAREHOLDERS' EQUITY – GROUP SHARE</b>	<b>116,778</b>	<b>115,640</b>	<b>111,556</b>	<b>98,680</b>	<b>92,494</b>
Non-controlling interests	2,527	2,474	2,481	2,894	2,915
<b>TOTAL SHAREHOLDERS' EQUITY</b>	<b>119,305</b>	<b>118,114</b>	<b>114,037</b>	<b>101,574</b>	<b>95,409</b>
<b>Non-current liabilities</b>					
Deferred income taxes	11,858	11,490	10,828	11,060	12,360
Employee benefits	3,501	3,363	3,735	3,746	3,774
Provisions and other non-current liabilities	20,613	21,432	15,986	16,846	17,502
Non-current financial debt	47,773	40,129	41,340	43,067	44,464
<b>TOTAL NON-CURRENT LIABILITIES</b>	<b>83,745</b>	<b>76,414</b>	<b>71,889</b>	<b>74,719</b>	<b>78,100</b>
<b>Current liabilities</b>					
Accounts payable	28,394	26,134	26,479	23,227	20,928
Other creditors and accrued liabilities	25,749	22,246	17,779	16,720	16,884
Current borrowings	14,819	13,306	11,096	13,920	12,488
Other current financial liabilities	487	478	245	327	171
Liabilities directly associated with the assets classified as held for sale	795 <sup>(2)</sup>	70 <sup>(4)</sup>	1,106 <sup>(6)</sup>	491 <sup>(8)</sup>	504 <sup>(10)</sup>
<b>TOTAL CURRENT LIABILITIES</b>	<b>70,244</b>	<b>62,234</b>	<b>56,705</b>	<b>54,685</b>	<b>50,975</b>
<b>TOTAL LIABILITIES</b>	<b>273,294</b>	<b>256,762</b>	<b>242,631</b>	<b>230,978</b>	<b>224,484</b>

(1) \$449 million of several UK non-core assets have been classified as "Assets classified as held for sale". \$433 million of Total E&P Deep Offshore Borneo BV which holds an 85.95% interest in Block CA1 has been classified as "Assets classified as held for sale". \$88 million of Fosmax LNG, operator of the Fos Cavaou LNG terminal. \$318 million of Total Quadran has been classified as "Assets classified as held for sale".

(2) \$349 million of several UK non-core assets has been classified as "Liabilities directly associated with the assets classified as held for sale". \$180 million of Total E&P Deep Offshore Borneo BV which holds an 85.95% interest in Block CA1 has been classified as "Liabilities directly associated with the assets classified as held for sale". \$266 million of Total Quadran has been classified as "Liabilities directly associated with the assets classified as held for sale".

(3) \$1,077 million of Ichthys in Australia has been classified as "Assets classified as held for sale". \$116 million of Total Petrochemicals (Ningbo) Ltd and \$79 million of Total Petrochemicals Foshan in China have been classified as "Assets classified as held for sale". \$61 million of Hazira LNG Private Ltd and \$31 million of Hazira Port Private Ltd in India have been classified as "Assets classified as held for sale".

(4) \$41 million of Total E&P Ichthys BV in Netherlands has been classified as "Liabilities directly associated with the assets classified as held for sale". \$16 million of Total Petrochemicals Foshan and \$13 million of Total Petrochemicals (Ningbo) Ltd in China have been classified as "Liabilities directly associated with the assets classified as held for sale".

(5) \$2,581 million of Martin Linge in Norway has been classified as "Assets classified as held for sale". \$166 million of Total Erg in Italy has been classified as "Assets classified as held for sale".

(6) \$1,106 million of Martin Linge in Norway has been classified as "Liabilities directly associated with the assets classified as held for sale".

(7) \$1,077 million of Atotech has been classified as "Assets classified as held for sale".

(8) \$491 million of Atotech has been classified as "Liabilities directly associated with the assets classified as held for sale".

(9) \$497 million of Fuka in United Kingdom has been classified as "Assets classified as held for sale". \$458 million of Total Turkeyie has been classified as "Assets classified as held for sale". \$234 million of Kharyaga in Russia has been classified as "Assets held for sale".

(10) \$82 million of Fuka in United Kingdom has been classified as "Liabilities directly associated with the assets classified as held for sale". \$258 million of Total Turkeyie has been classified as "Liabilities directly associated with the assets classified as held for sale". \$164 million of Kharyaga in Russia has been classified as "Liabilities directly associated with the assets classified as held for sale".

## NET TANGIBLE & INTANGIBLE ASSETS BY BUSINESS SEGMENT

As of December 31,

(in million dollars)

	2019	2018	2017	2016	2015
<b>Exploration &amp; Production</b>	<b>98,894</b>	<b>100,997</b>			
Tangibles	79,382	81,709			
Intangibles	19,512	19,288			
<b>Integrated Gas, Renewables &amp; Power</b>	<b>29,597</b>	<b>24,023</b>			
Tangibles	17,945	16,015			
Intangibles	11,652	8,008			
Tangibles	97,327	97,724	93,461	98,389	96,175
Intangibles	31,164	27,296	13,051	14,062	13,277
<b>Total Upstream</b>	<b>128,491</b>	<b>125,020</b>	<b>106,512</b>	<b>112,451</b>	<b>109,452</b>
<b>Refining &amp; Chemicals</b>	<b>12,196</b>	<b>10,493</b>	<b>10,820</b>	<b>9,293</b>	<b>9,317</b>
Tangibles	11,335	9,869	10,150	8,661	8,631
Intangibles	861	624	670	632	686
<b>Marketing &amp; Services</b>	<b>8,316</b>	<b>6,343</b>	<b>6,253</b>	<b>5,225</b>	<b>4,989</b>
Tangibles	7,289	5,463	5,519	4,661	4,506
Intangibles	1,027	880	734	564	483
<b>Corporate</b>	<b>583</b>	<b>390</b>	<b>399</b>	<b>364</b>	<b>309</b>
Tangibles	457	268	267	260	206
Intangibles	126	122	132	104	103
<b>TOTAL</b>	<b>149,586</b>	<b>142,246</b>	<b>123,984</b>	<b>127,333</b>	<b>124,067</b>

## PROPERTY, PLANT & EQUIPMENT

As of December 31,

(in million dollars)

	2019	2018	2017	2016	2015
Proved properties	79,937	71,837	62,223	62,901	58,687
Unproved properties	1,872	1,521	1,828	1,996	2,423
Work in progress	11,487	21,425	27,749	31,785	33,962
<b>TOTAL EXPLORATION &amp; PRODUCTION PROPERTIES</b>	<b>93,296</b>	<b>94,783</b>	<b>91,800</b>	<b>96,682</b>	<b>95,072</b>
Land	2,034	1,127	1,157	1,011	970
Machinery plant and equipment (including transportation equipment)	11,199	9,171	7,780	5,680	5,748
Buildings	4,487	3,224	3,344	2,998	2,637
Construction in progress	2,499	2,538	2,309	2,770	2,577
Other	2,893	2,481	3,007	2,830	2,514
<b>OTHER</b>	<b>23,112</b>	<b>18,541</b>	<b>17,597</b>	<b>15,289</b>	<b>14,446</b>
<b>TOTAL <sup>(1)</sup></b>	<b>116,408</b>	<b>113,324</b>	<b>109,397</b>	<b>111,971</b>	<b>109,518</b>

(1) As of December 31, 2019 accumulated depreciation, depletion and amortization amounted to 170,609 M\$.

## NON-CURRENT ASSETS BY BUSINESS SEGMENT <sup>(1)</sup>

As of December 31,

(in million dollars)

	2019	2018	2017	2016	2015
Exploration & Production	111,008	112,531	99,658		
Integrated Gas, Renewables & Power	47,862	39,487	33,193		
<b>Total Upstream</b>	<b>158,870</b>	<b>152,018</b>	<b>132,851</b>	<b>137,244</b>	<b>133,764</b>
Refining & Chemicals	16,727	15,067	15,506	13,165	13,032
Marketing & Services	9,929	7,929	7,751	6,723	6,426
Corporate	1,591	1,269	896	421	(193)
<b>TOTAL</b>	<b>187,117</b>	<b>176,283</b>	<b>157,004</b>	<b>157,553</b>	<b>153,029</b>

(1) Non-current financial assets are not included.

## NON-CURRENT DEBT ANALYSIS

As of December 31,

(in million dollars, except percent)

	2019	%	2018	%	2017	%	2016	%	2015	%
<b>Loan repayment schedule<sup>(1)</sup></b>										
2015							-	-	-	-
2016							-	-	-	-
2017							-	-	4,602	11%
2018							4,320	10%	4,420	10%
2019					5,930	15%	5,702	14%	5,542	13%
2020			5,432	14%	5,117	13%	4,952	12%	4,965	11%
2021	5,615	12%	3,966	10%	3,795	9%	3,578	8%	23,716 <sup>(2)</sup>	55%
2022	6,078	13%	5,158	13%	4,959	12%	23,607 <sup>(3)</sup>	56%	-	-
2023	5,163	11%	4,983	13%	20,860 <sup>(4)</sup>	51%	-	-	-	-
2024	5,798	12%	19,910 <sup>(5)</sup>	50%						
2025 and beyond	24,207	52%								
<b>TOTAL</b>	<b>46,861</b>	<b>100%</b>	<b>39,449</b>	<b>100%</b>	<b>40,661</b>	<b>100%</b>	<b>42,159</b>	<b>100%</b>	<b>43,245</b>	<b>100%</b>

(in million dollars, except percent)

	2019	%	2018	%	2017	%	2016	%	2015	%
<b>Analysis by currency<sup>(1)</sup></b>										
U.S. dollar	43,276	92%	38,120	97%	38,703	95%	39,963	95%	40,337	93%
Euro	2,639	6%	1,103	3%	724	2%	977	2%	1,681	4%
Norwegian Kroner	81	0%	27	0%	975	2%	928	2%	907	2%
Other currencies	865	2%	199	0%	259	1%	291	1%	320	1%
<b>TOTAL</b>	<b>46,861</b>	<b>100%</b>	<b>39,449</b>	<b>100%</b>	<b>40,661</b>	<b>100%</b>	<b>42,159</b>	<b>100%</b>	<b>43,245</b>	<b>100%</b>

(in million dollars, except percent)

	2019	%	2018	%	2017	%	2016	%	2015	%
<b>Analysis by interest rate<sup>(1)</sup></b>										
Fixed rate	26,985	58%	18,139	46%	18,332	45%	11,703	28%	7,666	18%
Floating rates	19,876	42%	21,310	54%	22,329	55%	30,456	72%	35,579	82%
<b>TOTAL</b>	<b>46,861</b>	<b>100%</b>	<b>39,449</b>	<b>100%</b>	<b>40,661</b>	<b>100%</b>	<b>42,159</b>	<b>100%</b>	<b>43,245</b>	<b>100%</b>

(1) These analyses are presented after the impact of interest rate and currency swaps.

(2) 2021 and after.

(3) 2022 and after.

(4) 2023 and after.

(5) 2024 and after.

## CONSOLIDATED STATEMENT OF CHANGES IN SHAREHOLDERS' EQUITY – GROUP SHARE

(in million dollars)	Common shares issued		Paid-in surplus and retained earnings	Cumulative translation adjustments	Treasury shares		Shareholders' equity
	Number	Amount			Number	Amount	
<b>AS OF JANUARY 1, 2015</b>	<b>2,385,267,525</b>	<b>7,518</b>	<b>94,646</b>	<b>(7,480)</b>	<b>(109,361,413)</b>	<b>(4,354)</b>	<b>90,330</b>
Dividend	-	-	(6,303)	-	-	-	(6,303)
Net income 2015	-	-	5,087	-	-	-	5,087
Other comprehensive income	-	-	185	(4,639)	-	-	(4,454)
Issuance of common shares	54,790,358	152	2,159	-	-	-	2,311
Purchase of treasury shares	-	-	-	-	(4,711,935)	(237)	(237)
Sales of treasury shares <sup>(1)</sup>	-	-	(6)	-	105,590	6	-
Share-based payments	-	-	101	-	-	-	101
Share cancellation	-	-	-	-	-	-	-
Issuance of perpetual subordinated notes	-	-	5,616	-	-	-	5,616
Payments on perpetual subordinated notes	-	-	(114)	-	-	-	(114)
Other operations with minority interests	-	-	23	-	-	-	23
Other items	-	-	134	-	-	-	134
<b>AS OF DECEMBER 31, 2015</b>	<b>2,440,057,883</b>	<b>7,670</b>	<b>101,528</b>	<b>(12,119)</b>	<b>(113,967,758)</b>	<b>(4,585)</b>	<b>92,494</b>
Dividend	-	-	(6,512)	-	-	-	(6,512)
Net income 2016	-	-	6,196	-	-	-	6,196
Other comprehensive income	-	-	(108)	(1,752)	-	-	(1,860)
Issuance of common shares	90,639,247	251	3,553	-	-	-	3,804
Purchase of treasury shares	-	-	-	-	-	-	-
Sales of treasury shares <sup>(1)</sup>	-	-	(163)	-	3,048,668	163	-
Share-based payments	-	-	112	-	-	-	112
Share cancellation	(100,331,268)	(317)	(3,505)	-	100,331,268	3,822	-
Issuance of perpetual subordinated notes	-	-	4,711	-	-	-	4,711
Payments on perpetual subordinated notes	-	-	(203)	-	-	-	(203)
Other operations with minority interests	-	-	(98)	-	-	-	(98)
Other items	-	-	36	-	-	-	36
<b>AS OF DECEMBER 31, 2016</b>	<b>2,430,365,862</b>	<b>7,604</b>	<b>105,547</b>	<b>(13,871)</b>	<b>(10,587,822)</b>	<b>(600)</b>	<b>98,680</b>
Dividend	-	-	(6,992)	-	-	-	(6,992)
Net income 2017	-	-	8,631	-	-	-	8,631
Other comprehensive income	-	-	718	5,963	-	-	6,681
Issuance of common shares	98,623,754	278	4,431	-	-	-	4,709
Purchase of treasury shares	-	-	-	-	-	-	-
Sales of treasury shares <sup>(1)</sup>	-	-	(142)	-	2,211,066	142	-
Share-based payments	-	-	151	-	-	-	151
Share cancellation	-	-	-	-	-	-	-
Issuance of perpetual subordinated notes	-	-	-	-	-	-	-
Payments on perpetual subordinated notes	-	-	(302)	-	-	-	(302)
Other operations with minority interests	-	-	(8)	-	-	-	(8)
Other items	-	-	6	-	-	-	6
<b>AS OF DECEMBER 31, 2017</b>	<b>2,528,989,616</b>	<b>7,882</b>	<b>112,040</b>	<b>(7,908)</b>	<b>(8,376,756)</b>	<b>(458)</b>	<b>111,556</b>
Dividend	-	-	(7,881)	-	-	-	(7,881)
Net income 2018	-	-	11,446	-	-	-	11,446
Other comprehensive income	-	-	(20)	(3,405)	-	-	(3,425)
Issuance of common shares	156,203,090	476	8,366	-	-	-	8,842
Purchase of treasury shares	-	-	-	-	(72,766,481)	(4,328)	(4,328)
Sales of treasury shares <sup>(1)</sup>	-	-	(240)	-	4,079,257	240	-
Share-based payments	-	-	294	-	-	-	294
Share cancellation	(44,590,699)	(131)	(2,572)	-	44,590,699	2,703	-
Issuance of perpetual subordinated notes	-	-	-	-	-	-	-
Payments on perpetual subordinated notes	-	-	(315)	-	-	-	(315)
Other operations with minority interests	-	-	(517)	-	-	-	(517)
Other items	-	-	(32)	-	-	-	(32)

(1) Treasury shares related to the restricted stock grants.



<i>(in million dollars)</i>	Common shares issued		Paid-in surplus and retained earnings	Cumulative translation adjustments	Treasury shares		Shareholders' equity
	Number	Amount			Number	Amount	
<b>AS OF DECEMBER 31, 2018</b>	<b>2,640,602,007</b>	<b>8,227</b>	<b>120,569</b>	<b>(11,313)</b>	<b>(32,473,281)</b>	<b>(1,843)</b>	<b>115,640</b>
Dividend	-	-	(7,730)	-	-	-	(7,730)
Net income 2019	-	-	11,267	-	-	-	11,267
Other comprehensive income	-	-	(659)	(190)	-	-	(849)
Issuance of common shares	26,388,503	74	1,265	-	-	-	1,339
Purchase of treasury shares	-	-	-	-	(52,389,336)	(2,810)	(2,810)
Sales of treasury shares <sup>(1)</sup>	-	-	(219)	-	4,278,948	219	-
Share-based payments	-	-	207	-	-	-	207
Share cancellation	(65,109,435)	(178)	(3,244)	-	65,109,435	3,422	-
Issuance of perpetual subordinated notes	-	-	(4)	-	-	-	(4)
Payments on perpetual subordinated notes	-	-	(353)	-	-	-	(353)
Other operations with minority interests	-	-	55	-	-	-	55
Other items	-	-	16	-	-	-	16
<b>AS OF DECEMBER 31, 2019</b>	<b>2,601,881,075</b>	<b>8,123</b>	<b>121,170</b>	<b>(11,503)</b>	<b>(15,474,234)</b>	<b>(1,012)</b>	<b>116,778</b>

(1) Treasury shares related to the restricted stock grants.

### NET-DEBT-TO-EQUITY RATIO

<b>As of December 31,</b> <i>(in million dollars, except percent)</i>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
Net financial debt	31,124	21,657	15,424	27,121	26,586
Shareholder's equity	119,305	118,114	114,037	101,574	95,409
<b>NET-DEBT-TO-EQUITY RATIO<sup>(1)</sup></b>	<b>20.7%</b>	<b>15.5%</b>	<b>11.9%</b>	<b>21.1%</b>	<b>21.8%</b>

(1) Including leases. Net-debt-to-equity ratio excluding leases impact was 16.7% at the end of 2019.

### CAPITAL EMPLOYED BASED ON REPLACEMENT COST BY BUSINESS SEGMENT

<b>As of December 31,</b> <i>(in million dollars)</i>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
Exploration & Production	88,844	89,400	82,510		
Integrated Gas, Renewables & Power	41,549	34,746	30,103		
<b>Total Upstream</b>	<b>130,393</b>	<b>124,146</b>	<b>112,613</b>	<b>112,592</b>	<b>108,131</b>
Refining & Chemicals	12,228	10,599	11,045	11,618	10,454
Marketing & Services	8,371	6,442	6,929	5,884	5,875
Corporate	(2,164)	(2,668)	(2,860)	(2,671)	(3,317)
<b>TOTAL</b>	<b>148,828</b>	<b>138,519</b>	<b>127,727</b>	<b>127,423</b>	<b>121,143</b>

### CAPITAL EMPLOYED

<b>As of December 31,</b> <i>(in million dollars)</i>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
Non-current assets	187,117	176,283	157,005	157,553	153,029
Assets and liabilities classified as held for sale	794	1,279	1,641	446	826
Working capital	(1,510)	(1,507)	1,365	2,348	1,776
Long-term liabilities	(35,972)	(36,285)	(30,549)	(31,652)	(33,636)
<b>CAPITAL EMPLOYED</b>	<b>150,429</b>	<b>139,770</b>	<b>129,462</b>	<b>128,695</b>	<b>121,995</b>

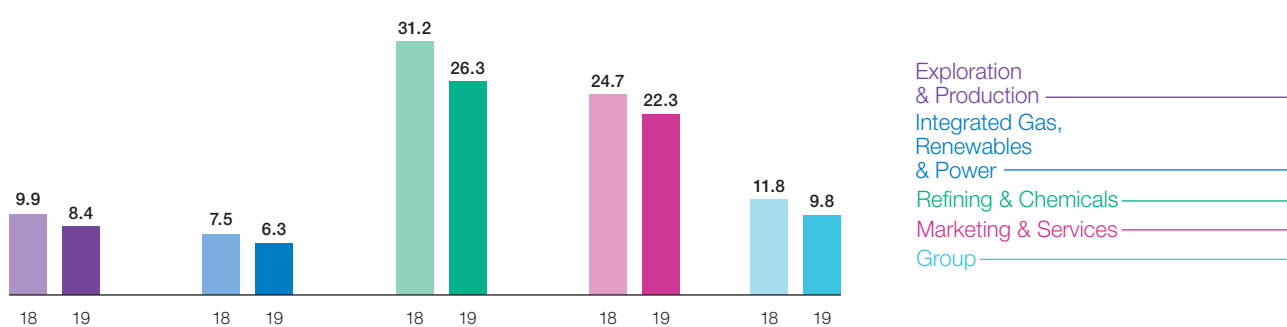
## ROACE BY BUSINESS SEGMENT

(in million dollars, except percent)

	2019	2018	2017	2016	2015
<b>Exploration &amp; Production</b>					
Adjusted net operating income	7,509	8,547	4,541		
Average capital employed <sup>(1)</sup>	89,122	85,955	82,978		
<b>ROACE</b>	<b>8.4%</b>	<b>9.9%</b>	<b>5.5%</b>		
<b>Integrated Gas, Renewables &amp; Power</b>					
Adjusted net operating income	2,389	2,419	1,929		
Average capital employed <sup>(1)</sup>	38,148	32,425	29,625		
<b>ROACE</b>	<b>6.3%</b>	<b>7.5%</b>	<b>6.5%</b>		
<b>Total Upstream</b>					
Adjusted net operating income	9,898	10,966	6,470	3,656	4,897
Average capital employed <sup>(1)</sup>	127,270	118,380	112,603	110,362	105,394
<b>ROACE</b>	<b>7.8%</b>	<b>9.3%</b>	<b>5.7%</b>	<b>3.3%</b>	<b>4.6%</b>
<b>Refining &amp; Chemicals</b>					
Adjusted net operating income	3,003	3,379	3,790	4,195	4,839
Average capital employed <sup>(1)</sup>	11,414	10,822	11,332	11,036	11,995
<b>ROACE</b>	<b>26.3%</b>	<b>31.2%</b>	<b>33.5%</b>	<b>38.0%</b>	<b>40.3%</b>
<b>Marketing &amp; Services</b>					
Adjusted net operating income	1,653	1,652	1,676	1,559	1,591
Average capital employed <sup>(1)</sup>	7,407	6,686	6,407	5,880	6,272
<b>ROACE</b>	<b>22.3%</b>	<b>24.7%</b>	<b>26.2%</b>	<b>26.5%</b>	<b>25.4%</b>
<b>Corporate</b>					
Adjusted net operating income	(481)	(306)	22	(136)	73
Average capital employed <sup>(1)</sup>	(2,417)	(2,765)	(2,767)	(2,995)	(2,826)
<b>Group</b>					
Adjusted net operating income	14,073	15,691	11,958	9,274	11,400
Average capital employed <sup>(1)</sup>	143,674	133,123	127,575	124,283	120,835
<b>ROACE</b>	<b>9.8%</b>	<b>11.8%</b>	<b>9.4%</b>	<b>7.5%</b>	<b>9.4%</b>

(1) At replacement cost (excluding after-tax inventory effect). Average Capital Employed = (Capital Employed beginning of the year + Capital Employed end of the year)/2.

## ROACE BY BUSINESS SEGMENT (%)



## CONSOLIDATED STATEMENT OF CASH FLOW

(in million dollars)	2019	2018	2017	2016	2015
<b>Cash flow from operating activities</b>					
Consolidated net income	11,438	11,550	8,299	6,206	4,786
Depreciation, depletion, amortization and impairment	16,401	14,584	16,611	14,423	19,334
Non-current liabilities, valuation allowances, and deferred taxes	(58)	(887)	(384)	(1,559)	(2,563)
(Gains) losses on sales of assets	(614)	(930)	(2,598)	(263)	(2,459)
Undistributed affiliates' equity earnings	(1,083)	(826)	42	(643)	(311)
(Increase) decrease in working capital	(1,718)	769	827	(1,119)	1,683
Other changes, net	319	443	(478)	(524)	(524)
<b>CASH FLOW FROM OPERATING ACTIVITIES</b>	<b>24,685</b>	<b>24,703</b>	<b>22,319</b>	<b>16,521</b>	<b>19,946</b>
<b>Cash flow used in investing activities</b>					
Intangible assets and property, plant, and equipment additions	(11,810)	(17,080)	(13,767)	(18,106)	(25,132)
Acquisition of subsidiaries, net of cash acquired	(4,748)	(3,379)	(800)	(1,123)	(128)
Investments in equity affiliates and other securities	(1,618)	(1,108)	(1,368)	(180)	(513)
Increase in non-current loans	(1,061)	(618)	(961)	(1,121)	(2,260)
<b>TOTAL EXPENDITURES</b>	<b>(19,237)</b>	<b>(22,185)</b>	<b>(16,896)</b>	<b>(20,530)</b>	<b>(28,033)</b>
Proceeds from disposal of intangible assets, and property, plant and equipment	527	3,716	1,036	1,462	2,623
Proceeds from disposal of subsidiaries, net of cash sold	158	12	2,909	270	2,508
Proceeds from disposal of non-current investments	349	1,444	294	132	837
Repayment of non-current loans	1,026	2,067	1,025	1,013	1,616
<b>TOTAL DIVESTMENTS</b>	<b>2,060</b>	<b>7,239</b>	<b>5,264</b>	<b>2,877</b>	<b>7,584</b>
<b>CASH FLOW USED IN INVESTING ACTIVITIES</b>	<b>(17,177)</b>	<b>(14,946)</b>	<b>(11,632)</b>	<b>(17,653)</b>	<b>(20,449)</b>
<b>Cash flow (from)/used financing activities</b>					
Issuance (repayment) of shares:					
– parent company shareholders	452	498	519	100	485
– Treasury shares	(2,810)	(4,328)	-	-	(237)
Cash dividend paid:					
– parent company's shareholders	(6,641)	(4,913)	(2,643)	(2,661)	(2,845)
– Minority shareholders	(115)	(97)	(141)	(93)	(100)
Issuance of perpetual subordinated Notes	-	-	-	4,711	5,616
Payments on perpetual subordinated Notes	(371)	(325)	(276)	(133)	-
Other transactions with non controlling interest	10	(622)	(4)	(104)	89
Net issuance (repayment) of non-current debt	8,131	649	2,277	3,576	4,166
(Increase) decrease in current borrowings	(5,829)	(3,990)	(7,175)	(3,260)	(597)
(Increase) decrease in current financial assets and liabilities	(536)	(797)	1,903	1,396	(5,517)
<b>CASH FLOW USED IN FINANCING ACTIVITIES</b>	<b>(7,709)</b>	<b>(13,925)</b>	<b>(5,540)</b>	<b>3,532</b>	<b>1,060</b>
<b>NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS</b>	<b>(201)</b>	<b>(4,168)</b>	<b>5,147</b>	<b>2,400</b>	<b>557</b>
Effect of exchange rates	(354)	(1,110)	3,441	(1,072)	(2,469)
Cash and cash equivalents at the beginning of the period	27,907	33,185	24,597	23,269	25,181
<b>CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD</b>	<b>27,352</b>	<b>27,907</b>	<b>33,185</b>	<b>24,597</b>	<b>23,269</b>

## CASH FLOW FROM OPERATING ACTIVITIES

(in million dollars)	2019	2018	2017	2016	2015
<b>By business segment</b>					
Exploration & Production	16,917	18,537	10,719		
Integrated Gas, Renewables & Power	3,461	596	3,157		
<b>Total Upstream</b>	<b>20,378</b>	<b>19,133</b>	<b>13,876</b>	<b>10,455</b>	<b>11,805</b>
Refining & Chemicals	3,837	4,308	7,411	4,584	6,435
Marketing & Services	2,604	2,759	2,221	1,833	2,440
Corporate	(2,134)	(1,497)	(1,189)	(351)	(734)
<b>TOTAL</b>	<b>24,685</b>	<b>24,703</b>	<b>22,319</b>	<b>16,521</b>	<b>19,946</b>

## GROSS INVESTMENTS <sup>(1)</sup>

(in million dollars)

	2019	2018	2017	2016	2015
<b>By business segment</b>					
Exploration & Production	8,992	13,789	10,005		
Integrated Gas, Renewables & Power	7,053	5,032	3,594		
<b>Total Upstream</b>	<b>16,045</b>	<b>18,821</b>	<b>13,599</b>	<b>17,306</b>	<b>24,821</b>
Refining & Chemicals	1,698	1,781	1,734	1,861	1,875
Marketing & Services	1,374	1,458	1,457	1,245	1,267
Corporate	120	125	106	118	70
<b>TOTAL</b>	<b>19,237</b>	<b>22,185</b>	<b>16,896</b>	<b>20,530</b>	<b>28,033</b>
<b>By geographic area</b>					
France	1,979	4,502	1,193	1,835	980
Rest of Europe	3,201	2,609	2,805	3,842	4,783
North America	1,748	2,014	2,916	2,825	3,493
Africa	7,663	4,838	5,030	6,859	9,154
Rest of world	4,646	8,222	4,952	5,169	9,623
<b>TOTAL</b>	<b>19,237</b>	<b>22,185</b>	<b>16,896</b>	<b>20,530</b>	<b>28,033</b>

(1) Including acquisitions and increases in non-current loans.

## ORGANIC INVESTMENTS <sup>(1)</sup> BY BUSINESS SEGMENT

(in million dollars)

	2019	2018	2017	2016	2015
Exploration & Production	8,635	7,952	9,136		
Integrated Gas, Renewables & Power	2,259	1,745	2,527		
<b>Total Upstream</b>	<b>10,894</b>	<b>9,697</b>	<b>11,663</b>	<b>14,734</b>	<b>20,933</b>
Refining & Chemicals	1,426	1,604	1,625	1,642	850
Marketing & Services	969	1,010	1,019	1,003	1,130
Corporate	108	115	88	105	63
<b>TOTAL</b>	<b>13,397</b>	<b>12,426</b>	<b>14,395</b>	<b>17,484</b>	<b>22,976</b>

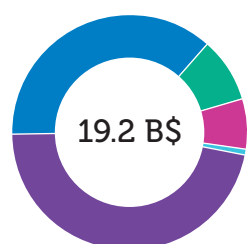
(1) Organic investments = net investments, excluding acquisitions, divestments and other operations with non-controlling interests.

## DIVESTMENTS BY BUSINESS SEGMENT

(in million dollars)

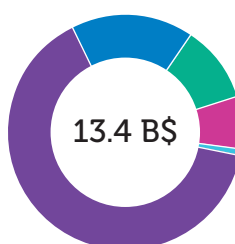
	2019	2018	2017	2016	2015
Exploration & Production	368	3,674	1,793		
Integrated Gas, Renewables & Power	1,108	2,209	198		
<b>Total Upstream</b>	<b>1,476</b>	<b>5,883</b>	<b>1,991</b>	<b>2,353</b>	<b>3,298</b>
Refining & Chemicals	322	919	2,820	88	3,494
Marketing & Services	249	428	413	424	767
Corporate	13	9	40	12	25
<b>TOTAL</b>	<b>2,060</b>	<b>7,239</b>	<b>5,264</b>	<b>2,877</b>	<b>7,584</b>

### 2019 GROSS INVESTMENTS BY GEOGRAPHIC AREA



Exploration & Production — 46.7%  
 Integrated Gas, Renewables & Power — 36.7%  
 Refining & Chemicals — 8.8%  
 Marketing & Services — 7.1%  
 Corporate — 0.6%

### 2019 ORGANIC INVESTMENTS BY BUSINESS SEGMENT

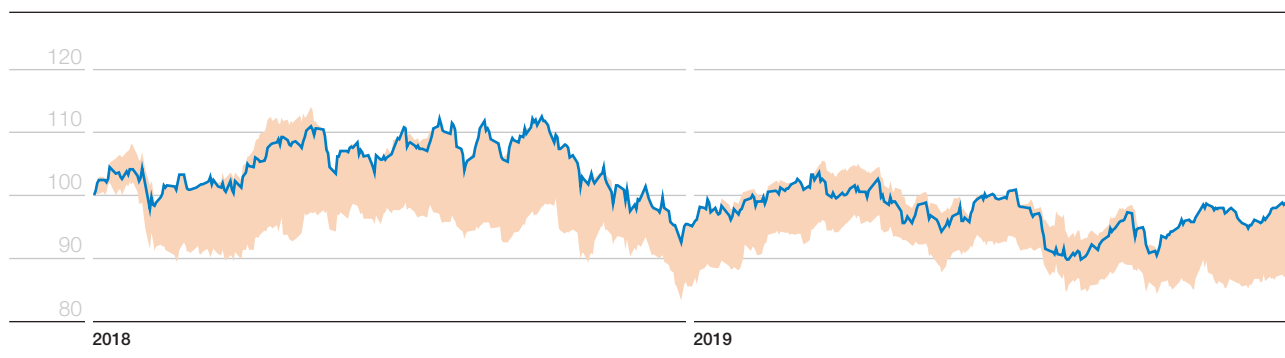


Exploration & Production — 64.5%  
 Integrated Gas, Renewables & Power — 16.9%  
 Refining & Chemicals — 10.6%  
 Marketing & Services — 7.2%  
 Corporate — 0.8%



## SHARE PERFORMANCE

### TOTAL ADR price (in dollars) in New York<sup>(1)</sup> versus peers<sup>(2)</sup>



TOTAL — Peer range

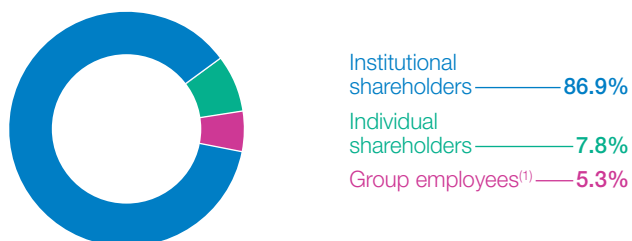
Source: Bloomberg.

(1) Rebased to 100, in 2018.

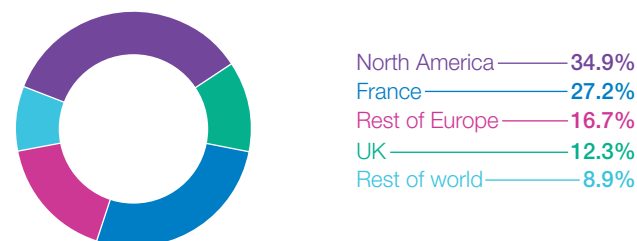
(2) BP, Chevron, ExxonMobil, Shell.

## SHAREHOLDING STRUCTURE ESTIMATE AS OF DECEMBER 31, 2019

### Distribution by type (excluding treasury shares)



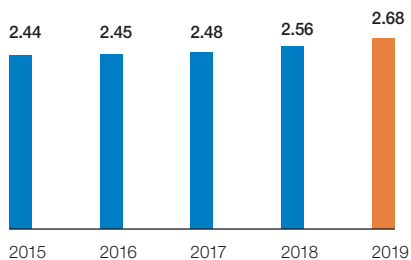
### Distribution by geographic area (excluding treasury shares)



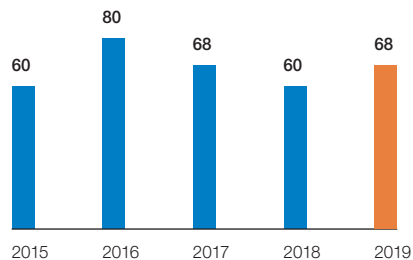
(1) Based on the definition of employees shareholding pursuant to Article L. 225-102 of the French Commercial Code, treasury shares excluded.

## DIVIDEND

### Dividend per share (in euros)



### Pay-out ratio (%)



## SHARE INFORMATION

	2019	2018	2017	2016	2015
Shares outstanding at year-end	2,601,881,075	2,640,602,007	2,528,989,616	2,430,365,862	2,440,057,883
Fully-diluted weighted-average number of shares <sup>(1)</sup>	2,618,007,888	2,623,716,444	2,494,756,413	2,389,713,936	2,304,435,542
Shares on a fully-diluted basis at year-end <sup>(1)</sup>	2,603,292,172	2,623,358,837	2,535,742,821	2,435,713,864	2,336,295,758
Treasury Shares	15,474,234	32,473,281	8,376,756	10,587,822	113,967,758
<b>Price per share (€)</b>					
High	52.27	56.82	49.50	48.89	50.30
Low	42.65	43.09	42.23	35.21	36.92
Year-end	49.20	46.18	46.05	48.72	41.27
<b>Price per ADR (\$)</b>					
High	58.82	65.69	57.07	51.36	55.86
Low	47.70	49.70	48.15	39.05	40.93
Year-end	55.30	52.18	55.28	50.97	44.95
<b>Market capitalization at year-end<sup>(2)</sup></b>					
Billion €	128.0	121.9	116.4	118.4	100.7
Billion \$	143.9	137.8	139.8	123.8	109.7
<b>Trading volume (daily average)</b>					
Euronext Paris	5,549,490	6,199,835	5,380,909	6,508,817	7,412,179
New York Stock Exchange (number of ADRs)	1,770,853	1,855,274	1,667,928	2,109,802	1,853,669
Adjusted fully-diluted earnings per share (\$) <sup>(3)</sup>	4.38	5.05	4.12	3.38	4.51
Dividend per share (€)	2.68	2.56	2.48	2.45	2.44
Dividend per ADR (\$)	2.97 <sup>(4)</sup>	2.94	2.96	2.61	2.67
Pay-out <sup>(5)</sup>	68%	60%	68%	80%	60%
Price-to-earning ratio <sup>(6)</sup>	12.6	10.8	12.6	15.9	10.1
Yield <sup>(7)</sup>	5.45%	5.54%	5.39%	5.03%	5.91%

(1) Excluding treasury shares, cancelled in the consolidated equity pursuant to IFRS rules.

(2) Computed on shares outstanding.

(3) Adjusted results are defined as income at replacement cost, excluding non-recurring items, and excluding the impact of fair value changes.

(4) 2019 dividend in dollars includes the first quarterly interim ADR dividend of \$0.72 paid in October 2019, the second quarterly interim ADR dividend of \$0.73 paid in January 2020, the third quarterly interim ADR dividend of \$0.75 paid in April 2020 and the final interim ADR dividend of \$0.77 paid in July 2020.

(5) Dividend (€)/adjusted fully-diluted earnings per share (€).

(6) Share price at year-end (€)/adjusted fully-diluted earnings per share (€).

(7) Dividend (€)/share price at year-end (€).

## PAYROLL <sup>(1)</sup>

For the year ended December 31,

(in million dollars)

	2019	2018	2017	2016	2015
Wages and salaries (including social charges)	8,922	9,099	7,985	8,238	8,088

(1) Personnel expenses and number of employees of fully-consolidated subsidiaries.

## NUMBER OF EMPLOYEES

As of December 31,	2019	2018	2017	2016	2015
<b>Number of employees by region <sup>(1)</sup></b>					
France	34.1%	34.5%	32.1%	31.1%	31.5%
Rest of Europe	27.4%	28.3%	26.1%	25.2%	24.5%
Rest of world	38.6%	37.2%	41.8%	43.7%	44.0%
<b>TOTAL</b>	<b>107,776</b>	<b>104,460</b>	<b>98,277</b>	<b>102,168</b>	<b>96,019</b>

As of December 31,	2019	2018	2017	2016	2015
<b>Number of employees by business segment <sup>(1)</sup></b>					
Exploration & Production	12.3%	13.2%	14.3%		
Integrated Gas, Renewables & Power	13.7%	11.6%	11.8%		
<b>Total Upstream</b>	<b>26.0%</b>	<b>24.8%</b>	<b>26.1%</b>	<b>27.3%</b>	<b>26.9%</b>
Refining & Chemicals	47.7%	48.7%	49.8%	50.4%	50.2%
Marketing & Services	23.5%	24.1%	21.6%	20.4%	21.3%
Corporate	2.8%	2.4%	2.5%	1.9%	1.6%
<b>TOTAL</b>	<b>107,776</b>	<b>104,460</b>	<b>98,277</b>	<b>102,168</b>	<b>96,019</b>

(1) Personnel expenses and number of employees of fully-consolidated subsidiaries.

# INTEGRATED GAS, RENEWABLES & POWER

**34.3** Mt

LNG volumes sold  
in 2019

#2 LNG private  
global player

**3.0** GW

installed gross  
capacity of renewable  
power generation  
at year-end 2019

**3.7** B\$

operating cash flow  
excl. working capital  
changes and  
financial charges  
(DACF) in 2019

**6.2** B\$

of net investments  
in 2019

**2.4** B\$

adjusted net  
operating income  
in 2019

**14,696**

employees

Integrated  
across the  
low-carbon  
electricity  
value chain

**5.8** Million

number of sites for  
gas and electricity  
sales of which 80%  
for B2C at year-end  
2019



## The Integrated Gas, Renewables & Power segment (iGRP)

is driving the Group's ambition in the activities of the integrated Liquefied Natural Gas (LNG) and low-carbon electricity value chains, as well as the activities that contribute to carbon neutrality. The execution of a profitable growth strategy in the future low-carbon businesses is helping to achieve the Group's ambition of reducing the carbon intensity of the energy products used by its customers.

### DEVELOPING PROFITABLE LOW-CARBON BUSINESSES

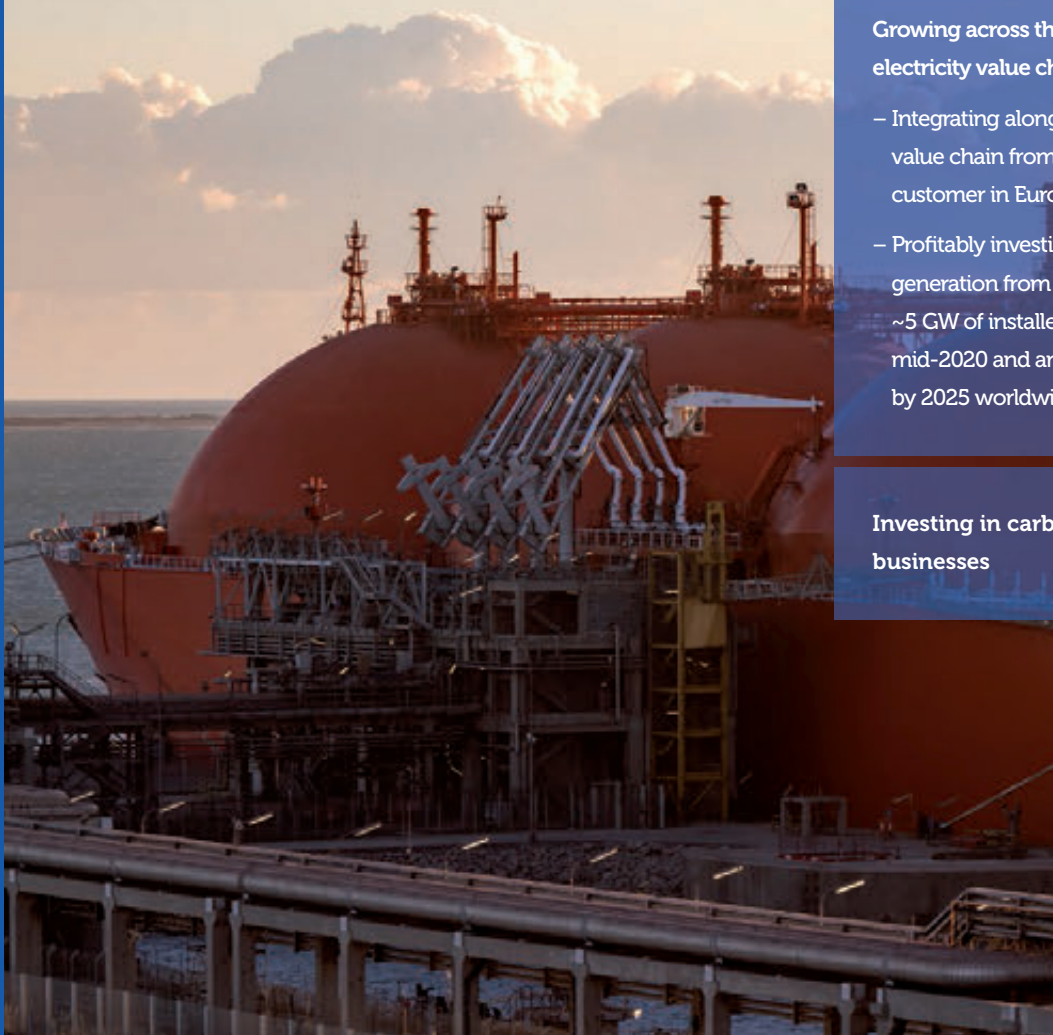
Expanding the Group's presence  
across the LNG value chain

Developing the Group's businesses  
across the low-carbon electricity  
value chain

Growing across the low-carbon  
electricity value chain

- Integrating along the electricity value chain from supply to end customer in Europe
- Profitably investing in electricity generation from renewables, with ~5 GW of installed capacity at mid-2020 and an objective of 25 GW by 2025 worldwide

Investing in carbon neutrality  
businesses



## FINANCIAL HIGHLIGHTS <sup>(1)</sup>

(in million dollars)

	2019	2018	2017
Adjusted net operating income <sup>(2)</sup>	2,389	2,419	1,929
Gross investments <sup>(3)</sup>	7,053	5,032	3,594
Organic investments <sup>(4)</sup>	2,259	1,745	2,253
Divestments	1,108	2,209	198
Cash flow from operating activities <sup>(5)</sup>	3,461	596	3,157
Cash flow from operations before working capital changes w/o financial charges (DACF) <sup>(6)</sup>	3,730	2,055	2,289

(1) 2015-2016 data are not shown as they have not been restated to reflect the new organization of the E&P and iGRP segments.

(2) Adjusted results are defined as income using replacement cost, adjusted for special items, excluding the impact of changes for fair value.

(3) Including acquisitions and increases in non current-loans.

(4) Organic investments = net investments, excluding acquisitions, divestments and other operations with non-controlling interests.

(5) Excluding financial charges, except those related to leases.

(6) DACF = debt adjusted cash flow. Cash flow from operating activities before changes in working capital at replacement cost, without financial charges except those related to leases.

## OPERATIONAL HIGHLIGHTS

### HYDROCARBON PRODUCTION AND LNG SALES

Hydrocarbon production	2019	2018	2017
<b>iGRP (KBOE/D)</b>	<b>560</b>	<b>381</b>	<b>401</b>
Liquids (kb/d)	71	39	48
Gas (Mcf/d)	2,711	1,875	1,934
<b>LNG (Mt)</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>
<b>OVERALL LNG SALES</b>	<b>34.3</b>	<b>21.8</b>	<b>15.6</b>
Including sales from equity production <sup>(1)</sup>	16.3	11.1	11.2
Including sales by TOTAL from equity production and third party purchases	27.9	17.1	7.6

(1) The Group's equity production may be sold by TOTAL or by the joint-ventures.

### INSTALLED GROSS CAPACITY OF LOW-CARBON ELECTRICITY GENERATION

(GW)	2019	2018	2017
Solar	1.6	1.0	0.6
Wind	1.3	0.7	0.2
Biogas and hydroelectricity	0.1	0.0	0.0
<b>TOTAL FROM RENEWABLES</b>	<b>3.0</b>	<b>1.7</b>	<b>0.8</b>
Combined-cycle gas power plants – Europe <sup>(1)</sup>	1.9	1.9	0.3
Combined-cycle gas power plants – Rest of the world	1.6	1.6	1.6

(1) Including Normandy refinery cogeneration unit, part of Refining & Chemicals.

## LIQUEFIED NATURAL GAS (LNG)

As a pioneer in the LNG industry, TOTAL, thanks to solid and diversified positions, has become the world No.2 in LNG, with a 10% market share. The development of an integrated value chain is a key component of the Group's strategy: TOTAL has strengthened its presence from upstream activities, thanks mainly to its shareholdings in liquefaction plants located in the major production areas, until the distribution to end customers, through midstream activities, such as transport, regasification and trading. Additionally, the Group is entering new LNG markets by developing Floating Storage and Regasification Unit projects (FSRU) in emerging countries.

### TOTAL'S GLOBAL INTEGRATED AND DIVERSIFIED LNG PORTFOLIO, AS OF DECEMBER 31, 2019







## Production and liquefaction of LNG by the Group

LNG sold by the Group across worldwide markets comes either from the Group's share of production in upstream assets, from the Group's share in liquefaction plants, or through purchase contracts from third parties.

In 2019, the ramp-up of the Ichthys plant in Australia and the Yamal LNG plant in Russia, plus the start-up of the Cameron LNG plant in the United States, enabled continual growth in the Group's production of LNG. The LNG sales from equity production were 16.3 Mt in 2019, compared to 11.1 Mt in 2018 and 11.2 Mt in 2017. This growth of LNG production is expected to continue over the coming years, thanks to the Group's liquefaction projects under construction (United States, Russia, Nigeria and Mozambique), or projects currently under study (Papua New Guinea, Russia, Oman, Mexico and the United States).

### LIQUEFIED NATURAL GAS (LNG) SALES FROM EQUITY PRODUCTION <sup>(1)</sup>

<i>(kt/y)</i>	2019	2018	2017	2016	2015
Nigeria (NLNG)	3,092	2,950	3,049	2,783	3,068
Indonesia (Bontang) <sup>(2)</sup>	-	-	2,584	3,125	2,990
Gladstone LNG	1,445	1,345	1,495	1,274	103
Qatar (Qatargas 2)	1,344	1,324	1,262	1,313	1,237
Qatar (Qatargas 1)	939	909	915	887	932
Norway (Snøhvit)	821	851	714	849	731
Angola LNG	558	551	489	91	-
Oman <sup>(3)</sup>	487	456	368	371	336
Abu Dhabi (ADNOC LNG)	295	270	281	294	289
Yamal LNG <sup>(4)</sup>	5,087	2,212	41	-	-
Yemen LNG	-	-	-	-	529
Egyptian LNG T1	87	31	-	-	-
Ichthys LNG	1,836	171	-	-	-
Cameron LNG	275	-	-	-	-
<b>TOTAL</b>	<b>16,267</b>	<b>11,071</b>	<b>11,198</b>	<b>10,987</b>	<b>10,216</b>

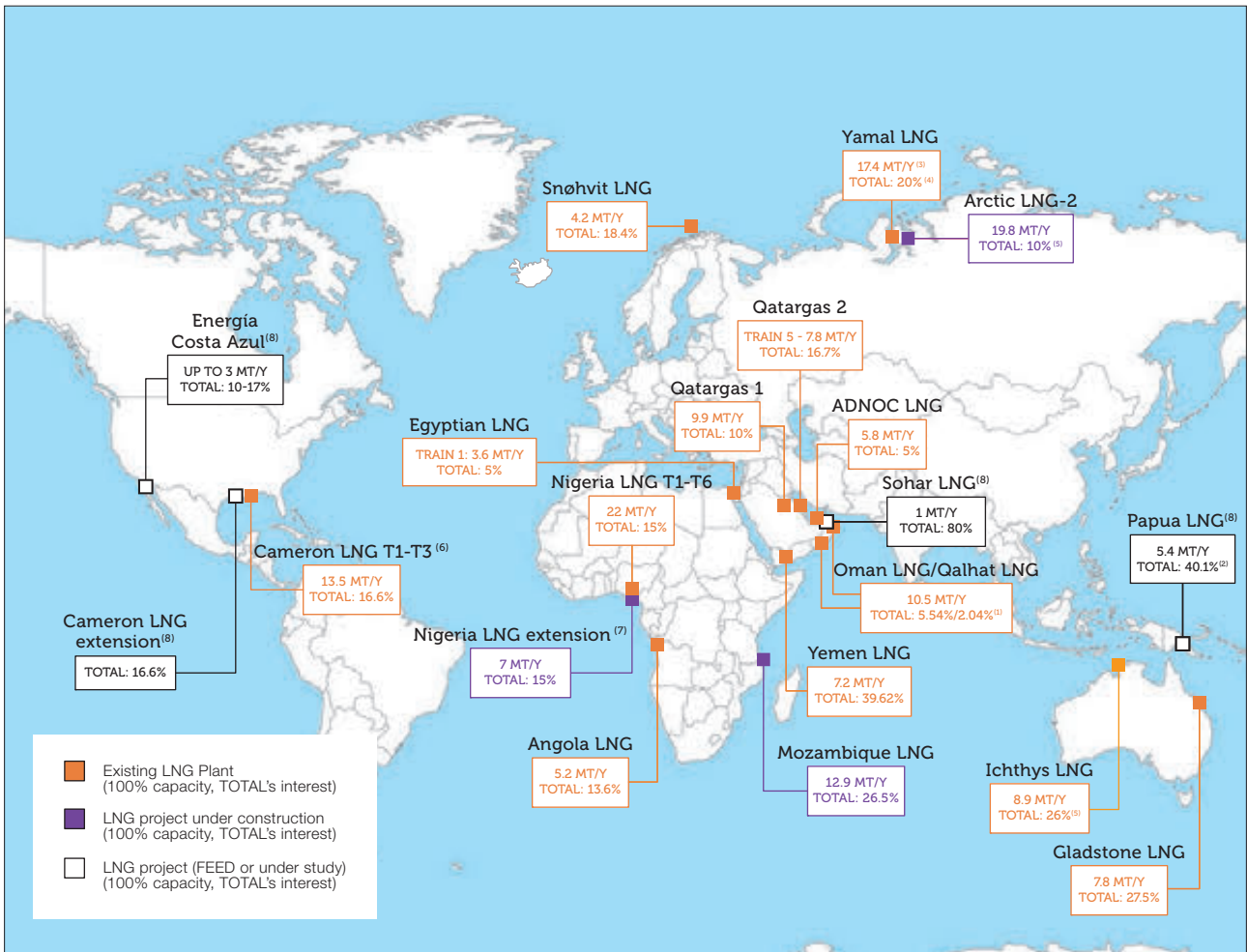
(1) Group share, excluding trading. The Group's equity production may be sold by TOTAL or by the joint-ventures.

(2) 2017 data restated to reflect volume estimates for Bontang LNG based on the 2016 SEC coefficient.

(3) Includes both Oman LNG & Qalhat LNG.

(4) Including TOTAL's stake in Novatek.

## LNG LIQUEFACTION PLANTS AS OF DECEMBER 31, 2019



- (1) TOTAL has an indirect stake via Oman LNG's stake in Qalhat LNG.
- (2) The State of Papua New Guinea retains the right to enter 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%.
- (3) Train 4 is under construction and will be in operation in 2020.
- (4) Direct stake in the project. Aggregated participation (including indirect interest in Novatek) is 29.72%.
- (5) Direct stake in the project. Aggregated participation (including indirect interest in Novatek) is 21.64%.
- (6) Train 1 started in 2019. Trains 2 and 3 are under construction.
- (7) The Final Investment Decision was confirmed in 2020.
- (8) Subject to FID.



Ichthys LNG (Australia)

The information below describes the main LNG production and liquefaction activities of the Group, presented by geographical area. Selected iGRP assets are illustrated with maps. The capacities referred to herein are expressed on a 100% basis, regardless of the Group's interest in the asset. Other upstream hydrocarbons activities by geographical area are presented in the E&P segment.

## → Europe and Central Asia

### RUSSIA

In Russia, the Group's LNG production has come from the Yamal LNG ① project since the end of 2017.

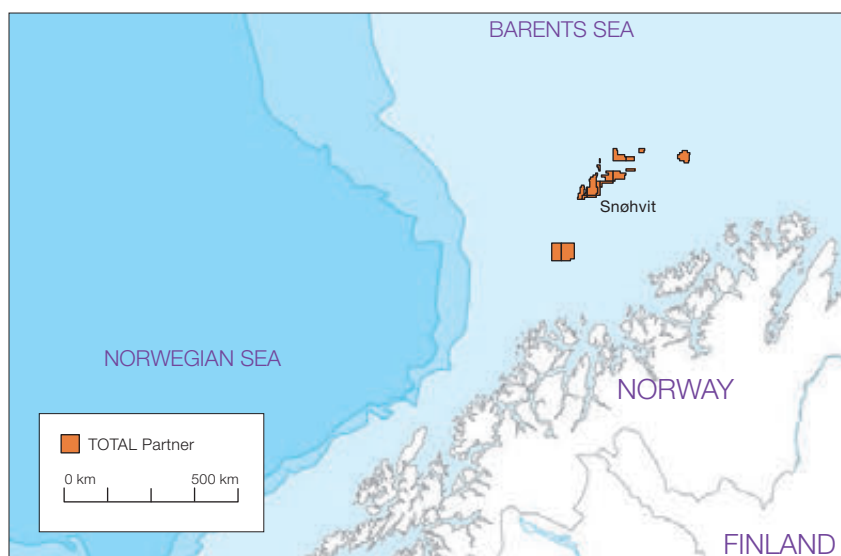
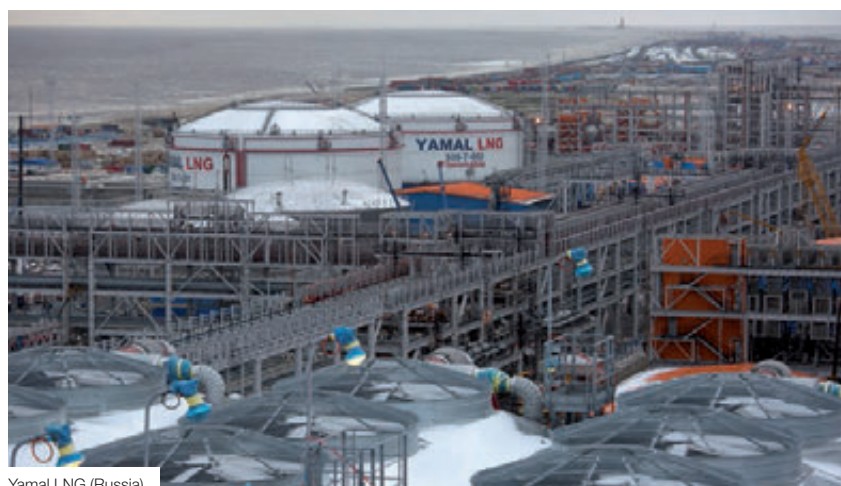
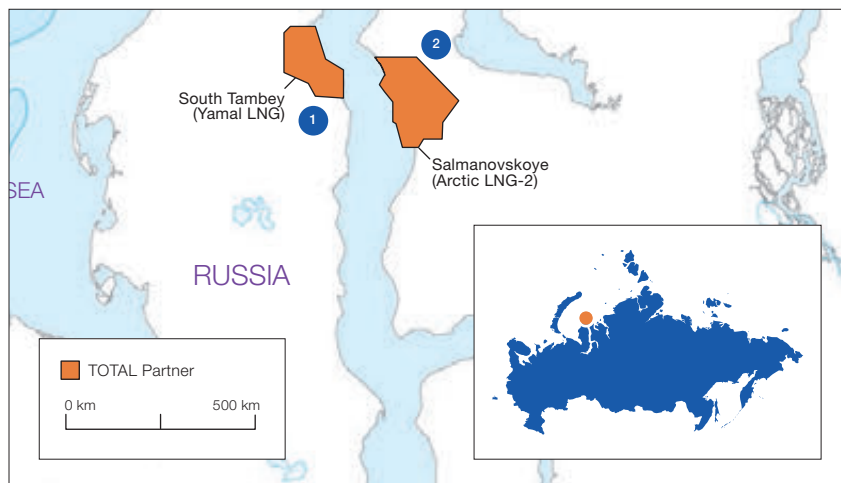
In 2013, OAO Yamal LNG launched this project to develop the onshore field of South Tambey (gas and condensates) located on the Yamal peninsula and to build a three-train gas liquefaction plant with a total LNG capacity of 16.5 Mt/y. The Yamal LNG project's financing was finalized in 2016 in compliance with applicable regulations. At the end of 2017, the Yamal LNG plant started production with the first shipment aboard "Christophe de Margerie" LNG tanker. The second liquefaction train of the plant, with a capacity of 5.5 Mt/y, produced its first shipment of LNG in August 2018. The third liquefaction train started production in November 2018, more than one year ahead of the schedule planned when the project was launched. A fourth liquefaction train with a capacity of 0.9 Mt/y, using PAO Novatek technology, is under construction and is expected to start in 2020.

TOTAL holds an aggregate interest of 29.72% in Yamal LNG project (20.00% directly and 9.72% indirectly through PAO Novatek).

In March 2019, TOTAL acquired a 10% direct interest in the Arctic LNG 2 project ②. TOTAL and its partners approved the final investment decision for Arctic LNG 2 project in September 2019. With a production capacity of 19.8 Mt/y, the Arctic LNG 2 project will develop the resources of the Utrenneye onshore field (gas and condensates) located on the Gydan Peninsula which faces the Yamal Peninsula. It involves the installation of three gravity-based structures in the Ob Bay that will host the three liquefaction trains of 6.6 Mt/y capacity each. The first shipment of LNG is expected in 2023. The project is also expected to benefit from synergies with the Yamal LNG project. TOTAL has an aggregate interest in Arctic LNG 2, directly (10%) and indirectly (11.64%) through its shareholding in PAO Novatek. The agreement in May 2018 between TOTAL and PAO Novatek also enables TOTAL to acquire a direct shareholding of between 10% and 15% in all future PAO Novatek LNG projects on the Yamal and Gydan peninsulas.

### NORWAY

In Norway, the Group holds an 18.40% interest in the gas liquefaction plant of Snøhvit (capacity of 4.2 Mt/y). The plant, located in the Barents Sea, is supplied with production from the Snøhvit and Albatross gas fields.





→ Africa (excluding North Africa)

**NIGERIA**

In Nigeria, TOTAL holds a 15% shareholding in Nigeria LNG (NLNG), whose main asset is a liquefaction plant with a total capacity of 22 Mt/y. NLNG shareholders approved the launch of a plant extension project for an additional capacity of around 7 Mt/y, construction should start in 2020. TOTAL is also present on the onshore field OML 58 ① (40%, operator), as part of the joint-venture with the Nigerian National Petroleum Corporation (NNPC). It has been supplying gas to NLNG and to the domestic Nigerian market.

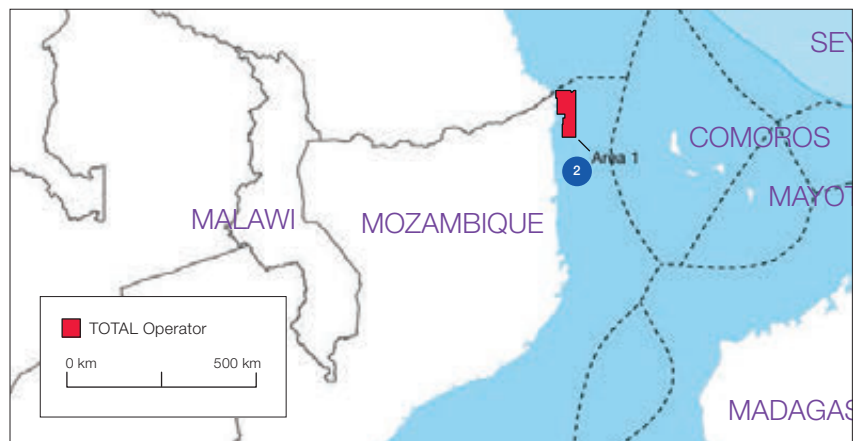
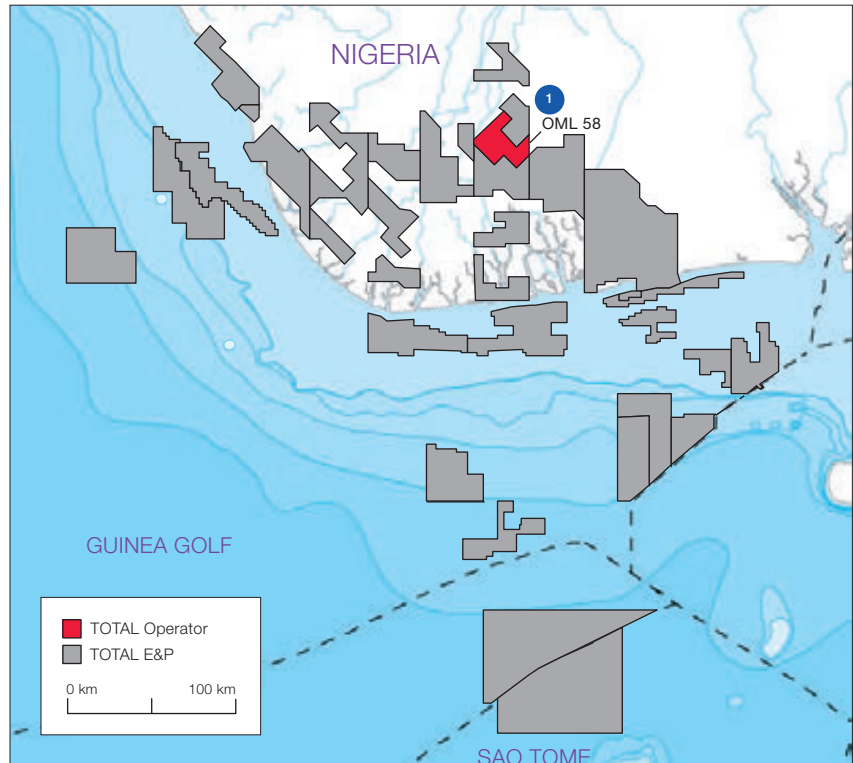
**ANGOLA**

In Angola, TOTAL holds a 13.6% shareholding in the Angola LNG project, which includes a gas liquefaction plant with a total capacity of 5.2 Mt/y near Soyo and supplied by gas associated with production from Blocks 0, 14, 15, 17, 18 and 32 ①.

**MOZAMBIQUE**

In Mozambique, in September 2019, TOTAL acquired from Occidental Petroleum Corporation, a company that hold 26.5% shareholding in the Mozambique LNG project previously held by Anadarko, for which the final investment decision was taken in June 2019. The project plans to liquefy the gas produced by the Golfinho and Atum fields in Offshore Area 1 ② (TOTAL Operator) by building two onshore liquefaction trains with a total capacity of 12.9 Mt/y.

The sale of nearly 90% of the output of Mozambique LNG has been secured by long-term contracts for delivery to customers in Asia and Europe. Part of the gas is expected to be kept for the domestic market in order to contribute to the country's economic development.



OML 58 (Nigeria)

(1) Blocks belonging to E&P segment.



## → Middle East and North Africa

### QATAR

In Qatar, the Group participates in the production, processing and exporting of gas from the North Field through its interest in the Qatargas 1 and Qatargas 2 LNG plants:

- Qatargas 1: TOTAL holds a 20% interest in the Qatargas 1 Upstream field and a 10% interest in the LNG plant (three trains with a total capacity of 10 Mt/y); and
- Qatargas 2: the Group holds a 16.7% interest in train 5, which has an LNG production capacity of 7.8 Mt/y.

TOTAL offtakes part of the LNG produced in accordance with the 2006 contracts, which provides for the purchase of 5.2 Mt/y of LNG by the Group.

### OMAN

In Oman, in 2018, TOTAL signed an MOU with the Oman government for the development of, on the one hand, natural gas resources on the onshore Blocks 10 and 11, located in the Greater Barik area (25%), on the other hand, the development of an LNG plant in the port of Sohar, with an initial production capacity of 1 Mt/y (80%, operator). This plant will supply LNG for bunkering.

The Group also produces LNG through its investments in the Oman LNG (5.54%)/ Qalhat LNG (2.04%) through Oman LNG liquefaction complex, with an overall capacity of 10.5 Mt/y.

### UNITED ARAB EMIRATES

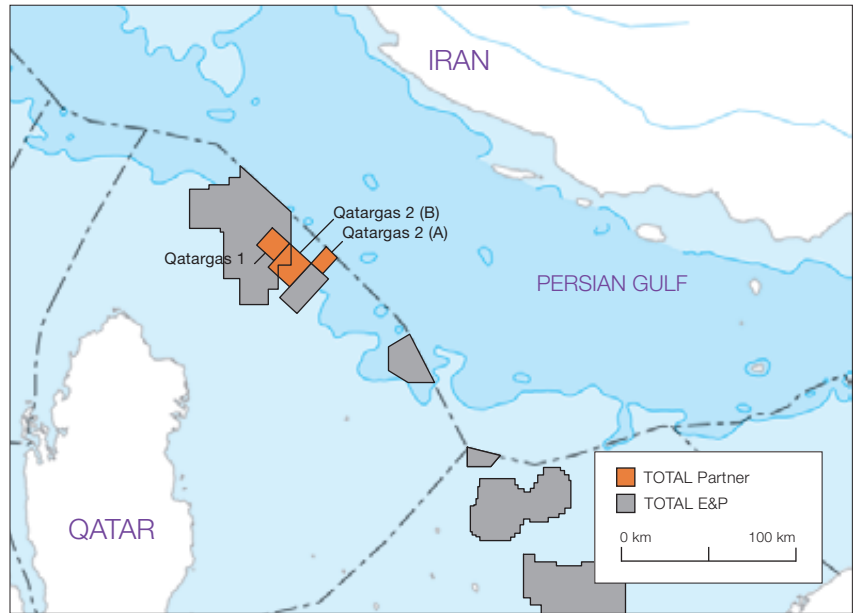
In the United Arab Emirates, TOTAL holds 5% of ADNOC LNG (capacity of 5.8 Mt/y), which processes the associated gas produced by ADNOC Offshore in order to produce LNG, NGL and condensates, and 5% of National Gas Shipping Company (NGSCO), which owns eight LNG tankers and exports the LNG produced by ADNOC LNG.

### EGYPT

In Egypt, TOTAL holds a 5% shareholding in the first train (capacity of 3.6 Mt/y) in the Idku plant of Egyptian LNG's liquefaction project.

### YEMEN

In Yemen, the deterioration of security conditions in the vicinity of the Balhaf site caused the company Yemen LNG, in which the Group holds a shareholding 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.



Qatargas (Qatar)



Qatargas (Qatar)

→ Americas

UNITED STATES

In the United States, the LNG production of train 1 (4.5 Mt/y) of the Cameron LNG plant in Louisiana, in which the Group holds a 16.60% shareholding, started in May 2019. The first phase of the Cameron LNG plant, which has a capacity of 13.5 Mt/y, comprises three liquefaction trains, each with a capacity of 4.5 Mt/y. Trains 2 and 3 are under construction and are expected to start up in 2020. TOTAL is continuing to evaluate the expansion of the plant beyond its initial capacity of 13.5 Mt/y.

In July 2019, TOTAL signed several agreements in order to develop the Driftwood LNG project in Louisiana, which are conditioned by the final investment decision of the project.

In shale gas, thanks to its ability to control costs, TOTAL achieved satisfactory results from its assets operated on Barnett (90.92%), despite unfavorable gas prices.

MEXICO

In Mexico, TOTAL signed in 2018 an agreement with Sempra Energy that provides a framework for the Energia Costa Azul LNG project and is continuing its discussions in order to participate in the project.



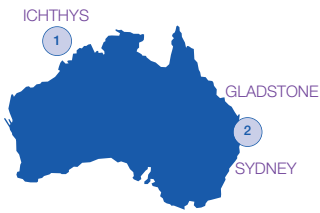
Cameron LNG (USA)



Cameron LNG (USA)



→ Asia Pacific



**AUSTRALIA**

In Australia, LNG production comes from the Gladstone LNG (GLNG) (27.5%) project and Ichthys LNG (26%) project.

The Ichthys LNG project involves the development of a gas and condensate field located in the Browse Basin ①. This development includes subsea wells connected to a platform for the production, processing and export of gas, a FPSO for processing and exporting the condensate, an 889 km gas pipeline and an onshore liquefaction plant in Darwin. At full capacity, the two trains of the gas liquefaction plant produce 8.9 Mt/y of LNG. Approximately 100,000 boe/d of offshore and onshore condensates and LPG are produced. Ichthys LNG started offshore production in July 2018 and exported its first LNG shipment in October 2018. Ichthys LNG has now reached its production plateau. The LNG is sold, mainly in the Asian market, under long-term contracts.

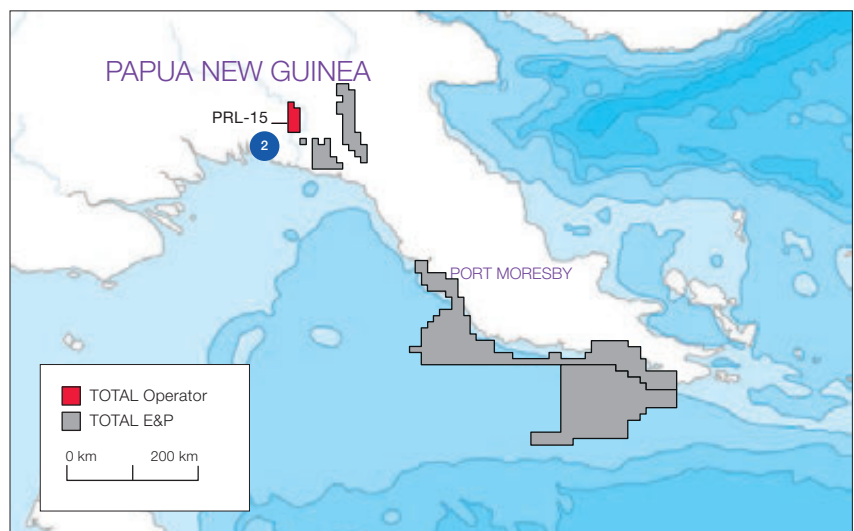
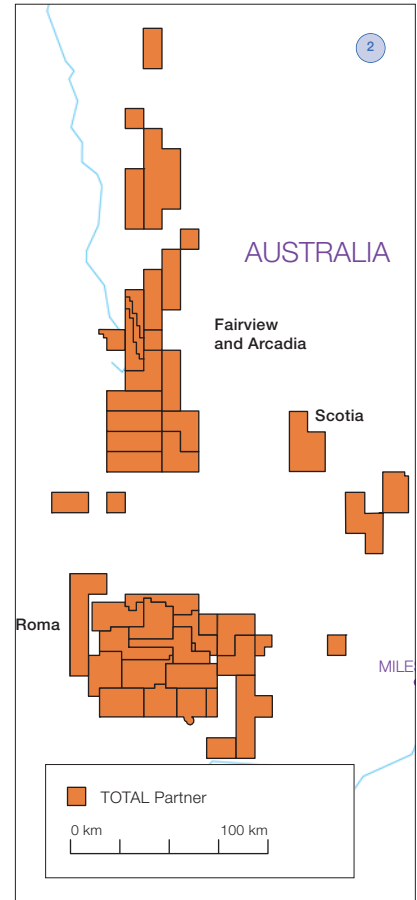
GLNG is an integrated project with production (from the Fairview, Roma, Scotia and Arcadia fields), transportation, and liquefaction capacity of 8.8 Mt/y located on Curtis Island, Queensland. The plant's two trains are in production respectively since 2015 and 2016.

**PAPUA NEW GUINEA**

In Papua New Guinea, the Group owns a shareholding in Block PRL-15 ② (40.1%, operator since 2015). The State of Papua New Guinea retains the right to take a shareholding in the license (when the final investment decision is made) at a level of 22.5%. In this case, TOTAL's shareholding would be reduced to 31.1%.

Block PRL-15 includes the two discoveries Elk and Antelope. The appraisal program of these discoveries was completed in 2017 and the results of the wells drilled confirmed the resource levels of the fields.

In 2019, development studies at conceptual stage and preparatory activities continued in the Elk and Antelope fields located on the Block PRL-15. The gas produced by these fields will be transported by a 320 km onshore/offshore pipeline to the PNG LNG site, where it will be liquefied in two new trains to be constructed, with a total capacity of 5.4 Mt/y integrated to the existing producing facilities operated by a partner in the project.



TOTAL and its partners have signed an agreement with the independent State of Papua New Guinea defining the fiscal framework for the development of the Papua LNG project in April 2019.

**INDONESIA**

In Indonesia, following the expiry of the Mahakam license and the transfer of the associated activities to Pertamina (operator) on January 1, 2018, production has come from the Ruby gas field on the Sebuku license (15%), and is transported by a gas pipeline to the Senipah terminal for treatment and separation.

## Purchasing, sale, trading and shipping of LNG

### → Purchasing, sale and trading of LNG

The Group's LNG trading activities are growing with the management and the optimization of a portfolio of long-term contracts and spot activity.

TOTAL acquires long-term volumes of LNG, mainly from liquefaction projects in which the Group holds an interest. New LNG sources notably arising from, the acquisition of Engie's LNG assets in the United States and new sanctioned projects are expected to ensure the growth of the Group's LNG portfolio in the coming years.

In addition, TOTAL also acquires long-term LNG volumes from American projects in which the Group has no equity (Sabine Pass, Corpus Christi, Cove Point and Freeport). These volumes supply and diversify its worldwide portfolio of LNG resources. TOTAL has strengthened its LNG activity in the United States through the take-over of Toshiba's LNG portfolio in 2019. Consequently,

TOTAL is expected to become the leading exporter of American LNG by 2021.

In 2019, TOTAL purchased 297 shipments under long-term contracts from Algeria, Australia, Egypt, the United States, Nigeria, Norway, Qatar and Russia and 186 spot or medium-term shipments, compared with 173 and 97 in 2018, and 59 and 49 in 2017 respectively. Deliveries from Yemen LNG have been halted since 2015.

TOTAL holds several significant contracts for the long-term sale of LNG (notably to Chile, China, South Korea, Indonesia, Japan, Panama, the Dominican Republic, Singapore and Taiwan). Additionally, the Group is developing LNG retail sales (by barge, tanker trucks) for industrial use or mobility (marine, waterways or road) in Europe, in the Caribbean in partnership with AES, and in Oman through the Sohar LNG project.

The Group's LNG trading activities are growing. In 2019, these LNG trading activities represented a volume of 28.7 Mt, compared with 17.1 Mt in 2018 and 7.6 Mt in 2017. This increase is due to the acquisition of Engie's portfolio of LNG activities, finalized in 2018.

The portfolio focuses, in particular, on Asian markets (including China, South Korea, India, Indonesia, Japan and Taiwan) and is made up of spot and long-term contracts that enable TOTAL to supply gas to its key customers worldwide, while keeping sufficient flexibility to seize market opportunities.

The trading teams are located in Geneva, Houston and Singapore.

### → LNG shipping

As part of its LNG shipping activities, TOTAL uses a fleet of 15 LNG vessels. To support the strong growth of the Group's LNG portfolio, seven additional new LNG vessels will be added to the chartered fleet by 2021. In addition to the long-term fleet, each year,

TOTAL may also charter vessels on a spot and short-term basis to meet trading needs and to adapt its shipping capacity to seasonal demand.

TOTAL is also present in LNG shipping through its Total E&P Norge subsidiary,

which charters two LNG vessels, and through the Group's shareholdings in LNG production and export projects that operate their own fleets of LNG vessels, such as Nigeria LNG, Angola LNG, Qatargas and Yamal LNG.



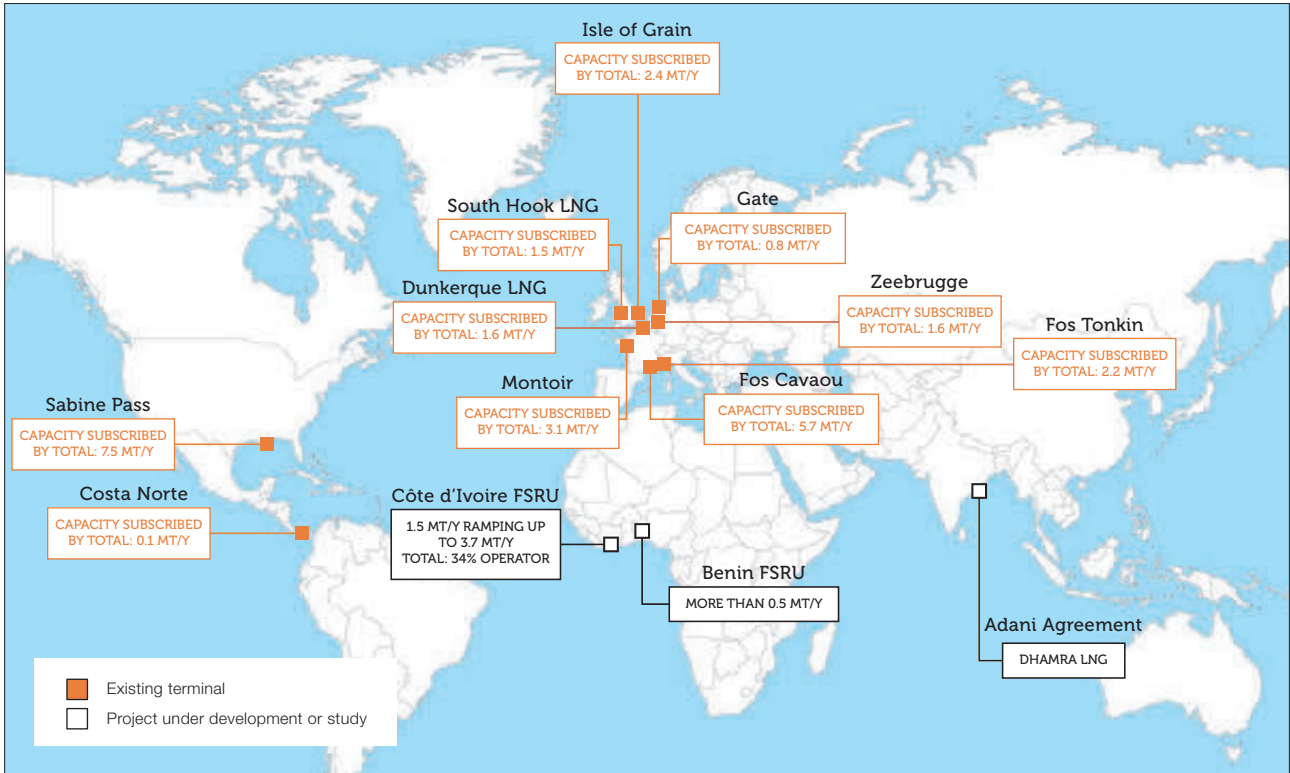
Arctic Lady



## LNG regasification

TOTAL holds shareholdings in regasification assets, or has entered into agreements that provide long-term access to LNG regasification capacity worldwide, through existing assets or projects under development in Europe (France, the United Kingdom, Belgium and the Netherlands), the Americas (United States and Panama), Asia (India) and Africa (Benin, Côte d'Ivoire). TOTAL also charters two FSRUs. In 2019, TOTAL holds an LNG regasification capacity of 28 Bcm/y.

### REGASIFICATION TERMINALS AS OF DECEMBER 31, 2019



Fos Cavaou (France)

## FRANCE

In France, TOTAL sold its 27.5% interest in Fosmax LNG company in February 2020. This disposal does not affect the capacity booking contract which provides TOTAL with a regasification capacity of 7.4 Bcm/y on this terminal. The terminal received 70 vessels in 2019, compared with 65 in 2018 and 55 in 2017. In 2018, TOTAL sold its 9.99% shareholding in the Dunkirk LNG terminal, with a capacity of 13 Bcm/y, but retained an access to a regasification capacity of 2 Bcm/y in 2019 on this terminal. TOTAL also holds a regasification capacity up to 3.8 Bcm/y on the Montoir de Bretagne terminal and 3 Bcm/y on the Fos Tonkin terminal.

## UNITED KINGDOM

In the United Kingdom, in the context of its equity interest in the Qatargas 2 project, TOTAL holds an 8.35% shareholding in the South Hook LNG regasification terminal, with a total capacity of 21 Bcm/y. The Group also holds a regasification capacity of 3.2 Bcm/y on the Isle of Grain terminal.

## BELGIUM

In Belgium, TOTAL holds a regasification capacity of 1.9 Bcm/y on the Zeebrugge terminal.

## NETHERLANDS

In the Netherlands, TOTAL holds a regasification capacity of 1.1 Bcm/y reserved up to 2024 on the Gate terminal.

## UNITED STATES

In the United States, TOTAL has reserved a regasification capacity of approximately 10 Bcm/y on the Sabine Pass terminal (Louisiana) until 2029. In 2012, TOTAL and Sabine Pass Liquefaction (SPL) signed agreements allowing TOTAL's reserved regasification capacity to gradually be transferred by TOTAL to SPL in return for a payment.

## INDIA

In India, TOTAL disposed of its 26% shareholding in the Hazira terminal in January 2019. Additionally, in 2018, TOTAL and Adani Group signed an agreement on the development of two LNG import and regasification terminals, including Dhamra LNG in eastern India and, potentially, the Mundra terminal in the west of the country. With these agreements, TOTAL relies on a recognized local partner to break into the Indian natural gas market which has a significant potential for growth.

## BENIN

In Benin, TOTAL, the Republic of Benin and the Société Béninoise d'Énergie Électrique (SBEE) have signed agreements in order to develop a floating LNG import terminal and to supply more than 0.5 Mt/y of LNG to Benin for a 15-year period, starting in 2021. This FSRU will be located off the shore of Benin and connected to the existing electric power plants and the future Maria Gléta plant by an offshore gas pipeline.

## CÔTE D'IVOIRE

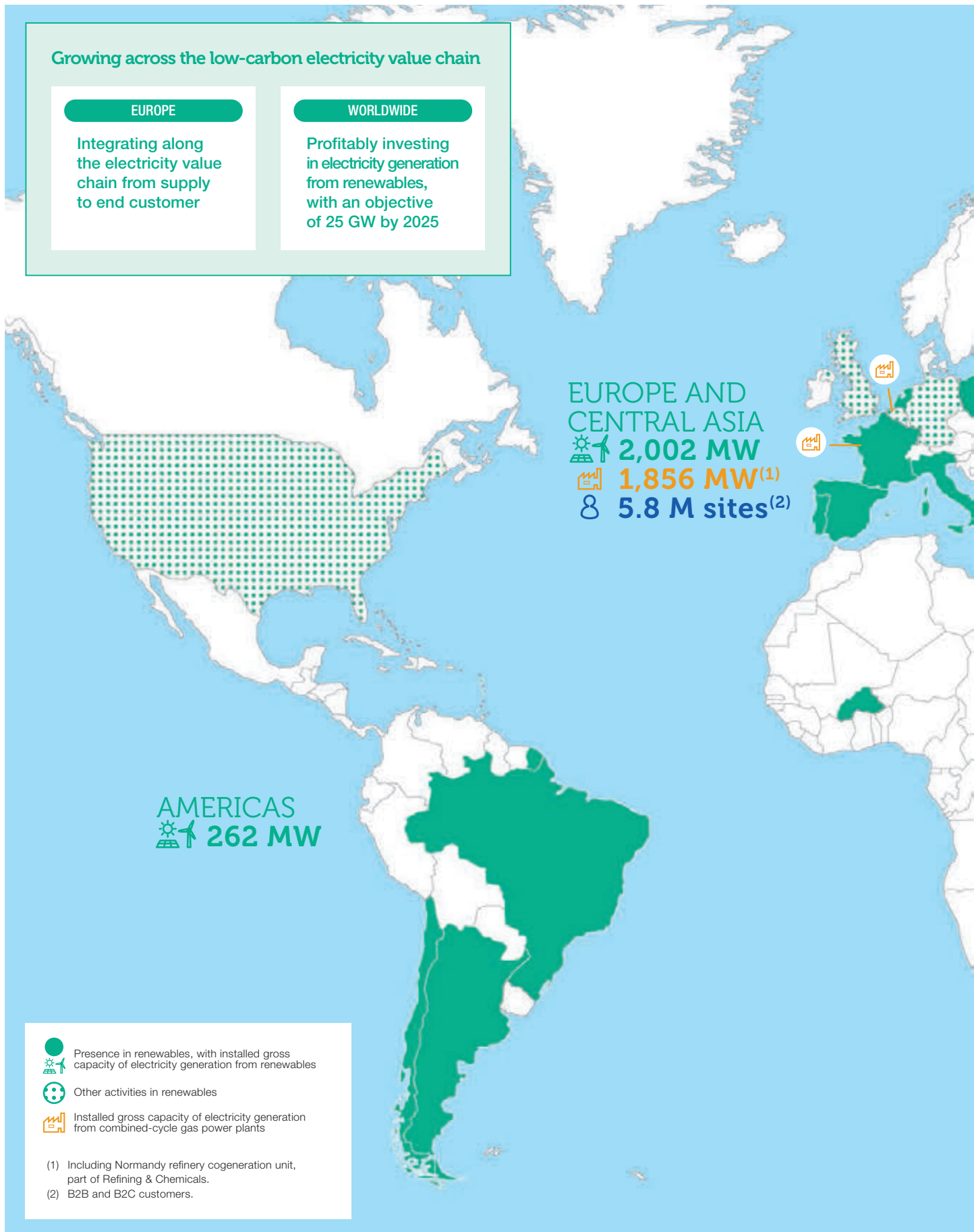
In Côte d'Ivoire, a consortium led by TOTAL (34%, operator) has been assigned responsibility for developing and operating an FSRU-type LNG regasification terminal in Abidjan. Due to a decrease in expected consumption, start-up is now expected in 2023.



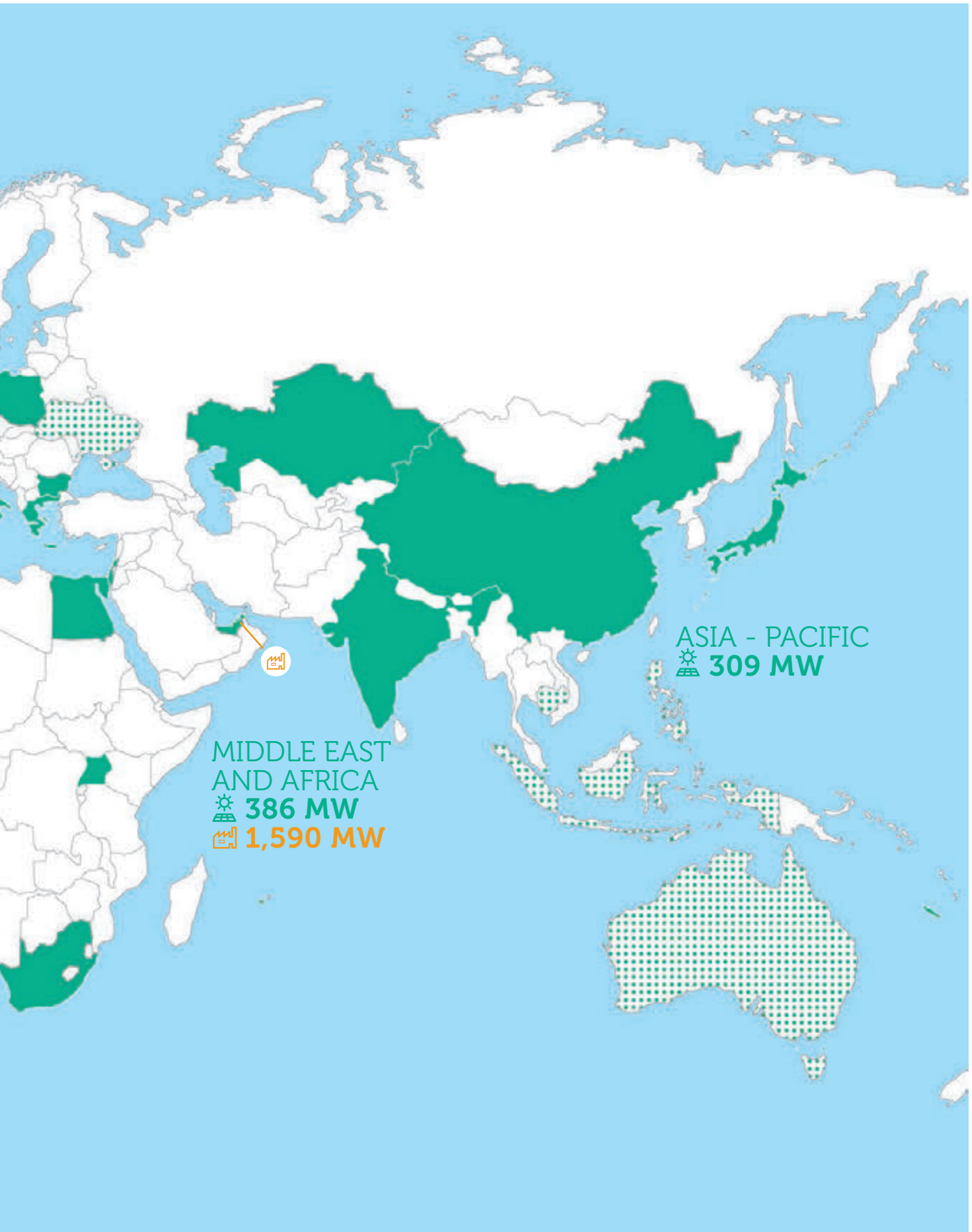
Costa Norte (Panama)

# LOW-CARBON ELECTRICITY

TOTAL'S GLOBAL PRESENCE IN LOW-CARBON ELECTRICITY AS OF DECEMBER 31, 2019









## Production and storage of low-carbon electricity

TOTAL has accelerated its strategy to integrate the gas-electricity chain in Europe and to develop low-carbon electricity by acquiring Direct Énergie and two combined-cycle natural gas power plants in France in 2018. Consequently, in 2019, TOTAL had an installed capacity of 1.9 GW of low-carbon electricity generation from gas.

The Group also increases its commitment to renewables. Upstream and downstream, in solar, wind and hydraulic power, TOTAL continues to seize investment opportunities and had an installed gross capacity of 3 GW of electricity production at the end of 2019. During the first half of 2020, the Group already announced agreements with a view to further develop its low-carbon electricity production in France, India, Qatar, Spain and in the United Kingdom.

### → Electricity production from renewables

In Europe, TOTAL is developing an integrated approach to the generation of low-carbon electricity by developing and operating onshore wind power, solar, hydroelectric and biogas projects. Elsewhere in the world, TOTAL is developing the generation of electricity from renewable energies by proposing decentralized photovoltaic systems for residential, industrial and business customers, and by developing and operating onshore solar power plants and onshore wind power plants. TOTAL is also taking part in offshore wind power projects, in particular by relying on its renowned know-how in offshore oil and gas.

In February 2020, TOTAL expanded its partnership with Adani Indian Group by creating a 50/50 joint-venture with Adani Green Energy Limited (AGEL). AGEL will transfer its solar plant in operation which have a cumulated capacity of over 2 GW. This transaction remains subject to the approval of the relevant authorities. In March 2020, TOTAL signed an agreement with the developer Simply Blue Energy to acquire a 80% stake in the pioneering floating wind project Erebus located in the Celtic Sea. The project will have a 96 MW capacity. In May 2020, TOTAL acquired the Energias de Portugal's portfolio of 2.5 million B2C customers and two gas-fired combined

cycle power plants, which represent an electricity generation capacity of nearly 850 MW. In June 2020, TOTAL signed an agreement with SSE Renewables, to acquire a 51% stake in the Seagreen 1 offshore wind farm project of 1,140 MW.

#### TOTAL QUADRAN

TOTAL implements its policy of investing in low-carbon businesses with Total Quadran, which enables the Group to speed up its development in solar and wind power in France. At the end of 2019, Total Quadran operated a portfolio of 213 onshore wind, solar, hydroelectric and biogas assets in France, and continues to develop a portfolio of renewable electricity projects. The installed gross capacity was 0.8 GW at the end of 2019, following the acquisition in August 2019 of the French company Vents d'Oc, which develops more than 200 MW of renewable energy projects, mainly in wind power.

Banque des Territoires signed an agreement in January 2020 in order to take an equity interest of 50% in a portfolio of solar and wind energy assets of a total capacity of 143 MW, held by Total Quadran in France. This partnership reflects the deployment of TOTAL's business model regarding the

development of renewable energy projects. It will enable to pursue the development of new renewable energy projects in France. In March 2020, Total Quadran acquired Global Wind Power France, a company with a 1,000 MW portfolio of onshore wind projects, including 250 MW scheduled to come on stream by 2025. In April 2020, Total Quadran was awarded with 131 MWp of solar projects tender for ground-mounted solar parks, as well as 5.6 MWp of solar in the French Overseas departments and collectivities.

#### TOTAL EREN

TOTAL has a 29.6% interest in Total Eren at the end of 2019 and has an option to acquire 100% of Total Eren in 2023. Total Eren today manages numerous energy projects in countries and regions where renewable energies represent an economically viable response to growing energy demand, notably in Asia-Pacific, Africa and Latin America. In April 2019, Total Eren acquired the Novenergia group and extended its presence, in particular in southern Europe. At the end of 2019, Total Eren had a diversified set of assets in renewable energies (wind, solar and hydraulic), representing an installed gross capacity of approximately 1.7 GW worldwide.



Prieska (South Africa)

### TOTAL SOLAR INTERNATIONAL

Total Solar International (TOTAL, 100%) contributes to the development of solar activities by concentrating on solar power plants, which may be combined with batteries or other means of generation, and electricity storage sites in targeted geographical areas: Europe, the Middle East, Japan and South Africa. Total Solar International has interests in the Shams 1 solar power station in Abu Dhabi, PV Salvador in Chile, Prieska in South Africa and Nanao in Japan. In June 2019 in Japan, Total Solar International commissioned the Miyako solar power station, with a capacity of 25 MW, and launched the construction of a solar power station with a capacity of approximately 52 MW in Osato in October 2019.

In January 2020, TOTAL and its partners began the development of the Al Kharsaah Solar Park, the first large-scale solar plant (800 MW), in Qatar. The project has been awarded to a consortium comprised of Total Solar International (49%) and Marubeni (51%) following the first international solar tender in the country. In February 2020, TOTAL signed two agreements with Powertis and Solarbay Renewable Energy in order to develop nearly 2 GW of solar projects in the Spanish solar market.

### TOTAL SOLAR DISTRIBUTED GENERATION

Total Solar Distributed Generation (TOTAL, 100%) contributes to the development of solar activities. It concentrates on decentralized photovoltaic systems that can be combined with batteries or other means of generation, installed on the sites of its industrial or business customers (B2B). Total Distributed Generation enters private PPAs and also takes part in the deployment of the program to solarize TOTAL's sites. In August 2019, TOTAL inaugurated its 1,000<sup>th</sup> service station equipped with solar panels worldwide. In September 2019, Total Solar Distributed Generation and the Envision Group, the world leader in smart energy systems, formed an equally held joint-venture to commercially develop distributed solar energy projects for self-consumption for B2B customers in China. Since October 2019, Total Solar Distributed Generation has added six solar projects with a cumulative capacity of approximately 10 MW to its portfolio of renewable energy assets in South-East Asia. These decentralized production projects are located in Thailand, the Philippines, Indonesia and Singapore.

### SUNPOWER

Since 2011, TOTAL has been the largest shareholder of SunPower, an American company listed on NASDAQ and based in California. SunPower is the market leader in distributed energy in the United States, and its panels sales represent more than 2.4 GW worldwide in 2019, compared with 1.5 GW in 2018 and 1.4 GW in 2017.

In November 2019, SunPower announced its decision to split its activities between two companies listed on the NASDAQ: Maxeon Solar Technologies and SunPower. Singapore-based Maxeon Solar Technologies will exercise activities from the design to the manufacturing and international sales of very high-yield solar cells and panels. SunPower will continue to develop and market energy services in the American market, in the residential, industrial and commercial segments. The spin-off is expected to take effect in 2020.



Miyako (Japan)



Beatrice (UK)



## → Electricity production from natural gas

The construction of a portfolio of combined-cycle gas power plants in Europe is part of the strategy to integrate across the gas and electricity value chain, from production to marketing, and complements well the sources of production of intermittent renewable electricity. Furthermore, the flexible production of these power plants enables the Group to optimize its customers' electricity supply costs.

### INSTALLED GROSS CAPACITY OF ELECTRICITY GENERATION FROM COMBINED-CYCLE GAS POWER PLANTS

(in MW)

2019

CCGT Bayet (France)	383
CCGT Marcinelle (Belgium)	388
CCGT Pont-sur-Sambre (France)	440
CCGT Toul (France)	405
Normandy refinery cogeneration unit (France) <sup>(1)</sup>	240
<b>TOTAL EUROPE<sup>(2)</sup></b>	<b>1,856</b>
Taweelah A1 gas power plant (Abu Dhabi) <sup>(3)</sup>	1,590

(1) Part of Refining & Chemicals.

(2) TOTAL, 100%.

(3) TOTAL, 20%.

#### EUROPE

In France and Belgium, TOTAL has four 100%-owned combined-cycle natural gas (CCGT) power plants. The global installed capacity is 1.6 GW. A fifth CCGT (0.4 GW) is currently under construction in Landivisiau (France). Additionally, TOTAL signed an agreement in December 2018 with EPH that will add two CCGT (0.8 GW) to the TOTAL portfolio in 2020, subject to authorization by the competent authorities.

#### REST OF THE WORLD

In Abu Dhabi, the Taweelah A1 gas power plant (TOTAL, 20%) combines electricity generation and water desalination. The plant has a gross power generation capacity of 1.6 GW and a water desalination capacity of 385,000 m<sup>3</sup> per day. The plant's production is sold to Abu Dhabi Water and Electricity Company (ADWEC) as part of a long-term agreement.



CCGT of Bayet (France)

## → Electricity storage

Electricity storage is a major challenge for the future of power grids and is vital in addition to renewable energies, which are intermittent by nature. Large-scale electricity storage is essential to promote the growth of renewables and enable them to become a significant share of the electricity mix.

The acquisition of Saft Groupe S.A., achieved in 2016, is perfectly aligned with TOTAL's ambition to develop its low-carbon business. Saft is a century-old French company that specializes in the design, manufacture and sale of high technology batteries for industry. Saft develops batteries based on nickel, lithium-ion and primary lithium technologies. The company is active in transport (aeronautics, rail and off-road electric mobility), industrial infrastructures, civil and military electronics, space, defense and energy storage. Building on the strength of its technological know-how, and through its energy storage activities, Saft is well placed to benefit from the growth in renewable energies beyond its current activities, by offering massive storage capacities, combined with the generation of electricity from renewables. This is one of Saft's main sources of growth. As of year-end 2019, Saft is present in 19 countries and has over 4,500 employees. Saft is achieving growth in particular in Asia, South America and Russia, and has 14 production sites and approximately 30 sales offices.

In 2019, the company strengthened its energy storage and electric mobility activity, with the creation of a joint-venture with Tianneng Energy Technology, with a view to developing their lithium-ion activity, and with the acquisition of Go Electric Inc., an American specialist in energy resilience solutions for microgrids. Additionally, Saft signed a contract with the Finnish operator TuuliWatti to build the largest energy storage system in the Nordic countries. Saft is also active in the European alliance working on a new generation of "solid electrolyte" batteries. TOTAL and PSA Group announced in January 2020 their plan to combine their know-how to develop an electric vehicles battery manufacturing activity in Europe. In March 2020, TOTAL launched a battery-based energy storage project in Mardyck, in Dunkirk's port district. The new lithium-ion energy storage system will be the largest in France.



Saft battery plant (Faroe Islands)



TOTAL's solar solutions

## → Access to energy

TOTAL's solar solutions for access to energy were distributed in 38 countries in 2019. 3.3 million lamps and solar kits were sold in 2019 in cumulative, helping improve the everyday lives of 14.5 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. In

addition, in 2019, around 15 incubation projects were developed with start-ups in the nano-grid, mini-grid, recycling and wind turbine sectors. More than 20 business partnerships were deployed in the field, with organizations ranging from NGOs and development agencies, to professional customers and international organizations. The goal of the program is to impact 25 million people by 2025.



# Natural gas and electricity marketing and trading

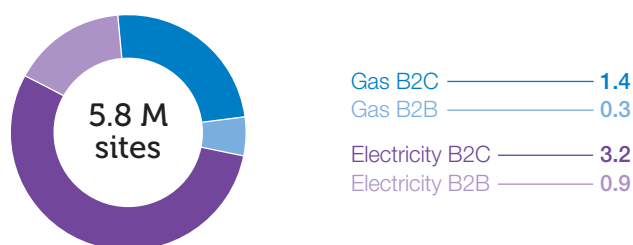
## → Natural gas and electricity marketing

### EUROPE

With a portfolio of nearly 6 million sites (B2B and B2C customers) and 141 TWh of energy supplied in 2019, TOTAL has become a leading player in the sale of natural gas and electricity in the residential and professional markets (business and industrial segments). TOTAL is now targeting nearly 10 million sites (B2B and B2C customers) in Europe in every segment, and in particular a 15% market share in France and Belgium in the residential segment by 2025.

The Group markets natural gas and electricity in the residential and professional segments in France, through its Total Direct Énergie subsidiary (a merger of the Total Énergie Gaz, Total Spring France and Direct Énergie entities), in Belgium, through its subsidiaries Lampiris (B2C) and Total Gas & Power Belgium (B2B) and in the Netherlands. TOTAL also markets natural gas and electricity in the professional segment in the United Kingdom and is developing its activity in Germany and Spain.

**Breakdown of gas and electricity sites in Europe**  
As of December 31, 2019 (in millions of B2B and B2C sites)



### BREAKDOWN OF GAS AND ELECTRICITY SALES IN EUROPE

(in millions of B2B and B2C sites)

	2019	2018	2017
<b>Europe</b>	<b>5.8</b>	<b>5.1</b>	<b>1.5</b>
France	4.4	3.8	0.5
Belgium	1.0	1.0	0.8
United Kingdom	0.2	0.2	0.2
Germany	0.0	0.0	0.0
The Netherlands	0.1	0.1	0.0
Spain	0.0	0.0	0.0

(in TWh of delivered electricity)

	2019	2018	2017
<b>Europe</b>	<b>46</b>	<b>31</b>	<b>15</b>
France	26	17	1
Belgium	4	4	4
United Kingdom	11	10	9
Germany	2	1	0
The Netherlands	0	0	0
Spain	2	0	0

(in Gm<sup>3</sup> of delivered gas)

	2019	2018	2017
<b>Europe</b>	<b>9.1</b>	<b>8.5</b>	<b>8.4</b>
France	2.4	1.8	1.9
Belgium	0.9	0.8	0.7
United Kingdom	4.1	4.2	4.3
Germany	1.3	1.3	1.2
The Netherlands	0.4	0.4	0.3
Spain	0.0	0.0	0.0

## REST OF THE WORLD

In Argentina, TOTAL markets the natural gas that it produces. In 2019, the volume of gas sales were stable to 4.3 Bcm, compared to 4.3 Bcm in 2018 and 4.2 Bcm in 2017.

In India, the partnership with Adani was strengthened in October 2019 with the announcement of the acquisition by TOTAL of 37.4% of Adani Gas Limited, one of the leading local distributors of natural gas, holding 38 urban concessions.

In Mexico, the Group holds shareholdings in the marketing companies that are associated with the LNG regasification terminals located at Altamira.

### → Natural gas and electricity trading

TOTAL is active in the trading of natural gas and electricity in Europe and North America. The Group sells its output to third parties and supplies its subsidiaries.

In Europe, TOTAL sold 70.3 Bcm of natural gas in 2019, compared with 46.4 Bcm in 2018. The Group also traded 66 TWh of electricity

in 2019, compared to 65.4 TWh in 2018 and 70.2 TWh in 2017, mainly from external sources.

In North America, TOTAL sold 17.4 Bcm of natural gas in 2019 from its own production or from external resources, compared to 13.7 Bcm in 2018.

## TRADING (EXCLUDING LNG, GAS AND ELECTRICITY) AND TRANSPORT OF NATURAL GAS

The Group is also active in markets other than natural gas, LNG or electricity, such as LPG, petcoke and sulfur. In 2019, TOTAL traded and sold nearly 6.4 Mt of LPG (propane and butane) worldwide. Slightly more than 25% of these quantities came from fields or refineries operated by the Group. This trading activity was conducted by means of nine long-term chartered vessels. In 2019, 290 journeys were necessary for transporting the negotiated quantities, including 176 journeys carried out by TOTAL's long-term chartered vessels and 114 journeys by spot-chartered vessels.

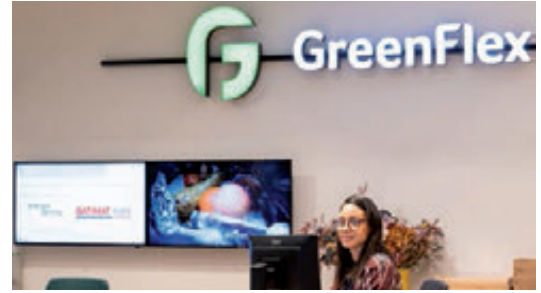
TOTAL sells petcoke produced by the Port Arthur refinery in the United States and the Jubail refinery in Saudi Arabia. Petcoke is sold

to cement producers and electricity producers mainly in India, as well as in Mexico, Brazil, other Latin American countries and Turkey. 2.5 Mt of petcoke were sold in the international market in 2019.

TOTAL also sells sulfur, mainly from the production of its refineries. In 2019, 1.6 Mt of sulfur were sold.

In 2015, the Group ceased its coal production activities and, in 2016, stopped selling and trading coal.

The Group also holds interests in gas pipelines.



## Carbon Neutrality Businesses

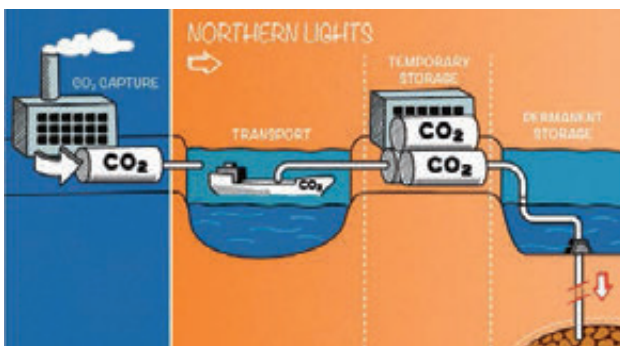
One of the missions of the Group is to propose and implement a strategy in the fields of energy efficiency, CO<sub>2</sub>-related business chains and, more globally, in the new low-carbon activities, the services related to energy and the building of decarbonisation's offers.

### Carbon capture, use and storage (CCUS)

The Group aims at developing new businesses to enable its industrial, domestic or electricity producing customers to capture, store or use their CO<sub>2</sub> emissions, thanks to the study of new industrial solutions.

TOTAL considers CCUS to be one of the key drivers to tackle the challenge of the climate change and is particularly interested in the development of new business and industrial models associated with this value chain. The Group allocates 10% of its R&D budget, i.e., \$100 million per year.

In this area, the Group intends to participate directly or indirectly in large-scale pilot projects. In 2017, TOTAL launched studies with Equinor and Royal Dutch Shell for developing the transport and storage aspects of the first industrial commercial project in the world for the capture, transport and storage of CO<sub>2</sub>, with a capacity of 1.5 Mt of CO<sub>2</sub>/y. The project aims to store the emissions from two industrial sites near Oslo (Norway) and will also be able to collect emissions from other emitters. TOTAL is also involved in studies of other projects, in collaboration with other industrial companies and partners, in Antwerp (Belgium), Dunkirk (France), Teesside or St. Fergus (United Kingdom).



Svante Inc., LafargeHolcim, Oxy Low Carbon Ventures, LLC (OLCV), a wholly-owned subsidiary of Occidental, and TOTAL announced a joint study to assess the viability and design of a commercial-scale carbon-capture facility at the Holcim Portland cement plant in Florence, Colorado, U.S. This joint initiative follows the project CO<sub>2</sub>MENT recently launched by Svante, LafargeHolcim and TOTAL at the Lafarge Richmond cement plant in Canada, which already enhanced progress regarding reinjection of captured CO<sub>2</sub> inside cement.

### Natural carbon sinks

Carbon sinks that use natural solutions are an effective means of capturing CO<sub>2</sub>. In June 2019, the Group created the new Total Nature Based Solutions (NBS) entity that is dedicated to investments in these solutions. This entity on the one hand, will fund, develop and manage activities that capture carbon naturally (reforestation, regenerative agriculture, etc.) and, on the other hand, will ensure the protection of ecosystems that already store high quantities of carbon emissions. The Group allocates a budget of \$100 million per year to NBS.

### Energy efficiency services

The energy efficiency services market is experiencing strong growth, expected to accelerate in the coming years. In this context, the Group is investing in this market, with the aim of helping the Group's customers reduce their energy consumption and their emissions, in particular by choosing between the best energy sources.

GreenFlex is (TOTAL, 100%) offers services designed to improve the energy and environmental performance of its customers.

### Total Carbon Neutrality Ventures (TCNV)

Total Carbon Neutrality Ventures is entirely dedicated to carbon neutrality businesses and is expected to reach an aggregate amount of \$400 million of investments by 2023. TCNV invests in the upstream stage of the development of companies offering interesting technologies or economic models that enable companies to cut their energy consumption or the carbon intensity of their activities.

With teams based in Europe and the United States, the fund makes its investments on a worldwide scale in smart energy, energy storage, smart mobility, bioplastics and recycling. TCNV continues to develop its investment platform dedicated to emerging markets, and in particular to companies developing business models for access to energy for people who are not connected to the grid.



# EXPLORATION & PRODUCTION

**8.6** B\$  
organic  
investments  
in 2019

**18.0** B\$  
operating cash flow  
excl. working capital  
changes and financial  
charges (DACF) in 2019

**5**  
major start-ups  
in 2019: Culzean,  
Egina, Iara,  
Johan Sverdrup,  
Kaombo Sul

**2.5** Mboe/d  
of hydrocarbons  
production in 2019

**7.5** B\$  
adjusted net  
operating income  
in 2019

**12,295**  
employees



## The Exploration & Production segment (E&P)

encompasses the Group's oil and gas exploration and production activities in more than 50 countries.

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.

Since January 1, 2019, the LNG Upstream and Midstream activities, which previously reported to the E&P segment, now report to the iGRP segment. This section presents the activities of the E&P segment adjusted accordingly.

### DELIVERING OPERATIONAL EXCELLENCE

- Safety
- Actively reducing scope 1+2 CO<sub>2</sub> emissions
- Further improving availability
- Leveraging low cost competitive advantage

### FOCUSING ON VALUE BY PLAYING TO THE GROUP'S STRENGTHS

- Value over volume
- Technical expertise in deepwater
- Core geographical areas (Africa, Middle East, North Sea)

### HIGHGRADING PORTFOLIO AND RENEWING RESERVES

- Renewed exploration strategy focusing on prolific basins
- Dynamic portfolio management: assessing low breakeven discovered resources
- Rationalizing operating positions



## FINANCIAL HIGHLIGHTS <sup>(1)</sup>

(in million dollars)

	2019	2018	2017
Adjusted net operating income <sup>(2)</sup>	7,509	8,547	4,541
Gross investments <sup>(3)</sup>	8,992	13,789	10,005
Organic investments <sup>(4)</sup>	8,635	7,953	9,110
Divestments	368	3,674	1,793
Cash flow from operating activities <sup>(5)</sup>	16,917	18,537	10,719
Cash flow from operations before working capital changes w/o financial charges (DACF) <sup>(6)</sup>	18,030	17,832	12,758

(1) 2015-2016 data are not shown as they have not been restated to reflect the new organization of the E&P and iGRP segments.

(2) Adjusted results are defined as income using replacement cost, adjusted for special items, excluding the impact of changes for fair value.

(3) Including acquisitions and increases in non current-loans.

(4) Organic investments = net investments, excluding acquisitions, divestments and other operations with non-controlling interests.

(5) Excluding financial charges, except those related to leases.

(6) DACF = debt adjusted cash flow. Cash flow from operating activities before changes in working capital at replacement cost, without financial charges except those related to leases.

## OPERATIONAL HIGHLIGHTS

### PRODUCTION

Hydrocarbon production	2019	2018	2017
<b>E&amp;P (KBOE/D)</b>	<b>2,454</b>	<b>2,394</b>	<b>2,165</b>
Liquids (kb/d)	1,601	1,527	1,298
Gas (Mcf/d)	4,653	4,724	4,728

### MAJOR E&P START-UPS IN 2019

Projects	Field type	Hydrocarbon type	Capacity (kboe/d)	Share	Op.	Country
Culzean	Shallow water	Gas/Cond.	100	49.99%	X	UK
Egina	Deep off.	Oil	200	24%	X	Nigeria
Iara 1	Deep off.	Oil	150	22.5%		Brazil
Johan Sverdrup 1	Shallow water	Oil	440	8.44%		Norway
Kaombo Sul	Deep off.	Oil	115	30%	X	Angola

## E&P ACTIVITIES BY GEOGRAPHICAL AREA

The information below describes the main exploration and production activities of the E&P segment, presented by geographical area. Selected E&P assets are illustrated with maps. The capacities referred to herein are expressed on a 100% basis, regardless of the Group's interest in the asset. LNG activities are presented in the iGRP segment.

### → Europe and Central Asia

#### RUSSIA

In Russia, oil and gas production comes mainly from the interests held in the Termokarstovoye (58.89%)<sup>(1)</sup> and Kharyaga (20%) fields and from TOTAL's 19.40% shareholding in PAO Novatek. LNG activities in the country are presented in the iGRP segment.

#### NORWAY

In Norway, TOTAL's production is sourced from multiple fields, in particular Ekofisk ① (39.9%) and Troll ② (3.69%). The giant Johan Sverdrup ③ (8.44%) field started production in October 2019. TOTAL has equity interests in 63 production licenses on the Norwegian maritime continental shelf, 12 of which it operates.

As part of the continual improvement of its North Sea portfolio, the Group disposed of its interests in the Victoria discovery (57%) in January 2019, in the Mikkel field (7.65%) in the Haltenbanken zone in January 2019, and in the King Lear discovery (22.2%) in October 2019. LNG activities in the country are presented in the iGRP segment.

#### UNITED KINGDOM

In the United Kingdom, production comes from fields in different areas:

- in the Alwyn area ④ (100%), production from the Alwyn and Dunbar fields represents 55% of this area. The rest of the production comes from satellites linked to these fields;
- in the Central Graben area ⑤, TOTAL operates the Elgin/Franklin complex (46.17%)

which hosts the West Franklin (46.17%) and Glenelg (58.73%) fields. The project to redevelop Elgin, which started in 2016 and included the drilling of five wells, was completed in 2019. A new infill well was drilled on Franklin. TOTAL also operates the Culzean gas and condensate field (49.99%) which started production in June 2019. This start-up is the main reason for the rise in production in the United Kingdom in 2019. In the Quad 30 area, the Group holds an interest in the Flyndre field (65.94%). TOTAL announced a discovery on the Glengorm prospect (25%), close to existing TOTAL operated infrastructure, in January 2019;

- in the West of Shetland area ⑥, TOTAL operates the producing Laggan, Tormore, Edradour and Glenlivet fields (all 60%). A delineation well was drilled in 2019 following the discovery of gas on the Glendronach prospect in 2018;
- in the Quad 9 area ⑦ in the eastern North Sea, TOTAL operates the Gryphon (86.5%), Maclure (38.19%), South Gryphon (89.88%) and Tullich (100%) fields. In the Quad 15 area, TOTAL holds 100% interests in the Dumbarton, Balloch, and Lochranza fields, whose production is processed by the Global Producer III FPSO also operated by TOTAL.

In 2019, TOTAL maintained its interests in the PEDL 273, 305 and 316 (20%) shale gas exploration and production licenses, after sales of interests in various licenses and leases in 2017.

In July 2019, TOTAL signed an agreement to sell several non-strategic assets in the

eastern North Sea. They include Dumbarton, Balloch, Lochranza and Drumtochty (100%), Flyndre (65.94%), Affleck (66.67%), Cawdor (60.6%), Golden Eagle (31.56%), Scott (5.16%), and Telford (2.36%) fields. In May 2020, TOTAL reiterated its commitment to completing the sale.

#### DENMARK

In Denmark, TOTAL is operator of the Danish Underground Consortium (DUC) ⑧ (43.2%) resulting from the acquisition of Mærsk Oil in March 2018 and of Chevron Denmark Inc. in April 2019. The operated production (100%) comes from the two main DUC assets: Dan/Halfdan and Gorm/Tyra fields. The Tyra field facilities constitute the main gas offshore treatment hub in Denmark. Production on the Tyra field was stopped in September 2019 as part of the redevelopment of the field that aims to extend the reserve life of the Tyra Denmark offshore gas field, the restart of which is expected in 2022. During the shut-down of the facilities in the field, the gas is exported from the facilities of the Dan/Halfdan fields.

#### NETHERLANDS

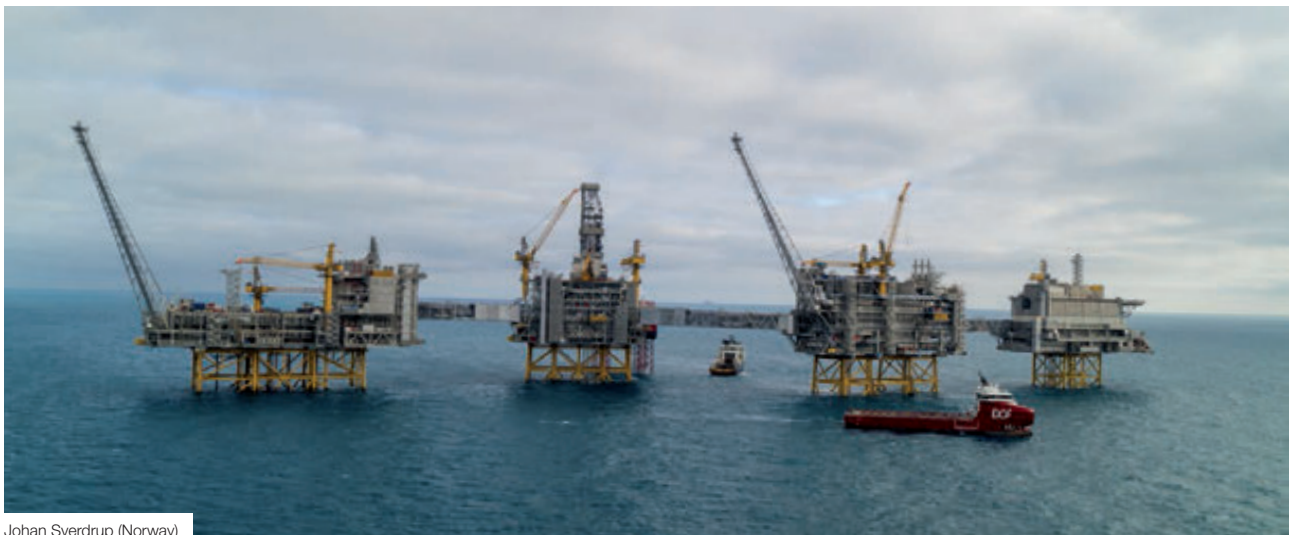
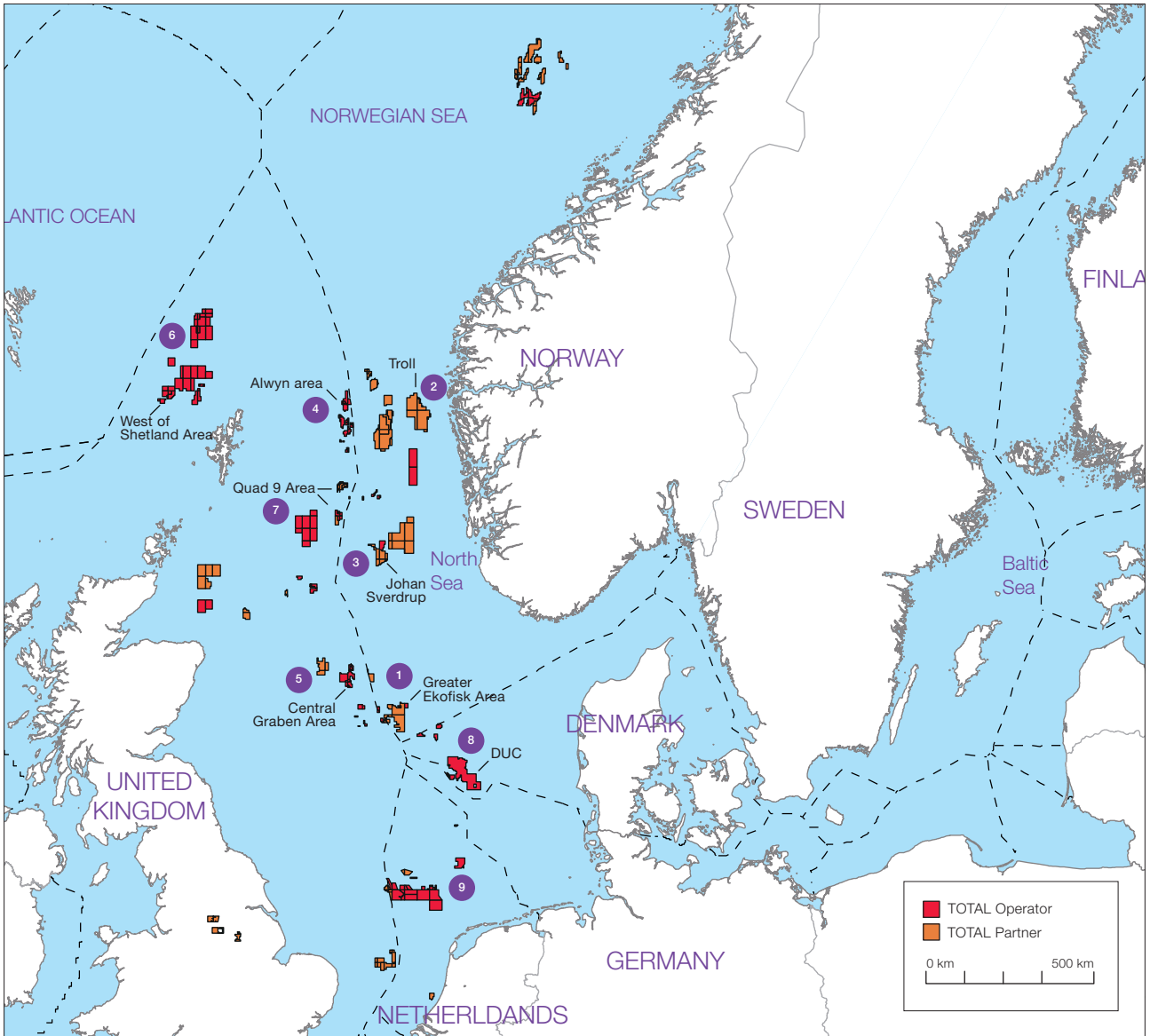
In the Netherlands, production is sourced from the assets held in the 22 offshore production licenses ⑨, of which 18 are operated. Cost-cutting efforts allowed operations to restart at the end of 2019 on the F15 platform the production of which was stopped for decommissioning in 2017.



Culzean (UK)

(1) TOTAL's aggregate interest through a direct interest of 49% in ZAO Terneftegas with PAO Novatek and a 9.89% indirect interest through its shareholding in PAO Novatek.





Johan Sverdrup (Norway)

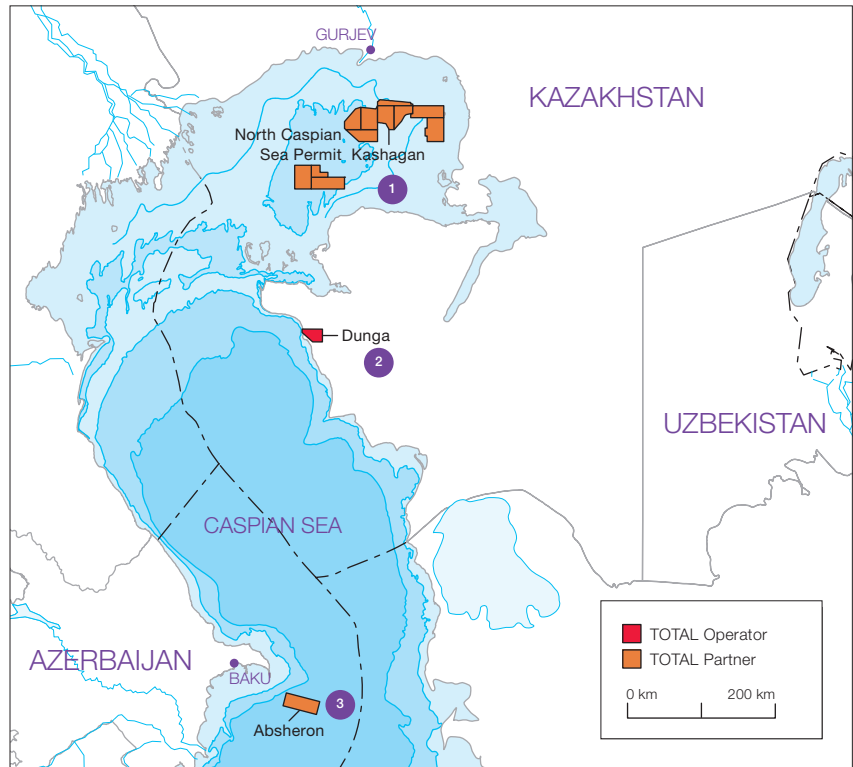


### KAZAKHSTAN

In Kazakhstan, oil and gas production comes mainly from the Kashagan field ① operated by the North Caspian Operating Company (NCOC) in the North Caspian license (16.81%). The production of the first phase of the Kashagan field and of the corresponding treatment plant, which started in 2016, has reached the capacity of 400 kb/d. On the Dunga field ② (60%, operator), the extension of the contract until 2039 was signed in July 2019, enabling the development project of phase 3 to be launched.

### AZERBAIJAN

In Azerbaijan, the development of the Absheron gas and condensates field ③ (50%) in the Caspian Sea, which is operated by JOCAP (Joint Operating Company of Absheron Petroleum, a company jointly held by TOTAL and SOCAR), is in progress, with a view to supplying the domestic market. The production capacity of this first development phase is expected to be 35 kboe/d. The drilling operations, which were completed in November 2019, confirmed the significant potential of the deposit, beyond the first development phase.



Kashagan (Kazakhstan)

**ITALY**

In Italy, TOTAL holds interests in and is operator of the Tempa Rossa field (50%) located on the Gorgoglione concession (Basilicate region), as well as three exploration licenses. Production at Tempa Rossa started in December 2019 and is expected to reach the planned capacity of 50 kboe/d in 2020.

**GREECE**

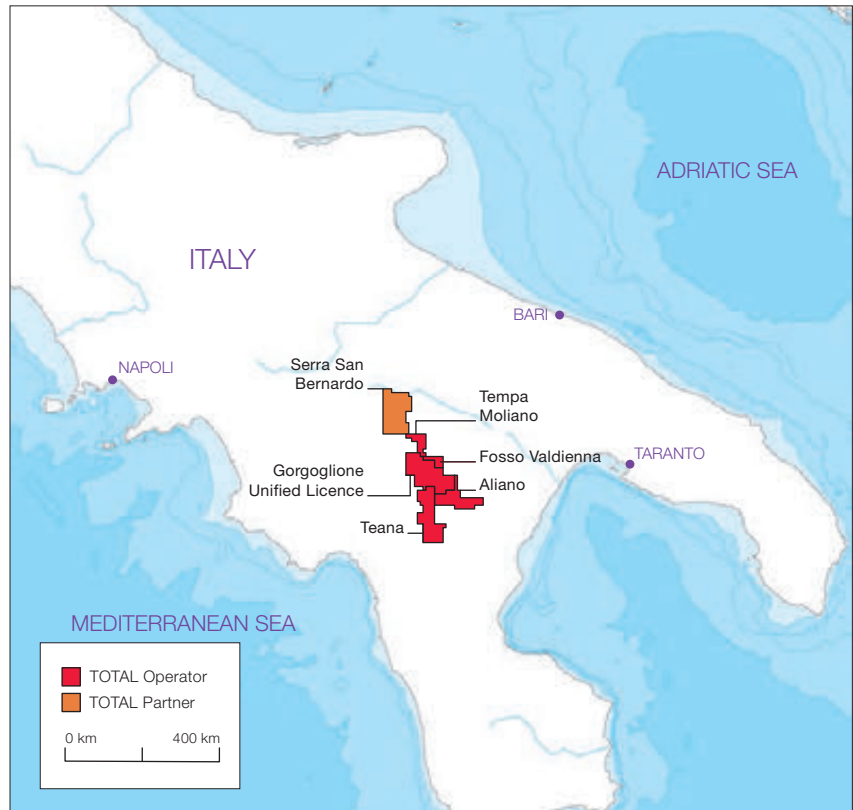
In Greece, TOTAL holds interests (50%) and is operator of the exploration license on Block 2 in the Ionian Sea since March 2018. In October 2019, TOTAL was allocated interests (40%) and the operatorship of two licenses to explore two offshore blocks to the west and south-west of Crete.

**BULGARIA**

In Bulgaria, TOTAL holds interests (40%) and is operator of the deep offshore exploration Block Han Asparuh. A 3D seismic campaign is expected in 2020.

**REST OF THE EUROPE  
AND CENTRAL ASIA**

TOTAL also holds interests (33.35%) in an exploration license without activity in Tajikistan.



Tempa Rossa (Italy)



## → Africa (excluding North Africa)

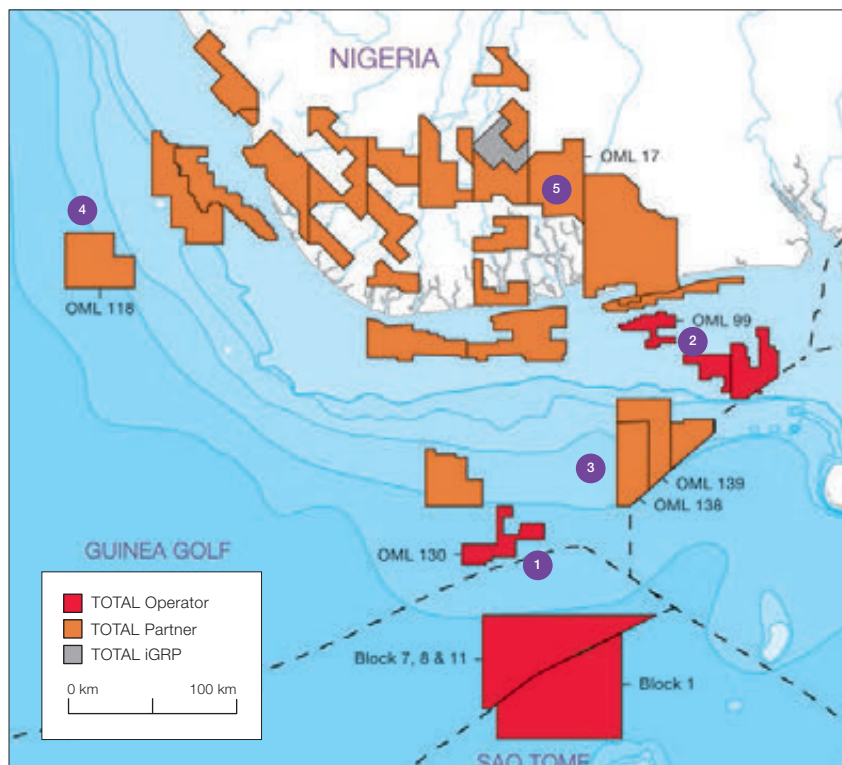
### NIGERIA

In Nigeria, the Group's production is mainly offshore. TOTAL operates five production licenses (OML) on the 33 leases in which the Group has interests.

TOTAL has offshore operations, notably on the following operated leases:

- on OML 130 ① (24%, operator), the production on the Egina field started in December 2018. The Egina field reached its production plateau at more than 200 kboe/d in May 2019. The Preowei field development plan was approved by the authorities in 2019;
- on OML 99 ② (40%, operator), the final investment decision of the Ikike field was taken in January 2019;
- on OML 139 (18%), the plan to develop the Owowo discovery, made by TOTAL in 2012, is under study. This discovery is near the OML 138 license, where the Usan field is in production ③;
- on OML 118 ④ (12.5%), the tender phase of the Bonga South West Aparo project (10%, unitized) was launched in February 2019.

TOTAL is also present onshore, notably through the SPDC joint-venture (10%) which has 20 production licenses (of which 17 are located onshore), the 2019 production was 60 kboe/d. TOTAL has obtained 20-year extensions for 3 offshore licenses in 2014, and for 16 onshore licenses in 2018. The sale process of the Group's shares in OML 17 ⑤ is ongoing. LNG activities in the country are presented in the iGRP segment.



### ANGOLA

In Angola, where TOTAL is the country's leading operator, the Group production mainly comes from Blocks 17, 32, 0, 14 and 14K:

- the deep offshore Block 17 ⑥ (40%, operator), TOTAL's main asset in Angola, is composed of four major producing hubs: Girassol, Dalia, Pazflor and CLOV. The three brownfield projects, Zinia Phase 2, Clov Phase 2 and Dalia Phase 3, are satellite developments of the Pazflor, CLOV and Dalia FPSOs and are expected to come into production in 2020 and 2021. Following the agreement signed in December 2019 with state-owned Sonangol and the National Oil, Gas and Biofuels Agency (ANPG), all Block 17 production licenses were extended until 2045. Sonangol will simultaneously obtain a 5% interest in Block 17 and an additional 5% interest in 2036. After the entry of Sonangol in Block 17, the Group's interest will be 38% with operatorship. Other brownfield projects for extending the production of Pazflor, Rosa, Girassol



Egina FPSO (Nigeria)

- and Dalia are under study. Exploration may also help unlock further resources as two nearby exploration wells are expected to be drilled in 2020;
- on the deep offshore Block 32 ⑦ (30%, operator), production of the Kaombo project started in July 2018 with the start-up of the Kaombo Norte FPSO. The start-up of the second Kaombo Sul FPSO took place in April 2019. The discoveries in the central and northern parts of the Block (outside Kaombo) offer additional potential and are currently being assessed;
- on Block 0 ⑧ (10%), production comes from different fields, including in particular Mafumeira, where an additional drilling campaign is in progress;
- on Block 14 ⑨ (20%)<sup>(1)</sup>, 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 ⑩ (36.75%) is the offshore unitization area between Angola (Block 14) and the Republic of Congo. TOTAL holds interests (10%) in the Lianzi field located in Block 14K through Angola Block 14 BV.

TOTAL signed in December 2019 an agreement with Sonangol to acquire interests in Blocks

(1) Interest held through Angola Block 14 BV (TOTAL 50.01%).

**AFRICA  
(EXCLUDING  
NORTH AFRICA)**

Nigeria  
Angola  
Republic of Congo  
Democratic Republic  
of Congo

Gabon  
Uganda  
Mauritania  
Senegal  
Kenya

South Africa  
Namibia  
Rest of the Africa zone

20/11 (50%) and 21/09 (80%) in the Kwanza, offshore Luanda, in view of developing a new production hub. As per the agreement, TOTAL will become operator of the development of the two licenses where several discoveries were made, before putting in place an operating company with Sonangol.

In exploration, in 2018, TOTAL acquired a license for Block 48 ⑪ (50%, operator) which plans the drilling of an exploration well during the first two-year period. LNG activities in the country are presented in the iGRP segment.

**REPUBLIC OF CONGO**

In the Republic of Congo, the Group's production comes from the Total E&P Congo subsidiary, owned by TOTAL (85%) and Qatar Petroleum (15%).

Two significant assets operated by Total E&P Congo are in production in the Moho Bilondo license ⑫: the Moho Bilondo field (53.5%, operator) and the Moho Nord field. The Moho Nord field has been producing more than its capacity of 100 kboe/d since the start of 2018 due to strong productivities of the wells.

Block 14K ⑩ (36.75%) is the offshore unitization area between Angola (Block 14) and the Republic of Congo (Haute Mer license). TOTAL holds interests (26.75%) in the Lianzi field located in Block 14K through Total E&P Congo.

Total E&P Congo is the operator of Djéno (63%), the sole oil terminal in the country.

Three new exploration licences were granted to TOTAL by the Republic of Congo in February 2020: Marine XX ⑬ in deep offshore, as well as Nanga ⑭ and Mokelembembe located onshore.

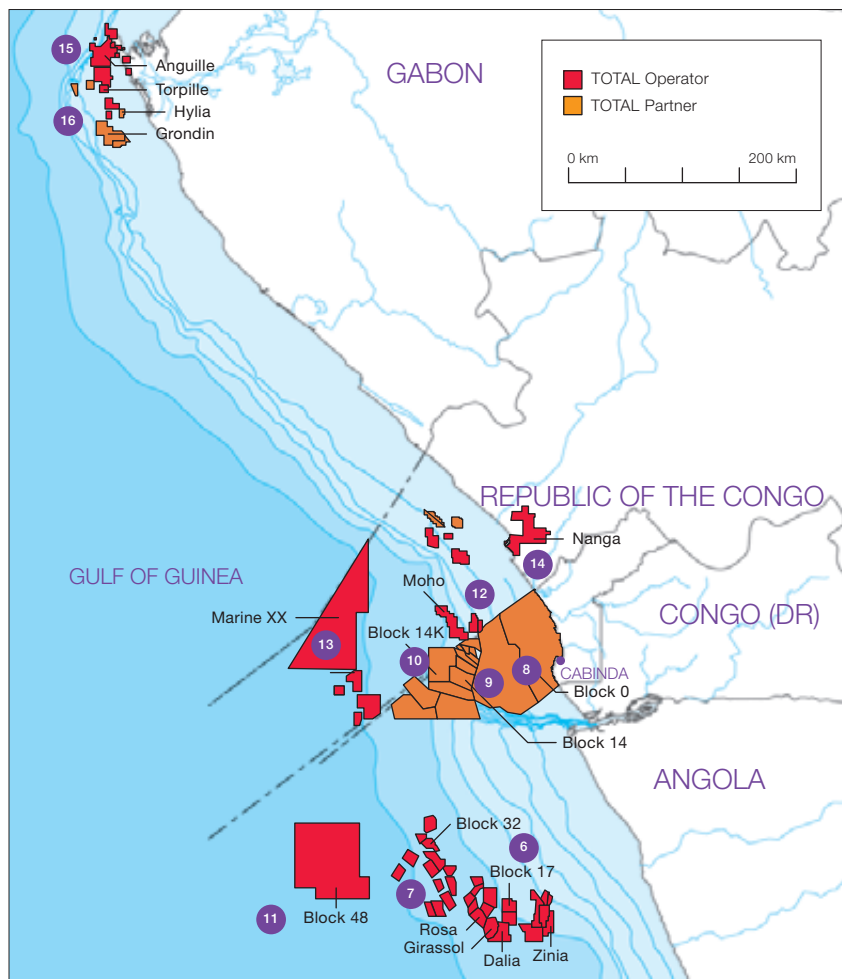
**DEMOCRATIC REPUBLIC OF CONGO**

In the Democratic Republic of Congo, after the completion of seismic acquisition work, TOTAL informed the authorities of its withdrawal from Block III in January 2019.

**GABON**

In Gabon, production comes from TOTAL's shareholding in Total Gabon<sup>(1)</sup>. Total Gabon is the operator (100%) of the Anguille and Torpille ⑮ sector offshore fields, the Mandji Island sector onshore fields and the Cap Lopez oil terminal. In 2019, Total Gabon finalized a drilling campaign on Torpille sector as part of the redevelopment of the field.

Total Gabon also holds interests in the licenses in the Grondin (65.28%) and Hylia ⑯ (37.50%) sectors, where the first phase of a conversion campaign was launched in 2019 to change the activation of the gas-lift wells into submerged pumps.



Kaombo Norte FPSO (Angola)

(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%).



## UGANDA

In Uganda, TOTAL holds a 33.33% interest in Blocks EA1, EA2 and EA3 **1** for the development of the Lake Albert project. TOTAL is the operator of Block EA1, where most of the reserves are located. The project has reached an advanced technical stage, in terms of the engineering of the surface facilities and the oil pipeline, as well as for the drilling. The State-owned company has an option to acquire a 15% interest in the project, which would reduce TOTAL's share to 28.33%, if exercised.

In January 2017, TOTAL and Tullow signed a purchase agreement that enabled TOTAL to acquire 21.57% of Tullow's 33.33% interest in the Lake Albert license. Despite in-depth discussions with the authorities, an agreement on the fiscal conditions of the transaction could not be reached, and the 2017 agreement expired on August 29, 2019.

However, in April 2020, an agreement was reached, through which TOTAL shall acquire Tullow's entire interests in Uganda Lake Albert development project including the East African Crude Oil Pipeline. Under the terms of the deal, TOTAL will acquire all of Tullow's existing 33.33% stake in each of the Lake Albert project licenses EA1, EA1A, EA2 and EA3A and the proposed East African Crude Oil Pipeline System. The transaction is subject to approvals.

## MAURITANIA

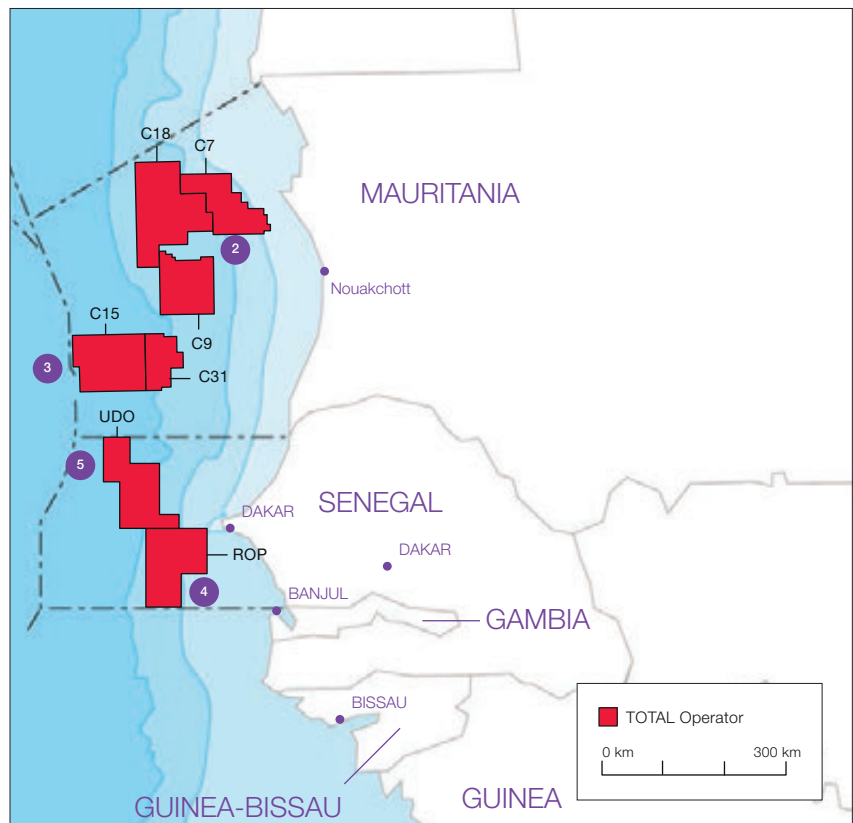
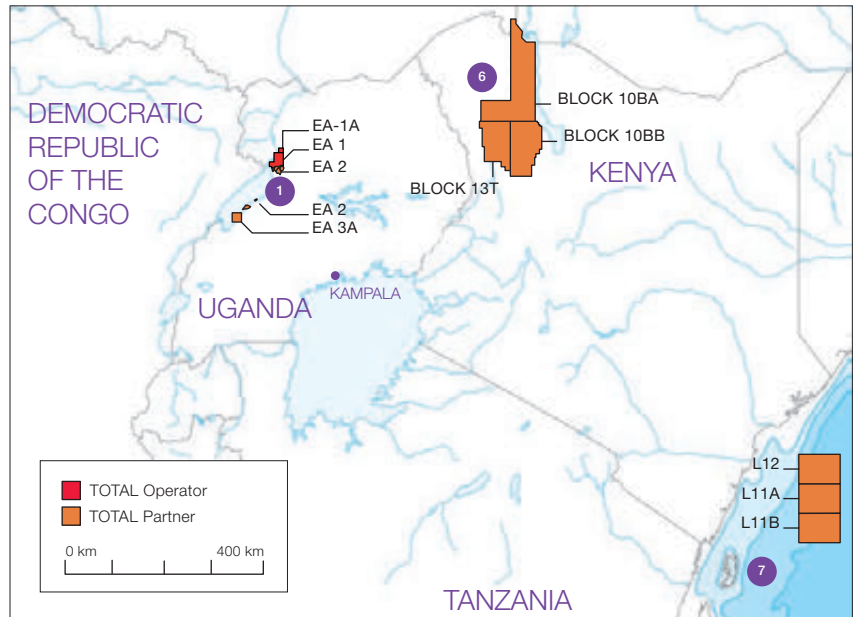
In Mauritania, TOTAL continued exploration activities on the five operated offshore Blocks: Block C9 (50%) since 2012, C7 (90%) and C18 **2** (90%) since 2017, and Blocks C15 (90%) and C31 **3** (90%) since 2019. On Block C18, TOTAL entered the second exploration period in June 2019. After the drilling of a well in 2019, TOTAL relinquished the Block C9 in January 2020.

## SENEGAL

In Senegal, TOTAL continued exploration activities on operated offshore blocks: Rufisque Offshore Profond (ROP) **4** (60%) signed in 2017 and Ultra Deep Offshore (UDO) **5** (90%) since 2018. In 2019, TOTAL drilled an exploration well on Block ROP while the entry in the first exploration period on Block UDO was approved by decree.

## KENYA

In Kenya, TOTAL holds interests in the onshore exploration licenses **6** (10BA, 10BB and 13T) and the offshore exploration licenses **7** (L11A, L11B and L12). In August 2019, TOTAL announced the signing of an agreement entitling Qatar Petroleum to acquire a part of its interests in these offshore licenses. The



finalization of this transaction remains subject to the authorities' approval. Several oil discoveries were made on Blocks 10BB and 13T and a preliminary early production project is in progress to assess the production potential.

**AFRICA  
(EXCLUDING  
NORTH AFRICA)**

Nigeria  
Angola  
Republic of Congo  
Democratic Republic  
of Congo

Gabon  
Uganda  
Mauritania  
Senegal  
Kenya

South Africa  
Namibia  
Rest of the Africa zone

**SOUTH AFRICA**

In South Africa, TOTAL operates three deep offshore exploration licenses on the South Outeniqua Block 1 (100%), Block 11B/12B 2 (45%) and since November 2019 the DWOB license (80%). TOTAL also holds an interest in the East Algoa license (30%). Following the drilling of the first Brulpadda-1Ax exploration well on Block 11B/12B in January 2019, TOTAL announced a discovery of gas and condensates and proceeded with a 3D seismic acquisition. Preparations are well advanced for the continuation of the exploration program, with additional 2D and 3D seismic acquisitions which started in December 2019 and additional drillings are planned in 2020. Additionally, in May 2019, TOTAL announced the signing of a binding agreement with the Occidental Petroleum Corporation for the acquisition of the assets held by the Anadarko Petroleum Corporation in South Africa (exploration licenses 5/6/7 within the Orange Basin). The acquisition was closed in January 2020.

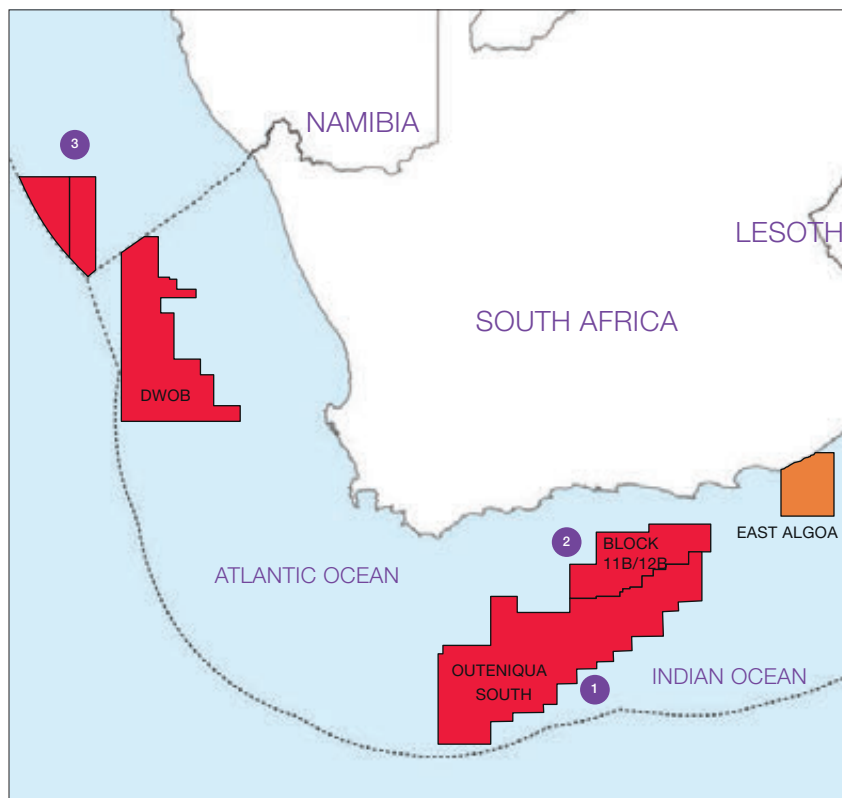
**NAMIBIA**

In Namibia, TOTAL operates two exploration permits in the deep offshore on Blocks 2912 (85%) and 2913B 3 (70%). An exploration well is planned to be drilled in 2020 on the Venus prospect (Block 2913B). In August 2019, TOTAL announced the signing of agreements entitling Qatar Petroleum to acquire part of its interests in these Blocks. The completion of the transaction is expected in 2020.

**REST OF THE AFRICA ZONE**

TOTAL directly holds interests in three deep offshore exploration licenses in Ivory Coast, including Blocks CI-705 (90%,operator) and CI-706 (90%, operator) signed in June 2019, in addition to Block CI-605 (90%, operator). Additionally, two new licenses were granted to TOTAL in March 2019 one for Block ST-1 in São Tomé et Príncipe and the other for Blocks JDZ-7,8,11 in the joint development area between São Tomé et Príncipe and Nigeria.

In May 2019, TOTAL entered into a SPA with Occidental in order to acquire Anadarko's assets in Africa. Under this agreement, it was provided that the acquisition of the Ghana's assets was conditional upon the completion of the Algeria assets' acquisition. Given that Occidental informed TOTAL that they would not be in a position to sell its interests in Algeria and in light of the extraordinary market environment and the lack of visibility that the Group faces, TOTAL has decided not to pursue the completion of the purchase of the Ghana assets. LNG activities in Africa are presented in the iGRP segment.



Exploration asset (Uganda)

## → Middle East and North Africa

### UNITED ARAB EMIRATES

In the United Arab Emirates, the Group's production, mainly oil, is sourced from different concessions.

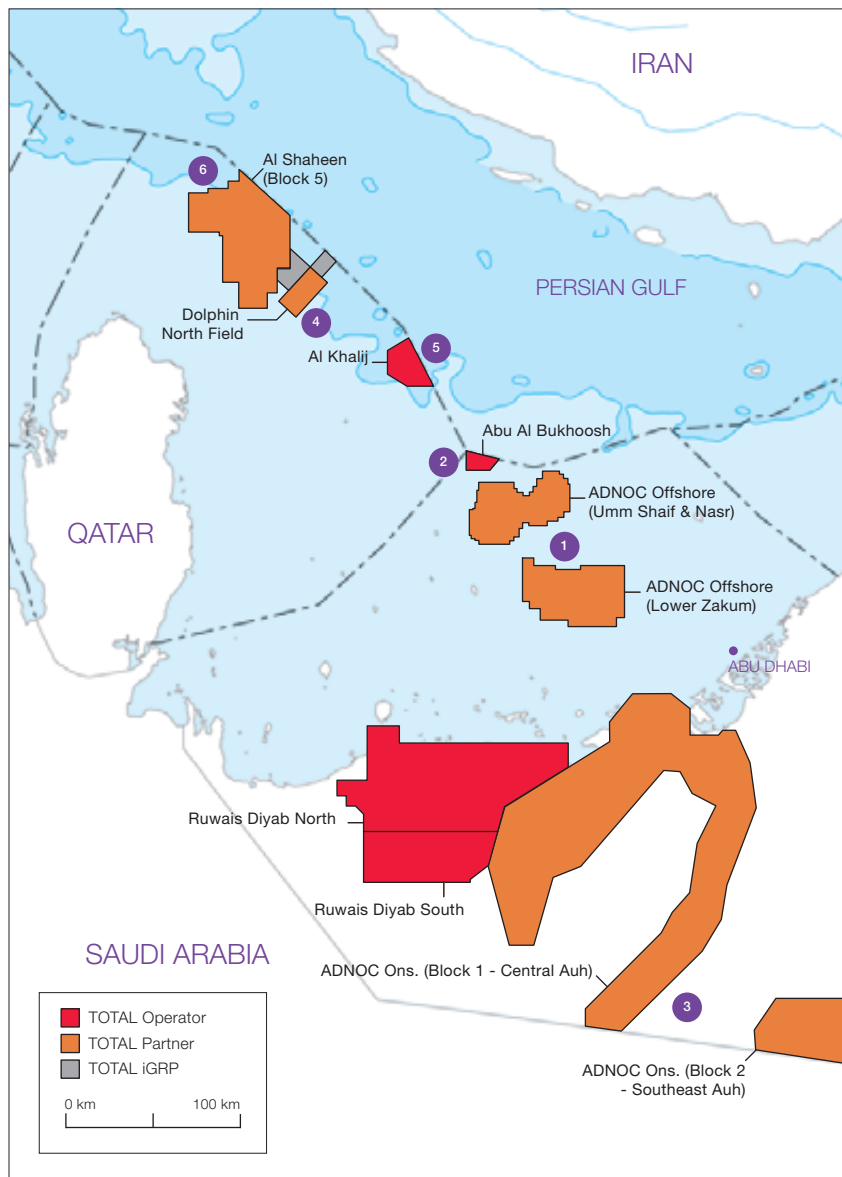
Since March 2018, the Group holds a 20% interest in the Umm Shaif/Nasr offshore concession and a 5% interest in the Lower Zakum offshore concession, for a period of 40 years operated by ADNOC Offshore ❶, which follows the previous Abu Dhabi Marine Areas Ltd. (ADMA) offshore concession. TOTAL operates the Abu Al Bukhoosh offshore field ❷ (100%) for which the contract was extended for 3 years in March 2018.

In 2015, the Group had also renewed its 10% interest in the ADNOC Onshore ❸ concession (formerly the Abu Dhabi Company for Onshore Petroleum Operations Ltd.) for 40 years. This concession covers the 15 main onshore fields of Abu Dhabi.

TOTAL also holds a 10% shareholding in ADNOC Gas Processing (formerly Abu Dhabi Gas Industries), which produces NGL and condensates from the associated gas produced by ADNOC Onshore.

TOTAL also holds a 24.5% shareholding in Dolphin Energy Ltd. that sells gas from the Dolphin Block ❹ in Qatar to the United Arab Emirates and Oman. The operations of Dolphin Energy were not impacted by the evolution of the diplomatic relations between the United Arab Emirates and Qatar.

In November 2018, TOTAL and the state-owned Abu Dhabi National Oil Company (ADNOC) signed a concession agreement to launch an exploration program for unconventional onshore gas on Block 1 in the Diyab prospection zone. In addition to finishing the fracking and testing of the existing three exploration wells, the program consists of three appraisal wells and two exploration wells. LNG activities in the country are presented in the iGRP segment.



### QATAR

In Qatar, production comes mainly from the Group's interests in the Al Khalij offshore field ❺ (40%, operator) and the Al Shaheen field ❻ (30%). The Al Shaheen field, located offshore, 80 km north of Ras Laffan, is operated by the North Oil Company, held by TOTAL (30%) and Qatar Petroleum (70%). TOTAL has held a 25-year interest in this field since 2017. TOTAL also holds a 24.5% interest in the offshore Dolphin Block ❹, producing gas that is sold in the United Arab Emirates and Oman. The operations of Dolphin Energy were not impacted by the evolution of the diplomatic relations between the United Arab Emirates and Qatar. LNG activities in the country are presented in the iGRP segment.



Al Shaheen (Qatar)



MIDDLE EAST  
AND NORTH AFRICA

United Arab Emirates  
Qatar  
Libya  
Algeria  
Oman

Iraq  
Yemen  
Iran  
Syria  
Cyprus

Lebanon  
Rest of the zone of the  
Middle East and North  
Africa

**LIBYA**

In Libya, production partly comes from the Al Jurf fields located on offshore areas 15, 16 and 32 ① (75%) and from the El Sharara fields located on onshore areas 129-130 (30%) and 130-131 ② (24%). On these areas, production was shutdown in July 2018 and from December 2018 to February 2019 for security reasons and around 10 days in July-August 2019 due to the unavailability of an export pipeline. The Mabruk fields (75%), located on onshore areas 70 and 87 ③, have been shutdown since the end of 2014.

Additionally, in March 2018, TOTAL acquired Marathon Oil Libya Limited, which holds an 16.33% interest in the onshore Waha Concessions, with a production of approximately 350 kboe/d at the end of 2019. This acquisition was definitively approved by the competent authorities in December 2019.

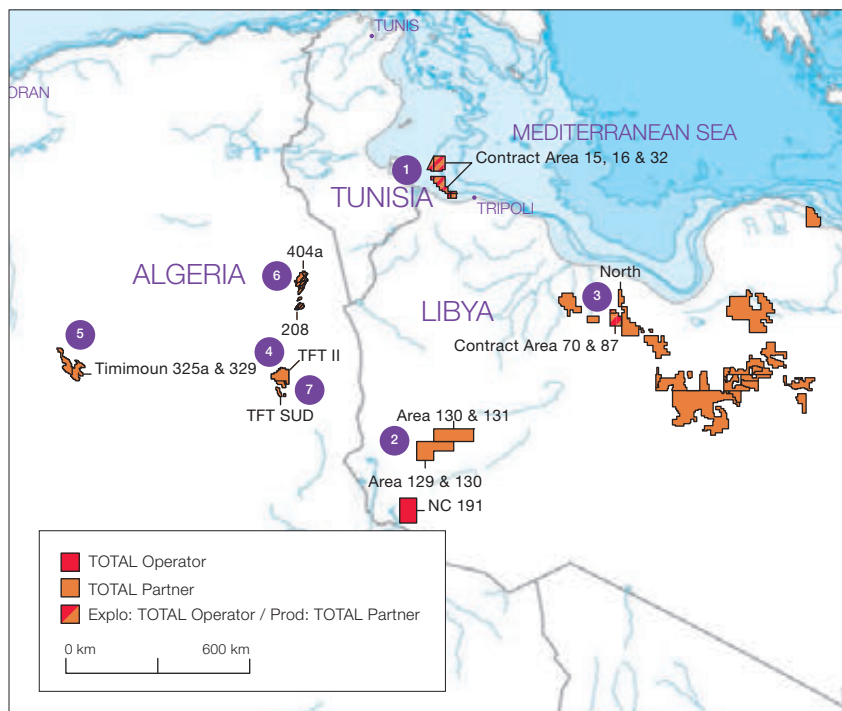
**ALGERIA**

In Algeria, production comes from the shares in the TFT II ④ and Timimoun gas fields ⑤ and in the oil fields in the Berkine basin (Blocks 404a and 208) ⑥.

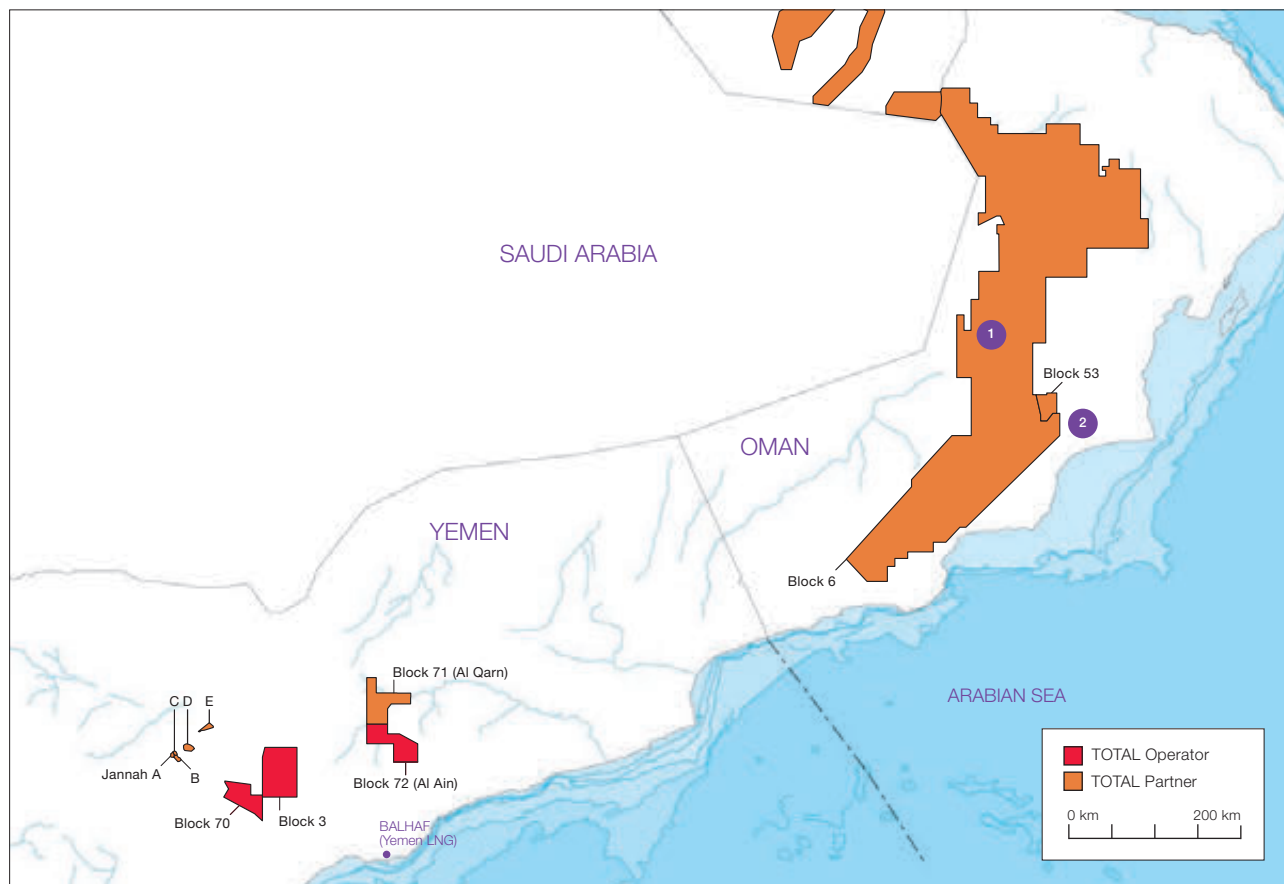
Under the terms of a Global Agreement signed in 2017 with the authorities, two new concession contracts and the corresponding contracts for the sale of gas came into effect for TFT II (26.4%) in October 2018 and for TFT SUD ⑦ (49%) in February 2019. Also, TOTAL finalized an agreement to buy the 22.6% share of a partner in TFTII. This acquisition is subject to the prior approval of the competent authorities. A concession contract and a gas marketing contract for Timimoun (37.75%) also took effect in July 2018, replacing those dated July 2012. Production on this field started in March 2018.

Additionally, in May 2019, TOTAL announced the signing of a binding agreement with the Occidental Petroleum Corporation to acquire the Anadarko Petroleum Corporation's assets in Algeria. However, in May 2020, Occidental informed TOTAL that, as part of an understanding with the Algerian authorities on the transfer of Anadarko's interests to Occidental, Occidental would not be in a position to sell its interests in Algeria.

Late 2018, TOTAL was granted two authorizations to conduct exploration works on two offshore prospective areas, with operatorship for one of them.



Block 404a (Algeria)



### OMAN

In Oman, TOTAL participates in the production of oil in Block 6 ① (4%) principally and on Block 53 ② (2%), the sale of which is subject to the approval of the competent authorities.

Additionally, in February 2020, TOTAL signed a concession agreement with the Oman government to explore the resources of the onshore Block 12, located in the Greater Barik area. LNG activities in the country are presented in the iGRP segment.

### IRAQ

In Iraq, the Group's production comes mainly from its 22.5% interest in the risked service contract for the Halfaya field, located in Missan province. Phase 3 of the project to develop the Halfaya field came into production in 2018 and reached the production plateau of 400 kb/d in March 2019. In July 2019, a contract was awarded for the treatment of the associated gas and the recovery of the LPG and condensates.

Following the finalization of the acquisition of Mærsk Oil in March 2018, TOTAL also holds an interest in the Sarsang field in Iraqi Kurdistan, which is already in production.

### YEMEN

TOTAL holds various stakes in four onshore exploration licenses, for which a situation of *force majeure* has been declared. In addition, TOTAL signed an agreement to sell its interest in Block 5 (Marib Basin, Jannah license, 15%) in 2018. This agreement remains subject to the authorities' approval. LNG activities in the country are presented in the iGRP segment.

### IRAN

In Iran, TOTAL ceased all operational activity in Iran before November 4, 2018. Following the withdrawal of the United States from the Global Joint Comprehensive Plan of Action in May 2018, TOTAL withdrew from the project SP11 of this giant South Pars gas field and finalized its withdrawal on October 29, 2018, before the re-imposition of US secondary sanctions on the oil industry as of November 5, 2018. TOTAL was the operator and had a 50.1% interest alongside the Chinese state-owned company CNPC (30%) and Petropars (19.9%); a wholly-owned subsidiary of National Iranian Oil Company (NIOC).

### SYRIA

In Syria, TOTAL ceased its activities that contributed to oil and gas production in December 2011.

### CYPRUS

In Cyprus, TOTAL is present in the offshore Blocks 6 (50%) and 11 (50%, operator) and entered the exploration Blocks 2 (20%), 3 (30%), 7 (50%, operator), 8 (40%) and 9 (20%) in October 2019.

### LEBANON

In Lebanon, TOTAL is operator since February 2018 of two offshore exploration Blocks 4 and 9 (40%, operator).

### REST OF THE ZONE OF THE MIDDLE EAST AND NORTH AFRICA

TOTAL also holds interests in an offshore exploration license in Block 7 (25%) in Egypt. LNG activities in Middle East and North Africa are presented in the iGRP segment.

→ Americas

UNITED STATES

In the United States, hydrocarbon production in the Gulf of Mexico comes from its interests in the deep offshore fields Tahiti ① (17%), and, since March 2018, Jack ② (25%). It divested its 33.33% interest in the Chinook field in 2019.

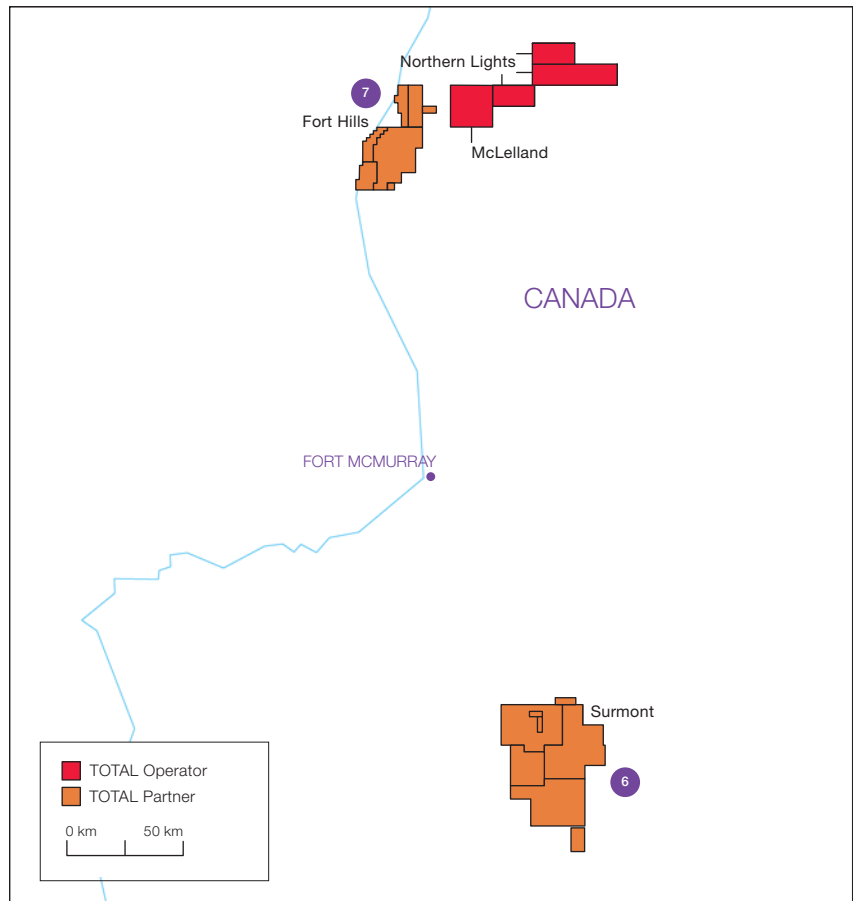
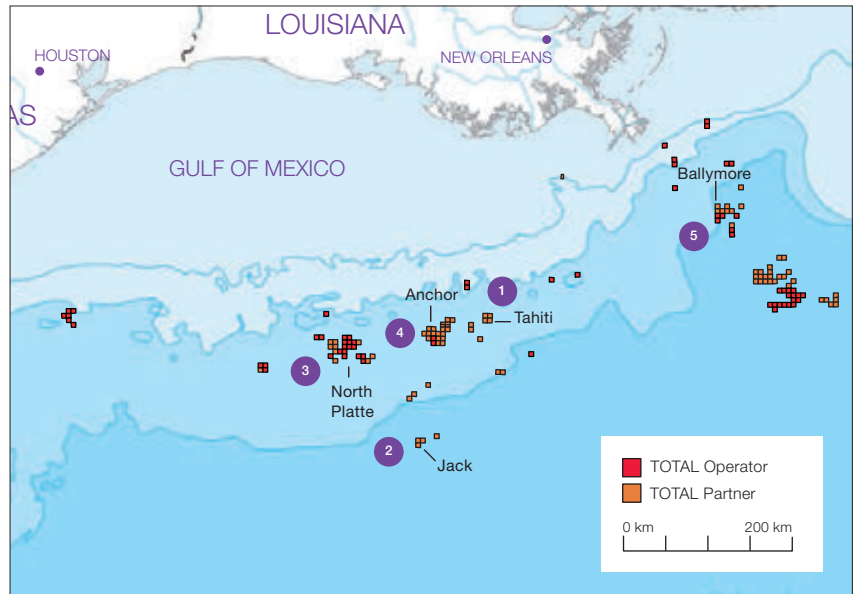
TOTAL is operator of the North Platte ③ discovery (60%) and holds interests in the Anchor ④ (37.14%) discoveries. In 2019, the Group decided to launch the development of Anchor. Production is expected to start on Anchor in 2024, and the field is expected to reach a plateau of 80 kboe/d.

On the Ballymore ⑤ discovery (40%), announced in January 2018, the studies launched after the appraisal program completed in 2019, aim to establish the profitability of the project by optimizing its development plan.

TOTAL also holds a 25% interest in an asset in the Utica basin (on mining acreage located mainly in Ohio), where TOTAL has not taken part in any drilling in the last three years. LNG activities in the country are presented in the iGRP segment.

CANADA

In Canada, the Group's output comprises bituminous oil sands. TOTAL has a 50% interest in Surmont ⑥, a Steam Assisted Gravity Drainage (SAGD) production project, and a 24.58% interest of the Fort Hills ⑦ mining extraction project, both in the province of Alberta. The application in January 2019 of production quotas by the Alberta government affected the production of Surmont and Fort Hills, but significantly improved the netbacks of the projects.





ARGENTINA

In Argentina, TOTAL operated approximately 27%<sup>(1)</sup> of the country's gas production in 2019:

- in Tierra del Fuego ❶, on the CMA-1 concession, TOTAL operates the Ara and Cañadon Alfa Complex onshore fields and the Hidra, Carina, Aries and Vega Pleyade offshore fields (37.5%);
- in the Neuquén onshore Basin ❷, the Group holds interests in 10 licenses and operates six of them, including Aguada Pichana Este and San Roque, where production has already started. Three shale gas and oil pilot projects operated by TOTAL were launched: the first on the Aguada Pichana Block, where production started mid-2015 in order to produce gas; the second on the Rincón la Ceniza Block, located on the gas and condensate portion of Vaca Muerta (45%, operator), where production started in 2016; and the third on the Aguada San Roque Block (24.71%, operator), started production in 2018 in order to produce oil.

Following the good results of the Aguada Pichana gas pilot project and a reduction in drilling costs, the first phase of development of the giant Vaca Muerta shale play was launched in 2017 in the eastern part of the Block. In this project, all the partners of Aguada Pichana have signed an agreement to split the Block in two which has enabled TOTAL to remain the operator of the Aguada Pichana Este Block, with 27.27% of the conventional part (Mulichinco), and 41% of the unconventional part (Vaca Muerta), and to adjust to 25% its interest in the Aguada Pichana Oeste, which is now non-operated by TOTAL and where a pilot came to production in 2017.

A second development phase was launched on the Aguada Pichana Este – Vaca Muerta Block in 2018. It should allow the production plateau to reach 500 Mcf/d, which corresponds to the capacity of the existing plant.

The wells of the first pilot on San Roque have been in production since 2018, and a second series of wells started up in May 2019, confirming the formation's oil potential.

The pilot development on the Rincón la Ceniza Block was completed in 2019 with the start of production of three new wells in the gas and condensates part. The delineation well drilled in 2016 on the neighboring La Escalonada Block in order to test the oil portion of the formation has also demonstrated good productivity. This well was connected to the Rincón la Ceniza plant in 2019. Two additional wells on the Rincón la Ceniza are expected to confirm the oil potential of these two blocks.



Vaca Muerta (Argentina)

In December 2019, TOTAL divested its 2.51% interests in the bloc Sierra Chiata in the Neuquén onshore Basin.

In Exploration, TOTAL is operator of three new exploration licenses, in conventional

offshore: CAN 111 and CAN 113 (50%) since October 2019 and MLO 123 ❸ (37.5%) since November 2019.

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

**BOLIVIA**

In Bolivia, TOTAL is present on six licenses, five of which are in production ①: San Alberto (15%), San Antonio (15%), the XX Tarija Oeste Block (Itau) (41%), Aquio and Ipati (50%, operator).

Production on the Incahuasi field, on the Aquio and Ipati Blocks, started in 2016. The connection of the ICS-3 well in 2018, the drilling of the ICS-5 well in May 2019, and the increase in the capacity of the treatment plant to 390 Mcf/d, are expected to durably maintain the production of the field.

On the Azero exploration license (50%, operator), the drilling of the NCZ-X1 exploration well continued in 2019.

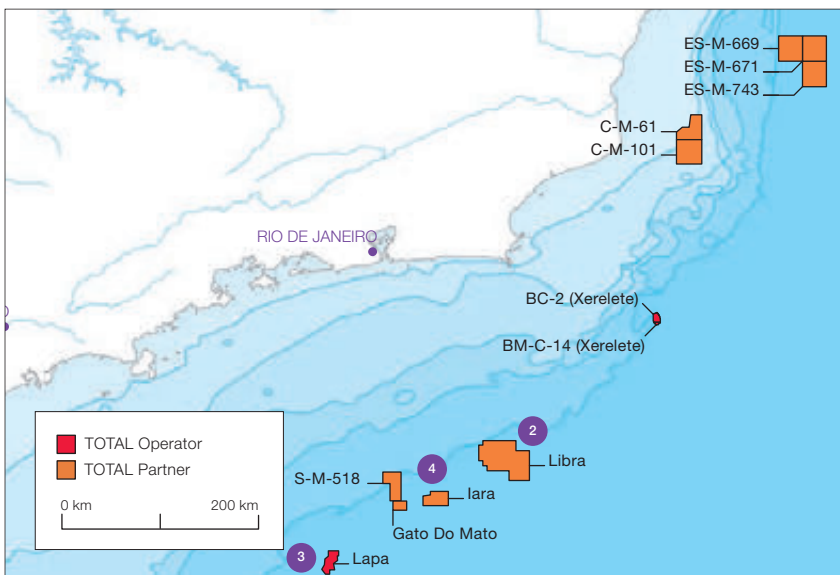
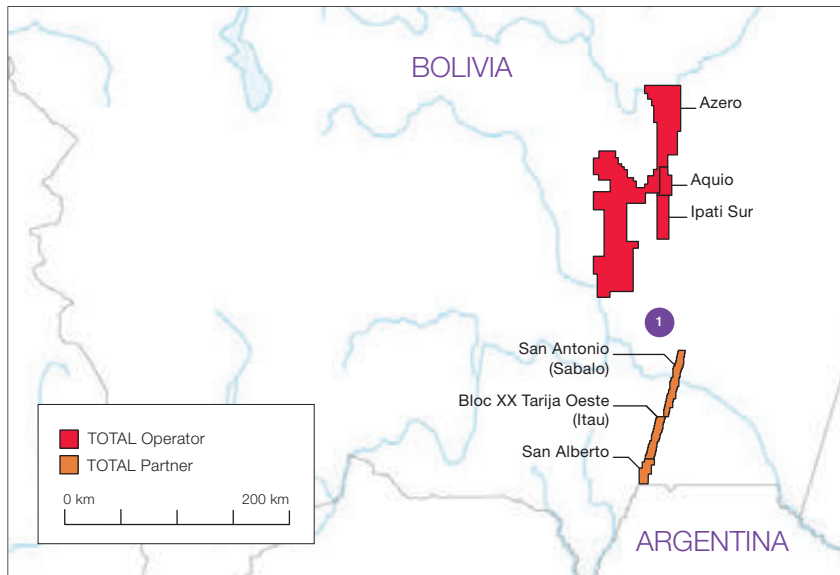
**BRAZIL**

In Brazil, production comes from the Mero field in the Libra ② (20%), Lapa ③ (35%, operator) and Iara ④ (22.5%) Blocks. The acquisition by the Group of an additional 10% interest in Lapa under the agreement signed in December 2018, thus increasing TOTAL's interest in the asset from 35% to 45%, is ongoing. The finalization of this transaction remains subjects to the Brazilian authorities in 2020.

The Mero field is located in the Santos Basin, approximately 170 km off the coast of Rio de Janeiro. At year-end 2019, 18 wells had been drilled and the production started in 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 FPSO of the Mero development project, Mero 1, with a liquid treatment capacity of 180 kb/d was launched in 2017, is currently under construction and is expected to start up in 2021. The second development FPSO, Mero 2 (with 16 wells connected to the FPSO with a liquid treatment capacity of 180 kb/d) was launched in 2019 and is expected to start up in 2023.

On Iara, production started in November 2019, with the FPSO P-68 (capacity of 150 kb/d of oil) with a view to developing the Berbigao and Sururu-West fields. In June 2020, TOTAL and its partners announced the start-up of the FPSO P-70 (capacity of 150 kb/d of oil) which will produce the reserve of the Atapu field, located in the deepwater Santos Basin.

On Lapa, a drilling campaign started in mid-2019 on the north-east part of the field in order to increase the production of the FPSO (capacity of 100 kb/d) by adding two injector wells and replacing two productive wells, on which integrity problems had been detected. The development of the south-east part of Lapa is ongoing, with two productive wells and one injector well.



Lapa FPSO (Brazil)

In exploration, TOTAL and its partners Qatar Petroleum and Petronas were awarded Block C-M-541 at the 16<sup>th</sup> oil auctions of the ANP in October 2019. The Block is situated in the Campos pre-salt-bearing basin in ultra deep water. TOTAL's 40% interest in the Block is expected to decrease to 30% subject to the closing of an ongoing 10% farm-out. In addition, the Group holds 18 exploration licenses located in the Barreirinhas ①, Ceará ②, Espirito Santo, Foz do Amazonas ③ and Pelotas basins.

Under the terms of their strategic alliance, TOTAL and Petrobras have signed an agreement to promote the strengthening of technical cooperation between the two companies, 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.

TOTAL holds an interest in the Gato de Mato field discovered in 2012. The well GDM#3 drilled in 2019 has confirmed the field extension in the Block Gato de Mato South and allows to start development studies.

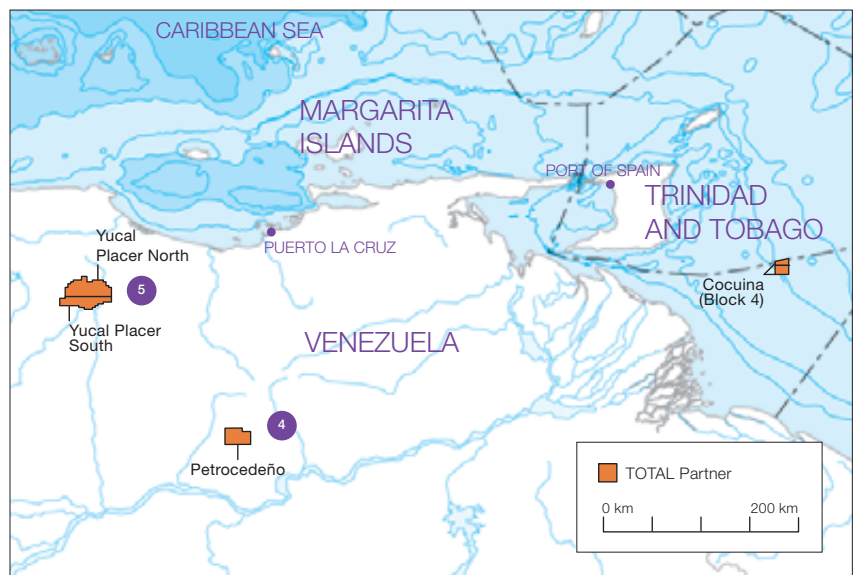
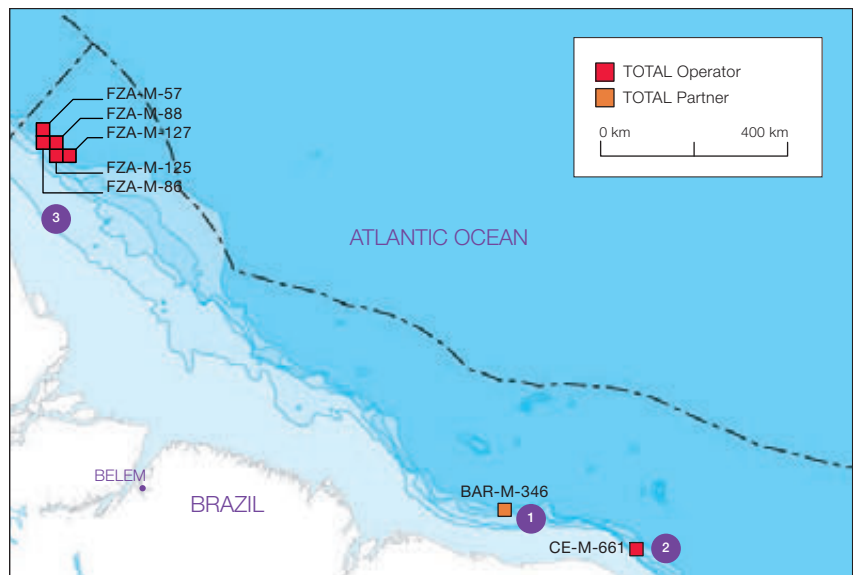
TOTAL also has interests in the fields undergoing assessment of Wahoo (28.6%) and Itaipu (40%) on the BMC-30 and BMC-32 Blocks, respectively in the Campos basin, following the acquisition of Mærsk Oil in 2018. On December 2019, TOTAL (70%, operator) and his partner informed the regulatory body ANP of their decision to relinquish the license containing the Xelerete field.

**VENEZUELA**

In Venezuela, the production is sourced from the shareholdings held by the Group in PetroCedeño S.A. ④ (30.32%) and in Yucal Placer ⑤ (69.5%). Following the new international economic sanctions imposed at the start of 2019, the development of the PetroCedeño extra heavy oil field and the debottlenecking project of the water separation and treatment facilities were suspended in 2019 (three wells were drilled in 2019, compared with 26 in 2018 and 49 in 2017). Production on the PetroCedeño field stopped at the end of June 2019 has resumed at the end of November at very low levels.



lara FPSO (Brazil)

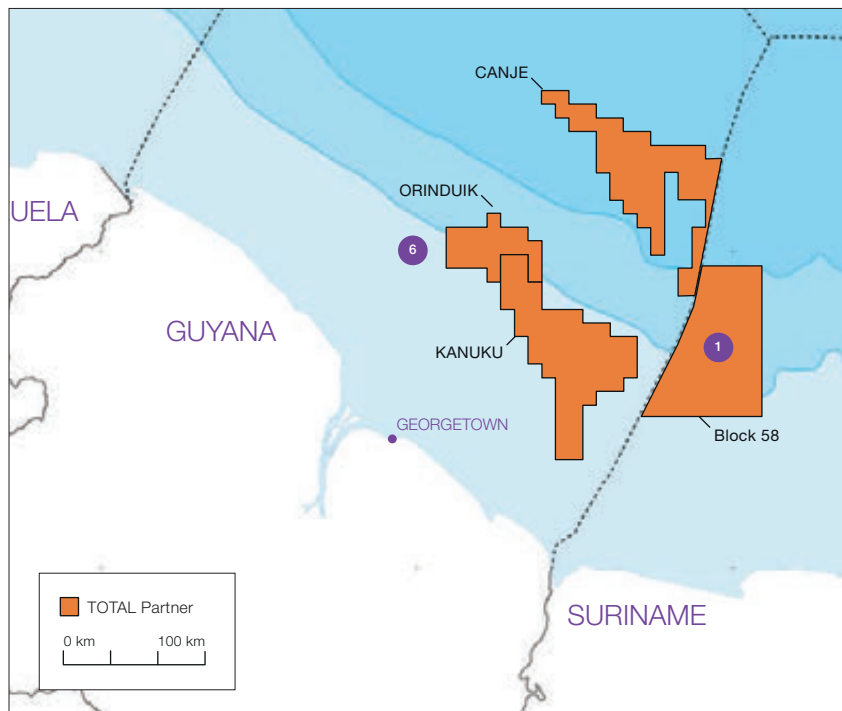




**SURINAME**

In Suriname, TOTAL acquired in December 2019 a 50% interest and the right to operatorship in the highly prospective Block 58 ① offshore Suriname. On this offshore Block, the discovery made early 2020 by the Maka Central -1 exploration well is now under evaluation and further drilling and testing will be carried out to appraise the resources and productivity of the reservoir. A second significant discovery was made in April 2020 with the Sapakara West-1 well on Block 58 offshore Suriname.

The well was drilled by a water depth of about 1,000 meters and encountered 79 meters net pay of high-quality light oil and gas condensate, in multiple stacked and good quality reservoirs. The Sapakara West-1 exploration well was drilled by Apache as operator with 50% working interest and with TOTAL as the JV partner with 50% working interest. The next exploration well will be drilled on the Kwaskwasi prospect, with a fourth exploration well to be planned back-to-back on the Keskesi prospect. TOTAL will become operator of the Block after the drilling of the 4<sup>th</sup> well.



**MEXICO**

In Mexico, TOTAL holds licenses in seven offshore exploration blocks in the Gulf of Mexico: Block 2 ② (50%, operator) located in the Perdido Basin, Blocks 1 ③ (33.33%) and 3 ④ (33.33%) located in the Salina Basin, Block 15 (60%, operator), as well as Block 32 (50%), Block 33 (50%, operator) and Block 34 (42.5%) located in the shallow waters of the Campeche Basin ⑤. TOTAL has informed Mexican authorities of its intention to give back the Block 2. LNG activities in the country are presented in the iGRP segment.

**GUYANA**

In Guyana, TOTAL has interests in the Canje Block (35%), the Kanuku Block (25%) and the Orinduik Block (25%) as part of the exploration of the prolific offshore Guyana Basin ⑥. In August 2019, TOTAL announced the signing of an agreement entitling Qatar Petroleum to acquire 40% of the company that owns the interests in Orinduik and Kanuku. The finalization of this transaction remains subject to the authorities' approval. Two discoveries currently being evaluated were made in 2019 on Orinduik Block.

**REST OF THE AMERICA ZONE**

At the end of 2018, TOTAL disposed of its interests in the Aruba exploration license. In French Guiana, the Guyane Maritime license (100%) expired in June 2019. In Colombia, following the stoppage of production on the Nicosta field, in which TOTAL holds a 71.4% interest, the Group decided to withdraw from the production sharing contract.



→ Asia-Pacific

THAILAND

In Thailand, the production of condensates and natural gas comes from the Bongkot ① (33.33%) offshore gas and condensates field and is all bought by the PTT Thai state company. Several new wells were drilled in 2019 to maintain the production plateau.

BRUNEI

In Brunei, production comes from the Maharaja Lela Jamalulalam condensate gas field on Block B (37.5%, operator), hence the gas is supplied to the Brunei LNG liquefaction plant, and from the unitized Gumusut-Kakap field, of which the part in Brunei is located on Block CA1 (86.95%, operator).

In October 2019, TOTAL has signed an agreement to sell its subsidiary (100%), Total E&P Deep Offshore Borneo BV, which holds 86.95% of Block CA1, 100 km offshore of Brunei. The transaction was completed in April 2020.

CHINA

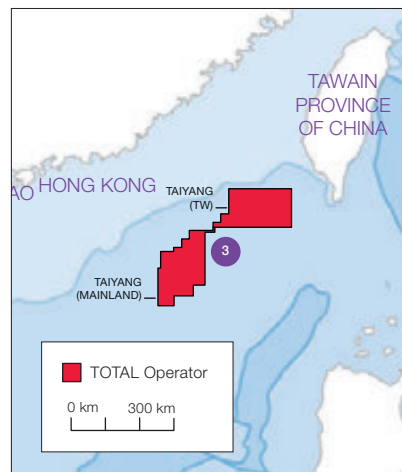
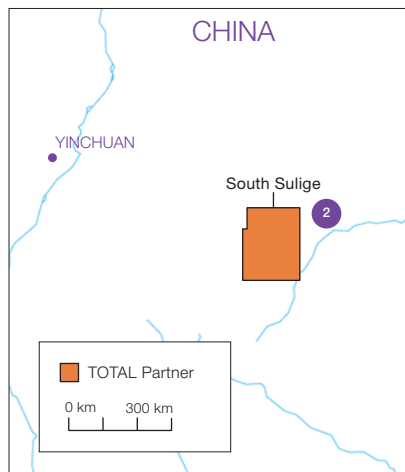
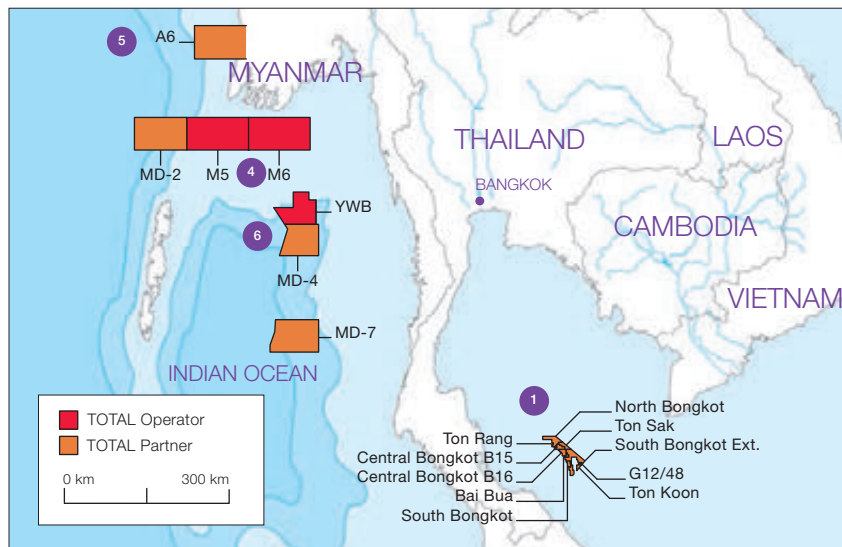
In China, production comes from the South Sulige Block ② (49%) in the Ordos Basin of Inner Mongolia, where the drilling of tight gas development wells is ongoing.

TOTAL holds a 49% interest and is operator of the Taiyang exploration Block in the China Sea ③, situated in both Chinese and Taiwanese waters. Two 2D seismic surveying campaigns were completed in 2018 and 2019.

MYANMAR

In Myanmar, the Yadana and Sein fields (31.24%, operator), located on the offshore Blocks M5 and M6 ④, primarily produce gas for delivery to PTT for use in Thai power plants. These fields also supply the domestic market via an offshore pipeline built and operated by MOGE, a Myanmar state-owned company. In 2017, TOTAL started production on the Badamyar field, a satellite of the Yadana field, which is expected to extend the production plateau beyond 2020. The 3D seismic (5,700 km<sup>2</sup>) acquired on Block M5 in the first quarter of 2019 is currently under study.

On the A6 ⑤ exploration license (40%), located in deep offshore waters west of Myanmar, and on which a gas discovery has been made, the design studies completed in the second quarter of 2019 confirmed the technical and economic viability of the project. On the YWB ⑥ deep offshore Block (100%, operator), TOTAL holds an exploration license that has been renewed until August 2020. The studies based on the 2018 3D seismic survey are currently in progress.



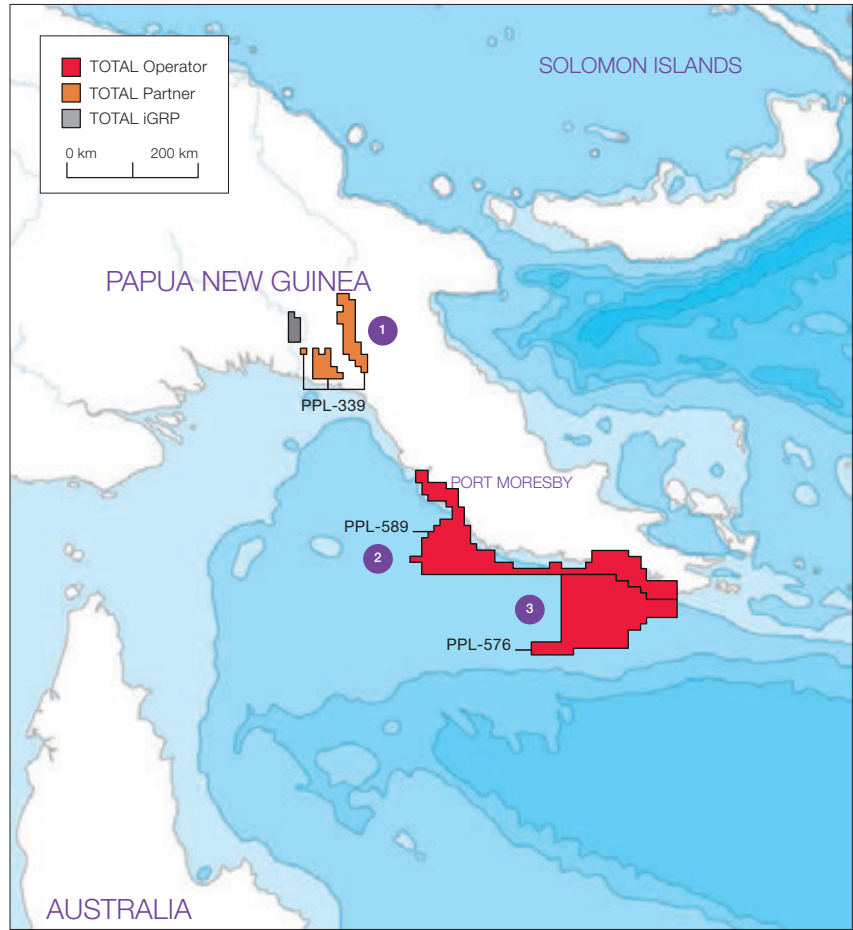
Bongkot (Thailand)

**PAPUA NEW GUINEA**

In Papua New Guinea, TOTAL holds interests in the PPL339 ① (35%), PPL589 ② (100%) and PPL576 ③ (100%) exploration licenses. The interpretation of the multi-client seismic survey performed in late 2016 on PPL576 revealed some promising prospects. LNG activities in the country are presented in the iGRP segment.

**REST OF THE ASIA-PACIFIC ZONE**

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. In Sri Lanka, TOTAL signed in 2016 an agreement to proceed with surveys on the offshore JS-5 and JS-6 Blocks off the east coast. The surveys are underway. A new partner joined the agreement with a 30% interest, reducing TOTAL's interest to 70% in August 2019. LNG activities in Asia-Pacific are presented in the iGRP segment.



Yadana (Myanmar)





# UPSTREAM HYDROCARBONS ACTIVITIES



**12.7** Bboe  
of proved reserves of  
hydrocarbons as  
of December 31, 2019 <sup>(1)</sup>

**3.0** Mboe/d  
of hydrocarbons  
produced in 2019

**5.4** \$/boe  
Production costs  
(ASC932) in 2019

(1) Based on a Brent crude of \$62.74/b (reference price in 2019), according to the rules established by the Securities and Exchange Commission.



## The Upstream Hydrocarbons activities

include the oil and gas exploration and production activities of the Exploration & Production (E&P) and Integrated Gas, Renewables & Power (iGRP) segments. They are conducted in more than 50 countries.

### CAPITALIZING ON STRENGTHS

- Delivering operational excellence
- Focusing on value by playing to the Group's strengths
- Highgrading portfolio and renewing reserves

### OUTSTANDING PRODUCTION GROWTH

- +9% in 2019
- Delivering cash accretive start-ups

### COMPETITIVE ADVANTAGE ON OPEX

- Targeting a 5\$/boe

### SUCCESSFULLY REPLACING RESERVES

- ~12 years of proved reserves





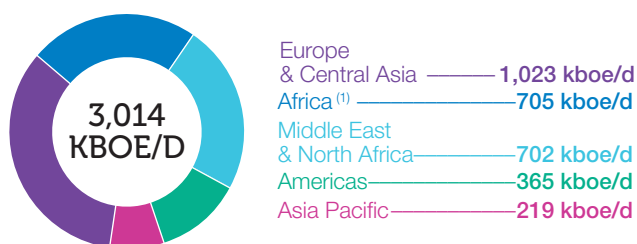
## PRODUCTION

Hydrocarbon production	2019	2018	2017	2016	2015
Oil (including bitumen) (kb/d)	1,431	1,378	1,167	1,088	1,022
Gas (including Condensates and associated NGL) (kboe/d)	1,583	1,397	1,399	1,364	1,325
<b>COMBINED PRODUCTION (KBOE/D)</b>	<b>3,014</b>	<b>2,775</b>	<b>2,566</b>	<b>2,452</b>	<b>2,347</b>

Hydrocarbon production	2019	2018	2017	2016	2015
Liquids (kb/d) <sup>(1)</sup>	1,672	1,566	1,346	1,271	1,237
Gas (Mcf/d)	7,364	6,599	6,662	6,447	6,054
<b>COMBINED PRODUCTION (KBOE/D)</b>	<b>3,014</b>	<b>2,775</b>	<b>2,566</b>	<b>2,452</b>	<b>2,347</b>

(1) Including bitumen.

### 2019 GROUP'S COMBINED PRODUCTION BY GEOGRAPHICAL AREA



(1) Excluding North Africa.

### PROVED RESERVES <sup>(1)</sup>

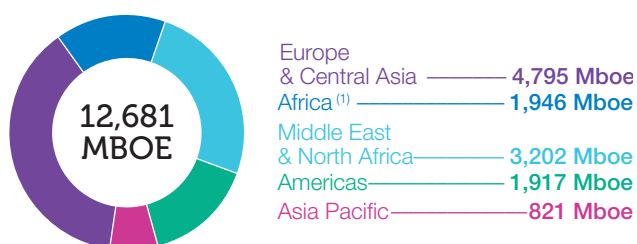
	2019	2018	2017	2016	2015
Oil (including bitumen) (Mb)	5,167	5,203	4,615	4,543	4,688
Gas (including Condensates and associated NGL) (Mboe)	7,514	6,847	6,860	6,975	6,892
<b>TOTAL (MBOE)</b>	<b>12,681</b>	<b>12,050</b>	<b>11,475</b>	<b>11,518</b>	<b>11,580</b>

	2019	2018	2017	2016	2015
Liquids (Mb) <sup>(2)</sup>	6,006	6,049	5,450	5,414	5,605
Gas (Bcf)	36,015	32,325	32,506	32,984	32,206
<b>TOTAL (MBOE)</b>	<b>12,681</b>	<b>12,050</b>	<b>11,475</b>	<b>11,518</b>	<b>11,580</b>

(1) Proved reserves are calculated in accordance with the United States Securities and Exchange Commission regulations.

(2) Including bitumen.

### 2019 GROUP'S PROVED RESERVES BY GEOGRAPHICAL AREA



(1) Excluding North Africa.

## EUROPE AND CENTRAL ASIA

In 2019, TOTAL's production in Europe and Central Asia was **1,023** kboe/d

Representing **34%** of the Group's overall production

### PRODUCTION

	2019	2018	2017	2016	2015
Liquids production (kb/d)	354	334	265	249	215
Gas production (Mcf/d)	3,596	3,099	2,674	2,737	2,413
<b>TOTAL (kboe/d)</b>	<b>1,023</b>	<b>909</b>	<b>761</b>	<b>757</b>	<b>664</b>

### MAJOR START-UPS

Start-up	Projects	Field type	Hydrocarbon type	Capacity (kboe/d)	Share	Op.	Country
2017	Kashagan	Onshore	Oil	370	16.81%		Kazakhstan
	Edradour Glenlivet	Deep off.	Gas/Cond.	35	60%	x	UK
	Yamal LNG-Train 1	Onshore	LNG	150	29.72% <sup>(1)</sup>		Russia
2018	Yamal LNG-Train 2 & 3	Onshore	LNG	300	29.72% <sup>(1)</sup>		Russia
2019	Culzean	Shallow water	Gas/Cond.	100	49.99%	x	UK
	Tempa Rossa	Onshore	Oil	55	50%	x	Italy
	Johan Sverdrup 1	Shallow water	Oil	440	8.44%		Norway

(1) TOTAL's aggregate interest through a direct interest of 20.00% in OAO Yamal LNG and a 9.72% indirect interest through its 19.40% shareholding in Novatek.

### TOTAL'S PRODUCING ASSETS AS OF DECEMBER 31, 2019<sup>(1)</sup>

Europe and Central Asia (Group share in %)	Exploration & Production segment	iGRP segment
<b>Denmark</b> (2018)	<b>Operated:</b> Danish Underground Consortium (DUC) zone (43.20%), comprising the Dan/Halvdan, Gorm and Tyra fields, and all their satellites	
<b>Italy</b> (1960)	<b>Operated:</b> Tempa Rossa (50.00%)	
<b>Kazakhstan</b> (1992)	<b>Operated:</b> Dunga (60.00%) <b>Non-operated:</b> Kashagan (16.81%)	
<b>Norway</b> (1965)	<b>Operated:</b> Atla (40.00%), Skirne (40.00%) <b>Non-operated:</b> Johan Sverdrup (8.44%), Åsgard (7.68%), Ekofisk (39.90%), Eldfisk (39.90%), Embla (39.90%), Flyndre (6.26%), Gimle (4.90%), Sindre (4.95%), Heimdal (16.76%), Islay (5.51%) <sup>(2)</sup> , Kristin (6.00%), Kvitebjørn (5.00%), Oseberg (14.70%), Oseberg East (14.70%), Oseberg South (14.70%), Troll (3.69%), Tune (10.00%), Tyrihans (23.15%)	<b>Non-operated:</b> Snøhvit (18.40%)
<b>Netherlands</b> (1964)	<b>Operated:</b> 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%) <b>Non-operated:</b> E16a (16.92%), E17a/E17b (14.10%), J3b/J6 (25.00%), K9ab-A (22.46%), Q16a (6.49%)	
<b>United Kingdom</b> (1962)	<b>Operated:</b> Alwyn North (100.00%), Dunbar (100.00%), Ellon (100.00%), Forvie North (100.00%), Grant (100.00%), Jura (100.00%), Nuggets (100.00%), Islay (94.49%) <sup>(2)</sup> , Elgin-Franklin (46.17%), West Franklin (46.17%), Glenelg (58.73%), Culzean (49.99%), Laggan Tormore, Edradour and Glenlivet (all 60.00%), Dumbarton, Balloch and Lochranza (100.00%), Gryphon (86.50%), Maclure (38.19%), South Gryphon (89.88%), Tullich (100.00%), Ballindalloch (91.8%), Flyndre (65.94%) <b>Non-operated:</b> Bruce (1.00%), Markham unitized field (7.35%), Golden Eagle, Peregrine and Solitaire (31.56%), Scott (5.16%), Telford (2.36%), Harding (30.00%)	
<b>Russia</b> (1991)	<b>Non-operated:</b> Kharyaga (20.00%), Termokarstovoye (58.89%) <sup>(3)</sup> , several fields through the participation in PAO Novatek (19.40%)	<b>Non-operated:</b> Yamal LNG (29.72%) <sup>(4)</sup>

(1) The Group's interest in the local entity is approximately 100%.

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

(3) TOTAL's aggregate interest through a direct interest of 49% in ZAO Terneftegas with PAO Novatek and a 9.89% indirect interest through its 19.40% shareholding in PAO Novatek.

(4) TOTAL's aggregate interest through a direct interest of 20.00% in OAO Yamal LNG and a 9.72% indirect interest through its 19.40% shareholding in Novatek.

## AFRICA (EXCL. NORTH AFRICA)



In 2019, TOTAL's production in Africa, excl. North Africa was **705** kboe/d

Representing **24%** of the Group's overall production

### PRODUCTION

	2019	2018	2017	2016	2015
Liquids production (kb/d)	558	513	502	509	521
Gas production (Mcf/d)	791	786	759	621	581
<b>TOTAL (kboe/d)</b>	<b>705</b>	<b>670</b>	<b>654</b>	<b>634</b>	<b>639</b>

### MAJOR START-UPS

Start-up	Projects	Field type	Hydrocarbon type	Capacity (kboe/d)	Share	Op.	Country
2017	Moho Nord	Deep off.	Oil	100	53.5%	x	Congo Rep.
2018	Kaombo Norte	Deep off.	Oil	115	30%	x	Angola
2019	Egina	Deep off.	Oil	200	24%	x	Nigeria
	Kaombo Sul	Deep off.	Oil	115	30%	x	Angola

### TOTAL'S PRODUCING ASSETS AS OF DECEMBER 31, 2019<sup>(1)</sup>

Africa (excluding North Africa) (Group share in %)	Exploration & Production segment	iGRP segment
<b>Angola</b> (1953)	<b>Operated:</b> Girassol, Dalia, Pazflor, CLOV (Block 17) (40.00%), Kaombo (Block 32) (30.00%) <b>Non-operated:</b> Cabinda Block 0 (10.00%), Kuito, BBLT, Tombua-Landana (Block 14) (20.00%) <sup>(2)</sup> , Lianzi (Block 14K) (10.00%) <sup>(2)</sup>	<b>Non-operated:</b> Angola LNG (13.60%)
<b>Gabon</b> (1928)	<b>Operated:</b> 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%), Mérour Sardine Sud (100.00%), N'Tchengue (100.00%), Port Gentil Océan (100.00%), Torpille (100.00%), Torpille Nord Est (100.00%) <b>Non-operated:</b> Barbier (65.28%), Girelle (65.28%), Gonelle (65.28%), Grondin (65.28%), Hylia Marine (37.50%), Mandaros (65.28%), Pageau (65.28%)	
<b>Nigeria</b> (1962)	<b>Operated:</b> OML 99 Amenam-Kpono (30.40%), OML 100 (40.00%), OML 102 (40.00%), OML 130 (24.00%) <b>Non-operated:</b> Shell Petroleum Development Company (SPDC 10.00%), OML 118 – Bonga (12.50%), OML 138 (20.00%)	<b>Operated:</b> OML 58 (40.00%) <b>Non-operated:</b> Nigeria LNG (15.00%)
<b>The Republic of Congo</b> (1968)	<b>Operated:</b> 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%) <b>Non-operated:</b> Lianzi (26.75%), Loango (42.50%), Zatchi (29.75%)	

(1) The Group's interest in the local entity is approximately 100% in all cases except for Total Gabon (58.28%), Total E&P Congo (85.00%).

(2) Shareholding in the company Angola Block 14 BV (TOTAL 50.01%).



## MIDDLE EAST AND NORTH AFRICA

In 2019, TOTAL's production in Middle East and North Africa was **702 kboe/d**

Representing **23%** of the Group's overall production

### PRODUCTION

	2019	2018	2017	2016	2015
Liquids production (kb/d)	548	520	419	373	372
Gas production (Mcf/d)	857	805	771	795	874
<b>TOTAL (kboe/d)</b>	<b>702</b>	<b>666</b>	<b>559</b>	<b>517</b>	<b>531</b>

### MAJOR START-UPS

Start-up	Projects	Field type	Hydrocarbon type	Capacity (kboe/d)	Share	Op.	Country
2018	Timimoun	Onshore	Tight Gas	30	37.75%		Algeria
	Halfaya 3	Onshore	Oil	200	22.5%		Iraq

### TOTAL'S PRODUCING ASSETS AS OF DECEMBER 31, 2019<sup>(1)</sup>

Middle East and North Africa	Exploration & Production segment	iGRP segment
<i>(Group share in %)</i>		
<b>Algeria (1952)</b>	<b>Non-operated:</b> TFT II (26.40%), Timimoun (37.75%), 404a & 208 (12.25%)	
<b>United Arab Emirates (1939)</b>	<b>Operated:</b> Abu Al Bukhoosh (100.00%) <b>Non-operated:</b> ADNOC Onshore (10.00%), ADNOC Offshore: Umm Shaif/Nasr (20.00%), Lower Zakum (5.00%), ADNOC Gas Processing (15.00%)	<b>Non-operated:</b> ADNOC LNG (5.00%)
<b>Iraq (1920)</b>	<b>Non-operated:</b> Halfaya (22.5%) <sup>(2)</sup> , Sarsang (18.00%)	
<b>Libya (1959)</b>	<b>Non-operated:</b> zones 15, 16 & 32 (75.00%) <sup>(3)</sup> , zones 129 & 130 (30.00%) <sup>(3)</sup> , zones 130 & 131 (24.00%) <sup>(3)</sup> , zones 70 & 87 (75.00%) <sup>(3)</sup> , Waha (16.33%)	
<b>Oman (1937)</b>	<b>Non-operated:</b> various onshore fields (Block 6) (4.00%) <sup>(4)</sup> , Mukhaizna field (Block 53) (2.00%) <sup>(5)</sup>	<b>Non-operated:</b> Oman LNG (5.54%), Qalhat LNG (2.04%, through Oman LNG)
<b>Qatar (1936)</b>	<b>Operated:</b> Al Khalij (40.00%) <b>Non-operated:</b> North Field-Block NF Dolphin (24.50%), Al Shaheen (30.00%)	<b>Non-operated:</b> North Field-Qatargas 1 Upstream (20.00%), North Field-Qatargas 1 Downstream (10.00%), North Field-Qatargas 2 Train 5 (16.70%)

(1) The Group's interest in the local entity is approximately 100% in all cases except certain entities in Abu Dhabi and Oman (see notes 2 and 5 below).

(2) TOTAL's shareholding in the joint-venture.

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

(4) TOTAL's indirect interest (4.00%) in the concession through its 10.00% shareholding in Private Oil Holdings Oman Ltd.

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

## AMERICAS



In 2019, TOTAL's production in Americas was **365** kboe/d

Representing **12%** of the Group's overall production

### PRODUCTION

	2019	2018	2017	2016	2015
Liquids production (kb/d)	168	183	132	109	95
Gas production (Mcf/d)	1,111	1,161	1,212	944	896
<b>TOTAL (kboe/d)</b>	<b>365</b>	<b>389</b>	<b>348</b>	<b>279</b>	<b>255</b>

### MAJOR START-UPS

Start-up	Projects	Field type	Hydrocarbon type	Capacity (kboe/d)	Share	Op.	Country
2017	Libra Pioneiro	Deep off.	Oil	50	20%		Brazil
2018	Fort Hills	Onshore	Bitumen	180	24.58%		Canada
	Vaca Muerta	Onshore	Shale gas	100	41%	x	Argentina
2019	Iara 1	Deep off.	Oil	150	22.5%		Brazil

### TOTAL'S PRODUCING ASSETS AS OF DECEMBER 31, 2019<sup>(1)</sup>

Americas (Group share in %)	Exploration & Production segment	iGRP segment
<b>Argentina</b> (1978)	<b>Operated:</b> Aguada Pichana Este – Mulichinco (27.27%), Aguada Pichana Este – Vaca Muerta (41.00%), 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%) <b>Non-operated:</b> Aguada Pichana Oeste (25%), Aguada de Castro (25%)	
<b>Bolivia</b> (1995)	<b>Operated:</b> Incahuasi (50.00%) <b>Non-operated:</b> San Alberto (15.00%), San Antonio (15.00%), Itaú (41.00%)	
<b>Brazil</b> (1999)	<b>Operated:</b> Lapa (35.00%) <sup>(2)</sup> <b>Non-operated:</b> Libra (20.00%), Iara (22.50%)	
<b>Canada</b> (1999)	<b>Non-operated:</b> Surmont (50.00%), Fort Hills (24.58%)	
<b>United States</b> (1957)	<b>Non-operated:</b> several assets in the Utica Shale area (25.00%) <sup>(3)</sup> , Tahiti (17.00%), Jack (25.00%)	<b>Operated:</b> several assets in the Barnett Shale area (90.92% in average)
<b>Venezuela</b> (1980)	<b>Non-operated:</b> PetroCedeño (30.32%), Yucal Placer (69.50%)	

(1) The Group's interest in the local entity is approximately 100%.

(2) TOTAL signed in December 2018 an agreement to acquire an additional 10% interest in the Lapa project in Brazil. The transaction, which remains subject to the approval of the Brazilian authorities, will increase TOTAL's interest in this asset from 35% to 45%.

(3) TOTAL's shareholding in the joint-venture with Encino and Chesapeake.

## ASIA-PACIFIC

In 2018, TOTAL's production in Asia-Pacific was **219** kboe/d

Representing **7%** of the Group's overall production

### PRODUCTION

	2019	2018	2017	2016	2015
Liquids production (kbo/d)	44	16	28	31	34
Gas production (Mcf/d)	1,009	748	1,247	1,350	1,290
<b>TOTAL (kboe/d)</b>	<b>219</b>	<b>141</b>	<b>244</b>	<b>265</b>	<b>258</b>

### MAJOR START-UPS

Start-up	Projects	Field type	Hydrocarbon type	Capacity (kboe/d)	Share	Op.	Country
2017	Badamyyar	Shallow water	Gas/Cond	35	31.24%	x	Myanmar
2018	Ichthys-Trains 1 & 2	Onshore	LNG	340	26%		Australia

### TOTAL'S PRODUCING ASSETS AS OF DECEMBER 31, 2019<sup>(1)</sup>

Asia-Pacific (Group share in %)	Exploration & Production segment	iGRP segment
Australia (2006)		<b>Non-operated:</b> several assets in UJV GLNG (27.50%) <sup>(2)</sup> , Ichthys (26.00%)
Brunei (1986)	<b>Operated:</b> Maharaja Lela Jamalulalam (37.50%) <b>Non-operated:</b> Block CA 1 – Unit (4.64%)	
China (2006)	<b>Non-operated:</b> South Sulige (49.00%)	
Indonesia (1968)		<b>Non-operated:</b> Block Sebuku (15.00%)
Myanmar (1992)	<b>Operated:</b> Blocks M5/M6 (Yadana, Sein, Badamyyar) (31.24%)	
Thailand (1990)	<b>Non-operated:</b> Bongkot (33.33%)	

(1) The Group's interest in the local entity is approximately 100%.

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



## COMBINED LIQUIDS AND GAS PRODUCTION <sup>(1)</sup> <sup>(2)</sup> <sup>(3)</sup>

(in thousands of barrels of oil equivalent per day)

	2019	2018	2017	2016	2015
<b>EUROPE AND CENTRAL ASIA</b>	<b>1,023</b>	<b>909</b>	<b>761</b>	<b>757</b>	<b>664</b>
Denmark	56	42	-	-	-
Italy	<1	<1	-	-	-
Kazakhstan	74	70	42	4	-
Norway	204	211	239	235	239
Netherlands	16	18	20	25	28
United Kingdom	189	179	142	158	107
Russia	484	389	318	335	290
<b>AFRICA (EXCL. NORTH AFRICA)</b>	<b>705</b>	<b>670</b>	<b>654</b>	<b>634</b>	<b>639</b>
Angola	232	211	229	243	248
The Congo, Republic of	134	136	104	90	87
Gabon	33	39	54	58	59
Nigeria	306	284	267	243	245
<b>MIDDLE EAST AND NORTH AFRICA</b>	<b>702</b>	<b>666</b>	<b>559</b>	<b>517</b>	<b>531</b>
Algeria	59	47	15	23	25
United Arab Emirates	295	288	290	291	287
Iraq	20	19	16	18	18
Libya	80	63	31	14	14
Oman	38	38	37	37	36
Qatar	210	211	170	134	134
Yemen	-	-	-	-	17
<b>AMERICAS</b>	<b>365</b>	<b>389</b>	<b>348</b>	<b>279</b>	<b>255</b>
Argentina	86	79	76	78	72
Bolivia	39	42	46	34	28
Brazil	16	19	<1	-	-
Canada <sup>(3)</sup>	98	95	59	34	14
Colombia	<1	1	<1	-	-
United States	111	119	123	86	89
Venezuela	15	34	44	47	52
<b>ASIA PACIFIC</b>	<b>219</b>	<b>141</b>	<b>244</b>	<b>265</b>	<b>258</b>
Australia	106	34	19	16	4
Brunei	21	19	21	18	15
China	19	16	15	10	11
Indonesia	2	3	112	140	147
Myanmar	16	17	19	21	19
Thailand	55	52	58	60	62
<b>TOTAL PRODUCTION</b>	<b>3,014</b>	<b>2,775</b>	<b>2,566</b>	<b>2,452</b>	<b>2,347</b>
<b>Including share of equity affiliates</b>	<b>731</b>	<b>671</b>	<b>639</b>	<b>600</b>	<b>559</b>
Angola	22	20	20	5	-
United Arab Emirates	32	49	125	123	116
Oman	37	37	35	36	34
Qatar	155	157	114	76	77
Russia	479	385	313	327	280
Venezuela	6	23	32	33	37
Yemen	-	-	-	-	15

(1) The geographical zones are as follows: Europe and Central Asia; Africa (excluding North Africa); Middle East and North Africa; Americas; and Asia-Pacific. 2015 data have been restated accordingly.

(2) Including fuel gas (531 Mcf/d in 2019, 454 Mcf/d in 2018, 473 Mcf/d in 2017, 448 Mcf/d in 2016, 435 Mcf/d in 2015).

(3) The Group's production in Canada consists of bitumen only. All of the Group's bitumen production is in Canada.

## LIQUIDS PRODUCTION <sup>(1)</sup>

(in thousands of barrels per day)

	2019	2018	2017	2016	2015
<b>EUROPE AND CENTRAL ASIA</b>	<b>354</b>	<b>334</b>	<b>265</b>	<b>249</b>	<b>215</b>
Denmark	34	25	-	-	-
Italy	<1	<1	-	-	-
Kazakhstan	59	56	31	3	-
Norway	104	104	121	121	125
Netherlands	<1	-	-	-	1
United Kingdom	79	75	42	49	35
Russia	78	74	71	76	54
<b>AFRICA (EXCL. NORTH AFRICA)</b>	<b>558</b>	<b>513</b>	<b>502</b>	<b>509</b>	<b>521</b>
Angola	205	186	204	230	238
The Congo, Republic of	128	130	98	84	81
Gabon	31	36	51	55	55
Nigeria	194	161	149	140	147
<b>MIDDLE EAST AND NORTH AFRICA</b>	<b>548</b>	<b>520</b>	<b>419</b>	<b>373</b>	<b>372</b>
Algeria	35	30	4	6	7
United Arab Emirates	286	276	278	279	274
Iraq	19	18	15	17	18
Libya	78	62	31	14	14
Oman	26	26	25	26	25
Qatar	104	108	66	31	32
Yemen	-	-	-	-	2
<b>AMERICAS</b>	<b>168</b>	<b>183</b>	<b>132</b>	<b>109</b>	<b>95</b>
Argentina	7	7	6	8	8
Bolivia	5	5	5	4	3
Brazil	16	18	<1	-	-
Canada	98	95	59	34	14
Colombia	<1	1	<1	-	-
United States	36	35	31	31	34
Venezuela	6	22	31	32	36
<b>ASIA PACIFIC</b>	<b>44</b>	<b>16</b>	<b>28</b>	<b>31</b>	<b>34</b>
Australia	29	3	-	-	-
Brunei	7	5	3	3	3
China	<1	-	<1	-	-
Indonesia	<1	-	16	19	22
Thailand	8	8	9	9	9
<b>TOTAL PRODUCTION</b>	<b>1,672</b>	<b>1,566</b>	<b>1,346</b>	<b>1,271</b>	<b>1,237</b>
<b>Including share of equity affiliates</b>	<b>216</b>	<b>247</b>	<b>284</b>	<b>247</b>	<b>219</b>
Angola	5	4	5	1	-
United Arab Emirates	24	41	115	114	107
Oman	25	24	23	24	24
Qatar	83	85	43	7	7
Russia	73	71	67	69	45
Venezuela	6	22	31	32	36

(1) Liquids consist of crude oil, bitumen, condensates and natural gas liquids (NGL). With respect to bitumen, 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 2014, 2015, 2016, 2017, 2018 and 2019.

## GAS PRODUCTION<sup>(1)</sup>

(in millions of cubic feet per day)

	2019	2018	2017	2016	2015
<b>EUROPE AND CENTRAL ASIA</b>	<b>3,596</b>	<b>3,099</b>	<b>2,674</b>	<b>2,737</b>	<b>2,413</b>
Denmark	114	99	-	-	-
Kazakhstan	68	70	53	6	-
Norway	539	577	640	618	614
Netherlands	90	98	112	141	158
United Kingdom	598	566	551	595	389
Russia	2,187	1,689	1,318	1,377	1,252
<b>AFRICA (EXCL. NORTH AFRICA)</b>	<b>791</b>	<b>786</b>	<b>759</b>	<b>621</b>	<b>581</b>
Angola	194	132	130	68	49
The Congo, Republic of	32	32	32	29	30
Gabon	7	12	14	15	15
Nigeria	558	610	583	509	487
<b>MIDDLE EAST AND NORTH AFRICA</b>	<b>857</b>	<b>805</b>	<b>771</b>	<b>795</b>	<b>874</b>
Algeria	132	94	58	90	96
United Arab Emirates	51	57	63	67	66
Iraq	3	1	1	1	1
Libya	15	9	-	-	-
Oman	65	67	64	62	58
Qatar	591	577	585	575	573
Yemen	-	-	-	-	80
<b>AMERICAS</b>	<b>1,111</b>	<b>1,161</b>	<b>1,212</b>	<b>944</b>	<b>896</b>
Argentina	438	402	388	391	354
Bolivia	193	204	216	160	133
Brazil	2	1	-	-	-
United States	423	483	527	304	308
Venezuela	55	71	81	89	101
<b>ASIA PACIFIC</b>	<b>1,009</b>	<b>748</b>	<b>1,247</b>	<b>1,350</b>	<b>1,290</b>
Australia	415	181	114	91	28
Brunei	72	72	87	78	62
China	106	88	80	53	59
Indonesia	10	14	519	657	676
Myanmar	126	133	151	165	153
Thailand	280	260	296	306	312
<b>TOTAL PRODUCTION</b>	<b>7,364</b>	<b>6,599</b>	<b>6,663</b>	<b>6,447</b>	<b>6,054</b>
<b>Including share of equity affiliates</b>	<b>2,835</b>	<b>2,281</b>	<b>1,914</b>	<b>1,894</b>	<b>1,828</b>
Angola	144	81	80	20	-
United Arab Emirates	39	45	53	51	50
Oman	66	67	64	62	58
Qatar	400	395	395	379	383
Russia	2,185	1,689	1,317	1,375	1,250
Venezuela	1	4	5	7	7
Yemen	-	-	-	-	80

(1) Including fuel gas (531 Mcf/d in 2019, 454 Mcf/d in 2018, 473 Mcf/d in 2017, 448 Mcf/d in 2016, 435 Mcf/d in 2015).



## CHANGES IN OIL, BITUMEN AND GAS RESERVES

The following tables present an estimate of the Group's oil, bitumen and gas quantities by geographic areas as of December 31, 2019, 2018, 2017, 2016 and 2015.

Quantities shown correspond to proved, developed and undeveloped reserves together with changes in quantities for 2019, 2018, 2017, 2016 and 2015.

The acquisitions in Africa correspond mainly to Mozambique.

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 2018 and 2019 are discussed below.

For consolidated subsidiaries, the revisions of +494 Mboe for the year 2019 were due to:

- +524 Mboe due to new information obtained from drilling and production history mainly in the United Arab Emirates, the United Kingdom, Angola and Norway;
- -30 Mboe due to economic factors as a result of lower yearly average hydrocarbon prices, including an earlier economic limit on a number of assets, partly compensated by higher entitlement share from production sharing and risked service contracts.

The extensions in the Americas correspond mainly to recognition of proved reserves in the United States.

For equity affiliates, the revisions of +88 Mboe for the year 2019 were mainly due to new information obtained from drilling and production history in Russia.

The extensions in Russia correspond mainly to recognition of reserves on Artic LNG 2.

## KEY OPERATING RATIOS ON PROVED RESERVES – GROUP

<b>(three-year average)</b>	<b>2017-2019</b>	<b>2016-2018</b>	<b>2015-2017</b>	<b>2014-2016</b>	<b>2013-2015</b>
Finding costs (\$/boe) <sup>(1)</sup>	3.0	3.0	2.6	3.2	4.2
Reserve replacement costs (\$/boe) <sup>(2)</sup>	11.4	13.8	16.6	20.6	23.2
Reserve replacement rate (%) <sup>(3) (4)</sup>	138	117	98	100	109
Organic reserve replacement rate (%) <sup>(4) (5)</sup>	113	98	100	106	121
<b>(in years)</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
Reserve life <sup>(6)</sup>	11.5	11.9	12.3	12.8	13.5

(1) (Exploration costs + unproved property acquisition) / (revisions + extensions and discoveries).

(2) Total costs incurred / (revisions + extensions, discoveries + acquisitions).

(3) (Revisions + extensions, discoveries + acquisitions – sales of reserves) / production for the period.

(4) Including the mechanical effect of changes in oil prices at year-end.

(5) (Revisions + extensions, discoveries) / production for the period; excluding acquisitions and sales of reserves.

(6) Reserves at year-end / production of the year.

## KEY OPERATING RATIOS ON PROVED RESERVES – CONSOLIDATED SUBSIDIARIES

<i>(in dollars per barrel of oil equivalent)</i>	<b>2017-2019</b>	<b>2016-2018</b>	<b>2015-2017</b>	<b>2014-2016</b>	<b>2013-2015</b>
Finding costs <sup>(1)</sup>	3.5	4.2	3.4	4.9	6.5
Reserve replacement costs <sup>(2)</sup>	14.0	18.5	22.1	33.3	36.5
<i>(in dollars per barrel of oil equivalent)</i>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
Operating expenses	5.4	5.7	5.4	5.9	7.4
Exploration costs	1.0	1.0	1.2	1.4	2.4
DD&A	12.9	12.2	12.8	13.1	13.2
Technical costs <sup>(3) (4)</sup>	19.3	18.9	19.4	20.4	23.0

(1) (Exploration costs + unproved property acquisition) / (revisions + extensions, discoveries).

(2) Total costs incurred / (revisions + extensions, discoveries + acquisitions).

(3) Excluding non-recurring items.

(4) (Production costs + exploration costs + DD&A) / production of the year.

## CHANGES IN OIL, BITUMEN AND GAS RESERVES

(in million barrels of oil equivalent)

Oil, bitumen and gas reserves – Consolidated subsidiaries

Proved developed and undeveloped reserves	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
<b>BALANCE AS OF DECEMBER 31, 2014 – BRENT AT 101.27 \$/B</b>	<b>1,965</b>	<b>29</b>	<b>2,324</b>	<b>557</b>	<b>1,888</b>	<b>1,050</b>	<b>7,813</b>
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	-	-	-	-	-	-	-
Sales of reserves in place	(28)	-	(76)	-	(160)	-	(264)
Production for the year	(137)	(4)	(233)	(105)	(79)	(94)	(652)
<b>BALANCE AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/B</b>	<b>1,812</b>	<b>25</b>	<b>2,020</b>	<b>1,309</b>	<b>1,799</b>	<b>1,025</b>	<b>7,990</b>
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)
<b>BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/B</b>	<b>1,726</b>	<b>11</b>	<b>1,802</b>	<b>1,442</b>	<b>1,639</b>	<b>982</b>	<b>7,602</b>
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)
<b>BALANCE AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/B</b>	<b>1,678</b>	<b>11</b>	<b>1,679</b>	<b>1,450</b>	<b>1,816</b>	<b>943</b>	<b>7,577</b>
Revisions of previous estimates	126	-	132	137	28	27	450
Extensions, discoveries and other	69	-	45	444	27	13	598
Acquisitions of reserves in place	316	-	-	85	86	-	487
Sales of reserves in place	(103)	-	(5)	-	(24)	(89)	(221)
Production for the year	(190)	(1)	(238)	(154)	(134)	(51)	(768)
<b>BALANCE AS OF DECEMBER 31, 2018 – BRENT AT 71.43 \$/B</b>	<b>1,896</b>	<b>10</b>	<b>1,613</b>	<b>1,962</b>	<b>1,799</b>	<b>843</b>	<b>8,123</b>
Revisions of previous estimates	67	2	113	211	76	25	494
Extensions, discoveries and other	9	-	1	1	76	32	119
Acquisitions of reserves in place	40	-	421	17	-	-	478
Sales of reserves in place	(3)	-	-	-	(1)	-	(4)
Production for the year	(197)	(2)	(249)	(175)	(131)	(79)	(833)
<b>BALANCE AS OF DECEMBER 31, 2019 – BRENT AT 62.74 \$/B</b>	<b>1,812</b>	<b>10</b>	<b>1,899</b>	<b>2,016</b>	<b>1,819</b>	<b>821</b>	<b>8,377</b>
<b>Minority interest in proved developed and undeveloped reserves as of</b>							
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
December 31, 2018 – Brent at 71.43 \$/b	-	-	98	-	-	-	98
<b>DECEMBER 31, 2019 – BRENT AT 62.74 \$/B</b>	<b>-</b>	<b>-</b>	<b>86</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>86</b>

(in million barrels of oil equivalent)

Oil, bitumen and gas reserves – Equity affiliates

Proved developed and undeveloped reserves	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
<b>BALANCE AS OF DECEMBER 31, 2014 – BRENT AT 101.27 \$/B</b>	-	<b>2,182</b>	<b>73</b>	<b>1,219</b>	<b>236</b>	-	<b>3,710</b>
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)
<b>BALANCE AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/B</b>	-	<b>2,220</b>	<b>71</b>	<b>1,121</b>	<b>178</b>	-	<b>3,590</b>
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)
<b>BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/B</b>	-	<b>2,389</b>	<b>70</b>	<b>1,292</b>	<b>165</b>	-	<b>3,916</b>
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)
<b>BALANCE AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/B</b>	-	<b>2,451</b>	<b>63</b>	<b>1,237</b>	<b>147</b>	-	<b>3,898</b>
Revisions of previous estimates	-	128	(1)	61	(1)	-	187
Extensions, discoveries and other	-	11	-	-	-	-	11
Acquisitions of reserves in place	-	102	-	-	-	-	102
Sales of reserves in place	-	(26)	-	-	-	-	(26)
Production for the year	-	(141)	(7)	(89)	(8)	-	(245)
<b>BALANCE AS OF DECEMBER 31, 2018 – BRENT AT 71.43 \$/B</b>	-	<b>2,525</b>	<b>55</b>	<b>1,209</b>	<b>138</b>	-	<b>3,927</b>
Revisions of previous estimates	-	85	(0)	41	(38)	-	88
Extensions, discoveries and other	-	538	-	18	-	-	556
Acquisitions of reserves in place	-	-	-	-	-	-	-
Sales of reserves in place	-	-	-	-	-	-	-
Production for the year	-	(175)	(8)	(82)	(2)	-	(267)
<b>BALANCE AS OF DECEMBER 31, 2019 – BRENT AT 62.74 \$/B</b>	-	<b>2,973</b>	<b>47</b>	<b>1,186</b>	<b>98</b>	-	<b>4,304</b>

(in million barrels of oil equivalent)

Oil, bitumen and gas reserves – Consolidated subsidiaries and equity affiliates

Proved developed and undeveloped reserves	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
<b>AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/B</b>							
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>1,812</b>	<b>2,245</b>	<b>2,091</b>	<b>2,430</b>	<b>1,977</b>	<b>1,025</b>	<b>11,580</b>
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
<b>PROVED DEVELOPED RESERVES</b>	<b>1,009</b>	<b>1,070</b>	<b>1,173</b>	<b>2,062</b>	<b>626</b>	<b>246</b>	<b>6,186</b>
Consolidated subsidiaries	1,009	16	1,161	1,070	549	246	4,051
Equity affiliates	-	1,054	12	992	77	-	2,135
<b>PROVED UNDEVELOPED RESERVES</b>	<b>803</b>	<b>1,175</b>	<b>918</b>	<b>368</b>	<b>1,351</b>	<b>779</b>	<b>5,394</b>
Consolidated subsidiaries	803	9	859	239	1,250	779	3,939
Equity affiliates	-	1,166	59	129	101	-	1,455
<b>AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/B</b>							
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>1,726</b>	<b>2,400</b>	<b>1,872</b>	<b>2,734</b>	<b>1,804</b>	<b>982</b>	<b>11,518</b>
Consolidated subsidiaries	1,726	11	1,802	1,442	1,639	982	7,602
Equity affiliates	-	2,389	70	1,292	165	-	3,916
<b>PROVED DEVELOPED RESERVES</b>	<b>1,025</b>	<b>1,017</b>	<b>1,141</b>	<b>2,281</b>	<b>979</b>	<b>224</b>	<b>6,667</b>
Consolidated subsidiaries	1,025	7	1,132	1,158	897	224	4,443
Equity affiliates	-	1,010	9	1,123	82	-	2,224
<b>PROVED UNDEVELOPED RESERVES</b>	<b>701</b>	<b>1,383</b>	<b>731</b>	<b>453</b>	<b>825</b>	<b>758</b>	<b>4,851</b>
Consolidated subsidiaries	701	4	670	284	742	758	3,159
Equity affiliates	-	1,379	61	169	83	-	1,692
<b>AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/B</b>							
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>1,678</b>	<b>2,462</b>	<b>1,742</b>	<b>2,687</b>	<b>1,963</b>	<b>943</b>	<b>11,475</b>
Consolidated subsidiaries	1,678	11	1,679	1,450	1,816	943	7,577
Equity affiliates	-	2,451	63	1,237	147	-	3,898
<b>PROVED DEVELOPED RESERVES</b>	<b>1,100</b>	<b>1,344</b>	<b>1,206</b>	<b>2,256</b>	<b>907</b>	<b>197</b>	<b>7,010</b>
Consolidated subsidiaries	1,100	8	1,192	1,177	836	197	4,510
Equity affiliates	-	1,336	14	1,079	71	-	2,500
<b>PROVED UNDEVELOPED RESERVES</b>	<b>578</b>	<b>1,118</b>	<b>536</b>	<b>431</b>	<b>1,056</b>	<b>746</b>	<b>4,465</b>
Consolidated subsidiaries	578	3	487	273	979	746	3,066
Equity affiliates	-	1,115	49	158	77	-	1,399



(in million barrels of oil equivalent)

Oil, bitumen and gas reserves – Consolidated subsidiaries and equity affiliates

Proved developed and undeveloped reserves	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
<b>AS OF DECEMBER 31, 2018 – BRENT AT 71.43 \$/B</b>							
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>1,896</b>	<b>2,535</b>	<b>1,668</b>	<b>3,171</b>	<b>1,937</b>	<b>843</b>	<b>12,050</b>
Consolidated subsidiaries	1,896	10	1,613	1,962	1,799	843	8,123
Equity affiliates	-	2,525	55	1,209	138	-	3,927
<b>PROVED DEVELOPED RESERVES</b>	<b>1,275</b>	<b>1,395</b>	<b>1,266</b>	<b>2,702</b>	<b>1,245</b>	<b>517</b>	<b>8,400</b>
Consolidated subsidiaries	1,275	8	1,257	1,649	1,182	517	5,888
Equity affiliates	-	1,387	9	1,053	63	-	2,512
<b>PROVED UNDEVELOPED RESERVES</b>	<b>621</b>	<b>1,140</b>	<b>402</b>	<b>469</b>	<b>692</b>	<b>326</b>	<b>3,650</b>
Consolidated subsidiaries	621	2	356	313	617	326	2,235
Equity affiliates	-	1,138	46	156	75	-	1,415
<b>AS OF DECEMBER 31, 2019 – BRENT AT 62.74 \$/B</b>							
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>1,812</b>	<b>2,983</b>	<b>1,946</b>	<b>3,202</b>	<b>1,917</b>	<b>821</b>	<b>12,681</b>
Consolidated subsidiaries	1,812	10	1,899	2,016	1,819	821	8,377
Equity affiliates	-	2,973	47	1,186	98	-	4,304
<b>PROVED DEVELOPED RESERVES</b>	<b>1,454</b>	<b>1,506</b>	<b>1,217</b>	<b>2,628</b>	<b>1,225</b>	<b>502</b>	<b>8,532</b>
Consolidated subsidiaries	1,454	8	1,211	1,604	1,181	502	5,960
Equity affiliates	-	1,498	6	1,024	44	-	2,572
<b>PROVED UNDEVELOPED RESERVES</b>	<b>358</b>	<b>1,477</b>	<b>729</b>	<b>574</b>	<b>692</b>	<b>319</b>	<b>4,149</b>
Consolidated subsidiaries	358	2	688	412	638	319	2,417
Equity affiliates	-	1,475	41	162	54	-	1,732

## CHANGES IN OIL AND BITUMEN RESERVES

Oil reserves include crude oil, condensates and natural gas liquids reserves.

<i>(in millions of barrels)</i>	Consolidated subsidiaries							Total	Bitumen Americas
	Oil								
	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific			
<b>Proved developed and undeveloped reserves</b>									
<b>BALANCE AS OF DECEMBER 31, 2014 – BRENT AT 101.27 \$/B</b>	<b>1,043</b>	<b>26</b>	<b>1,688</b>	<b>327</b>	<b>88</b>	<b>207</b>	<b>3,379</b>	<b>1,145</b>	
Revisions of previous estimates	(9)	-	3	(46)	27	10	(15)	130	
Extensions, discoveries and other	4	-	8	856	2	-	870	-	
Acquisitions of reserves in place	-	-	-	-	-	-	-	-	
Sales of reserves in place	(3)	-	(58)	-	-	-	(61)	(160)	
Production for the year	(59)	(3)	(191)	(86)	(16)	(12)	(367)	(5)	
<b>BALANCE AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/B</b>	<b>976</b>	<b>23</b>	<b>1,450</b>	<b>1,051</b>	<b>101</b>	<b>205</b>	<b>3,806</b>	<b>1,110</b>	
Revisions of previous estimates	22	1	6	239	(9)	6	265	(284)	
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)	(13)	
<b>BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/B</b>	<b>936</b>	<b>10</b>	<b>1,282</b>	<b>1,210</b>	<b>85</b>	<b>200</b>	<b>3,723</b>	<b>813</b>	
Revisions of previous estimates	42	-	94	57	7	2	202	189	
Extensions, discoveries and other	-	-	18	38	91	-	147	-	
Acquisitions of reserves in place	3	-	2	-	-	-	5	-	
Sales of reserves in place	(8)	-	(26)	-	-	-	(34)	(52)	
Production for the year	(71)	(1)	(182)	(87)	(15)	(10)	(366)	(22)	
<b>BALANCE AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/B</b>	<b>902</b>	<b>9</b>	<b>1,188</b>	<b>1,218</b>	<b>168</b>	<b>192</b>	<b>3,677</b>	<b>928</b>	
Revisions of previous estimates	34	-	122	141	51	3	351	(26)	
Extensions, discoveries and other	34	-	7	404	2	8	455	-	
Acquisitions of reserves in place	221	-	-	60	83	-	364	-	
Sales of reserves in place	(36)	-	(3)	-	-	(23)	(62)	(24)	
Production for the year	(95)	(1)	(185)	(136)	(24)	(6)	(447)	(35)	
<b>BALANCE AS OF DECEMBER 31, 2018 – BRENT AT 71.43 \$/B</b>	<b>1,060</b>	<b>8</b>	<b>1,129</b>	<b>1,687</b>	<b>280</b>	<b>174</b>	<b>4,338</b>	<b>843</b>	
Revisions of previous estimates	46	2	97	206	51	8	410	(1)	
Extensions, discoveries and other	8	-	1	1	62	1	73	-	
Acquisitions of reserves in place	20	-	7	16	-	-	43	-	
Sales of reserves in place	(2)	-	-	-	-	-	(2)	-	
Production for the year	(101)	(2)	(202)	(152)	(23)	(16)	(496)	(36)	
<b>BALANCE AS OF DECEMBER 31, 2019 – BRENT AT 62.74 \$/B</b>	<b>1,031</b>	<b>8</b>	<b>1,032</b>	<b>1,758</b>	<b>370</b>	<b>167</b>	<b>4,366</b>	<b>806</b>	
<b>Minority interest in proved developed and undeveloped reserves as of</b>	-	-	-	-	-	-	-	-	
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	-	
December 31, 2018 – Brent at 71.43 \$/b	-	-	90	-	-	-	90	-	
<b>DECEMBER 31, 2019 – BRENT AT 62.74 \$/B</b>	<b>-</b>	<b>-</b>	<b>77</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>77</b>	<b>-</b>	

## Equity affiliates

(in millions of barrels of oil equivalent)

Proved developed and undeveloped reserves	Oil						Equity affiliates	
	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total	Bitumen Americas
<b>BALANCE AS OF DECEMBER 31, 2014 – BRENT AT 101.27 \$/B</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)	-
<b>BALANCE AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/B</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)	-
<b>BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/B</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)	-
<b>BALANCE AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/B</b>	-	284	11	410	140	-	845	-
Revisions of previous estimates	-	54	-	57	(3)	-	108	-
Extensions, discoveries and other	-	-	-	-	-	-	-	-
Acquisitions of reserves in place	-	10	-	-	-	-	10	-
Sales of reserves in place	-	(5)	-	-	-	-	(5)	-
Production for the year	-	(26)	(2)	(54)	(8)	-	(90)	-
<b>BALANCE AS OF DECEMBER 31, 2018 – BRENT AT 71.43 \$/B</b>	-	317	9	413	129	-	868	-
Revisions of previous estimates	-	6	-	32	(35)	-	3	-
Extensions, discoveries and other	-	24	-	18	-	-	42	-
Acquisitions of reserves in place	-	-	-	-	-	-	-	-
Sales of reserves in place	-	-	-	-	-	-	-	-
Production for the year	-	(27)	(2)	(48)	(2)	-	(79)	-
<b>BALANCE AS OF DECEMBER 31, 2019 – BRENT AT 62.74 \$/B</b>	-	320	7	415	92	-	834	-

## Consolidated subsidiaries and equity affiliates

*(in millions of barrels of oil equivalent)*

Proved developed and undeveloped reserves	Oil						Bitumen	
	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total	Americas
<b>AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/B</b>								
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>976</b>	<b>269</b>	<b>1,463</b>	<b>1,311</b>	<b>271</b>	<b>205</b>	<b>4,495</b>	<b>1,110</b>
Consolidated subsidiaries	976	23	1,450	1,051	101	205	3,806	1,110
Equity affiliates	-	246	13	260	170	-	689	-
<b>PROVED DEVELOPED RESERVES</b>	<b>445</b>	<b>151</b>	<b>836</b>	<b>1,061</b>	<b>145</b>	<b>17</b>	<b>2,655</b>	<b>100</b>
Consolidated subsidiaries	445	15	833	846	71	17	2,227	100
Equity affiliates	-	136	3	215	74	-	428	-
<b>PROVED UNDEVELOPED RESERVES</b>	<b>531</b>	<b>118</b>	<b>627</b>	<b>250</b>	<b>126</b>	<b>188</b>	<b>1,840</b>	<b>1,010</b>
Consolidated subsidiaries	531	8	617	205	30	188	1,579	1,010
Equity affiliates	-	110	10	45	96	-	261	-
<b>AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/B</b>								
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>936</b>	<b>286</b>	<b>1,295</b>	<b>1,642</b>	<b>242</b>	<b>200</b>	<b>4,601</b>	<b>813</b>
Consolidated subsidiaries	936	10	1,282	1,210	85	200	3,723	813
Equity affiliates	-	276	13	432	157	-	878	-
<b>PROVED DEVELOPED RESERVES</b>	<b>476</b>	<b>152</b>	<b>819</b>	<b>1,309</b>	<b>151</b>	<b>14</b>	<b>2,921</b>	<b>160</b>
Consolidated subsidiaries	476	7	816	955	73	14	2,341	160
Equity affiliates	-	145	3	354	78	-	580	-
<b>PROVED UNDEVELOPED RESERVES</b>	<b>460</b>	<b>134</b>	<b>476</b>	<b>333</b>	<b>91</b>	<b>186</b>	<b>1,680</b>	<b>653</b>
Consolidated subsidiaries	460	3	466	255	12	186	1,382	653
Equity affiliates	-	131	10	78	79	-	298	-
<b>AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/B</b>								
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>902</b>	<b>293</b>	<b>1,199</b>	<b>1,628</b>	<b>308</b>	<b>192</b>	<b>4,522</b>	<b>928</b>
Consolidated subsidiaries	902	9	1,188	1,218	168	192	3,677	928
Equity affiliates	-	284	11	410	140	-	845	-
<b>PROVED DEVELOPED RESERVES</b>	<b>541</b>	<b>176</b>	<b>853</b>	<b>1,321</b>	<b>145</b>	<b>10</b>	<b>3,046</b>	<b>142</b>
Consolidated subsidiaries	541	8	849	1,000	77	10	2,485	142
Equity affiliates	-	168	4	321	68	-	561	-
<b>PROVED UNDEVELOPED RESERVES</b>	<b>361</b>	<b>117</b>	<b>346</b>	<b>307</b>	<b>163</b>	<b>182</b>	<b>1,476</b>	<b>786</b>
Consolidated subsidiaries	361	2	338	217	91	182	1,191	786
Equity affiliates	-	115	8	90	72	-	285	-



## Consolidated subsidiaries and equity affiliates

*(in millions of barrels of oil equivalent)*

Proved developed and undeveloped reserves	Oil						Bitumen	
	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total	Americas
<b>AS OF DECEMBER 31, 2018 – BRENT AT 71.43 \$/B</b>								
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>1,060</b>	<b>325</b>	<b>1,138</b>	<b>2,100</b>	<b>409</b>	<b>174</b>	<b>5,206</b>	<b>843</b>
Consolidated subsidiaries	1,060	8	1,129	1,687	280	174	4,338	843
Equity affiliates	-	317	9	413	129	-	868	-
<b>PROVED DEVELOPED RESERVES</b>	<b>698</b>	<b>196</b>	<b>928</b>	<b>1,750</b>	<b>164</b>	<b>118</b>	<b>3,854</b>	<b>512</b>
Consolidated subsidiaries	698	6	927	1,430	106	118	3,285	512
Equity affiliates	-	190	1	320	58	-	569	-
<b>PROVED UNDEVELOPED RESERVES</b>	<b>362</b>	<b>129</b>	<b>210</b>	<b>350</b>	<b>245</b>	<b>56</b>	<b>1,352</b>	<b>331</b>
Consolidated subsidiaries	362	2	202	257	174	56	1,053	331
Equity affiliates	-	127	8	93	71	-	299	-
<b>AS OF DECEMBER 31, 2019- BRENT AT 64.74 \$/B</b>								
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>1,031</b>	<b>328</b>	<b>1,039</b>	<b>2,173</b>	<b>462</b>	<b>167</b>	<b>5,200</b>	<b>806</b>
Consolidated subsidiaries	1,031	8	1,032	1,758	370	167	4,366	806
Equity affiliates	-	320	7	415	92	-	834	-
<b>PROVED DEVELOPED RESERVES</b>	<b>859</b>	<b>199</b>	<b>900</b>	<b>1,718</b>	<b>155</b>	<b>114</b>	<b>3,945</b>	<b>497</b>
Consolidated subsidiaries	859	7	899	1,402	113	114	3,394	497
Equity affiliates	-	192	1	316	42	-	551	-
<b>PROVED UNDEVELOPED RESERVES</b>	<b>172</b>	<b>129</b>	<b>139</b>	<b>455</b>	<b>307</b>	<b>53</b>	<b>1,255</b>	<b>309</b>
Consolidated subsidiaries	172	1	133	356	257	53	972	309
Equity affiliates	-	128	6	99	50	-	283	-

## CHANGES IN GAS RESERVES

(in billion cubic feet)

Gas reserves – Consolidated subsidiaries

Proved developed and undeveloped reserves	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
<b>BALANCE AS OF DECEMBER 31, 2014 – BRENT AT 101.27 \$/B</b>	<b>4,934</b>	<b>15</b>	<b>3,203</b>	<b>1,300</b>	<b>3,693</b>	<b>4,622</b>	<b>17,767</b>
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)
<b>BALANCE AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/B</b>	<b>4,470</b>	<b>15</b>	<b>2,848</b>	<b>1,429</b>	<b>3,301</b>	<b>4,485</b>	<b>16,548</b>
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)
<b>BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/B</b>	<b>4,208</b>	<b>5</b>	<b>2,584</b>	<b>1,297</b>	<b>4,204</b>	<b>4,265</b>	<b>16,563</b>
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)
<b>BALANCE AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/B</b>	<b>4,132</b>	<b>7</b>	<b>2,431</b>	<b>1,290</b>	<b>4,066</b>	<b>4,078</b>	<b>16,004</b>
Revisions of previous estimates	481	1	39	(21)	24	141	665
Extensions, discoveries and other	176	-	191	214	141	29	751
Acquisitions of reserves in place	516	-	-	130	14	-	660
Sales of reserves in place	(362)	-	(5)	-	-	(343)	(710)
Production for the year	(515)	-	(257)	(110)	(421)	(273)	(1,576)
<b>BALANCE AS OF DECEMBER 31, 2018 – BRENT AT 71.43 \$/B</b>	<b>4,428</b>	<b>8</b>	<b>2,399</b>	<b>1,503</b>	<b>3,824</b>	<b>3,632</b>	<b>15,794</b>
Revisions of previous estimates	115	-	76	40	142	114	487
Extensions, discoveries and other	4	-	-	-	79	178	261
Acquisitions of reserves in place	104	-	2,272	5	-	-	2,381
Sales of reserves in place	(10)	-	-	-	(2)	-	(12)
Production for the year	(514)	(1)	(236)	(129)	(405)	(368)	(1,653)
<b>BALANCE AS OF DECEMBER 31, 2019 – BRENT AT 62.74 \$/B</b>	<b>4,127</b>	<b>7</b>	<b>4,511</b>	<b>1,419</b>	<b>3,638</b>	<b>3,556</b>	<b>17,258</b>
<b>Minority interest in proved developed and undeveloped reserves as of</b>							
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
December 31, 2018 – Brent at 71.43 \$/b	-	-	43	-	-	-	43
<b>DECEMBER 31, 2019 – BRENT AT 62.74 \$/B</b>	<b>-</b>	<b>-</b>	<b>44</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>44</b>

(in billion cubic feet)

Gas reserves – Equity affiliates

Proved developed and undeveloped reserves	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
<b>BALANCE AS OF DECEMBER 31, 2014 – BRENT AT 101.27 \$/B</b>	-	<b>10,508</b>	<b>356</b>	<b>4,897</b>	<b>62</b>	-	<b>15,823</b>
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)
<b>BALANCE AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/B</b>	-	<b>10,604</b>	<b>311</b>	<b>4,695</b>	<b>48</b>	-	<b>15,658</b>
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)
<b>BALANCE AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/B</b>	-	<b>11,378</b>	<b>301</b>	<b>4,697</b>	<b>45</b>	-	<b>16,421</b>
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)
<b>BALANCE AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/B</b>	-	<b>11,671</b>	<b>276</b>	<b>4,513</b>	<b>42</b>	-	<b>16,502</b>
Revisions of previous estimates	-	394	(9)	28	11	-	424
Extensions, discoveries and other	-	60	-	-	-	-	60
Acquisitions of reserves in place	-	489	-	-	-	-	489
Sales of reserves in place	-	(112)	-	-	-	-	(112)
Production for the year	-	(616)	(30)	(184)	(2)	-	(832)
<b>BALANCE AS OF DECEMBER 31, 2018 – BRENT AT 71.43 \$/B</b>	-	<b>11,886</b>	<b>237</b>	<b>4,357</b>	<b>51</b>	-	<b>16,531</b>
Revisions of previous estimates	-	425	19	45	(14)	-	475
Extensions, discoveries and other	-	2,786	-	-	-	-	2,786
Acquisitions of reserves in place	-	-	-	-	-	-	-
Sales of reserves in place	-	-	-	-	-	-	-
Production for the year	-	(798)	(53)	(184)	-	-	(1,035)
<b>BALANCE AS OF DECEMBER 31, 2019 – BRENT AT 62.74 \$/B</b>	-	<b>14,299</b>	<b>203</b>	<b>4,218</b>	<b>37</b>	-	<b>18,757</b>

(in billion cubic feet)

Gas reserves – Consolidated subsidiaries and equity affiliates

Proved developed and undeveloped reserves	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
<b>AS OF DECEMBER 31, 2015 – BRENT AT 54.17 \$/B</b>							
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>4,470</b>	<b>10,619</b>	<b>3,159</b>	<b>6,124</b>	<b>3,349</b>	<b>4,485</b>	<b>32,206</b>
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
<b>PROVED DEVELOPED RESERVES</b>	<b>3,021</b>	<b>4,890</b>	<b>1,657</b>	<b>5,511</b>	<b>2,153</b>	<b>1,378</b>	<b>18,610</b>
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
<b>PROVED UNDEVELOPED RESERVES</b>	<b>1,449</b>	<b>5,729</b>	<b>1,502</b>	<b>613</b>	<b>1,196</b>	<b>3,107</b>	<b>13,596</b>
Consolidated subsidiaries	1,449	9	1,238	152	1,168	3,107	7,123
Equity affiliates	-	5,720	264	461	28	-	6,473
<b>AS OF DECEMBER 31, 2016 – BRENT AT 42.82 \$/B</b>							
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>4,208</b>	<b>11,383</b>	<b>2,885</b>	<b>5,994</b>	<b>4,249</b>	<b>4,265</b>	<b>32,984</b>
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
<b>PROVED DEVELOPED RESERVES</b>	<b>2,912</b>	<b>4,606</b>	<b>1,582</b>	<b>5,356</b>	<b>3,774</b>	<b>1,260</b>	<b>19,490</b>
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
<b>PROVED UNDEVELOPED RESERVES</b>	<b>1,296</b>	<b>6,777</b>	<b>1,303</b>	<b>638</b>	<b>475</b>	<b>3,005</b>	<b>13,494</b>
Consolidated subsidiaries	1,296	2	1,039	140	453	3,005	5,935
Equity affiliates	-	6,775	264	498	22	-	7,559
<b>AS OF DECEMBER 31, 2017 – BRENT AT 54.36 \$/B</b>							
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>4,132</b>	<b>11,678</b>	<b>2,707</b>	<b>5,803</b>	<b>4,108</b>	<b>4,078</b>	<b>32,506</b>
Consolidated subsidiaries	4,132	7	2,431	1,289	4,066	4,078	16,004
Equity affiliates	-	11,671	276	4,514	42	-	16,502
<b>PROVED DEVELOPED RESERVES</b>	<b>2,964</b>	<b>6,262</b>	<b>1,749</b>	<b>5,151</b>	<b>3,493</b>	<b>1,127</b>	<b>20,746</b>
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
<b>PROVED UNDEVELOPED RESERVES</b>	<b>1,168</b>	<b>5,416</b>	<b>958</b>	<b>652</b>	<b>615</b>	<b>2,951</b>	<b>11,760</b>
Consolidated subsidiaries	1,168	3	739	276	590	2,951	5,727
Equity affiliates	-	5,413	219	376	25	-	6,033



(in billion cubic feet)

Gas reserves – Consolidated subsidiaries and equity affiliates

Proved developed and undeveloped reserves	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
<b>AS OF DECEMBER 31, 2018 – BRENT AT 71.43 \$/B</b>							
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>4,428</b>	<b>11,894</b>	<b>2,636</b>	<b>5,860</b>	<b>3,875</b>	<b>3,632</b>	<b>32,325</b>
Consolidated subsidiaries	4,428	8	2,399	1,503	3,824	3,632	15,794
Equity affiliates	-	11,886	237	4,357	51	-	16,531
<b>PROVED DEVELOPED RESERVES</b>	<b>3,050</b>	<b>6,426</b>	<b>1,658</b>	<b>5,233</b>	<b>3,213</b>	<b>2,219</b>	<b>21,799</b>
Consolidated subsidiaries	3,050	4	1,625	1,224	3,188	2,219	11,310
Equity affiliates	-	6,422	33	4,009	25	-	10,489
<b>PROVED UNDEVELOPED RESERVES</b>	<b>1,378</b>	<b>5,468</b>	<b>978</b>	<b>627</b>	<b>662</b>	<b>1,413</b>	<b>10,526</b>
Consolidated subsidiaries	1,378	4	774	279	636	1,413	4,484
Equity affiliates	-	5,464	204	348	26	-	6,042
<b>AS OF DECEMBER 31, 2019 – BRENT AT 62.74 \$/B</b>							
<b>PROVED DEVELOPED AND UNDEVELOPED RESERVES</b>	<b>4,127</b>	<b>14,306</b>	<b>4,714</b>	<b>5,637</b>	<b>3,675</b>	<b>3,556</b>	<b>36,015</b>
Consolidated subsidiaries	4,127	7	4,511	1,419	3,638	3,556	17,258
Equity affiliates	-	14,299	203	4,218	37	-	18,757
<b>PROVED DEVELOPED RESERVES</b>	<b>3,137</b>	<b>7,018</b>	<b>1,547</b>	<b>5,009</b>	<b>3,237</b>	<b>2,152</b>	<b>22,100</b>
Consolidated subsidiaries	3,137	4	1,526	1,141	3,219	2,152	11,179
Equity affiliates	-	7,014	21	3,868	18	-	10,921
<b>PROVED UNDEVELOPED RESERVES</b>	<b>990</b>	<b>7,288</b>	<b>3,167</b>	<b>628</b>	<b>438</b>	<b>1,404</b>	<b>13,915</b>
Consolidated subsidiaries	990	3	2,985	278	419	1,404	6,079
Equity affiliates	-	7,285	182	350	19	-	7,836

## 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.

(in million dollars)

	Consolidated subsidiaries						
	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
<b>2015</b>							
Revenues Non-Group sales	1,345	-	989	2,340	970	3,013	8,657
Revenues Group sales	3,816	129	7,816	1,858	271	356	14,246
<b>TOTAL REVENUES</b>	<b>5,161</b>	<b>129</b>	<b>8,805</b>	<b>4,198</b>	<b>1,241</b>	<b>3,369</b>	<b>22,903</b>
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 <sup>(1)</sup>	(350)	(16)	(722)	(2,756)	(280)	(121)	(4,245)
<b>PRE-TAX INCOME FROM PRODUCING ACTIVITIES<sup>(2)</sup></b>	<b>214</b>	<b>(127)</b>	<b>(466)</b>	<b>(787)</b>	<b>(1,198)</b>	<b>(1,063)</b>	<b>(3,427)</b>
Income tax	458	(4)	(220)	(123)	210	(173)	148
<b>RESULTS OF OIL AND GAS PRODUCING ACTIVITIES<sup>(2)</sup></b>	<b>672</b>	<b>(131)</b>	<b>(686)</b>	<b>(910)</b>	<b>(988)</b>	<b>(1,236)</b>	<b>(3,279)</b>
<b>2016</b>							
Revenues Non-Group sales	1,075	-	507	613	963	2,113	5,271
Revenues Group sales	3,046	72	6,826	3,033	494	444	13,915
<b>TOTAL REVENUES</b>	<b>4,121</b>	<b>72</b>	<b>7,333</b>	<b>3,646</b>	<b>1,457</b>	<b>2,557</b>	<b>19,186</b>
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 <sup>(1)</sup>	(339)	(8)	(615)	(2,328)	(224)	(97)	(3,611)
<b>PRE-TAX INCOME FROM PRODUCING ACTIVITIES<sup>(3)</sup></b>	<b>(1,234)</b>	<b>(58)</b>	<b>443</b>	<b>(127)</b>	<b>(54)</b>	<b>841</b>	<b>(189)</b>
Income tax	818	14	(143)	(205)	(27)	(184)	273
<b>RESULTS OF OIL AND GAS PRODUCING ACTIVITIES<sup>(3)</sup></b>	<b>(416)</b>	<b>(44)</b>	<b>300</b>	<b>(332)</b>	<b>(81)</b>	<b>657</b>	<b>84</b>
<b>2017</b>							
Revenues Non-Group sales	1,454	-	975	934	1,335	2,160	6,858
Revenues Group sales	3,932	41	8,486	3,706	821	453	17,439
<b>TOTAL REVENUES</b>	<b>5,386</b>	<b>41</b>	<b>9,461</b>	<b>4,640</b>	<b>2,156</b>	<b>2,613</b>	<b>24,297</b>
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 <sup>(1)</sup>	(352)	(7)	(775)	(2,619)	(338)	(121)	(4,212)
<b>PRE-TAX INCOME FROM PRODUCING ACTIVITIES<sup>(4)</sup></b>	<b>615</b>	<b>(18)</b>	<b>1,382</b>	<b>1,066</b>	<b>(1,545)</b>	<b>1,278</b>	<b>2,778</b>
Income tax	(776)	(2)	(853)	(469)	387	(482)	(2,195)
<b>RESULTS OF OIL AND GAS PRODUCING ACTIVITIES<sup>(4)</sup></b>	<b>(161)</b>	<b>(20)</b>	<b>529</b>	<b>597</b>	<b>(1,158)</b>	<b>796</b>	<b>583</b>

(1) Included production taxes and accretion expense as provided by IAS 37 (\$497 million in 2015, \$507 million in 2016, \$525 million in 2017, \$515 million in 2018 and \$515 million in 2019).

(2) 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.

(3) 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.

(4) 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.

(in million dollars)

Consolidated subsidiaries

	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
<b>2018</b>							
Revenues Non-Group sales	2,199	-	1,899	2,331	1,109	1,384	8,922
Revenues Group sales	6,686	86	10,702	6,760	1,730	222	26,186
<b>TOTAL REVENUES</b>	<b>8,885</b>	<b>86</b>	<b>12,601</b>	<b>9,091</b>	<b>2,839</b>	<b>1,606</b>	<b>35,108</b>
Production costs	(1,546)	(14)	(1,208)	(617)	(864)	(147)	(4,396)
Exploration expenses	(297)	(1)	(144)	(45)	(218)	(93)	(798)
Depreciation, depletion and amortization and valuation allowances	(2,464)	(33)	(4,400)	(1,227)	(1,356)	(1,066)	(10,546)
Other expenses <sup>(1)</sup>	(395)	(12)	(993)	(5,561)	(423)	(141)	(7,525)
<b>PRE-TAX INCOME FROM PRODUCING ACTIVITIES<sup>(2)</sup></b>	<b>4,183</b>	<b>26</b>	<b>5,856</b>	<b>1,641</b>	<b>(22)</b>	<b>159</b>	<b>11,843</b>
Income tax	(2,356)	(16)	(2,440)	(868)	88	(25)	(5,617)
<b>RESULTS OF OIL AND GAS PRODUCING ACTIVITIES<sup>(2)</sup></b>	<b>1,827</b>	<b>10</b>	<b>3,416</b>	<b>773</b>	<b>66</b>	<b>134</b>	<b>6,226</b>
<b>2019</b>							
Revenues Non-Group sales	1,011	-	1,260	1,686	972	2,171	7,100
Revenues Group sales	6,383	83	11,286	7,369	2,110	390	27,621
<b>TOTAL REVENUES</b>	<b>7,394</b>	<b>83</b>	<b>12,546</b>	<b>9,055</b>	<b>3,082</b>	<b>2,561</b>	<b>34,721</b>
Production costs	(1,521)	(12)	(1,249)	(639)	(873)	(239)	(4,533)
Exploration expenses	(230)	(2)	(65)	(24)	(392)	(72)	(785)
Depreciation, depletion and amortization and valuation allowances	(2,238)	(100)	(5,556)	(798)	(1,924)	(1,019)	(11,635)
Other expenses <sup>(1)</sup>	(456)	(12)	(918)	(5,560)	(392)	(173)	(7,511)
<b>PRE-TAX INCOME FROM PRODUCING ACTIVITIES<sup>(2)</sup></b>	<b>2,949</b>	<b>(43)</b>	<b>4,758</b>	<b>2,034</b>	<b>(499)</b>	<b>1,058</b>	<b>10,257</b>
Income tax	(1,564)	13	(2,004)	(814)	309	(108)	(4,168)
<b>RESULTS OF OIL AND GAS PRODUCING ACTIVITIES<sup>(2)</sup></b>	<b>1,385</b>	<b>(30)</b>	<b>2,754</b>	<b>1,220</b>	<b>(190)</b>	<b>950</b>	<b>6,089</b>

(1) Included production taxes and accretion expense as provided by IAS 37 (\$497 million in 2015, \$507 million in 2016, \$525 million in 2017, \$515 million in 2018 and \$515 million in 2019).

(2) Including adjustment items applicable to ASC 932 perimeter, amounting to a net charge of \$ 1,238 million before tax and \$703 million after tax, essentially related to asset impairments.

(3) Including adjustment items applicable to ASC 932 perimeter, amounting to a net charge of \$ 899 million before tax and \$392 million after tax, essentially related to asset impairments.

(in million dollars)

Equity affiliates

Group's share of results of oil and gas producing activities	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
2015	-	285	-	699	32	-	1,016
2016	-	398	-	380	102	-	880
2017	-	483	72	547	62	-	1,164
2018	-	1,144	122	746	41	-	2,053
<b>2019</b>							
Revenues Non-Group sales	-	2,317	67	3,128	41	-	5,553
Revenues Group sales	-	-	-	606	-	-	606
<b>TOTAL REVENUES</b>	<b>-</b>	<b>2,317</b>	<b>67</b>	<b>3,734</b>	<b>41</b>	<b>-</b>	<b>6,159</b>
Production costs	-	(182)	-	(311)	(19)	-	(512)
Exploration expenses	-	(30)	-	-	-	-	(30)
Depreciation, depletion and amortization and valuation allowances	-	(254)	-	(227)	(23)	-	(504)
Other expenses	-	(230)	(9)	(2,086)	(39)	-	(2,364)
<b>PRE-TAX INCOME FROM PRODUCING ACTIVITIES</b>	<b>-</b>	<b>1,621</b>	<b>58</b>	<b>1,110</b>	<b>(40)</b>	<b>-</b>	<b>2,749</b>
Income tax	-	(222)	-	(469)	13	-	(678)
<b>RESULTS OF OIL AND GAS PRODUCING ACTIVITIES</b>	<b>-</b>	<b>1,399</b>	<b>58</b>	<b>641</b>	<b>(27)</b>	<b>-</b>	<b>2,071</b>

## 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.

(in million dollars)

	Consolidated subsidiaries						Total
	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	
<b>2015</b>							
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 <sup>(1)</sup>	4,735	97	7,582	600	3,143	2,381	18,538
<b>TOTAL COST INCURRED</b>	<b>5,410</b>	<b>104</b>	<b>7,954</b>	<b>3,107</b>	<b>3,857</b>	<b>2,656</b>	<b>23,088</b>
<b>2016</b>							
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 <sup>(1)</sup>	3,041	30	5,977	729	2,032	898	12,707
<b>TOTAL COST INCURRED</b>	<b>3,742</b>	<b>34</b>	<b>6,172</b>	<b>833</b>	<b>3,123</b>	<b>1,079</b>	<b>14,983</b>
<b>2017</b>							
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 <sup>(1)</sup>	1,445	20	3,544	948	1,957	1,073	8,987
<b>TOTAL COST INCURRED</b>	<b>1,919</b>	<b>22</b>	<b>3,771</b>	<b>1,014</b>	<b>2,512</b>	<b>1,721</b>	<b>10,959</b>
<b>2018<sup>(2)</sup></b>							
Proved property acquisition	2,899	-	210	473	1,417	-	4,999
Unproved property acquisition	3,173	-	245	2,337	2,137	1	7,893
Exploration costs	379	1	196	34	406	156	1,172
Development costs <sup>(1)</sup>	1,642	23	3,252	1,378	1,649	1,346	9,290
<b>TOTAL COST INCURRED</b>	<b>8,093</b>	<b>24</b>	<b>3,903</b>	<b>4,222</b>	<b>5,609</b>	<b>1,503</b>	<b>23,354</b>
<b>2019<sup>(3)</sup></b>							
Proved property acquisition	16	-	244	10	14	-	284
Unproved property acquisition	7	-	3,124	42	509	3	3,685
Exploration costs	262	2	198	78	469	84	1,093
Development costs <sup>(1)</sup>	2,273	28	2,724	1,074	1,547	598	8,244
<b>TOTAL COST INCURRED</b>	<b>2,558</b>	<b>30</b>	<b>6,290</b>	<b>1,204</b>	<b>2,539</b>	<b>685</b>	<b>13,306</b>

(in million dollars)

Group's share of costs of property acquisition exploration and development	Equity affiliates						Total
	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	
2015	-	637	-	406	83	-	1,126
2016	-	243	-	544	61	-	848
2017	-	219	-	629	88	-	936
2018	-	366	-	593	67	-	1,026
<b>2019</b>							
Proved property acquisition	-	-	-	-	-	-	-
Unproved property acquisition	-	1,673	-	-	-	-	1,673
Exploration costs	-	-	-	5	-	-	5
Development costs <sup>(1)</sup>	-	390	-	400	4	-	794
<b>Total cost incurred</b>	<b>-</b>	<b>2,063</b>	<b>-</b>	<b>405</b>	<b>4</b>	<b>-</b>	<b>2,472</b>

(1) Including asset retirement costs capitalized during the year and any gains or losses recognized upon settlement of asset retirement obligation during the year.

(2) Including costs incurred relating to acquisitions of Maersk Oil, Iara and Lapa concessions and Marathon Oil Libya Ltd.

(3) Including costs incurred relating to acquisitions Anadarko in Mozambique.



## CAPITALIZED COST 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.

(in million dollars)

	Consolidated subsidiaries						
	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
<b>As of December 31, 2015</b>							
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
<b>Total capitalized costs</b>	<b>56,068</b>	<b>1,167</b>	<b>78,204</b>	<b>14,874</b>	<b>28,545</b>	<b>23,883</b>	<b>202,741</b>
Accumulated depreciation, depletion and amortization	(28,341)	(699)	(39,259)	(9,283)	(11,488)	(13,647)	(102,717)
<b>NET CAPITALIZED COSTS</b>	<b>27,727</b>	<b>468</b>	<b>38,945</b>	<b>5,591</b>	<b>17,057</b>	<b>10,236</b>	<b>100,024</b>
<b>As of December 31, 2016</b>							
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
<b>Total capitalized costs</b>	<b>55,611</b>	<b>604</b>	<b>82,995</b>	<b>12,932</b>	<b>32,003</b>	<b>24,659</b>	<b>208,804</b>
Accumulated depreciation, depletion and amortization	(29,227)	(385)	(42,988)	(7,973)	(12,764)	(14,735)	(108,072)
<b>NET CAPITALIZED COSTS</b>	<b>26,384</b>	<b>219</b>	<b>40,007</b>	<b>4,959</b>	<b>19,239</b>	<b>9,924</b>	<b>100,732</b>
<b>As of December 31, 2017</b>							
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
<b>Total capitalized costs</b>	<b>59,709</b>	<b>623</b>	<b>84,082</b>	<b>13,874</b>	<b>33,619</b>	<b>26,256</b>	<b>218,163</b>
Accumulated depreciation, depletion and amortization	(34,370)	(421)	(46,725)	(8,450)	(14,345)	(15,550)	(119,861)
<b>NET CAPITALIZED COSTS</b>	<b>25,339</b>	<b>202</b>	<b>37,357</b>	<b>5,424</b>	<b>19,274</b>	<b>10,706</b>	<b>98,303</b>
<b>As of December 31, 2018</b>							
Proved properties	58,981	641	82,077	15,684	28,744	26,122	212,249
Unproved properties	2,873	4	4,631	2,802	8,969	1,708	20,987
<b>Total capitalized costs</b>	<b>61,854</b>	<b>645</b>	<b>86,708</b>	<b>18,486</b>	<b>37,713</b>	<b>27,830</b>	<b>233,236</b>
Accumulated depreciation, depletion and amortization	(35,036)	(454)	(50,029)	(10,012)	(14,398)	(16,682)	(126,611)
<b>NET CAPITALIZED COSTS</b>	<b>26,818</b>	<b>191</b>	<b>36,679</b>	<b>8,474</b>	<b>23,315</b>	<b>11,148</b>	<b>106,625</b>
<b>As of December 31, 2019</b>							
Proved properties	61,556	669	84,170	16,773	29,580	25,705	218,453
Unproved properties	2,720	4	8,253	2,998	8,987	1,792	24,754
<b>Total capitalized costs</b>	<b>64,276</b>	<b>673</b>	<b>92,423</b>	<b>19,771</b>	<b>38,567</b>	<b>27,497</b>	<b>243,207</b>
Accumulated depreciation, depletion and amortization	(36,815)	(551)	(55,686)	(10,720)	(15,414)	(17,645)	(136,831)
<b>NET CAPITALIZED COSTS</b>	<b>27,461</b>	<b>122</b>	<b>36,737</b>	<b>9,051</b>	<b>23,153</b>	<b>9,852</b>	<b>106,376</b>

(in million dollars)

Equity affiliates

Group's share of net capitalized costs	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
As of December 31, 2015	-	4,120	-	1,131	1,097	-	6,348
As of December 31, 2016	-	4,987	-	1,179	1,094	-	7,260
As of December 31, 2017	-	5,074	-	1,243	1,084	-	7,401
As of December 31, 2018	-	4,939	-	1,607	1,083	-	7,629
<b>As of December 31, 2019</b>							
Proved properties	-	9,004	-	3,791	1,699	-	14,494
Unproved properties	-	110	-	-	-	-	110
<b>Total capitalized costs</b>	-	<b>9,114</b>	-	<b>3,791</b>	<b>1,699</b>	-	<b>14,604</b>
Accumulated depreciation, depletion and amortization	-	(1,995)	-	(2,036)	(681)	-	(4,712)
<b>NET CAPITALIZED COSTS</b>	-	<b>7,119</b>	-	<b>1,755</b>	<b>1,018</b>	-	<b>9,892</b>

## 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:

1. estimates of proved reserves and the corresponding production profiles are based on current technical and economic conditions;
2. the estimated future cash flows are determined based on prices used in estimating the Group's proved oil and gas reserves;
3. 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;
4. 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

5. future net cash flows are discounted at a standard discount rate of 10 percent.

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 reserve estimates.

(in million dollars)

	Consolidated subsidiaries						
	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
<b>As of December 31, 2015</b>							
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)
<b>FUTURE NET CASH FLOWS, AFTER INCOME TAXES</b>	<b>21,214</b>	<b>10</b>	<b>10,712</b>	<b>4,030</b>	<b>4,554</b>	<b>9,214</b>	<b>49,734</b>
Discount at 10%	(10,784)	18	(3,450)	(2,194)	(4,014)	(5,299)	(25,723)
<b>STANDARDIZED MEASURE OF DISCOUNTED FUTURE NET CASH FLOWS</b>	<b>10,430</b>	<b>28</b>	<b>7,262</b>	<b>1,836</b>	<b>540</b>	<b>3,915</b>	<b>24,011</b>
<b>As of December 31, 2016</b>							
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)
<b>FUTURE NET CASH FLOWS, AFTER INCOME TAXES</b>	<b>12,851</b>	<b>(34)</b>	<b>5,378</b>	<b>6,271</b>	<b>777</b>	<b>5,954</b>	<b>31,197</b>
Discount at 10%	(5,172)	8	(64)	(2,986)	(815)	(2,666)	(11,695)
<b>STANDARDIZED MEASURE OF DISCOUNTED FUTURE NET CASH FLOWS</b>	<b>7,679</b>	<b>(26)</b>	<b>5,314</b>	<b>3,285</b>	<b>(38)</b>	<b>3,288</b>	<b>19,502</b>
<b>As of December 31, 2017</b>							
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)
<b>FUTURE NET CASH FLOWS, AFTER INCOME TAXES</b>	<b>18,802</b>	<b>47</b>	<b>18,043</b>	<b>6,843</b>	<b>10,572</b>	<b>9,070</b>	<b>63,377</b>
Discount at 10%	(8,106)	(3)	(4,977)	(3,065)	(6,562)	(3,567)	(26,280)
<b>STANDARDIZED MEASURE OF DISCOUNTED FUTURE NET CASH FLOWS</b>	<b>10,696</b>	<b>44</b>	<b>13,066</b>	<b>3,778</b>	<b>4,010</b>	<b>5,503</b>	<b>37,097</b>

(in million dollars)

	Consolidated subsidiaries						
	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
<b>As of December 31, 2018</b>							
Future cash inflows	90,506	508	79,258	121,614	41,224	19,936	353,046
Future production costs	(21,813)	(226)	(19,236)	(95,749)	(21,282)	(4,570)	(162,876)
Future development costs	(17,735)	(135)	(13,861)	(6,656)	(6,584)	(3,093)	(48,064)
Future income taxes	(22,486)	(63)	(16,357)	(5,965)	(2,322)	(2,809)	(50,002)
<b>FUTURE NET CASH FLOWS, AFTER INCOME TAXES</b>	<b>28,472</b>	<b>84</b>	<b>29,804</b>	<b>13,244</b>	<b>11,036</b>	<b>9,464</b>	<b>92,104</b>
Discount at 10%	(11,811)	(16)	(8,277)	(5,469)	(5,479)	(3,247)	(34,299)
<b>STANDARDIZED MEASURE OF DISCOUNTED FUTURE NET CASH FLOWS</b>	<b>16,661</b>	<b>68</b>	<b>21,527</b>	<b>7,775</b>	<b>5,557</b>	<b>6,217</b>	<b>57,805</b>
<b>As of December 31, 2019</b>							
Future cash inflows	70,868	436	70,854	110,796	50,810	19,953	323,717
Future production costs	(18,957)	(224)	(18,940)	(85,511)	(20,843)	(5,187)	(149,662)
Future development costs	(15,668)	(107)	(14,942)	(7,865)	(9,171)	(3,014)	(50,767)
Future income taxes	(12,932)	(46)	(12,341)	(4,887)	(1,790)	(1,867)	(33,863)
<b>FUTURE NET CASH FLOWS, AFTER INCOME TAXES</b>	<b>23,311</b>	<b>59</b>	<b>24,631</b>	<b>12,533</b>	<b>19,006</b>	<b>9,885</b>	<b>89,425</b>
Discount at 10%	(10,029)	(11)	(10,004)	(5,143)	(10,061)	(3,588)	(38,836)
<b>STANDARDIZED MEASURE OF DISCOUNTED FUTURE NET CASH FLOWS</b>	<b>13,282</b>	<b>48</b>	<b>14,627</b>	<b>7,390</b>	<b>8,945</b>	<b>6,297</b>	<b>50,589</b>
<b>Minority interests in future net cash flows as of</b>							
December 31, 2015	-	-	448	-	-	-	448
December 31, 2016	-	-	253	-	-	-	253
December 31, 2017	-	-	862	-	-	-	862
December 31, 2018	-	-	1,440	-	-	-	1,440
<b>DECEMBER 31, 2019</b>	<b>-</b>	<b>-</b>	<b>968</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>968</b>

(in million dollars)

	Equity affiliates						
Group's share of equity affiliates' future net cash flows as of	Europe & Central Asia (excl. Russia)	Russia	Africa (excluding North Africa)	Middle East & North Africa	Americas	Asia Pacific	Total
December 31, 2015	-	2,024	(103)	6,952	1,628	-	10,501
December 31, 2016	-	5,061	(183)	3,330	1,709	-	9,917
December 31, 2017	-	7,708	135	5,437	1,662	-	14,942
December 31, 2018	-	10,843	635	6,255	1,019	-	18,752
<b>December 31, 2019</b>	<b>-</b>	<b>43,959</b>	<b>326</b>	<b>39,513</b>	<b>3,970</b>	<b>-</b>	<b>87,768</b>
Future cash inflows	-	43,959	326	39,513	3,970	-	87,768
Future production costs	-	(9,904)	(44)	(17,392)	(2,062)	-	(29,402)
Future development costs	-	(1,894)	(44)	(3,272)	(242)	-	(5,452)
Future income taxes	-	(4,499)	-	(9,852)	(996)	-	(15,347)
<b>FUTURE NET CASH FLOWS, AFTER INCOME TAXES</b>	<b>-</b>	<b>27,662</b>	<b>238</b>	<b>8,997</b>	<b>670</b>	<b>-</b>	<b>37,567</b>
Discount at 10%	-	(16,507)	(156)	(4,626)	(406)	-	(21,695)
<b>STANDARDIZED MEASURE OF DISCOUNTED FUTURE NET CASH FLOWS</b>	<b>-</b>	<b>11,155</b>	<b>82</b>	<b>4,371</b>	<b>264</b>	<b>-</b>	<b>15,872</b>



## CHANGES IN THE STANDARDIZED MEASURE OF DISCOUNTED FUTURE NET CASH FLOWS

### Consolidated subsidiaries

(in million dollars)

	2019	2018	2017	2016	2015
<b>Discounted future net cash flows as of January 1</b>	<b>57,805</b>	<b>37,097</b>	<b>19,502</b>	<b>24,011</b>	<b>60,774</b>
Sales and transfers, net of production costs	(23,292)	(23,700)	(16,822)	(12,015)	(14,209)
Net change in sales and transfer prices and in production costs and other expenses	(15,484)	28,420	26,699	(21,189)	(88,615)
Extensions, discoveries and improved recovery	558	8,412	3,244	156	933
Changes in estimated future development costs	(1,735)	(1,071)	(324)	400	4,412
Previously estimated development costs incurred during the year	6,755	6,636	8,952	13,967	19,694
Revisions of previous quantity estimates	7,845	4,588	2,427	5,347	(4,800)
Accretion of discount	5,780	3,710	1,950	2,401	6,077
Net change in income taxes	12,146	(11,538)	(8,155)	6,304	42,252
Purchases of reserves in place	266	7,876	98	364	-
Sales of reserves in place	(55)	(2,625)	(474)	(244)	(2,507)
<b>END OF YEAR</b>	<b>50,589</b>	<b>57,805</b>	<b>37,097</b>	<b>19,502</b>	<b>24,011</b>

### Equity affiliates

(in million dollars)

	2019	2018	2017	2016	2015
<b>Discounted future net cash flows as of January 1</b>	<b>18,752</b>	<b>14,942</b>	<b>9,917</b>	<b>10,501</b>	<b>19,093</b>
Sales and transfers, net of production costs	(3,160)	(3,248)	(2,151)	(1,745)	(1,860)
Net change in sales and transfer prices and in production costs and other expenses	(8,191)	7,322	7,075	(3,840)	(14,821)
Extensions, discoveries and improved recovery	4,386	76	57	1,204	-
Changes in estimated future development costs	(736)	(255)	(1,171)	83	1,572
Previously estimated development costs incurred during the year	845	789	789	971	1,272
Revisions of previous quantity estimates	(104)	1,030	783	214	315
Accretion of discount	1,875	1,494	992	1,050	1,909
Net change in income taxes	2,205	(3,691)	(1,420)	(340)	2,901
Purchases of reserves in place	-	388	71	1,929	186
Sales of reserves in place	-	(95)	-	(110)	(66)
<b>END OF YEAR</b>	<b>15,872</b>	<b>18,752</b>	<b>14,942</b>	<b>9,917</b>	<b>10,501</b>

## OIL AND GAS ACREAGE

As of December 31,  
(in thousands of acres)

		2019		2018		2017	
		Undeveloped acreage <sup>(1) (2)</sup>	Developed acreage	Undeveloped acreage <sup>(1)</sup>	Developed acreage	Undeveloped acreage <sup>(1)</sup>	Developed acreage
Europe & Central Asia	Gross	29,124	917	19,649	923	17,885	730
	Net	11,625	231	7,450	221	6,567	165
Russia	Gross	23,697	709	3,733	619	3,758	604
	Net	4,280	146	685	127	691	121
Africa (excluding North Africa)	Gross	75,322	803	77,537	718	73,608	829
	Net	48,101	218	55,174	198	53,518	204
Middle East & North Africa	Gross	50,515	3,389	31,406	3,037	32,977	2,879
	Net	9,660	496	6,068	427	5,902	445
Americas	Gross	21,052	1,040	24,595	1,102	20,487	1,075
	Net	8,505	477	13,355	509	11,985	527
Asia Pacific	Gross	39,741	713	42,332	668	52,477	885
	Net	22,323	229	24,566	204	34,556	321
<b>TOTAL</b>	<b>GROSS</b>	<b>239,451</b>	<b>7,571</b>	<b>199,252</b>	<b>7,067</b>	<b>201,192</b>	<b>7,002</b>
	<b>NET<sup>(3)</sup></b>	<b>104,494</b>	<b>1,797</b>	<b>107,298</b>	<b>1,686</b>	<b>113,219</b>	<b>1,783</b>

As of December 31,  
(in thousands of acres)

		2016		2015	
		Undeveloped acreage <sup>(1)</sup>	Developed acreage	Undeveloped acreage <sup>(1)</sup>	Developed acreage
Europe & Central Asia	Gross	18,416	719	23,346	764
	Net	6,989	154	9,581	158
Russia	Gross	3,584	503	3,659	520
	Net	666	93	728	96
Africa (excluding North Africa)	Gross	79,517	806	82,757	817
	Net	46,071	200	45,852	207
Middle East & North Africa	Gross	37,148	2,606	38,582	2,686
	Net	9,991	371	10,545	366
Americas	Gross	24,569	992	23,881	984
	Net	13,155	468	9,186	304
Asia Pacific	Gross	44,242	738	38,834	672
	Net	27,373	276	23,285	251
<b>TOTAL</b>	<b>GROSS</b>	<b>207,476</b>	<b>6,364</b>	<b>211,059</b>	<b>6,443</b>
	<b>NET<sup>(3)</sup></b>	<b>104,245</b>	<b>1,562</b>	<b>99,177</b>	<b>1,382</b>

(1) Undeveloped acreage includes leases and concessions.

(2) For 2019, undeveloped acreage in Russia includes the leases of Novatek in which the Group has an indirect interest. As of December 31, 2018, the Group's undeveloped acreage was 20,308 thousands of acres and the net undeveloped acreage was 3,623 thousands of acres, including those licenses.

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

## NUMBER OF PRODUCTIVE WELLS

As of December 31, (number of wells)		2019		2018		2017	
		Gross productive wells	Net productive wells <sup>(1)</sup>	Gross productive wells	Net productive wells <sup>(1)</sup>	Gross productive wells	Net productive wells <sup>(1)</sup>
Europe & Central Asia	Oil	778	279	767	261	436	114
	Gas	281	96	314	98	244	90
Russia	Oil	418	71	337	65	297	55
	Gas	766	141	627	113	574	100
Africa (excluding North Africa)	Oil	1,531	429	1,533	429	1,590	442
	Gas	83	19	75	14	75	15
Middle East & North Africa	Oil	12,391	829	11,189	711	10,197	628
	Gas	197	48	190	40	168	41
Americas	Oil	1,085	357	1,066	352	1,044	346
	Gas	3,500	2,246	3,528	2,052	3,422	2,005
Asia Pacific	Oil	10	9	8	7	131	60
	Gas	2,917	920	2,289	743	3,053	1,108
<b>TOTAL</b>	<b>OIL</b>	<b>16,213</b>	<b>1,974</b>	<b>14,900</b>	<b>1,825</b>	<b>13,695</b>	<b>1,645</b>
	<b>GAS</b>	<b>7,744</b>	<b>3,470</b>	<b>7,023</b>	<b>3,060</b>	<b>7,536</b>	<b>3,359</b>

As of December 31, (number of wells)		2016		2015	
		Gross productive wells	Net productive wells <sup>(1)</sup>	Gross productive wells	Net productive wells <sup>(1)</sup>
Europe & Central Asia	Oil	415	106	407	108
	Gas	259	87	289	88
Russia	Oil	232	39	207	42
	Gas	489	80	516	80
Africa (excluding North Africa)	Oil	2,091	561	2,165	601
	Gas	96	19	98	22
Middle East & North Africa	Oil	9,385	609	7,992	534
	Gas	161	44	159	44
Americas	Oil	954	322	1,092	349
	Gas	3,585	2,230	3,903	795
Asia Pacific	Oil	124	55	119	53
	Gas	2,802	976	2,363	814
<b>TOTAL</b>	<b>OIL</b>	<b>13,201</b>	<b>1,692</b>	<b>11,982</b>	<b>1,687</b>
	<b>GAS</b>	<b>7,392</b>	<b>3,436</b>	<b>7,328</b>	<b>1,843</b>

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

## NUMBER OF NET PRODUCTIVE AND DRY WELLS DRILLED

As of December 31, (number of wells)	2019			2018			2017		
	Net productive wells drilled <sup>(1)(2)(4)</sup>	Net dry wells drilled <sup>(1)(3)(4)</sup>	Net total wells drilled <sup>(1)(3)(4)</sup>	Net productive wells drilled <sup>(1)(2)</sup>	Net dry wells drilled <sup>(1)(3)</sup>	Net total wells drilled <sup>(1)(3)</sup>	Net productive wells drilled <sup>(1)(2)</sup>	Net dry wells drilled <sup>(1)(3)</sup>	Net total wells drilled <sup>(1)(3)</sup>
<b>Exploratory</b>									
Europe & Central Asia	1.3	0.6	1.9	0.9	0.8	1.7	0.1	1.8	1.9
Russia	-	-	-	-	-	-	-	-	-
Africa (excluding North Africa)	1.1	0.6	1.7	0.1	1	1.1	0.2	0.5	0.8
Middle East & North Africa	1.0	1.4	2.4	0.5	-	0.5	0.6	0.5	1.1
Americas	1.4	2.2	3.6	0.5	1.6	2.1	1.3	0.5	1.7
Asia Pacific	-	-	-	0.8	-	0.8	1.2	0.7	1.9
<b>SUBTOTAL</b>	<b>4.8</b>	<b>4.8</b>	<b>9.6</b>	<b>2.8</b>	<b>3.4</b>	<b>6.2</b>	<b>3.4</b>	<b>4.0</b>	<b>7.4</b>
<b>Development</b>									
Europe & Central Asia	9.1	-	9.1	10.1	-	10.1	8.8	-	8.8
Russia	26.2	-	26.2	13.4	-	13.4	21.5	-	21.5
Africa (excluding North Africa)	17.4	-	17.4	13	0.1	13.1	14.4	-	14.4
Middle East & North Africa	69.6	-	69.6	68.8	-	68.8	82	-	82
Americas	64.3	-	64.3	38.8	0.3	39.1	29.2	0.5	29.7
Asia Pacific	170.1	-	170.1	116.3	-	116.3	132.4	-	132.4
<b>SUBTOTAL</b>	<b>356.7</b>	<b>-</b>	<b>356.7</b>	<b>260.4</b>	<b>0.4</b>	<b>260.8</b>	<b>288.3</b>	<b>0.5</b>	<b>288.8</b>
<b>TOTAL</b>	<b>361.5</b>	<b>4.8</b>	<b>366.3</b>	<b>263.2</b>	<b>3.8</b>	<b>267.0</b>	<b>291.7</b>	<b>4.5</b>	<b>296.2</b>

As of December 31, (number of wells)	2016			2015		
	Net productive wells drilled <sup>(1)(2)</sup>	Net dry wells drilled <sup>(1)(3)</sup>	Net total wells drilled <sup>(1)(3)</sup>	Net productive wells drilled <sup>(1)(2)</sup>	Net dry wells drilled <sup>(1)(3)</sup>	Net total wells drilled <sup>(1)(3)</sup>
<b>Exploratory</b>						
Europe & Central Asia	1.1	1	2.1	1.0	4.6	5.6
Russia	-	-	-	-	-	-
Africa (excluding North Africa)	0.7	-	0.7	0.2	2.1	2.3
Middle East & North Africa	0.8	-	0.8	0.3	0.5	0.8
Americas	2.1	0.8	2.9	1.4	0.6	2.0
Asia Pacific	1.6	-	1.6	2.0	0.9	2.9
<b>SUBTOTAL</b>	<b>6.3</b>	<b>1.8</b>	<b>8.1</b>	<b>4.9</b>	<b>8.7</b>	<b>13.6</b>
<b>Development</b>						
Europe & Central Asia	13.6	0.5	14.1	15.7	0.4	16.1
Russia	18.7	-	18.7	22.9	-	22.9
Africa (excluding North Africa)	14.6	-	14.6	21.4	-	21.4
Middle East & North Africa	49.3	1.1	50.4	36.6	0.6	37.2
Americas	35.4	-	35.4	60.6	0.1	60.7
Asia Pacific	151.0	-	151.0	86.9	-	86.9
<b>SUBTOTAL</b>	<b>282.6</b>	<b>1.6</b>	<b>284.2</b>	<b>244.1</b>	<b>1.1</b>	<b>245.2</b>
<b>TOTAL</b>	<b>288.9</b>	<b>3.4</b>	<b>292.3</b>	<b>249.0</b>	<b>9.8</b>	<b>258.8</b>

(1) Net wells equal the sum of the Company's fractional interest in gross wells.

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

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

(4) Include 1.7 extensions wells.



## WELLS IN THE PROCESS OF BEING DRILLED (INCLUDING WELLS TEMPORARILY SUSPENDED)

As of December 31, (number of wells)	2019		2018		2017	
	Gross	Net <sup>(1)</sup>	Gross	Net <sup>(1)</sup>	Gross	Net <sup>(1)</sup>
<b>Exploratory</b>						
Europe & Central Asia	1	0.3	-	-	6	1.9
Russia	-	-	-	-	-	-
Africa (excluding North Africa)	-	-	2	0.5	19	4.7
Middle East & North Africa	2	0.7	1	0.4	2	-
Americas	2	0.8	3	2	8	2.8
Asia Pacific	-	-	-	-	5	1.9
<b>SUBTOTAL</b>	<b>5</b>	<b>1.8</b>	<b>6</b>	<b>2.9</b>	<b>40</b>	<b>11.3</b>
<b>Other wells <sup>(2)</sup></b>						
Europe & Central Asia	122	67.3	138	71.4	16	5.2
Russia	25	6.3	26	3.9	61	15.2
Africa (excluding North Africa)	61	10.7	65	13.7	67	13.6
Middle East & North Africa	250	29.8	180	26.2	200	27.5
Americas	27	6.9	50	21.3	44	18.5
Asia Pacific	537	136.0	579	137.7	809	201.5
<b>SUBTOTAL</b>	<b>1,022</b>	<b>257.0</b>	<b>1,038</b>	<b>274.2</b>	<b>1,197</b>	<b>281.5</b>
<b>TOTAL</b>	<b>1,027</b>	<b>258.8</b>	<b>1,044</b>	<b>277.1</b>	<b>1,237</b>	<b>292.8</b>
<b>As of December 31,</b> (number of wells)						
			2016		2015	
			Gross	Net <sup>(1)</sup>	Gross	Net <sup>(1)</sup>
<b>Exploratory</b>						
Europe & Central Asia			4	0.9	9	2.5
Russia			-	-	-	-
Africa (excluding North Africa)			18	4.6	24	6.6
Middle East & North Africa			2	0.8	9	3.2
Americas			10	3.5	14	4.6
Asia Pacific			5	1.3	7	2.5
<b>SUBTOTAL</b>			<b>39</b>	<b>11.1</b>	<b>63</b>	<b>19.4</b>
<b>Other wells <sup>(2)</sup></b>						
Europe & Central Asia			45	11.8	59	17.2
Russia			111	27.9	113	17.4
Africa (excluding North Africa)			72	21.3	56	14.9
Middle East & North Africa			174	25.2	158	20.5
Americas			46	28.0	63	22.4
Asia Pacific			421	116.7	621	188.1
<b>SUBTOTAL</b>			<b>869</b>	<b>230.9</b>	<b>1,070</b>	<b>280.5</b>
<b>TOTAL</b>			<b>908</b>	<b>242.0</b>	<b>1,133</b>	<b>299.9</b>

(1) 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", for the year in which they were drilled.

(2) Other wells are development wells, service wells, stratigraphic wells and extension wells.

## INTERESTS IN PIPELINES

The table below sets forth interests of the Group's entities<sup>(1)</sup> in the main oil and gas pipelines.

As of December 31, 2019

Pipeline(s)	Origin	Destination	% interest	Operator	Liquids	Gas
<b>EUROPE AND CENTRAL ASIA</b>						
<b>Azerbaijan</b>						
BTC	Baku (Azerbaijan)	Ceyhan (Turkey, Mediterranean)	5.00		X	
<b>Norway</b>						
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	Teesside (United Kingdom)	45.22		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	
<b>The Netherlands</b>						
WGT K13-Den Helder	K13A	Den Helder	4.66			X
WGT K13-Extension	Markham	K13 (via K4/K5)	23.00			X
<b>United Kingdom</b>						
Alwyn Liquid Export Line	Alwyn North	Cormorant	100.00	X	X	
Bruce Liquid Export Line	Bruce	Forties (Unity)	1.00		X	
Graben Area Export Line (GAEL) Northern Spur	ETAP	Forties (Unity)	9.58		X	
Graben Area Export Line (GAEL) Southern Spur	Elgin-Franklin	ETAP	32.09		X	
Ninian Pipeline System	Ninian	Sullom Voe	16.36		X	
Shearwater Elgin Area Line (SEAL)	Elgin-Franklin, Shearwater	Bacton	25.73			X
SEAL to Interconnector Link (SILK)	Bacton	Interconnector	54.66	X		X
<b>AFRICA (EXCL. NORTH AFRICA)</b>						
<b>Gabon</b>						
Mandji Pipes	Mandji fields	Cap Lopez Terminal	100.00 <sup>(2)</sup>	X	X	
<b>Nigeria</b>						
O.U.R	Obite	Rumuji	40.00	X		X
NOPL	Rumuji	Owaza	40.00	X		X
<b>MIDDLE EAST AND NORTH AFRICA</b>						
<b>United Arab Emirates</b>						
Dolphin	North Field (Qatar)	Taweelah-Fujairah-AI Ain (United Arab Emirates)	24.50			X
<b>AMERICAS</b>						
<b>Argentina</b>						
TGM	Aldea Brasileira (Entre Rios)	Paso de Los Libres (Brazil border)	32.68			X
<b>Brazil</b>						
TBG	Bolivia-Brazil border	Porto Alegre via São Paulo	9.67			X
TSB	Argentina-Brazil border (TGM)	Uruguayana (Brazil)	25.00			X
	Porto Alegre	Canoas	25.00			X
<b>ASIA-PACIFIC</b>						
<b>Australia</b>						
GLNG	Fairview, Roma, Scotia, Arcadia	GLNG (Curtis Island)	27.50			X
<b>Myanmar</b>						
Yadana	Yadana field	Ban-I Tong (Thai border)	31.24	X		X

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

(2) Interest of Total Gabon. The Group has a financial interest of 58.28% in Total Gabon.

## PIPELINE GAS SALES AS OF DECEMBER 31 <sup>(1)</sup>

(Mcf/d)	2019	2018	2017	2016	2015
Denmark	95	85	-	-	-
United Kingdom	558	524	528	537	370
Norway	427	433	472	491	469
The Netherlands	86	93	107	134	149
Africa	15	14	8	(1)	13
Kazakhstan	56	59	43	3	-
Brunei	72	71	87	78	62
Algeria	119	42	-	-	-
Qatar	175	166	175	181	173
China	105	89	80	54	59
Indonesia	10	12	76	116	119
Myanmar	121	128	147	162	150
Thailand	270	251	285	296	301
United States	412	468	515	304	306
Argentina	412	383	368	374	341
Bolivia	188	199	212	156	130
Venezuela	54	67	76	82	93
Australia	463	165	109	85	25
<b>TOTAL</b>	<b>3,638</b>	<b>3,249</b>	<b>3,288</b>	<b>3,052</b>	<b>2,760</b>

(1) Consolidated entities.

# REFINING & CHEMICALS

Among  
the world's

**10**

largest  
integrated  
producers

**4.1** B\$

operating cash  
flow excl. working  
capital changes and  
financial charges  
(DACF) in 2019

**2.0** Mb/d

refining  
capacity at  
year-end 2019

**1.4** B\$

organic investments  
in 2019

**3.0** B\$

adjusted net  
operating income  
in 2019

**50,314**

employees

**26%**

ROACE in 2019

One of the leading  
traders of oil and refined  
products worldwide



## The Refining & Chemicals segment (R&C)

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) and the activities of Trading & Shipping.

### A FOCUSED STRATEGY

### PRIORITY TO INTEGRATED PLATFORMS

- Antwerp, Normandy, Daesan, Port Arthur, Qatar, SATORP

### GROWING PETROCHEMICALS

- Building on low cost feedstocks
- Leveraging growth in emerging markets
- Integrating monomer and polymer capacities

### INVESTING IN LOW CARBON SOLUTIONS

- Biofuels: La Mède start-up
- Bioplastics: #2 in Poly Lactic Acid (PLA)
- 30% recycled polymers by 2030
- Founding member of Alliance to End Plastic Waste



## FINANCIAL HIGHLIGHTS

(in million dollars)

	2019	2018	2017	2016	2015
Adjusted net operating income <sup>(1)</sup>	3,003	3,379	3,790	4,195	4,839
Gross investments <sup>(2)</sup>	1,698	1,781	1,734	1,861	1,875
Organic investments <sup>(3)</sup>	1,426	1,604	1,625	1,642	850
Divestments	322	919	2,820	88	3,494
Cash flow from operating activities <sup>(4)</sup>	3,837	4,308	7,411	4,584	6,435
Cash flow from operations before working capital changes w/o financial charges (DACF) <sup>(5)</sup>	4,116	4,388	4,728	4,873	5,788

(1) Adjusted results are defined as income at replacement cost, excluding non-recurring items, and excluding the impact of fair value changes.

(2) Including acquisitions and increases in non current-loans.

(3) Organic investments = net investments, excluding acquisitions, divestments and other operations with non-controlling interests.

(4) Excluding financial charges, except those related to leases.

(5) DACF = debt adjusted cash flow. Cash flow from operating activities before changes in working capital at replacement cost, without financial charges except those related to leases.

## OPERATIONAL HIGHLIGHTS <sup>(1) (2)</sup>

(in kb/d)

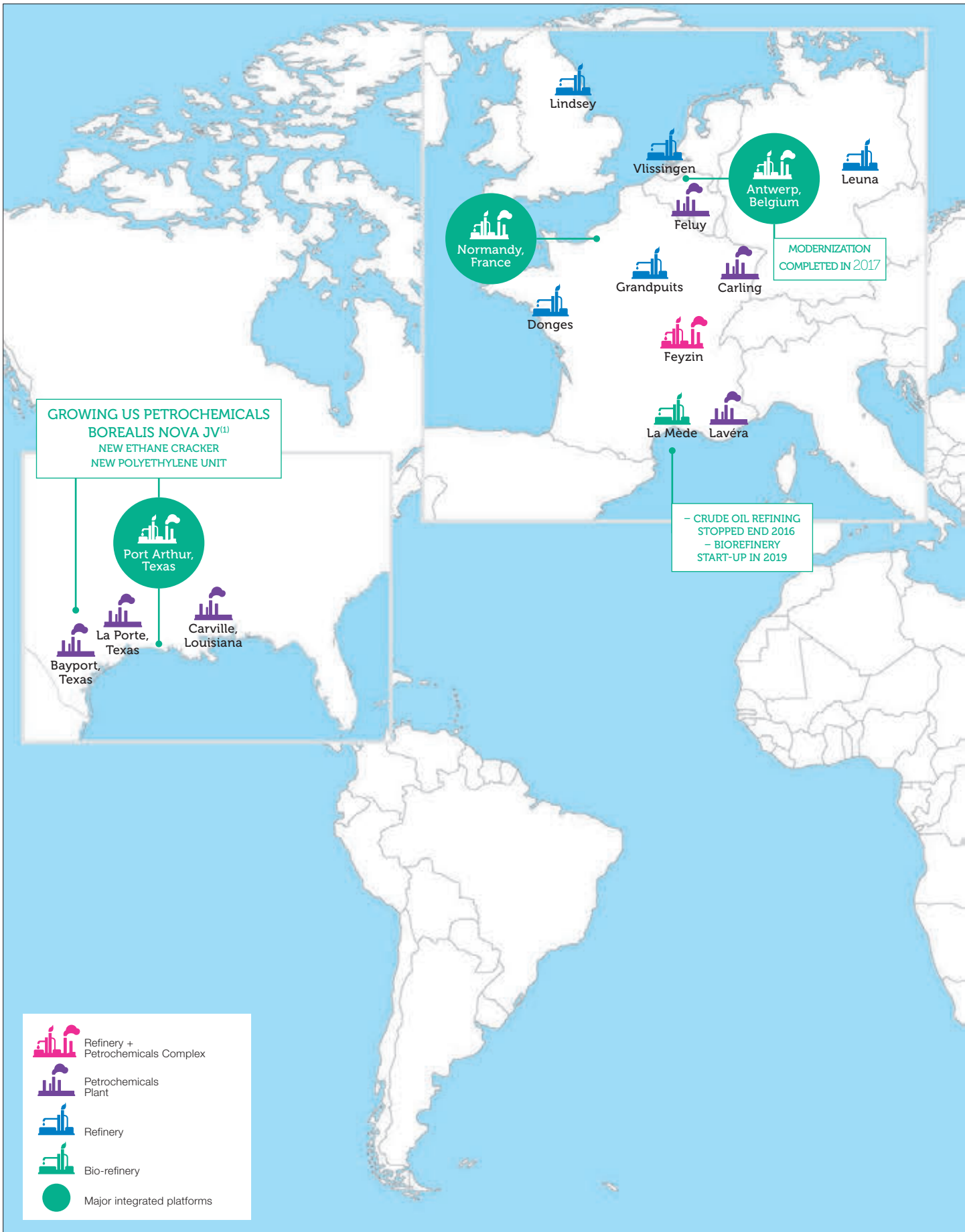
	2019	2018	2017	2016	2015
Distillation capacity (Group share) at year-end <sup>(3)</sup>	1,959	2,021	2,021	2,011	2,247
Refinery throughput	1,671	1,852	1,827	1,965	2,023

(1) Including share of Wepec (sold in 2019), 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.

(2) Condensates throughputs of BTP and HTC are included in refining throughputs and capacities.

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

MAIN REFINING & CHEMICALS PLANTS AS OF DECEMBER 31, 2019





# 2.0 Mb/d of refining capacity at year-end 2019

SATORP,  
Saudi Arabia

Ras Laffan

RLOC

Qatar

Qapco

Qatofin

MATURING FUTURE  
PETROCHEMICALS PROJECTS  
IN MIDDLE EAST – NORTH AFRICA  
SAUDI ARABIA  
ALGERIA

EXPANDING WORLDCLASS  
DAESAN PLATFORM  
– START-UP OF STEAMCRACKER  
EXPANSION FROM PROPANE  
FEEDSTOCK IN 2019  
– POLYETHYLENE AND  
POLYPROPYLENE EXPANSIONS

Daesan,  
South Korea

And worldwide chemicals positions through







## Sustainable contribution from Refining & Chemicals

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 of R&C 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 growing markets, particularly Asia; and
- innovating in low carbon activities by developing biofuels, biopolymers and plastics recycling solutions as well as materials contributing to the energy efficiency of the Group's customers, particularly in the automotive market.

### Growing Petrochemicals

TOTAL focuses on projects building on low cost gas feedstock and maximizing synergies on large integrated platforms:

- in the US, about \$3 billion are invested for a new 1 Mt/y ethane steam cracker in Port Arthur and the expansion of polyethylene capacity to 1 Mt/y scheduled to start up in 2021;
- in South Korea, investments totalling \$750 million have increased the ethylene production capacity by 30% in 2019 and the polyethylene production capacity by more than 50% in 2020 to 1.1 Mt/y. An additional investment of \$500 million will increase the polypropylene capacity by 60% by 2021 to reach 1.1 Mt/y and simultaneously increase the ethylene capacity by 10% to 1.5 Mt/y;
- in Saudi Arabia, engineering studies are ongoing for a project with Saudi Aramco which will include a mixed feed steam cracker with a capacity of 1.5 Mt/y and polyethylene units with a capacity of 1 Mt/y, for a total investment of about \$5.5 billion;
- in Algeria, engineering studies are ongoing for a project with Sonatrach to build a propane dehydrogenation plant and polypropylene production unit with a capacity of 550 kt/y.

### Investing in low carbon solutions

TOTAL is exploring new ways to valorize conventional and non-conventional carbon resources (natural gas, biomass, waste). These projects are part of the Group's commitment to building a diversified energy mix generating lower CO<sub>2</sub> emissions.

Regarding biomass valorization, 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) as well as the most appropriate, efficient and environmentally friendly conversion processes.

### Biomass to fuels

- Start-up of La Mède, the first biorefinery in France in mid-2019, with a production capacity of 500 kt/y of biofuels, mainly high-quality HVO type biodiesel, but also biojet fuel and petrochemical bio-feedstocks.
- Ongoing gasification test program in Dunkirk for the conversion of biomass into fungible, sulfur-free fuels launched in 2017.

### Biomass to polymers

The joint venture created with Corbion started, in December 2018, production of PLA (polylactic acid polymer) from the 75 kt/y capacity plant located in Thailand.

### Plastics recycling and circular economy

TOTAL is committed to developing recycling and end of life solutions for plastics. Total has the ambition to produce 30% of its polymers from recycled materials by 2030:

- in February 2019, TOTAL acquired French company Synova, a leader in manufacturing high-performance recycled polypropylene for the automotive sector, with a current production of 20 kt/y of polypropylene made from recycled plastics which will be doubled by 2021;
- founding member of the Alliance to End Plastic Waste, created in January 2019 to eliminate plastic waste in the environment, especially in the oceans;
- member of the consortium with leading actors in the packaging value chain (Citeo, Recycling Technologies, Mars and Nestlé) to study the technical and economic feasibility of recycling complex waste;
- in May 2019, TOTAL signed an agreement with PureCycle Technologies to develop a strategic partnership in plastic recycling. As part of the agreement, TOTAL undertakes to purchase part of the output of PureCycle Technologies' future facility in the United States and to assess the interest of developing a new plant together in Europe.

## REFINERY CAPACITY (GROUP SHARE)

Major upgrading plant capacity at 100%<sup>(1)</sup>

As of December 31, 2019 (kb/d)	Total Distillation Capacity	Group Interest	Group Capacity	Cat Crack	Cat Reform	Hydro- Cracking	Resid. Hydro- Treat	Dist. Hydro- Treat	Alky	Isom	Vis	Coker
<b>France</b>												
Normandy, Gonfreville	253	100%	253	-	37	64	-	220	-	-	22	-
Provence, La Mède	-	100%	-	-	-	-	-	-	-	-	-	-
Donges	219	100%	219	51	23	-	-	126	7	-	26	-
Feyzin	109	100%	109	29	11	-	-	72	5	-	15	-
Grandpuits	101	100%	101	31	14	-	-	77	4	-	13	-
<b>TOTAL FRANCE</b>	<b>682</b>		<b>682</b>	<b>110</b>	<b>85</b>	<b>64</b>	<b>0</b>	<b>495</b>	<b>16</b>	<b>0</b>	<b>76</b>	<b>0</b>
<b>Rest of Europe</b>												
United Kingdom, Immingham/Lindsey	109	100%	109	50	16	-	-	102	7	-	20	-
Netherlands, Vlissingen	148	55%	81	-	26	74	-	65	-	-	-	-
Belgium, Antwerp	338	100%	338	95	56	51	50	253	9	-	-	-
Germany, Leuna	227	100%	227	59	25	-	-	238	10	-	25	-
<b>TOTAL REST OF EUROPE</b>	<b>822</b>		<b>755</b>	<b>204</b>	<b>124</b>	<b>124</b>	<b>50</b>	<b>659</b>	<b>26</b>	<b>0</b>	<b>45</b>	<b>0</b>
<b>United States</b>												
Texas, Port Arthur (Refinery)	178	100%	178	75	38	-	-	241	6	8	-	54
Texas, Port Arthur (Condensate Splitter) <sup>(2)</sup>	60	40%	24	-	-	-	-	-	-	-	-	-
<b>TOTAL UNITED STATES</b>	<b>238</b>		<b>202</b>	<b>75</b>	<b>38</b>	<b>0</b>	<b>0</b>	<b>241</b>	<b>6</b>	<b>8</b>	<b>0</b>	<b>54</b>
<b>Africa</b>												
Cameroon, Limbe	42	4%	2	-	8	-	-	27	-	-	-	-
Côte d'Ivoire, Abidjan	76	15%	11	-	14	17	-	33	-	-	-	-
Senegal, Dakar	24	5%	1	-	3	-	-	5	-	-	-	-
South Africa, Sasolburg	105	18%	19	25	18	13	15	44	5	-	-	-
<b>TOTAL AFRICA</b>	<b>247</b>		<b>33</b>	<b>25</b>	<b>43</b>	<b>30</b>	<b>15</b>	<b>109</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Asia &amp; Middle East</b>												
Korea, Daesan <sup>(3)</sup>	186	50%	93	-	-	-	-	-	-	-	-	-
Qatar, Ras Laffan	300	10%	30	-	-	-	-	308	-	-	-	-
Saudi Arabia Jubail	438	38%	164	36	72	124	-	304	13	-	-	113
<b>TOTAL ASIA</b>	<b>924</b>		<b>287</b>	<b>36</b>	<b>72</b>	<b>124</b>	<b>0</b>	<b>612</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>113</b>
<b>WORLDWIDE CRUDE DISTILLATION</b>	<b>2,914</b>		<b>1,959</b>	<b>450</b>	<b>362</b>	<b>342</b>	<b>65</b>	<b>2,116</b>	<b>66</b>	<b>8</b>	<b>121</b>	<b>167</b>

(1) Cat Crack: Catalytic Cracking; Cat Reform: Catalytic Reforming; Resid Hydrotreat: Residual Hydrotreating; Dist Hydrotreat: Distillate Hydrotreating; Alky: Alkylation; Isom: C5/C6 Isomerization; Vis: Visbreaker.

(2) Condensates Splitter held by the joint venture BTP (40% TOTAL, 60% BASF and TOTAL operator) and included in the refining capacities from December 31, 2015.

(3) Condensates Splitter held by the joint venture HTC (50% TOTAL, 50% Hanwha and HTC operator) and included in the refining capacities from December 31, 2015.

## DISTILLATION CAPACITY (GROUP SHARE)<sup>(1)</sup>

Capacity, throughput and production data include equity share of refineries in which the Group holds a direct or indirect interest:

As of December 31, (kb/d)	2019	2018	2017	2016	2015
France	682	682	682	682	829
Rest of Europe	755	755	772	772	870
United States and French West Indies <sup>(2)</sup>	202	202	202	202	198
Asia & Middle East <sup>(3)</sup>	287	337	320	303	288
Africa	33	45	45	52	62
<b>TOTAL</b>	<b>1,959</b>	<b>2,021</b>	<b>2,021</b>	<b>2,011</b>	<b>2,247</b>

(1) Capacity at the end of the year. share of TotalErg until January 2018 and of WEPEC until June 2019. Results for refineries in Africa, French Antilles (until May 2015) and Italy (until January 2018) are reported in the Marketing & Services segment.

(2) Including from December 31, 2015, TOTAL share in BTP Condensate Splitter (40%) in United States.

(3) Including TOTAL share (50%) in HTC Condensate Splitter in Korea from December 31, 2015.

## REFINERY THROUGHPUT (GROUP SHARE) <sup>(1)</sup>

Capacity, throughput and production data include equity share of refineries in which the Group holds a direct or indirect interest:

(kb/d)	2019	2018	2017	2016	2015
France	456	610	624	669	674
Rest of Europe	754	755	767	802	849
United States and French West Indies <sup>(2)</sup>	173	198	163	193	218
Asia & Middle East <sup>(3)</sup>	254	251	243	249	230
Africa	35	38	31	53	54
<b>TOTAL</b>	<b>1,671</b>	<b>1,852</b>	<b>1,827</b>	<b>1,965</b>	<b>2,023</b>

(1) Results for refineries in Africa, French Antilles (until May 2015) and Italy (until January 2018) are reported in the Marketing & Services segment.

(2) Including from 2015 TOTAL share in BTP Condensate Splitter (40%) in United States. 2015 datas have been restated.

(3) Including TOTAL share (50%) in HTC Condensate Splitter in Korea from 2015. 2015 datas have been restated.

## UTILIZATION RATE (BASED ON CRUDE AND OTHER FEEDSTOCKS) <sup>(1) (2)</sup>

(%)	2019	2018	2017	2016	2015
France	67	89	91	81	81
Rest of Europe <sup>(3)</sup>	100	98	99	92	94
Americas <sup>(4)</sup>	86	98	81	97	111
Asia & Middle East <sup>(5)</sup>	75	78	80	86	80
Africa	78	84	66	85	84
<b>AVERAGE</b>	<b>83</b>	<b>92</b>	<b>91</b>	<b>87</b>	<b>88</b>

(1) Including equity share of refineries in which the Group has a stake.

(2) (Crude + crackers' feedstock)/distillation capacity at the beginning of the year.

(3) Including capacity of Total Erg as of December 31, 2017. Total Erg was sold in 2018.

(4) Including from 2015 TOTAL share in BTP Condensate Splitter (40%) in United States. 2015 datas have been restated.

(5) Including TOTAL share (50%) in HTC Condensate Splitter in Korea from 2015. 2015 datas have been restated. Including TOTAL share (22%) in WEPEC until June 2019.

## UTILIZATION RATE (BASED ON CRUDE ONLY) <sup>(1) (2)</sup>

(%)	2019	2018	2017	2016	2015
<b>AVERAGE</b>	<b>80</b>	<b>88</b>	<b>88</b>	<b>85</b>	<b>86</b>

(1) Including equity share of refineries in which the Group has a stake.

(2) Crude/distillation capacity at the beginning of the year.

## PRODUCTION LEVELS (GROUP SHARE) <sup>(1)</sup>

The table below sets forth by product category TOTAL's net share of refined quantities produced at the Group's refineries <sup>(1) (2)</sup>.

(kb/d)	2019	2018	2017	2016	2015
LPG	46	56	62	60	61
Motor gasoline	288	291	283	324	346
Avgas, jet fuel and kerosene	187	210	196	182	190
Diesel fuel and heating oils	672	732	726	795	825
Fuel oils	82	99	115	140	131
Lubricants	15	17	16	12	17
Bitumen	30	36	32	34	31
Other products	286	352	328	324	330
<b>TOTAL</b>	<b>1,606</b>	<b>1,793</b>	<b>1,758</b>	<b>1,871</b>	<b>1,931</b>

(1) For refineries not 100% owned by TOTAL the production shown is TOTAL's equity share of the site's overall production.

(2) Condensates productions of BTP and HTC are included in refining production as from 2015 and 2015 datas have been restated.

## MAIN PETROCHEMICALS PRODUCT GROUPS AND THEIR MAJOR APPLICATIONS

### Main product groups Major applications

#### Base Petrochemicals

##### Olefins

Ethylene	Production of polyethylene, vinyl chloride monomer, styrene, functional polymers and copolymers, ethylene oxide, glycols and vinyl acetate monomer.
Propylene	Production of polypropylene, acrylic acid, oxo-alcohols, propylene oxide, glycols, cumene and acrylonitrile.
Butadiene	Production of rubber, polybutadiene, elastomers, latex and ABS.

##### Aromatics

Benzene	Production of styrene, cyclohexane, chlorobenzenes, cumene, aniline, alkylbenzenes and maleic anhydride.
Styrene	Production of polystyrene, expanded polystyrene, ABS, emulsions, resins, latex and rubbers.
Toluene	Production of chemical intermediates and solvents.
Xylenes	Production of phthalic anhydride, terephthalic acid (PTA) and solvents.

#### Polymers

Polyethylene	Flexible and rigid packaging, cables, pipes and tubes, molded bottles, fuel tanks artificial grass and caps and closures.
Polypropylene	Flexible and rigid packaging, containers, automotive parts, household and sanitary goods, fibers, medical, pipes and caps and closures.
Polystyrene	Food packaging, refrigeration appliances, insulation boards and television sets.

## MAIN PRODUCTION CAPACITIES AT YEAR-END<sup>(1)</sup>

(in thousands of tons)	2019				2018	2017	2016	2015
	Europe	North America	Asia and Middle East <sup>(2)</sup>	World	World	World	World	World
Olefins <sup>(3)</sup>	4,371	1,555	1,938	7,863	7,430	7,378	7,468	7,433
Aromatics <sup>(4)</sup>	2,929	1,512	2,554	6,995	6,967	6,909	6,844	6,783
Polyethylene	1,120	223	880	2,223	2,135	2,357	2,338	2,338
Polypropylene	1,370	1,200	420	2,990	2,950	2,950	2,950	2,950
Polystyrene	413	600	-	1,013	1,745	1,745	1,745	1,745
Others <sup>(5)</sup>	-	-	116	116	100	63	63	63
<b>TOTAL</b>	<b>10,203</b>	<b>5,090</b>	<b>5,907</b>	<b>21,200</b>	<b>21,327</b>	<b>21,401</b>	<b>21,407</b>	<b>21,312</b>

(1) Excluding inter-segment sales.

(2) Including interests in Qatar, 50% of Hanwha Total Petrochemicals Co. Ltd and 37.5% of SATORP in Saudi Arabia.

(3) Ethylene + Propylene + Butadiene.

(4) Including monomer styrene.

(5) Mainly Monoethylene Glycol (MEG) and Cyclohexane.

## SALES BY GEOGRAPHIC AREA – CHEMICALS<sup>(1)</sup>

(%)	2019	2018	2017	2016	2015
France	10%	10%	10%	12%	13%
Rest of Europe	40%	39%	37%	41%	41%
North America	26%	30%	31%	30%	34%
Rest of world	24%	21%	22%	16%	12%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

(1) Excluding inter-segment sales and sales by equity affiliates and including fertilizers sales.



## MAIN SPECIALTY CHEMICALS PRODUCT GROUPS AND THEIR MAJOR APPLICATIONS

### Main product groups Major applications

Elastomer processing	Elastomer parts for the automotive, transportation and aerospace industries: transmission systems, antivibration systems, fluid transfer parts, body sealings, precision sealing (Hutchinson).
Electroplating	General metal finishing, electronics materials and semiconductors, green technologies chemistry and systems (Atotech) <sup>(1)</sup> .

(1) Atotech sale completed in January 2017.

### SALES BY ACTIVITY – SPECIALITY CHEMICALS PRODUCTS

<i>(in million dollars)</i>	2019	2018	2017	2016	2015
Hutchinson	4,828	4,904	4,645	4,471	4,256
Bostik <sup>(1)</sup>	-	-	-	-	155
Atotech <sup>(2)</sup>	-	-	81	1,102	1,093

(1) Bostik sale to Arkema completed on February 2, 2015.

(2) Atotech sale completed on January, 31 2017

### SALES BY GEOGRAPHIC AREA- SPECIALITY CHEMICALS PRODUCTS<sup>(1) (2) (3)</sup>

<i>(%)</i>	2019	2018	2017	2016	2015
France	18%	19%	18%	15%	14%
Rest of Europe	41%	41%	40%	35%	35%
North America	28%	26%	26%	25%	26%
Rest of world	14%	14%	16%	25%	25%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

(1) Excluding inter-segment sales.

(2) The Cray Valley coating resins and Sartomer photocure resins businesses were divested in July 2011. The structural and hydrocarbon resins business lines were kept and have been incorporated into the Petrochemicals division as of January 1, 2012.

(3) Atotech sale completed on January, 31 2017.

### SALES BY ACTIVITY- SPECIALITY CHEMICALS PRODUCTS<sup>(1)</sup>

<i>(%)</i>	2019	2018	2017	2016	2015
Elastomer processing	100%	100%	98%	80%	77%
Resins <sup>(2)</sup>	-	-	-	-	-
Adhesives <sup>(3)</sup>	-	-	-	-	3%
Electroplating <sup>(4)</sup>	-	-	2%	20%	20%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

(1) Excluding inter-segment sales.

(2) The Cray Valley coating resins and Sartomer photocure resins businesses were divested in July 2011. The structural and hydrocarbon resins business lines were kept and have been incorporated into the Petrochemicals division as of January 1, 2012.

(3) Bostik sale to Arkema completed on February 2, 2015.

(4) Atotech sale completed on January, 31 2017.

# MARKETING & SERVICES



**N°2**

major in retail  
outside  
North America <sup>(1)</sup>

**N°4**

distributor of  
inland lubricants <sup>(2)</sup>

**2.5** B\$

operating cash flow  
excl. working capital  
changes and financial  
charges (DACF) in 2019

**1.0** B\$

organic  
investments  
in 2019

**1.7** B\$

adjusted net  
operating income  
in 2019

**24,858**

employees

**15,615**

branded  
service-stations <sup>(3)</sup>

**1,845** kb/d

of petroleum  
products sales in 2019 <sup>(4)</sup>

(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) Excludes Trading and bulk Refining sales.





## The Marketing & Services segment (M&S)

is dedicated to the development of Total's petroleum products distribution activities and related services throughout the world.

Present in more than 130 countries, 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 for its M&S activities. The Group achieves this ambition by creating solutions aimed at performance, energy efficiency, mobility, new energies for mobility<sup>(1)</sup> and digital transformation.

M&S's three main business areas are retail, the production and sales of lubricants and the distribution of products and services for professional Markets (mainly bulk fuels, special fluids, LPG, compressed natural gas, bitumens, heavy fuels and marine and aviation fuel).

GROWING  
SELECTIVELY  
AND DELIVERING  
NON-CYCLICAL  
CASH FLOW

EXPANDING IN LARGE  
FAST GROWING  
MARKETS

- >4,000 stations targeted in new markets (China, India, Brazil, Mexico, Saudi Arabia, Angola)

DEVELOPING  
NON-FUEL REVENUES

- Increasing Shop Food & Services revenues in Europe
- Leveraging leadership in Africa

GROWING IN LOW  
CARBON SOLUTIONS

- EV charging
- Natural gas for trucks
- LNG for bunkering
- Early supporter of hydrogen in Germany and France

(1) Electro-mobility, natural gas vehicle (NGV), hydrogen, marine LNG.

## FINANCIAL HIGHLIGHTS

(in million dollars)

	2019	2018	2017	2016	2015
Adjusted net operating income <sup>(1)</sup>	1,653	1,652	1,676	1,559	1,591
Gross investments <sup>(2)</sup>	1,374	1,458	1,457	1,245	1,267
Organic investments <sup>(3)</sup>	969	1,010	1,019	1,003	1,130
Divestments	249	428	413	424	767
Cash flow from operating activities <sup>(4)</sup>	2,604	2,759	2,221	1,833	2,440
Cash flow from operations before working capital changes w/o financial charges (DACF) <sup>(5)</sup>	2,546	2,156	2,242	1,966	2,058

(1) Adjusted results are defined as income at replacement cost, excluding non-recurring items, and excluding the impact of fair value changes.

(2) Including acquisitions and increases in non current-loans.

(3) Organic investments = net investments, excluding acquisitions, divestments and other operations with non-controlling interests.

(4) Excluding financial charges, except those related to leases.

(5) DACF = debt adjusted cash flow. Cash flow from operating activities before changes in working capital at replacement cost, without financial charges except those related to leases.

## OPERATIONAL HIGHLIGHTS

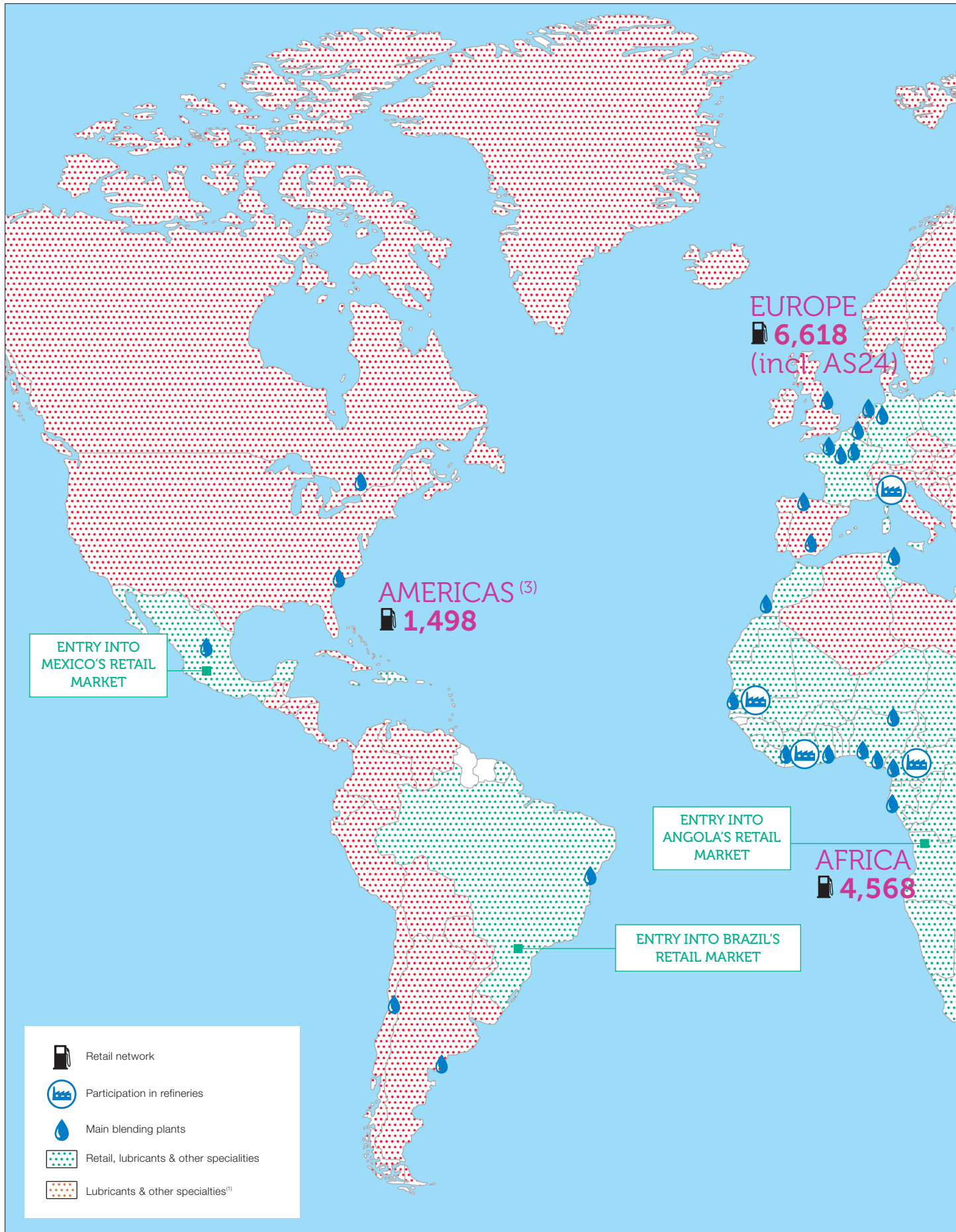
(in kb/d)

	2019	2018	2017	2016	2015
<b>REFINED PRODUCT SALES EXCLUDING TRADING AND BULK SALES <sup>(1)</sup></b>	<b>1,845</b>	<b>1,801</b>	<b>1,779</b>	<b>1,793</b>	<b>1,818</b>
Trading sales	1,730	1,777	1,659	1,690	1,538
Bulk sales	536	575	581	700	649
<b>REFINED PRODUCT SALES INCLUDING TRADING AND BULK SALES</b>	<b>4,110</b>	<b>4,153</b>	<b>4,019</b>	<b>4,183</b>	<b>4,005</b>

(1) Results of Trading and bulk sales are reported in the Refining & Chemicals segment.



TOTAL'S GLOBAL PRESENCE IN MARKETING & SERVICES AS OF DECEMBER 31, 2019



(1) Lubricants - LPG - jet fuel - special fluids - bitumen - heavy fuels - marine fuels - additives and special fuels.

(2) Excluding Saudi Arabia, which wasn't consolidated as of 31 December 2019.

(3) Including Clean Energy retail network as part of TOTAL's participation.





## Marketing & Services – GROWING SELECTIVELY

### Retail

M&S has a large footprint in retail with over 15,000 service-stations across near to 70 countries and has the second largest IOC position in retail outside North America. In Africa, TOTAL is the market leader with 17% market share. Its network is also one of the largest in Western Europe, with an average market share of 16% in key markets (France, Germany, Belgium, the Netherlands, Luxembourg).

M&S relies on four major levers to increase its profitability:

#### Expanding network

- Entered the fuel distribution market in Brazil with the acquisition of 280 stations.
- Continued to gradually switch a network of nearly 250 service stations in Mexico over to the TOTAL brand.
- Signed a joint-venture agreement with the national company Saudi Aramco to develop a network of fuel and retail services in Saudi Arabia.
- Continued to develop a fuel retail network in Angola in partnership with the national company Sonangol.
- Joined forces with Adani Group in India to build a network of 1,500 service stations over 10 years. This partnership was extended with the acquisition of a 37.4% stake in Adani Gas Limited, with the ambition to develop a network of natural gas stations for vehicles.

#### Capturing market growth and offering new energies and services

- Expansion of AS24, the TOTAL network dedicated to heavy duty vehicles, in Eastern Europe with a global service offer to logistics companies.
- Plans to operate more than 150,000 charging points in Europe by 2025; deployment of hydrogen stations in Germany and NGV stations in key European markets to develop new energies for transportation.
- Acquisition of a 25% stake in Clean Energy Fuels Corps., the leading supplier of natural gas fuel for transportation in North America.
- Expansion of fleet management services with the Total Fleet offer simplifying mobility and energetic transition of all professional customers.
- Full digital solution for fueling and charging via the be:mobility platform live in Germany.

#### Improving performance, expanding premium fuels

- Total Excellium, TOTAL's premium fuel, now available in approximately 45 countries and targeting an increase to more than 50 by 2021.

#### Maximizing non-fuel revenues

- Launched a new service to geolocate the trailers of TOTAL's customers on the European freight transport market, through new IoT<sup>(1)</sup> applications for logistics.
- Deployed 2,000 Total Wash car wash stations in 2019 including standalone sites.

(1) Internet of Things.

(2) Based on IHS data.

### Lubricants

Despite a growth slow-down in global lubricants demand and tensions on supply in the market in 2019, TOTAL's range of recognized quality-lubricants and its customer-centric approach enabled M&S to achieve sales growth over the past decade and rank 4<sup>th</sup> worldwide<sup>(2)</sup>. The growth of the lubricants business has been driven by:

#### Capturing market growth

- 1<sup>st</sup> oil company to launch ranges of fluids for hybrid and electric vehicles: Total Quartz EV Fluids and Total Rubia EV Fluids.
- Acquisition of a lubricant blending plant and associated activities in Tanzania to grow in East Africa.
- Acquisition from Houghton International of some rolling oil activities in the North American and European Economic Area markets. The transaction includes the associated technical support services in both regions.

#### Improving performance, strengthening supply chain

- Producing in customer proximity: new blending site opened in Russia and another plant under construction in Algeria.
- Leveraging the network of 11 blending sites in Asia and the Middle-East, particularly in Singapore, Tianjin and Dubai, to expand in the Asian markets.
- Small packaging: progressive roll out of a redesigned packaging (new colors, new labels and a more ergonomic design), showcasing the product's premium quality.

#### Building on premium sales

- Strong cooperation with OEMs: ongoing partnerships including PSA Group, Kia, Mazda, and Aston Martin.

#### Increasing marketing footprint

- Partnership with major actors in e-commerce in order to grow its sales and develop new services (for example in Asia) and new distribution schemes through partners to grow its sales worldwide.

### Business-to-Business

M&S develops and delivers bespoke, innovative solutions to its business customers with an eco-friendly approach:

#### Improving the performance of supply chain

- Strengthening logistics for LNG bunkering in major maritime hubs: Amsterdam-Rotterdam-Antwerp, Singapore and in the Mediterranean. Partnered with Mitsui O.S.K. Lines, Ltd (MOL) for a long-term chartering contract linked to a second LNG bunker vessel, to be delivered in 2021 and positioned in the Marseille-Fos area in France.

#### Constantly innovating in products and services

- Continued to deploy the Optimizer digital platform dedicated to the optimization of onsite energy consumption for agricultural, construction and mining sites through the use of data collected from sensors installed on their facilities and equipment.
- Supplying lubricants and services to more than 50 mining sites in Asia-Pacific area, including leading mining players operating in many countries such as Australia, Indonesia, or New Caledonia.
- Signed a second Preferred Supplier Agreement with a Chinese world major company in construction and energy.
- Reached a strategic cooperation agreement with a Logistics and Transportation major player to strengthen our collaboration, in particular in the field of sustainable mobility and low-carbon energies.
- Providing through Total Marine Fuel Global Solutions a diversified range of marine fuels and associated services, including low-sulfur marine fuels and LNG bunker, to help its customers meet the new emission standards for marine fuels from 2020.

## PETROLEUM PRODUCT SALES (EXCLUDING TRADING AND BULK SALES)

### By geographic area

<i>(in kb/d)</i>	2019	2018	2017	2016	2015
<b>Europe</b>					
France <sup>(1)</sup>	512	517	519	541	541
United Kingdom	25	25	26	27	27
Benelux	216	209	205	216	214
Germany	197	198	184	192	192
Italy <sup>(6)</sup>	22	4	77	79	81
Spain	1	1	1	1	1
Portugal	0	0			-
Rest of Europe	48	47	37	37	36
<b>TOTAL EUROPE</b>	<b>1,021</b>	<b>1,001</b>	<b>1,049</b>	<b>1,093</b>	<b>1,092</b>
<b>Africa</b>					
Northern Africa	123	122	121	119	118
Western Africa	73	71	82	88	85
Eastern Africa	94	102	95	84	89
Southern Africa	117	112	93	87	87
Central Africa	27	27	31	31	31
Other <sup>(2)</sup>	10	9	9	10	13
<b>TOTAL AFRICA</b>	<b>444</b>	<b>443</b>	<b>431</b>	<b>419</b>	<b>423</b>
<b>Americas</b>					
United States	76	68	33	27	28
Caribbean Islands <sup>(1)(3)</sup>	40	40	41	42	35
Latin America	33	9	7	7	7
<b>TOTAL AMERICAS</b>	<b>149</b>	<b>117</b>	<b>81</b>	<b>76</b>	<b>70</b>
<b>Middle East<sup>(4)</sup></b>					
Jordan, Lebanon, Turkey and others	34	41	45	55	85
<b>TOTAL MIDDLE EAST</b>	<b>34</b>	<b>41</b>	<b>45</b>	<b>55</b>	<b>85</b>
<b>Asia-Pacific</b>					
East Asia <sup>(5)</sup>	173	175	149	125	124
Pacific	5	5	8	10	9
Indian Ocean islands	19	19	16	15	15
<b>TOTAL ASIA-PACIFIC</b>	<b>197</b>	<b>199</b>	<b>173</b>	<b>150</b>	<b>148</b>
<b>TOTAL WORLDWIDE</b>	<b>1,845</b>	<b>1,801</b>	<b>1,779</b>	<b>1,793</b>	<b>1,818</b>

(1) Sales of Totalgaz France and SARA refinery during the 2<sup>nd</sup> quarter of 2015.

(2) Represents supply to African non consolidated group companies and third parties.

(3) Including the acquisition of service-stations in Dominican Republic in January 2016.

(4) Including the sales of 455 service-stations in Turkey in March 2016.

(5) Including the acquisition of service-stations in Philippines in July 2016.

(6) Including the sales of TotalErg.

### By main products

<i>(in kb/d)</i>	2019	2018	2017	2016	2015
LPG	59	58	57	53	70
Motor gasoline <sup>(1)</sup>	361	342	340	339	341
Avgas and jet fuel <sup>(1)</sup>	292	268	243	273	234
Diesel fuel and heating oils	881	873	985	977	1,018
Fuel oils	127	137	32	37	42
Lubricants	37	37	39	38	39
Solvents	12	14	14	13	14
Bitumen	43	48	44	45	45
Other products	31	24	25	18	15
<b>TOTAL</b>	<b>1,845</b>	<b>1,801</b>	<b>1,779</b>	<b>1,793</b>	<b>1,818</b>

(1) Including TOTAL's share in CEPESA until July 31, 2011 and in TotalErg since October 1, 2010.

(2) Sales of Totalgaz since May 29, 2015.



## SERVICE-STATIONS <sup>(1)</sup>

As of December 31,	2019	2018	2017	2016	2015
<b>Europe</b>					
France	3,480	3,490	3,548	3,593	3,667
Benelux	925	916	910	925	928
Germany	1,189	1,187	1,194	1,188	1,178
Italy	0	0	2,519	2,585	2,608
Eastern Europe (Poland)	38	32	23	18	10
AS24 Stations	986	848	819	801	763
<b>TOTAL EUROPE</b>	<b>6,618</b>	<b>6,473</b>	<b>9,013</b>	<b>9,110</b>	<b>9,154</b>
<b>Africa</b>					
Northern Africa	728	709	703	687	673
Western Africa	1,722	1,697	1,649	1,572	1,509
Eastern Africa	1,052	1,005	1,005	901	882
Southern Africa	619	603	590	585	592
Central Africa	447	435	430	422	402
<b>TOTAL AFRICA</b>	<b>4,568</b>	<b>4,449</b>	<b>4,377</b>	<b>4,167</b>	<b>4,058</b>
<b>Americas</b>					
United States <sup>(1)</sup>	530	530	-	-	-
Mexico	205	91	-	-	-
Brazil	287	-	-	-	-
Caribbean Islands <sup>(2)</sup>	476	470	555	585	464
<b>TOTAL AMERICAS</b>	<b>1,498</b>	<b>1,091</b>	<b>555</b>	<b>585</b>	<b>464</b>
<b>Middle East</b>					
Jordan, Lebanon, Turkey <sup>(3)</sup>	889	877	821	809	816
<b>TOTAL MIDDLE EAST</b>	<b>889</b>	<b>877</b>	<b>821</b>	<b>809</b>	<b>816</b>
<b>Asia-Pacific</b>					
East Asia <sup>(4)</sup>	1,770	1,684	1,598	1,530	1,276
Pacific	104	101	101	100	96
Indian Ocean islands	168	166	165	160	159
<b>TOTAL ASIA-PACIFIC</b>	<b>2,042</b>	<b>1,951</b>	<b>1,864</b>	<b>1,790</b>	<b>1,531</b>
<b>TOTAL EXCLUDING AS24</b>	<b>14,629</b>	<b>13,993</b>	<b>15,811</b>	<b>15,210</b>	<b>15,257</b>
<b>TOTAL WORLDWIDE</b>	<b>15,615</b>	<b>14,841</b>	<b>16,630</b>	<b>16,461</b>	<b>16,023</b>

(1) Retail network from TOTAL's participation in Clean Energy (consolidated from 2019).

(2) Including the acquisition of service-stations in Dominican Republic in January 2016.

(3) Including a status change for 450 service-stations in Turkey in March 2016.

(4) Including the acquisition of service-stations in Philippines in July 2016.

# CONTACT

## TOTAL INVESTOR RELATIONS CONTACTS

### LONDON

Total Finance Corporate Services Ltd.  
10 Upper Bank Street  
Canary Wharf  
London E14 5BF  
United Kingdom  
Phone: +44 (0)207 7197 962  
investor.relations@total.com

### NORTH AMERICA

TOTAL American Services, Inc.  
1201 Louisiana Street, Suite 1800  
Houston, TX 77002  
United States  
Phone: +1 (713) 483 5070  
ir.tx@total.com

### FRANCE

TOTAL S.A.  
2, place Jean Millier  
Arche Nord – Coupole/Regnault  
92078 Paris La Défense cedex  
France  
Phone: +33 (0)1 47 44 24 02  
shareholders@total.com



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TOTAL S.A.  
Registered Office:  
2, place Jean Millier – La Défense 6  
92400 Courbevoie – France  
Share capital: 6,601,505,017.50 euros  
542 051 180 RCS Nanterre

Reception: +33 (0)1 47 44 45 46  
Investor Relations: +44 (0)207 719 7962  
North American Investor Relations: +1 (713) 483-5070