A French public limited company
(*Société anonyme*)
with capital of 1,525,484,813 euros
Registered office: 22-30, avenue de Wagram
75382 Paris cedex 08
Paris Registry of Trade and Companies No. 552 081 317

EDF Group

Universal Registration Document (URD) 2018 including the half-yearly financial report at 30 June 2019

Contents

AUTORITÉ DES MARCHÉS FINANCIERS
AMF

This Universal Registration Document (URD) was filed on 29 July 2019 with the AMF (*the French Financial Markets Regulator*), as the competent authority under Regulation (EU) 2017/1129, without prior approval in accordance with Article 9 of the said Regulation.

This Universal Registration Document may be used for the purpose of a public offer of securities or the admission of securities to trading on a regulated market if it supplemented by a securities note and, as the case may be, by a summary and all the amendments to the Universal Registration Document. These documents are together approved by the AMF in accordance with Regulation (EU) 2017/1129.

This Universal Registration Document:

- incorporates by reference the EDF Group's 2018 Registration Document filed with the AMF on 15 March 2019 under number D-19-157 (the **2018 Registration Document**) https://www.edf.fr/sites/default/files/contrib/groupe-edf/espaces-dedies/espace-finance-fr/informations-financieres/informations-reglementees/document-de-reference/edf-ddr-2018-fr.pdf, and updates the sections required in accordance with applicable regulation.

A concordance table is provided in Section III of this Universal Registration Document in order to facilitate the retrieval of the information incorporated by reference and that which are updated or amended.

Copies of this Universal Registration Document and the 2018 Registration Document are available free of charge from EDF (22-30, avenue de Wagram - 75382 Paris cedex 08) and on its website (http://www.edf.com) as well as on the AMF website by clicking on the following link: https://www.amf-france.org/technique/multimedia?docId=e31bf44e-fe17-4f45-afec b7ddf6b67e90&famille=BDIF&bdifId=7510-91.D_D.19-0157

I. CERTIFICATE ISSUED BY THE PERSON RESPONSIBLE FOR THE 2018 UNIVERSAL REGISTRATION DOCUMENT (URD)

PERSON RESPONSIBLE FOR THE 2018 UNIVERSAL REGISTRATION DOCUMENT

Jean-Bernard Lévy, Chairman and Chief Executive Officer of EDF.

CERTIFICATE ISSUED BY THE PERSON RESPONSIBLE FOR THE UNIVERSAL REGISTRATION DOCUMENT 2018

I hereby certify, after having taken all reasonable measures to this effect, that the information contained in this Universal Registration Document is, to the best of my knowledge, in accordance with the facts and contains no omission likely to affect its import.

I certify that, to the best of my knowledge, the condensed consolidated financial statements for the six months ended 30 June 2019 have been prepared in accordance with applicable accounting standards and give a true and fair view of the assets, financial position and results of the company and all the companies included in the consolidation, and that the half-yearly management report set out in Section II.2 of this document presents a true and fair view of the significant events that occurred during the first six months of the financial year, their impact on the accounts, the main transactions between related parties and a description of the main risks and uncertainties for the remaining six months of the financial year.

Jean-Bernard Lévy,

Chairman and Chief Executive Officer of EDF

II. HALF-YEARLY FINANCIAL REPORT AS AT 30 JUNE 2019

French société anonyme
with a share capital of €1,525,484,813
Registered head office: 22-30, avenue de Wagram
75382 Paris cedex 08
552 081 317 RCS Paris

EDF group

HALF-YEAR FINANCIAL REPORT

AT 30 JUNE 2019

At its meeting of 25 July 2019, EDF's Board of Directors approved this Half-year financial report and the condensed consolidated financial statements for the half-year ended on 30 June 2019 included in it.

This report contains information relating to the markets in which the EDF group is present. This information has been taken from surveys carried out by external sources. Considering the very rapid changes that characterise the energy sector in France and worldwide, it is possible that this information could turn out to be mistaken or outdated. Developments in the Group's activities could consequently differ from those described in this Half-year financial report and the declarations and information appearing in this report could prove to be erroneous.

The forward-looking statements contained in this Half-year financial report, notably in section 11 "Financial Outlook" of the Half-year management report, are based on assumptions and estimates that could evolve or be impacted by risks, uncertainties (relating particularly to the economic, financial, competitive, regulatory and weather environment) or other factors that may cause the future results, performances and achievements of the Group to differ significantly from the objectives expressed and suggested. These factors may include changes in the economic and commercial environment, regulations, and the factors discussed in section 2 of the EDF group's 2018 Reference Document "Risk Factors and control framework".

Pursuant to European and French legislation, the entities responsible for the transmission and distribution of electricity within the EDF group may not communicate certain information gathered in the course of their activities to the other entities of the Group, including its Management. Similarly, certain data specific to generation and supply activities may not be communicated to the entities responsible for transmission and distribution. This Half-year financial report has been prepared by the EDF group in compliance with these rules.

CONTENT OF THE 2019 HALF-YEAR FINANCIAL REPORT

CERTIFICATION BY THE PERSON RESPONSIBLE FOR THE 2019 HALF-YEAR FINANCIAL REPORT

I certify that, to the best of my knowledge, the condensed consolidated financial statements at 30 June 2019 are prepared in accordance with the applicable accounting standards and give a true and fair view of the assets and liabilities, financial position and income of the company and of all the companies included in the scope of consolidation, and that the attached Half-year management report presents a true and fair view of the important events of the first six months of the financial year and their impact on the financial statements, the main related party transactions and a description of the main risks and uncertainties for the remaining six months of the financial year.

Paris, 25 July 2019

Jean-Bernard Lévy

Chairman and CEO of EDF

HALF-YEAR MANAGEMENT REPORT AT 30 JUNE 2019

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1 KEY FIGURES

Pursuant to European regulation 1606/2002 of 19 July 2002 on the adoption of international accounting standards, the EDF group's condensed consolidated financial statements for the half-year ended 30 June 2019 are prepared using the presentation, recognition and measurement rules set forth in the international accounting standards published by the IASB and approved by the European Union for application at 30 June 2019. These international standards are IAS (International Accounting Standards), IFRS (International Financial Reporting Standards), and SIC and IFRIC interpretations.

The accounting methods applied by the Group are presented in note 1 to the condensed consolidated half-year financial statements at 30 June 2019.

The figures presented in this document are taken from the EDF group's condensed consolidated half-year financial statements at 30 June 2019.

Since 1 January 2019, the Group has applied IFRS 16 "Leases" under the "modified" retrospective approach. Restatement of comparative figures for the impacts of application of IFRS 16 is not required. Consequently, the financial statements at 30 June 2019 were prepared with no prior year restatements (see note 2.1 to the condensed consolidated half-year financial statements at 30 June 2019).

The sale of Edison's Exploration and Production (E&P) operations has been classified as a discontinued operation as defined by IFRS 5 from 1 January 2019 (see note 2.3 to the condensed consolidated half-year financial statements at 30 June 2019). As a result, the net income of discontinued operations is reported on a specific line of the income statement for the periods published.

The condensed consolidated half-year financial statements comply with standard IAS 34 on interim financial reporting. They do not therefore include all the information required for full annual financial statements, and are to be read in conjunction with the consolidated financial statements at 31 December 2018.

The Group's key figures for the first half of 2019 are shown in the following table.

EXTRACT FROM THE CONSOLIDATED INCOME STATEMENT

(in millions of euros)	H1 2019 (1)	H1 2018 (2)	Variation	Variation (%)	Organic growth (%)
Sales	36,469	34,962	1,507	+4.3	+3.7
Operating profit before depreciation and amortisation (EBITDA)	8,346	8,062	284	+3.5	+0.1
Operating profit (EBIT)	3,672	3,595	77	+2.1	+3.0
Income before taxes of consolidated companies	3,542	1,977	1,565	+79.2	+82.8
EDF net income	2,498	1,726	772	+44.7	+46.6
Net income excluding non-recurring items (3)	1,402	1,739	(337)	-19.4	-17.6

(1) The financial statements at 30 June 2019 apply IFRS 16 from 1 January 2019. In accordance with the new standard's transition provisions, the comparative figures have not been restated.

(2) The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations.

(3) Net income excluding non-recurring items is not defined by IFRS, and is not directly visible in the Group's consolidated income statement. It corresponds to the Group's share of net income (EDF net income) excluding non-recurring items, net changes in the fair value of energy and commodity derivatives (excluding trading activities), and net changes in the fair value of debt and equity instruments, net of tax (see section 4.10 "Net income excluding non-recurring items").

FROM EDF NET INCOME TO NET INCOME EXCLUDING NON-RECURRING ITEMS

(in millions of euros)	H1 2019	H1 2018
EDF net income	2,498	1,726
Other, including net changes in fair value on energy and commodity derivatives, excluding trading activities and changes in the fair value of debt and equity instruments	(1,570)	(36)
Impairment	474	49
Including impairment on Edison's E&P operations (in application of IFRS 5)	*414*	*10*
NET INCOME EXCLUDING NON-RECURRING ITEMS	**1,402**	**1,739**
Payments to bearers of perpetual subordinated bonds	(334)	(378)
NET INCOME EXCLUDING NON-RECURRING ITEMS, ADJUSTED FOR PAYMENTS ON HYBRID BONDS	**1,068**	**1,361**

GROUP CASH FLOW

(in millions of euros)	**H1 2019**	**H1 2018** [(1)]	**Variation**	**Variation (%)**
Group cash flow [(2)] [(3)]	1,049	1,546	(497)	-32,1

(1) The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations.

(2) The financial statements at 30 June 2019 apply IFRS 16. The comparative figures have not been restated. The impact on Group cash flow would have been +€302 million.

(3) Group cash flow is not an aggregate defined by IFRS as a measure of financial performance, and is not comparable with indicators of the same name reported by other companies. It is equivalent to the operating cash flow less asset disposals, income taxes paid, net financial expenses disbursed, dedicated assets, dividend paid in cash, Hinkley Point C and Linky (see section 5 of this financial report).

DETAILS OF NET INDEBTEDNESS

(in millions of euros)	**30/06/2019**	**31/12/2018**	**Variation**	**Variation (%)**
Net indebtedness [(1)]	37,374 [(2)]	33,388	3,986	+11.9
Equity (EDF share)	45,154	44,469	685	+1.5
Net indebtedness/EBITDA	2.4 [(3)]	2.2		

(1) Net indebtedness is not defined in the accounting standards and is not directly visible in the Group's consolidated balance sheet. It comprises total loans and financial liabilities, less cash and cash equivalents and liquid assets. Liquid assets are financial assets consisting of funds or securities with initial maturity of over three months that are readily convertible into cash and are managed according to a liquidity-oriented policy (see note 21.3 to the condensed consolidated half-year financial statements at 30 June 2019).

(2) Net indebtedness at 30 June 2019 include IFRS 16 from 1 January 2019 for €4,492 million.

(3) The ratio at 30 June 2019 is calculated based on cumulative EBITDA for the second half of 2018 and the first half of 2019.

2 ECONOMIC ENVIRONMENT

2.1 Market prices for electricity and the principal energy sources

In an interconnected European market, analysis of French market prices must be related to analysis of market prices in the neighbouring countries.

European spot electricity prices during the first half of 2019 remained close to the prices observed in the first half of 2018; they increased slightly in certain countries including France, while other countries such as the United Kingdom saw a decline in spot prices.

2.1.1 Spot electricity prices in Europe (1)

	France	United Kingdom	Italy	Germany	Belgium
Average baseload price for H1 2019 *(€/MWh)*	41.0	53.4	55.1	38.3	41.5
Variation in average H1 baseload prices, 2019/2018	+1.9%	-10.9%	+2.5%	+7.2%	-6.7%
Average peakload price for H1 2019 *(€/MWh)*	47.4	57.4	60.4	44.6	48.6
Variation in average H1 peakload prices, 2019/2018	-1.6%	-10.4%	+0.1%	+5.4%	-6.2%

The comments below concern baseload prices.

In **France**, spot electricity prices stood at an average €41.0/MWh (baseload) and €47.4MW/h (peakload) in the first half of 2019, €0.8/MWh higher in baseload and €0.8/MWh lower in peakload compared to the first half of 2018. This relative stability masks substantial year-on-year price differences. In January 2019, spot electricity prices were €26.2/MWh above their January 2018 level as temperatures were 3.7°C lower, inducing higher demand for electricity. For the months of March and June 2019, however, baseload prices were down by €14.4/MWh and €13.1/MWh respectively compared to 2018, as a result of milder weather in March leading to lower demand in 2019, and higher renewable energy generation in France and Germany in June, combined with a decline in spot gas prices.

In the first half of 2019, demand in France stood at 245.7TWh, down by 3.4TWh from first-half 2018. After nearing record levels in 2018, hydropower generation in the early part of the year was much lower in 2019 than 2018 (-9.3TWh). The shortfall was offset by higher nuclear fleet availability (+1.1TWh), and greater use of gas-fired plants (+5.0TWh). Generation by coal-fired plants registered a significant decline (-2.1TWh from the first half of 2019). Wind power and solar power output, meanwhile, increased respectively by 1.7TWh and 1.3TWh to 15.8TWh and 5.9TWh for the first half of 2019. France's export balance for the first half of the year was 2.2TWh [2] lower in 2019 than 2018. In the first quarter, higher net imports in January (+6.0TWh) due to lower temperatures compared to January 2018 were counterbalanced by a rise in net exports in February and March. Net exports by France showed a particular downturn in the spring (-2.2TWh): this mainly concerned exports to the United Kingdom due to lower interconnection availability, and exports to the CWE area due to high wind power generation in Germany in 2019, in contrast to the low wind power generation level of spring 2018.

In the **United Kingdom**, spot electricity prices stood at an average €53.4MWh for the first half of 2019, a year-on-year decrease of €6.5/MWh despite a rise in prices in the early part of the year: as temperatures were lower in 2019 than 2018, January prices were €12.3/MWh higher. But this situation was short-lived, and average spot electricity prices for the months of March to June were nearly €13/MWh on average below the levels for the corresponding period of 2018. The downturn in prices in March 2019 was caused by milder weather than in 2018, when a late wave of cold winter weather drove demand for gas up significantly at a time of supply tensions in the United Kingdom after unscheduled outages at a Norwegian gas field and the interconnection with the Netherlands, leading to a spike in gas and electricity prices. In the spring, a marked decline in spot gas prices was the main factor in the decrease in electricity prices, which are closely correlated to gas prices in the United Kingdom.

In **Italy**, average spot prices saw a year-on-year rise of €1.3/MWh, standing at an average €55.1/MWh for the first half of 2019. This rise was principally driven by January prices, which were €18.7/MWh higher in 2019 than 2018 due to lower temperatures. Prices in June 2019, in contrast, were well below their June 2018 level (-€8.7/MWh) as a result of declining spot gas prices.

In **Germany**, spot prices rose by €2.6/MWh compared to first-half 2018 to an average €38.3/MWh for the first half of 2019. This rise, like elsewhere in Europe, resulted from higher prices in January due to due to colder weather (up by +€19.9/MWh from January 2018), but it was partly offset by a decline in prices in March and June. In March, prices were driven down by milder weather than in 2018 and a record level of wind power output for Germany (16.0TWh). In June, the downturn in spot prices was related to the downturn in short-term gas prices. In the spring, Germany is generally a net importer, chiefly from France, and its spot electricity prices are thus often influenced by French prices. Wind power output was up by 10.1TWh year-on-year to 65.1TWh for the first half of 2019, while photovoltaic power output was up by 1.4TWh to 22.7TWh. At 31 May 2019[3], the total installed wind power and photovoltaic power capacities in Germany were around 60GW and 48GW respectively. Several periods of significant wind and photovoltaic power generation led to negative prices (142 hours in the first half of 2019 against 104 hours in the first half of 2018). The lowest hourly price was -€90.0/MWh, registered on 8 June 2019.

In **Belgium**, spot prices retreated by €3.0/MWh year-on-year, with an average price of €41.5/MWh for the first half of 2019, although the year had begun with rising prices: January prices were €23.7/MWh higher in 2019 than 2018 as a result of this year's colder temperatures, and lower nuclear plant availability at the start of the year in Belgium, where three of the seven reactors were offline in January 2019, compared to only one in January 2018. The decrease in Belgian spot prices was mainly attributable to the month of March (when prices declined -€13.1/MWh year-on-year) as wind power was high all over Europe, especially in Germany, and the month of June (when prices declined -€22.5/MWh year-on-year) which benefited from lower spot prices for gas and better nuclear availability than in 2018 (only two reactors were offline in June 2019, compared to four in June 2018).

*(1) **France and Germany**: average previous day EPEXSPOT price for same-day delivery;*
*   **Belgium**: average previous day Belpex price for same-day delivery;*
*   **United Kingdom**: average previous day EDF Trading OTC price for same-day delivery;*
*   **Italy**: average previous day GME price for same-day delivery.*
*(2).**Source** : RTE monthly reports until May 2019,ENTSO-E Transparency Platform for June 2019*
(3) Data at 30 June 2019 is unavailable.

2.1.2 Forward electricity prices in Europe (1)

	France	United Kingdom	Italy	Germany	Belgium
Average forward baseload price under the 2020 annual contract for H1 2019 *(€/MWh)*	51.4	60.4	60.6	48.4	51.8
Variation in average H1 forward baseload price under the annual contracts, 2019/2018	+21.0%	+10.6%	+16.5%	+28.5%	+23.2%
Forward baseload price under the 2020 annual contract at 30 June 2019 *(€/MWh)*	51.7	57.3	61.9	49.2	52.1
Average forward peakload price under the 2020 annual contract for H1 2019 *(€/MWh)*	65.6	66.8	68.0	59.2	63.9
Variation in average H1 forward peakload price under the annual contracts, 2019/2018	+21.0%	+11.4%	+14.5%	+26.7%	+20.4%
Forward peakload price under the 2020 annual contract at 30 June 2019 *(€/MWh)*	63.6	64.0	68.8	58.6	63.3

All over Europe, average annual contract prices for baseload and peakload electricity were higher than in the first half of 2018, principally due to increases in CO_2 prices and gas prices.

In **France**, the average annual contract baseload price for next-year delivery was €51.4/MWh, up by 21% compared to the first half of 2018. This increase is principally explained by higher CO_2 prices, which practically doubled year-on-year. The "Calendar N+1" price thus ended the half-year at €51.7/MWh.

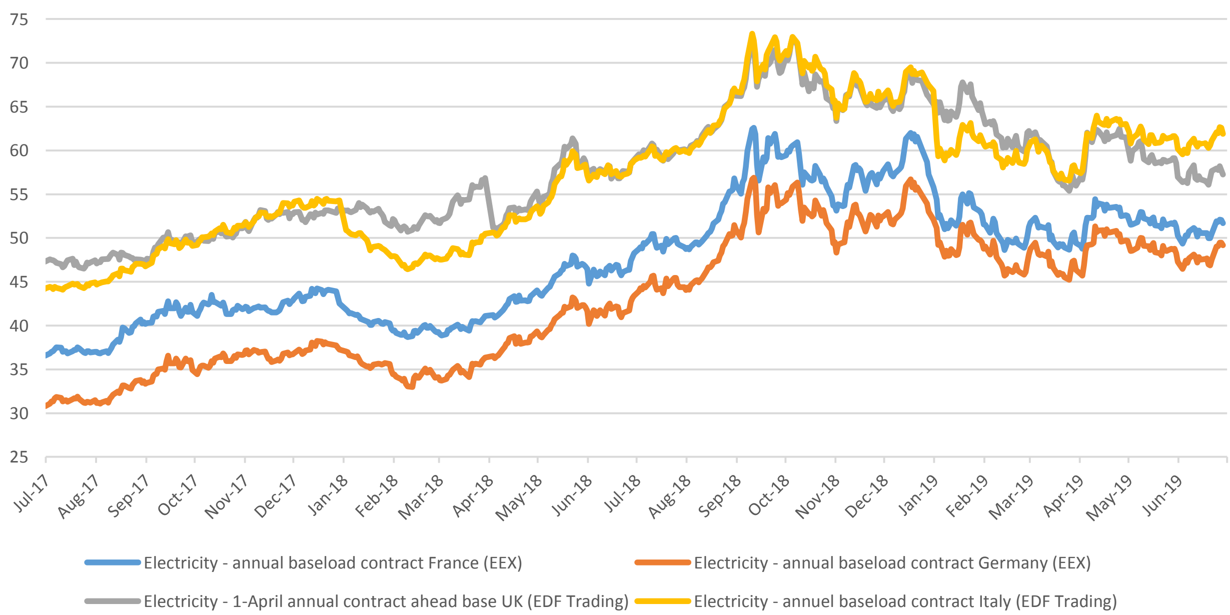
In the **United Kingdom**, the April Ahead contract baseload price for 1 April Y+1 to 31 March Y+2 was up by nearly 11% year-on-year to an average €60.4/MWh for the first half of 2019, due to an increase in gas and CO_2 prices.

In **Italy**, the annual contract baseload price for next-year delivery also rose to an average €60.6/MWh, 17% higher than in the first half of 2018. This increase is attributable to the significant rise in CO_2 prices.

In **Germany**, the annual contract baseload price for next-year delivery was up by 28% compared to the first half of 2018, standing at an average €48.4/MWh. This rise is mainly explained by CO_2 price rises between the two years, since coal-fired plants still make a significant contribution to the formation of German electricity prices, and are more strongly affected by CO_2 prices than gas-fired plants.

In **Belgium**, the annual contract baseload price for next-year delivery was 23% higher than in the first half of 2018 at an average €51.8/MWh, due to the increase in CO_2 and gas prices. This is comparable to the movements in German and French prices, as prices in these countries are highly correlated.

→ Principal forward electricity prices in Europe (baseload year ahead)



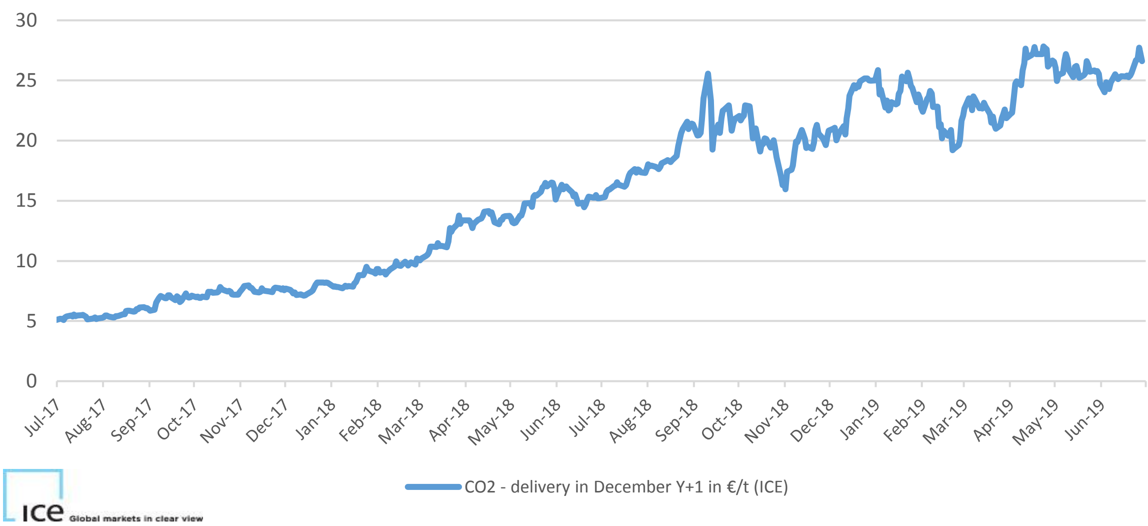
*(1) **France** and **Germany**: average year-ahead EEX price;*
***Belgium** and **Italy**: average year-ahead EDF Trading price;*
***United Kingdom**: average ICE annual contract prices, April 2018 then April 2019 (in the UK, annual contract deliveries take place from 1 April to 31 March).*

2.1.3 CO_2 emission rights prices [(1)]

The price of CO_2 emissions certificates for delivery in December Y+1 ended the half-year at €26.6/t, up by €11.4/t compared to 30 June 2018. The main explanation for this increase was the agreement on the EU-ETS reform for the period 2021-2030 to reduce the number of quotas in circulation. Prices were very volatile at the end of 2018, moving between €15 and €25/t in response to progress on Brexit negotiations and speculative behaviours by certain actors.

In late January, prices were driven downwards by the recommendation of Germany's Coal Exit Commission that the entire German lignite and coal-fired fleet should be progressively closed down, with the possibility of decommissioning starting as soon as 2022. Prices then turned upwards in March as a "hard Brexit" by the end of the month, then the end of April, appeared less and less likely. If the United Kingdom were to leave the European Union without an agreement, a large number of quotas would flood the market, as the quota system would not apply in the United Kingdom and British power plants would have to sell all their emissions quotas, possibly within a short time horizon. Also, as the last actors with emissions not yet fully covered for 2018 had to purchase additional quotas to reach compliance by the end of April, CO_2 prices exceeded €27/t in mid-April, a level not attained since July 2008, before subsequently stabilising at around €25/t.

→ CO_2 emission rights prices



2.1.4 Fossil fuel prices [(2)]

	Oil *(US$/bbl)*	**Natural gas** *(€/MWhg)*	**Coal** *(US$/t)*
Average price for H1 2019	66.2	19.5	74.1
Average H1 price variation, 2019/2018	-7.0%	+2.9%	-10.8%
Highest price in H1 2019	74.6	21.8	87.0
Lowest price in H1 2019	54.9	17.5	62.2
Price at 30 June 2019	66.6	17.5	64.7
Price at 30 June 2018	79.4	21.5	89.5

Oil prices stood at an average US$66.2/bbl for the first half of 2019, down by 7% (-US$5.0/bbl) compared to the same period of 2018, and was US$12.9/bbl lower year-on-year at 30 June 2019. This downturn is mainly explained by a fall in prices per barrel in late 2018 (-US$35/bbl in the final quarter). Oil prices then showed an upturn in January due to limits on production in OPEC countries, especially Saudi Arabia, sanctions against Venezuelan oil, and a slowdown in oil production in Nigeria following action by rebel groups. Prices were also driven upwards by forecasts of high demand, with positive signals from the Chinese and North American economies. After stabilising at around US$70/bbl on April/May, Brent oil prices declined by almost US$10/bbl in the first few days of June as a result of the US' announcement that it was introducing customs duties for Mexican imports. These frictions, in addition to the trade conflict between China and the US, led to fears of an economic slowdown. However, rising tensions in the Middle East in mid-June following attacks on two tankers in the Gulf of Oman and the destruction of an American drone by Iran sent prices back upwards.

The **annual gas contract** for next-year delivery at the French PEG hub traded at an average €19.5/MWh in the first half of 2019, up slightly compared to the first half of 2018 (+€0.6/MWh or +3%). However, this relative stability does not reflect the background movements in gas prices: in 2018, prices rose almost constantly over the first half-year, while this year saw a general downward trend until gas prices ended the period at €4.1/MWh below their 30 June 2018 level. Like coal prices, gas prices have shown a marked decrease since the start of the year (-€3.0/MWh), principally as a result of very high stock levels for the season. The comparatively mild weather meant that demand for gas for both heating and electricity generation was only moderate this winter, requiring little drawings on stocks. This effect was

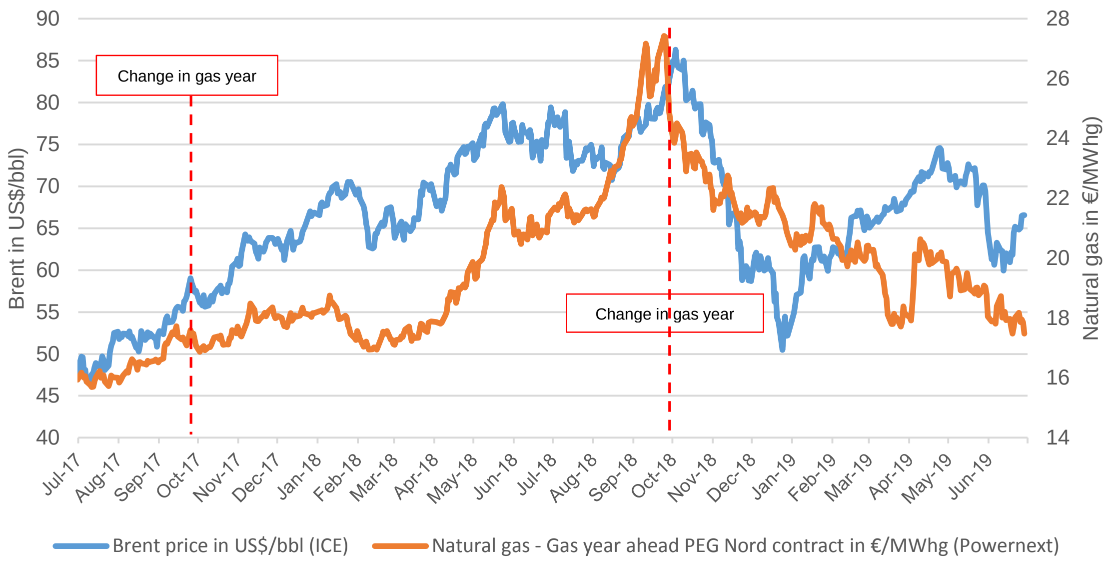
(1) Average ICE prices for the annual contract, Phase III (2013-2020).

*(2) **Oil**: Brent first reference crude oil barrel, IPE index (front month) (US$/barrel);*
***Natural gas**: average ICE OTC prices, for delivery starting from October of the following year in France (PEG Nord) (€/MWhg);*
***Coal**: average ICE prices for delivery in Europe (CIF ARA) for the next calendar year (US$/t).*

amplified by a significant increase in LNG supplies in Europe, since US cargo ships currently prefer to deliver to Europe rather than Asian countries after gas prices fell sharply in Asia. The abundance of LNG supplies pushed short-term gas prices down significantly: spot prices dropped below the €10/MWh mark, a situation last seen almost ten years ago.

In the first half of 2019, **coal** prices for next-year delivery in Europe stood at an average US$74.1/t, a year-on-year decrease of 11% (-US$9.0/t). The price of coal at 30 June was US$24.8/t lower in 2019 than 2018. Coal prices hovered around the US$100/t mark on 3 October 2018, but have been in constant decline since then, notably losing US$17.5/t since the beginning of the year due to the high stock levels all over Europe. Stocks of coal began to accumulate in the Benelux ports in late 2018 because the low level of the river Rhine limited deliveries to the German power plants. The accumulation continued during the winter due to weak demand for electricity generation, and as a result coal stocks reached record levels by the end of the winter. Lower forecast worldwide demand was another contributing factor to the decrease in forward prices, together with a number of signals indicating the possibility of German coal-fired plant closures as soon as 2022.

→ Natural gas and oil prices



2.2 Electricity and gas consumption

2.2.1 Electricity and gas consumption in France

Electricity consumption in **France** (1) totalled 247.7TWh for the first half of 2019, stable compared to the first half of 2018.

Estimated natural gas consumption in **France** (2) for the first half of the year rose by 3.0% (+7.8TWh) year-on-year to 266.8TWh. In February and March, gas consumption was much lower in 2019 than 2018 (-20.4% and -17.4% respectively) as above-normal temperatures in 2019 led to lower demand for gas heating and less use of gas-fired power plants to generate electricity. In the months of January, April and May, however, consumption was much higher (+24.9%, +22.5% and +38.1% respectively) due to lower temperatures than in the same months of 2018 (-3.7°C, -2.1°C and -2.3°C respectively). In June, the year-on-year rise in consumption was mainly driven by extensive use of gas-fired plants (+1.0TWh) which became more profitable due to the low gas prices on the spot market.

2.2.2 Electricity and gas consumption in Italy

Electricity consumption in **Italy** (3) showed a slight decrease in the first half of 2019 (-0.6%) compared to the same period of 2018, while electricity generation was up by 2.6%. The higher levels of gas-fired, wind and solar power generation more than made up for the decline in hydropower generation (-17.1%). Net imports were down by 18.7%.

Domestic demand for natural gas in **Italy** (4) increased by 4.3% due to a rise in demand for thermal electricity (+16.7%). Demand from residential customers declined by 0.8% as a result of milder temperatures in February and March, while industrial demand was stable in relation to the first half of 2018.

2.3 Electricity and natural gas sales tariffs

In **France,** the "blue" regulated tariffs for residential and non-residential customers were raised by 7.7% (excluding taxes) from 1 June 2019 (see note 3.3.2 to the condensed consolidated half-year financial statements at 30 June 2019).

In the **United Kingdom,** a cap on the variable gas and electricity tariffs for residential customers was introduced on 1 January 2019. The cap was raised by 10% from 1 April 2019 to reflect developments in wholesale market prices.

(1) *Sources: **France**: unadjusted data and data adjusted for weather effects provided by RTE (the data for June are estimates since final figures are not yet available).*
(2) *Sources: **France**: unadjusted data provided by Smart GRTgaz.*
(3) *Sources for **Italy**: unadjusted data and data provided by Terna, the Italian national grid operator, and adjusted by Edison.*
(4) *Sources for **Italy**: Ministry for Economic Development (MSE), Snam Rete Gas data adjusted by Edison on the basis of 1Bcm = 10.76TWh.*

2.4 Weather conditions: temperatures and rainfall

The first half of 2019 ended on temperatures 0.1°C below normal, but registered contrasting temperatures in different months.

The winter of 2018-2019 was one of the ten mildest winters in France since the 20th century began (source: Meteo France), even though January was close to seasonal norms.

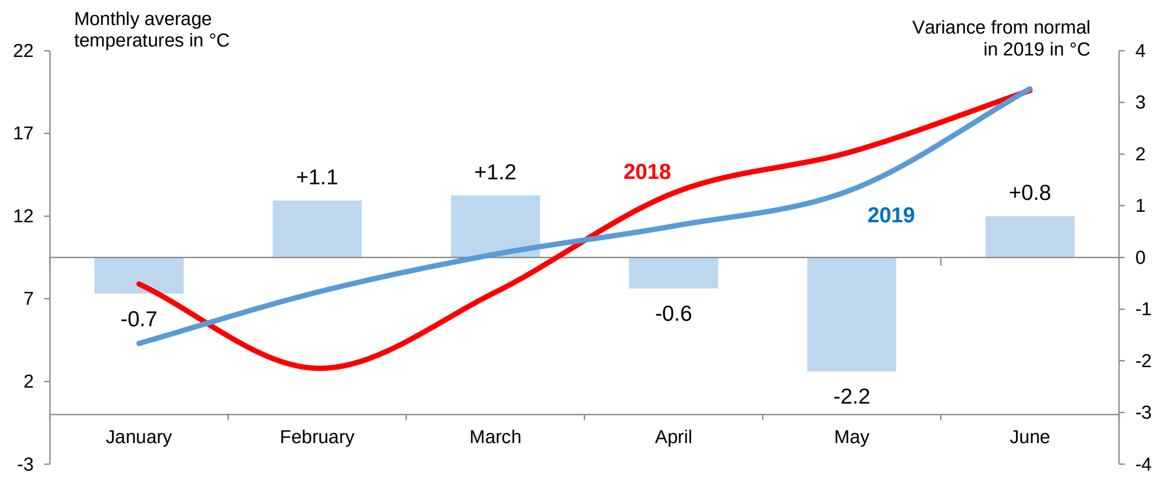
There was a cold spell in early February, followed by variable but mild temperatures. France registered record high winter temperatures in the second half of February, and March remained mild at 1.2°C above normal.

Compared to the first half of 2018, there were significant differences in average monthly temperatures in 2019: -3.7°C, +4.6°C and +2.3°C respectively for January, February and March.

May was very cool overall (2.2°C below normal).

June began with below-normal temperatures (notably on 11 June, 5.6°C under the norm); but records were beaten later in the month by an exceptionally intense heatwave (on 27 June temperatures were 7.6°C above normal.

→ Temperatures [1] [2] in France in first-half 2019 and first-half 2018

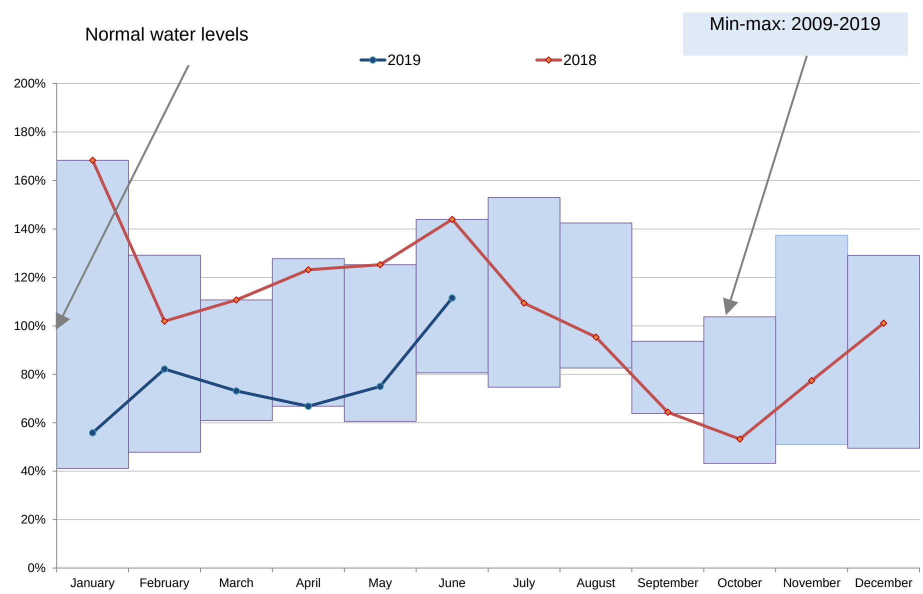


(1) Average temperatures recorded in 32 cities weighted by electricity consumption.
(2) Source: Miréor (data from Météo-France).

Regarding rainfall, the first half of 2019 was marked by:

- a shortfall in precipitation in southern Europe, particularly Spain and the Mediterranean Arc;
- surplus precipitation in Scandinavia;
- close to normal levels elsewhere.

→ Water flow coefficients in France in 2018 and first-half 2019 [1]



(1) Weekly monitoring by EDF's OSGE energy observatory of French reservoir levels (Miréor project) as far as the coast.

France had fairly low precipitation in the first half of 2019 (particularly in February, March and June). Combined with marked contrasts in air temperatures (particularly in April and May), this led to an unusual snow coverage situation: in the Alps, the thaw came late and was mostly concentrated in June.

As a result of these unfavourable weather conditions, water flow coefficients in France were below normal in every month of the first half of 2019 except June. This was the second driest half-year of the last 30 years.

3 SIGNIFICANT EVENTS OF 2019 (1) (2)

This chapter reports on significant events following the publication, on 15 March 2019, of the 2018 Reference Document (see section 5.1.3 “Significant events of 2018” and 5.2 “Subsequent events”).

3.1 Major events

3.1.1 Sustainable development and Group Renewables

EDF Renewables (3)

- During the first half of 2019, EDF Renewables commissioned new facilities, signed electricity sales agreements and undertook new projects.
- The Council of State approved the final administrative permits for the Fécamp and Courseulles-sur-Mer offshore wind farm projects (see press release of 24 July 2019).
- EDF-led consortium selected for the Dunkirk offshore wind power project (see press release of 14 June 2019 and note 3.1.3.5 to the condensed consolidated half-year financial statements at 30 June 2019).
- The Council of State approved the Saint-Nazaire offshore wind farm operating permit (see press release of 7 June 2019 note 3.1.3.4 to the condensed consolidated half-year financial statements at 30 June 2019).
- Consortium of EDF, Masdar and Green of Africa named as successful bidder for Morocco’s landmark Noor Midelt I solar project (see press release of 22 May 2019 and note 3.1.3.3 to the condensed consolidated half-year financial statements at 30 June 2019).
- EDF Renewables completed the acquisition of LUXEL Group, a French utility that develops and operates solar projects (see press release of 1 April 2019 and note 3.1.3.1 to the condensed consolidated half-year financial statements at 30 June 2019).
- EDF signed agreement to build and operate two offshore wind farms and to optimize a heating and air-conditioning networks in the city of Wuhan (see press release of 25 March 2019 and note 3.1.3.2 to the condensed consolidated half-year financial statements at 30 June 2019).
- EDF Renewables acquired a majority stake in a 77MWp rooftop PV assets portfolio from Asia Clean Capital (see press release of 21 March 2019).

EDF Pulse Croissance

- EDF acquired Energy2market (e2m) and strengthen its position in the field of decentralized energy management in Europe (see press release of 13 June 2019).
- EDF launched DREEV, its new subsidiary to turn innovative smart charging solutions into a reality (see press release of 20 May 2019).
- EDF launched Hynamics, a subsidiary to produce and market low-carbon hydrogen (see press release of 2 April 2019).

3.1.2 Nuclear industry

- Hinkley Point C hit its biggest milestone yet with the completion of the base for the first reactor (see EDF Energy’s press release of 28 June 2019, available on the website www.edfenergy.com).
- Flamanville EPR: EDF has reviewed the decision from the French Nuclear Safety Authority (ASN) notified in a letter dated 19 June 2019, related to the deviations affecting welds on the main steam transfer pipes covered by the break preclusion principle at the Flamanville EPR (see press release of 20 June 2019 and note 3.1.5 to the condensed consolidated half-year financial statements at 30 June 2019).
  - Three scenarios for upgrading the penetration welds are under consideration.
  - After a detailed examination of the three scenarios and discussions with the ASN, the Group will communicate in the coming months the implications of the selected scenario in terms of planning and cost.
  - At this stage, commissioning cannot be expected before end 2022.
  - A new application to amend the Flamanville 3 construction authorization decree, to extend the deadline, was filed by EDF on 23 July 2019.

3.2 Asset disposals plan

- Edison announced the signing of the agreement to sell its exploration and production of gas to Energean Oil and Gas (see press release of 4 July 2019 available on Edison website www.edison.it and note 2.3 to the condensed consolidated half-year financial statements at 30 June 2019).
- EDF announced the completion of the disposal of its 25% stake in Alpiq (see press release of 28 May 2019 and note 3.1.1 to the condensed consolidated half-year financial statements at 30 June 2019).

(1) A full list of press releases is available from the EDF website: www.edf.fr
(2) See section 9 for details of litigation that has been significant developments since the Reference Document was filed.
(3) A full list of press releases is available from the EDF Renewables website: www.edf-renouvelables.com

3.3 Financial structure

- EDF signed two bilateral sustainable revolving credit facilities with Crédit Agricole CIB and Societe Generale CIB, bringing the total of its sustainability-linked loans to over €5 billion (see press release of 22 July 2019).
- EDF and BBVA signed a €300 million sustainability-linked revolving credit facility (RCF) which incorporates a pricing adjustment based on EDF's sustainability performance linked to CO_2 emissions and energy efficiency. (see press release of 22 March 2019 and note 3.1.2 to the condensed consolidated half-year financial statements at 30 June 2019).

3.4 Regulatory environment

Regulatory changes are described in detail in the following notes to the condensed consolidated half-year financial statements at 30 June 2019:

- note 3.3.1 "Multi-year energy plan (PPE)";
- note 3.3.2 "Regulated electricity sales tariffs in France";
- note 3.3.3 "TURPE network access tariffs";
- note 3.3.4 "CSPE compensation mechanism for public energy service charges"(CSPE);
- note 3.3.5 "French capacity mechanism";
- note 3.3.6 "Energy savings certificates";
- note 3.3.7 "ARENH".

3.5 Changes in the members of EDF's BOard of Directors

At the General meeting of 16 May 2019, the shareholders approved the renewal of Jean-Bernard Lévy's term of office as director for a four-year period, the appointment of Anne Rigail, Bruno Crémel, Gilles Denoyel and Philippe Petitcolin as directors for a four-year period, and the renewal of the terms of office of Marie-Christine Lepetit, Colette Lewiner, Laurence Parisot, Michèle Rousseau and Maurice Gourdault-Montagne as directors for a two-year period. Ms Lepetit, Ms Rigail, Ms Rousseau and Messrs Denoyel and Gourdault-Montagne were appointed after nomination by the French State, in application of ordinance 2014-948 of 20 August 2014.

The Board of Directors, at a meeting held the same day, decided to propose that the President of France renew Jean-Bernard Lévy's appointment as Chairman and CEO. This appointment was confirmed by decree of the President on 22 May 2019 (see press release of 16 May 2019).

Following the elections of directors representing the employees on EDF's Board of Directors, which took place between 7 and 13 June 2019, the distribution of seats on the Board will be unchanged, with three directors sponsored by the CGT union, one sponsored by the CFDT union, one sponsored by the CFE-CGC union and one sponsored by the FO union. Christine Chabauty and Christophe Cuvilliez (CGT) will be replaced by Karine Migliorini and Claire Bordenave. Vincent Rodet is to succeeed Marie-Hélène Meyling (CFDT). The terms of office of Jacky Chorin (FO), Jean-Paul Rignac (CGT) and Christian Taxil (CFE-CGC) have been renewed.

After noting the resignation of Maurice Gourdault-Montagne, at a meeting on 28 June 2019 the Board of Directors provisionally appointed François Delattre as director to replace Maurice Gourdault-Montagne for the remainder of his term of office. The appointment of François Delattre will be submitted for ratification at the next ordinary meeting of EDF shareholders.

3.6 Share repurchase programme adopted by the Combined Shareholders' Meeting of 16 May 2019

At EDF's Shareholders' Meeting of 16 May 2019, the Board of Directors received authorisation from the shareholders to undertake operations affecting the Company's shares (see press release of 16 May 2019)

Objectives of the share repurchase programme

Under the share repurchase programme, the shares will be purchased for the following purposes:

- Cancellation of shares;
- Allocation or sale of shares to current or former employees of EDF, on terms and conditions prescribed by French law, particularly under the company's profit-sharing schemes, or free share grants or offers reserved for employees;
- Remittal of shares upon the exercise of rights attached to securities that entitle the holder to a share in the Company's capital by redemption, conversion, exchange, presentation of a warrant or any other procedure;
- Market-making through a liquidity agreement that complies with accepted market practice as established by the French market authority (AMF);
- Remittal of shares upon the exercise of rights attached to securities that entitle the holder to a share in the Company's capital, and all hedging operations, to the extent of the obligations of the Company or one of its subsidiaries;
- Holding and remittal at a later date, as part of external growth operations, contributions, mergers or demergers;
- More generally, undertaking any operation that is currently or comes to be authorised by the regulations in force, or falls within the scope of a market practice accepted by the AMF.

Duration of the share repurchase programme

The repurchase programme shall be in application for a period of 18 months, i.e. until 16 November 2020.

Maximum portion of share capital, maximum number and characteristics of the shares the Company can repurchase, and maximum purchase price

The maximum portion of the share capital that can be repurchased under this programme is 10% of the total number of shares making up the capital (or 5% if the shares are acquired with a view to holding them for subsequent remittal as payment or exchange in external growth operations). When the shares are repurchased to for market-making purposes under a liquidity contract, the number of shares taken into consideration in calculating the 10% limit is the number of shares repurchased less the number of shares resold during the period covered by the authorisation.

The Company can never hold more than 10% of its own capital, directly or indirectly.

The maximum purchase price shall be €30 per share, and the total amount of funds that can be allocated to execution of the share repurchase programme cannot exceed €2 billion.

Following changes in the regulations governing liquidity contracts, in compliance with AMF decision 2018-01 of 2 July 2018, a new liquidity contract was concluded with Oddo BHF and at 28 March 2019, the amounts reported in the liquidity account were €10,120,161 and 738,882 shares (see press release of 29 March 2019).

3.7 Other significant events

- EDF group successfully completed its offer reserved for employees and former employees (see press release of 10 July 2019 and note 3.1.4 to the condensed consolidated half-year financial statements at 30 June 2019).
- Results of the option for payment of the balance of the 2018 dividend: the amount of the cash dividend paid to shareholders who did not opt for the scrip dividend for the 2018 distribution was €31 million (see press release of 17 June 2019 and note 19.2 to. the condensed consolidated half-year financial statements at 30 June 2019).
- Changes in the EDF Group's Executive Committee (see press release of 20 May 2019):
  - Marc BENAYOUN was appointed Group Senior Executive Vice President in charge of Customers, Services and Regional Action, whilst remaining in charge of the Gas and Italy business;
  - Cédric LEWANDOWSKI was appointed Group Senior Executive Vice President in charge of the Nuclear and Thermal business;
  - Alexandre PERRA was appointed Group Senior Executive Vice President in charge of Innovation, Corporate Social Responsibility and Strategy.

4 ANALYSIS OF THE BUSINESS AND THE CONSOLIDATED INCOME STATEMENTS FOR THE FIRST HALF-YEARS OF 2018 AND 2019

Presentation and analysis of the consolidated income statements for the first-half years of 2018 and 2019 is shown at two levels of analysis for Sales and EBITDA: a first focusing on the Group, then a second reporting on the different business segments (France - Generation and supply activities, France - Regulated activities, EDF Renewables, Dalkia, Framatome, United Kingdom, Italy, Other international and Other activities). EBIT (operating profit) and net income are analysed from a general standpoint.

(in millions of euros)	H1 2019 (1)	H1 2018 (2)
Sales	**36,469**	**34,962**
Fuel and energy purchases	(17,951)	(16,770)
Other external purchases	(3,655)	(3,989)
Personnel expenses	(6,963)	(6,815)
Taxes other than income taxes	(2,810)	(2,691)
Other operating income and expenses	3,256	3,365
Operating profit before depreciation and amortisation (EBITDA)	**8,346**	**8,062**
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	350	19
Net depreciation and amortisation	(4,776)	(4,307)
Net increases in provisions for renewal of property, plant and equipment operated under concessions	(54)	(66)
(Impairment)/reversals	(45)	(57)
Other income and expenses	(149)	(56)
Operating profit (EBIT)	**3,672**	**3,595**
Financial result	**(130)**	**(1,618)**
Income before taxes of consolidated companies	**3,542**	**1,977**
Income taxes	(1,020)	(582)
Share in net income of associates and joint ventures	352	365
Net income of discontinued operations	(410)	(7)
GROUP NET INCOME	**2,464**	**1,753**
EDF net income	**2,498**	**1,726**
Net income of continuing operations	*2,898*	*1,733*
Net income of discontinued operations	*(400)*	*(7)*
Net income attributable to non-controlling interests	**(34)**	**27**
Net income of continuing operations	*(24)*	*27*
Net income of discontinued operations	*(10)*	-
EARNINGS PER SHARE (EDF SHARE) IN EUROS		
Basic earnings per share	0.72	0.46
Diluted earnings per share	0.72	0.46
Earnings per share of continuing operations	0.85	0.46
Diluted earnings per share of continuing operations	0.85	0.46

(1) The financial statements at 30 June 2019 apply IFRS 16 from 1 January 2019. In accordance with the new standard's transition provisions, the comparative figures have not been restated.

(2) The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations.

4.1 Sales

Consolidated sales were up by 4.3% corresponding to an organic increase of 3.7%.

4.1.1 Change in Group sales

(in millions of euros)	H1 2019	H1 2018 (1)	Variation	Variation (%)	Organic growth (%)
Sales	**36,469**	**34,962**	**1,507**	**+4.3**	**+3.7**

(1) The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations.

Sales amounted to €36,469 million in the first half of 2019, a year-on-year increase of €1,507 million (+4.3%). Excluding the effect of movements in exchange rates (+€79 million) and changes in the scope of consolidation (+€120 million), sales showed organic growth of +3.7%.

4.1.2 Change in sales by segment

The following table shows sales by segment, excluding inter-segment eliminations.

(in millions of euros)	H1 2019	H1 2018 (1)	Variation	Variation (%)	Organic growth (%)
France - Generation and supply activities (2)	14,299	13,652	647	+4.7	+4.5
France - Regulated activities (3)	8,307	8,405	(98)	-1.2	-1.2
EDF Renewables	776	735	41	+5.6	+2.2
Dalkia	2,152	2,009	143	+7.1	+6.4
Framatome	1,537	1,500	37	+2.5	+1.1
United Kingdom	4,536	4,605	(69)	-1.5	-2.2
Italy	4,029	3,900	129	+3.3	+0.3
Other international	1,365	1,147	218	+19.0	+18.2
Other activities	1,670	1,284	386	+30.1	+33.6
Eliminations	(2,202)	(2,275)	73	-3.2	-3.2
GROUP SALES	**36,469**	**34,962**	**1,507**	**+4.3**	**+3.7**

(1) The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations.
(2) Generation, supply and optimisation in mainland France, and sales of engineering and consulting services.
(3) Regulated activities comprise distribution in mainland France, which is carried out by Enedis [(1)], EDF's island activities and the activities of Électricité de Strasbourg. In mainland France, distribution network activities are regulated via the network access tariff TURPE (Tarifs d'Utilisation des Réseaux Publics d'Électricité).

4.1.2.1 France – Generation and supply activities

Sales in the first half of 2019 by the **France - Generation and supply activities** segment amounted to €14,299 million, an organic rise of +€619 million (+4.5%) compared to the first half of 2018.

Downstream market conditions [(2)] had a positive effect estimated at +€417 million on sales due to positive price effects, notably in correlation with prices on the forward wholesale markets.

Resales of electricity subject to purchase obligations generated +€140 million more in sales than in the first half of 2018 (the effect on EBITDA was neutral because expenses related to purchase obligations are compensated by the CSPE), largely because of a positive spot price effect in the month of January.

The weather in the first half of 2019 had a favourable impact estimated at +€40 million.

Price effects on regulated sales tariffs [(3)] had a positive impact of around +€65 million due to the 7.7% (excluding taxes) increase from 1 June 2019.

Sales on the wholesale markets in connection with the capacity mechanism had a positive impact of €67 million compared to the first half of 2018.

Other purchases and sales on the wholesale markets had an estimated -€263 million negative impact on sales due to the lower volumes sold, mainly due to hydropower capacity levels.

Electricity generation

Nuclear generation in the first half of 2019 produced 203.7TWh, up by +1.1TWh from the first half of 2018 due to better availability, which was partly counterbalanced by greater modulation, especially as wind power output increased.

Hydropower generation stood at 20.1TWh [(4)], -31.6% (-9.3TWh) lower than in the first half of 2018, due to less favourable hydrological conditions (see section 2.4 "Weather conditions: temperatures and rainfall").

Less use was made of thermal generation facilities. Their output was down by 0.4TWh year-on-year to 4.2TWh, with most of the decrease concentrated in the coal-fired fleet (-1.6TWh).

Sales volumes to final customers (a market segment that includes local distribution firms and excludes foreign operators) were down by -11.3TWh, including -8.4TWh reflecting losses of customers in an intensely competitive market, and -1.6TWh related to the weather.

(1) Enedis is an independent EDF subsidiary as defined in the French Energy Code.
(2) Excluding the energy savings certificates component of market-price offers.
(3) Price effects on customers on the regulated sales tariff, excluding the energy savings certificates component of the tariff "stacking". On 1 August 2018 the "blue" tariffs for residential customers were reduced by -0.5% and the "blue" tariffs for non-residential customers were raised by +1.1%.
(4) After deduction of pumped-storage hydropower volumes, hydropower production stood at 17.1TWh for the first half of 2019 (25.5TWh for the first half of 2018).

EDF was a net seller on the wholesale markets to the extent of 37.9TWh. The -7.6TWh decrease in net market sales compared to the first half of 2018 is explained by the lower hydropower output and the decline in volumes sold to final customers, partly offset by subscriptions to the ARENH mechanism (+12.8TWh).

4.1.2.2 France – Regulated activities

Sales in the first half of 2019 by the **France - Regulated activities** segment amounted to €8,307 million, a year-on-year organic decrease of -€98 million (-1.2%).

The indexation of the TURPE 5 tariff at 1 August 2018 (1) had an estimated -€12 million unfavourable effect on sales.

The lower volumes delivered (-1.8TWh), combined with weather effects, had a downward impact estimated at -€79 million compared to the first half of 2018.

Sales also benefited from the favourable effect of income from connection services (+€21 million).

4.1.2.3 EDF Renewables

The **EDF Renewables** segment's sales totalled €776 million, an organic increase of +2.2% compared to the first half of 2018.

Sales from energy generation continued to rise, registering organic growth of +8.3% driven by price effects and more favourable wind conditions, although the volumes produced were lower than the previous year (7.5TWh, down by -0.3TWh from the first half of 2018) because of the disposals that took place in late 2018 and early 2019. EDF Renewables' sales were also hit by a €30 million decrease in the first half of 2019 as a result of lower business levels in distributed solar power in the USA.

4.1.2.4 Dalkia

Sales by **Dalkia** amounted to €2,152 million for the first half of 2019, an organic increase of €129 million (+6.4%) from the same period of 2018.

This improvement mainly reflects expanding sales both in France and internationally, and favourable trends in the indexes underlying revision of service contract prices. Proactive commercial activity continued: Dalkia was awarded the contract for the town of Vaulx-en-Velin's renewable heat network, and signed a new multiservice contract with Safran covering 26 sites.

4.1.2.5 Framatome

Framatome's sales amounted to €1,537 million in the first half of 2019, an organic rise of +1.1% compared to the first half of 2018. A significant portion of sales are made within the Group.

Contrasting factors in Framatome's different business lines contributed to this result:

- The "Components" business maintained a good level of sales, continuing the step-up in production begun in 2018, particularly for steam supply systems and control rod drive mechanisms;
- Sales by the "Fuel" business were down, mainly due to timing differences in deliveries of fuel assemblies;
- The "Installed base" business kept sales stable overall, as business in the USA made up for the low level of activity in France.

4.1.2.6 United Kingdom

The **United Kingdom's** contribution to Group sales amounted to €4,536 million in the first half of 2019, which was €69 million lower than in the first half of 2018. Excluding foreign exchange effects (+€31 million), sales showed a year-on-year organic decline of -2.2%.

The downturn in UK sales is primarily explained by the lower volumes sold on the wholesale markets, as nuclear generation was down and also because high volumes of gas were sold in the first half of 2018 due to cold weather that was not matched in 2019. Another, more secondary factor was suspension of the capacity market, which contributed to the decline in sales despite rising tariffs and prices on the residential and business markets.

4.1.2.7 Italy

Italy contributed €4,029 million to consolidated sales for the first half of 2019, an organic increase of +€12 million (+0.3%) compared to the first half of 2018.

Sales were up for the electricity activities (organic growth of +€231 million), thanks to higher sales volumes on the industrial and residential customer segment. Price effects were positive, particularly in the wholesale markets.

In the gas activities, sales were down (organic decrease of -€229 million) due to lower volumes of sales on the wholesale markets. This was partly counterbalanced by the rise in volumes sold for thermal power generation and industrial customers. The price effect was negative, especially on the wholesale markets.

4.1.2.8 Other international

The **Other international** segment principally covers operations in Belgium, the United States, Brazil and Asia (China, Vietnam and Laos).

Sales by the Other international segment stood at €1,365 million in the first half of 2019, an organic increase of +€209 million from the first half of 2018.

In Belgium (2), sales registered organic growth of +€89 million, particularly reflecting rising electricity and gas prices across all segments, partly mitigated by a slight falloff in volumes sold to private customers because of the mild weather. Wind power capacities increased to reach 450MW, +2.3% more than at 31 December 2018.

In Brazil, sales registered organic growth of +€102 million, partly driven by the positive effect of contractual revision of EDF Norte Fluminense's electricity sales tariff in late 2018, and partly by reinvoicing of the ICMS (3) tax (which had no impact on EBITDA).

(1) Indexed adjustment of -0.21% to the TURPE 5 distribution tariff from 1 August 2018.
(2) Belgium comprises Luminus and EDF Belgium.
(3) Tax on Circulation of Merchandise and Services in Brazil.

4.1.2.9 Other activities

Other activities comprise, among other entities, EDF Trading and the gas activities.

Sales by the Other activities segment stood at €1,670 million in the first half of 2019, an organic increase of +€432 million from the first half of 2018.

EDF Trading's sales totalled €627 million, showing a substantial organic increase of +39.1% over the first half of 2018. EDF Trading made good use of movements in European market prices in the first half of 2019, which was marked by a particularly significant decrease in gas prices, and took positions which are profitable at 30 June 2019. Its activities on the worldwide market for energies, LNG (Liquefied Natural Gas) and LPG (Liquefied Petroleum Gas) also contributed to this performance.

Sales by the gas activities registered organic year-on-year growth of €424 million, in a context of a favourable LNG market and better use of Group capacities.

EDF and Jera broadened their partnership to include LNG optimisation and trading activities since 1 April 2019.

4.2 Operating profit before depreciation and amortisation (EBITDA)

EBITDA for the first half-year rose by +3.5%, a slight organic increase of +0.1% compared to the first half of 2018.

(in millions of euros)	**H1 2019 (1)**	**H1 2018 (2)**	**Variation**	**Variation (%)**	**Organic growth (%)**
Sales	**36,469**	**34,962**	**1,507**	**+4.3**	**+3.7**
Fuel and energy purchases	(17,951)	(16,770)	(1,181)	+7.0	+6.1
Other external expenses	(3,655)	(3,989)	334	-8.4	-1.9
Personnel expenses	(6,963)	(6,815)	(148)	+2.2	+1.7
Taxes other than income taxes	(2,810)	(2,691)	(119)	+4.4	+4.8
Other operating income and expenses	3,256	3,365	(109)	-3.2	-3.4
EBITDA	**8,346**	**8,062**	**284**	**+3.5**	**+0.1**

(1) The financial statements at 30 June 2019 apply IFRS 16 from 1 January 2019. In accordance with the new standard's transition provisions, the comparative figures have not been restated.

(2) The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations.

4.2.1 Change in consolidated EBITDA and analysis

Consolidated **EBITDA** for the first half of 2019 amounted to €8,346 million, a year-on-year increase of +3.5%. Excluding the effects of application of IFRS 16 (+€338 million), foreign exchange effects (+€22 million) and changes in the scope of consolidation (-€81 million), EBITDA showed slight organic growth of +0.1%.

The Group's **fuel and energy purchases** amounted to €17,951 million in the first half of 2019, up by €1,181 million compared to the first half of 2018 (+7.0%). The organic change was a rise of €1,018 million (+6.1%).

- In the **France - Generation and supply activities** and **France - Regulated activities** segments, fuel and energy purchases amounted to €9,806 million, a year-on-year organic increase of +€431 million (+4.6%), mainly as a result of higher purchase obligations for photovoltaic power and cogeneration, and the capacity mechanism.
- in the **United Kingdom,** the organic increase observed in fuel and energy purchases (+€213 million or +7.2%) principally relates to the rise in prices and regulatory costs, which was partly offset by lower gas purchases due to the cold weather of the first half of 2018 that had no equivalent in 2019, and also a decline in nuclear fuel consumption as a result of lower generation output.

The Group's **other external expenses** amounted to €3,655 million, down by €334 million from the first half of 2018 (-8.4%). Excluding the effects of application of IFRS 16 (+€338 million), foreign exchange effects (-€24 million) and changes in the scope of consolidation (-€55 million), other external expenses showed an organic decline of -€75 million (-1.9%).

- In the **France - Generation and supply activities** and **France–Regulated activities** segments, other external expenses totalled €1,639 million. Excluding the effects of application of IFRS 16 (+€247 million) and changes in the scope of consolidation (-€19 million), there was an organic decrease of -€129 million (-6.5%) in other external expenses, reflecting control of costs across all activities, and a higher amount of self-constructed assets, in line with the operating activity.

The Group's **personnel expenses** totalled €6,963 million, up by €148 million from the first half of 2018, corresponding to an organic increase of +€115 million (+1.7%).

- In the **France - Generation and supply activities** segment, personnel expenses for the first half of the year totalled €3,024 million, stable overall compared to the previous year, and a reflection of the efforts made to control payroll costs. Year-on-year, the average workforce numbers fell by 2.1% (1) across all activities.
- In the **France - Regulated activities** segment, personnel expenses for the first half of the year totalled €1,599 million, stable overall compared to the previous year, and the average workforce was down slightly (-0.6%) year-on-year.
- **EDF Renewables** registered a €19 million organic increase in personnel expenses which is principally explained by an increase in its development and construction personnel to keep pace with business growth, particularly in North America, and for Solar and Storage Plans.
- **Dalkia** registered a €24 million organic increase in personnel expenses which is principally explained by an increase in average

(1) Excluding apprentices and work-study contracts. At comparable scope.

workforce numbers, in line with growth in its service activities.

Taxes other than income taxes amounted to €2,810 million, €119 million or +4.4% higher than in the first half of 2018 (+4.8% in organic terms).

- In the **France - Generation and supply activities** segment, the €30 million increase essentially relates to higher land taxes and taxes based on value added.
- In Brazil, the €86 million increase mainly concerns the ICMS tax (which has no impact on EBITDA).

Other operating income and expenses generated net income of €3,256 million in the first half of 2019, €109 million less than in the first half of 2018 (an organic change of -€115 million or -3.4%).

- In the **France - Generation and supply activities** segment, the income generated by other operating income and expenses was down by €185 million, chiefly reflecting the higher cost of the obligations regarding energy savings certificates.
- In the **France – Regulated activities** segment, there was an increase of €91 million in other operating income and expenses, notably relating to the CSPE subsidies recorded, and the increase to a regulatory risk provision for the Electricity Equalisation Fund.

4.2.2 Change in consolidated EBITDA and analysis by segment

(in millions of euros)	H1 2019 (1)	H1 2018 (2)	Variation	Variation (%)	Organic growth (%)
France - Generation and supply activities	3,971	3,578	393	+11.0	+6.5
France - Regulated activities	2,578	2,663	(85)	-3.2	-6.3
EDF Renewables	405	360	45	+12.5	+1.9
Dalkia	195	159	36	+22.6	+13.2
Framatome	74	86	(12)	-14.0	-43.0
United Kingdom	128	485	(357)	-73.6	-75.9
Italy	328	238	90	+37.8	+28.2
Other international	166	117	49	+41.9	+35.9
Other activities	501	376	125	+33.2	+55.9
GROUP EBITDA	**8,346**	**8,062**	**284**	**+3.5**	**+0.1**

(1) The financial statements at 30 June 2019 apply IFRS 16 from 1 January 2019. In accordance with the new standard's transition provisions, the comparative figures have not been restated.

(2) The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations.

4.2.2.1 France – Generation and supply activities

The contribution to Group EBITDA by the **France - Generation and supply activities** segment amounted to €3,971 million. After adjustment for the impact of application of IFRS 16, this segment's EBITDA showed organic growth of +€231 million (+6.5%) compared to the first half of 2018.

The substantial decrease in hydropower output (-8.4TWh [1]), only very slightly offset by a rise in nuclear output (+1.1TWh), had an unfavourable impact on EBITDA estimated at -€342 million.

Better conditions on the wholesale markets had a positive effect estimated at +€114 million.

On the downstream market [2], the positive price movements on market-price offers more than made up for erosion of market shares (-8.4TWh, including losses of volumes for customers on the regulated sales tariffs). This resulted in a positive impact of +€305 million compared to the first half of 2018.

The weather in the first half of 2019 had a positive impact estimated at +€40 million.

Regarding regulated sales tariffs [3], the tariff rise at 1 June 2019 and the tariff reduction in August 2018 (reflecting the discontinuation of the 2012-2013 tariff catch-up component) led to an estimated rise in EBITDA of +€26 million (excluding energy savings certificates) compared to the first half of 2018.

Operating expenses [4] were reduced by €173 million (-4.2%).

A number of factors had a total effect of -€85 million on EBITDA, principally the rise in costs of energy savings certificates obligations, which was partly offset by net reversals from provisions.

(1) After deduction of pumped-storage hydropower volumes, hydropower production stood at 17.1TWh for the first half of 2019 (25.5TWh for the first half of 2018).
(2) Excluding the energy savings certificate component of market-price offers.
(3) -0.5% at 1 August 2018 (including the end of tariff catch-up) and +7.7% HT at 1 June 2019.
(4) Sum of personnel expenses and other external expenses. Based on comparable scope and exchange rates, without IFRS 16 and constant discount rates for pensions. Excluding changes in operating expenses of the service activities.

4.2.2.2 France - Regulated activities

EBITDA for the **France - Regulated activities** segment stood at €2,578 million. After adjustment for application of IFRS 16, EBITDA showed an organic decline of -€168 million (-6.3%) compared to the first half of 2018.

EBITDA was affected by unfavourable indexations on the TURPE 5 tariffs [(1)] with an estimated impact of -€68 million, and the unfavourable weather effect, which had an estimated impact of -€36 million.

Other factors had a combined estimated negative impact of -€128 million on EBITDA: they mainly related to an increase in expenses for contributions to the Electricity Equalisation Fund [(2)], and the negative effect of changes in provisions for employee benefit obligations.

These effects were partly offset by growth in connection services (+€21 million) and the decrease in operating expenses (+€43 million).

4.2.2.3 EDF Renewables

EDF Renewables' contribution to Group EBITDA was €405 million, corresponding to organic growth of +€7 million (+1.9%) compared to the first half of 2018.

EBITDA from generation recorded an organic increase of 2.4% to €472 million, despite the disposals completed in late 2018 and early 2019. This change is primarily attributable to price effects and more favourable wind conditions.

There was a sustained level of development and sales of structured assets, with disposals undertaken in the early part of the year, notably in the United States and Poland.

In addition, development costs and support function costs rose in line with growth in business.

At 30 June 2019, the net installed capacities were stable overall at a total of 8GW. The gross portfolio of projects under construction at 30 June 2019 reached a record level of 4GW, equally balanced between onshore wind power and solar power.

4.2.2.4 Dalkia

Dalkia's EBITDA for the first half of 2019 was €195 million, corresponding to year-on-year organic growth of €21 million (+13.2%).

The growth in EBITDA reflects the dynamic sales activity, particularly in heat networks and energy performance contracts (signing a new multiservice contract with Safran covering 26 sites). Dalkia was also given a new public service delegation for urban heating in Grande Île at Vaulx-en-Velin and Villeurbanne (15.5 years). It also benefited from the fact that several new cogeneration plants were commissioned by industrial operators in late 2018.

This growth was also driven by sales of energy savings certificates in excess of the regulatory obligations, which were concentrated in the first half of the year whereas in 2018 they took place in the second half of the year.

4.2.2.5 Framatome

Framatome's EBITDA totalled €207 million, an organic decrease of -6.6%, including the margin realised with other EDF group entities. Framatome's contribution to Group EBITDA for the first half of 2019 was €74 million, a year-on-year organic decrease of 43%.

The "Fuel" business retreated in the first half of 2019, due to lower production levels at the European plants and unfavourable delivery schedule effects during the first half of 2019.

The "Installed base" business improved its performance in the US and Germany (80% exports) in a highly competitive market, but was affected in France by project execution costs for export and French customers.

The "Components" business is recovering profitability, and continued the step-up in production initiated in 2018 concerning equipment to replace steam generators and equipment for new projects.

Framatome's EBITDA also benefited from continuation of the operating and structure costs reduction plan. During the first half of 2019, it included a non-recurring €21 million expense related to the revaluation of inventories undertaken to determine Framatome's acquisition balance sheet.

4.2.2.6 United Kingdom

The **United Kingdom**'s contribution to Group EBITDA for the first half of 2019 was €128 million, a year-on-year organic decrease of -75.9%.

EBITDA in the UK was affected by the downturn in nuclear generation, the introduction at 1 January 2019 of a cap on residential tariffs for electricity and gas, and to a lesser extent the suspension of the capacity market.

Nuclear generation output amounted to 24.5TWh, -5.7TWh less than at 30 June 2018, due to extensions of the outages at Hunterston B and Dungeness B.

The customer portfolio shrank slightly (-1.1% compared to 31 December 2018) against intense competitive pressure.

4.2.2.7 Italy

The **Italy** segment contributed €328 million to the Group's consolidated EBITDA, an organic increase of 28.2% compared to the first half of 2018.

The electricity activities registered a good performance, essentially due to higher generation output, the contribution of electricity ancillary system, and commissioning of new wind farms (+115MW).

EBITDA for the gas activities was also up. In the first half of 2018 it had been affected by an unfavourable price effect relating to wholesale market purchases in a period of sourcing pressures.

EBITDA for the supply activity was down slightly year-on-year. The margins on electricity were lower, particularly in the residential customer segment. Margins for gas improved, especially in the industrial customer segment.

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(1) Indexed adjustment of -0.21% to the TURPE 5 distribution tariff from 1 August 2018 and +3.0% to the TURPE 5 transmission tariff from 1 August 2018.
(2) For the years 2012-2017 following publication of the official decisions. A provision has been booked for 2018 and the first half of 2019.

4.2.2.8 Other international

EBITDA for the **Other international** segment stood at €166 million for the first half of 2019, corresponding to organic growth of +€42 million (+35.9%) compared to the first half of 2018.

In Belgium**,** EBITDA showed an organic increase of +€14 million (+17.7%). The performance of thermal generation has a positive effect on EBITDA estimated at €17 million at 30 June 2019. Production of renewable energy benefited from the increase in installed wind power capacities, which totalled 450MW at 30 June 2019 (up by +15% compared to 30 June 2018). Service activities are continuing to grow. Retail activities are still marked by the strongly competitive environment.

EBITDA in Brazil also showed organic growth of +€33 million, largely due to the +16% adjustment to the Power Purchase Agreement (PPA) price in November 2018, and a smaller maintenance programme than in 2018 which meant that lower energy purchases were needed to cover the PPA requirements.

4.2.2.9 Other activities

Other activities contributed €501 million to Group EBITDA for the first half of 2019, a year-on-year organic increase of +€210 million (+55.9%).

EBITDA at EDF Trading amounted to €477 million, an organic increase of +€153 million (+44.2%) compared to the first half of 2018. This change follows the rise in the trading margin due to high volatility on the markets, as mentioned earlier in the discussion of sales (see section 4.1.2.9).

4.3 Operating profit (EBIT)

EBIT for the first half-year was up by 2.1%.

(in millions of euros)	H1 2019 [1]	H1 2018 [2]	Variation	Variation (%)
EBITDA	**8,346**	**8,062**	**284**	**+3.5**
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	350	19	331	n.a.
Net depreciation and amortisation	(4,776)	(4,307)	(469)	+10.9
Net increases in provisions for renewal of property, plant and equipment operated under concessions	(54)	(66)	12	-18.2
(Impairment)/reversals	(45)	(57)	12	-21.1
Other income and expenses	(149)	(56)	(93)	+166.1
EBIT	**3,672**	**3,595**	**77**	**+2.1**

n. a.: not applicable.

(1) The financial statements at 30 June 2019 apply IFRS 16 from 1 January 2019. In accordance with the new standard's transition provisions, the comparative figures have not been restated.

(2) The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations.

The Group's consolidated **EBIT** amounted to €3,672 million for the first half of 2019, up by +€77 million from the first half of 2018. This development is essentially explained by the growth in EBITDA and the favourable impact of net changes in fair value on energy and commodity derivatives, excluding trading activities. It was partly offset by a rise in net depreciation and amortisation.

4.3.1 Net changes in fair value on Energy and Commodity derivatives, excluding trading activities

The net changes in fair value on energy and commodity derivatives, excluding trading activities, increased from €19 million in the first half of 2018 to +€350 million in the first half of 2019, principally reflecting the higher level of Edison's gas positions.

4.3.2 Net depreciation and amortisation

Net depreciation and amortisation was up by €469 million compared to the first half of 2018. Excluding the effects of application of IFRS 16 (-€312 million), foreign exchange effects (-€10 million) and changes in the scope of consolidation (+€15 million), net depreciation and amortisation was up by €162 million.

The **France – Generation and supply activities** segment registered a €262 million increase in net depreciation and amortisation. After adjustment for the effect of application of IFRS 16, the increase in net depreciation and amortisation was €110 million. This rise is essentially explained by a volume effect related to newly-commissioned facilities in the nuclear fleet, and to a lesser degree accelerated depreciation of the coal-fired fleet from 1 June 2019.

The **France – Regulated activities** segment registered a €117 million increase in net depreciation and amortisation. After adjustment for the effect of application of IFRS 16, the increase in net depreciation and amortisation was €38 million, principally attributable to the step-up of the Linky [1] project and investments in connections and network reinforcements.

(1) Linky is a project led by Enedis, an independent EDF subsidiary as defined in the French Energy Code.

4.3.3 Net increases in provisions for renewal of property, plant and equipment operated under concessions

The €12 million decrease between the first half of 2018 and the first half of 2019 is attributable to the **France - Regulated activities** segment.

4.3.4 Impairment/reversals

At 30 June 2019 the Group booked impairment of €45 million on certain specific assets, comparable to the amount at 30 June 2018.

4.3.5 Other income and expenses

At 30 June 2019, other income and expenses amounted to -€149 million. This particularly includes the expense for the preferential employee reserved offer which took place during the first half of 2019 (see note 3.1.4 to the condensed consolidated half-year financial statements at 30 June 2019), and restructuring provisions in certain Group entities.

At 30 June 2018, other income and expenses amounted to -€56 million.

4.4 Financial result

(in millions of euros)	H1 2019 (1)	H1 2018 (2)	Variation	Variation (%)
Cost of gross financial indebtedness	(925)	(782)	(143)	+18.3
Discount effect	(1,801)	(1,697)	(104)	+6.1
Other financial income and expenses	2,596	861	1,735	+201.5
FINANCIAL RESULT	**(130)**	**(1,618)**	**1,488**	**-92.0**

(1) The financial statements at 30 June 2019 apply IFRS 16 from 1 January 2019. In accordance with the new standard's transition provisions, the comparative figures have not been restated.

(2) The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations.

The financial result for the first half of 2019 is a financial expense of €130 million, €1,488 million lower than in the first half of 2018. This change is explained by :

- an increase in the cost of gross financial indebtedness, mainly associated with the €60 million unfavourable effect of changes in fair value, and a €43 million unfavourable foreign exchange effect, and finally due to application of IFRS 16 which had an effect of €36 million;
- an unfavourable change of €104 million in the discount effect, principally due to the higher level of nuclear provisions associated with the change in the discount rate. The discount rate used for nuclear provisions is 3.8% at 30 June 2019, assuming inflation of 1.5% (respectively 3.9% and 1.5% at 31 December 2018);
- an increase of €1,735 million in other fiancial income and expenses, caused mainly by the change in the fair value of the dedicated asset portfolio (€1,801 million) as the equity and bond markets rebounded during the first half of 2019.

4.5 Income taxes

Income taxes amounted to -€1,020 million in the first half of 2019 (corresponding to an effective tax rate of 28.8%) compared to an expense of -€582 million [1] in the first half of 2018 (corresponding to an effective tax rate of 29.4% [1]). The €438 million increase in the Group's tax charge between June 2018 and June 2019 essentially reflects the +€1,565 million increase in net income before taxes, generating an additional tax charge of €539 million in application of the French income tax rate of 34.43% for 2019, adopted on 11 July 2019.

After eliminating non-recurring items (mainly the sale of Alpiq), the effective tax rate for the 2019 is 32.7%. The effective tax rate for the first half of 2018 after elimination of non-recurring items was 29.1% [1].

4.6 Share in net income of associates and joint ventures

The Group's share in net income of associates and joint ventures was €352 million for the first half of 2019, compared to €365 million at 30 June 2018, a difference of -€13 million.

4.7 Net income of discontinued operations

The specific line "Net income of discontinued operations" comprises items from the income statement of Edison's E&P operations for the first half of 2018 and 2019, and impairment on these assets recognised in those two periods (see note 12 to the condensed consolidated half-year financial statements at 30 June 2019).

4.8 Net income attributable to non-controlling interests

Net income attributable to non-controlling interests amounted to -€34 million at 30 June 2019, down by €61 million compared to 30 June 2018. This downturn is mainly explained by the Centrica's lower income from nuclear generation in the **United Kingdom**, due to the lower level of nuclear power output.

(1) The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations.

4.9 EDF net income

EDF net income totalled €2,498 million at 30 June 2019, an increase of +€772 million in comparison to the first half of 2018 (+44.7%), notably due to improvement of the financial result.

4.10 Net income excluding non-recurring items

The Group's net income excluding non-recurring items [1] stood at €1,402 million at 30 June 2019, down by -19.4% compared to 30 June 2018.

(1) EDF net income excluding: non-recurring items, net changes in fair value on energy and commodity derivatives (excluding trading activities), and net changes in the fair value of debt and equity instruments, net of tax.
Amount of non-recurring items, net changes in fair value on energy and commodity derivatives, excluding trading activities, and net changes in the fair value of debt and equity instruments, net of tax:
-€501 million for miscellaneous risks and impairment in the first half of 2019, compared to -€90 million in the first half of 2018 ;
+€287 million of net changes in the fair value of energy and commodity derivatives, excluding trading activities, net of tax in the first half of 2019, compared to +€15 million for the first half of 2018 ;
+€1,310 million of net changes in the fair value of debt and equity instruments in the first half of 2019, compared to +€62 million for the first half of 2018.

5 NET INDEBTEDNESS, CASH FLOWS AND INVESTMENTS

Net indebtedness comprises total loans and financial liabilities, less cash and cash equivalents and liquid assets. Liquid assets are financial assets consisting of funds or securities with initial maturity of over three months that are readily convertible into cash and are managed according to a liquidity-oriented policy.

The Group's net indebtedness stood at €37,374 million at 30 June 2019 and include IFRS 16 from 1 January 2019 for €4,492 million. It stood at €33,388 million at 31 December 2018.

(in millions of euros)	H1 2019	H1 2018 [(1)]	Variation	Variation (%)
Operating profit before depreciation and amortisation (EBITDA)	**8,346**	**8,062**	**284**	**+3.5**
Cancellation of non-monetary items included in EBITDA	(1,285)	(784)		
EBITDA *cash*	**7,061**	**7,278**		
Change in working capital	1,050	1,419		
Net investments [(2)] (excluding 2019-2020 asset disposals, Hinkley Point C and Linky)	(5,695)	(5,136)		
Other items including dividends received from associates and joint ventures	89	126		
Operating cash flow [(3)]	**2,505**	**3,687**	**(1,182)**	**-32.1**
Asset disposals	434	-		
Income taxes paid	259	200		
Net financial expenses disbursed	(606)	(719)		
Dedicated assets	57	74		
Dividends paid in cash	(445)	(551)		
Operating cash flow before Hinkley Point C and Linky	**2,204**	**2,691**		
Hinkley Point C and Linky	(1,155)	(1,145)		
Group Cash flow [(4)]	**1,049**	**1,546**		
Other monetary changes	(285)	(54)		
(Increase)/decrease in net indebtedness, excluding the impact of changes in exchange rate	**764**	**1,492**		
Effect of change in exchange rates	(52)	107		
Effect of other non-monetary changes	(4,718)	92		
(Increase)/decrease in net indebtedness of continuing operations	**(4,006)**	**1,691**		
(Increase)/decrease in net indebtedness of discontinued operations [(5)]	**20**	**49**		
Net indebtedness at beginning of period	**33,388**	**33,015**		
NET INDEBTEDNESS AT END OF PERIOD	**37,374**	**31,275**		

(1) The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations.

(2) Net investments are operating investments and financial investments for growth, net of disposals. They also include net debts acquired or transferred in acquisitions or disposals of securities, investment subsidies received and non-Group partner investments. They do not include the 2019-2020 asset disposals, Hinkley Point C and Linky.

(3) Operating cash flow is not an aggregate defined by IFRS as a measure of financial performance, and is not directly comparable with indicators of the same name reported by other companies. This indicator, also known as Funds From Operations ("FFO"), is equivalent to net cash flow from operating activities, changes in working capital after adjustment where relevant for the impact of non-recurring effects, net investments (excluding 2019-2020 asset disposals, Hinkley Point C and Linky) and other items including dividends received from associates and joint ventures.

(4) Group cash flow is not an aggregate defined by IFRS as a measure of financial performance, and is not comparable with indicators of the same name reported by other companies. It is equivalent to the operating cash flow less asset disposals, income taxes paid, net financial expenses disbursed, dedicated assets, dividend paid in cash, Hinkley Point C and Linky.

(5) This corresponds to the net indebtedness of Edison's E&P operations (discontinued operations).

5.1 Operating cash flow

The operating cash flow amounted to €2,505 million in the first half of 2019 compared to €3,687 million in the first half of 2018, a decrease of €1,182 million.

EBITDA (see section 4.2) after adjustment for non-cash items amounted to €7,061 million, down by €217 million from in the first half of 2018.

5.1.1 Change in working capital

Working capital improved by €1,050 million in the first half of 2019.

This improvement is mainly explained by the favourable change related to tax and social liabilities in the France –Generation and supply activities segment (+€889 million), principally driven by the seasonal nature of local taxes.

The year-on-year difference in the change in working capital for the first half of the year (-€369 million) is essentially explained by:

- receipts related to the CSPE in 2018 amounting to +€607 million, compared to payments in 2019 amounting to -€242 million, a variation of -€849 million;
- a smaller decrease in supplier payables in the first half of 2019: +€453 million, particularly driven by the volumes of Enedis purchases;
- receipts of margin calls on positions taken in the optimisation and trading activity, amounting to +€95 million.

5.1.2 Net investments (excluding 2019-2020 disposals, Hinkley Point C and Linky)

Net investments amounted to €5,695 million at 30 June 2019 compared to €5,136 million at 30 June 2018, an increase of €559 million (+10.9%). Details are as follows:

(in millions of euros)	H1 2019	H1 2018 (1)	Variation	Variation (%)
France - Generation and supply activities	2,974	2,375	599	+25.2
France - Regulated activities	1,830	1,694	136	+8.0
EDF Renewables	226	85	141	+165.9
Dalkia	58	68	(10)	-14.7
Framatome	82	90	(8)	-8.9
United Kingdom	293	219	74	+33.8
Italy	79	394	(315)	-79.9
Other international	130	175	(45)	-25.7
Other activities	23	36	(13)	-36.1
NET INVESTMENTS	**5,695**	**5,136**	**559**	**+10.9**

(1) The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations and and the reclassification of investments included in New Developments in 2018 (excluding Hinkley Point C and Linky).

Net investments by the **France - Generation and supply activities** segment increased by €599 million (+25.2%), mainly as a result of investments in nuclear maintenance in line with the plant inspection schedules, notably concerning ten-year inspections (Tricastin).

Net investments by the **France – Regulated activities** segment were up by €136 million (+8.0%). This rise is primarily explained by an increase in numbers of connections for customers, reinforcement of the network and an improvement in servicing quality.

Net investments by **EDF Renewables** saw an increase of €141 million, principally driven by investments in the United States.

In the **United Kingdom**, the increase of €74 million or +33.8% is explained, among other factors, by lower disposals of assets in the first half of 2019 and a rise in expenses on nuclear maintenance.

In **Italy**, net investments were down by €315 million, principally reflecting the acquisition of Gas Natural Vendita Italia in 2018, which had no equivalent in 2019.

In the **Other international** segment, net investments were down by €46 million or -26.3%. This is explained by the lower level of expenditures on international projects (expenses were incurred in the first half of 2018 that had no equivalent in the first half of 2019).

5.2 Cash flow before Hinkley Point C and Linky

The cash flow before Hinkley Point C and Linky consequently amounted to €2,204 million in the first half of 2019 (compared to €2,691 million [1] in the first half of 2018).

5.2.1 2019-2020 asset disposals

Asset disposals concern EDF's sale of its 25.04% investment in the Swiss energy operator Alpiq.

5.2.2 Dedicated assets

In compliance with the French Law no. 2006-739 of 28 June 2006 on the sustainable management of radioactive materials and waste, EDF has built up a portfolio of dedicated assets for secure financing of its long-term nuclear obligations which amounted to €28,368 million at 30 June 2019.

Overall, the changes in dedicated assets comprise:

- allocations to reach full coverage of obligations;
- reinvestment of financial income (dividends and interest) generated by these assets;
- withdrawals of assets corresponding to the costs incurred over the period to meet long-term nuclear obligations falling within the scope

(1) Application of IFRS 16 at 30 June 2018 would have increased the cash flow before Hinkley Point C and Linky by approximately €302 million.

of the Law of 28 June 2006;

- exceptional withdrawals proposed to the governance bodies in charge of managing dedicated assets when the value of the portfolio exceeds the amount of the obligations to be financed; such withdrawals must be validated by these bodies.

The net change of +€57 million in dedicated assets in the first half of 2019 corresponds to the first three categories above.

5.2.3 Dividends paid in cash

Dividends paid in cash during the first half of 2019 (-€445 million) comprise:

- the balance of the 2018 dividend (-€31 million); most of that year's dividend took the form of a scrip dividend;
- payments made in the first half of 2019 to bearers of perpetual subordinated bonds for the "hybrid" bond issues of January 2013 and January 2014 (-€334 million);
- dividends paid by Group subsidiaries to their minority shareholders (-€80 million).

5.3 Group cash flow

The Group cash flow amounted to +€1,049 million at 30 June 2019, versus +€1,546 million at 30 June 2018.

5.4 Effect of change in exchange rates

The foreign exchange effect had an unfavourable impact of -€52 million on the Group's net indebtedness at 30 June 2019.

5.5 Other monetary changes

Other monetary changes declined by -€4,718 million compared to the first half of 2018, principally reflecting the application of IFRS 16 from 1 January 2019 (-€4,492 million).

5.6 Financial ratios

	30 June 2019	31 December 2018	31 December 2017
Net indebtedness/EBITDA	2.4 (1)	2.2	2.4
Net indebtedness/(Net indebtedness + equity) (2)	41%	39%	40%

(1) The ratio at 30 June 2019 is calculated based on cumulative EBITDA for the second half of 2018 and the first half of 2019.
(2) Equity including non-controlling interests.

6 MANAGEMENT AND CONTROL OF MARKET RISKS

6.1 Management and control of financial risks

This section sets forth the policies and principles for management of the Group's financial risks defined in the Strategic financial management framework (liquidity, interest rate, foreign exchange rate and equity risks), and the Group counterparty risk management policy set up by the EDF group. These principles apply only to EDF and operationally controlled subsidiaries or subsidiaries that do not benefit by law from specific guarantees of independent management such as Enedis. In compliance with IFRS 7, the following paragraphs describe the nature of risks resulting from financial instruments, based on analyses of sensitivities and credit (counterparty) risks.

Since 2002, a dedicated body - the Financial Risks Control department *(Département Contrôle des Risques Financiers et Investissements - CRFI)* - has been in charge of financial risk control at Group level, mainly by ensuring correct application of the principles of the Strategic Financial Management Framework (July 2015). This department, which has reported to the Group's Risk Division since 2008, is an independent unit that also has the task of carrying out a second-level check of the risk of counterparty default (methodology and organisation) for EDF entities and operationally controlled Group subsidiaries (excluding Enedis), and a first-level check of financing activities by EDF SA's Trading room. The CRFI department also carries out a second-level check of management activities concerning the dedicated asset portfolio.

The CRFI department issues daily and weekly monitoring reports of risk indicators relevant to activities in EDF SA's trading room.

Regular internal audits are carried out to ensure controls are actually applied and are effective.

6.1.1 Liquidity position and management of liquidity risk

6.1.1.1 Liquidity position

At 30 June 2019, the Group's liquidities, consisting of liquid assets, cash and cash equivalents, totalled €23,565 million and available credit lines amounted to €10,984 million.

No Group company was in default on any borrowing at 30 June 2019.

6.1.1.2 Management of liquidity risk

The EDF group was able to meet its financing needs by conservative liquidity management, and has obtained financing on satisfactory terms.

A range of specific levers are used to manage the Group's liquidity risk:

- the Group's cash pooling system, which centralises cash management for controlled subsidiaries. The subsidiaries' cash balances are made available to EDF SA in return for interest, so as to optimise the Group's cash management and provide subsidiaries with a system that guarantees them market-equivalent financial terms;
- centralisation of financing for controlled subsidiaries at the level of the Group's cash management department. Changes in subsidiaries' working capital are financed by this department in the form of stand-by credit lines provided for subsidiaries, which may also be granted revolving credit from the Group. EDF SA and the investment subsidiary EDF Investissements Groupe (EDF IG), set up in partnership with the bank Natixis Belgique Investissements, also provide medium and long-term financing for EDF group operations outside France, arranged by EDF SA and EDF IG on a totally independent basis: each company sets its own terms, which are the same as the subsidiary would have in an arm's-length market transaction;
- active management and diversification of financing sources used by the Group: the Group has access to short-term resources on various markets through programmes for French commercial paper *(billets de trésorerie)* and US commercial paper. For EDF, the ceilings for these programmes are €6 billion for French NEU CP commercial paper and $10 billion for US commercial paper.

At 30 June 2019, EDF SA had an overall amount of €10,194 million in available credit facilities (syndicated credit and bilateral lines):

- the syndicated credit line amounts to €4 billion and expires in December 2023. No drawings had been made on this syndicated credit line at 30 June 2019;
- bilateral lines represent an available amount of €6,064 million, with expiry dates extending to June 2024. The level of this available financing is very frequently reviewed to ensure the Group has sufficient backup credit facilities;
- the amount available from the credit lines with the European Investment Bank is €130 million. €70 million had been drawn on one credit line of €200 million at 30 June 2019. Four other credit lines were fully drawn at 30 June 2019 for amounts of €225 million, €250 million, €500 million and €500 million.

EDF Investissements Groupe has a syndicated credit facility for €400 million (expiring in September 2020). At 30 June 2019, there were no drawings on this credit facility.

Edison has a credit line with the European Investment Bank for €357 million (€90 million of which remain available) and another €100 million credit line on which €50 million had been drawn at 30 June 2019.

EDF Chile has a €112 million credit line with a pool of banks which was fully drawn at 30 June 2019.

6.1.2 Credit rating

The financial ratings agencies Standard & Poor's, Moody's and Fitch Ratings attributed the following long-term and short-term ratings to EDF group entities at 30 June 2019:

Company	Agency	Long-term rating	Short-term rating
	Standard & Poor's	A-, stable outlook (1)	A-2
	Moody's	A3, stable outlook	P-2
EDF	Fitch Ratings	A-, stable outlook	F2
EDF Trading	Moody's	Baa2, stable outlook	n.a.
EDF Energy	Standard & Poor's	BBB-, negative outlook	A-3
	Standard & Poor's	BBB-, stable outlook (2)	A-3
Edison	Moody's	Baa3, stable outlook	n.a.

n.a.: not applicable.
(1) S&P revised EDF's outlook from negative to stable on 25 February 2019.
(2) S&P revised EDISON's long-term rating from BB+ to BB- and short-term rating from B to A-3 on 19 June 2018.

6.1.3 Management of foreign exchange risk

As a result of the financing and foreign exchange risk hedging policy, the Group's gross debt at 30 June 2019 breaks down as follows by currency after hedging:

GROSS DEBT STRUCTURE BY CURRENCY BEFORE AND AFTER HEDGING

30 June 2019 *(in millions of euros)*	Initial debt structure	Impact of hedging instruments (1)	Debt structure after hedges	% of debt
Borrowings in Euros (EUR)	33,823	18,017	51,840	82%
Borrowings in US dollars (USD)	17,567	(14,943)	2,624	4%
Borrowings in pounds sterling (GBP)	9,422	(1,086)	8,336	13%
Borrowings in other currencies	2,663	(1,988)	675	1%
TOTAL DEBT	**63,475**	**-**	**63,475**	**100%**

(1) Hedges of liabilities and net assets of foreign subsidiaries.

The table below presents the impact on equity of a variation in exchange rates on the Group's gross debt at 30 June 2019:

EXCHANGE RATE SENSITIVITY OF THE GROUP'S GROSS DEBT

30 June 2019 *(in millions of euros)*	Debt after hedging instruments converted into euros	Impact of a 10% unfavourable variation in exchange rates	Debt after a 10% unfavourable variation in exchange rates
Borrowings in Euros (EUR)	51,840	-	51,840
Borrowings in US dollars (USD)	2,624	262	2,886
Borrowings in pounds sterling (GBP)	8,336	834	9,170
Borrowings in other currencies	675	68	743
TOTAL DEBT	**63,475**	**1,164**	**64,639**

Due to the Group's hedging policy for foreign exchange risk on the Group's gross debt, the income statement for companies controlled by the Group is marginally exposed to foreign exchange rate risk.

The table below sets forth the foreign exchange position relating to net non-operating investments in foreign currencies of the Group's principal subsidiaries at 30 June 2019.

	At 30 June 2019	At 31 December 2018
(in millions of currency units)	Net position after management (Assets) (1)	Net position after management (Assets)
USD	2,414	2,107
CHF (Switzerland)	-	202
GBP (United Kingdom)	10,780	11,085
CLP (Chile)	37	(6,663)
PLN (Poland)	145	154
BRL (Brazil)	1,065	1,164
CNY (China)	10,052	9,932

(1) The net positions shown exclude certain non-significant exposures.

The assets in the above table are the net assets of the Group's foreign subsidiaries in foreign currencies, adjusted for changes in the fair value of cash flow hedges and available-for-sale financial assets recorded in equity, and changes in the fair value of financial instruments recorded in income.

6.1.4 Management of interest rate risk

The Group's debt after hedging instruments at 30 June 2019 was structured as follows: 58.8% of debt bore interest at fixed rates and 41.2% at floating rates.

A 1% uniform annual rise in interest rates would generate an increase of approximately €261 million in financial expenses, based on gross floating-rate debt at 30 June 2018 after hedging.

The average cost of Group debt (weighted interest rate on outstanding amounts) was 2.68% at 30 June 2019.

The table below sets forth the structure of Group debt and the impact of a 1% variation in interest rates at 30 June 2019.

STRUCTURE AND INTEREST RATE SENSITIVITY OF GROUP DEBT

30 June 2019 *(in millions of euros)*	Initial debt structure	Impact of hedging instruments	Debt structure after hedging	Impact on income of a 1% variation in interest rates
Fixed rate	58,660	(21,309)	37,351	-
Floating rate	4,815	21,309	26,124	261
TOTAL	**63,475**	**-**	**63,475**	**261**

6.1.5 Management of equity risks

The equity risk is concentrated in the following areas:

Coverage of EDF's nuclear obligations

Analysis of the equity risk is presented in section 6.1.6 "Management of financial risk on EDF SA's dedicated asset portfolio".

Coverage of employee benefit obligations for EDF SA, EDF Energy and British Energy

Assets covering EDF's employee benefit liabilities are partly invested on the international and European equities markets. Market trends therefore affect the value of these assets, and a downturn in equity prices would lead to a rise in balance sheet provisions.

28.8% of the assets covering EDF's employee benefit obligations were invested in equities at 30 June 2019, representing an amount of €3.7 billion of equities.

At 30 June 2019, the two pension funds sponsored by EDF Energy (EDF Energy Pension Scheme and EDF Energy Group Electricity Supply Pension Scheme) were invested to the extent of 24.1% in equities and 7.6% in equity funds, representing an amount of £307 million of equities. The British Energy pension funds were invested to the extent of 8.5% in equities and equity funds, representing an amount of £588 million of equities.

CENG fund

CENG is exposed to equity risks in the management of its funds established to cover nuclear decommissioning expenses.

EDF's long-term cash management

As part of its long-term cash management policy, EDF has continued its strategy to reduce the portion of equity-correlated investments, resulting in a non-significant position well below €1 million at 30 June 2019.

6.1.6 Management of financial risk on EDF's dedicated asset portfolio

Dedicated assets have been built up progressively by EDF since 1999 for secure financing of its long-term nuclear obligations. The Law of 28 June 2006 and its implementing regulations defined provisions not related to the operating cycle, which must therefore be covered by dedicated assets; they are listed in note 24 to the condensed consolidated half-year financial statements at 30 June 2019, "EDF's dedicated assets".

The dedicated asset portfolio is managed under the supervision of the Board of Directors and its advisory committees (Nuclear commitments monitoring committee, Audit committee).

The **Nuclear Commitments Monitoring Committee (CSEN)** is a specialised Committee set up by EDF's Board of Directors in 2007.

A **Nuclear Commitments Financial Expertise Committee (CEFEN)** exists to assist the company and its governance bodies on questions of matching assets and liabilities and asset management. The members of this Committee are independent of EDF. They are selected for their skills and diversity of experience, particularly in the fields of asset/liability management, economic and financial research, and asset management.

Governance and management principles

The governance principles setting forth the structure of dedicated assets, and the relevant decision-making and control processes for their management, are validated by EDF's Board of Directors. These principles also lay down rules for the asset portfolio's structure, selection of financial managers, and the legal, accounting and tax structure of the funds.

Strategic asset allocation is based on asset/liability reviews carried out to define the most appropriate target portfolio for financing long-term nuclear expenses. Strategic allocation is validated by EDF's Board of Directors and reviewed every three years unless circumstances require otherwise. A new strategic allocation was validated during 2018. This target allocation consists of a yield portfolio, a growth portfolio and a fixed-income portfolio, respectively accounting for 30%, 40% and 30% of the total portfolio. The yield portfolio consists of real estate assets and infrastructure assets; the growth portfolio consists of equities and equity funds (both listed and unlisted); the fixed-income portfolio consists of bonds, debt funds (both listed and unlisted), the CSPE receivable and cash. These portfolios are managed by the Listed Asset Management division and by EDF Invest (formed in 2013 following the decree of 24 July 2013).

The "cash" pocket of the portfolio exists to provide secure coverage for future disbursements related to the purpose of the asset covered, and may be reinforced tactically, particularly when a conservative approach is required in the event of a market crisis.

The CSPE receivable was allocated to dedicated assets on 13 February 2013 (see note 45 to the 2018 consolidated financial statements).

Tactical management of the growth assets and fixed-income assets has several focal areas:

- monitoring of exposure between growth assets and fixed-income assets;
- within each sub-portfolio, allocation by "secondary asset class";
- selection of investment funds, aiming for diversification:
  - by style (growth securities, unlisted securities, yield securities),
  - by market capitalisation (major stocks, medium and small stocks),
  - by investment process (macroeconomic and sector-based approach, selection of securities on a "quantitative" basis, etc.),
  - by investment vehicle (for compliance with maximum investment ratios);
- for bonds, a choice of securities held directly, through brokers, or via investment funds incorporating the concern for diversification:
  - by type of issue (fixed income, indexed income),
  - by type of instrument (government or supranational bonds, covered bonds and similar, corporate bonds),
  - by issuer and by maturity.

The allocation policy between growth assets and fixed-income assets was developed by the Operational Management Committee [(1)] on the basis of the economic and financial outlook for each market and geographical area, a review of market appreciation in different markets and market segments, and risk analyses produced by the CRFI department.

Content and performance of EDF's dedicated asset portfolio

BREAKDOWN OF THE PORTFOLIO

	30/06/2019	31/12/2018
Yield assets	20.0%	19.3%
Growth assets	38.7%	36.5%
Fixed-income assets	41.3%	44.2%
TOTAL	**100%**	**100%**

At 30 June 2019, the total value of the portfolio was €30,258 million compared to €27,689 million at 31 December 2018.

(1) A permanent internal committee for evaluation, consultation and operational decision-making in the management of dedicated assets.

PORTFOLIO CONTENT UNDER THE CLASSIFICATION FROM ARTICLE 4, DECREE 2007-243 OF 23 FEBRUARY 2007

Categories *(in millions of euros)*	30 June 2018		31 December 2018	
	Net book value [1]	Realisable value	Net book value [1]	Realisable value
CTE (the holding company that holds 100% of RTE) [2]	2,705	2,903	2,705	2,738
Other unlisted securities	2,772	3,134	2,333	2,618
YIELD ASSETS	**5,477**	**6,037**	**5,038**	**5,356**
Funds not exclusively invested in OECD bonds	10,179	11,454	9,370	9,844
Hedges, deposits, amounts receivable	-	25	20	45
Other unlisted securities	235	244	198	219
GROWTH ASSETS	**10,414**	**11,723**	**9,588**	**10,108**
OECD government bonds and similar	4,326	4,611	4,362	4,443
OECD corporate (non-government) bonds	1,242	1,275	946	950
Funds investing in the above two categories	4,772	4,967	4,580	4,647
CSPE after funding	1,512	1,522	2,060	2,080
Other unlisted securities	128	119	114	105
Derivatives	4	4	-	-
FIXED INCOME ASSETS	**11,984**	**12,498**	**12,062**	**12,225**
TOTAL DEDICATED ASSETS	**27,875**	**30,258**	**26,688**	**27,689**

(1) Net book value in the parent company financial statements.

(2) Dedicated assets include 50.1% of Coentreprise de Transport d'Électricité (CTE).

Details of the coverage of nuclear liabilities by dedicated assets are provided in note 24 to the condensed consolidated half-year financial statements at 30 June 2019.

PERFORMANCE OF EDF'S DEDICATED ASSET PORTFOLIO

The table below presents the performance by portfolio at 30 June 2019 and 31 December 2018:

(in millions of euros)	30/06/2019 Stock market or realisable value	Performance for 2018 Portfolio	31/12/2018 Stock market or realisable value	Performance for 2018 Portfolio
YIELD ASSETS	**6,037**	**6.3%**	**5,356**	**7.0%**
GROWTH ASSETS	**11,723**	**15.7%**	**10,108**	**-7.0%**
FIXED-INCOME ASSETS	**12,498**	**4.3%**	**12,225**	**-0.4%**
TOTAL DEDICATED ASSETS	**30,258**	**8.9%**	**27,689**	**-1.6%**

BREAKDOWN OF PORTFOLIO PERFORMANCE UNDER THE CLASSIFICATION FROM ARTICLE 4, DECREE 2007-243 OF 23 FEBRUARY 2007

(in millions of euros)	30/06/2019 Stock market or realisable value	Performance for 2018 Portfolio	31/12/2018 Stock market or realisable value	Performance for 2018 Portfolio
CTE (the holding company that holds 100% of RTE) [1]	2,903	6.0%	2,738	7.0%
Other unlisted securities [2]	3,497	6.3%	2,942	7.9%
Equity funds including derivatives	11,479	16.0%	*9,889*	-7.4%
Bonds and bond funds	10,666	5.2%	*10,010*	-0.8%
Monetary funds	191	-0.1%	30	-0.3%
CSPE after funding	1,522	0,3%	2,080	0.4%
TOTAL DEDICATED ASSETS	**30,258**	**8.9%**	**27,689**	**-1.6%**

(1) Dedicated assets include 50.1% of Coentreprise de Transport d'Électricité (CTE).

(2) EDF Invest without CTE. The performance by EDF Invest including CTE is 6.2% for the first half of 2019 and 7.5% for the year 2018.

Changes in the portfolio during 2018

The markets bounced back in the first half of 2019 as brusquely and powerfully as they had retreated in late 2018. In the space of a few months, equities had recovered fully from their downturn and regained the highest levels of the previous year. More unexpectedly, bonds also turned in a very good performance. Overall, the markets were very sensitive to the sudden reversal of central banks' policies. All the central banks were following tighter monetary policies in 2018, but are now beginning a new phase of greater flexibility, started even before the ECB began to raise its rates. In June, the US market thus broke new records, German 10-year rates fell below -.030%, Italian rates dropped back significantly and there was a pronounced tightening of credit spreads, although they did not reach the extreme levels of early 2018. One notable difference, however, was that market volatitlity remained significantly higher than in mid-2018, when the markets were also very buoyant.

In May 2019, the balance of the minority interest acquired by EDF Invest in December 2018 in Nam Theun Power Company (NTPC, a hydroelectric dam in operation in Laos) was allocated to dedicated assets. EDF Invest also acquired an office building in Germany. EDF Invest is thus continuing to diversify its portfolio of unlisted assets.

The unlisted assets managed by EDF Invest are distributed between yield assets, growth assets and fixed-income assets. This portfolio, including CTE, amounted to €6.4 billion at 30 June 2019 compared to €5.7 billion at 31 December 2018. At 30 June 2019 the 6-month performance by EDF's total portfolio was 6.2% including CTE.

The growth assets registered a +15.7% increase, largely attributable to the listed asset portfolio. In addition to the exposure to passive management, which benefited fully from the rising markets, the significant allocation to "low volatility" type funds was also favourable when there was a temporary readjustment in May.

The fixed-income assets also had a very good performance (+4.3%) despite prudent positioning in terms of maturities, and on the Italian debt. This good result was mainly driven by the renewed emphasis on credit assets throughout the first half of the year.

The yield assets consist of unlisted infrastructure and real estate assets, and yield-oriented investment funds. At 30 June 2019, the 6-month performance by this class of assets was 6.3% including CTE.

In the first half of 2019, the overall after-tax performance of dedicated assets (impacts on reserves and net income) was +€1,749 million, comprising +€10 million for the CSPE (+€15 million before tax), +€128 million for the CTE shares allocated to dedicated assets, and +€1,611 million for other securities (+€2,301 million before tax).

Dedicated assets' exposure to risks

EDF is exposed to equity risks, interest rate risks and foreign exchange risks through its dedicated asset portfolio.

The market value of the listed equities in EDF's dedicated asset portfolio was €11,479 million at 30 June 2019. The volatility of the listed equities at the same date was 12.9% based on 52 weekly performances, compared to 14.3% at 31 December 2018. Applying this volatility to the value of listed equity assets at the same date, the Group estimates the annual volatility of the equities portion of dedicated assets at €1,481 million.

At 30 June 2019, the sensitivity of the listed bonds (€10,666 million) was 5.7, i.e. a uniform 100 base point rise in interest rates would result in a €603 million decline in market value. This sensitivity was 5.3 at 31 December 2018.

6.1.7 Management of counterparty/credit risks

Counterparty risk is defined as the total loss that the EDF group would sustain on its business and market transactions if a counterparty defaulted and failed to perform its contractual obligations.

The Group has a counterparty risk management policy which applies to EDF and all operationally controlled subsidiaries. This policy sets out the governance associated with monitoring for this type of risk, and organisation of the counterparty risk management and monitoring. The policy also involves monthly consolidation of the Group's exposures, updated monthly for financial and energy market activities and quarterly for other activities. The CRFI (Financial Risks Control) department closely monitors Group counterparties (daily review of alerts, special cautionary measures for certain counterparties).

The Group's counterparty risk has increased now that PG&E has filed for bankruptcy in the US. EDF Renewables' exposure amounts to several hundred million euros due to existing PPAs, and the difficulties of the GE group.

The table below gives details, by rating, of the EDF group's consolidated exposure to counterparty risk. At 31 March 2019, 90% of the Group's exposure concerns "investment grade" counterparties, mainly as a result of the predominance of exposures generated by the cash and asset management activity, as most short-term investments concern low-risk assets:

	Good credit rating	Poor credit rating	No internal rating	Total
30/09/2018	90%	8%	2%	100%
31/03/2019	90%	8%	2%	100%

The exposure to counterparty risk by nature of activity is distributed as follows:

	Purchases	Insurance	Distribution and sales	Cash and asset management	Fuel purchases and energy trading	Total
30/09/2018	6%	1%	11%	75%	7%	100%
31/03/2019	6%	1%	10%	77%	6%	100%

Exposure in the energy trading activities is concentrated in EDF Trading, where each counterparty is assigned a limit that depends on its financial robustness. A range of methods are used to reduce counterparty risk at EDF Trading, primarily position netting agreements, cash-collateral agreements and establishment of guarantees from banks or affiliates.

For counterparties dealing with EDF's trading room, the CRFI department has drawn up a framework specifying counterparty authorisation procedures and the methodology for calculation of allocated limits. The level of exposure can be consulted in real time and is systematically monitored on a daily basis. The suitability of limits is reviewed without delay in the event of an alert or unfavourable development affecting a counterparty.

As the political and financial situation in the Euro zone is still uncertain, EDF has continued to apply a conservative management policy for its cash investments in non-core countries. Only banking, sovereign and corporate counterparties with good credit ratings are authorised, for limited amounts and maturities.

6.2 Management and control of energy market

This section presents the main changes in energy market risks affecting the Group since 31 December 2018.

The principles for management and control of energy market risks are presented in section 2.1.1 of the 2018 Reference Document. They have not been changed since 31 December 2018.

For operationally controlled entities in the Group, positions on the energy markets are taken predominantly by EDF Trading, the Group's trading entity, which operates on the markets on behalf of other Group entities and for the purposes of its own trading activity, backed by the Group's industrial assets. EDF Trading is therefore subject to a strict governance and control framework in compliance with European regulations on trading companies.

In 2019, EDF Trading's exposure on the markets is controlled, being subject to a Value at Risk limit of €35 million, a Capital at Risk limit for long-term contracts and a Capital at Risk limit for operations on illiquid markets of €250 million each, and a stop-loss limit of €180 million.

During the first half of 2019, these limits were not exceeded and EDF Trading managed its risks within the boundaries of its mandate from EDF at all times. The stop-losses have never been triggered since their introduction.

7 TRANSACTIONS WITH RELATED PARTIES

The transactions undertaken with related parties are discussed in note 26 "Related Parties" to the condensed consolidated half-year financial statements at 30 June 2019.

8 PRINCIPAL RISKS AND UNCERTAINTIES FOR THE SECOND HALF-YEAR OF 2019

The principal risks and uncertainties to which the EDF group considers itself exposed are described in section 2 of the 2018 Reference Document.

The Group's policies for risk management and control are described in section 2 of the 2018 Reference Document.

This presentation of the major risks remains valid at the date of publication of this report as regards assessment of the principal risks and uncertainties for the second half of 2019, and the Group remains subject to the usual risks specific to its business.

9 SIGNIFICANT EVENTS RELATED TO LITIGATION IN PROCESS

Litigations concerning the EDF group are described in section 2.4 of the 2018 Reference Document. This chapter reports on litigations which have seen significant developments since the release of the 2018 Reference Document.

9.1 Proceedings concerning EDF

Litigation by photovoltaic operators for compensation

On 13 May 2014, Solaire Direct issued proceedings against EDF, EDF EN, EDF ENR and EDF ENR Solaire before the Commercial Court in Paris, seeking compensation for the damage it claimed to have suffered as a result of the practices condemned by France's Competition Authority, the ADLC, in its decision issued on 17 December 2013, assessed by Solaire Direct at €8.7 million. On 16 December 2014, the Court ordered a stay of proceedings pending the judgment to be issued by the Court of Appeal in Paris on EDF's appeal against the above-mentioned ADLC decision. In a judgement dated 21 February 2017, the Commercial Court ordered a further stay of proceedings until the ruling of the Court of Cassation on the appeal filed by the ADLC against the decision dated 21 May 2015. The Court of Cassation gave its ruling on 27 September 2017, and the case was re-entered on the case list, with Solaire Direct now estimating its prejudice at €5.2 million. These proceedings are still ongoing.

On 11 December 2014, Apem Énergie, Arkeos, Biosystem-AD, Cap Eco Énergie, Cap Sud, Isowatt, PCI-m, Photen and Sol'Air Confort started proceedings against EDF, EDF ENR and EDF ENR Solaire before the Commercial Court of Paris on the same grounds. They are claiming alleged damages of €18.3 million. By a judgement of 27 September 2017, the court rejected the action of the plaintiffs on the grounds that it was barred by prescription. Only six of the eleven companies appealed, claiming total damages of €9.4 million. On 6 March 2019 the Court of Appeal of Paris rejected this appeal as the plaintiffs had failed to demonstrate any prejudice. Since no further appeals have been lodged, this litigation is now closed.

Xélan

On 17 October 2016, Xélan brought a claim before the French Competition authority ADLC alleging among other things that EDF's refusal to share the consumption data concerning clients on regulated-tariff contracts prevented Xélan from developing its own electricity supply offers based on energy consumption management. Following the filing of this claim, on 22 and 23 November 2016 the Competition authority carried out search and seizure operations in the offices of EDF and several of its subsidiaries. These operations are not an indication of any offence committed that could be attributed to the EDF group. EDF and its subsidiaries filed appeals with the Court of Appeal of Versailles to challenge these search and seizure operations. By an ordinance of 12 April 2018, the President of the Court of Appeal of Versailles dismissed the appeals relating to the order authorising the search and seizure operations and suspended its decision on the appeal proceedings against the operations themselves. In an ordinance of 10 January 2019, the President of the Court of Appeal of Versailles dismissed the appeal against the search and seizure operations. EDF and its subsidiaries have lodged an appeal before the Court of Cassation against this ordinance.

Labour litigation

EDF is party to a number of labour lawsuits, notably regarding working hours or compensation for the prejudice of anxiety associated with exposure to asbestos. EDF estimates that none of these lawsuits, individually (including after the reversal of the position by the Court of Cassation, which found in favour of employees with regard to the prejudice of anxiety in April 2019), is likely to have a significant impact on its financial results or financial position. However, because they relate to situations that could concern a large number of EDF's employees in France, any increase in such litigations could have a potentially negative impact on the Group's financial position, although the risk was mitigated by the signature of the agreement on fixed numbers of working days in 2016.

Regarding asbestos, EDF is party to 74 actions in France brought on the grounds of "inexcusable fault by the employer". Although the number of such cases is stabilising, following the reversal in April 2019 of the Court of Cassation's previous position, EDF fears an increase in the number of litigations for the prejudice of anxiety. To date, 14 litigations concerning 264 employees are in process that involve EDF SA.

Tax disputes

For the period 2008 to 2015, EDF was notified of proposed tax adjustments, notably concerning the tax-deductibility of certain long-term liabilities. This recurrent reassessment, which is applied for each year, represented a cumulative financial risk of some €563 million in income taxes at 31 December 2018. In two rulings of September 2017 and one of February 2019 the Montreuil Administrative Court recognised the tax-deductibility of these liabilities and validated the position taken by the Company. The Minister has appealed against one of these rulings and the case is now before the Versailles Administrative Court.

For the years 2012 to 2015, the French tax authorities notified the Company of certain recurrent tax reassessments concerning the *Contribution sur la Valeur ajoutée des Entreprises* (tax on corporate value added), and questioned the deductibility of long-term provisions.

Action before the Paris Commercial Court by AET

Azienda Elettrica Ticinese (AET), a public company in the Canton of Tessina, applied to the courts to order renegotiation of the energy prices applied under a 20-year baseload electricity supply agreement concluded on 20 December 2007 for an annual capacity of 70MW, claiming that the market prices had fallen below the prices set in the agreement since 2014 and at certain periods.

As the prices in the agreement were non-negotiable and it contains no hardship clause, EDF offered to make adjustments while preserving the original economic balance, stressing that it was under no obligation to renegotiate.

The negotiations were unsuccessful, and AET issued proceedings against EDF before the Paris Commercial Court on 12 April 2016. The Paris Commercial Court issued a decision on 4 December 2017 in favour of EDF, rejecting all of AET's claims. AET has lodged an appeal against this decision and the case is pending before the Paris Court of Appeal.

AET also brought an action against EDF on 9 November 2017 in relation to the same agreement, claiming a share in the profits from the capacity mechanism relating to the contractual 70MW. On 22 January 2019 the Paris Commercial Court ruled in favour of EDF, rejecting AET's claim. AET has lodged an appeal against this decision and the case is pending before the Paris Court of Appeal.

AMF investigation

Since 21 July 2016, EDF has been the subject of an investigation by the AMF into the financial information provided to the markets since July 2013. As part of this investigation, EDF has provided the AMF with certain information and a number of documents, and answered its questions. On 5 April 2019 the AMF notified EDF of two grievances which EDF is contesting. The issuance of this notification is by no means an indication that any failing could be attributed to the EDF group at the end of the procedure.

Flamanville 3 - action against the amended decree authorising construction

Three appeals have been filed against the amended construction authorisation decree for Flamanville 3. The first two were filed on 23 May 2017 before the Council of State by several non-profit organisations (one by CRILAN and the other by *Notre Affaire à tous*), directly challenging the decree of 23 March 2017 which amended the construction authorisation decree for Flamanville 3 and changed the commissioning deadline. In a decision of 28 March 2018, the Council of State rejected both appeals and ordered the organisations to pay EDF the sum of €2,000.

The third appeal was filed on 21 August 2017, also before the Council of State, by several non-profit organisations including Greenpeace, CRILAN and *Notre Affaire à tous* and concerned the Prime Minister's implicit refusal to revoke the amended construction authorisation decree for Flamanville 3. The Council of State rejected this appeal on 11 April 2019 and ordered each of the organisations to pay EDF the sum of €400.

Flamanville 3 - action against the Nuclear Safety Authority (ASN)'s opinion of 10 October 2017 and decision of 9 October 2018

On 30 November 2017, several non-profit organisations, including the *Sortir du nucléaire* network and Greenpeace France, initiated proceedings before the Council of State requesting cancellation of the Nuclear Safety Authority (ASN)'s opinion of 10 October 2017 regarding the anomaly in the steel in the bottom and head of the Flamanville 3 reactor vessel. The ASN considered that this anomaly was not likely to compromise the commissioning of the reactor vessel, providing specific checks were carried out during the operation of the facility.

On 27 November 2018, the same organisations lodged another appeal before the Council of State against the ASN's decision of 9 October 2018 on the Flamanville 3 vessel (see section 1.4.1.2.1 "Flamanville 3 EPR project"), which was issued after the above-mentioned opinion of 10 October 2017.

Both these appeals were rejected by the Council of State in a decision of 24 July 2019, and this litigation is now closed.

Flamanville 3 – Complaint by Greenpeace and Réseau Sortir du Nucléaire

On 18 July 2018, Greenpeace and the network of associations *Réseau Sortir du Nucléaire* filed a joint complaint at the Cherbourg Public Prosecutions office against EDF (operator), Framatome (manufacturer) and persons unknown for various breaches of the French Environmental Code and the regulations concerning basic nuclear facilities, due to welding issues observed at the Flamanville construction site.

On 24 July 2019, an additional complaint against EDF was filed at the Cherbourg Public Prosecutions office by the same organisations, who said they were doing so to "alert [public opinion] to a systemic lack of discipline with dangerous consequences" concerning the EPR nuclear reactor under construction in Flamanville in the north-west of France. This new complaint is for alleged non-compliance with the rules for classification of certain Flamanville 3 equipment which is required by the decision of 7 February 2012 setting out the general rules for basic nuclear facilities.

Fessenheim

On 14 March 2017, the *Association Trinationale de Protection Nucléaire* (ATPN) lodged an appeal before the Council of State, requesting the cancellation firstly of the French Nuclear Safety Authority (ASN)'s decision no. 2016-DC-0551 of 29 March 2016 setting out the instructions relative to the procedures for water sampling and consumption, effluent discharge, and environmental monitoring at the Fessenheim power plant, and secondly of the ASN's decision no. 2016-DC-0550 setting the limits for effluent discharge by that plant into the environment.

In its ruling of 14 June 2018, the Council of State partly cancelled the decision setting effluent discharge limits, as no reasons were provided for the exemptions granted. However, the Council of State stated that "in view of the economic and energy interests attached to operation of Fessenheim, and also in view of the fact that temporary continuation of the limits, cancelled by this decision on the sole grounds of an absence of stated reasons, does not entail any particular risks for the interests referred to by article L.593-1 of the Environmental Code (…)", EDF was permitted to discharge the effluents concerned by the decision into the environment, respecting these cancelled limits, until the ASN took a new decision laying down new limits, which was to be issued by 1 October 2018 at the latest. That new decision was adopted by the ASN on 17 July 2018 and approved two months later. The Council of State also rejected all other claims and the application for cancellation of the decision mentioned earlier relating to the sampling methods.

A second appeal was lodged on 15 May 2018 by the ATPN, this time against the decision of the President of the ASN dated 25 July 2016 by which he authorised EDF to significantly modify the information and factors on which the authorisation to create the site had been based. The Council of State must now decide on this appeal, which is currently under examination.

Two other appeals by the ATPN have been filed before the Council of State against the implicit decisions by the French Prime Minister and the ASN refusing to order the closure of the Fessenheim plant, particularly for safety reasons. EDF was notified of these proceedings on 10 May 2019.

Finally, in an ordinance of 14 June 2018 the Council of State rejected the urgent applications filed by the APTN for suspension of the ASN's decision of 12 March 2018 which ended suspension of the serviceability certificate granted to Areva NP for the Fessenheim steam generator. The Council of State must now issue a ruling on the merits of the matter, which is currently under examination.

Regulated electricity sales tariffs – appeal against the decisions of 28 May 2019

On 24 June 2019, the consumer associations *UFC Que Choisir* and *Consommation Cadre de Vie Logement* lodged an appeal before the Council of State against the decisions of 28 May 2019 concerning i) the regulated electricity sales tariffs applicable to residential customers in mainland France, ii) the regulated electricity sales tariffs applicable in non-interconnected zones, iii) the regulated electricity sales tariffs applicable to local distribution companies. The two associations are challenging the legality of raising the regulated sales tariffs.

The same day, these associations filed a petition for suspension of these tariff decisions. In an ordinance of 12 July 2019, the Council of State rejected this petition on the grounds that there was no urgency.

9.2 Proceedings concerning EDF's subsidiaries and investments

Enedis

Engie

On 23 December 2016, Engie issued proceedings against Enedis before the Commercial Court of Paris concerning remuneration payable to suppliers for their management of customers under a single contract (see section 1.4.2.1.4 "Electricity supply contracts"). These proceedings are ongoing. An application for a preliminary ruling on constitutionality (*question prioritaire de constitutionalité* - QPC) was filed by Engie challenging article 13 of the Law of 30 December 2017. This QPC was referred by the Paris Commercial Court and then the Court of Cassation to the Constitutional Council, which rejected it and therefore validated article 13 II of the law.

EDF International

Tax disputes

The tax inspections of EDF International for the years 2009 to 2014 resulted in a challenge to the valuation of the convertible bonds issued to refinance the acquisition of British Energy. The total amount concerned is around €310 million. In a judgement of 2 July 2019, Montreuil Administrative Court confirmed the related tax readjustments for the period 2009-2013. EDF International intends to appeal.

Edison

Proceedings concerning the sale of Ausimont (Bussi site)

Several legal actions were begun following the sale of the Ausimont SpA industrial complex to Solvay Solexis SpA in 2002. The criminal proceedings are now closed, but several proceedings are still ongoing:

- Administrative court proceedings: on 28 February 2018, the Province of Pescara notified Solvay Speciality Polymers Italy SpA (formerly Solvay Solexis SpA) and Edison SpA of the launch of an administrative procedure to determine who was responsible for the pollution of the land belonging to Ausimont SpA which had been sold. The Province also ordered Edison SpA to remove waste that was on the land concerned. Following rejection of Edison's appeal before Pescara regional administrative court, Edison has lodged an appeal against the decision with the Italian Council of State.
- Arbitration proceedings: In 2012, arbitration proceedings were launched by Solvay SA and Solvay Specialty Polymers Italy SpA for violation of the representations and warranties in environmental matters concerning the Bussi and Spinetta Marengo sites contained in the agreement for the sale of Agora SpA (the company that controls Ausimont SpA), which was signed in December 2001 between Montedison SpA and Longside International SA, and Solvay Solexis SpA (Solvay Specialty Polymers Italy SpA). After a phase of preliminary questions and applications for preliminary rulings, the procedure is continuing with examination of the merits of the parties' claims.
- Civil proceedings: on 8 April 2019, the Italian Ministry for the Environment brought a civil action against Edison, claiming damages for environmental disaster. An initial court hearing is scheduled for September 2019.

10 SUBSEQUENT EVENT

11 OUTLOOK

Targets 2019 [(1)] including IFRS 16 impact

- **EBITDA** [(2)]: between €16.0 billion and €16.7 billion;
- **Operating expenses** [(3)]: €1.1billion decrease compared with 2015 ;
- **Cash flow** excluding Hinkley Point C and Linky: > €600 million [(4)].

2019-2020 Ambitions [(1)] including IFRS 16 impact

- **Total net investments** [(5)] excluding acquisitions and 2019-2020 Group disposals: around €15 billion per year;
- **2019-2020 Group disposals**: between €2 billion and €3 billion;
- **Net financial debt/EBITDA** [(2)] [(5)]**:** ≤ 2.7x;
- **Targeted payout ratio,** based on net income excluding non-recurring items [(6)]: 45% - 50%.
  The French State has chosen the scrip option for payment of the balance of the 2018 dividend, and for 2019 and 2020 dividends.

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(1) At constant legal and regulatory framework in France.
(2) On the basis of the scope and exchange rates at 1 January 2019 and of an assumption of a 395TWh France nuclear output.
(3) Sum of personnel expenses and other external expenses. At comparable scope and exchange rate, and without IFRS 16. At constant pension discount rates. Excluding change in operating expenses of the service activities.
(4) The impact of IFRS 16 on cash-flow is derived from the increase in EBITDA, reduced by financial interests on the IFRS 16 net financial debt.
(5) For 2020: depending of the impact, currently under assessment, of the decision of the French Nuclear Authority of 19 June 2019 on the schedule and completion cost of the Flamanville 3 project.
(6) Adjusted for the remuneration of hybrid bonds accounted for in equity.

CONDENSED CONSOLIDATED
HALF-YEAR FINANCIAL STATEMENTS
AT 30 JUNE 2019

Consolidated income statement

(in millions of euros)	Notes	H1 2019 (1)	H1 2018 (2)
Sales	6	36,469	34,962
Fuel and energy purchases		(17,951)	(16,770)
Other external expenses		(3,655)	(3,989)
Personnel expenses		(6,963)	(6,815)
Taxes other than income taxes		(2,810)	(2,691)
Other operating income and expenses	7	3,256	3,365
Operating profit before depreciation and amortisation		**8,346**	**8,062**
Net changes in fair value on energy and commodity derivatives, excluding trading activities		350	19
Net depreciation and amortisation		(4,776)	(4,307)
Net increases in provisions for renewal of property, plant and equipment operated under concessions		(54)	(66)
(Impairment)/reversals	8	(45)	(57)
Other income and expenses	9	(149)	(56)
Operating profit		**3,672**	**3,595**
Cost of gross financial indebtedness		(925)	(782)
Discount effect	10.1	(1,801)	(1,697)
Other financial income and expenses	10.2	2,596	861
Financial result		**(130)**	**(1,618)**
Income before taxes of consolidated companies		**3,542**	**1,977**
Income taxes	11	(1,020)	(582)
Share in net income of associates and joint ventures	15	352	365
Net income of discontinued operations	12	(410)	(7)
GROUP NET INCOME		2,464	1,753
EDF net income		**2,498**	**1,726**
Net income of continuing operations		2,898	1,733
Net income of discontinued operations		(400)	(7)
Net income attributable to non-controlling interests		**(34)**	**27**
Net income of continuing operations		(24)	27
Net income of discontinued operations		(10)	0
Earnings per share (EDF share) in euros:			
Basic earnings per share		0.72	0.46
Diluted earnings per share		0.72	0.46
Earnings per share of continuing operations		0.85	0.46
Diluted earnings per share of continuing operations		0.85	0.46

(1) *The financial statements at 30 June 2019 apply IFRS 16 from 1 January 2019 (using the modified retrospective approach). In accordance with the new standard's transition provisions, the comparative figures have not been restated (see note 2.1).*
(2) *The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations (see note 2.3).*

In application of IFRS 5, the net income of discontinued operations is presented on a separate line of the income statement for the financial periods presented. The impact of application of IFRS 5 on the published figures for 2018 is presented in note 2.3.

Consolidated statement of comprehensive income

	H1 2019 [1]			H1 2018		
(in millions of euros)	EDF net income	Net income attributable to non-controlling interests	Total	EDF net income	Net income attributable to non-controlling interests	Total
Group net income	2,498	(34)	2,464	1,726	27	1,753
Gross change in fair value of hedging instruments [2]	752	(15)	737	28	3	31
Related tax effect	(243)	(1)	(244)	(46)	(1)	(47)
Associates' and joint ventures' share of fair value of hedging instruments	(40)	-	(40)	(9)	-	(9)
Change in fair value of hedging instruments	*469*	*(16)*	*453*	*(27)*	*2*	*(25)*
Translation adjustments - controlled entities	(328)	(20)	(348)	69	(22)	47
Translation adjustments – associates and joint ventures	30	-	30	82	-	82
Translation adjustments	*(298)*	*(20)*	*(318)*	*151*	*(22)*	*129*
Gross change in fair value of debt instruments [2]	376	-	376	(115)	-	(115)
Related tax effect	(123)	-	(123)	40	-	40
Associates' and joint ventures' share of fair value of debt instruments	6	-	6	(6)	-	(6)
Change in fair value of debt instruments	*259*	*-*	*259*	*(82)*	*-*	*(82)*
Gains and losses recorded in equity with recycling	430	(36)	394	42	(20)	22
Gross change in fair value of equity instruments	-	-	-	(2)	-	(2)
Related tax effect	-	-	-	-	-	-
Associates' and joint ventures' share of fair value of equity instruments	-	-	-	-	-	-
Change in fair value of equity instruments	*-*	*-*	*-*	*(2)*	*-*	*(2)*
Gross change in actuarial gains and losses on post-employment benefits [3]	(1,953)	9	(1,944)	1,209	74	1,283
Related tax effect	306	-	306	(349)	(10)	(359)
Associates' and joint ventures' share of change in actuarial gains and losses on post-employment benefits	(129)	-	(129)	24	-	24
Change in actuarial gains and losses on post-employment benefits	*(1,776)*	*9*	*(1,767)*	*884*	*64*	*948*
Gains and losses recorded in equity with no recycling	(1,776)	9	(1,767)	882	64	946
Total gains and losses recorded in equity	(1,346)	(27)	(1,373)	924	44	968
CONSOLIDATED COMPREHENSIVE INCOME	1,152	(61)	1,091	2,650	71	2,721
Comprehensive income of continuing operations	1,149	(61)	1,088	2,657	71	2,728
Comprehensive income of discontinued operations	3	-	3	(7)	-	(7)

(1) *The financial statements at 30 June 2019 apply IFRS 16 from 1 January 2019 (using the modified retrospective approach). In accordance with the new standard's transition provisions, the comparative figures have not been restated (see note 2.1).*
(2) *Gross changes in fair value recycled to profit and loss in respect of debt and equity instruments and hedging instruments are presented in notes 19.4.1 and 19.4.2.*
(3) *Gross changes in actuarial gains and losses are presented in note 20.3.1.2.*

Consolidated balance sheet

ASSETS *(in millions of euros)*	Notes	30/06/2019 (1)	31/12/2018
Goodwill	13	10,210	10,195
Other intangible assets		9,953	9,918
Property, plant and equipment operated under French public electricity distribution concessions	14	57,284	56,515
Property, plant and equipment operated under concessions for other activities	14	6,792	7,339
Property, plant and equipment used in generation and other tangible assets owned by the Group	14	84,273	78,252
Investments in associates and joint ventures	15	7,609	8,287
Non-current financial assets	16	40,252	37,104
Other non-current receivables	18	2,140	1,796
Deferred tax assets		1,273	978
Non-current assets		**219,786**	**210,384**
Inventories		14,066	14,227
Trade receivables	17	14,165	15,910
Current financial assets	16	28,913	31,143
Current tax assets		280	869
Other current receivables	18	6,615	7,346
Cash and cash equivalents		4,345	3,290
Current assets		**68,384**	**72,785**
Assets held for sale	23	**1,555**	**-**
TOTAL ASSETS		289,725	283,169

EQUITY AND LIABILITIES *(in millions of euros)*	Notes	30/06/2019 (1)	31/12/2018
Capital	19	1,525	1,505
EDF net income and consolidated reserves		43,629	42,964
Equity (EDF share)		*45,154*	*44,469*
Equity (non-controlling interests)		8,422	8,177
Total equity		**53,576**	**52,646**
Provisions related to nuclear generation - back-end of the nuclear cycle, plant decommissioning and last cores		50,616	49,204
Other provisions for decommissioning		1,494	2,033
Provisions for employee benefits		19,623	17,627
Other provisions		2,986	2,908
Non-current provisions	20.1	*74,719*	*71,772*
Special French public electricity distribution concession liabilities		47,218	46,924
Non-current financial liabilities	21.1	54,620	52,129
Other non-current liabilities	22	4,955	4,896
Deferred tax liabilities		2,337	1,987
Non-current liabilities		**183,849**	**177,708**
Current provisions	20.1	6,280	6,010
Trade payables		11,335	13,421
Current financial liabilities	21.1	16,430	17,167
Current tax liabilities		1,032	205
Other current liabilities	22	16,394	16,012
Current liabilities		**51,471**	**52,815**
Liabilities related to assets held for sale	23	**829**	**-**
TOTAL EQUITY AND LIABILITIES		289,725	283,169

(1) *The financial statements at 30 June 2019 apply IFRS 16 from 1 January 2019 (using the modified retrospective approach). In accordance with the new standard's transition provisions, the comparative figures have not been restated (see note 2.1).*

Consolidated cash flow statement

(in millions of euros)	Notes	H1 2019 (1)	H1 2018 (2)
Operating activities:			
Income before taxes		3,168	2,013
Income before taxes of discontinued operations		(374)	36
Income before taxes of consolidated companies		3,542	1,977
Impairment/(reversals)		45	57
Accumulated depreciation and amortisation, provisions and changes in fair value		3,169	4,916
Financial income and expenses		312	277
Dividends received from associates and joint ventures		88	124
Capital gains/losses		(6)	50
Change in working capital		1,050	1,419
Net cash flow from operations		*8,200*	*8,820*
Net financial expenses disbursed		(606)	(719)
Income taxes paid		259	200
Net cash flow from continuing operating activities		7,853	8,301
Net cash flow from operating activities relating to discontinued operations		129	111
Net cash flow from operating activities		7,982	8,412
Investing activities:			
Acquisitions of equity investments, net of cash acquired		(282)	(296)
Disposals of equity investments, net of cash transferred		217	45
Investments in intangible assets and property, plant and equipment		(7,537)	(7,621)
Net proceeds from sale of intangible assets and property, plant and equipment		41	89
Changes in financial assets		1,799	(479)
Net cash flow from continuing investing activities		(5,762)	(8,262)
Net cash flow from investing activities relating to discontinued operations		(69)	(58)
Net cash flow from investing activities		(5,831)	(8,320)
Financing activities:			
EDF capital increase		-	-
Transactions with non-controlling interests (3)		420	1,285
Dividends paid by parent company	19.2	(31)	(60)
Dividends paid to non-controlling interests		(80)	(113)
Purchases/sales of treasury shares		(16)	-
Cash flows with shareholders		*293*	*1,112*
Issuance of borrowings		2,521	2,299
Repayment of borrowings		(3,778)	(3,087)
Payments to bearers of perpetual subordinated bonds	19.3	(334)	(378)
Funding contributions received for assets operated under concessions		68	56
Investment subsidies		141	301
Other cash flows from financing activities		*(1,382)*	*(809)*
Net cash flow from continuing financing activities		(1,089)	303
Net cash flow from financing activities relating to discontinued operations		(61)	(67)
Net cash flow from financing activities		(1,150)	236
Net cash flow from continuing operations		1,002	342
Net cash flow from discontinued operations		(1)	(14)
Net increase/(decrease) in cash and cash equivalents		1,001	328
CASH AND CASH EQUIVALENTS - OPENING BALANCE		3,290	3,692
Net increase/(decrease) in cash and cash equivalents		1,001	328
Effect of currency fluctuations		(49)	(22)
Financial income on cash and cash equivalents		8	7
Effect of reclassifications		95	(48)
CASH AND CASH EQUIVALENTS - CLOSING BALANCE		4,345	3,957

(1) *The financial statements at 30 June 2019 apply IFRS 16 from 1 January 2019 (using the modified retrospective approach). In accordance with the new standard's transition provisions, the comparative figures have not been restated (see note 2.1).*
(2) *The published figures for 2018 have been restated due to the impact of presenting Edison's E&P operations as discontinued operations (see note 2.3).*
(3) *Contributions via capital increases, or capital reductions and acquisitions of additional interests or disposals of interests in controlled companies. In 2019, this item includes an amount of €418 million relating to CGN's payment for the NNB Holding Ltd. and Sizewell C Holding Co capital increases (€361 million at 30 June 2018). In 2018 it also included an amount of €797 million relating to the sale of 49% of EDF Renewables' wind farms (see note 3.2.1).*

Change in consolidated equity

Details of the change in equity between 1 January and 30 June 2019 are as follows:

(in millions of euros)	Capital	Treasury shares	Translation adjustments [(1)]	Fair value adjustment of financial instruments (OCI with recycling) [(2)]	Other consolidated reserves and net income [(3)]	**Equity (EDF share)**	Equity (non-controlling interests)	**Total equity**
Equity at 31/12/2018	1,505	(56)	215	(1,856)	44,661	44,469	8,177	52,646
IFRIC 23 restatements (see note 2.2)	-	-	-	-	(10)	(10)	-	(10)
Equity at 01/01/2019	1,505	(56)	215	(1,856)	44,651	44,459	8,177	52,636
Gains and losses recorded in equity	-	-	(298)	728	(1,776)	(1,346)	(27)	(1,373)
Net income	-	-	-	-	2,498	2,498	(34)	2,464
Consolidated comprehensive income			(298)	728	722	1,152	(61)	1,091
Payments on perpetual subordinated bonds	-	-	-	-	(334)	(334)	-	(334)
Dividends paid	-	-	-	-	(483)	(483)	(94)	(577)
Purchases/sales of treasury shares	-	(16)	-	-	-	(16)	-	(16)
Capital increase by EDF SA [(4)]	20	-	-	-	431	451	-	451
Other changes [(5)]	-	-	-	-	(75)	(75)	400	325
EQUITY AT 30/06/2019	1,525	(72)	(83)	(1,128)	44,912	45,154	8,422	53,576

(1) Changes in translation adjustments amount to €(298) million at 30 June 2019, mainly relating to the recycling of Alpiq's conversion reserves following the sale of 28 May 2019.

(2) Changes in reserves recorded in OCI (Other Comprehensive Income) with recycling are shown in the Statement of Comprehensive Income. They correspond to the effects of fair value adjustments of debt securities and financial instruments hedging cash flows and net foreign investments, and amounts recycled to profit and loss in respect of terminated contracts and debt instruments transferred.

(3) Fair value changes recorded in OCI with no recycling are presented in the "Other consolidated reserves and net income" column.

(4) In 2019, the changes in capital and other consolidated reserves (issue premium) relate to EDF's capital and payment of the balance of the scrip dividend for 2018 totalling €451 million (see note 19.1).

(5) Other changes in 2019 in equity (non-controlling interests) also include capital increases by NNB Holding Ltd. and Sizewell C Holding Co funded by CGN (€418 million).

Details of the change in equity between 1 January and 30 June 2018 are as follows:

(in millions of euros)	Capital	Treasury shares	Translation adjustments (1)	Fair value adjustment of financial instruments (OCI with recycling) (2)	Other consolidated reserves and net income (3)	**Equity (EDF share)**	Equity (non-controlling interests)	**Total equity**
Equity at 01/01/2018	1,464	(40)	136	(1,678)	41,475	41,357	7,341	48,698
Gains and losses recorded in equity	-	-	151	(109)	882	**924**	44	**968**
Net income	-	-	-	-	1,726	**1,726**	27	**1,753**
Consolidated comprehensive income	**-**	**-**	**151**	**(109)**	**2,608**	**2,650**	**71**	**2,721**
Payments on perpetual subordinated bonds	-	-	-	-	(378)	**(378)**	-	**(378)**
Dividends paid	-	-	-	-	(909)	**(909)**	(121)	**(1,030)**
Purchases/sales of treasury shares	-	(5)	-	-	-	**(5)**	-	**(5)**
Capital increase by EDF SA (4)	41	-	-	-	806	**847**	-	**847**
Other changes (5)	-	-	-	-	393	**393**	676	**1,069**
EQUITY AT 30/06/2018	1,505	(45)	287	(1,787)	43,995	43,955	7,967	51,922

(1) Changes in translation adjustments amount to €151 million at 30 June 2018, mainly relating to the rise of the dollar against the euro.

(2) Changes in reserves recorded in OCI (Other Comprehensive Income) with recycling are shown in the Statement of Comprehensive Income. They correspond to the effects of fair value adjustments of debt securities and financial instruments hedging cash flows and net foreign investments, and amounts recycled to profit and loss in respect of terminated contracts and debt instruments transferred.

(3) Fair value changes recorded in OCI with no recycling are presented in the "Other consolidated reserves and net income" column.

(4) In 2018, the changes in capital and other consolidated reserves (issue premium) relate to EDF's capital and payment of the balance of the scrip dividend for 2017 totalling €847 million.

(5) In 2018, the changes in consolidated reserves and equity (non-controlling interests) include in particular the effect of the sale of 49% of EDF Renewables Ltd' s wind farms. "Other changes" in equity (non-controlling interests) also include the capital increases funded by CGN for NNB Holding Ltd. and Sizewell C Holding Co amounting to €361 million, and the effects of the sale of Dunkerque LNG amounting to €(280) million (not paid to the shareholders at 30 June 2018) and the effects of convertible bond issues in the Dalkia group amounting to €44 million).

NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

Électricité de France (EDF or "the Company") is a French *société anonyme* governed by French Law, and registered in France.

The condensed consolidated financial statements (hereafter called "the consolidated financial statements") reflect the accounting position of the Company and its subsidiaries (which together form the "Group") and the Group's interests in associates, joint arrangements classified as joint operations, and joint ventures for the half-year to 30 June 2019.

The Group is an integrated energy operator engaged in all aspects of the energy business: generation, transmission, distribution, supply, trading, energy services, equipment production, nuclear fuel assembly and reactor services.

The Group's consolidated financial statements at 30 June 2019 were prepared under the responsibility of the Board of Directors and approved by the Directors at the Board meeting held on 25 July 2019.

NOTE 1 GROUP ACCOUNTING POLICIES

1.1 DECLARATION OF CONFORMITY AND GROUP ACCOUNTING POLICIES

Pursuant to European regulation 1606/2002 of 19 July 2002 on the adoption of international accounting standards, the EDF group's consolidated financial statements at 30 June 2019 are prepared under the international accounting standards published by the IASB and approved by the European Union for application at 30 June 2019. These international standards are IAS (International Accounting Standards), IFRS (International Financial Reporting Standards), and SIC and IFRIC interpretations.

The consolidated half-year financial statements comply with standard IAS 34 "Interim financial reporting". They do not therefore include all the information required for full annual financial statements, and are to be read in conjunction with the consolidated financial statements at 31 December 2018.

Apart from the methods specific to interim financial reporting described in note 1.4 and note 1.6 concerning the first application of IFRS 16 and IFRIC 23, the accounting principles and valuation methods are identical to those applied and described in note 1 to the consolidated financial statements at 31 December 2018.

1.2 CHANGES IN ACCOUNTING STANDARDS

1.2.1 IFRS 16 "Leases"

IFRS 16 "Leases", which is mandatory for financial years beginning on or after 1 January 2019, was adopted by the European Union on 31 October 2017. The recognition and measurement principles that now apply to lease contracts are described in note 1.6.1, and the information required by IAS 8 and IFRS 16 about the effects of the new standard's application by the Group is provided in note 2.1.

1.2.2 IFRIC 23 "Uncertainty over income tax treatments"

This interpretation was adopted by the European Union on 23 October 2018 and is mandatory for financial years beginning on or after 1 January 2019.

It clarifies application of the provisions of IAS 12 "Income taxes" regarding recognition and measurement of income tax when fiscal uncertainty exists. The applicable methods are presented in note 1.6.2 and the impacts are described in note 2.2.

1.2.3 Annual improvements to IFRS, 2015 – 2017 cycle

These improvements were adopted by the European Union on 14 March 2019 and contain amendments to:

- IAS 23 "Borrowing costs": specific borrowings for a qualifying asset must be included in the general borrowings pool once construction of the qualifying asset is complete;
- IFRS 3 and IFRS 11: measurement of previously held interests in a joint operation when control or joint control is obtained;
- IAS 12 "Income taxes": recognition in profit and loss of the tax consequences of dividend distributions.

These amendments have no impact on the Group's consolidated financial statements.

1.2.4 Amendments to IAS 19 "Plan Amendment, Curtailment or Settlement

These amendments were adopted by the European Union on 13 March 2019. They clarify that when a plan is amended, curtailed or settled during the accounting period, a company must update its actuarial assumptions at the date of the change to measure and record the current service cost and the net interest expense on the net defined benefit liability over the remainder of the reporting period, from the date of the change affecting the plan.

These amendments have no impact on the Group's consolidated financial statements.

1.2.5 Amendments to IAS 28 "Long term Interests in Associates and Joint Ventures

These amendments were adopted by the European Union on 8 February 2019. They clarify that an entity should first apply IFRS 9 "Financial Instruments" for impairment of other interests in an associate or joint venture that form part of its net investment in that associate or joint venture but are not accounted for by the equity method.

These amendments have no impact on the Group's consolidated financial statements.

1.2.6 Amendments to IFRS 9 "Prepayment Features with Negative Compensation"

Under these amendments, which were adopted by the European Union on 22 March 2018, financial assets with an early redemption option that results in negative compensation qualify for measurement at amortised cost, subject to certain conditions.

These amendments have no impact on the Group's consolidated financial statements.

1.3 MANAGEMENT JUDGMENTS AND ESTIMATES

The preparation of the financial statements requires the use of judgments, best estimates and assumptions in determining the value of assets and liabilities, income and expenses recorded for the period, considering positive and negative contingencies existing at the closing date. The figures in the Group's future financial statements could differ significantly from current estimates due to changes in these assumptions or economic conditions.

In a context characterised by financial market volatility, the parameters used to prepare estimates are based on macro-economic assumptions appropriate to the very long-term cycle of Group assets.

The principal operations for which the Group uses estimates and judgments are the same as those described in note 1.3.2 to the consolidated financial statements at 31 December 2018, except for leases as a result of the first application of IFRS 16 "Leases".

As described in note 1.6.1, valuation of the right-of-use asset and the lease liability is based on estimates and assumptions. These mainly concern the terms of the leases to which IFRS 16 applies, which include extension or early termination options that the Group is reasonably certain of exercising.

1.4 VALUATION METHODS SPECIFIC TO INTERIM FINANCIAL STATEMENTS

The following valuation methods specific to interim financial statements have been applied.

1.4.1 Employee benefits

The amount of the obligation corresponding to post-employment benefits and other long-term benefits at 30 June is calculated by projecting the prior year obligation over one half-year, taking into account the benefits paid out and the changes in fund assets, adjusted due to plan modifications where relevant.

In the event of amendment, curtailment or settlement during the accounting period, the actuarial assumptions and the amount of the obligation are updated at the date of the change. The current service cost and the net interest expense on defined benefits are adjusted accordingly from that date.

In all other situations, the actuarial assumptions used to calculate employee benefits for interim financial statements differ from those used for the previous annual financial statements if significant developments arise for certain parameters, for example the discount rate.

1.4.2 Income taxes

For interim financial statements, income tax (current and deferred) is generally calculated by applying the last known estimated effective tax rate for the current year, for each entity or tax group, to the consolidated companies' pre-tax income.

1.5 SEASONAL NATURE OF THE BUSINESS

Interim sales and operating profit before depreciation and amortisation are affected by significant seasonal factors in the calendar year, principally in France. The variations observed are mainly associated with weather conditions and tariff structures specific to each period.

1.6 CHANGES IN THE PRINCIPAL ACCOUNTING AND VALUATION METHODS

Due to the application of IFRS 16 in 2019, the Group's accounting rules and methods have been changed as described below (note 1.6.1). These accounting rules only apply to leases in the first half of 2019, and the comparative period of 2018 is still presented in accordance with IAS 17.

Adoption of IFRIC 23 has also led to a change in the Group's accounting rules and methods for recognition of income taxes (note 1.6.2).

1.6.1 Leases

Under IFRS 16, a contract is, or contains, a lease if it confers the right to control the use of an identified asset for a period of time in exchange for a consideration.

Identified arrangements that do not have the legal form of a lease contract but nonetheless convey the right to control the use of an asset or group of specific assets to the purchaser are treated by the Group as leases, and analysed by reference to IFRS 16.

1.6.1.1 Recognition of a lease contract as lessee under IFRS 16

The Group's lease contracts as lessee essentially concern real estate assets (office and residential properties), industrial installations (land, wind farms) and to a lesser extent vehicles and IT equipment.

IFRS 16 requires leases to be recognised in the lessee's balance sheet when the leased asset is made available, in the form of a "right-of-use" asset, presented in "Property, plant and equipment used in generation and other tangible assets owned by the Group" with a corresponding financial liability associated with the lease commitment, presented in "Current and non-current financial liabilities".

Upon initial recognition of a lease, the right of use and the lease liability are valued by discounting the future lease payments over the term of the lease, taking into consideration assumptions regarding the renewal or termination of leases if the relevant options are reasonably certain to be exercised.

As a rule, since the implicit interest rate in a lease is difficult to determine, the lessee's incremental borrowing rate is used to discount the lease liability. This rate is based on zero-coupon EDF bond rates, adjusted for the currency risk, a country risk premium, the term of the lease contracts and the subsidiary's credit risk at the date of initial recognition of the contract. In certain cases, it is based on a subsidiary's specific incremental borrowing rate.

Subsequently, the right of use is amortised over the expected term of the lease, while the lease liability is stated at amortised cost, i.e. adding the interest recognised in the financial result, and deducting the amount of the lease payments made.

The Group has decided to apply the two exemptions allowed by IFRS 16, and as a result leases with a term of 12 months or less and leases of assets with individual value when new of less than USD 5,000 are not recognised in the balance sheet. Consequently, the payments on these leases are recognised on a straight-line basis over the lease term in the income statement.

If the Group performs a **sale and leaseback operation** – consisting of selling an asset to a third party and then renting it back as lessee – which is classified as a sale under IFRS 15, it measures the right-of-use asset resulting from the lease as the proportion of the asset's previous book value that corresponds to the right-of-use retained by the Group. Also, the gain on the sale of the asset by the Group only corresponds to the proportion of the right of use actually transferred to the third party. The lease liability is not adjusted, unless the conditions of the sale or lease do not reflect market values.

Off balance sheet commitments presented in note 25.1.1 concern:

- Short-term leases (12 months or less);
- Leases of assets with low value (less than USD 5,000 when new);
- Leases signed for which the leased assets have not yet been made available (for example, assets under construction).

1.6.1.2 Recognition of a lease contract as lessor

The accounting treatment of a lease contract in which the Group is lessor depends on the classification of the contract. For a finance lease which transfers substantially all risks and rewards inherent to ownership of the underlying asset to the lessee, the Group recognises a financial asset in its balance sheet instead of the initial fixed asset; in this case, the receivable is equal to the discounted value of future lease payments. Conversely, a contract classified as an operating lease does not require any substantial accounting adjustment by the Group.

1.6.2 IFRIC 23 - Uncertain tax position

In addition to the information given in note 1.3.8 "Income taxes" in the consolidated financial statements at 31 December 2018:

In application of IFRIC 23, a tax asset or liability is recognised when there is uncertainty over income tax treatments. If the Group considers it likely that the tax authorities will not accept its chosen treatment, it recognises a tax liability, and if it considers it likely that the tax authorities will reimburse a tax that has already been paid, it recognises a tax asset. The tax assets and liabilities relating to these uncertainties are estimated on a case-by-case basis and stated at the most likely amount, or the weighted average of the various outcomes considered.

NOTE 2 COMPARABILITY

2.1 IFRS 16 – LEASES

IFRS 16 "Leases" was adopted by the European Union on 31 October 2017 and is mandatory for financial years beginning on or after 1 January 2019.

The Group decided to apply the modified retrospective approach, in which the cumulative impact of first application of the standard is recognised as an adjustment to retained earnings at the date of first application, i.e. 1 January 2019. This approach involves recognition of a liability equal to the discounted value of residual lease payments and a corresponding right-of-use asset adjusted for the amount of prepaid or accrued payments on the lease. The Group has opted to value the right-of-use asset at an amount equal to the lease payment liability.

Restatement of comparative figures in the main financial statements and the accompanying notes for the impacts of application of IFRS 16 is not required, and therefore the financial statements at 30 June 2019 are presented with no prior year restatements.

The weighted average discount rate applied by the Group to calculate the lease liability at 1 January 2019 over the residual term of its lease contracts is 1.61% (see note 1.6.1).

The Group also decided to apply the exemptions allowed by IFRS 16 as indicated in note 1.6.1.1, and not to reassess the lease contracts at the date of first application.

2.1.1 Impact of the transition at 1 January 2019

Under the modified retrospective approach, application of IFRS 16 at the transition date has an impact on net indebtedness, and results in recognition of a right-of-use asset, in the amount of €4,492 million.

The differences between the operating lease commitments under IAS 17 reported at 31 December 2018 and the estimated lease liability under IFRS 16 relating to the same contracts at 1 January 2019 are explained in the following table:

(in millions of euros)	01/01/2019
Operating lease commitments as lessee at 31/12/2018 (note 25.1.1.3)	4,375
Unrecognised contracts (IFRS 16 exemptions)	(65)
Differences in the durations applied for termination and extension options that are reasonably certain to be exercised	1,125
Leases signed in 2018 for an asset available after 1 January 2019	(329)
Other	(40)
Non-discounted lease liability under IFRS 16 at 01/01/2019	5,066
Discount effect	(574)
Discounted lease liability under IFRS 16 at 01/01/2019	4,492

This amount for the right-of-use asset and the lease liability is recognised in addition to finance-leased assets at 31 December 2018, amounting to €96 million (see note 14) and the finance lease liability amounting to €324 million (see note 21.2.1).

2.1.2 Impacts on the Group's consolidated financial statements at 30 June 2019

At 30 June 2019, the net value of the right-of-use asset amounts to €4,304 million and the lease liability amounts to €4,553 million. In the first half of the year, the amortisation expense for the right of use amounts to €(322) million and the interest on the lease liability amounts to €(42) million.

For information, based on the Group's calculations, application of IFRS 16 under the modified retrospective approach would have had a positive impact of some €338 million on operating profit before depreciation and amortisation for the first half of 2018. The consolidated net income would not have been significantly different.

2.2 IFRIC 23 – UNCERTAINTY OVER INCOME TAX TREATMENTS

In application of the modified retrospective method, implementation of IFRIC 23 at the transition date has a non-significant impact on tax liabilities (€10 million) that is recognised via equity, with no restatement of the comparative figures.

2.3 IFRS 5 - PLANNED SALE OF EDISON'S E&P OPERATIONS

EDF's Board of Directors on 28 June 2019 and Edison's Board of Directors on 3 July 2019 approved the purchase offer made for the Group's investment in Edison's Exploration and Production (E&P) operations. On 4 July 2019, Edison therefore announced the signature of the agreement with Energean Oil and Gas to sell 100% of Edison's E&P operations and its subsidiaries in the hydrocarbons exploration and production business (oil and natural gas).

The price of the transaction is based on an enterprise value of USD 750 million, with an additional consideration of USD 100 million contingent on the commissioning of the Cassiopea development gas project in Italy. Additionally, Edison will be entitled to royalties from further potential developments in Egypt that could bring the aggregate value close to USD 1 billion. All of Edison's future decommissioning obligations will be transferred to the buyer under the sale agreement.

Edison Exploration and Production manages all of Edison's activities, mining titles and corporate shareholdings in the hydrocarbons business in Italy and abroad. In particular, Edison E&P owns a portfolio of approximately 90 licences in 9 countries in the Mediterranean and Northern Europe, corresponding to a production quota of approximately 49,000 barrels per day at December 31, 2018.

This sale to Energean Oil and Gas is expected to be completed by the end of 2019, subject to the customary conditions for transactions of this kind, including approval by the Italian Economic Development Ministry.

The proceeds of the sale will support Edison's strategic development plan, which involves very significant investments in Italy in the three-year period 2019-2021, mainly for sustainable production from renewable sources and gas, but also to reinforce the Company's retail business and energy efficiency services.

2.3.1 Presentation of Edison's E&P operations in the consolidated financial statements

As Edison is the only Group entity with E&P operations, which account for a large portion of the "Italy" operating segment, the sale of the E&P operations is classified as a discontinued operation as defined by IFRS 5 from 1 January 2019.

As a result, the net income of discontinued operations is reported on a specific line of the income statement for the periods published. Similarly, in the cash flow statement, the net change in cash from discontinued operations is reported on a specific line for the periods published.

Following application of IFRS 5, based on the terms of the purchase offer, the amounts of Edison's E&P assets and liabilities at 30 June 2019 are reported in specific lines of the consolidated balance sheet. Details of the assets and liabilities of these discontinued operations are given in note 23. The impacts of application of IFRS 5 on the Group's income statement and cash flow statement at 30 June 2018 are presented below.

Based on the consolidated net value of these E&P operations at 30 June 2019 and the sale price as stated in the indicative purchase offer, impairment of €(425) million was booked during the half-year (see note 12), included in the line "net income of discontinued operations".

2.3.2 Impacts on the 2018 income statement

(in millions of euros)	H1 2018 as published	Impact of IFRS 5	H1 2018 restated
Sales	35,175	(213)	34,962
Fuel and energy purchases	(16,751)	(19)	(16,770)
Other external expenses	(4,038)	49	(3,989)
Personnel expenses	(6,836)	21	(6,815)
Taxes other than income taxes	(2,694)	3	(2,691)
Other operating income and expenses	3,375	(10)	3,365
Operating profit before depreciation and amortisation	**8,231**	**(169)**	**8,062**
Net changes in fair value on energy and commodity derivatives, excluding trading activities	19	-	19
Net depreciation and amortisation	(4,410)	103	(4,307)
Net increases in provisions for renewal of property, plant and equipment operated under concessions	(66)	-	(66)
(Impairment)/reversals	(68)	11	(57)
Other income and expenses	(56)	-	(56)
Operating profit	**3,650**	**(55)**	**3,595**
Cost of gross financial indebtedness	(785)	3	(782)
Discount effect	(1,707)	10	(1,697)
Other financial income and expenses	855	6	861
Financial result	**(1,637)**	**19**	**(1,618)**
Income before taxes of consolidated companies	**2,013**	**(36)**	**1,977**
Income taxes	(625)	43	(582)
Share in net income of associates and joint ventures	365	-	365
Net income of discontinued operations	-	(7)	(7)
GROUP NET INCOME	1,753	-	1,753
EDF net income	**1,726**	**-**	**1,726**
Net income of continuing operations	1,726	7	1,733
Net income of discontinued operations	-	(7)	(7)
Net income attributable to non-controlling interests	**27**	**-**	**27**
Net income of continuing operations	27	-	27
Net income of discontinued operations	-	-	-

2.3.3 Impacts on the 2018 consolidated cash flow statement

(in millions of euros)	H1 2018 as published	Impact of IFRS 5	H1 2018 restated
Operating activities:			
Income before taxes of consolidated companies	2,013	(36)	1,977
Income before taxes of discontinued operations	-	36	36
Income before taxes	2,013	-	2,013
Impairment/(reversals)	68	(11)	57
Accumulated depreciation and amortisation, provisions and changes in fair value	5,017	(101)	4,916
Financial income and expenses	296	(19)	277
Dividends received from associates and joint ventures	124	-	124
Capital gains/losses	50	-	50
Change in working capital	1,434	(15)	1,419
Net cash flow from continuing operations	*9,002*	*(182)*	*8,820*
Net cash flow relating to discontinued operations	-	*182*	*182*
Net cash flow from operations	*9,002*	-	*9,002*
Net financial expenses disbursed	(730)	11	(719)
Income taxes paid	140	60	200
Net cash flow from continuing operating activities	8,412	(111)	8,301
Net cash flow from operating activities relating to discontinued operations	-	111	111
Net cash flow from operating activities	8,412	-	8,412
Investing activities:			
Acquisitions of equity investments, net of cash acquired	(296)	-	(296)
Disposals of equity investments, net of cash transferred	45	-	45
Investments in intangible assets and property, plant and equipment	(7,713)	92	(7,621)
Net proceeds from sale of intangible assets and property, plant and equipment	123	(34)	89
Changes in financial assets	(479)	-	(479)
Net cash flow from continuing investing activities	(8,320)	58	(8,262)
Net cash flow from investing activities relating to discontinued operations	-	(58)	(58)
Net cash flow from investing activities	(8,320)	-	(8,320)
Financing activities:			
EDF capital increase	-	-	-
Capital increase subscribed by non-controlling interests	357	-	357
Transactions with non-controlling interests	928	-	928
Dividends paid by parent company	(60)	-	(60)
Dividends paid to non-controlling interests	(113)	-	(113)
Purchases/sales of treasury shares	-	-	-
Cash flows with shareholders	*1,112*	-	*1,112*
Issuance of borrowings	2,299	-	2,299
Repayment of borrowings	(3,154)	67	(3,087)
Payments to bearers of perpetual subordinated bonds	(378)	-	(378)
Funding contributions received for assets operated under concessions	56	-	56
Investment subsidies	301	-	301
Other cash flows from financing activities	*(876)*	*67*	*(809)*
Net cash flow from continuing financing activities	236	67	303
Net cash flow from financing activities relating to discontinued operations	-	(67)	(67)
Net cash flow from financing activities	236	-	236
Net increase/(decrease) in cash and cash equivalents from continuing operations	328	14	342
Net increase/(decrease) in cash and cash equivalents from discontinued operations	-	(14)	(14)
Net increase/(decrease) in cash and cash equivalents	328	-	328
CASH AND CASH EQUIVALENTS - OPENING BALANCE	3,692	-	3,692
Net increase/(decrease) in cash and cash equivalents	328	-	328
Effect of currency fluctuations	(22)	-	(22)
Financial income on cash and cash equivalents	7	-	7
Effect of reclassifications	(48)	-	(48)
CASH AND CASH EQUIVALENTS - CLOSING BALANCE	3,957	-	3,957

NOTE 3 SIGNIFICANT EVENTS AND TRANSACTIONS

3.1 SIGNIFICANT EVENTS AND TRANSACTIONS OF 2019

In addition to the planned disposal of Edison's E&P operations, presented in note 2.3, the main significant events and transactions of 2019 are the following:

3.1.1 Disposal of EDF's 25% stake in Alpiq

On 4 April 2019, following the approval given by their respective governance bodies, EDF, EBM (Coopérative Elektra Birseck) and EOS (EOS Holding SA) signed an agreement on EDF's disposal of its stake in Swiss power producer Alpiq (25.04% of the company's capital and voting rights) to EBM and EOS (each entity acquiring half of this stake).

This operation valued EDF's stake in Alpiq at approximately CHF489 million (around €434 million), based on a purchase price of CHF70 per Alpiq share. It reduced the Group's net indebtedness by €434 million. The Shares Purchase Agreement includes potential earn-out mechanisms. The sale was completed on 28 May 2019 after it received clearance from the German competition authority.

The impact on the consolidated net income is not significant.

3.1.2 Signature of three credit lines indexed on ESG criteria

Through these new agreements, which form a continuity with two other credit lines indexed on the Group's sustainability performance signed in 2017 and 2018, EDF is reaffirming the central role of sustainable financing instruments in its finance strategy. ESG-indexed renewable credit lines now total more than €5 billion, accounting for around 45% of the EDF group's credit lines.

Signature by EDF and BBVA of a €300 million revolving credit facility

On 22 March 2019 EDF and BBVA signed a €300 million sustainability-indexed revolving credit facility which incorporates a pricing adjustment based on EDF's sustainability performance for CO2 emissions and energy efficiency.

The margin on this credit facility will be indexed to three of EDF's sustainability KPIs: direct CO2 emissions, electrification of its vehicle fleet, and use of online consumption monitoring tools by French residential customers.

Signature of two-bilateral sustainable revolving credit facilities with Crédit Agricole CIB and Societe Generale CIB

On 22 July 2019 EDF signed two €300 million sustainability-indexed revolving credit facilities which incorporate a pricing adjustment based on EDF's sustainability performance for CO2 emissions and energy efficiency. One facility, led by Crédit Agricole CIB, was signed with the Crédit Agricole Group and includes LCL and Crédit Agricole d'Ile-de-France, and the other was signed with Societe Generale CIB.

These two credit facilities incorporate an adjustment mechanism that links their cost to three of the Group's sustainability KPIs: direct CO2 emissions, use of online consumption monitoring tools by EDF's customers (as a proxy for EDF's success in getting French residential customers actively engaged with their energy consumption), and electrification of EDF's light vehicle fleet.

3.1.3 New developments in renewable energies

3.1.3.1 Finalisation of the acquisition of Luxel

On 1 April 2019, EDF Renewables acquired the Luxel Group, an independent photovoltaic energy operator in France which holds a portfolio of 1 GWc of projects already in operation, ready to build or under development. This acquisition significantly reinforces EDF Renewables' position in solar power in France, with a view to achieving the ambitious objectives in EDF's Solar Plan.

3.1.3.2 China offshore

On 25 March 2019 EDF signed two agreements for low-carbon projects in China.

- The cooperation agreement signed with China Energy Investment, a leading industrial player on China's electricity market, concerns EDF's acquisition of a stake in the Dongtai IV and V offshore wind power projects, located off the coast of Jiangsu Province north of Shanghai.

  The Dongtai IV project is currently being built, and construction of Dongtai V is scheduled to begin in 2019. Subject to execution of the final contracts, both partners will build and operate a total installed capacity of 500MW which will be gradually commissioned up until 2021.

- EDF and the electricity utility Huadian have signed a cooperation agreement to enhance the performance of a heating and air-conditioning network for one of the districts of the city of Wuhan in central China. The network will eventually provide heating for 100,000 customers and air-conditioning for 500,000 m^2 of office space. The signatories will jointly examine the feasibility of incorporating all the smart energy management tools that are already being used by the EDF Group for the heating network in the city of Sanmenxia.

3.1.3.3 Noor Midelt I solar project in Morocco

After a competitive international bidding process, the Moroccan Agency for Sustainable Energy (MASEN) announced that it had chosen the consortium formed by EDF (through its subsidiary EDF Renewables), Masdar (also known as the Abu Dhabi Future Energy Company), and Green of Africa (a Moroccan developer of renewable energies) for the design, construction, operation and maintenance of the first phase of the Noor Midelt I multi-technologies solar power plant.

With an installed capacity of 800MW, this hybrid solar project uses an innovative combination of concentrated solar power (CSP) and photovoltaic (PV) technologies.

The construction phase is expected to begin in the last quarter of 2019, and the plant should be commissioned in 2022.

3.1.3.4 Offshore windpower: the Saint Nazaire offshore wind farm project validated by the Council of State

In early June, the French Council of State validated the plan to build a 480MW 80-turbine wind farm off the west coast of France near Saint-Nazaire, dismissing the appeals filed by environmental associations. After examining the merits of the appeal proceedings, France's highest administrative court rejected the applications by the *Groupement des résidents pour la sauvegarde environnementale de La Baule* and the *Association pour la protection du site et de l'environnement de Sainte-Marguerite*.

The Council of State's ruling will enable EDF Renewables and its Canadian partner Enbridge to continue development of this project in preparation for a final investment decision, which is expected to be given in the second half of 2019.

3.1.3.5 Offshore windpower: the Dunkirk project awarded to the EDF Group-led consortium

Following a public tender procedure, France's Ministry for the Ecological and Inclusive Transition selected the EDF group, via its subsidiary EDF Renewables, in partnership with Innogy and Enbridge, to design, build, operate and maintain the future Dunkirk offshore wind farm off France's north coast.

This is the fourth offshore project that the Group has won through French government tender procedures, after its successful bids for three projects in 2012 at Saint-Nazaire, Fécamp and Courseulles-sur-Mer. The future Dunkirk wind farm will be more than 10km off the coast and will have installed capacity of almost 600MW. It will supply the equivalent of around 40% of the *Nord département's* electricity needs.

This wind farm is expected be commissioned in 2026.

3.1.4 "ERO 2019" employee shareholding plan

The Board of Directors of EDF decided on April 4, 2019 on the principle of an employee shareholding operation. This was carried out by the sale of 7,704,974 existing shares by the State to EDF which immediately sold them to eligible employees, former employees and retired employees. This operation does not constitute a capital increase for the Group.

The employee reserved offer (ERO) included a "leveraged" formula with a guarantee covering the employee's personal contribution in euros, and a "standard" formula. It was carried out through a French company mutual fund (*Fonds commun de placement d'entreprise*, or FCPE). A matching employer contribution was offered to employees in the "classic" formula.

The shares offered are ordinary shares, listed on the Euronext Paris stock market (Compartment A), with current dividend rights. Being acquired through the subscription of shares in a FCPE that is part of the Group Savings Plan, they are subject to a mandatory holding period of 5 years ending 16 July 2024, apart from cases of early release provided for by the regulations. Voting rights will be exercised by the Supervisory Board of the FCPE.

The sale price for these shares was fixed on 20 June 2019. It included a discount of 20% on the reference price based on the volume-weighted average price of EDF shares traded on Euronext Paris for the twenty trading days preceding the day when the price was set.

The shares were delivered on 16 July 2019.

The impacts of this employee shareholding plan are presented in note 9, "Other income and expenses".

3.1.5 Flamanville 3 EPR project

NB: The following information should be read in conjunction with the reminders of the key points of 2018 presented in note 3.2.3.

On 11 April 2019, EDF announced that it was aware of the opinion of the Permanent Group of experts for nuclear pressure equipment (GP ESPN), made public on 11 April 2019, regarding the quality deviations affecting the welds located on the main steam transfer pipes covered by the break preclusion principle of the Flamanville 3 EPR.

The Nuclear Safety Authority (ASN) had held a meeting of the GP ESPN on 9 April 2019 as part of its investigation into these quality deviations:

- On 3 December 2018, EDF submitted a technical file to the ASN presenting the procedures for repairing and upgrading the main secondary circuit welds, which had shown deficiencies with respect to the break preclusion requirements, as well as for the specific justification method for the 8 welds located in the reactor containment building structure.
- The file was examined by the ASN, with technical support from the Institute for Radiation Protection and Nuclear Safety (IRSN).
- Based on this examination, discussions took place at a GP ESPN meeting attended by EDF, which presented the background facts, their analysis and the methods for dealing with the issue. EDF answered all the Permanent Group of experts' questions for the technical examination of this file.

EDF indicated at the time that the recommendations and solution avenues suggested by the Permanent Group of experts could have an impact on the commissioning schedule and construction cost, and that the Group would continue its discussions with the ASN, which was to issue its decision regarding action to be taken on this matter a few weeks later.

Consequently, the Group stated that a detailed update of the schedule and construction cost for the Flamanville 3 EPR will be given after the ASN's decision has been published.

On 20 June 2019, EDF announced that it was aware of the decision issued by the ASN in its letter of 19 June 2019 regarding the quality deviations affecting the welds located on the main steam transfer pipes covered by the break preclusion principle of the Flamanville 3 EPR. EDF announced it would analyse the consequences of this decision for the schedule and cost of the Flamanville 3 EPR.

On 26 July 2019, EDF announced that three scenarios for upgrading the penetration welds were under consideration, and that after a detailed examination of the three scenarios and discussions with the ASN, the Group expects to communicate the schedule and cost implications of the selected scenario in the next few months. The Group also announced that at this stage, commissioning cannot be expected before the end of 2022.

This ASN decision has no impact on the Group's financial statements at 30 June 2019.

3.1.6 Taishan

Following the authorisation given by the Chinese nuclear safety authority in late May, the Taishan 2 EPR was connected to the power network on 23 June 2019, in preparation for the start of commercial operations by the end of the year.

Taishan 1 began commercial operations in December 2018 (see note 3.2.4).

3.2 SIGNIFICANT EVENTS AND TRANSACTIONS OF 2018

3.2.1 A new partner for EDF Renewables in twenty-four UK wind farms (first half of 2018)

On 29 June 2018, EDF Renewables sold a 49% minority stake in twenty-four of its UK wind farms (around 550MW), for the price of £701 million.

The new partnership with Dalmore Capital Limited and Pensions Infrastructure Platform, with investments from large UK local authority pension schemes, enabled EDF Renewables to continue to expand the renewable energy business.

EDF Renewables retained a 51% share in this portfolio of wind farms. It also continues to run the sites and to provide operations and maintenance and asset management services.

EDF Energy continues to purchase all of the electricity and ROCs (Renewables Obligation Certificates) generated by the wind farms, on market-standard terms.

The sale of this investment, which was considered as a transaction between shareholders with no change of control, was recognised in equity and had no impact on the Group's income statement (see the statement of Change in consolidated equity).

3.2.2 Completion of the sale of EDF's stake in Dunkerque LNG (second half of 2018)

Following a competitive auction process launched in early 2018, the EDF group announced on 29 June 2018 that it had entered into exclusive negotiations with two groups of investors for the disposal of its 65.01% interest in the share capital of Dunkerque LNG, owner and operator of the liquefied natural gas (LNG) terminal in Dunkirk.

Based on the prices paid by the two consortia, the average enterprise value for 100% of Dunkerque LNG amounted to €2.4 billion.

This transaction allowed Fluxys, already a 25% shareholder of Dunkerque LNG, to take control of and consolidate Dunkerque LNG with the support of Axa Investment Managers – Real Assets and Crédit Agricole Assurances.

EDF, as a customer of Dunkerque LNG, is still committed in the long term to the terminal, which continues to serve the Group's gas strategy.

Once the required regulatory approvals had been given, the EDF group completed the sale of its stake in the Dunkerque LNG terminal on 30 October 2018.

Following this sale, valuation of the long-term agreement between EDF and Dunkerque LNG for reservation of LNG regasification capacities led to recognition of a €737 million increase in provisions for onerous contract. Due the gain of €755 million generated, this operation had a net impact of €18 million on other income and expenses. It also contributed a €1.5 billion reduction in the EDF Group's net financial indebtedness, based on a sale price of approximately €1 billion net of cash transferred.

3.2.3 Flamanville 3 EPR project

NB: the reminders of the key points of 2018 presented below, which were included in the financial statements at 31 December 2018 published on 16 February 2019, should be read in conjunction with the developments in 2019 presented in note 3.1.5.

Major milestones were reached during 2018:

- Completion of cold functional testing, consisting of a large number of test operations including the leak performance test on the primary system at a pressure greater than 240 bar – higher than the pressure of this system once in operation;

- Successful testing of the reactor containment building in April 2018. This is an in-air test that checks the concrete structure's mechanical behaviour and airtightness by raising pressure inside the building to six times the outside air pressure;
- Integration of an instrumentation and control (I&C) configuration involving around 250 modifications, completed in early September 2018, so that hot functional testing can take place in a stable, coherent I&C configuration.

Equipment manufacturing and quality

At 31 December 2018, almost all the equipment for the nuclear island and the conventional island, had been delivered and assembled on site. The situation as regards the quality of equipment manufactured by Framatome for the primary system is described in the following paragraphs.

Vessel

The issue of the higher-than expected carbon content in the vessel head and bottom was examined by the French Nuclear Safety Authority ASN during the first half of 2017 on the basis of documentation submitted by Framatome under the supervision of EDF. Based on the opinion of a group of ASN-appointed experts, the ASN issued an opinion on 11 October 2017 concluding that the mechanical properties of the vessel head and bottom head were adequate for their uses, including in the event of an accident.

On 9 October 2018, the ASN authorised:

- the commissioning of the vessel bottom, subject to functional checks;
- the commissioning of the vessel head, for a limited operating life until 2024 unless the technical feasibility of checks comparable to the vessel bottom checks can be demonstrated.

EDF is currently working on development of in-service vessel head checks, in order to go back to the ASN later in 2019 for permission to retain the current vessel head if such checks are industrially feasible. If permission is not given, EDF could remain liable for some or all of the costs incurred to manufacture a replacement vessel head. These costs are not included in the target construction cost, since if they arise they would do so after the plant's commissioning. EDF SA has initiated arbitration proceedings against Areva SA on this matter.

Break preclusion and quality deviations in the welds of the main secondary system

On 30 November 2017, EDF declared a significant event to the ASN regarding the detection of a quality deviation in the welding of the secondary system that conducts the steam from the steam generators to the turbine of the Flamanville 3 EPR.

This system (main steam lines) was designed and manufactured according to the "break preclusion" concept, with stricter requirements for design, manufacture and in-service monitoring. These stricter requirements, requested by EDF, are backed up by a "high quality" requirement for the building of these systems.

Although these requirements were applied during the design phase, they were not properly incorporated into the welding work. Failure to meet these requirements does not necessarily entail non-compliance with the nuclear pressure equipment regulations.

From 21 March 2018, during an initial comprehensive inspection, EDF detected other quality deviations in welds on the pipes in the main secondary system of the Flamanville 3 EPR. The initial comprehensive inspection is a mandatory by law before commissioning plant, and mainly involves examination of the welds on the primary and secondary systems. It gives rise to an initial benchmark report on the state of plant before it begins operation.

In accordance with industrial procedures, the welds had been checked by the consortium of contractors in charge of manufacturing the system and each one had been declared compliant as the work was done.

On 10 April 2018 (see EDF's press release of the same date), EDF notified the ASN of a significant event relating to the detection of deviations in the performance checks on these welds (part of the main secondary system was already concerned by the insufficient application of the "break preclusion" requirements).

EDF therefore began a further inspection during the second quarter of 2018 of all 150 welds concerned in the main secondary system. Of these 150 welds:

- 87 welds were compliant with requirements;
- 33 welds had quality deficiencies and had to be repaired. The work on site to repair these welds began in late July 2018;

- EDF also decided to rework a further 20 welds which, although they had no defects, did not meet the break preclusion requirements defined by EDF during the EPR design phase. The files for adjustments to the first welds was sent to the ASN, and on-site welding work began in November 2018;
- for 10 other welds, EDF submitted a proposal to the ASN detailing a specific justification method to confirm the high level of safety at the plant throughout its operating life. After a final analysis this number was reduced to 8. It also became clear from checks that one of these eight welds had a small quality defect. The ASN will closely examine EDF's specific justification method in the next few months.

Commissioning schedule and construction costs

On 25 July 2018 (see EDF's press release of the same date), the Group presented an update concerning these inspections, and adjusted the Flamanville 3 EPR schedule and target construction costs.

- The target date for loading the nuclear fuel was scheduled for the end of the fourth quarter of 2019, with start-up and hot functional testing planned for late 2018;
- The target construction costs were revised from €10.5 billion to €10.9 billion (in 2015 euros, excluding borrowing costs).

On 21 January 2019 (see EDF's press release of the same date) EDF announced that the schedule for hot functional testing had been revised, and it is now expected to commence during the second half of February 2019.

The schedule and estimated construction costs remain tight. They include a timetable for receiving authorisations from the ASN as explained above, which among other factors is contingent on the ASN completing its examination of the methods proposed by EDF for repairing the welds in the main secondary system, as stated in the Group's press release of 31 January 2019.

On 29 January 2019 the Chairman of the ASN announced that the ASN will issue a statement in May 2019 concerning the validation programme for the welds in the main secondary system, saying "if it turns out that the eight welds in the reactor containment building structure also need reworking then it will not be possible to meet the deadline." A detailed update on progress on the Flamanville 3 EPR, particularly the schedule and construction cost, will be issued after the ASN's statement has been published. EDF is not currently in a position to assess the impact in the event the ASN does not validate the proposed approach.

3.2.4 Start of commercial operation by the first of two EPR reactors at China's Taishan nuclear power plant

On 14 December 2018, CGN and EDF announced that Taishan nuclear power plant's unit 1 had become the world's first EPR to begin commercial operation. This last milestone was reached on 13 December 2018 after successful completion of the final statutory test of continuous operation at full power for 168 hours, which showed that all the requirements for the reactor's safe operation were met.

Comprising two 1750-MW EPR reactors, Taishan nuclear power plant is the biggest cooperation project to have taken place between China and France in the energy sector. Taishan's two reactors are capable of supplying the Chinese power grid with up to 24TWh of carbon-free electricity a year, tantamount to the annual electricity consumption of 5 million Chinese users, whilst at the same time preventing the emission of 21 million tonnes of CO_2 a year.

The Taishan project is led by TNPJVC, a joint venture founded by CGN (51%), EDF (30%) and a regional Chinese utility called Yuedian (19%). The EDF Group and its subsidiary Framatome supplied the third-generation EPR technology, which meets the highest international safety standards. EDF also contributed operating experience gained from the construction of its Flamanville 3 EPR, and this was a crucial factor in successfully completing the initial phases of the Taishan 1 construction project.

Taishan 1 is providing its experience in project management and technological expertise for EPRs around the world. The first reactors to benefit from this experience are the two Hinkley Point C units currently being built in the UK. EDF and CGN are partners in two other British projects: the Sizewell C EPR project, and the Bradwell B project which is based on Hualong technology.

3.3 REGULATORY CHANGES IN FRANCE

3.3.1 France's multi-year energy programme (PPE)

On 25 January 2019, France's Ministry for the Ecological and Inclusive Transition issued the draft PPE, the oversight tool for the energy policy introduced by the French law on the energy transition for green growth adopted in 2015. In principle, the PPE covers two successive five-year periods. The first PPE published in October 2016 departed from this rule by setting out two successive periods of three and five years respectively, 2016-2018 and 2019-2023. The revised PPE, which is currently being finalised, will cover the periods 2019-2023 and 2024-2028. This draft PPE follows the Ministry's press release of 27 November 2018 presenting the government's targets for the multi-year programme and the national low-carbon strategy.

For nuclear electricity generation, the French government has now set the deadline of 2035 for reaching the objective of a 50% nuclear share in the national electricity mix. The objective set in the Energy Code should be modified accordingly. To achieve this objective, 14 nuclear reactors will have to be shut down by 2035, including the closure of the two reactors at Fessenheim "by spring 2020, in application of the cap on installed electronuclear power, so that the Flamanville EPR can be put into operation".

The schedule for these shutdowns would be aligned with the timing of the fifth 10-year inspections of the reactors concerned, except for 2 reactors scheduled for closure during the second period of the PPE, in 2027 and 2028, provided the criterion of secure supply is respected. If certain conditions relating to electricity prices and European electricity market trends are fulfilled, two additional reactors could also be shut down in 2025-2026 by a decision to be made in 2023.

The final version of the PPE will name the priority sites for these reactor shutdowns. All of the closures would be associated with State support for the regions concerned, mainly through an ecological transition contract to foster new local development dynamics.

The draft PPE is currently undergoing a consultation process before it can be adopted.

If the measures described above are confirmed in the final laws and regulations, the principal consequence of their adoption for the Group's financial statements will be recognition of the change in the expected shutdown date of two nuclear reactors to 2027 and 2028, ahead of their fifth 10-year inspection: this will have an impact on the value of nuclear provisions at the time of the change of estimate, and prospective modification of the depreciation period for the two units concerned. As this situation would bring forward the shutdown of two reactors in the Group's fleet by a few years, the various scenarios examined indicate that the potential effect on nuclear provisions, particularly the decommissioning provision, could be an increase of some tens of millions of euros, via an adjustment to the relevant balance sheet assets.

The French government is to propose the terms of a new system of regulations for existing nuclear plants that will protect consumers against rising market prices after 2025 by allowing them to benefit from the competitive advantage of investments made in the historical nuclear power plant fleet, while giving EDF the financial capacity to ensure economic sustainability of generation facilities and meet the requirements of the PPE in low-price scenarios.

The draft PPE also states that "the Government, together with the industry, will conduct a programme of work by mid-2021 to examine the questions of the cost of new nuclear energy production and its advantages and disadvantages in relation to other low-carbon generation methods, the possible financing models, the project management modalities for new reactor projects and public consultation, and matters relating to the management of waste generated by the potential new nuclear fleet. Based on this information and depending on developments in the energy situation, the Government will make a decision regarding the suitability of launching a renewal programme for nuclear installations".

For fossil-fired electricity generation, under the draft PPE the last coal-fired plants would be closed down by 2022, and no further authorisations would be issued for new electricity plants that use fossil fuels. The bill of law on energy and the climate of 30 April 2019 specifies the potential arrangements for implementing the draft PPE in this respect, leading to consequences for the operating life of coal-fired plants which are detailed below.

The draft PPE also sets the objective of a significant step-up in the pace of development of renewable energies.

The "PACTE" law

France's "PACTE" law for business growth and transformation was enacted on 22 May 2019 and published in the *Journal Officiel* on 23 May.

Article 126 of this law modifies the rules concerning self-consumption and broadens the definition of collective self-consumption in order to encourage experimentation.

Article 143 extends the scope of energy savings certificates to include facilities classified for environmental protection that are subject to greenhouse gas emission trading systems, by modifying article L.221-7 of the Energy Code.

Article 194 is designed to facilitate online billing for residential customers, and lays down certain obligations for suppliers, particularly to ensure that e-invoices are received by the customer.

Finally, articles 213, 214 and 215, which were intended to put an end to regulated electricity sales tariffs (for all but the smallest businesses) and regulated gas sales tariffs, were ruled contrary to the French Constitution, on the grounds that these provisions were riders with little connection to the initial draft of the law.

The energy and the climate law

The bill of law on energy and the climate, registered by the National Assembly's Presidential office on 30 April 2019 and amended by a letter of rectification of 12 June is under discussion by the French Parliament. It is expected to be adopted in autumn 2019. Its principal measures affecting the Group's business are the following:

Article 1 revises the objectives of France's energy policy in the light of results of preparatory work for the national low-carbon strategy and the Multi-Year Energy Programme (PPE):

- The objective of "dividing greenhouse gas emissions by four between 1990 and 2050" is replaced by the objective of "achieving carbon neutrality by 2050, by reducing greenhouse gas emissions by a factor of more than six between 1990 and 2050";
- The objective of "reducing primary fossil fuel energy consumption by 30% by 2030" is replaced by the objective of "reducing primary fossil fuel energy consumption by 40% by 2030";
- And finally, the time horizon for reducing the nuclear share of France's electricity output to 50% is no longer 2025 but 2035.

Article 3 of the proposed law on energy and the climate sets a maximum operating life for power plants generating the highest pollution, in order to limit greenhouse gas emissions in the electricity generation sector from 1 January 2022. As a result of this article, measures for coal-fired plant closures can begin at that date, with the provision of State support measures for their employees and subcontractors.

In this context, the Group has announced that it intends to close down Le Havre plant by the spring of 2021, and is still examining the possibilities of converting the Cordemais plant to a biomass plant. At the end of a meeting held on 24 January 2019, EDF and the Ministry for the Ecological and Inclusive Transition approved a programme of work prior to making a decision about the Ecocombust project. As announced in EDF's press release of 29 January 2019, by the autumn of 2019, this programme of work should help validate the technical trials, environmental impact studies and economic model for this conversion project. After that period, if the technical, economic and environmental conclusions are satisfactory, once discussions have been held with the Government and local communities, EDF will embark on the industrialisation stage, aiming to start producing the fuel in 2022. The Ecocombust project concerns the production of an innovative, ecological fuel that can be used to run heating or electricity generation facilities that currently run on coal. To ensure secure electricity supplies in the north-west quarter of France, especially Brittany, if the studies by RTE commissioned by the government confirm the need, some or all of the biomass produced could be used to provide 80% of the fuel for current units until 2026 and thus keep the electricity network in the west of France secure at the highest peak consumption times.

As a result, the ends of the depreciation periods for the Le Havre and Cordemais plants have been changed in the first half of 2019 and set at 2021 for Le Havre and 2026 for Cordemais. These estimates could be modified later, depending on the final decisions.

The principal consequence of this prospective modification of the depreciation periods in the Group's financial statements at 30 June 2019 is an increase of some €19 million in the depreciation expense (around €130 million at 31 December 2019, all other things being equal).

Article 8 of the proposed law aims to ensure that calculation of the price supplements in the ARENH mechanism for Regulated access to historic nuclear power incorporates the effect of the ceiling defined in article L.336-1 of the Energy Code in order to avoid any distorted signal that could trigger windfall effects detrimental to the public interest.

More broadly, as regards the ARENH system, the proposed law offers an opportunity to re-examine the price ceiling applied, and particularly to consider raising it.

Finally, the letter of rectification of 12 June 2019 added four articles on regulated sales tariffs. Practically speaking, these correspond to the provisions in the draft "PACTE" law that were rejected by the Constitutional Council, even though the option of legislating by ordinance included in the draft "PACTE" law was abandoned.

Article 9 sets out the terms for the discontinuation of regulated gas sales tariffs for all consumers, to bring French law into line with European Union law. Once the future energy and climate law has been enacted it will be impossible to subscribe a new natural gas contract on regulated sales tariffs. The existing regulated tariffs will subsequently be discontinued for small businesses one year after enactment of the law, and for all consumers from 1 July 2023. The necessary support measures for these tariff discontinuations are to be provided.

Articles 10 and following concern the regulated sales tariffs for electricity and gas. They reflect the consequences of the Council of State's decision of 18 May 2018, and transpose the EU directive on the internal electricity market, published in the Official Journal of the European Union (OJEU) on 14 June 2019, which requires discontinuation of regulated tariffs for business customers except the very smallest business types by 31 December 2020.

3.3.2 Regulated electricity sales tariffs in France – "Blue" tariffs

Council of State decision of 18 May 2018 and the EU directive

Legal challenges against the tariff decisions of 2016 and 2017 were brought before France's Council of State by Anode (the national association of retail energy operators) and Engie, on the grounds that the "blue" regulated electricity sales tariffs for residential and non-residential customers were contrary to European Union law.

Ruling on these challenges, by decisions of 18 May and 3 October 2018 the Council of State validated the principle of regulated electricity sales tariffs, notably acknowledging that they serve the public economic interest objective of guaranteeing consumers an electricity price that is more stable than market prices. The Council of State confirmed that this objective cannot be achieved by softer State intervention and that regulation of sales tariffs guarantees electricity firms equal access to consumers and is not discriminatory.

However, the Council of State considered that the tariff regulation is disproportionate in its duration, which is permanent, and its scope of application, which currently covers large business sites with subscribed power levels below 36kVA. These facts were cited as justification for partial cancellation of the tariff decisions of 28 July 2016 and 27 July 2017.

Directive (EU) 2019/944 of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU was published in the OJEU on 14 June 2019. This directive requires continuation of regulated sales tariffs for residential customers and very small businesses.

Implementation of the Council of State's decision and the new directive is the responsibility of the lawmaker. Since the Constitutional Council would not allow introduction of these measures in the "Pacte" law in May 2019, they have been incorporated into the proposed Energy law currently under discussion in the French Parliament.

Tariff changes

Since 8 December 2015, in accordance with the NOME Law on organisation of the French electricity market (articles L. 337-4 and L. 337-13 of the French Energy Code), the French Energy Regulatory Commission (*Commission de Régulation de l'Énergie* or CRE) has been responsible for sending the Ministers for the Economy and Energy its reasoned proposals for regulated electricity sales tariffs. If no objections are made within three months, the proposals are deemed to have been approved.

In a decision of 7 February 2019 published on 12 February 2019, the CRE proposed an increase of 7.7% (excluding taxes) in the "blue" regulated tariffs for residential customers and non-residential customers, or 5.9% including taxes. The government had announced in late 2018 that electricity tariffs would not increase during the winter period, and only approved the CRE's proposal in early May 2019. The tariff decisions of 28 May 2019 were published in the *Journal Officiel* of 30 May 2019 and took effect on 1 June 2019.

The consumer associations UFC Que Choisir and Consommation Cadre de Vie Logement (CLCV) have challenged these decisions through an ultra vires application to the Council of State requesting their cancellation, together with an urgent petition for suspension of execution of the decisions until a ruling on the merits of the case can be issued. In an ordinance of 12 July, the urgent applications judge refused to grant the suspension since there was no urgency.

Also, in a decision of 25 June 2019 published on 2 July 2019, the CRE, in compliance with the French Energy Code, proposed a tariff change on 1 August 2019 due to a change in the TURPE network access tariff from the same date.

The proposed change would result in an average increase of 1.47% excluding taxes or 1.23% including taxes for all "blue" tariffs meaning: 1.49% excluding taxes (1.26% including taxes) for "blue" tariffs for residential customers and 1.34% excluding taxes (1.10% including taxes) for "blue" tariffs for non-residential customers.

3.3.3 "TURPE" network access tariffs

On 17 November 2016, the CRE published its decisions for the TURPE 5 Transmission (high voltage) and TURPE 5 Distribution (medium voltage and low voltage) tariffs for the period 2017-2020. The new TURPE 5 tariff frame took effect on 1 August 2017.

TURPE 5 Transmission tariffs

The TURPE 5 Transmission tariff came into force with a 6.76% tariff increase effective from 1 August 2017, to be followed by subsequent rises on 1 August in the years 2018 to 2020, based on average inflation observed over the previous calendar year, adjusted by a correcting factor to balance the income and expenses adjustment account (CRCP) (1). The TURPE 5 Transmission tariff sets the weighted average cost of capital (WACC) at 6.125% for the return on RTE's asset base versus 7.25% for TURPE 4.

On 6 June 2019 the CRE adopted a decision concerning the TURPE 5 tariff for the high voltage network and its revision at 1 August 2019, following the average +3% increase on 1 August 2018. The tariff scale will increase by an average +2.16% from 1 August 2019, comprising +1.61% for inflation and +0.55% to balance the CRCP.

TURPE 5 and TURPE 5 bis Distribution tariffs

TURPE 5

The TURPE 5 Distribution tariff came into force with a 2.71% tariff increase, which took effect on 1 August 2017, to be followed by subsequent rises on 1 August in the years 2018 to 2020, based on average inflation observed over the previous calendar year, adjusted by a correcting factor to balance the CRCP. The TURPE 5 continues to use the previous method for calculating cost of capital, setting the margin on assets at 2.6% and the return on regulated equity at 4.1%.

Action against the TURPE 5 HTA/BT

- By a decision of 12 January 2017 published in the *Journal Officiel* of 17 January 2017; the French Minister for Energy, acting within the two-month response period, requested a new decision from the CRE as in its opinion the decision of 17 November 2016 had not taken national energy policy orientations into consideration. In a new decision of 19 January 2017, the CRE reiterated its initial decision of 17 November 2016. Both decisions were published in the *Journal Officiel* of 28 January 2017.
- On 2 February 2017, Enedis filed an application before the Council of State for cancellation of these two CRE decisions.
- On 3 February 2017, EDF, in its capacity as the shareholder of Enedis, also filed an application before the Council of State for cancellation of the same CRE decisions.
- By a decision of 9 March 2018, the Council of State partly cancelled the TURPE 5 decisions since the regulator "did not, in determining the cost of capital invested, apply, in addition to the 'risk premium', the 'risk-free rate' to the assets corresponding to items funded, at the time of renewal of installations, by recovery of the remaining portion of the provisions established during the tariff period covered by the 'TURPE 2' tariffs, and the corresponding portion of the installations handed over by the concessionary authorities to the network operator during the same period".

TURPE 5 bis HTA/BT

(1) A mechanism to measure and offset differences between the actual figures and the forecasts on which tariffs are based.

On 28 June 2018, the CRE adopted a decision regarding the TURPE 5 HTA-BT (medium voltage – low voltage) tariff and the change from 1 August 2018 to that tariff, known as the "second TURPE 5 HTA-BT". This decision included an adjustment of an average -0.21% to the TURPE 5 from 1 August 2018, following a combination of factors:

- Implementation of the Council of State's partial cancellation decision on 9 March 2018, and the concurrent application of a lower corporate income tax rate: these two effects almost totally offset each other over the period 2018-2020 (combined effect of +0.06%);
- The standard inflation-based adjustment at 1 August (+1%) and balancing of the CRCP (-1.27%);
- The -0.21% reduction is modulated according to the tariff structure: on average -1.16% for users of the medium voltage networks (HTA), -0.59% for low voltage networks (BT) above 36kVA, and +0.14% for low voltage networks (BT) below 36kVA.

This decision had no impact on the tariff preparation method, the operating expense trajectory, the principle of regulation for incentive purposes, or the regulations applicable to Linky meters. The change in the corporate income tax rate was equivalent to adjusting the return on regulated equity to 4% and the margin on assets to 2.5% (previously 4.1% and 2.6% respectively).

The decision also reiterated previous CRE decisions about expenses relating to customer management under a single contract (decision of 26 October 2017), via the management component, and collective auto consumption (decision of 7 June 2018), via the energy withdrawal component. It was published in the *Journal Officiel* on 29 July 2018.

In particular, to implement the Council of State's decision of 9 March 2018, the CRE added back an annual amount of around €1.6 billion in 2018 (and will add back declining amounts until 2073) to regulated equity. The CRE considers that this will lead to Enedis receiving additional remuneration equivalent to €750 million (in 2018 euros) expressed in the present value of pre-tax cash flows. This add-back to regulated equity results in remuneration of some €60 million per year in the first few years, on a basis that will reduce progressively until 2073 at a (nominal pre-tax) rate that may, under the present method, be revised by the CRE at each tariff period.

On 25 June 2019 the CRE adopted a decision concerning revision of the TURPE 5 tariff for the medium and low voltage network at 1 August 2019. The tariff scale will increase by an average +3.04% from 1 August 2019, comprising +1.61% for inflation, +1.45% to balance the CRCP, and -0.02% in application of the Council of State's decision of 9 March 2018.

Supplier commissioning

After Law 2017-1839 of 30 December 2017 confirmed the CRE's competence for supplier commissioning, the CRE issued a new decision on 18 January 2018, published in the *Journal Officiel* of 25 January 2018. This decision reiterated the principles adopted in its previous decision of 26 October 2017 regarding remuneration payable by distribution network operators to suppliers for their management of customers under a single contract.

The content of these decisions upheld the principle of identical commissions for all suppliers selling single-contract market-price offers. Only regulated electricity tariffs give rise to slightly lower commissions (€4.50 instead of €6.80 per point of delivery until 1 August 2019), and this difference will be progressively reduced to zero by 1 August 2022.

For remuneration of past customer management charges (prior to 1 January 2018), the CRE's decision set an amount it considered as a cap that can be passed on through the TURPE tariff.

However, Law 2017-1839 of 30 December 2017 introduced a measure intended to rule out the possibility of suppliers receiving remuneration from network managers for past customer management services.

On 23 December 2016, Engie brought an action against Enedis before the Paris Commercial Court claiming such remuneration. These legal proceedings are ongoing.

Electricity Equalisation Fund

On 22 March 2018, the CRE published its consultation on the levels of contribution due to the Electricity Equalisation Fund for EDF SEI and Électricité de Mayotte for the years 2018 to 2021. The annual average contribution to the Electricity Equalisation Fund for EDF SEI over this period, including the planned smart metering system, is €185 million.

On 29 April 2019 the Board of the Electricity Equalisation Fund ratified a plan setting Enedis' contribution at €160 million.

The draft amended decisions for the period 2012-2015 and the proposed decisions for the years 2016 and 2017 were examined by the Higher Energy Council on 14 May 2019 and published in the Journal Officiel on 21 June 2019.

Arrangements will be made for payment in instalments of the amounts outstanding for the years 2012-2017. The decision for the year 2018 is to be made later, under the same principles as for the years 2016 and 2017.

3.3.4 Compensation for public energy service charges (CSPE)

Legal and regulatory framework

The legal and regulatory framework for the mechanism for compensation for public energy service charges is described in note 4.4 to the consolidated financial statements at 31 December 2018.

Public service charges borne by EDF

The amount of expenses (excluding the annual contribution to repayment and associated interest) to be compensated to EDF for the first half of 2019 is €3,976 million.

The amounts received between 1 January and 30 June 2019 (excluding the annual contribution to repayment and associated interest) totalled €3,786 million (including €2,480 million for the dedicated "energy transition" budget account and €1,306 million for the general budget).

A repayment schedule for EDF's receivable corresponding to the accumulated shortfall in compensation, which amounted to €5,780 million at 31 December 2015, was set out in the ministerial decision of 13 May 2016, amended on 2 December 2016. Under this schedule the receivable will be fully repaid by 2020. On 22 December 2016 EDF securitised a portion of this receivable (€1.5 billion) through a State-approved "Dailly law" assignment. Consequently, since 1 January 2017 EDF has received 73.6% of payments made by the State in reimbursement of the receivable as set out in the repayment schedule. The remainder is paid directly to the assignees.

During the first half of 2019, the State paid EDF €541 million of the principal amount of the financial receivable. This represents 40% of the €1,354 million due by the State in 2019, i.e. the minimum repayment for the first half-year stipulated in the commitments made. At 30 June 2019, the outstanding CSPE financial receivable amounted to €1,472 million (principal only).

Finally, in accordance with decree 2016-158 of 18 February 2016 concerning compensation for public energy service charges, on 12 July 2018 the CRE published its decision 2018-156 providing a forecast of charges for 2019 (€7,206 million for EDF).

3.3.5 French capacity mechanism

The French capacity mechanism took effect on 1 January 2017. It was introduced by France's Energy Code to ensure secure national power supplies in the long term.

In capacity auctions for 2018, the market reference price for 2017 and 2018 were €10.00/kW and €9.34/kW respectively.

Several auctions of capacity for 2019 were held on the European Power Exchange EPEX SPOT in 2017 and 2018.

The market reference price for 2019 was established after the auction of 13 December 2018, the last before the year of delivery: it was €17.37/kW.

At the "rebalancing" auction held on 16 May 2019 for the year 2019, the price was €0.00/kW.

The first three auctions for energy deliveries in 2020 took place in the first half of 2019. The March and May sessions resulted in a price of €20.0/kW, while the June auction resulted in a price of €22.4/kW.

3.3.6 Energy savings certificates

Decree 2017-690 of 2 May 2017 issued by the French Ministry for the Environment, Energy and the Sea, published in the *Journal Officiel* on 3 May 2017, sets the obligation levels for the fourth period of energy savings obligations to run from 1 January 2018 to 31 December 2020. The overall level of obligations for this three-year period is substantially increased by the decree: 1,200TWhc for the "standard" obligations and 400TWhc for the obligations that are to benefit the poorest households, compared to 700TWhc and 150TWhc respectively for the previous period.

Energy sellers may fulfil their obligation in three ways: by supporting consumers in their energy efficiency operations, funding ministry-approved energy savings certificate schemes, and purchasing certificates from eligible actors. Any surplus "stock" of certificates gained in the previous period also contributes to fulfilment of the obligation. If there is a shortfall at the end of the period, obligated actors must pay the Treasury the fine of €15 per MWhc of shortfall laid down in Article L. 221-4 of the Energy Code.

The EDF group is making every effort to gradually increase its number of certificates in order to meet the objective set by the State. Certificates gained increased by 43% between 2017 and 2018, and will continue to rise significantly thanks to new actions introduced in the last six months ("coups de pouce" action, programmes, etc). However, the significant increase in obligations combined with the current lack of depth in the energy savings certificates market, whose future liquidity is uncertain, expose the Group to the risk of a shortfall in certificates for the fourth period (see note 20.4.1). A draft decree ratifying a one-year extension to the fourth period under identical annual obligations was submitted to the Higher Energy Council on 9 July.

3.3.7 ARENH

For the ARENH applications of November 2018, demand from alternative suppliers totalled 132.98TWh, more than the legal maximum. EDF will therefore deliver 100TWh under the ARENH system for supply to competitors' final customers. Subscriptions to cover network losses amounted to 20.4TWh

These applications were made at a time when the ARENH price (which includes a capacity guarantee in its €42/MWh) was competitive in comparison to forward baseload prices for 2019.

No ARENH applications were made during the May 2019 session, and consequently no changes were made to the ARENH deliveries for 2019.

In decisions no. 2018-222 of 25 October 2018 and no. 2019-090 of 9 May 2019, as required by the Energy Code the CRE set out the method for allocating ARENH volumes when applications exceed the legal maximum. These decisions stipulated that if the ARENH was oversubscribed in November 2018 or May 2019, curtailment would only apply to new ARENH applications made in the session that exceeded the maximum, and that EDF-controlled subsidiaries' excess applications would be fully curtailed (this does not apply to network operators). Finally, the decisions stated that EDF-controlled subsidiaries could enter into contracts with the parent company replicating the ARENH system and the terms of supply, particularly the curtailment rate for alternative suppliers. In the method proposed by the CRE in decision no. 2019-28 on the calculation of regulated sales tariffs for electricity, this curtailment mechanism, when applied, makes reference to market prices more influential in determining regulated sales tariffs, and all other things being equal, also increases the price of the energy component.

NOTE 4 CHANGES IN THE SCOPE OF CONSOLIDATION

There was no significant change in the Group's scope of consolidation during the first half of 2019, apart from the operations presented in note 3.

NOTE 5 SEGMENT REPORTING

Segment reporting presentation complies with IFRS 8, "Operating segments".

Segment reporting is determined before inter-segment eliminations and where applicable comprises the effects on profit and loss of asset and liability revaluations due to acquisition of control as defined by IFRS 3.

In accordance with IFRS 8, the breakdown used by the EDF group corresponds to the operating segments as regularly reviewed by the Management Committee (the Group's chief operating decision-maker).

5.1 AT 30 JUNE 2019

(in millions of euros)	France – Generation and Supply	France – Regulated activities	Framatome	United Kingdom	Italy	Other international	EDF Renewables	Dalkia	Other activities	Inter-segment eliminations	Total
Income statements:											
External sales	13,725	8,293	854	4,536	4,016	1,285	506	1,818	1,436	-	36,469
Inter-segment sales	574	14	683	-	13	80	270	334	234	(2,202)	-
TOTAL SALES	14,299	8,307	1,537	4,536	4,029	1,365	776	2,152	1,670	(2,202)	36,469
OPERATING PROFIT BEFORE DEPRECIATION AND AMORTISATION	3,971	2,578	203	128	328	166	405	195	501	(129)	8,346
OPERATING PROFIT	1,907	961	47	(373)	134	3	161	59	902	(129)	3,672

5.2 AT 30 JUNE 2018

(in millions of euros)	France – Generation and Supply	France – Regulated activities	Framatome	United Kingdom	Italy (1)	Other international	EDF Renewables	Dalkia	Other activities	Inter-segment eliminations	Total
Income statements:											
External sales	13,068	8,390	862	4,603	3,887	1,058	525	1,705	864	-	34,962
Inter-segment sales	584	15	638	2	13	89	210	304	420	(2,275)	-
TOTAL SALES	13,652	8,405	1,500	4,605	3,900	1,147	735	2,009	1,284	(2,275)	34,962
OPERATING PROFIT BEFORE DEPRECIATION AND AMORTISATION	3,578	2,663	194	485	238	117	360	159	376	(108)	8,062
OPERATING PROFIT	1,934	1,157	92	(24)	59	(17)	94	56	352	(108)	3,595

(1) Restated for the impacts of IFRS 5 concerning the E&P discontinued operations.

INCOME STATEMENT

NOTE 6 SALES

Sales are comprised of:

(in millions of euros)	H1 2019	H1 2018
Sales of energy and energy-related services	33,775	32,569
Other sales of goods and services	2,062	1,921
Trading	632	472
SALES	36,469	34,962

After elimination of changes in foreign exchange rates and the scope of consolidation, sales for the first half of 2019 showed growth of 3.7% or €1.3 billion, principally in the France – Generation and supply activities segment (+4.8% or +€0.6 billion) and in the Other activities segment (+€0.6 billion, including +€0.4 billion for gas activities). These are adjusted contributive figures.

The rise in sales in France in the first half of 2019 mainly reflects a favourable price effect on market-price offers (energy and capacity component). For sales at the regulated sales tariff, the price effect over the period was limited as the indexed adjustment of tariffs (a +7.7% increase in the "blue" tariffs for residential and non-residential customers) took effect at 1 June.

NOTE 7 OTHER OPERATING INCOME AND EXPENSES

Other operating income and expenses mainly include the amount received or receivable by EDF under the CSPE (*Contribution au Service Public de l'Électricité* - Contribution to the Public Electricity Service) system which is reflected in the consolidated financial statements by recognition of income of €3,976 million for the first half of 2019 (€3,611 million for the first half of 2018). Other operating income and expenses also include costs relating to energy savings certificates, which were higher in the first half of 2019 than the first half of 2018, principally due to a price effect.

NOTE 8 IMPAIRMENT / REVERSALS

Impairment tests are conducted for the half-year financial statements when there is an indication of loss of value.

The Group recognised €(45) million of impairment during the first half of 2019 due to risks specific to certain assets.

Impairment of €(57) million was booked during the first half of 2018 in respect of certain specific assets.

NOTE 9 OTHER INCOME AND EXPENSES

Other income and expenses amount to €(149) million for the first half of 2019.

They mainly comprise the €30 million cost of the ERO 2019 employee shareholding offer undertaken during the first half of 2019 (see note 3.1.4), and restructuring provisions in certain Group entities.

Other income and expenses amounted to €(56) million for the first half of 2018.

NOTE 10 FINANCIAL RESULT

10.1 DISCOUNT EFFECT

The cost of unwinding the discount and, where relevant, the effect of changes in discount rates, mainly concern provisions for the back-end of the nuclear cycle, decommissioning and last cores, and long-term and post-employment employee benefits.

Details of this expense are as follows:

(in millions of euros)	H1 2019	H1 2018
Provisions for long-term and post-employment employee benefits	(463)	(433)
Provisions for the back-end of the nuclear cycle, decommissioning and last cores [(1)]	(1,270)	(1,226)
Other provisions and advances	(68)	(38)
DISCOUNT EFFECT	(1,801)	(1,697)

(1) *Including the effect of discounting the receivable corresponding to amounts reimbursable by the NLF in the United Kingdom (see note 16.3).*

10.2 OTHER FINANCIAL INCOME AND EXPENSES

Other financial income and expenses comprise:

(in millions of euros)	H1 2019	H1 2018
Gains/(losses)on financial assets	434	329
Changes in financial instruments carried at fair value through profit and loss	1,729	103
Other	433	429
OTHER FINANCIAL INCOME AND EXPENSES	2,596	861

Gains/(losses) on financial instruments consist of income on cash and cash equivalents and income and expenses on debt and equity securities and other financial assets.

Changes in other financial income and expenses in the first half of 2019 include €1,729 million of changes in the fair value of financial instruments (€1,801 million of which concern dedicated assets).

They also include €39 million of gains and losses on sale of debt securities carried at fair value through OCI with recycling (€38 million of which concern dedicated assets).

In the first half of 2018, changes in financial instruments included €110 million of changes in the fair value of debt and equity securities (€119 million of which concerned dedicated assets). Gains and losses on sale of debt securities carried at fair value through OCI with recycling amounted to €20 million, €4 million of which concerned dedicated assets.

NOTE 11 INCOME TAXES

The income tax expense amounts to €(1,020) million for the first half of 2019, corresponding to an effective tax rate of 28,8% (compared to an expense of €(582) million corresponding to an effective tax rate of 29.4% for the first half of 2018).

The increase of €(438) million in the income tax expense in 2019 essentially reflects the +€1,565 million increase in net income before taxes, generating an additional tax charge of €(539) million in application of the French income tax rate of 34.43% for 2019, adopted on 11 July 2019.

After eliminating non-recurring items (mainly the sale of the investment in Alpiq), the effective tax rate for 2019 is 32.7%. The effective tax rate for 2018 after elimination of non-recurring items was 29.1%.

NOTE 12 NET INCOME OF DISCONTINUED OPERATIONS

The specific line "Net income of discontinued operations" comprises income statement items for Edison's E&P operations for the first half-years of 2018 and 2019, and impairment recognised in respect of these assets in both these periods. In the first half of 2019, this includes €(425) million of impairment on the assets and liabilities concerned, determined as the difference between the book value and the fair value net of costs to sell (see note 2.3.1).

The principal profit and loss indicators for Edison's E&P operations in these periods are as follows:

(in millions of euros)	H1 2019	H1 2018
Sales	209	213
Operating profit before depreciation and amortisation	148	169
Operating profit	64	66
Financial result	(13)	(19)
Income taxes	(36)	(43)
NET INCOME OF EDISON'S E&P OPERATIONS	15	4
Impairment of discontinued operations, net of income taxes	(425)	(11)
NET INCOME OF DISCONTINUED OPERATIONS	(410)	(7)

NOTE 13 GOODWILL

At 30 June 2019 goodwill mainly concerns EDF Energy (€7,561 million) and Framatome (€1,325 million).

No significant change was observed during the first half of 2019.

NOTE 14 PROPERTY, PLANT AND EQUIPMENT

The net value of property, plant and equipment breaks down as follows:

(in millions of euros)	30/06/2019	31/12/2018
Property, plant and equipment	55,354	54,677
Property, plant and equipment in progress	1,930	1,838
PROPERTY, PLANT AND EQUIPMENT OPERATED UNDER FRENCH PUBLIC ELECTRICITY DISTRIBUTION CONCESSIONS	57,284	56,515
Property, plant and equipment	5,692	6,026
Property, plant and equipment in progress	1,100	1,313
PROPERTY, PLANT AND EQUIPMENT OPERATED UNDER CONCESSIONS FOR OTHER ACTIVITIES	6,792	7,339
Property, plant and equipment	46,940	47,779
Property, plant and equipment in progress	33,029	30,377
Finance-leased property, plant and equipment (1)	n/a	96
Rights of use related to lease contracts (1)	4,304	n/a
PROPERTY, PLANT AND EQUIPMENT USED IN GENERATION AND OTHER TANGIBLE ASSETS OWNED BY THE GROUP	84,273	78,252

(1) *At 31 December 2018, these assets solely comprise finance-leased assets (€96 million).*
At 30 June 2019, they also include assets related to leases by all Group subsidiaries as lessee (IFRS 16).

The change observed in these assets in 2019 notably concerns reclassification of the assets of Edison's E&P operations as assets held for sale, in the amount of €(1,264) million.

At 30 June 2019, property, plant and equipment in progress used in generation owned by the Group mainly concern the EPR reactors at Flamanville 3 amounting to €13,016 million including capitalised interim interest of €2,811 million (€12,479 million including €2,622 million at 31 December 2018, i.e an increase of €348 million over the half-year excluding capitalised interim interest). This item also includes investments concerning Hinkley Point C (€8,681 million including capitalised interim interest of €134 million).

The capitalised value of the Flamanville 3 EPR project in the financial statements at 30 June 2019 is €10,416 million excluding borrowing costs (€10,224 million in property, plant and equipment in progress and €192 million (1) in property, plant and equipment in operation). This includes the following, in addition to the construction cost:

- an inventory of spare parts and capitalised amounts totalling €363 million for related projects (notably the initial comprehensive inspection and North Area development);
- €571 million of pre-operating expenses and other property, plant and equipment related to the Flamanville 3 EPR project;
- and also the elimination of internal balances on balance sheet items and margins between Framatome and EDF SA in connection with the Flamanville 3 EPR project (€444 million, essentially consisting of advances and progress payments),

giving a construction cost at historical value of €9,482 million in the consolidated financial statements at 30 June 2019.

(1) *€248 million gross, less €56 million of depreciation.*

The net value of property, plant and equipment used in generation and other tangible assets owned by the Group breaks down as follows:

(in millions of euros)	Land and buildings	Networks	Nuclear power plants	Fossil-fired and hydropower plants	Other installations, plant, machinery and equipment and other	Total
NET VALUES AT 30/06/2019	5,701	7	23,862	6,069	11,301	46,940
Net values at 31/12/2018	5,777	6	24,166	6,846	10,984	47,779

NOTE 15 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES

Investments in associates and joint ventures are as follows:

		30/06/2019			30/06/2018	31/12/2018	
(in millions of euros)	Principal Activity [(1)]	Ownership %	Share of net equity	Share of net income	Share of net income	Share of net equity	Share of net income
Principal investments in associates							
CTE	O	50.10	1,259	128	153	1,406	283
CENG	G	49.99	1,740	68	54	1,667	102
Taishan (TNPJVC) [(2)]	G	30.00	n.c.	n.c.	4	984	(2)
Alpiq [(3)]	G, D, O, T	n/a	n/a	11	(5)	622	(41)
Other investments in associates and joint ventures			n.c.	n.c.	159	3,608	227
TOTAL			7,609	352	365	8,287	569

n/a = not applicable
n.c. = not communicated
(1) *G = generation, D = distribution, T = transmission, O = other*
(2) *The financial data for Taishan at 30 June 2019 are not reported in this table as CGN (Taishan's parent company) publishes its consolidated financial statements after the Group.*
(3) *Alpiq was sold on 28 May 2019 (see note 3.1.1). As Alpiq publishes its consolidated financial statements after the Group, the figures above include an estimate of its contribution at the date of the sale (including the 2018 final results published by Alpiq in March 2019).*

Other investments in associates and joint ventures are Nam Theun Power Company (NTPC), Compagnie Énergétique de Sinop (CES), Jiangxi Datang International Fuzhou Power Generation Company Ltd and certain entities owned by EDF Renewables and EDF SA.

Impairment of €(28) million was booked in respect of associates in the first half of 2019.

No impairment was recognised on associates in the first half of 2018.

15.1 COENTREPRISE DE TRANSPORT D'ELECTRICITE (CTE)

CTE's affiliate, RTE (Réseau de Transport d'Électricité), is responsible for managing the high voltage and very high voltage public electricity transmission network. Enedis uses RTE's network to convey energy to the distribution network.

15.2 CENG

15.2.1 Transactions between the EDF group and CENG

At 30 June 2019, the main operations between the EDF group and CENG concern the power purchase agreements between CENG and the Group (EDF Trading North America). These agreements provide for delivery to EDF Trading North America of 49.99% of the power output from CENG's three plants at market price.

These electricity sales by CENG to EDF Trading North America represented a volume of 8.1TWh in the first half of 2019.

15.2.2 Impairment

At 31 December 2018, the updated impairment test for CENG assets indicated that the recoverable value of the investment was higher than the book value, mainly due to the new long-term price curves published by external organisations over the second half-year, and the effects of the tax reform in the US. However, given the specific context of the asset, there was no partial recovery of the impairment booked previously.

At 30 June 2019, the impairment test conducted confirmed the conclusions of the test at 31 December 2018, in a similar context.

Calculation of the value is sensitive to several assumptions, particularly concerning the long-term existence of New York State's Zero Emission Credit (ZEC) programme of subsidies for nuclear power plants, which provides additional income for the Ginna and Nine Mile Point plants. This programme is currently the subject of legal proceedings and its continuation could be called into question.

In addition, there are uncertainties relating to several key assumptions for the valuation of the investment in CENG (e.g. the market environment, legal framework, changes in energy policies, and the Group's lack of control over strategy-setting). The calculation of recoverable value thus includes a specific risk premium.

Under the terms of the agreement with Exelon, EDF has an option to sell its share in CENG to Exelon at fair value, exercisable between January 2016 and June 2022.

15.3 TAISHAN

EDF owns 30% of Taishan Nuclear Power Joint Venture Company Limited (TNPJVC), which was set up to build and operate two EPR nuclear reactors in Taishan, in the province of Guangdong in China. CGN holds a 51% stake and Yudean a 19% stake.

Framatome has two contracts with TNPJVC:

- supply of two EPR nuclear islands in a consortium with CNPDC and CNPEC;
- delivery of fuels (initial core and first refuelling for each unit).

Following the start of commercial operation by the first reactor on 13 December 2018 (see note 3.2.4), the second reactor is due to be commissioned by the end of 2019 (see note 3.1.6).

On 20 March 2019, the NDRC (National Development and Reform Commission) attributed regulated tariffs to the first three 3rd-generation nuclear projects in China, one of which is Taishan.

The tariff attributed to Taishan is set at RMB435/MWh until the end of 2021, with retroactive effect to the date the first reactor was commissioned (13 December 2018).

Indexing mechanisms and the post-2021 tariff levels were not set out in this decision.

In view of the uncertainty, the business plan was updated to incorporate this temporary tariff decision. This did not lead to recognition of any impairment on these assets in the financial statements at 30 June 2019.

NOTE 16 CURRENT AND NON-CURRENT FINANCIAL ASSETS

16.1 BREAKDOWN BETWEEN CURRENT AND NON-CURRENT FINANCIAL ASSETS

Current and non-current financial assets break down as follows:

	30/06/2019			31/12/2018		
(in millions of euros)	Current	Non-current	Total	Current	Non-current	Total
Instruments at fair value through OCI with recycling	17,828	5,669	23,497	17,659	5,279	**22,938**
Instruments at fair value through OCI with no recycling	30	437	467	6	407	**413**
Instruments at fair value through profit and loss	1,885	18,646	20,531	3,175	16,985	**20,160**
Debt and equity securities	***19,743***	***24,752***	***44,495***	***20,840***	***22,671***	***43,511***
Positive fair value of trading derivatives	5,810	-	5,810	6,404	-	**6,404**
Positive fair value of hedging derivatives	1,505	3,355	4,860	1,646	2,737	**4,383**
Loans and financial receivables [(1)]	1,855	12,145	14,000	2,253	11,696	**13,949**
CURRENT AND NON-CURRENT FINANCIAL ASSETS	28,913	40,252	69,165	31,143	37,104	68,247

(1) *Including impairment of €(309) million at 30 June 2019 (€(281) million at 31 December 2018).*

16.2 DEBT AND EQUITY SECURITIES

Details of debt and equity securities are shown in the table below.

	30/06/2019				31/12/2018
(in millions of euros)	At fair value through OCI with recycling	At fair value through OCI with no recycling	At fair value through profit and loss	Total	Total
Debt and equity securities					
EDF dedicated assets	5,828	-	18,170	**23,998**	21,820
Liquid assets	17,579	-	1,641	**19,220**	20,538
Other securities [(1)]	90	467	720	**1,277**	1,153
TOTAL	23,497	467	20,531	44,495	43,511

(1) *Investments in non-consolidated companies, principally EDF Invest.*

Information on EDF's dedicated assets is given in note 24. The general management policy for dedicated assets is presented in note 45 of the consolidated financial statements for the year ended 31 December 2018.

16.3 LOANS AND FINANCIAL RECEIVABLES

Loans and financial receivables are recorded at amortised cost.

(in millions of euros)	30/06/2019	31/12/2018
Loans and financial receivables - amounts receivable from the NLF	9,779	9,220
Loans and financial receivables – CSPE [(1)]	1,512	2,060
Loans and financial receivables - other	2,709	2,669
LOANS AND FINANCIAL RECEIVABLES	14,000	13,949

(1) *Including €1,512 million allocated to dedicated assets at 30 June 2019 (€2,060 million at 31 December 2018).*

At 30 June 2019, loans and financial receivables mainly include:

- amounts representing reimbursements receivable from the NLF and the British government for coverage of long-term nuclear obligations, totalling €9,779 million at 30 June 2019 (€9,220 million at 31 December 2018), discounted at the same rate as the provisions they finance;
- the receivable corresponding to the balance of the shortfall in the Contribution to the Public Electricity Service (CSPE) at 31 December 2018 and the costs of bearing that shortfall. Reimbursements received during the first half of 2019 amounted to €562 million (€529 million in the first half of 2018), in line with the schedule published in the ministerial orders of 13 May 2016 and 2 December 2016, made in application of Article R. 121-31 of the French Energy Code. This CSPE receivable is allocated in its entirety to dedicated assets.

NOTE 17 TRADE RECEIVABLES

Details of net trade receivables are as follows:

(in millions of euros)	30/06/2019	31/12/2018
Trade receivables, gross value – excluding EDF Trading	13,492	14,468
Trade receivables, gross value – EDF Trading	1,676	2,446
Impairment	(1,003)	(1,004)
TRADE RECEIVABLES, NET VALUE	14,165	15,910

Most trade receivables mature within one year.

Advances received from customers in France who pay in regular monthly instalments, amounting to €7,029 million at 30 June 2019 (€6,827 million at 31 December 2018), are deducted from trade receivables.

Contract assets

Contract assets are rights held by an entity to receive a consideration in return for goods or services supplied to customers, when such rights are conditional on something other than the passage of time.

The contract assets included in receivables represent an amount of €439 million at 31 December 2018 and €353 million at 30 June 2019, and mainly concern the Framatome, Dalkia and EDF Renewables operating segments.

NOTE 18 OTHER RECEIVABLES

At 30 June 2019, other receivables principally include tax receivables of €1,970 million (€2,475 million at 31 December 2018) and prepaid expenses of €1,532 million (€1,719 million at 31 December 2018). They also include a receivable corresponding to the shortfall in the CSPE, amounting to €1,023 million (€799 million at 31 December 2018). The rest of the CSPE receivable is included in loans and financial receivables (see note 16.3).

NOTE 19 EQUITY

19.1 SHARE CAPITAL

At 30 June 2019, EDF's share capital amounts to €1,525,484,813 comprising 3,050,969,626 fully subscribed and paid-up shares with nominal value of €0.50, owned 83,74% by the French State, 14,97% by the public (institutional and private investors) and 1,13% by current and retired Group employees, with 0,16% held by EDF as treasury shares.

In June 2019, payment of the interim dividend for 2018 in the form of a scrip dividend led to a €20 million increase in the share capital and an issue premium of €431 million following issuance of 40,701,950 new shares. The legal formalities for this operation were finalised in June 2019.

Under Article L. 111-67 of the French Energy Code, the French State must hold more than 70% of the capital of EDF at all times.

19.2 DIVIDENDS

The General Shareholders' Meeting of 16 May 2019 decided to distribute an ordinary dividend of €0.31 per share in respect of 2018, offering shareholders the choice of payment in cash or shares (scrip option).

In application of Article 24 of the Company's articles of association, shareholders who had held their shares continuously for at least 2 years at the year-end and still held them at the dividend distribution date benefit from a 10% bonus on their dividends. The number of shares carrying an entitlement to the bonus dividend cannot exceed 0.5% of the Company's capital per shareholder. The bonus dividend amounts to €0.341 per share.

As interim dividends of €0.15 per share had been paid in the form of new shares or cash on 10 December 2018, the balance payable for 2018 amounted to €0.16 per share benefiting from the ordinary dividend and €0.191 per share benefiting from the bonus dividend. The balance of the dividend was paid out on 18 June 2019.

The French government opted for the scrip dividend for the balance of 2018 dividends payable.

The amount of the balance of the 2018 cash dividend paid to shareholders who did not opt for the scrip dividend for 2018 amounts to €31 million.

19.3 EQUITY INSTRUMENTS

At 30 June 2019, perpetual subordinated bonds are carried in equity at the amount of €10,101 million (net of transaction costs).

Interest paid by EDF to the bearers of perpetual subordinated bonds totalled €334 million in the first half of 2019 and €584 million in the year 2018. The resulting cash pay-out is reflected in a corresponding reduction in Group equity.

In the second half of 2019, EDF paid interest of around €173 million to the bearers of perpetual subordinated bonds in July 2019.

19.4 CHANGES IN THE FAIR VALUE OF FINANCIAL INSTRUMENTS

19.4.1 Debt and equity instruments

Changes in the fair value of debt and equity instruments were recorded in equity (EDF share) over the period as follows:

(in millions of euros)	H1 2019 Gross changes in fair value recorded in OCI with no recycling(1)	H1 2019 Gross changes in fair value recorded in OCI with recycling (1)	H1 2019 Gross changes in fair value recycled to profit and loss (2)	H1 2018 Gross changes in fair value recorded in OCI with no recycling(1)	H1 2018 Gross changes in fair value recorded in OCI with recycling (1)	H1 2018 Gross changes in fair value recycled to profit and loss (2)
EDF dedicated assets	-	303	38	-	(31)	4
Liquid assets	-	112	1	-	(64)	16
Other assets	3	-	-	(2)	-	-
DEBT AND EQUITY INSTRUMENTS (3)	**3**	**415**	**39**	**(2)**	**(95)**	**20**

(1) + / ( ): increase / (decrease) in equity (EDF share).
(2) + / ( ): increase / (decrease) in income (EDF share).
(3) Excluding associates and joint ventures.

In the first half of 2019, gross changes in fair value principally concern EDF (€376 million, including €265 million for dedicated assets).

In the first half of 2018, gross changes in fair value principally concerned EDF (€(115) million, including €(35) million for dedicated assets).

19.4.2 Hedging instruments

Changes during the period in the fair value of hedging instruments included in equity (EDF share) are detailed below:

(in millions of euros)	H1 2019 Gross changes in fair value recorded in equity (1)	H1 2019 Gross changes in fair value transferred to profit and loss - Recycling (2)	H1 2019 Gross changes in fair value charged to profit and loss - Ineffectiveness	H1 2018 Gross changes in fair value recorded in equity (1)	H1 2018 Gross changes in fair value transferred to profit and loss - Recycling (2)	H1 2018 Gross changes in fair value charged to profit and loss - Ineffectiveness
Interest rate hedging	(62)	-	1	(29)	-	-
Exchange rate hedging	(689)	(465)	15	420	274	(10)
Net foreign investment hedging	(3)	(407)	-	(73)	-	-
Commodity hedging	1,116	482	6	(511)	(495)	-
HEDGING INSTRUMENTS (3)	**362**	**(390)**	**22**	**(193)**	**(221)**	**(10)**

(1) *+ / ( ): increase / (decrease) in equity (EDF share).*
(2) *+ / ( ): increase / (decrease) in income (EDF share).*
(3) *Excluding associates and joint ventures.*

NOTE 20 PROVISIONS

20.1 BREAKDOWN BETWEEN CURRENT AND NON-CURRENT PROVISIONS

The breakdown between current and non-current provisions is as follows:

		30/06/2019			31/12/2018		
(in millions of euros)	Notes	Current	Non-current	Total	Current	Non-current	Total
Provisions for the back-end of the nuclear cycle		1,512	22,747	24,259	1,515	22,362	23,877
Provisions for decommissioning and last cores		341	27,869	28,210	302	26,842	27,144
Provisions related to nuclear generation	20.2	1,853	50,616	52,469	1,817	49,204	51,021
Other provisions for decommissioning		101	1,494	1,595	91	2,033	2,124
Provisions for employee benefits	20.3	952	19,623	20,575	998	17,627	18,625
Other provisions	20.4	3,374	2,986	6,360	3,104	2,908	6,012
TOTAL PROVISIONS		6,280	74,719	80,999	6,010	71,772	77,782

20.2 PROVISIONS RELATED TO NUCLEAR GENERATION - BACK-END OF THE NUCLEAR CYCLE, PLANT DECOMMISSIONING AND LAST CORES

In the first half of 2019, the changes in provisions for the back-end of the nuclear cycle, decommissioning and last cores breaks down as follows:

(in millions of euros)	31/12/2018	Increases	Decreases	Discount effect	Translation adjustments	Other movements	30/06/2019
Provisions for spent nuclear fuel management	12,162	269	(656)	345	(3)	(32)	12,085
Provisions for waste removal and conditioning	1,120	1	(10)	29	(2)	48	1,186
Provisions for long-term radioactive waste management	10,595	23	(224)	478	(4)	120	10,988
Provisions for the back-end of the nuclear cycle	23,877	293	(890)	852	(9)	136	24,259
Provisions for nuclear plant decommissioning	23,040	1	(82)	512	(26)	553	23,998
Provisions for last cores	4,104	-	-	83	(5)	30	4,212
Provisions for decommissioning and last cores	27,144	1	(82)	595	(31)	583	28,210
PROVISIONS RELATED TO NUCLEAR GENERATION	51,021	294	(972)	1,447	(40)	719	52,469

There was no significant change during the first half of 2019 in the breakdown by company of provisions related to nuclear generation (see note 29 to the consolidated financial statements at 31 December 2018).

The change in provisions related to nuclear generation in the first half of 2019 is mainly due to a lower discount rate in France and the United Kingdom. The corresponding effects are included in the "Discount effect" (€460 million), and in "Other movements" (€871 million) for changes in provisions with related assets (assets associated with provisions and underlying assets in France; the NLF receivable in the United Kingdom).

20.2.1 Nuclear provisions in France

The measurement of provisions for the back-end of the nuclear cycle, plant decommissioning and last cores is sensitive to assumptions concerning technical processes, costs, inflation rates, long-term discount rates, the depreciation period of plants currently in operation and disbursement schedules. A revised estimate is established at each closing date to ensure that the amounts accrued correspond to the best estimate of the costs eventually to be borne by the Group.

The regulatory and contractual framework for nuclear provisions in France and the main calculation methods used for provisions are described in note 29.1 to the consolidated financial statements at 31 December 2018.

Discount rate

The methods for calculating the discount rate are identical to those used at 31 December 2018, and are described in note 29.1.5 to the 2018 consolidated financial statements.

The discount rate is 3.8% at 30 June 2019 (3.9% at 31 December 2018), assuming inflation of 1.5%, unchanged compared to 2018.

Regulatory discount rate limit

The discount rate applied must also comply with two regulatory limits. Under the amended decree of 23 February 2007 and the ministerial order of 21 March 2007, itself modified by the order of 29 December 2017, the discount rate must be lower than:

- a regulatory maximum, set until 31 December 2026 as the weighted average of two terms, the first set at 4.3%, and the second corresponding to the arithmetic average over the 48 most recent months of the TEC 30-year rate plus 100 points. The weighting given to the first constant term of 4.3% reduces on a straight-line basis from 100% at 31 December 2016 to 0% at 31 December 2026;
- and the expected rate of return on assets covering the liability (dedicated assets).

The ceiling rate based on the TEC 30-year rate is 3.9% at 30 June 2019 (4.0% at 31 December 2018).

Sensitivity to assumptions concerning costs, inflation rate, long-term discount rate, and disbursement schedules can be measured based on comparison of the gross amount estimated under period-end economic conditions with the present value of the amount.

(in millions of euros)	30/06/2019		31/12/2018	
	Costs based on economic conditions at 30 June	Amounts in provisions at present value	Costs based on economic conditions at 31 December	Amounts in provisions at present value
Spent fuel management	18,843	10,639	18,737	10,698
Waste removal and conditioning	1,193	768	1,194	751
Long-term radioactive waste management	31,074	10,146	30,970	9,846
BACK-END NUCLEAR CYCLE EXPENSES	51,110	21,553	50,901	21,295
Decommissioning provisions for nuclear plants in operation	20,901	12,968	20,755	12,480
Decommissioning provisions for shut-down nuclear power plants	6,568	3,589	6,576	3,505
Provisions for last cores	4,342	2,598	4,346	2,526
DECOMMISSIONING AND LAST CORE EXPENSES	31,811	19,155	31,677	18,511

Regarding the permanently shut-down UNGG (natural uranium graphite gas-cooled) plants (see note 29.1.3 to the financial statements at 31 December 2018), the ASN issued two proposed decisions on 11 July which are currently in a public consultation process.

The proposed decisions confirm EDF SA's selected industrial scenario of "in-air" dismantling for all reactors, the usefulness of an industrial demonstrator, and the timetable for dismantling the first-of-a-kind reactor. While the ASN does not consider it necessary to wait for full experience of dismantling of the first-of-a-kind reactor before starting to dismantle the caissons of the five other reactors, it does consider it useful to have significant experience given the complexity of these operations, which have never been undertaken before. This position would lead to a slightly shorter overall timetable (around ten years) than EDF SA's current selected scenario. EDF SA will submit its comments and proposals on the proposed decisions, at the request of the ASN. If the final decisions are identical to the proposals, the adjustment to the overall dismantling schedule and the sequence of operations would result in an increase of around €100 million in provisions, all other things being equal. This amount could be at least partly offset by the results of studies currently in process for optimisation of the timetable and costs for dismantling of the five caissons after the work on the first-of-a-kind reactor.

20.2.2 EDF Energy's nuclear provisions

The regulatory and contractual framework related to provisions for the back-end of the nuclear cycle and decommissioning of EDF Energy's power plants is described in note 29.2 to the consolidated financial statements at 31 December 2018.

The real discount rate applied to EDF Energy's nuclear provisions at 30 June 2019 is 2.3% (2.5% at 31 December 2018). This results in an increase in provisions, and a correlated increase in the NLF receivable.

20.3 EMPLOYEE BENEFITS

20.3.1 EDF group

(in millions of euros)	30/06/2019	31/12/2018
Provisions for employee benefits - current portion	952	998
Provisions for employee benefits - non-current portion	19,623	17,627
PROVISIONS FOR EMPLOYEE BENEFITS	20,575	18,625

20.3.1.1 Breakdown of the change in the net liability

(in millions of euros)	Obligations	Fund assets	Net liability
Balance at 31/12/2018 (1)	**38,479**	**(20,791)**	**17,688**
Net expense for first-half 2019	1,022	(260)	762
Actuarial gains and losses	4,419	(2,475)	1,944
Employer's contributions to funds	-	(139)	(139)
Employees' contributions to funds	8	(8)	-
Benefits paid	(927)	187	(740)
Translation adjustments	(40)	44	4
Changes in scope of consolidation	-	-	-
Other movements	(3)	(2)	(5)
BALANCE AT 30/06/2019	42,958	(23,444)	19,514
Including:			
Provisions for employee benefits	-	-	20,575
Non-current financial assets	-	-	(1,061)

(1) The net liability at 31 December 2018 comprised €18,625 million for the provision for employee benefits and €(937) million of non-current financial assets, giving a net amount of €17,688 million.

Actuarial gains and losses on obligations amount to €4,419 million for the first half of 2019, comprising €998 million in the United Kingdom and €3,323 million in France associated with changes in the discount rate (see note 20.3.2).

Actuarial gains and losses on fund assets amount to €(2,475) million for the first half of 2019. They result from a €(1,407) million change in France driven by favourable returns on bonds which exceeded the discount rate, and a €(1,053) million change in the United Kingdom driven by the performance of yield and growth assets.

20.3.1.2 Post-employment and long-term employee benefit expenses

(in millions of euros)	H1 2019	H1 2018
Current service cost	(410)	(514)
Past service cost	-	(1)
Actuarial gains and losses – long-term benefits	(149)	(28)
Net expenses recorded as operating expenses	**(559)**	**(543)**
Interest expense (discount effect)	(463)	(433)
Return on fund assets	260	236
Net interest expense included in financial result	**(203)**	**(197)**
EMPLOYEE BENEFIT EXPENSES RECORDED IN THE INCOME STATEMENT	(762)	(740)
Actuarial gains and losses – post-employment benefits	(4,419)	1,198
Actuarial gains and losses – fund assets	2,475	85
Actuarial gains and losses	**(1,944)**	**1,283**
Translation adjustments	(4)	(2)
GAINS AND LOSSES ON EMPLOYEE BENEFITS RECORDED IN EQUITY	(1,948)	1,281

There was no significant change during the first half of 2019 in the breakdown of the net employee benefit liability by geographical area (see note 31.1.3 to the consolidated financial statements at 31 December 2018).

20.3.2 Actuarial assumptions

The methods for determining actuarial assumptions are unchanged from 31 December 2018.

The main actuarial assumptions used in valuing employee benefits in France are as follows:

(in %)	30/06/2019	31/12/2018
Discount rate/rate of return on assets (1)	1.60%	2.30%
Inflation rate	1.40%	1.50%
Wage increase rate (2)	2.60%	2.60%

(1) *In accordance with IAS 19, the interest income generated by assets is calculated using the discount rate. The difference between this interest income and the return on assets is recorded in equity.*

(2) *Average wage increase rate, including inflation and projected over a full career.*

The main actuarial assumptions used in valuing employee benefits in the United Kingdom are as follows:

(in %)	30/06/2019	31/12/2018
Discount rate/rate of return on assets (1)	2.36%	2.86%
Inflation rate	3.09%	2.99%
Wage increase rate	2.47%	2.39%

(1) In accordance with IAS 19, the interest income generated by assets is calculated using the discount rate. The difference between this interest income and the return on assets is recorded in equity.

20.4 OTHER PROVISIONS AND CONTINGENT LIABILITIES

20.4.1 Other provisions

(in millions of euros)	31/12/2018	Increases	Decreases		Changes in scope	Other Changes	30/06/2019
			Utilisations	Reversals			
Provisions for contingencies related to subsidiaries and investments (1)	934	-	(182)	-	-	8	760
Provisions for tax disputes	448	111	(40)	(2)	(1)	(15)	501
Provisions for litigation	562	11	(52)	(11)	-	8	518
Provisions for onerous contracts (2)	1,208	83	(133)	(7)	-	18	1,169
Provisions related to environmental schemes (3)	1,137	1,171	(360)	(1)	-	11	1,958
Other provisions for risks and liabilities (4)	1,723	229	(387)	(61)	(22)	(28)	1,454
TOTAL	6,012	1,605	(1,154)	(82)	(23)	2	6,360

(1) Including the reversal of the provision concerning Alpiq.

(2) Provisions for onerous contracts are mainly attributable to the long-term contract with Dunkerque LNG.

(3) Provisions related to environmental schemes include provisions for greenhouse gas emission rights, renewable energy certificates and energy savings certificates. The increase in provisions over the period principally corresponds to allocations for renewable energy certificates in the United Kingdom and for energy savings certificates (see note 3.3.6) due to the seasonal nature of sales which generated the obligation, and acquisitions and productions of energy savings certificates. Many of the obligations under the renewable energy certificates scheme are covered by purchased certificates recorded as intangible assets.

(4) These provisions cover various contingencies and expenses related to operations (employers' matching contributions to employee profit sharing, restructuring operations, contractual maintenance obligations, etc.). No individual provision is significant.

20.4.2 Contingent liabilities

Apart from proceedings concerning the sale of Ausimont (Bussi site), no change was observed during the first half of 2019 in the Group's contingent liabilities as presented in note 47 to the 2018 consolidated financial statements, and section 2.4 of the 2018 Reference Document filed on 15 March 2019.

Several legal actions were begun following the sale of the Ausimont SpA industrial complex to Solvay Solexis SpA in 2002. The criminal proceedings are now closed, but several proceedings are still ongoing:

- Administrative court proceedings: on 28 February 2018, the Province of Pescara notified Solvay Speciality Polymers Italy SpA (formerly Solvay Solexis SpA) and Edison SpA of the launch of an administrative procedure to determine who was responsible for the pollution of the land belonging to Ausimont SpA which had been sold. The Province also ordered Edison SpA to remove waste that was on the land concerned. Following rejection of Edison's appeal before Pescara regional administrative court, Edison has lodged an appeal against the decision with the Italian Council of State.
- Arbitration proceedings: in 2012, arbitration proceedings were launched by Solvay SA and Solvay Specialty Polymers Italy SpA for violation of the representations and warranties in environmental matters concerning the Bussi and Spinetta Marengo sites contained in the agreement for the sale of Agora SpA (the company that controls Ausimont SpA), which was signed in December 2001 between Montedison SpA and Longside International SA, and Solvay Solexis SpA (Solvay Specialty Polymers Italy SpA). After a phase of preliminary questions and applications for preliminary rulings, the procedure is continuing with examination of the merits of the parties' claims.
- Civil proceedings: on 8 April 2019, the Italian Ministry for the Environment brought a civil action against Edison, claiming damages for environmental disaster. An initial court hearing is scheduled for September 2019.

Regarding tax disputes, the main developments observed over the first half of the year were as follows:

The tax inspections of EDF International for the years 2009 to 2014 resulted in a challenge to the valuation of the convertible bonds issued to refinance the acquisition of British Energy. The total amount concerned is around

€310 million. In a judgement of 2 July 2019, Montreuil Administrative Court confirmed the related tax readjustments for the period 2009-2013. EDF International has decided to appeal.

For the period 2008 to 2015, EDF was notified of proposed tax adjustments, notably concerning the tax-deductibility of certain long-term liabilities. This recurrent reassessment, which is applied for each year, represented a cumulative financial risk of some €563 million in income taxes at 31 December 2018. In two rulings of September 2017 and one of February 2019 Montreuil Administrative Court recognised the tax-deductibility of these liabilities and validated the position taken by the Company. The Minister has appealed against one of these rulings and the case is now before the Versailles Administrative Court.

NOTE 21 CURRENT AND NON-CURRENT FINANCIAL LIABILITIES

21.1 BREAKDOWN BETWEEN CURRENT AND NON-CURRENT FINANCIAL LIABILITIES

Current and non-current financial liabilities break down as follows:

	30/06/2019			31/12/2018		
(in millions of euros)	Current	Non-current	Total	Current	Non-current	Total
Loans and other financial liabilities	9,966	53,509	**63,475**	8,287	50,901	**59,188**
Negative fair value of derivatives held for trading	5,579	-	**5,579**	7,160	-	**7,160**
Negative fair value of hedging derivatives	885	1,111	**1,996**	1,720	1,228	**2,948**
FINANCIAL LIABILITIES	16,430	54,620	71,050	17,167	52,129	69,296

21.2 LOANS AND OTHER FINANCIAL LIABILITIES

21.2.1 Changes in loans and other financial liabilities

(in millions of euros)	Bonds	Loans from financial institutions	Other financial liabilities	Lease liability	Accrued Interest	Total
Balances published at 31/12/2018	**50,401**	**3,098**	**4,026**	**324**	**1,339**	**59,188**
IFRS 16 restatements (see note 2.1)	-	-	-	4,492	-	4,492
Restated balances at 01/01/2019	**50,401**	**3,098**	**4,026**	**4,816**	**1,339**	**63,680**
Increases	-	357	2,164	-	91	2,612
Decreases	(3,013)	(103)	(772)	(324)	(219)	(4,431)
Translation adjustments	(6)	20	45	5	1	65
Changes in scope of consolidation	-	41	(17)	24	-	48
Changes in fair value	1,506	-	(19)	-	-	1,487
Other changes	1	(9)	(8)	32	(2)	14
BALANCES AT 30/06/2019	48,889	3,404	5,419	4,553	1,210	63,475

Increases and decreases in loans and other financial liabilities (excluding accrued interest) shown in the above table do not include monetary variations (included in the Cash flow statement) of €434 million on settlement of hedging instruments.

Other changes in loans and other financial liabilities include non-monetary variations relating to the conclusion of new lease contracts (IFRS 16).

21.2.2 Maturity of loans and other financial liabilities

(in millions of euros)	Bonds	Loans from financial institutions	Other financial liabilities	Lease liability	Accrued Interest	**Total**
Less than one year	2,737	610	4,989	711	919	**9,966**
From one to five years	9,535	640	-	2,216	58	**12,449**
More than five years	36,617	2,154	430	1,626	233	**41,060**
LOANS AND OTHER FINANCIAL LIABILITIES AT 30/06/2019	48,889	3,404	5,419	4,553	1,210	63,475

21.2.3 Credit lines

At 30 June 2019, the Group has unused credit lines with various banks totalling €10,984 million (€11,393 million at 31 December 2018).

	30/06/2019				31/12/2018
	Total	Maturity			Total
(in millions of euros)		< 1 year	1-5 years	> 5 years	
CONFIRMED CREDIT LINES	10,984	1,144	9,755	85	11,393

21.2.4 Fair value of loans and other financial liabilities

	30/06/2019		31/12/2018	
(in millions of euros)	Fair value	Net book value	Fair value	Net book value
LOANS AND OTHER FINANCIAL LIABILITIES	70,479	63,475	63,772	59,188

21.3 NET INDEBTEDNESS

(in millions of euros)	Notes	30/06/2019	31/12/2018
Loans and other financial liabilities (1)	21.2.1	63,475	59,188
Derivatives used to hedge liabilities		(2,550)	(1,972)
Cash and cash equivalents		(4,345)	(3,290)
Debt and equity instruments - Liquid assets	16.2	(19,220)	(20,538)
Net indebtedness of discontinued operations		14	-
NET INDEBTEDNESS (1)		37,374	33,388

(1) *At 1 January 2019, due to application of IFRS 16, net indebtedness included the lease liability, amounting to €4,492 million (see note 21.2), and amounted to €37,880 million at that date.*

NOTE 22 OTHER LIABILITIES

Details of other liabilities are as follows:

(in millions of euros)	30/06/2019	31/12/2018
Advances and progress payments received	1,825	1,920
Liabilities related to fixed assets	3,244	3,757
Tax liabilities	5,074	4,624
Social charges	4,403	4,388
Deferred income on long-term contracts	3,543	3,413
Other deferred income	675	609
Other	2,585	2,198
OTHER LIABILITIES	21,349	20,908
Non-current portion	4,955	4,896
Current portion	16,394	16,012

22.1 ADVANCES AND PROGRESS PAYMENTS RECEIVED

Advances and progress payments received comprise payments made by Framatome's customers amounting to €682 million (€679 million at 31 December 2018).

22.2 TAX LIABILITIES

At 30 June 2019, tax liabilities mainly include an amount of €686 million for the CSPE income to be collected by EDF on energy supplied but not yet billed (€659 million at 31 December 2018).

22.3 DEFERRED INCOME ON LONG-TERM CONTRACTS

EDF's deferred income on long-term contracts at 30 June 2019 comprises €1,765 millions of partner advances made to EDF under the nuclear plant financing plans (€1,663 million at 31 December 2018).

Deferred income on long-term contracts also includes an advance of €1.7 billion paid to the EDF group in 2010 under the agreement with the Exeltium consortium. This advance is transferred to the income statement progressively over the term of the contract (24 years).

22.4 OTHER ITEMS

The "Other" line of the table includes investment subsidies received during the first half of 2019, amounting to €141 million (€351 million for the year 2018).

22.5 CONTRACT LIABILITIES

Contract liabilities represent an entity's obligations to provide customers with goods or services for which it has already been paid, or for which payment is due.

These liabilities consist of practically all the advances and progress payments received, amounting to €1,779 million (principally concerning the Framatome, United Kingdom and France – Generation and Supply and Regulated activities segments), and practically all the deferred income (on long-term and other contracts), amounting to €3,891 million (principally concerning the France – Generation and Supply segment). They thus total €5,670 million at 30 June 2019 (€5,848 million at 31 December 2018).

Contracts expiring in more than one year on which obligations are unfulfilled or partially fulfilled at the reporting date should generate sales revenues of approximately €12,164 million which have not yet been recognised. €1,366 million of these sales revenues will be recognised progressively until 2034 on the Exeltium contract, and the balance will be recognised over the operating period for contracts relating to jointly-operated power plants, and over the term of the contract for other firm sale contracts (excluding energy sales).

NOTE 23 ASSETS HELD FOR SALE AND RELATED LIABILITIES

At 30 June 2019, assets held for sale and related liabilities concern the disposal of Edison's E&P operations (€1,555 million of assets and €829 million of liabilities):

(in millions of euros)	30/06/2019	31/12/2018
ASSETS HELD FOR SALE	1,555	-
LIABILITIES RELATED TO ASSETS HELD FOR SALE	829	-

In application of IFRS 5, details of the assets and liabilities of Edison's E&P operations presented as assets held for sale and related liabilities at 30 June 2019 are shown below:

(in millions of euros)	30/06/2019
Non-current non-financial assets	857
Non-current financial assets	-
Current non-financial assets	675
Current financial assets	23
TOTAL ASSETS HELD FOR SALE	1,555

(in millions of euros)	30/06/2019
Non-current non-financial liabilities	611
Non-current financial liabilities	37
Current non-financial liabilities	181
Current financial liabilities	-
TOTAL LIABILITIES RELATED TO ASSETS HELD FOR SALE	829

Edison's E&P operations contributed €14 million to the Group's net indebtedness at 30 June 2019 (see note 21.3).

OTHER INFORMATION

NOTE 24 EDF'S DEDICATED ASSETS

EDF has built up a portfolio of financial assets dedicated to secure financing of long-term nuclear obligations, in particular decommissioning of its power plants and long-term management of radioactive waste.

The key features of this portfolio, the principles governing its management and the applicable regulations are presented in note 45 to the financial statements at 31 December 2018.

24.1 VALUATION OF EDF'S DEDICATED ASSETS

EDF's dedicated assets are included in the Group's consolidated financial statements at the following values:

		30/06/2019		31/12/2018	
(in millions of euros)	Consolidated balance sheet presentation	Book value	Realisable value	Book value	Realisable value
Yield assets (EDF Invest)		**4,157**	**6,037**	**3,919**	**5,356**
CTE	Investments in associates (1)	1,259	2,903	1,406	2,738
Other associates	Investments in associates (2)	1,447	1,641	1,167	1,234
Other unlisted assets	Debt and equity securities and other net assets (3)	1,451	1,493	1,346	1,384
Growth assets		**11,723**	**11,723**	**10,108**	**10,108**
Equities (4)	Debt securities	11,454	11,454	9,844	9,844
Unlisted equity funds (EDF Invest)	Debt securities	244	244	219	219
Derivatives	Fair value of derivatives	25	25	45	45
Fixed-income assets		**12,488**	**12,498**	**12,205**	**12,225**
Bonds	Debt securities	10,662	10,662	10,010	10,010
Unlisted debt funds (EDF Invest)	Debt securities	119	119	105	105
Cash portfolio (5)	Debt securities	191	191	30	30
CSPE receivable (6)	Loans and financial receivables	1,512	1,522	2,060	2,080
Derivatives	Fair value of derivatives	4	4	-	-
TOTAL EDF DEDICATED ASSETS		28,368	30,258	26,232	27,689

(1) *The Group's investment of 50.1% of CTE, the company that holds 100% of the shares in RTE. The CTE shares are included at their equity value in the consolidated financial statements (book value in the table). The realisable value of CTE in the above table has been determined by an independent assessor, in the same way as for EDF Invest's other assets.*
(2) *Including the value of the share in equity of the controlled companies owning these investments.*
(3) *Including debt and equity securities amounting to €1,328 million and the value of the share in equity of other controlled companies.*
(4) *Including €391 million of securities acquired in late December 2018 for which payment took place in early January 2019.*
(5) *After deduction of the €391 million of liabilities on securities acquired in late December 2018 for which payment took place in early January 2019.*
(6) *The receivable consisting of accumulated shortfalls in compensation at 31 December 2015, less the portion assigned on 22 December 2016 and reimbursements received since then, in line with the repayment schedule. The realisable value of the CSPE receivable is estimated based on market rates.*

24.2 COVERAGE OF LONG-TERM NUCLEAR OBLIGATIONS

At 30 June 2019, by the regulatory calculations provisions are 103.9% covered by dedicated assets. The regulatory limit on the realisable value of certain investments (article 5 of the decree 2007-243) has no effect at 30 June 2019.

At 31 December 2018, by the regulatory calculations provisions were 98.3% covered by dedicated assets. The regulatory limit on the realisable value of certain investments (decree 2007-243) had no effect at 31 December 2018.

Because of changes in the assumptions used to calculate long-term nuclear provisions, particularly the change in the discount rate, the required allocation to dedicated assets for 2018 amounted to €1,337 million. The administrative authorities authorised EDF to spread this allocation as follows: €540 million in 2019 and 2020, and €257 million in 2021.

The Group's long-term nuclear obligations in France concerned by the regulations for dedicated assets are included in the EDF group's consolidated financial statements at the following values:

(in millions of euros)	30/06/2019	31/12/2018
Provisions for spent fuel management – portion unrelated to the operating cycle as defined in the regulations	1,109	1,067
Provisions for long-term radioactive waste management	10,146	9,846
Provisions for waste removal and conditioning	768	751
Provisions for nuclear plant decommissioning	16,557	15,985
Provisions for last cores - portion for future long-term radioactive waste management	542	518
PRESENT COST OF LONG-TERM NUCLEAR OBLIGATIONS	29,122	28,167

24.3 CHANGES IN DEDICATED ASSETS IN 2019

Following a ministerial letter of 31 May 2018 authorising EDF, subject to conditions, to increase the portion of unlisted assets in its dedicated assets, on 29 June 2018 the Board of Directors validated a new strategic allocation for dedicated assets. Approximately one third of these assets will now consist of unlisted assets (infrastructures – which include CTE, real estate, investment funds) instead of one quarter under the previous strategic allocation applied since February 2013.

The strategic benchmark for the financial portfolio (listed equities and bonds) is being gradually modified between 1 January 2019 and 1 January 2022 at the latest, from 49% equities/51% bonds in 2018 to 57% equities/43% bonds.

In December 2018, EDF SA acquired EDF International's minority interest in Nam Theun Power Company (NTPC), a hydroelectric dam in Laos, part of which was allocated by EDF Invest to dedicated assets at that date. The rest has been allocated by end of June 2019 (€387 million).

Changes in the positive fair value of the dedicated asset portfolio (investment funds, equities) amounting to €1,801 million were recognised in the financial result in the first half of 2019, in application of IFRS 9 (see note 10.2).

Changes in the positive fair value of the bonds in the dedicated assets portfolio amounting to €265 million were recognised in OCI in the first half of 2019, in application of IFRS 9 (see note 19.4.1)

In the first half of 2019, the overall after-tax performance of dedicated assets (impacts on reserves and net income) was +€1,749 million, comprising +€10 million for the CSPE (+€15 million before tax), +€128 million for the CTE shares allocated to dedicated assets, and +€1,611 million for other securities (+€2,301 million before tax). The pre-tax performance of the dedicated asset portfolio was +8.9% for the first half of 2019 and -1.6% for the year 2018.

NOTE 25 OFF-BALANCE SHEET COMMITMENTS

This note presents off-balance sheet commitments given and received by the Group at 30 June 2019. The amounts of commitments correspond to non-discounted contractual values.

25.1 COMMITMENTS GIVEN

(in millions of euros)	Notes	30/06/2019	31/12/2018
Operating commitments given (1)	25.1.1	15,828	14,117
Investment commitments given	25.1.2	18,154	17,572
Financing commitments given	25.1.3	5,592	5,494
TOTAL COMMITMENTS GIVEN		39,574	37,183

(1) Excluding fuel and energy purchases and operating leases as lessee.

In almost all cases, these are reciprocal commitments, and the third parties concerned are under a contractual obligation to supply the Group with assets or services related to operating, investment and financing activities.

25.1.1 Operating commitments given

25.1.1.1 Fuel and energy purchase commitments

Commitments to purchase commodities, energy and nuclear fuel (excluding purchases of gas and related services) amounted to €26,878 million at 31 December 2018, and there was no significant change during the first half of 2019.

25.1.1.2 Operating contract performance commitments given

At 30 June 2019, these commitments mature as follows:

	30/06/2019				31/12/2018
	Total	Maturity			Total
(in millions of euros)		< 1 year	1-5 years	> 5 years	
Operating guarantees given	7,424	2,311	2,675	2,438	7,047
Operating purchase commitments (1)	8,163	4,666	2,808	689	6,898
Other operating commitments	241	83	147	11	172
OPERATING CONTRACT PERFORMANCE COMMITMENTS GIVEN (2)	15,828	7,060	5,630	3,138	14,117

(1) Excluding fuel and energy.
(2) Including commitments given by controlled entities to joint ventures, amounting to €1,143 million at 30 June 2019 (€982 million at 31 December 2018).

In the course of its business, the Group provides contract performance guarantees, generally through the intermediary of banks.

Operating guarantees at 30 June 2019 mainly consist of guarantees given by EDF, Edison and EDF Renewables in connection with its development projects.

25.1.1.3 Operating lease commitments at lessee

Operating lease commitments as lessee amounted to €4,375 million at 31 December 2018.

From 1 January 2019, in application of IFRS 16, the only remaining off-balance sheet lease commitments are:

- Short-term leases (with a duration of 12 months or less);
- Leases of low-value assets (with individual value when new of less than USD 5,000);
- Leases for which the contracts have been signed but the leased assets have not yet been made available (e.g. assets under construction).

As a result, lease commitments amounted to €434 million at 1 January 2019 (see note 2.1.1). These commitments amount to €612 million at 30 June 2019.

25.1.2 Investment commitments given

At 30 June 2019, details of investment commitments are as follows:

(in millions of euros)	30/06/2019 Total	Maturity < 1 year	Maturity 1-5 years	Maturity > 5 years	31/12/2018 Total
Commitments related to acquisition of tangible and intangible assets	**17,171**	8,705	7,702	764	16,545
Commitments related to acquisition of financial assets	**737**	296	343	98	746
Other commitments related to investments	**246**	203	43	-	281
TOTAL INVESTMENT COMMITMENTS GIVEN (1)	18,154	9,204	8,088	862	17,572

(1) Including commitments given by controlled entities to joint ventures, amounting to €517 million at 30 June 2019 (€399 million at 31 December 2018).

The increase in commitments related to acquisition of tangible and intangible assets in the first half of 2019 principally concerns EDF Renewables and reflects development for projects mainly located in the United States.

25.1.3 Financing commitments given

Financing commitments given by the Group at 30 June 2019 comprise the following:

(in millions of euros)	30/06/2019 Total	Maturity < 1 year	Maturity 1-5 years	Maturity > 5 years	31/12/2018 Total
Security interests in real property	**4,315**	217	1,793	2,305	4,226
Guarantees related to borrowings	**865**	149	285	431	974
Other financing commitments	**412**	397	15	-	294
TOTAL FINANCING COMMITMENTS GIVEN (1)	5,592	763	2,093	2,736	5,494

(1) Including commitments given by controlled entities to joint ventures, amounting to €997 million at 30 June 2019 (€917 million at 31 December 2018). These financing commitments to joint ventures mainly concern EDF Renewables.

25.2 COMMITMENTS RECEIVED

The table below shows off-balance sheet commitments received by the Group that have been valued at 30 June 2019.

(in millions of euros)	30/06/2019	31/12/2018
Operating commitments received (1)	8,305	8,861
Investment commitments received	131	183
Financing commitments received (2)	79	31
TOTAL COMMITMENTS RECEIVED	8,515	9,075

(1) Excluding commitments related to supplies of energy and related services, and operating lease commitments as lessor (€678 million at 31 December 2018.
(2) Excluding commitments related to credit lines, which are described in note 21.2.3.

At 30 June 2019, operating commitments received include commitments on operating sales amounting to €6,494 million (€7,004 million at 31 December 2018). These commitments mainly concern firm orders made through contracts recorded on a percentage-of-completion basis at Framatome (construction and engineering contracts) and EDF Renewables (agreements for operation services, maintenance services, and development and sale of structured assets).

NOTE 26 RELATED PARTIES

There have been no significant changes since 31 December 2018 in the types of transaction undertaken with related parties. In particular, the Group has significant ongoing relationships with public-sector enterprises, primarily the Orano group for the supply, transmission and reprocessing of nuclear fuel and maintenance of nuclear plants.

NOTE 27 SUBSEQUENT EVENTS

Post-balance sheet date developments are described in notes 3.1.2 and 3.1.5.

This is a free translation into English of the statutory auditors' review report issued in French and is provided solely for the convenience of English-speaking readers. This report includes information relating to the specific verification of information presented in the Group's interim management report. This report should be read in conjunction with, and is construed in accordance with, French law and professional auditing standards applicable in France.

Electricité de France S.A.

Registered office: 22-30, avenue de Wagram – 75008 Paris

Statutory Auditors' Review Report on the 2019 interim condensed consolidated financial statements

For the six-month period ended June 30, 2019

To the Shareholders,

Following our appointment as statutory auditors by your General Meeting, and in accordance with article L.451-1-2 III of the French Monetary and Financial Law ("*Code monétaire et financier*"), we hereby report to you on:

- the review of the accompanying interim condensed consolidated financial statements of Electricité de France S.A. for the six-month period ended June 30, 2019;
- the verification of information contained in the half-yearly management report.

These interim condensed consolidated financial statements are the responsibility of your Board of Directors. Our role is to express a conclusion on these financial statements based on our review.

I. Conclusion on the financial statements

We conducted our review in accordance with professional standards applicable in France. A review of interim financial information consists of making inquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with professional standards applicable in France. Consequently this does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.

Based on our review, nothing has come to our attention that causes us to believe that the accompanying interim condensed consolidated financial statements are not prepared in all material respects in accordance with IAS 34 – the standard of IFRS as adopted by the European Union applicable to interim financial reporting.

Without qualifying our conclusion, we draw your attention to the notes 1.2.1, 1.6.1 and 2.1 of the interim condensed consolidated financial statements, which disclose the impact of the application of IFRS 16 “Leases”, new standard adopted in the European Union and applicable for financial years beginning on or after January 1st, 2019.

II. Specific verification

We have also verified information presented in the half-yearly management report on the interim condensed consolidated financial statements that were subject to our review. We have no matters to report as to its fair presentation and consistency with the interim condensed consolidated financial statements.

Paris la Défense and Neuilly-sur-Seine on July 25, 2019

The Statutory Auditors

French original signed by

KPMG *S.A.*		**Deloitte & Associés**	
Jay Nirsimloo	Michel Piette	Damien Leurent	Christophe Patrier

III. CONCORDANCE TABLE OF THE 2018 UNIVERSAL REGISTRATION DOCUMENT

The following concordance table identifies the information required by Annexes 1 and 2 of Delegated Regulation (EC) No 2019/980 of 14 March 2019 in accordance with the schedule to the URD and to cross them with the Sections of the 2018 Universal Registration Document incorporated in this document:

Annexes 1 and 2 of Commission Delegated Regulation (EU) No 2019/980 of 14 March 2019		*Sections of the 2018 registration document*	*Sections of this document*
1.	Persons responsible, information from third parties, expert reports and approval by the competent authority		Section 1 – Page 3
1.1.	Identity of the persons responsible	-	Section I
1.2.	Declaration of the persons responsible	-	Section I
1.3.	Name, address, qualifications and potential interests of persons acting as experts	n/a	n/a
1.4.	Certificate relating to information from a third party	n/a	n/a
1.5	Declaration without prior approval from the competent authority		Section I
2.	Statutory auditors		-
2.1.	Identity of the statutory auditors	Section 8.2	
2.2.	Possible changes	n/a	n/a
3.	Risk factors	Section 2.1	Section II.2.6 et II.2.8 Notes 3 - Notes to the condensed consolidated financial statements
4.	Information about the issuer		
4.1.	Company name and trade name of the issuer	Section 7.1.1	-
4.2.	Place, registration number and LEI of the issuer	Sections 7.1.2 et 8.3	-
4.3.	Date of incorporation and term of the issuer	Section 7.1.3	-
4.4.	Registered office and legal form of the issuer, legislation governing the activities, country of origin, address and telephone number of the registered office, website with a warning	Section 7.1.4	-
5.	Overview of the activities		
5.1.	Main activities		
5.1.1.	Nature of the operations	Section 1.4	Sections II.2.3 et II.2.4
5.1.2.	Important new products and services	n/a	n/a
5.2.	Main markets	Section 1.4	-
5.3.	Important events	Section 5.1.2 et 5.1.3	Section II.2.3.1
5.4.	Strategy and objectives	Sections 1.3 et 5.4	Section II.2.11
5.5.	Dependence of the issuer on patents, licenses, contracts and manufacturing processes	Section 2.3	-
5.6.	Statement on the competitive position	Sections 1.4.2.1.2 & 1.4.5.1.2.3	Section II.2 et II.3
5.7.	Investments		
5.7.1.	Significant investments made	Section 1.3.3.1	Section II.2.5
5.7.2.	Main ongoing or future investments of the issuer for which its management bodies have already made firm commitments and financing methods	Sections 1.3.3.2 et 5.1.3.5	Notes 23 - Notes to the condensed consolidated

Annexes 1 and 2 of Commission Delegated Regulation (EU) No 2019/980 of 14 March 2019		*Sections of the 2018 registration document*	*Sections of this document*
			financial statements
5.7.3.	Joint ventures and commitments in which the issuer holds a significant proportion of the capital	Section 4.5.1 et Section 6.1 - Notes to the consolidated financial statements - Note 23	-
5.7.4.	Environmental issues	Sections 1.7, 3.2 et 3.4.2	-
6.	**Organisational structure**		
6.1.	Brief description of the Group	Section 1.2.1	-
6.2.	List of significant subsidiaries	Section 1.2.1	-
7.	**Review of the financial position and profit or loss**		
7.1.	Financial position		
7.1.1.	Evolution of the results and financial position including key performance indicators of a financial and, where applicable, non-financial nature	Sections 5,6 sections 3 & 8.5.4	Section II.2.
7.1.2.	Future development forecasts and research and development activities	Section 1.6	-
7.2.	Operating results	section 6.1	Section II.2.4.3
7.2.1.	Significant factors, unusual, infrequent events or new developments	Section 5.1.2 & 5.1.3	Note 3.1 - Notes to the condensed consolidated financial statements
7.2.2.	Reasons for significant changes in net sales or revenues	Section 6.7	Section II.2.4.1
8.	**Cash and capital resources**		
8.1.	Information on capital	Sections 7.2 / 7.3	Section II.2.2 et II.2.4
8.2.	Cash flow	Section 6.1 - Notes to the consolidated financial statements - Note 43	Section II.2.5
8.3.	Financing needs and financing structure	Section 6.1 - Notes to the consolidated financial statements - Note 38	Section II.2.5 Note 21 - Notes to the condensed consolidated financial statements
8.4.	Restrictions on the use of capital	n/a	n/a
8.5.	Expected sources of funding	n/a	n/a
9.	**Regulatory environment**		
9.1.	Description of the regulatory environment and any administrative, economic, budgetary, monetary or political measures or factors	Sections 1.5, 1.3.1 et 1.3.2	Section II.3.4
10.	**Information on trends**		
10.1.	Description of the main trends and any significant changes in the Group's financial performance since the end of the last financial year	Sections 5.2 et 6.7	Sections II.2.2 et II.2.11
10.2.	Events likely to have a material impact on the outlook	Section 5.4	Section II.2.11
11.	**Profit forecasts or estimates**		
11.1.	Published profit forecasts or estimates	Section 5.4	Section II.2.11

Annexes 1 and 2 of Commission Delegated Regulation (EU) No 2019/980 of 14 March 2019		*Sections of the 2018 registration document*	*Sections of this document*
11.2.	Statement setting out the main assumptions for the forecasts	Section 5.1.2 et 5.1.3	Section II.2.11
11.3.	Statement of comparability with historical financial information and compliance with accounting policies	Section 5.4	Note 1.1 - Notes to the condensed consolidated financial statements
12.	**Administrative, management and supervisory bodies and general management**		
12.1.	Information concerning members		Section II.2.3.5
	Name, business address and position	Sections 4.2.1 et 4.3.1	-
	Nature of any existing family relationship	Section 4.4	-
	Expertise and experience	Sections 4.2.1 et 4.3.1	-
	Statement of non-conviction	Section 4.4.2	-
12.2.	Conflicts of interest	Section 4.4.3	-
13.	**Compensation and benefits**		
13.1.	Compensation paid and benefits in kind	Sections 4.6.1 et 4.6.2	-
13.2.	Provisions for pensions and retirement benefits	Section 4.6.1.1.3	-
14.	**Operation of the administrative and management bodies**		
14.1.	Expiry date of terms of office	Section 4.2.2.1	-
14.2.	Service contracts between members of the administrative, management or supervisory bodies and the issuer	Section 4.4.3	-
14.3.	Information on the audit committees and the compensation committee	Section 4.2.3	-
14.4.	Declaration of compliance with the corporate governance regime in force	Section 4.1	-
14.5.	Potential significant impacts on corporate governance	Section 4.2.2	-
15.	**Employees**		
15.1.	Number of employees	Section 3.4.4.1	-
15.2.	Shareholdings and stock options	n/a	n/a
15.3.	Agreement providing for employee holdings in the capital	n/a	n/a
16.	**Main shareholders**		
16.1.	Shareholders holding more than 5% of the share capital on the date of the registration document	Section 7.3.8	Note 19 - Notes to the condensed consolidated financial statements
16.2.	Existence of various voting rights	Section 7.2.4	-
16.3.	Direct or indirect control	Section 7.3	-
16.4.	Agreements whose implementation could result in a change of control	Section 7.3.9	-
17.	**Transactions with related parties**	**Section 7.5**	**Section II.2.7**
18.	**Financial information concerning the assets and liabilities, financial position and results of the issuer**		**-**
18.1.	Past financial information		
18.1.1.	Audited past financial information for the last three financial years and the audit report	Section 6.1	-
18.1.2.	Change in the accounting reference date	n/a	n/a

Annexes 1 and 2 of Commission Delegated Regulation (EU) No 2019/980 of 14 March 2019	*Sections of the 2018 registration document*	*Sections of this document*
18.1.3. Accounting standards	Section 6.1	Note 1 Notes to the condensed consolidated financial statements
18.1.4. Change in accounting standards	n/a	n/a
18.1.5. Financial information under French accounting standards	Section 6.1	n/a
18.1.6. Consolidated financial statements	Section 6.1	Section II.3
18.1.7. Date of the latest financial information	n/a	n/a
18.2. Interim and other financial information	n/a	n/a
18.2.1. Quarterly or half-yearly financial information		Section II
18.3. Audit of past yearly financial information		
18.3.1. Independent audit of past annual financial information	Section 6.2	-
18.3.2. Other audited information	n/a	n/a
18.3.3. Sources and reasons why information was not audited	n/a	n/a
18.4. Pro forma financial information	n/a	n/a
18.5. Dividend distribution policy		
18.5.1. Description of the dividend distribution policy and any applicable restrictions	Section 6.6.2	-
18.5.2. Dividend amount per share	Section 6.6.1	-
18.6. Administrative, judicial and arbitration proceedings	Section 2.4	Section II.2.9
18.7. Significant change in financial position	Section 6.7	n/a
19. Additional information		
19.1. Share capital		
19.1.1. Amount of subscribed capital, number of shares issued and fully paid up and nominal value per share, number of shares authorised	Sections 7.3.1, 7.3.3 et Section 6.1 - Notes to the consolidated financial statements - Note 27.1	Page 1
19.1.2. Information relating to non-equity shares	Section 7.3.5	-
19.1.3. Number, book value and nominal value of shares held by the issuer	Section 7.3.2	-
19.1.4. Information relating to convertible, exchangeable or securities with share warrants attached,	n/a	n/a
19.1.5. Information on the conditions governing any acquisition right and/or obligation attached to the subscribed but not paid-up capital, or on any company seeking to increase the capital	Sections 7.2.4, 7.2.5 et 7.3.3	-
19.1.6. Information on the share capital of any member of the group who is the subject of options or of a conditional or unconditional agreement to be issued options and the details of such options	Section 7.3.6	-
19.1.7. History of the share capital	Section 7.3.1	-
19.2. Memorandum and Articles of Association		
19.2.1. Register and company purpose	Sections 7.1.2 et 7.2.1	-
19.2.2. Rights, preferences and restrictions attached to each class of shares	Section 7.2.4	-
19.2.3. Provision delaying, deferring or preventing a change of control	Section 7.2.9	-
20. Significant contracts	**Section 7.6**	**-**
21. Available documents	**Section 8.3**	**-**