French Société anonyme
With share capital of €1,943,290,542
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EDF group

HALF-YEAR FINANCIAL REPORT

AT 30 JUNE 2022

At its meeting of 27 July 2022, EDF's Board of Directors approved this Half-year financial report and the condensed consolidated financial statements for the half-year ended 30 June 2022 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the energy sector in France and worldwide, it is possible that this information could turn out to be mistaken or outdated.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 presented in this report could prove to be erroneous.

The forward-looking statements contained in this Half-year financial report, particularly in section 6 of the Management Report, "Financial Outlook", are based on assumptions and estimates that could evolve or be modified due to risks, uncertainties (relating notably to the economic, financial, competition, regulatory, and climate environment), or other factors that could cause the future results, performances and achievements of the Group to differ significantly from the objectives expressed and suggested here. These factors may include changes in the economic and business environment, regulations, and the factors discussed in section 2 of the EDF group's 2021 Universal Registration 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 are not allowed to communicate certain information collected in the course of their activities to other Group entities, including the Group's Management. Similarly, certain data specific to generation and supply activities cannot 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.

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CERTIFICATION BY THE PERSON RESPONSIBLE FOR THE 2022 HALF-YEAR FINANCIAL REPORT

I certify that, to the best of my knowledge, the condensed consolidated half-year financial statements at 30 June 2022 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, together with a description of the principal risks and uncertainties for the remaining six months of the financial year.

Paris, 27 July 2022

Jean-Bernard Lévy

Chairman and Chief Executive Officer of EDF

HALF-YEAR MANAGEMENT REPORT AT 30 JUNE 2022

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Note 1 SIGNIFICANT EVENTS AND KEY FIGURES

French state announces its intention to hold 100% of EDF's share capital
Increased market price volatility exacerbated by the war in Ukraine
Strong decline in EBITDA due to lower output in France and exceptional regulatory measures
Significant level of investment towards the energy transition
Inclusion of nuclear power in the European Taxonomy

- **Intention of the French State to file a simplified public tender offer for EDF's shares[(1)]**
  - ◊ Objective: to buy back 15.9%[(2)] of EDF's capital, as well as the 60% of the OCEANE bonds that the State does not hold. Proposed price: €12.0 per EDF share (with dividend rights attached) and €15.64 per OCEANE
  - ◊ Mandatory delisting[(3)] if the implementation conditions are met
  - ◊ Total amount of the offer: approximately €9.7 billion
  - ◊ Set up by EDF's Board of Directors of an ad hoc committee tasked with issuing a recommendation to the Board of Directors on the interest of the offer for the Company, the shareholders and the holders of the OCEANE bonds[(4)]
  - ◊ Appointment of an independent expert by the Board upon the ad hoc committee's proposal
  - ◊ Offer to be filed with the French Financial Markets Authority (the "AMF") subject to enactment of a 2022 Supplementary Budget Bill

- **Stress corrosion (SC) phenomenon[(5)]**
  - ◊ The French Nuclear Safety Authority has assessed the overall strategy submitted by EDF as appropriate
  - ◊ All the reactors will be inspected by 2025 as part of the already scheduled outages, with priority given to the most sensitive reactors (four N4 reactors and twelve of the 1,300MW reactors). The thirty-two 900MW reactors and eight of the 1,300MW reactors have piping lines with low or very low sensitivity to stress corrosion
  - ◊ Continued development of processes for carrying out enhanced non-destructive examinations

- **War in Ukraine**
  - ◊ Increased market prices and volatility: extreme tensions on the electricity market in a context of lower nuclear output in 2022, requiring significant purchases on the market
  - ◊ Supply disruptions and inflation on components and commodities create delays on some activities and major projects
  - ◊ Limited impact on gas and uranium supply: one single Edison gas contract with a European subsidiary of a Russian company (accounting for 4% of the Group's supply and terminating by end of 2022) and low dependence on uranium imports from Russia, given the current level of stocks and the diversified long-term supply contracts (20 years)
  - ◊ International sanctions: to date, no exposure to Russian companies, banks or individuals affected by international sanctions. Closure of the Moscow office
  - ◊ Impacts on financial markets: decline in the value of the listed assets portfolio of the Dedicated Assets (inflation, recession risk and increase in interest rates) and decrease in the present value of nuclear provisions (increase in the real discount rate[(6)]). Overall, the coverage ratio[(7)] was 105.3% at end-June 2022 (compared to 109.3% at the end of 2021)

- **Environmental and societal success**
  - ◊ Adoption by 99.87% at the Shareholders' Meeting of the climate transition plan to contribute to achieve carbon neutrality by 2050
  - ◊ 84% of credit lines indexed on ESG KPIs, i.e. a total of €10 billion[(8)]
  - ◊ EDF, the first major French group to publish its impact score[(9)]: 68/100, above the average score of other companies[(10)]
  - ◊ EDF SA's attractiveness confirmed by survey rankings[(11)]

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(1) See press releases of 19 July 2022 issued by the French State and EDF.
(2) Before taking into account the share capital increase reserved for employees.
(3) According to the provisions of Article L433-4 of the Monetary and Financial Code.
(4) OCEANE: bonds convertible and/or exchangeable for new or existing shares.
(5) See information note of 27 July 2022: https://www.edf.fr/sites/groupe/files/2022-07/EDF_Mise%20a%20jour%20Note%20Info%20CSC_27juillet%202022.pdf
(6) The increase in discount rates also led to a decrease in the present value of pensions liabilities in France of 8.9 billion euros between 31/12/2021 and 30/06/2022.
(7) EDF SA perimeter.
(8) Out of a total of €12 billion at 30 June 2022.
(9) According to Impact France Movement methodology, which allows for a 360° assessment and mapping of the impact of companies in order to improve their ESG approach.
(10) The average score of the companies having published their impact score in Q1 2022 was 55/100.
(11) EDF: the preferred company of students and young graduates in the energy sector (Epoka ranking); 4th in the rankings of the most attractive employers for experienced engineers (Universum ranking); Certified "Happy Trainees": 1st energy company in its category and 2nd in the overall ranking.

- **Inclusion of nuclear power in the European Taxonomy**[1]
  - ◊ Final decisions of the European Council and Parliament on the inclusion notably of nuclear power in the Taxonomy. The recognition of the nuclear role is in line with the IPCC, the IEA and many countries
  - ◊ New Green Financing Framework[2] aligned with the European Taxonomy including nuclear projects

- **Strengthening of the financial structure and liquidity**
  - ◊ Successful rights issue for more than €3.15bn with preferential subscription rights to shareholders
  - ◊ Signature of 3-year bilateral term loans for a total amount of c. €12bn

- **Announcements by the French President on 10 February 2022 in Belfort**
  - ◊ Support to the French nuclear sector
    - o Launch of a construction program of 6 EPR2 reactors and potentially 8 more
    - o Extended operations for all reactors, except for safety issues
    - o Development of the French SMR programs, including €500 million for NUWARD™
  - ◊ Acceleration of renewable energy development
  - ◊ Confirmation of the growing role of low-carbon electricity in France's climate ambition, in a context of reduction in energy consumption

- **Nuclear**
  - ◊ Launch of the second phase of the "Grand Carénage" program covering the 2022-2028 period for an estimated cost of c.€33bn[3]
  - ◊ Decree on the additional allocation of 20TWh of ARENH volumes for 2022 published on 12 March 2022[4]
  - ◊ Flamanville 3: update of fuel loading target from end-2022 to Q2 2023 and construction costs from €12.4bn to €12.7bn[5]
  - ◊ Signature of an exclusive agreement with GE to acquire part of the GE Steam Power's nuclear activities[6], excluding the American continent
  - ◊ Hinkley Point C: review of schedule and costs, start of power generation of unit 1 targeted for June 2027, estimated completion costs of the project between £$_{2015}$25 and 26 billion[7]. Unit 1 reactor vessel head built
  - ◊ Sizewell C: obtention of the Development Consent Order (DCO) by the British government
  - ◊ SMR NUWARD™: design submitted to a pre-assessment led by the ASN, in collaboration with the Czech and Finnish safety authorities for the purpose of international harmonisation of safety standards

- **Renewables**
  - ◊ Growth of the Group's wind and solar projects portfolio. 82GW gross (+9% vs. end-2021) with success in India and the United States:
    - ○ 3 solar + storage projects won in New York (1GW)
    - ○ Offshore wind development rights won in the New York Bight (1.5GW)
    - ○ PPA signed on a solar project in Rajasthan (450MW)
  - ◊ Saint Nazaire (480MW): first MWh generated[8] and 56 offshore wind turbines installed out of 80
  - ◊ Commissioning of 4 solar power plants in Israel (54MW), 2 of which are floating

- **Customers and services**
  - ◊ 1.27 contracts/customer[9] services, gas and electricity at the end of June 2022 vs. 1.24 at the end of June 2021 (2030 target > 1.5)
  - ◊ Gain of nearly 520,000 gas and service contracts year-on-year[10] in France
  - ◊ Stability of the electricity contract portfolio in the first half of 2022 in France
  - ◊ Nearly 1.7 million residential electricity customers with market offers in France, i.e. +18% vs. end-2021
  - ◊ Success in the professional segment: electricity (Toyota, Ministry of Armed Forces, Paprec, etc.) and gas (Tereos, Constellium, etc.)
  - ◊ Dalkia: signing of agreements with Arkema for a SRF[11] recovery project, avoiding 10,000 t of CO_2 emissions per year

(1) Entry into force of the delegated act on 1 January 2023.
(2) In line with the Green Bond Principles published by the International Capital Markets Association (ICMA), with the European Union's Green Bond Standards proposed by the Technical Expert Group on Sustainable Finance (TEG). Independent third-party opinion performed by Cicero.
(3) In current euros. Part of it covers the end of the first period 2014-2025.
(4) See 14 March 2022 press release.
(5)See 12 January 2022 press release. Cost in 2015 euros and excluding interest during the construction period.
(6) See 10 February 2022 press release.
(7) Compared to a start-up in June 2026 and a cost estimation of between £201522 and 23 billion, announced on 27 January 2021. See press release of 19 May 2022.
(8) See EDF Renewables press release of 10 June 2022.
(9) EDF estimate for the 4 priority countries in Europe, known as "G4" (France, Italy, United Kingdom, Belgium) for residential customers.
(10) From end-June 2021 to end-June 2022.
(11) SRF = Solid Recovered Fuel not recycled locally.

- ## Innovations for carbon neutrality
  - ◊ Launch of a new industrial plan dedicated to 100% low-carbon hydrogen. As part of the IPCEI[1] programme, favourable EU decision allowing French subsidies for McPhy's gigafactory project in Belfort (1GW/year)
  - ◊ EDF Pulse: participation in the fundraising of the UK start-up Carbon8 (carbon capture and recovery based on industrial residues)
  - ◊ Mobility:
    - IZIVIA and Q-Park partnership to deploy 4,000 charging units within 3 years in France
    - Partnership signed by Luminus to supply charging solutions to Arval's professional and residential customers (3-year rolling period) in Belgium
    - Launch of a combined offer of charging stations and solar panels for business customers in France
    - Innovative solution from Sowee and Mobilize[2] for Renault electric vehicle customers: costs decreased through smart home charging
    - IZI by EDF selected by Nissan to supply and install electric vehicle charging solutions for its residential customers
    - More than 240,000 charging points installed and managed at the end of June 2022 at Group level, i.e. +26% compared to the end of 2021

- ## Framatome
  - ◊ Good operating performances and strong order intakes book

- ## Enedis
  - ◊ At the end of June 2022, all concession contracts with the cities and metropolitan areas renewed for an average duration of 30 years
  - ◊ Signature of a €800m loan agreement with EIB to support energy transition
  - ◊ Growth of the grid connection activity in particular with renewable producers

(1) Important Project of Common European Interest.
(2) Renault application.

Group key figures for the first half of 2022

The figures presented in this document are taken from the EDF group's condensed consolidated half-year financial statements at 30 June 2022.

(in millions of euros)	H1 2022	H1 2021	Variation	Variation (%)	Organic variation (%)
Sales	66,262	39,621	26,641	67.2	66.4
Operating profit before depreciation and amortisation (EBITDA)	2,672	10,601	(7,929)	- 74.8	- 75.0
Operating profit (EBIT)	(4,496)	4,272	(8,768)	n.a	n.a
Income before taxes of consolidated companies	(7,443)	5,133	(12,576)	n.a	n.a
EDF net income	(5,293)	4,172	(9,465)	n.a	n.a
Net income excluding non-recurring items (1)	(1,312)	3,740	(5,052)	n.a	n.a
Net income excluding non-recurring items, adjusted for the remuneration of hybrid bonds	(1,644)	3,452	(5,096)	n.a	n.a
Group cash flow (2)	(3,981)	(240)	(3,741)	n.a	n.a
Net indebtedness (3)	42,771	41,007	1,764	4.3	n.a

n.a: not applicable

(1) 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 4.6 "Net income excluding non-recurring items").

(2) 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, net allocations to dedicated assets, dividends paid in cash, and investments in the Hinkley Point C and Linky projects (see section 5).

(3) Net indebtedness is not defined in the accounting standards and is not directly visible in the Group's consolidated balance sheet (see section 5.1).

Note 2 ECONOMIC ENVIRONMENT

2.1 Market prices for electricity and the principal energy sources

During the first half of 2022, average spot prices for electricity were significantly higher all over Europe than in the first half of 2021.

Spot electricity prices in Europe (1)

	France	United Kingdom	Italy	Belgium
Average baseload price for H1 2022 (€/MWh)	229.0	209.8	249.1	200.9
Variation in average H1 baseload prices, 2022/2021	+ 291.6%	+ 165.6%	+ 272.0%	+ 254.7%
Average peakload price for H1 2022 (€/MWh)	252.7	232.6	267.5	219.8
Variation in average H1 peakload prices, 2022/2021	+ 276.6%	+ 153.0%	+ 263.5%	+ 244.2%

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

The comments below concern baseload prices.

In **France**, spot electricity prices stood at an average €229.0/MWh (baseload) and €252.7/MWh (peakload) in the first half of 2022, a year-on-year increase of €170.5/MWh and €185.6/MWh respectively.

This significant increase resulted from a combination of two factors:

- A large increase in commodity prices, particularly for gas, which caused a substantial rise in the cost of fossil-fired electricity generation,
- A decline in energy output, down by 30.5TWh compared to the first half of 2022, driven by a decrease in generation of nuclear power (-27.5TWh) and hydropower (-8.4TWh) to 154.1TWh and 25.5TWh respectively for the first half of 2022. These downturns were partly offset by a +4.2TWh increase in fossil-fired energy output including 3.8TWh for gas (+22.1% year on year) and 0.3TWh for coal (+16.3% year on year), and a slight increase in photovoltaic power output, which was almost entirely offset by the lower level of wind power generation.

Despite a decline in domestic demand to 239.8TWh, France was a net importer of 2.6TWh whereas it is generally a net exporter (to the extent of 22.4TWh in the first half of 2021). In the first half of 2022, France was a net importer from the CWE zone, the United Kingdom and Spain (13.2TWh 3.1TWh and 1.4TWh respectively) but remained a net exporter to Italy and Switzerland (8.7TWh and 6.3TWh respectively).

In the **United Kingdom**, average spot electricity prices were €130.8/MWh higher than in the first half of 2021, at €209.8/MWh in average for the first half of 2022. This increase resulted directly from the pressures on commodities caused by the war in Ukraine. The lower demand and higher solar and wind power generation in the second quarter, combined with large-scale imports of LNG, limited price rises in the second quarter.

In **Italy**, average spot prices rose by €182.1/MWh compared to the first half of 2021, to reach €249.1/MWh in average for the first half of 2022. This increase reflects the importance of gas in the electricity mix in Italy. Prices followed trends in gas and CO_2 prices, which rose significantly during the first half of 2022 due to the war in Ukraine and higher demand (+11.9TWh above the level recorded in the first half of 2021).

In **Belgium**, average spot prices registered a year-on-year increase of €144.3/MWh, to €200.9/MWh in average for the first half of 2022. This increase was driven by significant price upsurges in gas and CO_2 prices, together with higher demand (+2.5TWh), principally in the second quarter of the year.

*(1) **France:** 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.*

Forward electricity prices in Europe [(1)]

	France	United Kingdom	Italy	Belgium
Average forward baseload price under the 2023 annual contract for H1 2022 *(€/MWh)*	225.0	220.6	184.7	161.2
Variation in average H1 forward baseload price under the annual contracts, 2022/2021	+ 254.6%	+ 213.3%	+ 189%	+ 194%
Forward baseload price under the 2023 annual contract at 30 June 2022 *(€/MWh)*	365.7	231.2	268.0	222.0
Average forward peakload price under the 2023 annual contract for H1 2022 *(€/MWh)*	361.2	262.5	204.1	195.4
Variation in average H1 forward peakload price under the annual contracts, 2022/2021	+ 367.4%	+ 225.3%	+ 191%	+ 198%
Forward peakload price under the 2023 annual contract at 30 June 2022 *(€/MWh)*	618.5	284.0	290.9	275.0

All over Europe, the average quoted forward prices for baseload and peakload electricity under annual contracts were substantially higher than in the first half of 2021, principally due to increases in commodity prices (gas, coal and CO_2).

In **France**, the average annual contract baseload price for next-year delivery was €225.0/MWh in the first half of 2022, up by 254.6% compared to the first half of 2021. This increase reflects the rise in commodity prices, and a particularly tense domestic supply/demand balance due to low forecast nuclear availability. The average monthly forward price for 2023 rose across the whole period, and stood at €314.4/MWh in average for June 2022. Electricity prices for next-year delivery reached record levels in June, peaking at €365.7/MWh on 30 June.

In the **United Kingdom**, the April Ahead contract baseload price gained 213.3% year on year to an average €220.6/MWh for the first half of 2022, following the same pattern as commodity prices.

In **Italy**, the annual contract baseload price for next-year delivery was an average €184.7/MWh for the first half of 2022, up by +189% compared to first-half 2021. This increase was driven by the upward movement in commodity prices since the start of the year. CO_2 prices remained volatile over the period, following a rising trend that shored up the price of electricity: electricity prices rose across the first half of the year, because gas accounts for a large portion of the Italian electricity mix.

In **Belgium**, the annual contract baseload price for next-year delivery was 194% higher than in the first half of 2021, reaching an average €161.2/MWh in the first half of 2022 as a result of rising commodity prices.

➔ Principal forward electricity prices in Europe (baseload year ahead), in €/MWh

(1) ***France***: *average year-ahead EEX price;*
***Belgium** and **Italy**: average year-ahead EDF Trading price;*
***United Kingdom**: average ICE annual contract prices, April 2021 then April 2022 (in the UK, annual contract deliveries take place from 1 April to 31 March).*

CO_2 emission quota prices

The **price of CO_2 emission quotas** for delivery in December Y+1 stood at an average €85.4/t for the first half of 2022, up sharply from the first half of 2021 (+92.7% or +€41.1/t).
With the ambitions to cut down emissions, underpinned by the European Commission's "Fit for 55" package, in late June 2022 the European Parliament raised the target CO_2 emission reduction between 2005 and 2030 to 67%, as opposed to the initial 61%. It also approved the gradual phasing out between 2027 and 2032 of free emissions quota allocations to businesses.
The emission quota price also increased early in the year due to falling temperatures in central Europe and forecasts of low wind power generation (entailing greater use of fossil-fired generation facilities).
In late February, the war in Ukraine caused high volatility in prices. With the diminishing gas supplies from Russia, many European States considered making greater use of coal, and therefore purchased emissions quotas.
Against this background, prices also moved in line with the positions taken by purely financial actors that contributed to the volatility of quota prices right from the start of the year.

CO_2 emission quota prices in €/t for next-year deliveries in December [(1)]

Fossil fuel prices [(2)]

	Coal *(US$/t)*	Oil *(US$/bbl)*	Natural gas *(€/MWhg)*
Average price for H1 2022	187.4	105.0	74.9
Average H1 price variation, 2022/2021	+ 153.9%	+ 61.0%	+ 282.0%
Highest price in H1 2022	263.6	128.0	109.9
Lowest price in H1 2022	90.8	79.0	49.4
Price at 30 June 2022	252.0	114.8	109.9
Price at 30 June 2021	87.2	75.1	28.2

Coal prices for next-year delivery in Europe stood at an average $187.4/t in the first half of 2022 (+153.9% or +$113.6/t compared to first-half 2021).
This significant increase and the volatility of coal prices since the start of the year are explained by several factors:

- The durability of the energy crisis since October 2021, especially in the gas market, leading to greater use of coal-fired facilities and lower stock levels in Europe;
- Unfavourable weather-related incidents (in Indonesia and Australia) and rail transport difficulties that limited exports (in Australia and South Africa);
- Lower demand in China due to successive lockdowns, offset by energy requirements in India which were driven by national growth and local heatwaves;
- The embargo on Russian coal from 15 August 2022, decided in early April by the European Union;
- The reduction of gas supplies from Russia, which resulted in several European countries taking steps to restart electricity generation by coal-fired plants.

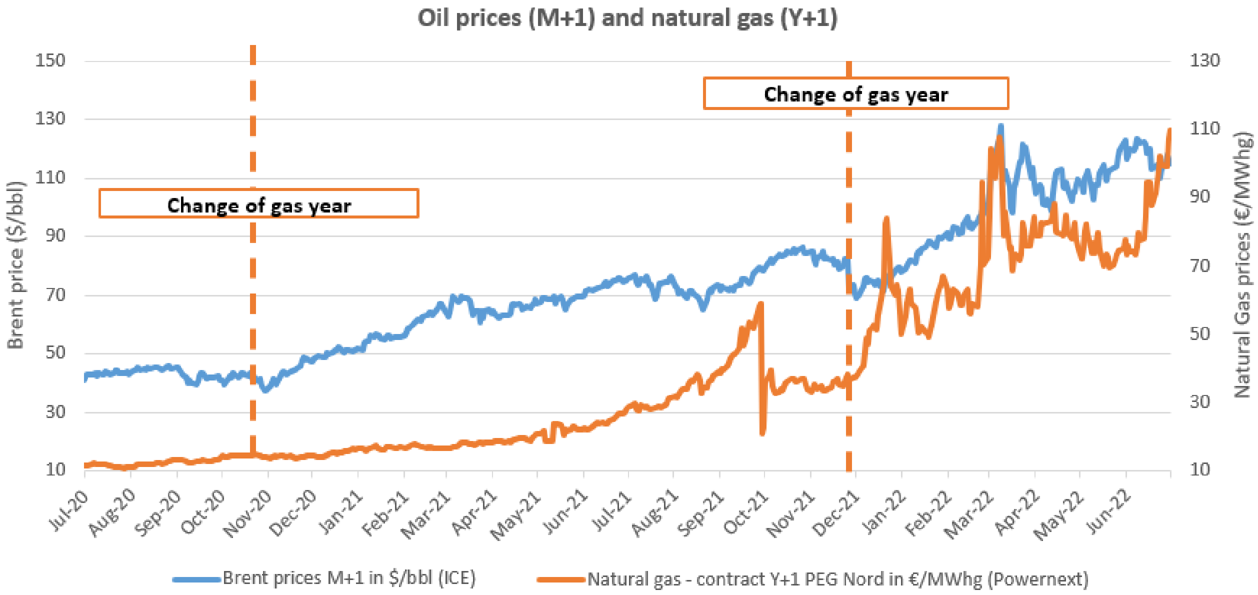
(1) *Average ICE prices for the annual contract, Phase IV (2021-2030).*
(2) ***Coal:** average ICE prices for delivery in Europe (CIF ARA) for the next calendar year (US$/t);*
***Oil:** ICE price for Brent crude oil barrel (front month) (US$/barrel);*
***Natural gas:** average ICE OTC prices, for delivery starting from October of the following year in France (PEG) (€/MWhg).*

Oil prices stood at an average $105.0/bbl for the first half of 2022 (+61.0% or +$39.8/bbl year on year). Amid market tensions, prices were fundamentally supported by a shrinking supply and geopolitical tensions.
When the war in Ukraine began, the United States announced an embargo on Russian oil on 8 March, but price increases were limited by falling Chinese demand because of lockdowns to cope with the resurgence of Covid, and the United States' decision to put 180 million barrels onto the market from March to September. At the end of the half-year, persistent supply-demand tensions worldwide and the announcement in May of an EU embargo on Russian oil pushed prices back upwards.

The **annual gas contract price** for next-year delivery at the French PEG hub reached an average of €74.9/MWh for the first half of 2022 (+282.0% or +55.3/MWh compared to first-half 2021). The energy crisis that had begun in October 2021 became more firmly established in 2022 as the war in Ukraine stoked fears of reduced gas supplies from Russia. Meanwhile, Russia demanded payment in roubles for Russian gas deliveries.
Tensions abated when deliveries continued, and there was a large influx of LNG into Europe.
However, there was a further upturn in prices late in the half-year, due to:

- Extension of the unavailability of the Freeport LNG terminal in Texas to three months as a result of a fire in early June;
- A 40%, then 60% reduction in Gazprom's export capacity via Nord Stream 1, intensifying concerns over the restoration of European stocks. Gas storage levels at 30 June were at 58.2% of capacity, one point below the ten-year average.

Natural gas and oil prices



2.2 Consumption of electricity and natural gas

Consumption of electricity and gas in France

Electricity consumption in France was down by 5TWh (-2%) compared to the first half of 2021. This decrease resulted from the relatively mild temperatures that had an estimated impact of -7.4TWh, partly counterbalanced by a post-Covid business recovery with an effect of around +2.5TWh.

Gas consumption in France was 22.5TWh lower in the first half of 2022 than the same period of 2021. This downturn was principally driven by the decrease in demand, resulting from the mild temperatures of the period.

Consumption of electricity and gas in the United Kingdom

Electricity and **gas** consumption in the United Kingdom decreased by 5% and 17% respectively compared to the first half of 2021, because mild weather and higher prices limited demand.

Consumption of electricity and gas in Italy

Electricity consumption in Italy in the first half of 2022 totalled 158.1TWh, 2.06% more than in the first half of 2021. This increase is attributable to the post-Covid business recovery and higher temperatures in May and June 2022, which pushed up cooling requirements.

Demand for natural gas in Italy in the first half-year totalled 39.1bcm, down by 1.7% year-on-year. The lower residential consumption (-4.1%) due to the milder weather in 2022, and a decline in industrial consumption (-8.4%), were only partly offset by higher consumption of gas for thermoelectric uses (+7%).

2.3 Sales tariffs for electricity and natural gas

In **France**, the regulated sales tariffs were raised on 1 February 2022 by an average +3.8% excluding taxes (+4% including taxes) for all consumers in both the residential and business segments. This increase results from the introduction of a tariff cap (*bouclier tarifaire*) introduced by the French government to protect consumers against the exceptional rises in energy prices.

In the **United Kingdom**, a cap on the variable electricity and gas tariffs for residential consumers was introduced on 1 January 2019. This cap has so far been revised every six months, mainly to take account of market price movements in the previous six months. Due to this approach, the significant increase in supply costs caused by the rise in energy prices since September 2021 was only partially reflected in the standard variable tariffs (SVT): an initial 12% increase was applied from 1 October 2021, followed by a 54% increase from 1 April 2022.

The British energy regulator Ofgem consequently held consultations on the price cap methodology, to ensure that it adequately reflects the costs, risks and contingencies faced by suppliers. The outcome was adoption of stabilisation measures to be applied in the event of excessive price fluctuations, and quarterly updates to the SVT cap.

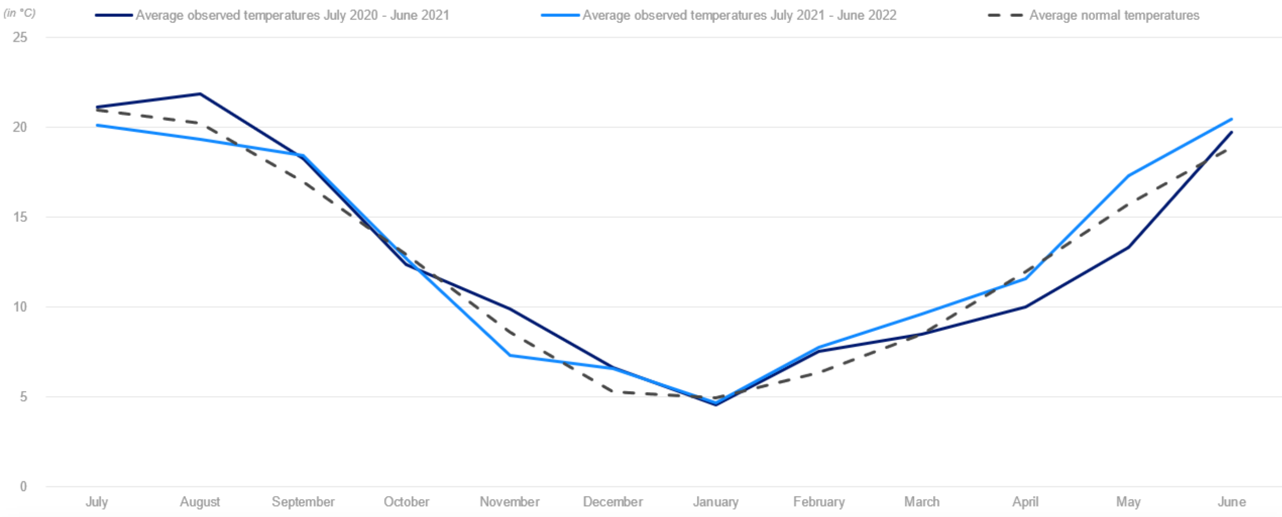
In view of recent and forthcoming increases to the SVT, the UK government also announced consumer support measures including a £400 reduction on every household's energy bill, and other aids for the most vulnerable households.

2.4 Weather conditions: temperatures and rainfall

Temperatures in France

The first half of 2022 was generally mild, except for a few cold spells in January and April. The average temperature was 0.8°C above seasonal norms and +1.3°C higher than in the first half of 2021. May was particularly warm, and June saw a heatwave that came exceptionally early in the year and was exceptionally intense.

Average monthly temperatures (1) (2) in France

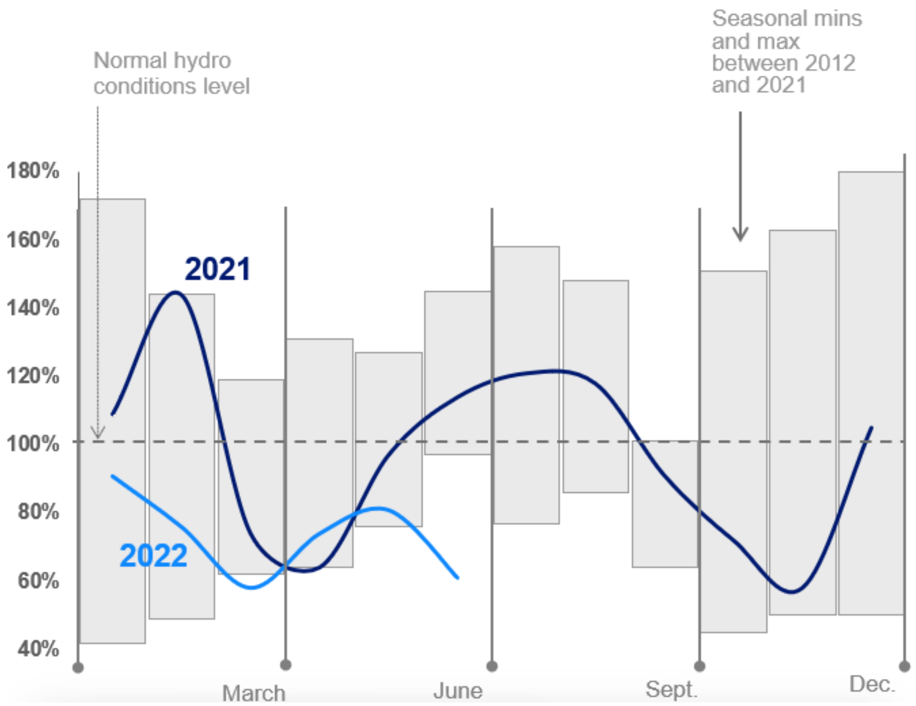


(1) Average temperatures recorded in 32 cities, weighted by electricity consumption.
(2) Source Météo France.

Rainfall in France

The first half of 2022 was marked by record low water levels in all mountain ranges. The index was 0.73 (compared to 1 in the first half of 2021). Reservoirs were 68.4% full at 30 June, close to the lowest levels ever recorded, due to the pre-drought situation and low cumulative snowfall over the winter 2021/2022, combined with rapid thaws that were essentially concentrated in the month of May.

Hydrological conditions in France *



* Weekly monitoring of French reservoir levels by the EDF group's statistical observatory (Miréor project) as far as the coast.

Note 3 SIGNIFICANT EVENTS

In addition to the significant events mentioned in sectjon 1, details of significant events during the first half of 2022 are presented in note 2 to the condensed consolidated half-year financial statements at 30 June 2022, "Summary of Significant Events".

3.1 Regulatory environment

Details of changes in regulations are provided in notes 5.1.1 and 5.3 to the condensed consolidated half-year financial statements at 30 June 2022.

3.2 Changes in EDF's Board of Directors

At the General Shareholder's Meeting of 12 May 2022, the shareholders appointed Delphine Geny-Stephann to replace Véronique Bédague-Hamilius who had informed the Board of her decision to resign from her post as director with effect from the end of the General Shareholders' Meeting. Ms Geny-Stephann, a consultant, was appointed as director upon recommendation of the French State, for a 3-year term to end with the General Shareholders' Meeting called to approve the financial statements for the year ended 31 December 2024.

Céline Fornaro, Head of the Finance Division of French State Shareholdings Agency (*Agence des participations de l'Etat* – APE), was appointed as Director representing the French State by a decision of the Minister for the Economy, Finance and Industrial and Digital Sovereignty issued on 28 June 2022, in accordance with article 4 of Order n° 2014-948 of 20 August 2014. She succeeds Martin Vial, who had been Commissioner of the French State Shareholdings Agency since 24 August 2015, and a Director of EDF since 9 September 2015.

Note 4 ANALYSIS OF THE BUSINESS AND THE CONSOLIDATED INCOME STATEMENT FOR THE FIRST HALF-YEARS OF 2022 AND 2021

Presentation and analysis of the consolidated income statement for the first half-years of 2022 and 2021 is broken down by business segment for sales and EBITDA (France – Generation and supply, France – Regulated activities, EDF Renewables, Dalkia, Framatome, United Kingdom, Italy, Other international and Other activities). EBIT (operating profit) and net income are analysed without any breakdown.

(in millions of euros)	H1 2022	H1 2021
Sales	**66,262**	**39,621**
Fuel and energy purchases	(48,238)	(18,753)
Other external purchases [(1)]	(3,919)	(3,629)
Personnel expenses	(7,286)	(7,273)
Taxes other than income taxes	(2,383)	(2,509)
Other operating income and expenses	(1,764)	3,144
Operating profit before depreciation and amortisation (EBITDA)	**2,672**	**10,601**
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	(993)	(541)
Net depreciation and amortisation [(2)]	(5,534)	(5,194)
(Impairment)/reversals	(253)	(502)
Other income and expenses	(388)	(92)
Operating profit (EBIT)	**(4,496)**	**4,272**
Cost of gross financial indebtedness	(728)	(754)
Discount effect	502	(1,016)
Other financial income and expenses	(2,721)	2,631
Financial result	**(2,947)**	**861**
Income before taxes of consolidated companies	**(7,443)**	**5,133**
Income taxes	1,840	(1,458)
Share in net income of associates and joint ventures	444	344
Net income of discontinued operations	4	(3)
CONSOLIDATED NET INCOME	**(5,155)**	**4,016**
EDF net income	**(5,293)**	**4,172**
EDF net income - continuing operations	(5,297)	4,175
EDF net income - discontinued operations	4	(3)
Net income attributable to non-controlling interests	**138**	**(156)**
Net income attributable to non-controlling interests - continuing operations	138	(156)
Net income attributable to non-controlling interests - discontinued operations	-	-

(1) Other external expenses are reported net of capitalised production.

(2) Including net increases in provisions for replacement of concession assets.

4.1 Sales

Sales amounted to €66,262 million in the first half of 2022, up by €26,641 million (+67.2%) from the first half of 2021. Excluding the effect of movements in exchange rates (€336 million) and changes in the scope of consolidation (-€23 million), sales registered organic growth of 66.4%.

Change in Group sales and breakdown by segment

(in millions of euros)	H1 2022	H1 2021	Variation	Variation (%)	Organic variation (%)
Sales	**66,262**	**39,621**	**26,641**	**67.2**	**66.4**

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

(in millions of euros)	H1 2022	H1 2021	Variation	Variation (%)	Organic variation (%)
France - Generation and supply [1]	23,762	16,001	7,761	48.5	48.4
France - Regulated activities [2]	9,578	9,096	482	5.3	5.3
EDF Renewables	1,051	807	244	30.2	24.3
Dalkia	3,211	2,326	885	38.0	39.9
Framatome	1,977	1,634	343	21.0	15.7
United Kingdom	6,904	4,887	2,017	41.3	42.1
Italy	13,017	3,911	9,106	232.8	232.0
Other international	2,585	1,394	1,191	85.4	65.1
Other activities	7,697	1,887	5,810	307.9	311.4
Inter-segment eliminations	(3,520)	(2,322)	(1,198)	n.a	n.a
GROUP SALES	**66,262**	**39,621**	**26,641**	**67.2**	**66.4**

(1) Generation, supply and optimisation in mainland France, and sales of engineering, consulting and other services.

*(2) Regulated activities comprise distribution in mainland France, which is carried out by Enedis, 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*). Enedis is an independent EDF subsidiary as defined in the French Energy Code.*

n.a : not applicable

France – Generation and Supply

Sales by the **France – Generation and supply** segment amounted to €23,762 million in the first half of 2022, up by €7,761 million (+48.4% in organic growth) year on year.
A substantial rise in downstream market prices led to higher downstream income (+€5,615 million). This increase was kept down by regulatory decisions intended to limit the rise in tariffs (principally raising the ARENH ceiling and introducing a tariff cap), with an effect of -€2,036 million.
The milder weather in 2022 had a negative impact of -€338 million.
Sales under the ARENH scheme to alternative suppliers were up by €292 million as a result of the additional volumes made available in application of a decree issued in March (this had a negative effect on EBITDA).
Resales of electricity subject to purchase obligations were up by €2,683 million, mainly due to a rise in spot and forward market prices since the third quarter of 2021 (the effect on EBITDA was neutral because expenses relating to purchase obligations are compensated by the CSPE mechanism).
Capacity auction sales also had a positive impact of €226 million.
Finally, the results of sales activities subsidiaries and aggregators, and gas sales, contributed +€1,511 million of the increase in sales (with no significant effect on EBITDA).

Electricity generation

Nuclear generation in France produced 154.1TWh in the first half of 2022, 27.6TWh less than in the first half of 2021. This decrease is principally explained by the reactor outages for inspections following detection of stress corrosion. Gross hydropower output stood at 18.9TWh[1], down by 5.7TWh year on year, a decline that mainly resulted from very unfavourable hydrological conditions in the first half of 2022 (see section 2.4 "Weather conditions: temperatures and rainfall").
Fossil-fired generation plants were therefore used to produce 5.7TWh, +0.5TWh more than in the first half of 2021, in a context of favourable price conditions, and despite the shutdown of the coal-fired facility at Le Havre.
Sales volumes to final customers (a market segment that includes the local distribution firms and excludes foreign operators) decreased by -5TWh, including -4.4TWh attributable to weather effects. The decline in market shares and unit volumes on the residential segment was partly offset by a post-Covid recovery in consumption on the business market.
EDF remained a net seller on the wholesale markets to the extent of 6.2TWh, down by 32.0TWh compared to the first half of 2021 due to the substantially lower nuclear and hydropower output.
Overall, the increase in ARENH sales and the decrease in sales to final customers balanced each other out.

(1) Before deduction of pumped-storage hydropower volumes. Total cumulative hydropower production after deduction of pumped-storage hydropower stood at 15.5TWh for the first half of 2022 (21.9TWh for the first half of 2021).

France – Regulated activities

Sales by the **France – Regulated activities** segment in the first half of 2022 amounted to €9,578 million, an increase of +€482 million (+5.3%) compared to the first half of 2021.
The €121 million rise in sales by Enedis[1] was principally driven by a volume effect (+€100 million) and a favourable price effect (+€212 million) due respectively to higher income from connections (+€28 million) and the indexed adjustment to the TURPE 6 distribution tariff [2]. These effects were partly counterbalanced by the milder weather in the first half of 2022 than the first half of 2021 (-€222 million).
Sales by Électricité de Strasbourg and SEI-PEI were up by €363 million, reflecting the increase in prices on the gas market, and the pre-tax rise in regulated sales tariffs.

EDF Renewables

EDF Renewables sales totalled €1,051 million, registering an organic increase of €196 million (+24.3%) compared to the first half of 2021, chiefly attributable to generation by plants in operation. The volume of energy produced totalled 10.8TWh at 30 June 2022, corresponding to year-on-year organic growth of 22.7%, particularly thanks to new capacities commissioned during the second half of 2021 and in 2022, and better wind conditions, principally in North America and the United Kingdom. Positive price effects in the United Kingdom also contributed to this growth.

Dalkia

Sales by **Dalkia** amounted to €3,211 million for the first half of 2022, an organic year-on-year increase of €928 million (+39.9%). This growth is principally driven by the substantial increase in gas prices (a fivefold increase since the first half of 2021). Sales also benefited from dynamic business activity in the United Kingdom and France.

Framatome

Framatome's sales amounted to €1,977 million in the first half of 2022, an organic increase of 15.7% compared to the first half of 2021. A significant portion of sales are made within the Group. This rise is explained by higher levels of business with the Group.

United Kingdom

The **United Kingdom** segment's contribution to first-half 2022 Group sales was €6,904 million, an organic increase of €2,057 million (+42.1%) compared to the first half of 2021. This was mainly attributable to the impact of rising energy prices on sales tariffs, and higher nuclear output, which rose by 2.3TWh to 23.2TWh due to the smooth implementation of the unit outages and a lighter maintenance schedule, despite the closure of Hunterston B in January 2022.

Italy

The **Italy** segment's sales totalled €13,017 million for the first half of 2022, with organic growth of €9,072 million (+232.0%) compared to the first half of 2021 driven by higher prices and sales volumes for electricity and gas, particularly on the wholesale market.

Other international

The **Other international** segment principally covers operations in Belgium, the United States, Brazil and Asia (China, Vietnam and Laos). Sales by this segment amounted to €2,585 million in the first half of 2022, a year-on-year organic increase of €907 million (+65.1%).

In **Belgium**[3]**,** sales registered an organic rise of €864 million (+89.6%) compared to the first half of 2021, resulting from higher electricity and gas prices, and an increase in volumes sold to business, industrial and residential customers. The Luminus customer portfolio grew despite intense competition on the market. Greater use was made of the thermal generation fleet, leading to an increase in services for the electricity system.

In **Brazil**, there was an organic increase of €43 million (+15.2%) in sales, principally due to higher volumes sold on the market and the +18% adjustment in November 2021 to the Power Purchase Agreement (PPA) price attached to EDF's Norte Fluminense power plant. The foreign exchange effect in the first half of 2022 was favourable (rise of the Brazilian real against the euro).

Other activities

Other activities comprise, among other entities, EDF Trading and the gas activities.
Sales by this segment amounted to €7,697 million in the first half of 2022, an organic increase of €5,877 million compared to the first half of 2021 (+311.4%).

- Sales by the **gas activities** amounted to €5,424 million, a year-on-year organic increase of €4,565 million. This substantial increase is explained both by the rise in wholesale gas prices and an increase in the volumes sold.
- **EDF Trading**'s sales totalled €2,098 million, a year-on-year organic increase of 164.7%. This performance was achieved in a context of high market volatility, particularly for gas and all commodities.

(1) Enedis is an independent EDF subsidiary as defined in the French Energy Code.
(2) Indexed adjustments to the TURPE distribution tariff: +2.75% at 1 August 2020 and 0.91% at 1 August 2021.
(3) Belgium comprises Luminus and EDF Belgium.

4.2 EBITDA

Despite a significant increase in sales, supported by electricity and gas prices, EBITDA was down significantly in the first half of 2022. This change in EBITDA is mainly explained by the drop in nuclear output linked to the phenomenon of stress corrosion, by the impact of the exceptional regulatory measures adopted by the French government to limit the increase in prices to consumers in 2022 and, to a lesser extent, by the drop in hydropower output. These events have forced the Group to purchase electricity in a context of high market prices. On the other hand, EBITDA benefited from the exceptional performance of EDF Trading, which grew in a context of high market volatility and from better nuclear output in the United Kingdom.

(in millions of euros)	H1 2022	H1 2021	Variation	Variation (%)	Organic variation (%)
Sales	**66,262**	**39,621**	**26,641**	**67.2**	**66.4**
Fuel and energy purchases	(48,238)	(18,753)	(29,485)	157.2	156.2
Other external expenses	(3,919)	(3,629)	(290)	8.0	6.7
Personnel expenses	(7,286)	(7,273)	(13)	0.2	- 0.8
Taxes other than income taxes	(2,383)	(2,509)	126	- 5.0	- 5.7
Other operating income and expenses	(1,764)	3,144	(4,908)	- 156.1	- 157.4
EBITDA	**2,672**	**10,601**	**(7,929)**	**- 74.8**	**- 75.0**

Change in Group EBITDA and analysis

- The Group's **fuel and energy purchases** amounted to €48,238 million in the first half of 2022, an organic increase of €29,288 million (+156.2%) compared to the first half of 2021.
  - In the **France - Generation and supply** segment, fuel and energy purchases registered an organic increase of €12,547 million (+181.5%) due to a large volume of energy purchases at high prices to compensate the lower levels of nuclear and hydro output, purchases to provide alternative suppliers with additional ARENH volumes, and energy purchases by aggregators.
  - In the **United Kingdom,** the organic increase of €1,868 million (+54.4%) in fuel and energy purchases principally related to the unfavourable impact of rising market prices on energy purchases.
  - In **Italy**, the organic increase of €8,823 million (+291.9%) in fuel and energy purchases essentially reflected higher volumes and prices for gas on the wholesale market.
  - In the **Other activities** segment, fuel and energy purchases showed an organic increase of €4,471 million (+737.8%). This was related to purchases of LNG at high prices in early 2022 following releases from reserves in late 2021, in a tense commodity market that led to extensive use of gas-fired plants.
- The Group's **other external expenses** amounted to €3,919 million for the first half of 2022, a year-on-year organic increase of €242 million (+6.7%).
  - In the **France – Generation and supply** segment, other external expenses registered an organic increase of €78 million (+8.4%). This increase mainly reflects purchases connected to growth in service activities for final customers, and development of engineering projects.
  - In the **United Kingdom**, there was an organic decrease of €93 million (-25.9%) in other external expenses, mainly explained by the transfer to the Nuclear Liability Fund of expenses for permanently shutdown power plants (Dungeness B and Hunterston B), and lower maintenance expenses in line with the outage schedule.
  - **EDF Renewables** registered a €55 million (+19.5%) organic increase in other external expenses, principally due to growth in the distributed solar power business in the United States, and development of the project portfolio.
  - **Dalkia**'s other external expenses showed an organic increase of €102 million (+12.8%), driven by business growth, particularly for site work in the United Kingdom.
- The Group's **personnel expenses** for the first half of 2022 totalled €7,286 million, an organic decrease of €61 million (-0.8%) from the first half of 2021.
  - In the **France – Generation and supply** segment, personnel expenses registered an organic decrease of €168 million (-5.6%) that mainly reflects good control of costs and the higher discount rate applied for pensions.
  - In the **France – Regulated activities** segment, there was an organic decrease of €72 million (-4.4%) in personnel expenses, essentially due to the higher discount rate, which offset the pay rise effects of 2022.
  - **EDF Renewables** registered a €39 million (+18.1%) organic increase in personnel expenses that is principally explained by a rise in workforce numbers, notably due to growth in the development and construction businesses, and also, to a lesser degree, to wage inflation observed principally in the United States and Brazil.
  - **Dalkia** saw an organic increase of €54 million (+9.3%) in its personnel expenses, essentially resulting from a workforce increase linked to growth in the services and site work businesses.
  - In the **United Kingdom**, there was an organic decrease of €144 million (-22.1%) in personnel expenses, notably due to the transitional payment for the employee pensions reform in 2021 which had no equivalent in 2022, the effects of that reform, and the decrease in the workforce in 2022.

- **Taxes other than income taxes** amounted to €2,383 million for the first half of 2022, corresponding to an organic decrease of €142 million (-5.7%) compared to the first half of 2021.
  - In the **France – Generation and supply** segment, the €146 million (-8.5%) organic decrease is mainly attributable to value added taxes given the change in the segment's results.

- **Other operating income and expenses** generated a net expense of €1,764 million in the first half of 2022, an organic decrease of €4,948 million (-157.4%) compared to the first half of 2021.
  - In the **France – Generation and supply** segment, the -€5,057 million organic decrease in other operating income and expenses is primarily attributable to a decrease in CSPE compensation (neutral impact on EBITDA), associated with the rise in spot market prices.
  - In the **France – Regulated activities** segment, the +€60 million (+8.1%) organic increase in other operating income and expenses mainly resulted from an increase in CSPE compensation for the island energy systems under the mechanism to compensate for additional costs in the French islands.
  - In the **United Kingdom**, other operating income and expenses showed a favourable organic change of +€214 million. This reflects the recognition in 2022 of a levy claim relating to the Utility Point customers taken on in 2021 under the supplier of last resort mechanism, and recovery of provisions for onerous contracts booked at 31 December 2021 concerning customers on the standard variable tariff (SVT).
  - In **Italy**, the organic decrease of -€109 million in other operating income and expenses principally relates to the gain on the sale of Infrastrutture Distribuzione Gas (IDG) recorded in the first half of 2021, which had no equivalent in 2022.

Change in Group EBITDA and breakdown by segment

(in millions of euros)	H1 2022	H1 2021	Variation	Variation (%)	Organic variation (%)
France – Generation and supply	(4,988)	4,838	(9,826)	- 203.1	- 203.0
France – Regulated activities	3,171	3,210	(39)	- 1.2	- 1.2
EDF Renewables	500	294	206	70.1	64.6
Dalkia	185	215	(30)	- 14.0	- 14.9
Framatome	186	183	3	1.6	- 6.6
United Kingdom	860	267	593	222.1	241.9
Italy	622	534	88	16.5	14.2
Other international	291	206	85	41.3	32.0
Other activities	1,845	854	991	116.0	114.6
GROUP EBITDA	**2,672**	**10,601**	**(7,929)**	**- 74.8**	**- 75.0**

n.a.: not applicable

France – Generation and supply

EBITDA is down sharply due to the drop in nuclear output in France linked to the phenomenon of stress corrosion in a context of high market prices and to the negative impacts of the exceptional regulatory measures adopted in France by the government in order to limit the increase in sales prices to consumers in 2022.

In supply activities, the rising prices trend contributed positively to the evolution of EDF's offers to its customers for an estimated €3,944 million in EBITDA, before regulatory measures

The additional allocation to alternative suppliers of 19.5TWh[1] of ARENH volumes (estimated at -€1.4 billion for the 6.5TWh delivered in Q2 2022) and its repercussions on customer offers starting in Q2 2022 (estimated at -€2 billion) have created negative price effects. The overall impact, including the 4% tax-inclusive cap on regulated electricity tariffs for 2022, is estimated at -€6,162 million at the end of June 2022. This amount includes a provision of €2.7 billion arising from the additional ARENH volumes of 13TWh to be delivered to alternative suppliers in the second half of 2022.

Nuclear output decreased by 27,6TWh between H1 2021 and H1 2022. The decrease was mainly due to the impact of the stress corrosion phenomenon (-36.6TWh). On the other hand, the fleet had fewer unplanned outages and better planning optimisation (+9TWh). The outages forced purchases to be made at very high price levels. The impact on EBITDA was estimated at -€7,282 million at the end of June 2022.

In a context of historically poor hydropower conditions, the drop in hydropower output had an adverse effect on EBITDA estimated at €1,370 million.

Other factors contributed favourably to the change in EBITDA, notably positive effects relating to purchases and sales on the market totalling an estimated €1,044 million in the context of a milder than normal winter.

(1) Additional volumes have been reduced from 20TWh to 19.5TWh due to the cessation of activity or the waiver of some suppliers in the CRE's deliberation on 31 March 2022.

France – Regulated activities

The decrease in EBITDA is explained in particular by a negative price effect for an estimated -€77 million linked to purchases of losses made in a context of a sharply increasing market prices (estimated at -€312 million) despite the positive change in TURPE indexation [(1)].

The downturn in volumes distributed due to milder weather had an estimated impact of -€98 million.

EDF Renewables

EBITDA growth was mainly due to the rise in generated volumes compared to the first half of 2021 (+22.7%) and by the positive price effects, in particular in North America and in the United Kingdom. The first half of 2021 was marked by an extreme cold snap in Texas, with a material adverse impact on EBITDA estimated at -€94 million, without equivalent in 2022.

The growth of the portfolio of wind and solar projects, as well as the setting up of operations in new countries (Vietnam, Australia, Colombia, etc.) brought an increase in development costs

Dalkia

EBITDA was penalised by the capping of gas prices for cogeneration plants under the purchase obligation and their early cessation due to the shift in the winter tariff.

Dalkia makes a major contribution to the “France Relance” plan. Arkema, Dalkia and PSI Environnement launched a project designed to avoid consumption of 18,000 tonnes of fossil fuel equivalent and 10,000 tonnes of CO2 emission per year. The steam boiler project, built and operated by Dalkia, will be SRF-fired[(2)].

Framatome

Framatome has experienced increased EBITDA within its scope. Contributory EBITDA, however, decreased in the first half of 2022 due to lower fuel assemblies sales, mainly in the United-States.

The “Installed Base” activity grew in the first half of 2022 in North America.

Order intake amounted to approximately €2.1 billion at the end of June 2022[(3)], higher than in the first half of 2021, thanks in particular to the fuel activities and the Installed Base activity in North America.

Framatome finalised the acquisition of the EFINOR group’s energy and defence activities. This operation allows Framatome to reinforce its expertise in welding and qualified welding standards, while strengthening its position in the manufacture of components and in high value-added services for customers[(4)].

United Kingdom

The significant increase in EBITDA is explained by improved generation and optimisation of the nuclear fleet. The increase in nuclear output (+2.3TWh) enabled additional volumes to be sold on the market in a context of rising prices (realised nuclear prices up by +£14.9MWh), whereas the level of output in 2021 had led to purchases at high prices.

Supply activities have been affected by the energy crisis in the United Kingdom, including a partial passing on the increase in energy prices to residential customers as part of the capped tariff increase announced on 1 April 2022. The professional and industrial customer segment benefited from portfolio growth and a favourable price effect.

EBITDA also benefited from lower operating expenses, mainly due to the shutdown of Dungeness B and Hunterston B plants and to the reform of the employee pension scheme.

Italy

EBITDA in electricity activities was up in particular thanks to higher volumes generated by CCGT (combined cycle gas turbines) in connection with the increase in the clean spark spread and the remuneration of the capacity market. On the other hand, the contribution of renewable generation decreased, in particular due to very poor hydropower conditions.

Gas activities benefited from the increase in volumes sold, in particular on the wholesale markets.

A capital gain on the disposal of Infrastrutture Distribuzione Gas (IDG) was recorded in 2021, with no equivalent in 2022.

Supply activities were affected by the increase in electricity and gas prices which have not been fully passed on to residential customers.

Other international

In Belgium, the increase in EBITDA is mainly due to increased generation from wind farms with more favourable wind conditions than in 2021 (+15.6% compared to H1 2021). Installed wind capacity amounted to 599MW[(5)], or +7.5% compared to June 2021.

Nuclear generation was down due in particular to the unplanned outage of the Chooz power plant[(6)] over much of the first half of 2022, leading to electricity purchases at high prices.

Given the tense market context, the positive evolution of EBITDA was also driven by the good performance of the thermal activities, which were more solicited.

Service activities are growing and supply activities held up well in a context marked by continuing intense competition and the extension of social tariffs.

(1) Indexation of TURPE 6 Distribution tariff of +0.91% and of TURPE 6 Transport tariff of +1.09% at 1 August 2021.
(2) Solid recovered fuel.
(3) At Framatome scope.
(4) See press release of 09 May 2022.
(5) Net capacity at Luminus perimeter. Gross installed wind capacity amounted to 664MW (+1 % compared to end-2021).
(6) Luminus benefits from 100MW of drawing rights at the Chooz power plant.

In Brazil, EBITDA was up organically mainly due to the 18% increase in the price of the Power Purchase Agreement (PPA) at the EDF Norte Fluminense plant in November 2021.

Other activities

EDF Trading's EBITDA was up sharply. This trading and optimisation performance was achieved across all geographies, on a backdrop of very volatile commodity markets.

The decline in EBITDA for the gas business was mainly due to higher-priced purchases of Liquefied Natural Gas at the beginning of 2022 compared to the first half of 2021. These purchases helped offset the de-stocking of the Dunkirk terminal at the end of 2021 in a context of high prices and tension on the commodities market leading to a high use of gas assets.

4.3 EBIT

The Group's consolidated **EBIT** for the first half of 2022 amounted to -€4,496 million, down by €8,768 million.

(in millions of euros)	**H1 2022**	**H1 2021**	**Variation**	**Variation (%)**
EBITDA	**2,672**	**10,601**	**(7,929)**	**- 74.8**
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	(993)	(541)	(452)	83.5
Net depreciation and amortisation *	(5,534)	(5,194)	(340)	6.5
(Impairment)/reversals	(253)	(502)	249	- 49.6
Other income and expenses	(388)	(92)	(296)	321.7
EBIT	**(4,496)**	**4,272**	**(8,768)**	**n.a.**

n.a.: not applicable

** Including net increases to provisions for replacement of concession assets.*

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

The net changes during the first half of the year in fair value on Energy and Commodity derivatives, excluding trading activities, increased significantly by €452 million between 2021 and 2022, in a context of high volatility on the commodity markets.

Net depreciation and amortisation

Net depreciation and amortisation showed an organic increase of €317 million compared to the first half of 2021. In the **France – Generation and supply** segment, the increase (+€188 million) essentially concerned the nuclear activities.

At **Enedis**, the higher depreciation and impairment (+158 million) relates to the "FACE" decree and lower recoveries of amortisation of grantor financing for concession assets located in towns that were transferred from the urban to the rural regime.

(Impairment)/Reversals

Impairment recognised in the first half of 2022 amounted to €253 million, including €121 million in the **United Kingdom,** and €100 million relating to **EDF Renewables'** wind farms in view of persistent congestion problems on the ERCOT transmission lines in Texas, and an unfavourable political context in Mexico.

Other income and expenses

Other income and expenses amounted to -€388 million for the first half of 2022, including -€321 million in the **France – Generation and supply** segment. This result is principally due to additional costs incurred for repair work on penetration welds at the Flamanville 3 EPR, and to a lesser degree, the expense resulting from the Employee Reserved Offer. The variation compared to the first half of 2021 is essentially explained by the AREVA settlement indemnity [1] recognised in 2021, which had no equivalent in 2022.

(1) Settlement agreement signed on 29 June 2021 for a payment by AREVA to EDF of a €563 million indemnity in settlement of all the disputes between EDF and AREVA regarding the acquisition contract for Framatome signed in 2017, and their commercial relations prior to the acquisition.

4.4 Financial result

(in millions of euros)	H1 2022	H1 2021	Variation	Variation (%)
Cost of gross financial indebtedness	(728)	(754)	26	- 3.4
Discount effect	502	(1,016)	1,518	n.a
Other financial income and expenses	(2,721)	2,631	(5,352)	n.a
FINANCIAL RESULT	**(2,947)**	**861**	**(3,808)**	**N.A**

n.a.: not applicable

The financial result for the first half of 2022 is a financial expense of €2,947 million, €3,808 million below the financial result for the first half of 2021. This change is primarily explained by:

- a €5,352 million deterioration in other financial income and expenses, mainly due to a weaker performance of the dedicated asset portfolio (-€5,032 million[(1)]) (see section 7.1.6);
- a favourable discount effect (+€1,518 million) principally attributable to the increase in the real discount rate for nuclear provisions between December 2021 and June 2022, whereas this rate was unchanged between December 2020 and June 2021. The discount rate used to calculate nuclear provisions at 30 June 2022 was 4.5%, assuming inflation of 2.2% (respectively 3.4% and 1.3% at 30 June 2021).

4.5 Income taxes

The income tax receivable amounts to €1,840 million at 30 June 2022, corresponding to an effective tax rate of 24.7% (compared to an expense of -€1 458 million at 30 June 2021, corresponding to an effective tax rate of 28.4%). The €3,298 million change between the tax expense for 2021 and tax receivable in 2022 essentially reflects the €12,576 million decrease in the Group's pre-tax income, generating additional tax income of €3,247 million. The tax receivable also reflects the unfavourable effect of the tax on exceptional profits made by electricity-producing companies in Italy in 2022, and the absence of any favourable effect equivalent to the impact of asset revaluations for tax purposes in Italy in 2021.

In contrast to 2021, the Group was not subject to any rise in the normative tax rate in the countries where it does business.

Deferred tax assets on the loss recorded in 2022 by EDF SA's tax consolidation group in France are recognised in full due to prospects of a recovery within a 10-year horizon.

After elimination of non-recurring items (principally variations in unrealised gains and losses on the financial asset portfolio and commodities, and the exceptional tax on surplus profits introduced in Italy), the effective current tax rate is 26.1% at 30 June 2022, compared to 26.5% at 30 June 2021.

4.6 Net income excluding non-recurring Items

The Group's net income excluding non-recurring items [(2)] stood at -€1,312 million in the first half of 2022, down by €5,052 million compared to the first half of 2021 (see note 18.1 to the condensed consolidated half-year financial statements at 30 June 2022, "Net income excluding non-recurring items"). This change principally reflects the significant decline in EBITDA, which was only partly offset by the higher financial result and a decrease in income taxes.

4.7 EDF net income

EDF net income totalled -€5,293 million at 30 June 2022, down by €9,465 million year on year. It includes the following principal items after tax:

- -€806 million of impairment and other non-recurring items;
- -€746 million of net changes in fair value on Energy and Commodity derivatives excluding trading activities, after taxes;
- -€2,429 million of net changes in the fair value of debt and equity instruments.

(1) Change in fair value of the portfolio.
(2) 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.

Note 5 NET INDEBTEDNESS, CASH FLOWS AND INVESTMENTS

(in millions of euros)	H1 2022	H1 2021	Variation	Variation (%)
EBITDA	**2,672**	**10,601**	**(7,929)**	**- 74.8**
Cancellation of non-monetary items included in EBITDA	(3,343)	(391)	(2,952)	n.a
Cash EBITDA	**(671)**	**10,210**	**(10,881)**	**- 106.5**
Change in working capital	6,804	(1,896)	8,700	- 461.8
Net investments (1) (excluding Group disposals 2020-2022)	(8,474)	(7,679)	(795)	10.3
Other items including dividends received from associates and joint ventures	(510)	(69)	(441)	n.a
Operating cash flow (2)	**(2,851)**	**566**	**(3,417)**	**n.a**
Asset disposals	9	420	(411)	n.a
Income taxes paid	(202)	(343)	141	- 41.1
Net financial expenses disbursed	(424)	(393)	(31)	7.9
Dedicated assets	30	(79)	109	- 138.0
Cash dividends	(543)	(411)	(132)	32.1
Group cash flow (3)	**(3,981)**	**(240)**	**(3,741)**	**n.a**
Issues of hybrid notes	-	1,235	(1,235)	n.a
Redemption of hybrid notes	-	-	-	-
Other monetary changes	3,230	(293)	3,523	n.a
(Increase)/decrease in net indebtedness, excluding the impact of changes in exchange rates	**(751)**	**702**	**(1,453)**	**n.a**
Effect of changes in exchange rates	(113)	(304)	191	- 62.8
Effect of other non-monetary changes	1,081	885	196	21.7
(Increase)/decrease in net indebtedness of continuing operations	**217**	**1,283**	**(1,066)**	**- 83.1**
(Increase)/decrease in net indebtedness of discontinued operations (4)	**-**	**-**	**-**	**-**
Net indebtedness at beginning of year	**42,988**	**42,290**	**698**	**1.7**
NET INDEBTEDNESS AT END OF YEAR	**42,771**	**41,007**	**1,764**	**4.3**

(1) 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 Group disposals for 2020-2022.

(2) 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 Group disposals 2020-2022 and including HPC and Linky), and other items, including dividends received from associates and joint ventures.

(3) Group 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. It is equal to the operating cash flow defined in note (3) less asset disposals, income taxes paid, net financial expenses disbursed, net allocations to dedicated assets, and dividends paid in cash.

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

n.a.: not applicable

5.1 Net indebtedness

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 was €42,771 million at 30 June 2022, compared to €41,007 million at 30 June 2021.

(in millions of euros)	**H1 2022**	**H1 2021**	**Variation**	**Variation (%)**
Loans and other financial liabilities	77,425	61,503	15,923	26
Derivatives used to hedge liabilities	(3,893)	(2,831)	(1,083)	38
Cash and cash equivalents	(7,418)	(5,928)	(1,490)	25
Debt and equity securities – liquid assets	(23,323)	(11,715)	(11,608)	99
Derivatives used to hedge assets	(20)	-	(20)	n.a.
Net indebtedness of assets held for sale	-	(22)	22	- 100
NET INDEBTEDNESS [1]	**42,771**	**41,007**	**1,764**	**4**

n.a.: not applicable

(1) Net indebtedness is not defined in the accounting standards and is not directly visible in the Group's consolidated balance sheet.

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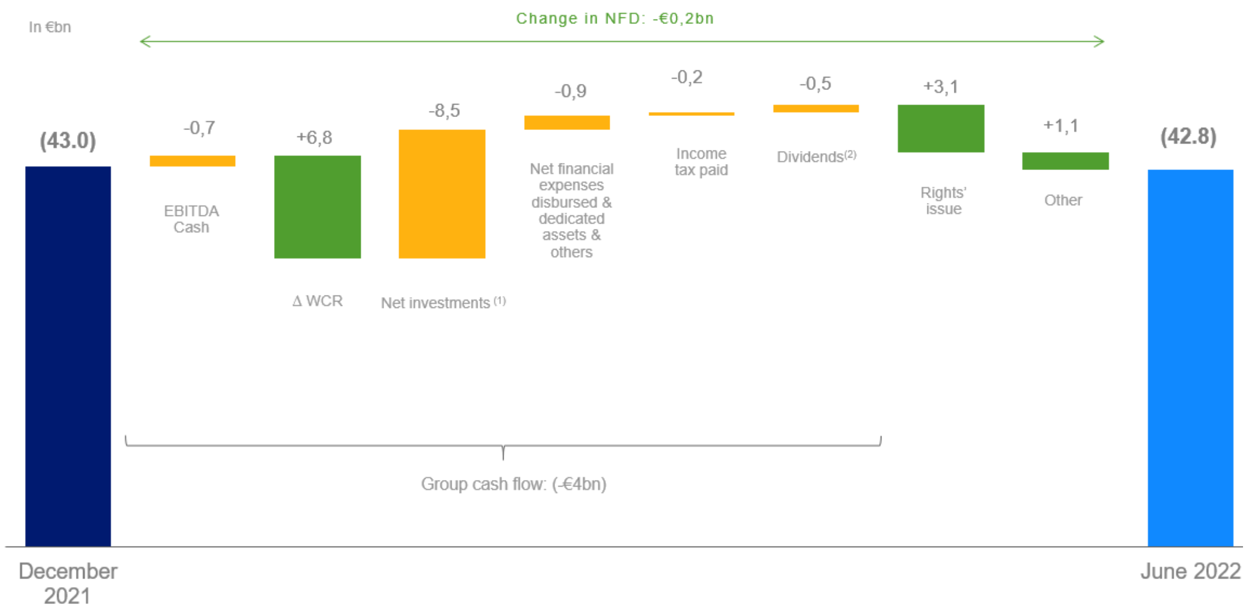
Net indebtedness was €0.2 billion lower than at 31 December 2021, notably due to the favourable €6.8 billion change in working capital and the €3.1 billion capital increase, despite the fact that cash EBITDA was negative. Net investments amounted to €8.5 billion.

Change in net indebtness between 31 December 2021 and 30 June 2022



NB: figures rounded up to the nearest whole number.

(1) Net investments excluding Group disposals.

(2) Dividends paid including hybrid bond remuneration.

5.2 Operating cash flow

The operating cash flow was -€2,851 million for the first half of 2022 compared to €566 million for the first half of 2021, a decrease of €3,417 million.

Cash EBITDA

EBITDA after adjustment for non-cash items amounted to -€671 million, down by €10,881 million from the first half of 2021, principally due to:

- The lower nuclear and hydropower output and the impacts of regulatory measures;
- A decrease in EDF Trading's cash EBITDA given the high price volatility in 2021 and early 2022. The change in working capital partly compensated for this.

Change in working capital

The change in working capital stood at €6,804 million for the first half of 2022. This change was mainly explained by a decrease of margin calls related to trading activities (+5.8 billion) and the rise in electricity prices which led to a decrease in EDF's net Purchase Obligation expense and surplus CSPE compensation (+€1.8 billion).

Similarly, the difference between the change in working capital for the first-half 2021 and 2022 (+€8,700 million) is principally due to changes in margin calls in the trading activities (+€6.9 billion) and working capital related to the CSPE (+€1.9 billion).

Net investments

Net investments (excluding Group disposals 2020-2022 and including HPC and Linky) amounted to €8,474 million for the first half of 2022, a year-on-year increase of €795 million.

(in millions of euros)	H1 2022	H1 2021	Variation	Variation (%)
France - Generation and supply	2,850	2,655	195	7
France - Regulated activities	2,310	2,407	(97)	- 4
EDF Renewables	1,384	368	1,016	276
Dalkia	78	80	(2)	- 3
Framatome	112	74	38	51
United Kingdom	1,396	1,433	(36)	- 3
Italy	256	486	(230)	- 47
Other international	78	197	(119)	- 60
Other activities	10	(21)	31	149
NET INVESTMENTS	**8,474**	**7,679**	**795**	**10**

Net investments by the **France - Generation and supply** segment were up by €195 million, due notably to costs related to stress corrosion.
Net investments by the **France – Regulated activities** segment (including Linky) were down by €97 million, mainly reflecting the smaller volume of work as the Linky programme drew to a close.
In the **United Kingdom**, net investments decreased by €36 million since maintenance costs for nuclear and thermal facilities were lower than in the first half of 2021.
At **EDF Renewables**, the €1,016 million increase reflects large-scale investments in the United States, and lower subsidies and disposals than in the first half of 2021.
In **Italy**, net investments were down by €230 million, notably due to acquisitions in the renewable energies sector in the first half of 2021 that had no equivalent in the first half of 2022.
Similarly, the decrease in net investments by the **Other International** segment is principally attributable to the acquisition of Essent by Luminus in the first half of 2021.

5.3 Group cash flow

Group cash flow for the first half of 2022 amounted to -€3,981 million, lower than the -€240 million recorded for the first half of 2021.

Asset disposals

Asset disposals in the first half of 2022 totalled €9 million.

Dedicated assets

In compliance with 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 to secure financing of its long-term nuclear obligations (see section 7.1.6).

In general, the changes concerning 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 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 +€30 million in dedicated assets at 30 June 2022 corresponds to the second and third of these categories.

Cash dividends

Cash dividends paid by EDF during the first half of 2022 amounted to €543 million, comprising:

- the 2021 dividend (€72 million) paid by EDF SA[1];
- payments made in 2022 to holders of perpetual subordinated bonds for the “hybrid note” issues (€332 million);
- dividends paid by Group subsidiaries to their minority shareholders (€139 million).

5.4 Effect of change in exchange rates

The foreign exchange effect (mainly the rise of the US dollar and the decline of the pound sterling against the euro [2]) had an unfavourable impact of €113 million on the Group’s net indebtedness.

5.5 Other non-monetary changes

Other non-monetary changes had an effect of €1,081 million in the first half of 2022, compared to €885 million in the first half of 2021. They mainly comprise changes in the fair value of debt instruments and new leases (IFRS 16).

5.6 Financial ratios

	30/06/2022 [2]	31/12/2021	31/12/2020
Net indebtedness/EBITDA	4.24	2.39	2.61
Net indebtedness/(Net indebtedness + equity) [1]	37%	41%	43%

(1) Equity including non-controlling interests.

(2) The ratio at 30 June 2022 is calculated based on cumulative EBITDA for the second half of 2021 and the first half of 2022.

Note 6 FINANCIAL OUTLOOK

2023 Ambitions [3]

- Net financial debt / EBITDA: around or slightly above 3x
- Adjusted net debt / Adjusted EBITDA [4]: around 5x

(1) The French State opted for a scrip dividend for 2021 and 2022.
(2) The pound sterling fell by 2.1% against the euro, from €1.190/£1 at 31 December 2021 to €1.165 /£1 at 30 June 2022.
The US dollar rose by 9% against the euro, from €0.883/$1 at 31 December 2021 to €0.963/$1 at 30 June 2022.
(3) On the basis of the scope and exchange rates at 1 January 2022. In a constant regulatory environment (ARENH ceiling at 100TWh), with a 2023 forward price assumption on 13 July 2022, and taking into account 2022 and 2023 French nuclear output estimates as given in the press release of 18 May 2022.
(4) At constant S&P methodology.

Note 7 MANAGEMENT AND CONTROL OF MARKET RISKS

See also section 2.2.2 "Financial and market risks" of the 2021 Universal Registration Document.

7.1 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, foreign exchange rate, interest rate, and equity risks), and the Group counterparty risk management policy set up by EDF. 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.

An independent unit in the Group's Risk Division, the Financial Risks Control Department (*Département Contrôle des Risques Financiers et Investissements* – CRFI), is in charge of financial risk control at Group level, mainly by ensuring correct application of the principles of the strategic financial management framework. It 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.

7.1.1 Liquidity position and management of liquidity risk

Liquidity position

The Group's liquidities at 30 June 2022, consisting of liquid assets, cash and cash equivalents, totalled €30,741 million and available credit lines amounted to €11,975 million.

At 30 June 2022, the Group's loans and other financial liabilities maturing within one year totalled €13,076 million and included €3,232 million relating to bonds, including accrued interest not yet due. This amount also comprises the negative cash position (including €2,437 million for margin calls on derivatives) and the liability relating to lease obligations (see note 17.2.2.3 to the condensed consolidated half-year financial statements at 30 June 2022). The associated requirements may when necessary be funded by the Group's liquidities and available credit lines mentioned above, and other short-term resources mentioned below.

No Group company was in default on any borrowing at 30 June 2022.

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. On 15 March 2022, EDF set up bilateral 3-year credit lines for the total amount of €10.25 billion with 9 banks. Two further 3-year bilateral credit lines totalling $2.2 billion were then concluded on 25 March and 29 April. Finally, on 5 April 2022 EDF carried out a rights issue of €3.1 billion.

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: changes in subsidiaries' working capital are financed by the Group's cash management department through stand-by credit lines provided for subsidiaries, which may also be granted revolving credit from the Group;
- 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), Negotiable European Commercial Paper (NEU CP), and US commercial paper (US CP). For EDF, the ceilings are €6 billion for the NEU CP programme and $10 billion for US commercial paper;
- transfer of bond liabilities to banking counterparties under cash repurchase agreements.

At 30 June 2022, the amount of the Group's commercial paper outstanding was €2,700 million for NEU CP, and $30 million for US CP. EDF has access to the world's main bond markets:

- the Euromarkets through its EMTN programme, which currently has a ceiling of €50 billion, particularly for euro and sterling issues;
- and the domestic markets, used for stand-alone issues in US dollars (144A bonds), yen (Samurai bonds) and Swiss francs.

The average maturity of the Group's gross debt was 12.2 years at 30 June 2022, compared to 13.7 years at 31 December 2021.

At 30 June 2022, EDF SA had a total amount of €11,433 million in available credit facilities (syndicated credit and bilateral lines):

- a syndicated credit line of €4 billion that expires in December 2025. No drawings had been made on this syndicated credit line at 30 June 2022;

- a syndicated social credit facility of €1.5 billion, signed in December 2021, with initial maturity of three years (December 2024) and two 1-year extensions possible. No drawings had been made on this facility at 30 June 2022;
- bilateral credit lines representing an available amount of €5,933 million, with expiry dates extending to December 2026. The level of this available financing is very frequently reviewed to ensure the Group has sufficient backup credit facilities.

The 7 credit lines with the European Investment Bank were all fully drawn by EDF SA at 30 June 2022, for a total amount of €2,675 million.

Among other facilities, Edison has a credit line with the European Investment Bank (available amount of €300 million at 30 June 2022).

7.1.2 Credit rating

At 30 June 2022, 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. These ratings were adjusted after the announcement on 13 January 2022 of changes in regulated electricity tariffs and 2022 nuclear power output and after publication of the annual results on 18 February 2022. On 24 May 2022 S&P placed EDF SA, EDF Energy and Edison on CreditWatch Negative after the group announced a downward revision of nuclear power generation forecasts in France and delays in the construction of Hinkley Point C.

The Group's rating may be affected by the risks described in Chapter 2 of the 2021 Universal Registration Document, particularly in risk 1A: "Changes in public policies and the regulatory framework in France and Europe, particularly ARENH" and risk 2D: "Risk of access to liquidity".

Company	Agency	Long-term rating	Short-term rating
EDF	Standard & Poor's	BBB/CreditWatch Negative	A-2
	Moody's	Baa1/ Negative outlook	P-2
	Fitch Ratings	BBB+/ Negative outlook	F2
EDF Trading	Moody's	Baa3/ Negative outlook	n.a.
EDF Energy	Standard & Poor's	BB/CreditWatch Negative	B
	Moody's	Baa3/ Negative outlook	n.a.
	Fitch Ratings	BBB-/ Negative outlook	n.a.
Edison	Standard & Poor's	BBB/CreditWatch Negative	A-2
	Moody's	Baa3/ Negative outlook	n.a.

n.a.: not applicable.

7.1.3 Management of foreign exchange risk

Due to the diversification of its activities and geographical locations, the Group is exposed to the risk of exchange rate fluctuations, which may have an impact on the translation differences affecting balance sheet items, Group financial expenses, equity, net income and the IRR of projects.

To limit exposure to foreign exchange risks, the Group has introduced the following management principles:

- local currency financing: to the extent possible given the local financial markets' capacities, each entity finances its activities in its own functional currency. When financing is contracted in other currencies, derivatives may be used to limit foreign exchange risk;
- matching of assets and liabilities: the net assets of subsidiaries located outside the Euro zone expose the Group to a foreign exchange risk. The foreign exchange risk in the consolidated balance sheet is managed by market hedging through debt issued or contracted in foreign currencies, or use of financial derivatives. Hedging of net assets in foreign currencies complies with risk/return targets, and the hedging ratio varies depending on the currency. If no hedging instruments are available, or if hedging costs are prohibitive, the foreign exchange positions remain open and the risk on such positions is monitored by sensitivity calculations;
- hedging of operating cash flows in foreign currencies: in general, the operating cash flows of EDF and its subsidiaries are in their local currencies, with the exception of flows related to fuel purchases which are primarily in US dollars, and certain flows related to purchases of equipment, which concern lower amounts. Under the principles laid down in the strategic financial management framework, EDF and the main subsidiaries concerned by foreign exchange risks (EDF Energy, EDF Trading, Edison, EDF Renewables) are required to hedge firm or highly probable commitments related to these future operating cash flows.

As a result of the financing and foreign exchange risk hedging policy, the Group's gross debt at 30 June 2022 breaks down as follows by currency after hedging:

GROSS DEBT STRUCTURE AT 30 JUNE 2022, BY CURRENCY BEFORE AND AFTER HEDGING

30 June 2022 *(in millions of euros)*	**Initial debt structure**	**Impact of hedging instruments***	**Debt structure after hedges**	**% of debt**
Borrowings in euros (EUR)	45,524	18,516	64,040	83
Borrowings in US dollars (USD)	19,232	(15,409)	3,823	5
Borrowings in pounds sterling (GBP)	9,311	(1,194)	8,117	10
Borrowings in other currencies	3,358	(1,913)	1,445	2
Total DEBT	**77,425**	**-**	**77,425**	**100**

** 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 2022.

EXCHANGE RATE SENSITIVITY OF THE GROUP'S GROSS DEBT

30 June 2022 *(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)	64,040	-	64,040
Borrowings in US dollars (USD)	3,823	382	4,205
Borrowings in pounds sterling (GBP)	8,117	812	8,929
Borrowings in other currencies	1,445	145	1,590
Total DEBT	**77,425**	**1,339**	**78,764**

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 assets in foreign currencies of the Group's subsidiaries.

NET ASSET POSITION

30 June 2022 * *(in millions of currency units)*	**Net assets**	**Bonds**	**Derivatives**	**Net assets after management**
USD	4,678	1,450	830	2,398
CHF (Switzerland)	22		19	3
PLN (Poland)	288		153	135
GBP (United Kingdom)	21,960	5,435	5,625	10,900
BRL (Brazil)	1,844			1,844
CNY (China)	10,295		6,360	3,935
JPY (Japan)	191		190	1

* *Net assets as at 30 June 2022; bonds and derivatives as at 30 June 2022. The net positions shown exclude certain non-significant exposures.*

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

7.1.4 Management of interest rate risk

The exposure of the Group's net indebtedness to interest rate fluctuations covers two types of risk: a risk of change in the net financial expenses on floating-rate financial assets and liabilities, and a risk of change in the value of financial assets invested at fixed rates. These risks are managed by monitoring the floating-rate portion of net indebtedness, defined by reference to the risk/return for net financial expenses, taking into consideration expected movements in interest rates.

Under this policy, some of the debt is variabilised and the Group may use interest rate derivatives for hedging purposes.

The Group's debt after hedging instruments at 30 June 2022 comprised 57% at fixed rates and 43% at floating rates. The increase since 31 December 2021 in the floating-rate portion of the debt essentially results from the bilateral fixed-term credit lines arranged during the first half of 2022, amounting to €10.25 billion and $2.2 billion; they bear interest at floating rates given their short maturity of 3 years and the early repayment option.

A 1% uniform annual rise in interest rates would generate an approximate €328 million increase in financial expenses at 30 June 2022 based on gross floating-rate debt after hedging.

The average cost of Group debt (weighted interest rate on outstanding amounts) was 1.87% at 30 June 2022.

STRUCTURE AND INTEREST RATE SENSITIVITY OF GROUP DEBT

30 June 2022 *(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	59,689,	(15,175)	44,514	-
Floating rate	17,736	15,175	32,911	329
TOTAL	**77,425**	**-**	**77,425**	**329**

The Group's interest rate risk notably relates to the value of the Group's long-term nuclear obligations (see note 14 to the condensed consolidated half-year financial statements at 30 June 2022) and its pension and other specific employee benefit obligations (see note 15 to the condensed consolidated half-year financial statements at 30 June 2022), which are adjusted to present value using discount rates that depend on interest rates for various time horizons, and debt securities held for management of the dedicated assets set aside to cover these obligations (see section 7.1.6).

7.1.5 Management of equity risk

Coverage of EDF's nuclear obligations

Analysis of the equity risk is presented in section 7.1.6.

Coverage of employee benefit obligations for EDF SA and EDF 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.

31.0% of the assets covering EDF SA's employee benefit obligations were invested in equities at 30 June 2022, representing an amount of €3.2 billion of equities.

At 31 December 2021, the two pension funds sponsored by EDF Energy (EDF Energy Pension Scheme and EDF Energy Group Electricity Supply Pension Scheme) were merged into the British Energy pension fund (British Energy Generation Group) which was renamed EDF group (EDFG). At 30 June 2022, this fund was invested to the extent of 11.5% in equities and equity funds (excluding diversified growth funds), representing an amount of £930 million of equities.

7.1.6 Management of financial risk on EDF SA's dedicated asset portfolio

Dedicated assets have been built up progressively by EDF since 1999 to secure financing of its long-term nuclear obligations. The Law of 28 June 2006, codified in France's Environment code (Articles L. 5 94-1 to 14) and its implementing regulations, defined the provisions that are not related to the operating cycle, and must therefore be covered by dedicated assets. They are listed in note 14.3 to the condensed half-year financial statements at 30 June 2022, "Coverage of EDF's long-term nuclear obligations".

The dedicated asset portfolio is managed under the supervision of the Board of Directors and its advisory committees (Nuclear Commitments Monitoring Committee (CSEN), Audit Committee).

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.

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 under a policy for ensuring secure financing of nuclear expenses, in compliance with the regulations. 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 obligations. 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 in 2021 to reflect changes in fixed-income markets. The 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), and cash. These portfolios are managed by EDF Gestion (formerly the Listed Asset Management Division) and by EDF Invest.

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 Financial Risks Control department.

At 30 June 2022, the total value of the portfolio was €33,876 million compared to €37,454 million at 31 December 2021. Changes in dedicated assets in the first half of 2022 are described in note 14.2.1 to the condensed consolidated half-year financial statements at 30 June 2022, and details of their realisable value and book value are also presented in note 14.2.2.

(1) Internal Committee and permanent body for evaluation, consultation and operational decision-making for dedicated asset management.

CONTENT AND PERFORMANCE OF EDF'S DEDICATED ASSET PORTFOLIO

	30/06/2022			31/12/2021		
(in millions of euros)	Share of portfolio	Stock market or realisable value	Performance for H1 2022	Share of portfolio	Stock market or realisable value	Performance for 2021
Yield assets	25.2%	8,546	7.3%	21.1%	7,908	17.1%
Growth assets	36.5%	12,351	- 16.0%	40.9%	15,320	22.6%
Fixed-income assets	38.3%	12,979	- 9.9%	38.0%	14,226	- 0.7%
TOTAL DEDICATED ASSETS	**100%**	**33,876**	**- 8.9%**	**100%**	**37,454**	**11.9%**

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 €11,809 million at 30 June 2022. Their volatility was 14.06% (based on 52 weekly performances), compared to 10.93% at 31 December 2021. Applying this volatility to the value of listed equity assets at 30 June 2022, the Group estimates the annual volatility of the equities portion of dedicated assets at €1,660 million.

At 30 June 2022, the sensitivity of the listed bonds (€12,132 million) was 4.8, i.e. a uniform 100 base point rise in interest rates would result in a €577 million decline in market value. This sensitivity was 5.3 at 31 December 2021.

Assessment of the expected rate of return on dedicated assets

In compliance with the applicable regulations, based on the target allocation for dedicated assets stated above, studies to simulate the expected rate of return for the next few years, particularly the next twenty years (a horizon close to the duration of nuclear provisions) show with high probability that the average projected rate of return is higher than the 4.5% discount rate used to calculate nuclear provisions at 30 June 2022 (see note 14.1 to the condensed consolidated half-year financial statements at 30 June 2022).
The average annualised performance of dedicated assets since 2004, the year when their value first exceeded €1 billion, was 5.8% at 30 June 2022.

Currently valid dispensations and prescriptions granted by the administrative authority, in application of articles D. 594-6 and D. 594-7 of the Environment Code

EDF received ministerial authorisation on 31 May 2018 to increase the portion of unlisted assets in its dedicated assets from 10% to 15% subject to conditions (this does not apply to the shares of CTE or real estate assets).
In addition, Cyclife, an EDF subsidiary, has received a prescription from the administrative authority to reach a coverage ratio of at least 100% by 31 December 2022. In order to comply with this requirement, allocations to dedicated assets may be made in 2022.

7.1.7 Management of counterparty/credit risk

Counterparty risk represents the potential loss the EDF group would sustain in the event of future default by its counterparty. 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 quarterly consolidation of the Group's exposures. The Financial Risks Control (CRFI) department closely monitors Group counterparties (daily review of alerts, special cautionary measures for certain counterparties).

The table below gives details, by rating category, of the EDF group's consolidated exposure to counterparty risk. At 31 March 2022, 89% of the Group's exposure concerned "investment grade" counterparties, mainly due to 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
At 31/12/2021	91%	8,5%	0,5%	100%
At 31/03/2022	89%	10%	1%	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
At 31/12/2021	7.8%	0.3%	11.7%	60.7%	19.5%	100%
At 31/03/2022	7.0%	0.3%	11.7%	58.9%	22.1%	100%

Exposure in the energy trading activities is concentrated in EDF Trading. The significant increase since December 2021 is due to soaring commodity prices over the period. Each counterparty of this subsidiary 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 arrangement of guarantees with 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. Only banking, sovereign and corporate counterparties with good credit ratings are authorised, for limited amounts and maturities.

7.2 Management and control of energy market risks

7.2.1 Energy market risk policy

Through its generation and supply activities, the EDF group has operations on deregulated energy markets, principally in Europe, which expose it to price variations on the energy market that can significantly affect its financial statements.

Consequently, the Group has an energy market risk policy for all energy commodities, applicable to EDF and entities over which it has operational control.

The purpose of this policy is to:

- define the general framework for management of risks on the energy markets where the Group entities carry out their asset portfolio management activities (energy generation, optimisation and sale), and trading activities in the case of EDF Trading;
- define the responsibilities of asset managers and traders, and the various levels of control of activities;
- implement a coordinated Group-wide hedging policy that is coherent with the Group's financial commitments;
- consolidate the exposure of the various entities operationally controlled by EDF on the structured energy-related markets.

The Group Risk Division presents an annual report on the implementation of this policy to the Board of Directors' Audit Committee.

At entities not operationally controlled by EDF, the risk management framework is reviewed by the governance bodies.

7.2.2 Organisation of risk control and general risk hedging principles

The process for controlling energy market risks for entities operationally controlled by the Group is based on:

- a governance and market risk exposure measurement system, clearly separating management and risk control responsibilities;
- an express delegation to each entity, defining hedging strategies and establishing the associated risk limits. This enables the Executive Committee to set out and monitor an annual Group risk profile for that scope, consistent with the financial objectives, and thus direct operational management of energy market risks over market horizons (generally three years).

The basic principle of current hedging policy is:

- netting of upstream/downstream positions; wherever possible, sales to final customers are hedged by internal sales;
- gradual closing of most positions before the end of the budget year, based on a predefined hedging trajectory(1) that captures an average price.

The energy risk control process involves Group management and is based on a risk indicator and measurement system incorporating escalation procedures in the event risk limits are exceeded.

The exposure to energy market risks through EDF's operationally controlled entities is reported quarterly to the Executive Committee. The control processes are regularly evaluated and audited.

7.2.3 Principles for operational management and control of energy market risks

The principles for operational management and control of energy market risks for the Group's operationally controlled entities are based on strict segregation of responsibilities for managing those risks, distinguishing between management of assets (generation and supply) and trading.

The operators of generation and supply assets are responsible for implementing a risk management strategy that smoothes the impact of energy market risks on the variability of their financial statements (the accounting classifications of the hedges used are described in note 18.7 to the 2021 consolidated financial statements, "Derivatives and Hedge accounting"). However, they are still exposed to structural price trends to the extent of volumes that are not yet hedged, and uncertainties over volumes (relating to the ARENH scheme, generation plant availability, and customer consumption).

For operationally controlled entities in the Group, positions on the energy markets are taken predominantly by EDF Trading, which as the Group's trading entity executes most of the Group's purchase/sale orders on the wholesale markets. Consequently, EDF Trading is

(1) The risk management frameworks, which are approved annually by the Group for each entity with exposure to energy market risks, may include acceleration or deceleration plans allowing departures from these trajectories if predefined price thresholds are exceeded. Since these plans do not comply with the general principle of gradual hedging, they can only be applied under strict conditions.

subject to a strict governance and control framework, particularly the European regulations on trading companies.

EDF Trading trades on organised or OTC markets in derivatives such as futures, forwards, swaps and options (regardless of the accounting classification applied at Group level). Its exposure on the energy markets is strictly controlled through daily limit monitoring overseen by the subsidiary's management and by the division in charge of energy market risk control at Group level. Automatic escalation procedures also exist to inform members of EDF Trading's Board of Directors of any breach of limits for risks (value at risk limit) or losses (stop-loss limits). Value at Risk (VaR) is a statistical measure of the potential maximum loss in market value on a portfolio in the event of unfavourable market movements, over a given time horizon and with a given confidence interval [(1)]. Specific Capital at Risk (CaR) limits are also used in certain areas (operations on illiquid markets, long-term contracts and structured contracts) where VaR is difficult to apply. The stop-loss limit stipulates the acceptable risk for the trading business, setting a maximum level of loss in relation to the trading margin over a rolling three-month period. If these limits are exceeded, EDF Trading's Board of Directors takes appropriate action, which may include closing certain positions.

In the first half of 2022, EDF Trading's commitment on the markets was subject to a VaR limit of €70 million from 1 January, successively reduced to €51 million on 9 February and €42 million on 15 March before being raised to €57 million on 24 May, a CaR limit for long-term contracts and a CaR limit for operations on illiquid markets of €250 million each, and a stop-loss limit of €210 million from 1 January to 8 February, then €180 million from 9 February.

In an extremely volatile market environment, the VaR limit was occasionally exceeded during the first half of 2022, triggering the procedures defined for such situations. This indicator had returned below its limit at 30 June 2022.

Note 8 TRANSACTIONS WITH RELATED PARTIES

The transactions undertaken with related parties are detailed in note 3.3 to the condensed consolidated half-year financial statements at 30 June 2022, "Related Parties".

Note 9 PRINCIPAL RISKS AND UNCERTAINTIES FOR THE SECOND HALF-YEAR OF 2022

The principal risk factors to which the EDF group considers itself exposed, and the Group's policies for risk management and control, are described in chapter 2 of the 2021 Universal Registration Document, "Risk Factors and Control Framework" (pages 93 to 127). The 2021 Universal Registration Document was filed with the *Autorité des Marchés Financiers* (French Financial Markets Authority or AMF) on 17 March 2022 and is available from the AMF website (www.amf-france.org) and the EDF group website (www.edf.com).

As the Group remains subject to the identified risks specific to its business, the presentation of the major risks contained in the 2021 Universal Registration Document remains valid at the date of publication of this report for assessment of the principal risks and uncertainties to which the Group is exposed at 30 June 2022 or which could affect it during the second half of the current financial year.

For information on the risks specific to the war in Ukraine, see also note 1.6.2 to the condensed consolidated half-year financial statements at 30 June 2022.

For information on the risk relating to the French regulatory framework, particularly regarding the ARENH scheme, see section 2.2.1-1A of the 2021 Universal Registration Document. Also see note 5.1.1 to the condensed consolidated half-year financial statements at 30 June 2022.

Note 10 SIGNIFICANT EVENTS RELATED TO LITIGATION IN PROCESS

The principal litigations concerning the EDF group are presented in section 7.1.5 of the 2021 Universal Registration Document (URD). Information is provided below on litigations which have seen significant developments since the release of the URD, in addition to the developments reported in note 16.3 to the condensed consolidated half-year financial statements at 30 June 2022.

AMF investigation

As part of an AMF investigation into financial information provided to the markets since July 2013, on 5 April 2019 the AMF notified EDF of two grievances, which EDF contested. On 28 July 2020, the AMF's *Commission des sanctions* (Enforcement Committee) fined EDF €5 million for breaching the rules by disseminating false or misleading information about the construction of the Hinkley Point C nuclear power plant in a press release dated 21 October 2014, entitled "European Commission approval of agreements for the Hinkley Point C Nuclear Power Plant Project".

However, the Enforcement Committee found no breach of the obligation to immediately disclose inside information about EDF's decision to pursue the Hinkley Point C project when it began to be fully consolidated in the Group's financial statements (the information concerned was communicated to the market on 21 September 2015), and exonerated both EDF and its Chairman and Chief Executive Officer at the time in this respect.

(1) EDF Trading estimates the VaR by a "Monte Carlo" method, which is based on volatilities and historical correlations measured using observed market prices over the 40 most recent business days. The VaR limit applies to the total EDF Trading portfolio.

On 5 October 2020, EDF took an appeal before the Paris Court of Appeal, challenging this decision insofar as it concerned the grievance considered founded. Following EDF's appeal, the AMF Chairman also filed a cross-appeal on 3 December 2020 against the Enforcement Committee's decision, requesting that EDF's fine should be raised to €8 million. However, the AMF Chairman's cross-appeal did not challenge the Enforcement Committee's decision to dismiss the second grievance and consequently that point of decision is final.

The Paris Court of Appeal issued its decision on 30 June 2022. It upheld EDF's appeal, considering that the press release of 8 October 2014 did not constitute dissemination of false or misleading information, and consequently cancelled the decision by the AMF's Enforcement Committee regarding the grievance against EDF it had considered founded. The Paris Court of Appeal also rejected the cross-appeal by the AMF Chairman. EDF has thus been entirely cleared of the grievances expressed against it by the AMF.

CRE/REMIT investigation

On 1 December 2016, the CRE (French Energy Regulation Commission) launched an investigation to determine whether EDF and its subsidiaries EDF Trading Limited and EDFT Markets Limited were guilty of engaging in practices, since 1 April 2016 that could constitute breaches of Regulation (EU) no. 1227/2011 of 25 October 2011 on wholesale energy market integrity and transparency (REMIT). The CRE informed EDF by a letter dated 5 July 2018 that it had referred the matter to the Settlement of Disputes and Sanctions Committee (CoRDis). On 17 December 2021, EDF and EDF Trading Limited received a notification of grievances from the CoRDIS, to which they replied on 14 February 2022. The CoRDis issued its decision on 25 April 2022: it reduced the scope of the grievances considered justified and fined EDF €50,000, and also fined EDF Trading Limited €50,000 for an operational error. EDF and EDFT have decided not to appeal against these decisions.

The Dutch Authority for Consumers and Markets (ACM) had begun an investigation into the availability of the Sloe power plant (a gas-fired combined cycle power plant located in the Netherlands). On 19 November 2020, EDF and EDF Trading Limited received a notification of grievances from the ACM. On 27 May 2022, the ACM informed EDF and EDFT that it had decided to terminate the investigation, and this matter is now closed.

Appeals by NGOs and associations against administrative authorisations for the generation plants

A certain number of authorisations and permits for the Group's generation plants (Nuclear Safety Authority approvals, decisions by the *Préfecture*, decrees, orders, etc) have been challenged before the courts, often at the instigation of environmental associations.

CGN arbitration

Under the shareholder pact of TNPJVC Guangdong Taishan Nuclear Power Company Limited, an entity formed to construct, operate, maintain and manage the Taishan nuclear power plant with two 1,750MW reactors, EDF began an "interpretation" arbitration procedure in January 2021 in the Singapore International Chamber of Commerce against its partners China General Nuclear Power Co., Ltd, Guangdong Nuclear Power Investments Co., Ltd and Taishan Nuclear Power Industry Investments Co. Ltd (the CGN group).
The disagreement concerns the accounting policy for the power plant, particularly its depreciation period. EDF wants to use a 60-year period in line with the plant's operating lifetime, while CGN considers it should be 41 years, ending at the same time as the entity TNPJVC. EDF filed an initial request for arbitration in November 2021, and CGN responded in March 2022. Hearings have been scheduled for 10-14 October 2022.

Note 11 SUBSEQUENT EVENTS

Subsequent events are described in note 20 to the condensed consolidated half-year financial statements at 30 June 2022.

CONDENSED CONSOLIDATED

HALF-YEAR FINANCIAL STATEMENTS

AT 30 JUNE 2022

CONSOLIDATED INCOME STATEMENT

(in millions of euros)	Notes	H1 2022	H1 2021
Sales	5.1	66,262	39,621
Fuel and energy purchases	5.2	(48,238)	(18,753)
Other external expenses[(1)]		(3,919)	(3,629)
Personnel expenses		(7,286)	(7,273)
Taxes other than income taxes		(2,383)	(2,509)
Other operating income and expenses	5.3	(1,764)	3,144
Operating profit before depreciation and amortisation	**5**	**2,672**	**10,601**
Net changes in fair value on energy and commodity derivatives, excluding trading activities	6	(993)	(541)
Net depreciation and amortisation		(5,534)	(5,194)
(Impairment)/reversals	10.4	(253)	(502)
Other income and expenses	7	(388)	(92)
Operating profit		**(4,496)**	**4,272**
Cost of gross financial indebtedness		(728)	(754)
Discount effect	8.1	502	(1,016)
Other financial income and expenses	8.2	(2,721)	2,631
Financial result	**8**	**(2,947)**	**861**
Income before taxes of consolidated companies		**(7,443)**	**5,133**
Income taxes	9	1,840	(1,458)
Share in net income of associates and joint ventures	11	444	344
Net income of discontinued operations		4	(3)
CONSOLIDATED NET INCOME		(5,155)	4,016
EDF net income		**(5,293)**	**4,172**
EDF net income – continuing operations		(5,297)	4,175
EDF net income – discontinued operations		4	(3)
Net income attributable to non-controlling interests		**138**	**(156)**
Net income attributable to non-controlling interests – continuing operations		138	(156)
Net income attributable to non-controlling interests – discontinued operations		-	-
Earnings per share (EDF share) in euros:			
Basic earnings per share		(1.62)	1.25
Diluted earnings per share		(1.62)	1.17
Basic earnings per share of continuing operations		(1.62)	1.25
Diluted earnings per share of continuing operations		(1.62)	1.17

[(1)]Other external expenses are reported net of capitalised production costs.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

(in millions of euros)	Notes	H1 2022 EDF net income	H1 2022 Net income attributable to non-controlling interests	H1 2022 Total	H1 2021 EDF net income	H1 2021 Net income attributable to non-controlling interests	H1 2021 Total
Consolidated net income		**(5,293)**	**138**	**(5,155)**	**4,172**	**(156)**	**4,016**
Fair value of cash flow hedges							
Fair value of cash flow hedges - gross change	17.5	3,589	22	3,611	797	5	802
Fair value of cash flow hedges - tax effects		(919)	(5)	(924)	(207)	(2)	(209)
Fair value of net investment hedges							
Fair value of net investment hedges - gross change	17.5	(74)	-	(74)	(666)	-	(666)
Fair value of net investment hedges - tax effects		58	-	58	45	-	45
Change in fair value of debt instruments							
Gross change in fair value of debt instruments	17.1.2	(1,204)	-	(1,204)	(216)	-	(216)
Related tax effect		311	-	311	56	-	56
Translation adjustments – controlled entities		**(196)**	**(202)**	**(398)**	**1,212**	**399**	**1,611**
Share in net income of associates and joint ventures – items that can be recycled to profit and loss		**614**	**-**	**614**	**470**	**-**	**470**
Gains and losses recorded in equity with recycling		***2,179***	***(185)***	***1,994***	**1,491**	**402**	**1,893**
Change in fair value of equity instruments							
Gross change in fair value of equity instruments	17.1.2	(4)	-	(4)	15	-	15
Related tax effect		-	-	-	-	-	-
Change in actuarial gains and losses on post-employment benefits							
Gross change in actuarial gains and losses on post-employment benefits[(1)]	15.1.2	9,104	38	9,142	2,528	97	2,625
Related tax effect[(1)]		(208)	(10)	(218)	(725)	(43)	(768)
Share in net income of associates and joint ventures – items that cannot be recycled to profit and loss		**340**	**-**	**340**	**77**	**-**	**77**
Gains and losses recorded in equity with no recycling		***9,232***	***28***	***9,260***	***1,895***	***54***	***1,949***
Total gains and losses recorded in equity		**11,411**	**(157)**	**11,254**	**3,386**	**456**	**3,842**
CONSOLIDATED COMPREHENSIVE INCOME		6,118	(19)	6,099	7,558	300	7,858
Comprehensive income of continuing operations		6,114	(19)	6,095	7,561	300	7,861
Comprehensive income of discontinued operations		4	-	4	(3)	-	(3)

[(1)] Actuarial gains included in equity principally concern France (see note 15.1). They have a limited tax effect due to the policy for recognition of deferred tax assets: deferred tax assets are recognised in full for temporary differences that are expected to reverse within 10 years, and recognised to the extent of concurrent deferred tax liabilities for temporary differences that are expected to reverse after that horizon. Most of the actuarial gains originating in the first half of 2022 concern the portion of the provision for employee benefits on which the reversal will occur after more than 10 years, and for which no corresponding deferred tax asset was recognised at 31 December 2021.

CONSOLIDATED BALANCE SHEET

ASSETS *(in millions of euros)*	Notes	30/06/2022	31/12/2021
Goodwill	10.1	10,820	10,945
Other intangible assets	10.1	10,509	10,221
Property, plant and equipment used in generation and other tangible assets owned by the Group, including right-of-use assets	10.2	98,647	98,237
Property, plant and equipment operated under French public electricity distribution concessions	10	62,816	62,132
Property, plant and equipment operated under concessions other than French public electricity distribution concessions	10	6,820	6,881
Investments in associates and joint ventures	11	9,681	8,084
Non-current financial assets	17.1	53,787	55,609
Other non-current receivables	12.3	2,700	2,092
Deferred tax assets	9	2,870	1,667
Non-current assets		**258,650**	**255,868**
Inventories		16,484	16,197
Trade receivables	12.2	20,624	22,235
Current financial assets	17.1	86,541	39,937
Current tax assets		1,032	544
Other current receivables	12.3	12,964	16,197
Cash and cash equivalents		7,418	9,919
Current assets		**145,063**	**105,029**
Assets classified as held for sale		74	69
TOTAL ASSETS		403,787	360,966

EQUITY AND LIABILITIES *(in millions of euros)*	Notes	30/06/2022	31/12/2021
Capital	13	1,934	1,619
EDF net income and consolidated reserves		57,173	48,592
Equity (EDF share)		***59,107***	***50,211***
Equity (non-controlling interests)	13.5	12,211	11,778
Total equity	**13**	**71,318**	**61,989**
Provisions related to nuclear generation – back-end of the nuclear cycle, plant decommissioning and last cores	14	57,821	62,067
Provisions for employee benefits	15	12,402	21,716
Other provisions	16	5,563	5,442
Non-current provisions		***75,786***	***89,225***
Special French public electricity distribution concession liabilities		49,072	48,853
Non-current financial liabilities	17.2	68,074	56,543
Other non-current liabilities	12.5	5,302	4,816
Deferred tax liabilities		2,284	2,401
Non-current liabilities		**200,518**	**201,838**
Current provisions	14, 15 and 16	9,848	6,836
Trade payables		15,949	19,565
Current financial liabilities	17.2	75,193	45,014
Current tax liabilities		861	446
Other current liabilities	12.5	30,070	25,248
Current liabilities		**131,921**	**97,109**
Liabilities related to assets classified as held for sale		30	30
TOTAL EQUITY AND LIABILITIES		403,787	360,966

CONSOLIDATED CASH FLOW STATEMENT

(in millions of euros)	Notes	H1 2022	H1 2021
Operating activities:			
Consolidated net income		**(5,155)**	**4,016**
Net income of discontinued operations		**4**	**(3)**
Net income of continuing operations		**(5,159)**	**4,019**
Impairment/(reversals)		253	502
Accumulated depreciation and amortisation, provisions and changes in fair value		5,713	4,526
Financial income and expenses		96	(25)
Dividends received from associates and joint ventures		98	112
Capital gains/losses		103	(108)
Income taxes		(1,841)	1,458
Share in net income of associates and joint ventures		(444)	(344)
Change in working capital	12.1.3	6,804	(1,896)
Net cash flow from operations		***5,623***	***8,244***
Net financial expenses disbursed		(424)	(393)
Income taxes paid		(202)	(343)
Net cash flow from continuing operating activities		**4,997**	**7,508**
Net cash flow from operating activities relating to discontinued operations		**-**	**-**
Net cash flow from operating activities		**4,997**	**7,508**
Investing activities:			
Acquisitions of equity investments, net of cash acquired		(70)	14
Disposals of equity investments, net of cash transferred		122	401
Investments in intangible assets and property, plant and equipment	10.3	(8,703)	(8,518)
Net proceeds from sale of intangible assets and property, plant and equipment		26	42
Changes in financial assets		(11,553)	3,103
Net cash flow from continuing investing activities		**(20,178)**	**(4,958)**
Net cash flow from investing activities relating to discontinued operations		**-**	**-**
Net cash flow from investing activities		**(20,178)**	**(4,958)**
Financing activities:			
EDF capital increase	13.1	3,148	-
Transactions with non-controlling interests[1]		581	293
Dividends paid by parent company	13.2	(72)	(36)
Dividends paid to non-controlling interests		(139)	(87)
Purchases/sales of treasury shares		(2)	(4)
Cash flows with shareholders		***3,516***	***166***
Issuance of borrowings	17.2.2.1	15,370	1,104
Repayment of borrowings	17.2.2.1	(5,983)	(5,962)
Issuance of perpetual subordinated bonds	13.3	-	1,235
Payments to bearers of perpetual subordinated bonds	13.3	(332)	(288)
Funding contributions received for assets operated under concessions and investment subsidies		169	441
Other cash flows from financing activities		***9,224***	***(3,470)***
Net cash flow from continuing financing activities		**12,740**	**(3,304)**
Net cash flow from financing activities relating to discontinued operations		**-**	**-**
Net cash flow from financing activities		**12,740**	**(3,304)**
Net cash flow from continuing operations		(2,441)	(754)
Net cash flow from discontinued operations		-	-
Net increase/(decrease) in cash and cash equivalents		**(2,441)**	**(754)**
CASH AND CASH EQUIVALENTS - OPENING BALANCE		9,919	6,270
Net increase/(decrease) in cash and cash equivalents		(2,441)	(754)
Currency fluctuations		(99)	116
Financial income on cash and cash equivalents		28	25
Other non-monetary changes		11	271
CASH AND CASH EQUIVALENTS - CLOSING BALANCE		7,418	5,928

[1]Capital increases/reductions and acquisitions/disposals of minority interests in controlled companies. In 2022, this item includes an amount of €613 million relating to CGN's payment for the capital increases by NNB Holding Ltd. (for the Hinkley Point C project) and Sizewell C Holding Co.. In 2021, this item included an amount of €597 million relating to CGN's payment for the capital increases by NNB Holding Ltd. (for the Hinkley Point C project) and Sizewell C Holding Co. and an amount of €(276) million relating to the acquisition of 70% of E2i Energie Speciali.

CHANGE IN CONSOLIDATED EQUITY

Details of the change in equity between 1 January and 30 June 2022 are as follows:

(in millions of euros)	Capital	Treasury shares	Translation adjustments	Fair value adjustment of financial instruments (OCI with recycling)[1]	Other consolidated reserves and net income[2]	Equity (EDF share)	Equity (non-controlling interests)	Total equity
Equity at 31/12/2021	**1,619**	**(14)**	**828**	**(4,474)**	**52,252**	**50,211**	**11,778**	**61,989**
Gains and losses recorded in equity	-	-	131	2,048	9,232	**11,411**	(157)	**11,254**
Net income	-	-	-	-	(5,293)	**(5,293)**	138	**(5,155)**
Consolidated comprehensive income	**-**	**-**	**131**	**2,048**	**3,939**	**6,118**	**(19)**	**6,099**
Payments on perpetual subordinated bonds	-	-	-	-	(332)	**(332)**	-	**(332)**
Dividends paid	-	-	-	-	(1,050)	**(1,050)**	(159)	**(1,209)**
Purchases/sales of treasury shares	-	(2)	-	-	-	**(2)**	-	**(2)**
EDF capital increase (see note 13.1)	315	-	-	-	3,812	**4,127**	-	**4,127**
Other changes[3]	-	-	-	-	35	**35**	611	**646**
EQUITY AT 30/06/2022	**1,934**	**(16)**	**959**	**(2,426)**	**58,656**	**59,107**	**12,211**	**71,318**

[1]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.

[2]Fair value changes recorded in OCI with no recycling are presented in this column.

[3]In the first half of 2022, "Other changes" in equity (non-controlling interests) include the effect of capital increases funded by CGN for NNB Holding Ltd. and Sizewell C Holding Co. amounting to €613 million.
"Other changes" also include a €44 million difference corresponding to the expense of the Employee Reserved Offering (ERO) (see note 7).

Details of the change in equity between 1 January and 30 June 2021 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 31/12/2020	**1,550**	**(10)**	**(871)**	**(1,116)**	**46,080**	**45,633**	**9,593**	**55,226**
Gains and losses recorded in equity	-	-	1,529	(38)	1,895	**3,386**	456	**3,842**
Net income	-	-	-	-	4,172	**4,172**	(156)	**4,016**
Consolidated comprehensive income	**-**	**-**	**1,529**	**(38)**	**6,067**	**7,558**	**300**	**7,858**
Payments on perpetual subordinated bonds	-	-	-	-	(288)	**(288)**	-	**(288)**
Issuance of perpetual subordinated bonds (see note 13.3)	-	-	-	-	1,235	**1,235**	-	**1,235**
Dividends paid	-	-	-	-	(652)	**(652)**	(100)	**(752)**
Purchases/sales of treasury shares	-	(4)	-	-	-	**(4)**	-	**(4)**
EDF capital increase (see note 13.1)	29	-	-	-	587	**616**	-	**616**
Other changes[4]	-	-	-	-	(325)	**(325)**	486	**161**
EQUITY AT 30/06/2021	**1,579**	**(14)**	**658**	**(1,154)**	**52,704**	**53,773**	**10,279**	**64,052**

[1]Changes in translation adjustments amount to €1,529 million at 30 June 2021. This variation is due to the rise of the pound sterling against the euro (£1 = €1.112 at 31 December 2020 and £1 = €1.165 at 30 June 2021).

[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 this column.

[4]In the first half of 2021, "Other changes" in equity (non-controlling interests) include the effect of capital increases funded by CGN for NNB Holding Ltd. and Sizewell C Holding Co. amounting to €597 million , and the transfer of the share of E2i Energie Speciali's equity acquired, amounting to €(121) million. The €(155) million difference between the sale price and the equity acquired is presented as a deduction from Equity (EDF share).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Electricité de France (EDF or the "Company") is a French *société anonyme* governed by French law, and registered in France (22-30, avenue de Wagram, 75008 Paris).

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 ended 30 June 2022.

The Group is an integrated energy operator engaged in all aspects of the energy business: power generation (nuclear power, hydropower, wind and solar power, thermal energy, etc.), transmission, distribution, supply, trading, energy services, production of equipment and fuel assemblies, and reactor services.

The Group's consolidated financial statements at 30 June 2022 were prepared under the responsibility of the Board of Directors and approved by the Directors at the Board meeting held on 27 July 2022.

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 2022 are prepared under the presentation, recognition and measurement rules set out in the international accounting standards published by the IASB and approved by the European Union for application at 30 June 2022. 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 2021.

Apart from changes in accounting standards, detailed in note 1.2, and the valuation methods specific to interim financial reporting described in note 1.4, the accounting principles and valuation methods are identical to those applied and described in note 1.3 and in individual notes to the consolidated financial statements at 31 December 2021.

1.2 CHANGES IN ACCOUNTING STANDARDS

1.2.1 Amendments to IAS 16 "Property, Plant and Equipment: Proceeds before Intended Use"

From 1 January 2022, the proceeds from sales of items produced by an asset that has not yet been commissioned (for example sales of electricity during a testing phase) are no longer deducted from the cost of the asset. These proceeds and the related costs are included in profit and loss as and when they are received or incurred.

Application of these amendments has no material impact on the Group's financial statements at 30 June 2022. For the Group, they will mostly concern the trial and testing phases of the Flamanville 3 EPR (see note 10.2).

1.2.2 Amendments to IAS 37 "Onerous Contracts - Cost of Fulfilling a Contract"

These amendments require the provision for onerous contracts to be based on unavoidable costs, corresponding to all the costs necessary to fulfil the contract, not only incremental costs.

This broadens the scope of costs to be taken into consideration, which comprise both incremental costs to fulfil contractual obligations (e.g. labour and materials costs), and a portion of other costs directly related to the contract (e.g. a portion of depreciation of the equipment used, or costs for insurance contracts).

Application of these amendments has no material impact on the Group's financial statements.

1.2.3 Interest Rate Benchmark Reform - Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16

These amendments have been applicable since 1 January 2021 to financial assets and liabilities for which contractual modifications result directly from the interest rate reform.

This reform is applied prospectively, with no impact on profit and loss, and the hedging relationships for the instruments concerned are continued. Its effects are mainly operational (renegotiation of contracts, fallback provisions, information system upgrades). The interest rate replacements already applied are described in note 1.2.1 to the consolidated financial statements at 31 December 2021.

When the Group adhered to the ISDA Fallback protocol in November 2021, the Libor GBP was replaced by the Sonia for all the derivatives concerned from 1 January 2022. The transition operations for the USD Libor will take place in line with the end date for its publication *i.e.* by 30 June 2023.

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 and energy 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 Group's main estimates and judgments are described in note 1.3.4 to the consolidated financial statements at 31 December 2021.

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) (see note 15.2).

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 COMPARABILITY

1.6.1 Effects of market price levels on comparability

The level and volatility of market prices affect the financial statements, and for certain aggregated items this effect is more pronounced than at 31 December 2021.

The balance sheet total has increased from €361 billion to €404 billion, particularly as a result of the higher fair value of derivatives (see notes 17.1 and 17.2) (trading derivatives: +€27 billion in the assets and +€25 billion in the liabilities; hedging derivatives: +€12 billion in the assets and +€9 billion in the liabilities). The balance sheet total had already increased from €305 billion to €360 billion between 31 December 2020 and 31 December 2021, also due to a rise in the fair value of derivatives, the working capital relating to trade receivables and payables, and margin calls on assets and liabilities in the trading activities (see note 13 to the consolidated financial statements at 31 December 2021). In "Other current receivables", the normal debit position of the CSPE for EDF SA (a receivable of some €2 billion at

31 December 2020) is in a credit position in "Other current liabilities" at the value of €0.3 billion at 31 December 2021 and €3.4 billion at 30 June 2022 (see note 12.5.4).

In the income statement, the main points of note are as follows:

- sales showed an organic increase of 66% and fuel and energy purchase increased by 156%, including the very high price effect of electricity purchases made necessary by the lower nuclear power output due to the stress corrosion phenomenon, and the effect of purchases and sales during the first half of the year for the purposes of the specific additional ARENH scheme, amounting to a net total of €1.4 billion. Purchases by Enedis to compensate for network losses also rose substantially (by €300 million over the period);
- the trading margin reached €2.1 billion, against €0.8 billion for the first half of 2021 and €1.5 billion for the year 2021.This margin includes an increase in the provisions for counterparty risks in the specific context of the European market;
- the volatility of commodities (IFRS 9) in the income statement was €(1) billion, compared to €(0.5) billion for the first half of 2021 and €(0.2) billion for the year 2021.

1.6.2 Impacts of the war in Ukraine

The Group has very limited direct exposure in Russia and Ukraine. Its dependency on Russian uranium imports is low in view of its existing stocks and diversified, long-term supply contracts. For gas, the Group has only one contract (through Edison) with a European subsidiary of a Russian company, which represents 4% of the Group's gas supplies and terminates at the end of 2022. The Group has no exposure with respect to businesses or banks that are currently affected by international sanctions. The Moscow office has been closed down, and the subsidiary Dalkia Russia was sold during this half-year.

Indirect impacts, however, are significant for the half-year financial statements: market prices and volatility have risen; supply chains are under pressure; contribution to the effects of inflation (on equipment, components, etc); impact on financial markets (notably affecting the value of dedicated assets).

NOTE 2 SUMMARY OF SIGNIFICANT EVENTS

The main significant events and transactions for the Group **in the first half of 2022** are the following:

- **Nuclear developments:**
  - Zero-carbon electricity generation ended and defueling is underway at Hunterston B (see the EDF Energy press releases of 7 January 2022 and 17 May 2022, and note 14);
  - Update on the Flamanville EPR (see the Group press release of 12 January 2022, and note 10.2);
  - On 13 January 2022 EDF updated its estimated nuclear output in France for 2022 (see the Group press release of 13 January 2022, and notes 10.2 and 10.4);
  - On 7 February 2022 EDF adjusted its estimated nuclear output in France for 2022 (see the Group press release of 7 February 2022, and notes 10.2 and 10.4);
  - On 11 February 2022 EDF adjusted its estimated nuclear output in France for 2023 (see the Group press release of 11 February 2022, and note 10.4);
  - Hinkley Point C Update: review of the project schedule and costs (see the Group press release of 19 May 2022, and notes 10.2 and 10.4);
  - Update on the stress corrosion phenomenon and adjustment of 2022 French nuclear output estimate (see the Group press release of 19 May 2022, and notes 5 and 10.2);
  - Major milestone as Government grants Development Consent Order to Sizewell C (see the EDF Energy press release of 20 July 2022, and note 10.2).
- **Disposals:**
  - Edison completed the divestment of its Exploration and Production activities (see Edison press releases of 5 May 2022 and 29 June 2022, and note 3.1).
- **Financing operations:**
  - EDF signed agreements for €10.25 billion of banking facilities (see Group press release of 16 March 2022, and note 17.2.2.1);
  - EDF announced a successful capital increase of over €3.150 billion, maintaining preferential subscription rights (see the Group press release of 5 April 2022, and note 13.1);
  - EDF Group launched a capital increase reserved for members of the EDF Group Savings Plan and the EDF International Group Savings Plan (see the Group press release of 12 May 2022, and notes 7 and 13);

- EDF and the European Investment Bank (EIB) announced the signing of an €800 million loan contract to finance the energy transition of the power distribution network managed by Enedis (see the Group press release of 19 May 2022, and note 17.2.2.1).
- **Renewable energies:**
  - EDF won a maritime zone in New York bight to develop offshore wind energy (see the Group and EDF Renewables press releases of 1 March 2022, and note 11.2);
  - Saint-Nazaire offshore wind farm: France's first offshore wind turbine was erected (see the EDF Renewables press release of 13 April 2022, and note 11.2);
  - EDF Renewables commissioned four solar power plants, including two floating, in Israel (see the EDF Renewables press release of 8 June 2022, and note 11.2).
- Exceptional measures were announced by the French Government (see the Group press release of 13 January 2022, and note 5);
- EDF signed an exclusive agreement to acquire part of GE Steam Power's nuclear activities (see the Group press release of 10 February 2022 and note 23 to the consolidated financial statements at 31 December 2021);
- EDF issued a statement concerning the decision made by the French Competition Authority (see the Group press release of 22 February 2022, and note 16);
- Publication of the decree and orders relating to the additional allocation of 20 TWh of ARENH volumes for 2022: update of the impact on the 2022 EBITDA outlook (see the Group press release of 14 March 2022, and notes 5 and 16.2);
- Dalkia sold its Russian operations (see the Dalkia press release of 23 May 2022, and notes 1.6.2 and 7).

The main significant events and transactions for the Group **in 2021** were the following:

- **Nuclear developments:**
  - EDF decided to move Dungeness B into the defueling phase (see the EDF Energy press release of 7 June 2021, and note 7);
  - Reactors of the Civaux and Chooz nuclear power plants: replacements and preventive checks on parts of the piping of a safety system (see the Group press release of 15 December 2021, and note 23 to the consolidated financial statements at 31 December 2021);
  - AGR (Advanced Gas-cooled Reactor) lifetime reviews were carried out (see the EDF Energy press release of 15 December 2021, and note 10.8 to the consolidated financial statements at 31 December 2021).
- **Disposals:**
  - Edison completed the sale of Edison Norge to Sval Energi for a value of $374 million (see the Edison press release of 25 March 2021, and note 3.1.2);
  - Edison completed the sale of Infrastrutture Distribuzione Gas (IDG) to 2I ReteGas for a value of €150 million (see the Edison press release of 30 April 2021, and note 3.1.2);
  - Dalkia completed the sale of its subsidiary Dalkia Wastenergy to Paprec (see the Dalkia press release of 28 July 2021, and notes 3.1.2);
  - EDF completed the sale of its interest in CENG (see the Group press release of 9 August 2021, and notes 3.1.2);
  - EDF completed the sale of the West Burton B CCGT gas power station to EIG (see the EDF Energy press release of 31 August 2021, and note 3.1.2);
  - Edison and Credit Agricole Assurances completed the transaction to accelerate the development of renewables in Italy together (see the Edison press releases of 3 and 14 December 2021, and note 3.1.2);
  - EDF transferred a property portfolio in the Île-de-France region to a joint venture with POWERHOUSE HABITAT (see the Group press release of 16 December 2021, and note 5.4 to the consolidated financial statements at 31 December 2021).
- **Renewable energies:**
  - Edison completed the acquisition of E2i (see the Edison press release of 16 February 2021, and note 3.1.2).
- EDF and Areva reached a settlement agreement (see the Group press release of 30 June 2021, and note 7);
- EDF put an end to Ecocombust, a project to develop a new class B wood-based fuel (see the Group press release of 8 July 2021, and note 10.3 to the consolidated financial statements at 31 December 2021).

NOTE 3 SCOPE OF CONSOLIDATION

3.1 CHANGES IN THE SCOPE OF CONSOLIDATION

3.1.1 Changes in the scope of consolidation in the first half of 2022

There was no significant change in the Group's scope of consolidation during the first half of 2022.

On 4 May 2022, Edison announced that it had signed an agreement to sell its stake in the North Reggane licence in Algeria, completing the divestment of all Exploration and Production (E&P) activities following the company's strategic realignment towards its energy transition businesses. Under this agreement, Edison was to sell its 11.25% stake in the North Reggane on-shore gas field to Wintershall Dea Algeria Gmbh.

On 29 June 2022 Edison announced the signature of an amendment to this agreement, after Repsol exercised its pre-emption right in accordance with the corresponding Joint Operating Agreement. The contract signed on 4 May was consequently modified to reflect the fact that Edison's stake in the North Reggane licence will be sold to Repsol (6.75%) and Wintershall Dea (4.50%).

The agreement is based on a value of approximately $100 million for Edison's participating interest in North Reggane.

Among other conditions, the transaction is subject to the usual customary authority approvals.

3.1.2 Changes in the scope of consolidation in 2021

The following changes in the Group's scope of consolidation took place during 2021 (see note 3.1.1 to the consolidated financial statements at 31 December 2021):

- acquisition of 70% of E2i on 16 February 2021;
- disposal of Edison Norge on 25 March 2021;
- disposal of Infrastrutture Distribuzione Gas (IDG) on 30 April 2021;
- disposal of Dalkia Wastenergy on 28 July 2021;
- disposal of interests in CENG on 9 August 2021;
- disposal of West Burton B on 31 August 2021;
- initial public offering of Pod Point on 4 November 2021;
- acquisition of Rolls-Royce Civil Nuclear I&C on 8 November 2021;
- disposal of 49% of Edison Renewables on 3 December 2021;
- consolidation of IZI Solutions Renov and Hynamics.

3.2 RELATED PARTIES

There have been no significant changes since 31 December 2021 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.

NOTE 4 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 business combinations, in accordance with IFRS 3.

At 30 June 2022

(in millions of euros)	France – Generation and Supply	France – Regulated activities	Framatome	United Kingdom	Italy	Other international	EDF Renewables	Dalkia	Other activities[1]	Inter-segment eliminations	Total
Income statement:											
External sales	22,804	9,475	989	6,898	12,996	2,473	640	2,726	7,261	-	**66,262**
Inter-segment sales	958	103	988	6	21	112	411	485	436	(3,520)	**-**
TOTAL SALES	**23,762**	**9,578**	**1,977**	**6,904**	**13,017**	**2,585**	**1,051**	**3,211**	**7,697**	**(3,520)**	**66,262**
OPERATING PROFIT BEFORE DEPRECIATION AND AMORTISATION	**(4,988)**	**3,171**	**321**	**860**	**622**	**291**	**500**	**185**	**1,845**	**(135)**	**2,672**
OPERATING PROFIT	**(8,054)**	**1,364**	**172**	**298**	**345**	**99**	**111**	**(98)**	**1,402**	**(135)**	**(4,496)**
Goodwill	**127**	**223**	**1,450**	**7,928**	**125**	**50**	**187**	**588**	**142**	**-**	**10,820**
Intangible assets and property, plant and equipment	**60,198**	**67,803**	**2,821**	**25,993**	**5,769**	**1,980**	**11,486**	**2,237**	**505**	**-**	**178,792**
Investments in intangible assets and property, plant and equipment	**2,842**	**2,385**	**102**	**2,010**	**202**	**60**	**1,012**	**78**	**12**	**-**	**8,703**
- Purchases of assets	*2,395*	*2,234*	*123*	*2,126*	*201*	*68*	*853*	*88*	*11*	*-*	***8,099***
- Change in liabilities related to purchases of assets	*447*	*151*	*(21)*	*(116)*	*1*	*(8)*	*159*	*(10)*	*1*	*-*	***604***

[1] Sales by the “Other activities” segment include the €2,098 million trading margin realised by EDF Trading.

At 30 June 2021

(in millions of euros)	France – Generation and Supply	France – Regulated activities	Framatome	United Kingdom	Italy	Other international	EDF Renewables	Dalkia	Other activities[1]	Inter-segment eliminations	Total
Income statement:											
External sales	15,248	9,067	923	4,886	3,894	1,301	551	2,026	1,725	-	**39,621**
Inter-segment sales	753	29	711	1	17	93	256	300	162	(2,322)	-
TOTAL SALES	**16,001**	**9,096**	**1,634**	**4,887**	**3,911**	**1,394**	**807**	**2,326**	**1,887**	**(2,322)**	**39,621**
OPERATING PROFIT BEFORE DEPRECIATION AND AMORTISATION	**4,838**	**3,210**	**293**	**267**	**534**	**206**	**294**	**215**	**854**	**(110)**	**10,601**
OPERATING PROFIT	**2,712**	**1,591**	**153**	**(919)**	**190**	**54**	**34**	**66**	**501** [2]	**(110)**	**4,272**
Goodwill	**109**	**223**	**1,332**	**7,929**	**98**	**47**	**184**	**576**	**142**	**-**	**10,640**
Intangible assets and property, plant and equipment	**59,983**	**66,165**	**2,606**	**22,685**	**5,324**	**2,043**	**10,027**	**2,168**	**615**	**-**	**171,616**
Investments in intangible assets and property, plant and equipment	**2,648**	**2,477**	**84**	**2,009**	**202**	**62**	**954**	**70**	**12**	**-**	**8,518**
- Purchases of assets	*2,217*	*2,271*	*105*	*2,120*	*222*	*62*	*811*	*75*	*10*	*-*	***7,893***
- Change in liabilities related to purchases of assets	*431*	*206*	*(21)*	*(111)*	*(20)*	*-*	*143*	*(5)*	*2*	*-*	***625***

[1] Sales by the “Other activities” segment include the €781 million trading margin realised by EDF Trading.

[2] The net changes in the fair value of energy and commodity derivatives (excluding trading activities) are mainly attributable to the “Other activities” segment.

NOTE 5 OPERATING PROFIT BEFORE DEPRECIATION AND AMORTISATION

(in millions of euros)	Notes	30/06/2022	30/06/2021
Sales	**5.1**	**66,262**	**39,621**
Fuel and energy purchases	**5.2**	**(48,238)**	**(18,753)**
External services		(6,774)	(6,446)
Other purchases (excluding external services, fuel and energy)		(2,056)	(1,715)
Change in inventories and capitalised production		4,785	4,423
(Increase)/decrease in provisions on other external expenses		126	109
Other external expenses(1)		**(3,919)**	**(3,629)**
Personnel expenses		**(7,286)**	**(7,273)**
Payroll taxes		(171)	(162)
Energy taxes		(1,344)	(1,332)
Other non-income taxes(2)		(868)	(1,015)
Taxes other than income taxes(3)		**(2,383)**	**(2,509)**
Other operating income and expenses	**5.3**	**(1,764)**	**3,144**
Operating profit before depreciation and amortisation		**2,672**	**10,601**

(1) After elimination of the effect of changes in foreign exchange rates and the scope of consolidation, other external expenses increased by 6.7% compared to the first half of 2021.

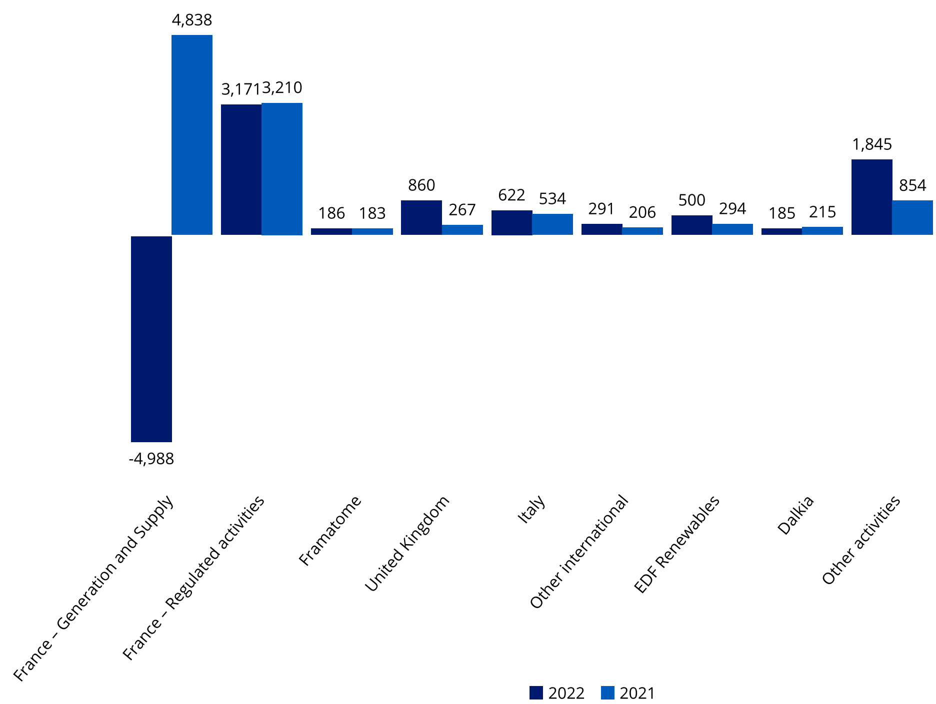
(2) Other non-income taxes mainly concern France and essentially comprise land tax and business taxes on land and value added.

(3) After elimination of the effect of changes in foreign exchange rates and the scope of consolidation, taxes other than income taxes decreased by 5.7% compared to the first half of 2021.

The Group's consolidated operating profit before depreciation and amortisation for the first half of 2022 amounts to €2,672 million, a decrease of 74.8% compared to the first half of 2021.

After elimination of foreign exchange effects and changes in the scope of consolidation, the Group's operating profit before depreciation and amortisation was down in organic terms by -75.0% or €(7,947) million. This decrease is principally explained by the contributions of the France – Generation and Supply segment (€(9,821) million or -203%), the France - Regulated activities segment (€(39) million or -1.2%), the Other activities segment (+€979 million or +114.6%), the United Kingdom (+€646 million or +241.9%), EDF Renewables (+€190 million or +64.6%) and Italy (+€76 million or +14.2%).

The breakdown of the Group's operating profit before depreciation and amortisation by operating segment for the first half of 2022 and the first half of 2021 is as follows, in millions of euros (see note 4):



In the **France – Generation and Supply** segment, the organic decrease of €(9,821) million in the operating profit before depreciation and amortisation is essentially explained by electricity purchases that had to be made on a high-price market due to the significant downturn in nuclear and hydropower production in France, and the negative impacts of the French government's exceptional regulatory measures to limit price increases for consumers in 2022. Nuclear power output decreased by 27.6TWh or -15.2%, principally in connection with the stress corrosion phenomenon, and hydropower output was adversely affected by the low water levels (-6.4TWh). EBITDA at 30 June 2022 also includes a provision for the cost in the second half-year of purchases and sales made for the purposes of the specific additional ARENH scheme, amounting to €2.7 billion.

In the **France – Regulated activities** segment, the €(39) million decrease in EBITDA mainly relates to a negative price effect on purchases to compensate for losses. However, EBITDA benefited from lower personnel expenses due to the higher discount rates applied to long-term benefits.

In the **Other activities** segment, the +€979 million increase in EBITDA is attributable to EDF Trading (contribution of €1,123 million) which achieved a record performance in 2022. EBITDA for the gas business declined by €(168) million, notably reflecting purchases of LNG (Liquefied Natural Gas) in the early part of 2022 at high prices compared to the first half of 2021.

The significant organic increase of +€646 million in EBITDA in the **United Kingdom** segment is explained by higher generation levels and optimisation in the nuclear fleet. The year-on-year increase in nuclear power output (+2.3TWh) made it possible to sell additional volumes on the market in a context of rising prices (realised prices for nuclear power were up by +£14.9/MWh), whereas declining production in the first half of 2021 had led to purchases at prices that were already high. EBITDA in the United Kingdom also benefited from lower operating expenses, principally as a result of the Hunterston B and Dungeness B plants moving into the defueling phase (most of the costs are paid by the Nuclear Liabilities Fund), and the employee pensions reform introduced last year.

EBITDA growth in the **EDF Renewables** segment (+€190 million) was principally driven by a rise in energy generation (+22.7% compared to the first half of 2021) and positive price effects, particularly in the United Kingdom and North America, after exceptional cold weather in Texas had a negative effect on EBITDA for the first half of 2021.

The increase in EBITDA for the **Italy** segment (+€76 million) is principally explained by the higher volumes produced by CCGT (combined cycle gas turbines), and the rise in gas prices in a highly volatile environment. In contrast, EBITDA for renewable energy generation was down, particularly due to low water levels in 2022. In the first half of 2021 EBITDA benefited from the gain on disposal of Infrastrutture Distribuzione Gas (IDG), which had no equivalent in 2022.

5.1 SALES

5.1.1 Regulatory changes in France

Regulated electricity sales tariffs in France – "Blue" tariffs

The framework for the "blue" regulated electricity sales tariffs is described in note 5.1.1 to the consolidated financial statements at 31 December 2021.

Tariff changes

In accordance with article L. 337-4 of the French Energy Code, the French Energy Regulatory Commission "CRE" (*Commission de Régulation de l'Énergie*) is responsible for sending the Ministers for the Economy and Energy its reasoned proposals for regulated sales tariffs for electricity. If no objections are made within three months, the proposals are deemed to have been approved.

In a decision of 8 July 2021, in view of changes in the TURPE tariff from 1 August 2021 and in application of the Energy Code, the CRE proposed an increase of 0.48% including taxes (1.08% excluding taxes) in the "blue" tariffs for residential customers and 0.38% including taxes (0.84% excluding taxes) in the "blue" tariffs for non-residential customers. The CRE has proposed that this change should apply from 1 August 2021.

The proposed tariff increase results from the increase in the TURPE network access tariffs from 1 August 2021 (+0.33% on regulated sales tariffs including taxes), the increase in the remuneration received by suppliers for the service of managing customers on behalf of the network operator, which is deducted from selling costs (-0.07% on regulated sales tariffs including taxes), and a new update of the "catch-up" adjustment for amounts not covered in 2019, so that the full amount will be recovered in two years, as the CRE had announced (+0.21% on regulated sales tariffs including taxes).

In view of the high increases in electricity market prices, France introduced a "tariff cap" limiting the raise in regulated sales tariffs to a maximum 4% (including taxes) at 1 February 2022 for residential customers compared to the tariffs in force at 1 August 2021. This tariff cap is founded on 2 articles of the Finance Law for 2022 adopted on 30 December 2021:

- under article 29, a reduction in the TICFE tax (or CSPE) has applied since 1 February 2022 for all customers (residential and business customers, on regulated-tariff or market-price contracts), although a legal minimum level must be maintained (€1/MWh for residential and small business customers). This reduction applies to quantities of energy delivered until 31 January 2023. The new TICFE tariffs have been set by decree;
- under article 181, if the CRE, despite the reduction in the TICFE, proposes an increase in regulated sales tariffs for residential customers that exceeds 4% (including taxes) compared to the tariffs in force at 31 December 2021, as a dispensation from the Energy Code the French government may object to the proposal and through a joint decision by the Ministers for the Economy and Energy set the regulated sales tariffs, and tariffs for sales to the local distribution companies, at a lower level. If this happens, the law provides for a subsequent catch-up adjustment of regulated sales tariffs in 2023, to be smoothed over twelve months, to cover the loss of income for EDF in 2022. The same article also introduces a mechanism to compensate for losses borne by local electricity distribution companies on regulated-tariff offers and electricity suppliers on market-price offers.

On 13 January 2022 the French government announced further exceptional measures to limit the rise in electricity tariffs for consumers in 2022. The principal measures were extension of the regulated tariff increase cap of 4% (including taxes) to non-residential customers who are still eligible for the regulated tariff in mainland France and non-interconnected zones.

In a decision of 18 January 2022, the CRE proposed an increase of 35.4% including taxes (44.5% excluding taxes) in the “blue” tariffs for residential customers and 35.9% including taxes (44.7% excluding taxes) in the "blue" tariffs for non-residential customers from 1 February 2022. This proposal, which did not take account of the decree of 11 March 2022 defining the terms for EDF making 20TWH of electricity available to ARENH-eligible suppliers between 1 April 2022 and 31 December 2022 (as detailed below), was driven primarily by the significant rise in prices on the energy market. If it had taken account of the maximum decrease in the TICFE confirmed by decree 2022-84 of 28 January 2022, this proposal would have been for a 20% increase (including taxes) in the “blue” tariffs for residential customers and a 20.9% increase (including taxes) in the “blue” tariffs for non-residential customers. In accordance with the tariff cap, this proposal was rejected by the Ministers for the Economy and Energy, who set the increase in the “blue” tariffs for residential customers at 4% including taxes (24.3% excluding taxes) and the increase in the “blue” tariffs for non-residential customers at 4% including taxes (23.6% excluding taxes) through tariff orders of 28 January 2022, published in the *Journal officiel* of 30 January 2022 and implemented from 1 February 2022.

In a decision of 7 July 2022, the CRE proposed an increase of 3.92% including taxes (4.10% excluding taxes) in the "blue" tariffs for residential customers and 3.56% including taxes (3.73% excluding taxes) in the "blue" tariffs for non-residential customers, to apply from 1 August 2022, principally reflecting the increase in the TURPE distribution tariff from 1 August 2022.

In application of article 181 of the Finance Law for 2022 and France’s tariff cap, the draft decisions submitted to the Higher Energy Council (*Conseil supérieur de l’énergie)* on 21 July oppose the CRE’s tariff proposals and continue the current tariffs.

The comparability of sales between periods is thus affected by the tariff changes introduced since 1 January 2021, presented in the table below:

Date of the CRE proposal	Increase in “blue” residential customer tariffs (inc. taxes / excl. taxes)	Increase in “blue” non- residential customer tariffs (inc. taxes/excl. taxes)	Date of the tariff decision	Date of application
14/01/2021	1.61% / 1.93%	2.61% / 3.23%	28/01/2021	01/02/2021
08/07/2021	0.48% / 1.08%	0.38% / 0.84%	29/07/2021	01/08/2021
18/01/2022	4.00% / 24.3%	4.00% / 23.6%	28/01/2022	01/02/2022
07/07/2022	forthcoming	forthcoming	forthcoming	01/08/2022 (1)

(1) *Subject to approval.*

"TURPE" Network access tariffs

The legal and regulatory framework for "TURPE" Network access tariffs is described in note 5.1.1 to the consolidated financial statements at 31 December 2021 and did not change during the first half of 2022.

TURPE 6 Distribution and Transmission tariffs

The CRE issued two decisions of 21 January 2021 (published in France's *Journal Officiel* 0096 of 23 April 2021) on the TURPE 6 Transmission (high voltage) and TURPE 6 Distribution (medium voltage – low voltage), after the Higher Energy Council (*Conseil supérieur de l'énergie*) gave its approval. These tariffs apply from 1 August 2021 for a period of approximately 4 years.

For distribution expenses, in its tariff decision n° 2021-13 of 21 January 2021, the CRE set the margin on assets at 2.5% and the additional return on regulated equity at 2.3%. The average tariff increase was +0.91% at 1 August 2021. In decision n° 2022-158 of 9 June 2022, the CRE set the increase in the average TURPE Distribution tariff from 1 August 2022 at +2.26%.

For transmission expenses, in its tariff decision n° 2021-12 of 21 January 2021, the CRE set a nominal pre-tax weighted average cost of capital (WACC) of 4.6% for the return on RTE's regulated asset base. The average tariff increase was +1.09% at 1 August 2021. In decision n° 2022-157 of 9 June 2022, the CRE set the change in the average TURPE Transmission tariff from 1 August 2022 at -0.01%.

Supplier commissioning

In application of the CRE's decision of 18 January 2018, energy suppliers receive remuneration from distribution network operators for the service of managing single-contract customers on their behalf.

The commissioning principle is identical for all suppliers selling single-contract market-price offers. Only regulated electricity tariffs have given rise to slightly lower commissions (€4.50 instead of €6.80 per point of delivery until 1 August 2019), with progressive reduction of this difference 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. In the course of this litigation, ENGIE filed an application for a preliminary ruling on constitutionality in a challenge to the arrangements introduced by the French "Hydrocarbons" law ending the possibility of obtaining supplier commissioning for past services. These arrangements were validated by the Constitutional Council in its decision 2019-776 of 19 April 2019. The proceedings before the Paris Commercial Court ended on 11 April 2022, the Court having formally declared the action extinguished as the time limit was exceeded.

ARENH

The ARENH[1] scheme for regulated access to historic nuclear power, set up in 2011, allows alternative suppliers to purchase electricity from EDF to supply their final customers, after signing a framework agreement, at a regulated price for set quantities determined under the provisions of the French Energy Code. This scheme is also open to network operators to cover their energy losses.

The ARENH price, determined by the Ministers for Energy and the Economy following a proposal by the CRE, has been fixed at €42/MWh since January 2012. This includes delivery of the electricity and has incorporated the associated capacity guarantees since 2017.

The maximum total ARENH volume that can be sold by law to suppliers who apply to the scheme to cover the needs of their final customers is set by ministerial order and cannot exceed a legal ceiling. Until 31 December 2019, the ceiling was 100TWh per year.

The Energy and Climate law of 8 November 2019 raised this ceiling to 150TWh from 1 January 2020, allowing the French government to raise the maximum total volume of ARENH deliveries above 100TWh by ministerial order, and to revise the ARENH price by ministerial order during a transition period.

In decision 2021-339 of 8 November 2021, as required by the Energy Code, the CRE set out the method for allocating ARENH volumes if applications exceed the maximum total volume defined for 2022. In view of the current exceptional crisis in the electricity market, it also introduced reinforced checks and special rules for accepting the ARENH volumes applied for by suppliers.

The CRE stated that excess applications by EDF-controlled subsidiaries (except network operators) would be fully curtailed and they could enter into contracts with the parent company that replicate the ARENH scheme and terms of supply, particularly the curtailment rate for alternative suppliers.

1 *Accès Régulé à l'Énergie Nucléaire Historique.*

ARENH applications during the November 2021 session for delivery in 2022 totalled 160.36TWh (excluding applications from EDF subsidiaries and network operators). The CRE scaled down certain applications (- 0.03TWh in total), bringing the total application volumes validated by the CRE to 160.33TWh, and curtailed each supplier's application to respect the total maximum volume of 100TWh. Further volumes were also sold by EDF to its subsidiaries through contracts that replicate the ARENH scheme, and to compensate for network electricity losses (26.4TWh).

Since 1 January 2022, the CRE has notified EDF that ARENH deliveries to three alternative suppliers have ceased because a court has placed them in liquidation or their governmental licence to purchase electricity has been suspended. For the May 2022 ARENH session the CRE included 21.9MW of ARENH volumes that had not been delivered by EDF due to (i) defaulting suppliers being placed in liquidation and (ii) non-implementation of the procedure to transfer their ARENH entitlements to the suppliers of last resort. All these volumes were allocated at this session.

On 13 January 2022 the French government announced exceptional measures to limit the rise in electricity tariffs for consumers in 2022. These measures include EDF making an additional ARENH volume of 20TWh available to eligible suppliers over the period 1 April to 31 December 2022, at the price of €46.20/MWh.

The terms for application of this measure were laid down in a Decree of 11 March 2022 and four ministerial orders. Eligible suppliers wishing to benefit from these additional volumes at the price of €46.20/MWh during the period 1 April to 31 December 2022 are required by the decree to sell EDF an equivalent volume to the volume sold to them by EDF under the ARENH scheme, at the price of €256.98/MWh (the average wholesale market price between 2 and 23 December 2021 for baseload electricity supplies in mainland France in 2022). To allocate the additional volumes between suppliers, the CRE applies the same method as for the delivery period that began on 1 January 2022. In practice, the CRE gave notice of 19.5TWh of additional ARENH volumes allocated.

Applying the procedure set out in its decision 2022-98 of 31 March 2022, the CRE set up a mechanism to monitor and control the methods used by eligible suppliers to pass on the effect of the reduced sourcing cost (resulting from allocation of additional volumes at the price of €46.20/MWh) through their customer invoicing. In accordance with the above CRE decision, EDF has had to replicate the terms imposed on alternative suppliers in its own market-price contracts.

This measure thus has two main effects for the Group:

- it is obliged to purchase the additional 19.5TWh of electricity from eligible suppliers at the price of €256.98/MWh, and concurrently sell them equivalent volumes of electricity at the price of €46.20/MWh, giving a net cost (including the cost of capacity guarantees) estimated at approximately €4.1 billion for the period 1 April 2022 to 31 December 2022; and
- the sale prices to customers on both regulated-tariff and market-price contracts are lower, due to the increased ARENH portion in relation to the market-price portion in the cost stacking system used to calculate regulated tariffs and market-price offers. This measure will have a limited incremental impact in 2022 on regulated-tariff contracts because of application of the tariff cap described above, which already limited increases in the regulated electricity tariffs, but it also limits the amount of the tariff catch-up to be applied from 2023.

In its press release of 13 January 2022, EDF announced that it would take all appropriate measures to protect its interests in view of the decree of 11 March 2022 and the four orders making up the rest of this measure. EDF therefore made a request to the State in May 2022, within a period that guarantees protection of its rights, to withdraw the Decree of 11 March 2022 and four orders. The State did not reply within 2 months, indicating an implicit rejection, and EDF now has the option of applying to the competent administrative courts.

Regarding the possibility of a transition to new regulations governing EDF's nuclear power plants, as announced in the draft multi-year energy programme (PPE) published on 25 January 2019, in January 2020 the French government launched a call for contributions regarding the fundamental findings driving the plan to reform the economic regulations for existing nuclear facilities, and its construction and operating principles. The proposed new regulations would replace the ARENH scheme. Like many other actors in the sector, the EDF group participated in this consultation, which ended on 17 March 2020. France's Minister for the Ecological and Inclusive Transition and Minister of the Economy and Finance then commissioned the CRE to carry out an assessment of the costs borne by the nuclear operator, and to determine fair remuneration for its nuclear activities under the government's potential future regulations for existing nuclear facilities. There have been no significant developments in the terms and conditions of these potential new regulations since 2021.

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 and is described in note 5.1 to the consolidated financial statements at

31 December 2021.

The decision by the Ministry for the Ecological Transition changing the rules of the capacity mechanism was published in France's *Journal Officiel* on 28 December 2021. The new rules set the opening date for trading of capacity guarantees for delivery years 2023 and 2024 at 1 March 2022.

Another consultation phase concerning structural changes to the capacity mechanism has been in progress since April 2022. The future mechanism could be introduced from delivery year 2026, subject to approval by the European Commission after the necessary examination period.

For the delivery years shown below, the mean market prices resulting from capacity auctions ahead of the delivery year were as follows:

Delivery year	2017	2018	2019	2020	2021	2022
Price (€/kW)	10	9.3	17.4	19.5	31.2	26.2

The delivery year 2023 was opened to auction in 2022. The three auctions held so far in 2022 resulted in the following prices, in chronological order:

- €42.4/kW in March;
- €42.5/kW in April; and
- €41.9/kW in June.

5.1.2 Sales

Sales are comprised of:

(in millions of euros)	H1 2022	H1 2021
Sales of energy and energy-related services	61,194	36,503
– energy[1]	*50,582*	25,882
– energy-related services (including delivery[2])	*10,612*	*10,621*
Other sales of goods and services	2,970	2,337
Trading	2,098	781
SALES	**66,262**	**39,621**

[1]Sales of energy include €6,251 million of sales related to optimisation operations on the wholesale gas and electricity markets in the first half of 2022 (€1,265 million in the first half of 2021). These operations are carried out by certain Group entities to balance supply and demand, in compliance with the group's risk management policy. In 2022, the principal operating segments with a net short position in euros on the markets are France – Generation and Supply (gas) and Italy (electricity). In 2021, they were Italy (electricity), the United Kingdom (electricity) and France – Generation and Supply (gas).

[2]Delivery services included in this item concern the distribution network operators Enedis, Electricité de Strasbourg and EDF SA for non-interconnected zones. However, delivery services concerning EDF Energy and Edison are included in Sales of energy, because those entities are classified as the principal under IFRS 15 for both supply and delivery. The delivery services by EDF Energy and Edison have no impact on net income because they are included in "Transmission and delivery expenses" in note 5.2.

After elimination of foreign exchange effects and changes in the scope of consolidation, the Group's sales for the first half of 2022 were up by 66.4% or +€26.3 billion. This increase principally concerns the France – Generation and Supply segment (+€7.5 billion or +49.5%), the France – Regulated activities segment (+€0.4 billion or +4.5%), the United Kingdom (+€2 billion or +42%), Italy (+€9 billion or +232.9%), the Other activities segment (+€5.6 billion or +324.8%) and Dalkia (+€0.7 billion or +36.7%).

Sales by the **France – Generation and supply** segment showed organic growth of +€7.5 billion. This increase is mainly explained by favourable energy market price effects on purchase obligations (+€2.7 billion), a favourable price effect on regulated-tariff and market-price sales despite its substantial limitation by the regulatory decisions introduced in 2022, sales under the specific additional ARENH scheme (+€0.3 billion during the first half of 2022), and a positive effect relating to sales subsidiaries and aggregators (+€1 billion). Sales by this segment also include sales through the capacity mechanism, which amounted to €594 million in the first half of 2022 (€268 million in the first half of 2021).

Sales in the **United Kingdom** segment registered an organic increase of €2 billion, principally attributable to the impact of rising energy prices on customer sales tariffs, and higher year-on-year nuclear power output in the first half of 2022.

The **Italy** segment's sales were €9 billion higher than in the first half of 2021. This increase is essentially explained by favourable price effects for gas, observed across all markets, and to a lesser degree a volume effect, together totalling €6.6 billion. Rising prices for electricity, together with a limited volume effect, also contributed €2.4 billion to the growth in sales in the first half of 2022.

The +€5.6 billion organic increase in sales by the **Other activities** segment essentially concerned the gas activities (+€4.3 billion), supported by the rise in wholesale gas prices and EDF Trading's trading margin (+€1.3 billion) which benefited from high market volatility in a high-price environment.

Sales by **Dalkia** showed an organic year-on-year increase of €0.7 billion. This growth was principally driven by the substantial increase in gas prices (which were five times as high as in the first half of 2021). Sales also benefited from dynamic business activity in the United Kingdom and France.

5.2 FUEL AND ENERGY PURCHASES

Fuel and energy purchases comprise:

(in millions of euros)	H1 2022	H1 2021
Fuel purchases used – power generation[1]	(15,230)	(5,692)
Energy purchases[1]	(29,149)	(8,987)
Transmission and delivery expenses	(4,087)	(4,223)
Gain/loss on hedge accounting	6	(7)
(Increase)/decrease in provisions related to nuclear fuels and energy purchases	222	156
Fuel and energy purchases	**(48,238)**	**(18,753)**

[1] At 30 June 2022, fuel and energy purchases used and include respectively €1,414 million and €15,087 million for optimisation operations on the wholesale gas and electricity markets (respectively €279 million and €1,088 million in the first half of 2021). At 30 June 2022 the principal operating segments with net long positions in euros on the markets are the United Kingdom (gas), Other international (Luminus – gas and electricity) and Dalkia (gas). At 30 June 2021, the same segments were concerned, together with France – Generation and Supply.

Fuel purchases used include costs relating to raw materials for energy generation (gas, nuclear fuels and fissile materials and a non-significant proportion of coal and oil), purchases of services related to the nuclear fuel cycle, and costs associated with environmental schemes (mainly greenhouse gas emission rights and renewable energy certificates).

"Energy purchases" include purchases made under the purchase obligation mechanism in France.

After elimination of foreign exchange effects and changes in the scope of consolidation, the Group's fuel and energy purchases were up by €29.3 billion from 2021, principally in the France-Generation and Supply segment (€12.6 billion, essentially electricity purchases), Italy (€8.8 billion, essentially gas purchases included in "Fuel purchases used - power generation"), the Other activities segment (€4.5 billion, mainly in the gas activities), and the United Kingdom (€1.9 billion). In France, this increase is principally explained by high-price market purchases made necessary by the lower level of nuclear power output (-27.6TWh, particularly due to the stress corrosion phenomenon); it also includes purchases made for the purpose of the specific additional ARENH scheme (€1.7 billion in the first half year of 2022).

5.3 OTHER OPERATING INCOME AND EXPENSES

Compensation for public energy charges (CSPE) (France)

The legal and regulatory framework for the mechanism for compensation for public energy service charges is described in note 5.4.1 to the consolidated financial statements at 31 December 2021.

The operating liability corresponding to the CSPE is recorded in "Other liabilities" at 30 June 2022 (see note 12.5).

Energy savings certificates in France

The fourth period of France's energy savings certificates scheme (2018-2021) ended on 31 December 2021. Despite the substantially higher energy savings targets, the EDF group met its obligation and has a stock for the start of the fifth period.

Decree 2021-712 on the fifth period of the energy savings certificates scheme (2022-2025) was published in the *Journal officiel* of 5 June 2021. The decree makes the scheme more effective (for example by significantly reducing special measures and bringing calculations close to the real savings), increases funding for very vulnerable households (higher obligations intended to benefit households in situations of energy poverty, restriction of the scope to very vulnerable households, an increase in the penalties in this category to €20/MWhc) and encourages development of carbon-free energies:

- the overall obligation is increased by 17.2% to 2,500TWhc for this period (obligations intended to benefit households in situations of energy poverty: +37% to 730TWhc, "standard" obligations: +11% to 1,770TWhc);

- the Energy Savings Certificate coefficient (MWhc to be produced per MWh of energy sold) is reduced by 10.2% for electricity and increased by 51.8% for gas;
- for electricity and gas, the threshold below which no energy savings certificates are required is progressively reduced from the current 400GWh/year to 300GWh/year in 2022, 200GWh/year in 2023 and 100GWh/year in 2024 and subsequent years.

Other operating income and expenses mainly include the amount received or receivable by EDF under the CSPE (*Contribution au Service Public de l'Energie* - Contribution to the Public Energy Service) system, which is reflected in the first half of 2022 by recognition of operating income of €1,347 million (€3,865 million for the first half of 2021). The decrease in CSPE income is principally explained by the level of first-half market prices, which were higher in 2022 than 2021 and exceeded the State's guaranteed support price during the first half of 2022.

Other operating income and expenses also include costs relating to energy savings certificates and the additional remuneration paid to producers of electricity from renewable sources in France (this was introduced by France's energy transition law for green growth, and applies in addition to purchase obligations).

Other operating income and expenses also include, at 30 June 2022, a provision of €2,749 million for the cost in the second half of 2022 of the specific additional 20TWh ARENH scheme, introduced by the decree of 11 March 2022 and its implementing orders (see note 2). The related laws and regulations place EDF under a concurrent obligation to buy and sell electricity with predetermined volumes and prices for the period from April to December 2022: sales of 19.5TWh of ARENH volumes to eligible suppliers at the price of €46.2/MWh, and purchases of 19.5TWh from the same eligible suppliers at the price of €256.98/MWh, in coordination with the Caisse des Dépôts et Consignation and RTE, under the supervision of the CRE. This mechanism will generate a definite net cost of €4,110 million for EDF for the year 2022. Its effects for April to June are included in purchases and sales of the first half-year, with recognition of a provision at 30 June 2022 for the period from July to December. This provision will be reversed in the second half year as and when the sales and purchases take place.

At 30 June 2021, other operating income and expenses included the gain on the sale of IDG (a gas distribution network in Italy, see note 3.1.2).

NOTE 6 NET CHANGES IN FAIR VALUE ON ENERGY AND COMMODITY DERIVATIVES, EXCLUDING TRADING ACTIVITIES

(in millions of euros)	H1 2022	H1 2021
NET CHANGES IN FAIR VALUE ON ENERGY AND COMMODITY DERIVATIVES, EXCLUDING TRADING ACTIVITIES	(993)	(541)

Net changes in fair value on Energy and Commodity derivatives, excluding trading activities, decreased from €(541) million in the first half of 2021 to €(993) million in the first half of 2022, principally due to high volatility on the commodities markets, particularly in the case of gas, and to a lesser degree electricity.

NOTE 7 OTHER INCOME AND EXPENSES

Other income and expenses amount to €(388) million for the first half of 2022. They principally comprise:

- the expense of the Employee Reserved Offer (ERO) during the period, amounting to €(64) million;
- exceptional additional costs relating to work for repairs to the main secondary circuit welds at the Flamanville 3 EPR, totalling €(308) million (these are defined by IAS 16.22 as abnormal costs and cannot be included in the cost of assets in progress);
- the €(15) million loss on the sale of Dalkia Russia.

Concerning the ERO, the Board of Directors of EDF decided on 11 May 2022 on the principle of an employee shareholding operation. The offer 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 "standard" formula.

The shares issued for this offer were 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 25 July 2027, apart from cases of early release provided for by the regulations. The voting rights will be exercised by the Supervisory Board of the FCPE.

The subscription price for these shares was fixed on 28 June 2022. It included a discount of 30% 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 determined. The expense corresponding to this discount is recognised in "Other changes" *via* an adjustment to Group reserves.

This operation led to an increase in the Group's share capital, through issuance of 18,100,741 new EDF shares on 25 July 2022. The shares were delivered on 25 July 2022 (see note 13.1).

In the first half of 2021, other income and expenses amounted to €(92) million. They principally comprised :

- an amount of €505 million to be received in application of the agreement signed by Areva and EDF on 29 June 2021 (see note 2) for a settlement payment of €563 million, less certain amounts, principally payments collected for third parties and assets previously included in the balance sheet;
- exceptional additional costs relating to work for repairs to the main secondary circuit welds at the Flamanville 3 EPR, totalling €(278) million at 30 June 2021 (these are defined by IAS 16.22 as abnormal costs and cannot be included in the cost of assets in progress);
- costs relating to the early closure of Dungeness B, amounting to €(161) million including impairment of fuel inventories and spare parts, and provisions for penalties due under the capacity mechanism (see note 2);
- provisions relating to proceedings before the civil, administrative and criminal courts concerning the sale by Montedison of Ausimont (the Bussi site) in Italy to Solvay in 2002.

NOTE 8 FINANCIAL RESULT

8.1 DISCOUNT EFFECT

The effect of unwinding the discount primarily concerns provisions for the back-end of the nuclear cycle, decommissioning and last cores, and long-term and post-employment employee benefits.

Details of the final discount effect are as follows:

(in millions of euros)	H1 2022	H1 2021
Provisions for long-term and post-employment employee benefits[1]	(335)	(245)
Provisions for the back-end of the nuclear cycle, decommissioning and last cores[2]	753	(731)
Other provisions and advances	84	(40)
DISCOUNT EFFECT	**502**	**(1,016)**

[1] See note 15.1.2.

[2] Including the effect of discounting the receivable corresponding to amounts reimbursable by the NLF (see note 17.1.3).

The increase in the discount effect on provisions for long-term and post-employment employee benefits on the first half of 2022 is explained by the higher discount rate applicable at 1 January 2022 (in France: 1.3%, against 0.9% at 1 January 2021).

The positive discount effect on nuclear provisions in the first half of 2022 is explained by a 30 base point increase in the real discount rate in France in the first half of the year, which has no equivalent in 2021. In France, negative discount effects for the first half of 2022 (€(856) million) were outweighed by positive discount effects of €1,596 million, giving a net positive effect of €740 million (see note 14).

8.2 OTHER FINANCIAL INCOME AND EXPENSES

Other financial income and expenses comprise:

(in millions of euros)	H1 2022	H1 2021
Gains/(losses) on financial assets	294	422
Changes in financial instruments carried at fair value through profit and loss	(3,252)	1,841
Other	237	368
OTHER FINANCIAL INCOME AND EXPENSES	**(2,721)**	**2,631**

Gains and losses on financial assets consist of income on cash and cash equivalents, income and expenses on debt and equity securities, and other financial assets.

At 30 June 2022, changes in the fair value of financial instruments include €(3,196) million concerning dedicated assets (see note 14.2.1). Other items include €(43) million of gains and losses on sale of debt securities carried at fair value through OCI with recycling (€(115) million of which concern dedicated assets).

At 30 June 2021, changes in the fair value of financial instruments include €1,836 million concerning dedicated assets. Other items include €42 million of gains and losses on sale of debt securities carried at fair value through OCI with recycling (€34 million of which concern dedicated assets).

NOTE 9 INCOME TAXES

The income tax credit amounts to €1,840 million at 30 June 2022, corresponding to an effective tax rate of 24.7% (compared to an expense of €(1,458) million at 30 June 2021, corresponding to an effective tax rate of 28.4%).

(in millions of euros)	H1 2022	H1 2021
Income of consolidated companies before tax	(7,443)	5,133
Income tax rate applicable to the parent company	25.82%	28.41%
Theoretical tax expense	1,922	(1,458)
Differences in tax rate(1)	43	(391)
Permanent differences	(25)	5
Taxes without basis(2)	(49)	554
Unrecognised deferred tax assets(3)	(51)	(165)
Other	-	(2)
ACTUAL TAX EXPENSE	**1,840**	**(1,458)**
EFFECTIVE TAX RATE	**24.7%**	**28.4%**

The €3,298 million change between the 2021 income tax expense and 2022 income tax credit essentially derives from the €12,576 million decrease in the Group's net income before tax, generating additional income tax credit of €3,247 million.

The income tax credit also reflects the unfavourable effect of the tax on exceptional profits made by electricity-producing companies in Italy in 2022, and the absence of any favourable effect equivalent to the asset restatements for tax purposes in Italy in 2021.

In contrast to 2021, the Group was not subject to any rise in the normative tax rate in the countries where it does business.

Deferred tax assets relating to the 2022 EDF SA French tax consolidation loss of €2,493 million are fully recognised due to prospects of a recovery within a 10-year horizon. They are included in the deferred tax assets of €2,870 million in the balance sheet.

After elimination of non-recurring items (principally fair value changes and unrealised gains and losses on financial assets and commodities), the effective current tax rate is 26.1% at 30 June 2022, compared to 26.5% at 30 June 2021.

The difference between the theoretical tax rate and the effective rate is explained by the following factors:

2022 :

- (1)the unfavourable impact of tax rate differences, amounting to €43 million, mainly relating to the United Kingdom where the normative tax rate applicable in 2022 is 19%;
- (2)the favourable impact of deduction of the payments made to bearers of perpetual subordinated bonds (amounting to €85 million), offset by the unfavourable impact of the exceptional tax on additional profits made by electricity-producing companies in Italy (€(71) million) and tax litigation (€(59) million);

- [3]the effect of non-recognition of deferred tax assets, amounting to €(51) million, mainly relating to the EDF SA tax consolidation which recognises deferred tax assets in full for temporary differences that are expected to reverse within 10 years, and to the extent of concurrent deferred tax liabilities for temporary differences that are expected to reverse after that horizon.

2021 :

- [1]the unfavourable impact of tax rate differences amounting to €(391) million, primarily due to the increase in the United Kingdom's normative tax rate from 19% to 25% from 2023;
- [2]the favourable impacts of asset restatements for tax purposes in Italy (amounting to €422 million) and deduction of the payments made to bearers of perpetual subordinated bonds (amounting to €84 million);
- [3]the effect of non-recognition of deferred tax assets, amounting to €(164) million, relating to the deferred tax assets recorded in respect of tax restatements of assets in Italy.

NOTE 10 PROPERTY, PLANT AND EQUIPMENT AND INTANGIBLE ASSETS

Details of property, plant and equipment and intangible assets are as follows:

(in millions of euros)	Notes	30/06/2022	Assets in progress	31/12/2021	Assets in progress
Goodwill	10.1	10,820	n.a.	10,945	n.a.
Other intangible assets	10.1	10,509	2,065	10,221	1,793
Property, plant and equipment used in generation and other tangible assets owned by the Group, including right-of-use assets	10.2	98,647	47,635	98,237	45,220
- Right-of-use assets		*4,032*	*n.a.*	*4,146*	*n.a.*
Property, plant and equipment operated under concessions other than French electricity distribution concessions		6,820	613	6,881	621
Property, plant and equipment operated under French public electricity distribution concessions		62,816	2,478	62,132	1,886
TOTAL PROPERTY, PLANT AND EQUIPMENT AND INTANGIBLE ASSETS		**189,612**	**52,791**	**188,416**	**49,520**

n.a.: not applicable.

10.1 GOODWILL AND OTHER INTANGIBLE ASSETS

At 30 June 2022, goodwill primarily relates to EDF Energy (€7,928 million) and Framatome (€1,450 million).

The changes in goodwill in the first half of 2022 primarily relate to translation adjustments (€(164) million) resulting chiefly from the decline of the pound sterling against the Euro.

Other intangible assets in progress at 30 June 2022 include €893 million for studies concerning the EPR2 (€761 million at 31 December 2021) and €98 million for Small Modular Reactors (€69 million at 31 December 2021), see note 10.6 to the consolidated financial statements at 31 December 2021.

10.2 PROPERTY, PLANT AND EQUIPMENT USED IN GENERATION AND OTHER TANGIBLE ASSETS OWNED BY THE GROUP

At 30 June 2022, property, plant and equipment used in generation and other tangible assets owned by the Group and in progress mainly comprise:

- Investments for the Flamanville 3 EPR amounting to €15,193 million, including capitalised interim interest of €3,471 million (€15,014 million at 31 December 2021, including capitalised interim interest of €3,471 million, *i.e.* an increase of €179 million over the half-year excluding capitalised interim interest). The amount capitalised for the Flamanville 3 project in the financial statements at 30 June 2022 is €15,426 million, of which €227 million concern assets that have been commissioned, including €24 million of interim interest.

This capitalised amount of €15,426 million including capitalised interim interest, includes the following in addition to the construction cost:

- an inventory of spare parts and capitalised amounts totalling €564 million for related projects (notably the initial comprehensive inspection and North Area development);
- €827 million of pre-operating expenses and other property, plant and equipment related to the Flamanville project;
- and the elimination of internal balances on balance sheet items and margins between Framatome and EDF SA in connection with the Flamanville 3 EPR project (€249 million, essentially consisting of advances and progress payments),

giving a construction cost at historical value of €10,541 million in the consolidated financial statements at 30 June 2022, and a construction cost at completion (excluding interim interest) of €12.7 billion (in 2015 euros).

The Group announced on 12 January 2022 that the schedule for the Flamanville 3 project was being adjusted and the estimated completion cost raised from €12.4 billion to €12.7 billion (in 2015 euros, excluding interim interest).

In its report of July 2020 on EPR technology, the French Court of Auditors (*Cour des Comptes*) stated that by its calculations, in addition to the construction cost at that date of €12.4 billion (in 2015 euros) announced by EDF, there will be further costs that could reach €6.7 billion (in 2015 euros), including €4.2 billion of interest expenses. As stated above, at 30 June 2022 the capitalised interest amounts to €3.5 billion and other capitalised project costs amount to €1.4 billion.

The non-recurring additional costs resulting from the necessary repairs to the main secondary circuit welds (see Group press release of 9 October 2019) are recorded in other income and expenses at the amount of €308 million in the first half of 2022 (€278 million in the first half of 2021) (see note 7). Additional costs induced by the readjustment announced on 12 January 2022 are also recognised in other operating income and expenses.

- Investments relating to Hinkley Point C, amounting to €20,080 million including capitalised interim interest of €970 million (€18,542 million at 31 December 2021 including capitalised interim interest of €835 million). In the first half of 2022 investments in this project amount to €1,717 million.
- Studies concerning Sizewell C amounting to €635 million (€533 million in 2021).

The balance of property, plant and equipment in progress (excluding assets operated under concessions), *i.e.* €11,726 million, principally concerns EDF SA's existing nuclear plants (70%) in line with the *Grand Carénage* programme (replacement of major components, particularly steam generators; work in connection with periodical and 10-year inspections), and to a lesser extent (around 15%) EDF Renewables (power plants in development in Europe, North America and emerging countries).

Property, plant and equipment in progress increased by €2,415 million as the level of investment in 2022 is significantly higher than the amount of assets brought into service during the first half of the year.

The changes observed in property, plant and equipment used in generation and other tangible assets owned by the Group include a €(30) million translation adjustment (resulting from a €(540) million decline in the pound sterling against the euro, counterbalanced by a €476 million rise by the US dollar) and €(1,252) million of other changes, mainly related to recognition of impairment on assets related to provisions (for decommissioning and last cores) following the change in discount rate (see note 14.1).

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

(in millions of euros)	Land and buildings	Nuclear power plants	Fossil-fired and hydropower plants	Other installations, plant, machinery, equipment and other	Right-of-use assets	Assets in progress	Total
NET VALUES AT 30/06/2022	5,726	23,913	4,415	12,926	4,032	47,635	98,647
NET VALUES AT 31/12/2021	5,887	25,881	4,825	12,278	4,146	45,220	98,237

Principal projects in progress and investments during the half year

Grand Carénage programme

Since 2014 EDF has been implementing its *Grand Carénage* industrial refurbishment programme for the French nuclear fleet, designed to enhance reactor safety and extend their operating lifetimes significantly beyond 40 years. The most recent estimate of the programme's cost for the period 2014-2025, established in late 2021, is €50.2 billion in current euros. This cost factors in the third 10-year inspections for the Group's 1300MW reactors, a significant portion of the safety improvements undertaken following lessons learned from the Fukushima incident, including construction and operation of 56 emergency diesel generators, creation of auxiliary feedwater pumps at each nuclear plant in operation, and performance of the fourth 10-year inspections of the Group's 900MW reactors.

To continue the investments necessary to operate the Group's nuclear fleet in complete safety significantly beyond 40 years, on 31 March 2022 EDF's Board of Directors validated a new roadmap for the *Grand Carénage* programme running from 2022 to 2028. The cost estimate for this new period is €33 billion in current euros, or an annual expenditure of €4.7 billion. The extended programme will enable the Group to conduct studies and the fourth 10-year inspections of the 1300MW series, conduct preliminary studies for operation of the 900MW reactors beyond 50 years, in accordance with the multi-year energy programme adopted by France in April 2020, and complete the still substantial maintenance and renovation work on major components, so that power plants can remain in operation for more than 50 years. The broader scope of the programme also covers new safety requirements resulting from the generic opinion of France's Nuclear Safety Authority (ASN) on the fourth 10-year inspections of the 900MW reactors, building on experience from the review with the ASN of the fourth 10-year inspections for 900MW and 1300MW reactors.

On 23 February 2021, the ASN issued its opinion on the generic aspects of continued operation of 900MW reactors for ten years following their fourth 10-year inspection. It considered that all the measures taken and recommended by EDF and its own recommendations pave the way for continued operation of these reactors for ten years following their fourth 10-year inspection. At 30 June 2022, the nuclear fleet comprises seven "VD4 900" reactors (Tricastin 1 and 2 - Bugey 2, 4 and 5 - Dampierre 1 – Gravelines 1) that have been authorised by the ASN to restart following their fourth 10-year inspection. Three other such inspections are in process at 30 June 2022 (Gravelines 3 – Dampierre 2 – Tricastin 3) and another will begin at Blayais 1 very soon.

Additionally, major investments have been made following the lessons of Fukushima. 56 emergency diesel generators have been constructed and put into operation, and every power plant has a permanent or provisional auxiliary feedwater system. Major components have also been replaced at many production units: replacement of the main unit transformers, renovation of turbines, replacement of steam generators, replacement of filter drums.

Stress corrosion

In late 2021, during preventive maintenance checks on reactor 1 at the Civaux nuclear power plant, scheduled as part of its ten-year inspection, defects were detected close to welds on the pipes of the safety injection system (SIS) circuit. Preventive checks were then carried out on the Civaux 2, Chooz 1 and Chooz 2 reactors and revealed similar defects. Preventive maintenance checks conducted during the ten-year inspection of reactor 1 at the Penly nuclear power plant also found similar defects on the SIS circuit.

On 13 January 2022, EDF stated that due to performance of checks and the examination and implementation of technical solutions, it was necessary to extend the maintenance outages of the Civaux 1,Civaux 2, Chooz 1, Chooz 2 and Penly 1 reactors. The control programme for the entire nuclear fleet is under development, incorporating experience from the initial analyses as it is gained. As a result of the longer outages at these 5 reactors, EDF revised its 2022 nuclear output estimate from 330-360TWh to 300-330TWh. EDF also adjusted its nuclear output estimate for 2022 to 295-315TWh on 7 February 2022, in the course of its control programme on the French nuclear fleet.

On 18 May 2022, EDF stated that it was continuing its inspection programme and preparing, along with the nuclear industry, to repair sections of the pipes affected by stress corrosion.

Twelve reactors were concerned by the stress corrosion checks at that date:

- in the N4 series: Civaux 1, Civaux 2, Chooz 1, Chooz 2;
- in the 1300 MW series: Penly 1, Flamanville 1, Flamanville 2, Cattenom 3, Cattenom 4;
- in the 900 MW series: Bugey 3, Bugey 4, Chinon B3.

The result of the metallurgical analyses carried out on samples taken from the pipes of the auxiliary circuits of the Civaux 1, Chooz 1 and Penly 1 reactors confirmed the presence of stress corrosion near welds on the SIS (safety injection system) and RHRS (residual heat removal system) circuits.

Checks and expert assessments carried out on Chinon B3 confirm the absence of stress corrosion on the SIS circuit. Evidence of stress corrosion was detected on a weld in the RHRS circuit.

EDF stated that other reactors would also be checked in 2022 during the maintenance programme that is part of their ten-year inspections (Tricastin 3, Gravelines 3, Dampierre 2, Blayais 1, Saint Laurent B2, and Golfech 1).

As indicated in EDF's press release of 18 May 2022, in view of all of these events EDF adjusted its French nuclear output estimate for 2022 to 280-300TWh.

Discussions continued with the ASN about the treatment programme for stress corrosion.

In a press release of 27 July 2022, the ASN declared the position it had reached on 26 July 2022 regarding EDF's proposed inspection strategy for the stress corrosion affecting its reactors. The ASN considers EDF's strategy appropriate given the knowledge gained about this phenomenon, and the related safety issues.

The ASN stated that since the discovery in late 2021 of cracks caused by stress corrosion on reactor 1 at the Civaux nuclear power plant, EDF has conducted many investigations to deepen understanding of the phenomenon and identify the zones concerned. In the course of this work, 70 laboratory analyses were performed on sample welds from eight reactors. These analyses and the tests by EDF itself provided vital support for its inspection strategy. They identified the geothermic characteristics of the pipes and their thermomechanical constraints as the principal factors influencing the incidence of stress corrosion. The most sensitive areas identified by EDF are:

- the pipes of the SIS (safety injection system) circuit that are located in the cold leg, and the suction pipes of the RHRS (residual heat removal system) circuit in the four N4 (1450MW) reactors;
- the pipes of the SIS circuit that are located in the cold leg in the P'4 (1300MW) reactors.

Based on the available knowledge, the P4 (1300MW) and the 900MW series reactors appear to have low or very low sensitivity to stress corrosion.

EDF intends to inspect all its reactors by 2025, prioritising these zones of the N4 and P'4 reactors that are the most sensitive to stress corrosion. The reactors will be checked using a new, non-destructive ultrasound inspection process, which has been developed to reliably detect stress corrosion cracks and estimate their depth. After six months of development, the results currently achieved by EDF are promising, and it should be possible to use this new inspection method as soon as the second half of 2022.

The ASN considers that this strategy meets the need to continue checks on what are considered the most sensitive pipes. However, the ASN considers that the inspection of reactor 2 at the Belleville nuclear power plant is scheduled too late (in 2024).

The ASN considers that knowledge about stress corrosion is still developing, and that the inspection programme will have to be adjusted if the checks or analyses conducted bring new information to light.

With the support of the IRSN, the ASN is continuing its examination of the information submitted by EDF. A presentation on this matter will be given in September to the permanent group of experts for pressurised nuclear equipment.

At 30 June 2022, the cost of capitalised work relating to the stress corrosion phenomenon amounts to €78 million.

Flamanville 3 EPR project

Developments in 2021

The fuel assemblies required for the first fuel load continued to arrive during the first half of the year, and the entire first core is now stored in the Flamanville 3 reactor building pool.

The process of repairing the penetration welds on the main secondary circuit using remote-controlled robots was approved by the ASN on 19 March 2021, several weeks behind the expected date, and work began on the eight welds that were not compliant with the break preclusion principle. All eight were repaired in 2021, then subjected to stress-relieving heat treatment. Demonstration of the qualification of the stress-relieving heat treatment for repairs of VVP (steam discharge pipework circuit) penetration welds was validated by the ASN, which issued authorisation for its use in late 2021. Furthermore, four ARE (steam generator water supply circuit) penetration welds also require repair, and qualification of the repair process is under way at the ASN. This process is an adaptation of the process used for VVP penetration weld repairs.

For the non-penetration welds located on the main secondary circuit that had quality deviations (this concerns 45 VVP welds and 32 ARE welds), the ASN issued approval in April 2021 for the repair of a third batch of 6 welds. In the 3 batches authorised to date, 12 weld upgrades have been completed. In April the ASN gave approval for the related regulatory checks, which are currently in process.

In total, a hundred welds (penetration and non-penetration) on the main secondary circuit were concerned by repairs to the VVP and ARE pipework. The final stage of repair for most of these welds will be an optimised stress-relieving heat treatment, prior to the final verification. Repairing these welds remains one of the key challenges on the Flamanville 3 critical pathway.

On 2 March 2021 EDF declared a significant event to the ASN, concerning incomplete application of the 2006 design standards when installing three nozzles on the main primary circuit (these nozzles connect auxiliary circuits to the primary circuit). At the request of the ASN, three scenarios were examined by the Group's engineering teams. A file was sent to the ASN on 21 June 2021, stating that EDF's chosen solution is to install a "containment collar", and asking the ASN for its position on this solution, so that all the design and procurement activities could be launched by the end of 2021. In a letter of 8 October 2021 the ASN indicated that it had no objections to this solution in principle. Nonetheless the design file for the containment collar will be examined by the French Radiation protection and Nuclear Safety Institute IRSN (*Institut de radioprotection et de sûreté nucléaire*).

Also, after corrosion was observed on pressuriser valves at the EPR at Olkiluto (Finland), the Group carried out equipment checks and also detected traces of corrosion on the Flamanville EPR's valves. The material used for certain components of the pilots control valves was changed accordingly. Several corrosion stress tests were conducted to select the best material. The components were put into production and were to be installed on site during the first half of 2022. The ASN was regularly informed of the technical choices, and made no objection to this strategy. The ASN and the IRSN also continued their examination of the operation and reliability of the pressuriser valves. EDF is due to respond to the IRSN's most recent questions so that it can finalise examination of the valve design by the end of the first half of 2022.

As the work advanced, new technical matters emerged that could increase the completion cost and the risk of deferred timelines. In view of the progress made on operations and preparations for start-up, on 12 January 2022 EDF adjusted the schedule for the Flamanville 3 project. The fuel loading date was deferred from late 2022 to the second quarter of 2023, and the estimated completion cost revised from €12.4 billion to €12.7 billion (in 2015 euros, excluding interim interest). The project has no remaining margin in its schedule or completion cost.

Before loading the fuel into the reactor vessel and carrying out the overall start-up tests, several operations remained to be carried out, mainly:

- completion of the weld repairs on the main secondary circuit;
- a new series of qualification tests of the installation before loading the fuel into the reactor;
- incorporation of experience gained from the technical issue handled at Taishan reactor 1;
- finishing work on the installation, and remittal of all the documents required for operation.

Developments in 2022

As announced in January 2022, inspections of the Taishan 1 reactor's fuel assemblies following the technical issue encountered during its second operating cycle showed mechanical wear on certain assembly components. This kind of wear has already been observed in several reactors of the French nuclear fleet. For the future commissioning of Flamanville 3, a solution will be examined with the ASN. EDF's proposed strategy for the Flamanville EPR (supply of around sixty reinforced fuel assemblies) was presented to the High Committee for Transparency and Information on Nuclear Safety (*Haut comité pour la transparence et l'information sur la sécurité nucléaire*, HCTISN) on 7 June 2022.

Repair work to the main secondary circuit welds continued at a good pace during the first half of the year. 122 welds are concerned (36 penetration welds and 86 non-penetration welds) and repairs had begun on 86% of them at 30 June 2022. At the same date, 41% of repairs were ready for stress-relieving heat treatment, and 17% were completed and valid after stress-relieving heat treatment.

Concerning the SIS (Safety injection system)/CHR (Containment Heat Removal) filtration sumps, EDF proposed a new filtration system which has been trialled and produced results considered satisfactory by the IRSN. It will be rolled out in September 2022.

Finally, the solution for pressuriser valves proposed by EDF based on experience with the Olkiluoto EPR in Finland is still in discussion with the IRSN, which is expected to issue its report during the summer.

Hinkley Point C

Following the final investment decision (FID) made by EDF's Board of Directors on 28 July 2016, EDF and China General Nuclear Power Corporation (CGN) signed contracts with the UK government for the construction and operation of two EPR reactors at the Hinkley Point site in Somerset (the "Hinkley Point C" or "HPC" project). EDF's share in HPC is 66.5% and CGN's share is 33.5%.

A review of the schedule and cost for the two Hinkley Point C reactors was finalised in May 2022[1] and concluded:

- the start of electricity generation for Unit 1 is targeted for June 2027. The risk of further delay of the two units is assessed at 15 months, assuming the absence of a new pandemic wave and no additional effects of the war in Ukraine[2];

1 The review took into account the main aspects of the project. The schedule and cost of electromechanical works and of final testing have not been reviewed.

2 Since the beginning of construction, the project has been delayed by 18 months in total, mainly due to the Covid-19 pandemic. See the press release of 27 January 2021.

- the project completion costs are now estimated in the range of £25 to £26 billion (in 2015 sterling)[1]. Under the terms of the Contract for Difference, there is no impact for UK consumers.

During more than two years of the Covid-19 pandemic, the project continued without stopping. This protected the integrity of the supply chains and allowed the completion of major milestones. However, people, resources and the supply chain have been severely constrained and their efficiency has been restricted. In addition, the quantities of materials and engineering as well as the cost of such activities, in particular marine works, have risen.

The next major milestone is the lifting of the dome onto Unit 1, which is expected to take place in the second quarter of 2023.

Sizewell C

The key features of the project are described in note 10.6 to the consolidated financial statements at 31 December 2021. By the final investment decision date at the latest, EDF expects to become a minority shareholder with a maximum stake of 20% and correspondingly limited rights, and to deconsolidate the project in the Group's financial statements.

In the first half of 2022, a UK law introducing the Regulated Asset Base (RAB) model was enacted in March 2022. Discussions are continuing between the Group and the British government to finalise the terms of the Government Support Package (GSP) for Sizewell C.

On 20 July 2022 the project was granted a Development Consent Order (DCO). This is a crucial decision for the future of the project, following four rounds of public consultation, particularly the public examination which ran from April to October 2021 after the DCO application was submitted in May 2020. A six-week period during which challenges can be made now follows this decision.

EDF's ability to participate along with other investors in a final investment decision and contribute to funding for the construction phase still depends on the fulfilment of conditions which are not guaranteed at this date.

10.3 INVESTMENTS IN INTANGIBLE ASSETS AND PROPERTY, PLANT AND EQUIPMENT

The table below provides a breakdown of the investments in intangible assets and property, plant and equipment presented in the cash flow statement:

(in millions of euros)	30/06/2022	30/06/2021
Acquisitions of intangible assets	(730)	(688)
Acquisitions of property, plant and equipment	(7,369)	(7,205)
Change in payables to suppliers of fixed assets	(604)	(625)
IINVESTMENTS IN INTANGIBLE ASSETS AND PROPERTY, PLANT AND EQUIPMENT	**(8,703)**	**(8,518)**

Investments in property, plant and equipment and intangible assets during the first half of 2022 mainly concern:

- the France – Generation and Supply segment: €2,842 million, primarily investments made under the *Grand Carénage* programme, investments for Flamanville 3, and investments in hydropower generation;
- the France – Regulated activities segment: €2,385 million, essentially investments related to connections for customers and producers, but also investments for network renewal, quality of service and network modernisation;
- the United Kingdom segment: €2,010 million, principally investments related to nuclear power generation, mainly for the HPC project (see note 10.2);
- the EDF Renewables segment: €1,012 million, mainly in wind and solar capacities in the United States, Europe and in emerging countries.

10.4 IMPAIRMENT/REVERSALS

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

At 30 June 2022, impairment tests were conducted on:

- the generation fleet of the France – Generation and supply segment (with tangible and intangible assets of €60.2 billion at 30 June 2022 – see note 4), particularly as the nuclear generation levels were affected by the stress corrosion phenomenon and because of the regulatory measures introduced in 2022;
- cash-generating units (CGUs) and goodwill in the United Kingdom segment (with tangible and intangible assets of €26 billion at 30 June 2022 – see note 4), particularly due to the update of the construction cost for HPC;
- and specific assets in various CGUs where indications of impairment had been identified, notably in the EDF Renewables segment (with tangible and intangible assets of €11.5 billion at 30 June 2022).

1 Costs net of operational action plans, in 2015 sterling, excluding interim interest and at a reference exchange rate for the project of £1 = €1.23.

It was not considered necessary to update the tests performed at 31 December 2021 on the CGUs of the Italy, Framatome, Other international, Dalkia, and Other activities segments (with total tangible and intangible assets of €13.3 billion at 30 June 2022 − see note 4), given the headroom existing at 31 December 2021 and the associated sensitivity analyses, and the fact that there was no triggering event at operational, regulatory or financial value in these CGUs during the first half of 2022.

General assumptions

The Group's impairment testing methodology is described in note 10.8 to the consolidated financial statements at 31 December 2021.

For future cash flows used to calculate value in use, a specific approach is used for the half-year closing since there is no update to the Medium-Term Plan at that date. Cash flows are based on the Management's best current estimate, considering budget adjustments for the current year and the initial orientations resulting from preparation work for the Medium-Term Plan.

Electricity prices

The electricity price assumptions used in the tests reflect the current market environment, which is marked by a rise in energy prices that was already visible at the end of 2021 and became much more accentuated over the first half of 2022.

Over the market horizon, the forward prices used in impairment tests are based on market prices observed at the end of the period and reflect their substantial change.

Over the long-term horizon, these tests use price curves constructed analytically by assembling blocks of assumptions and fundamental models of the supply-demand balance, in an annually updated process that is subject to specific internal governance. At the half-year closing, only the assumptions concerning commodities have been updated and validated by dedicated bodies (for coal, oil, gas and CO_2 quotas).

These commodities, particularly the movements in gas prices, have a significant impact on electricity price formation and are set on a clear upward trend at the start of the horizon, notably due to the reduction of Russian imports in Europe and the resulting higher demand for LNG. At the end of the horizon, prices return to their long-term fundamentals and are aligned with the full costs of North American LNG.

Given this generally rising trend over the long term in commodity prices, which are a primary factor in electricity price formation, and the context of higher carbon-cutting targets, subject to future regulatory developments no risk is anticipated on the value of assets based on the long-term electricity price scenarios. Those scenarios will be updated as usual in the second half of the year and used for the impairment tests at 31 December 2022.

Discount rates

The discount rates used in impairment tests have been revised since 31 December 2021, under an approach that is appropriate to the current situation of rising interest rates.

The methodology applied by the Group takes as the risk-free rate an average of interest rates observed over a sufficient period, generally between 18 months and 5 years depending on the country, to limit volatility effects on impairment tests at a given closing. Applying this methodology, the discount rates for the two principal zones, France and the United Kingdom, would have been unaffected by the pronounced increase in interest rates observed since January 2022 and mid-2021 respectively. As an exception, at 30 June 2022 in a context of significantly rising and volatile interest rates, the Group revised its discount rates for the two zones in which impairment tests were updated, specifically to calculate the risk-free rate by reference to the average for the last six months for France, and the last twelve months for the United Kingdom. The rate determined for France is thus 5.7% after tax compared to 5.1% at 31 December 2021, or applying the usual method at 30 June 2022, and the rate for the United Kingdom is 6% after tax compared to 5.7% at 31 December 2021, or applying the usual method at 30 June 2022.

United Kingdom – EDF Energy

Goodwill, HPC projects and existing nuclear assets

EDF Energy's goodwill amounted to €7.9 billion (or £6.8 billion) at 30 June 2022. It mainly results from the takeover of British Energy in 2009.

The recoverable value of EDF Energy is determined by discounting future cash flows over the assets' expected useful life, taking into consideration the two EPRs with a 60-year useful life currently under construction at the Hinkley Point site, a project for which the final contracts were signed on 29 September 2016. Future cash flows from these plants are determined by reference to the Contract for Difference (CfD) between the Group and the UK government. The CfD sets stable, predictable prices for EDF Energy for a period of 35 years from the date the two EPRs are first commissioned (see note 10.8 to the consolidated financial statements at 31 December 2021).

On 19 May 2022 the Group released a review of the schedule and cost for construction of the two nuclear reactors at the Hinkley Point site. It updated the project assumptions, notably to reflect the impact of Covid-19 restrictions and Brexit on the supply chain, and the challenges facing both operators and personnel as regards resources.

The start of electricity generation for Unit 1 is now scheduled for June 2027 instead of June 2026 as previously (and June 2028 instead of June 2027 for Unit 2). The project completion costs are now estimated in the range of £25-£26 billion (in 2015 sterling), as opposed to the previous estimate of £22-£23 billion (in 2015 sterling). The risk of delay to delivery remains unchanged at 15 months for both units.

The impairment test conducted at 30 June 2022 incorporated the new assumptions for commissioning and higher construction costs, and took account of the updated discount rate (from 5.7% to 6%) and inflation (which is favourable for the project over its entire operating lifetime).

On this revised basis, the headroom between the recoverable value and the net book value of the HPC project has clearly declined, but remains amply positive, at around one third of its net book value. This can absorb the risk of a 15-month delay to delivery of the two units, modelled in the test at £1.5 billion of additional costs in nominal value. After taking this risk into consideration, as an illustration, the test threshold would be reached if the discount rate was increased by 50 base points.

A combined stress test was performed for illustrative purposes, using the risk of a 15-month delay to delivery and several downgraded operational assumptions (a 2% reduction in plant availability, a 10% increase in fuel and O&M costs over the whole operating lifetime, without taking account of corrective measures, a 10% increase in decommissioning and waste management costs and a 5% decrease in the rate of return on hedging assets), and a 25 base point increase in the discount rate, which would bring the headroom close to equilibrium.

For the existing nuclear fleet, subject to future regulations, the significant increase in forward market prices increases the headroom calculated by the test despite the higher discount rate. Conversely, impairment of €121 million was recognised on individual assets (land).

For goodwill, on the revised basis for the Hinkley Point C project, existing nuclear facilities and more generally the updated discount rate for other CGUs, the headroom between the recoverable value and the book value of EDF Energy (including goodwill) is noticeably lower than at 31 December 2021 but still positive at 30 June 2022, representing around 12% of its net book value. In particular, this can absorb the risk of a 15-month delay to delivery of the two units, modelled in the test at £1.5 billion of additional costs in nominal value. After taking this risk into consideration, as an illustration, the test threshold would be reached if the discount rate was increased by 15 base points. Without taking this risk into consideration, as an illustration, the test threshold would be reached if the discount rate was increased by 35 base points.

A stress test was performed for illustrative purposes, using the risk of a 15-month delay to the project's delivery and several downgraded operational assumptions (a 2% reduction in plant availability and a 10% increase in fuel and O&M costs over the whole operating lifetime, without taking account of corrective measures), which would make the headroom close to equilibrium. The test is thus now sensitive to potential future increases in the construction costs.

France- Generation and supply

The principles underlying the impairment test for the power plant fleet in France are described in note 10.8.2 to the consolidated financial statements at 31 December 2021.

The impairment tests performed for the 2021 annual closing showed that the recoverable value was clearly higher than at 31 December 2020, due to the favourable impact of higher short-term, medium-term and long-term price scenarios, while other changes in assumptions used in the test had moderate or minor impacts.

The sensitivity dimension of the test was updated to assess the effect of the Group's announcement of 13 January 2022 concerning the French government's decision to attribute an additional 20TWh of volume to the ARENH scheme for 2022 at the price of €46.2/MWh, and the announcements of 13 January and 7 February about the downward revision of estimated nuclear power output in France for 2022, and on 11 February about the revision of estimated nuclear power output in France for 2023 (see note 23 to the consolidated financial statements at 31 December 2021). Under the provisions of the Finance Law adopted in December 2021, the effect of the tariff freeze has little impact on recoverable value (there is simply an income time lag). These factors noticeably reduced the headroom calculated by the test, but it remained clearly positive.

The impairment test on the French generation fleet was updated at 30 June 2022 to incorporate the best current estimate of the impact of downward revision of estimated nuclear power output in France for 2022 and 2023 (see note 10.2), the impact of the regulatory measures implemented in 2022, particularly the decree attributing an additional 20TWh of ARENH volumes for 2022 (see note 5.1), the Group's initial work for 2023-2024 in the Budget/Medium-Term Plan process, and the increase in the discount rate from 5.1% at 31 December 2021 to 5.7% at 30 June 2022.

At 30 June 2022, the impairment test conducted shows a slightly higher recoverable value than the sensitivity analysis at 31 December 2021 which used the best January 2022 estimate of the impact of announcements made by Group at that date (see above). This result is due to the effect of the significantly higher short-term price sce nario for the period 2023-2025 in the first half of 2022, which absorbs the unfavourable impact resulting from revision of nuclear power output estimates for 2022 and 2023 and attribution of an additional 20TWh to the ARENH scheme, the effect of the Group's ARENH scenarios for 2023-2025 with volumes potentially greater than 100TWh, and the effect of the higher discount rate.

The key assumptions in the test still particularly concern the useful life of nuclear assets (which is aligned with the depreciation period in the accounts), the long-term market price scenario – assuming full market exposure in construction of tariffs and prices after 2025, the date at which the ARENH scheme ends, since there is currently no visibility regarding possible future regulations – the volume of nuclear power output, the discount rate, changes in costs and investments, and the assumed capacity revenue. Based on the assumptions used, the headroom calculated by the test represents approximately 50% of the net book value of this CGU.

Each of these assumptions was subjected to a sensitivity analysis and the results did not call into question the existence of headroom between the recoverable value and the book value.

A stress test was also conducted for illustrative purposes using an unfavourable income scenario over the medium-term horizon, particularly in terms of ARENH volumes for the period 2023-2024, which would lead to a very significant decrease in the test headroom, all other things being equal.

EDF Renewables

With the marked expansion in renewable energies in Texas in recent years, congestion on the transmission networks is having a significant and durable impact on the projected sales for four wind farms (1 fully consolidated and 3 accounted for by the equity method). The impairment recognised in this respect during the first half of 2022 amounted to €60 million, and €134 million were booked for investments accounted for by the equity method (see note 11.2).

Furthermore, due to a (not yet final) decision by the Federal Electricity Commission to cancel a PPA, impairment of €37 million was booked on a wind farm that is under construction.

Following the impairment tests conducted at 30 June 2021, impairment was recognised on certain CGUs and individual assets totalling €(502) million, principally relating to EDF Energy's nuclear power plants in operation in the United Kingdom, and some of EDF Renewables' photovoltaic facilities in France (see note 10.4 to the condensed consolidated half-year financial statements at 30 June 2021).

NOTE 11 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES

Investments in associates and joint ventures are as follows:

(in millions of euros)	Notes	30/06/2022			30/06/2021	31/12/2021	
		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[1]		50.10	1,886	246	116	1,478	307
Taishan (TNPJVC)[2]	11.1	30.00	n.c	n.c	6	1,210	(39)
Other investments held by EDF SA	11.2	n.a.	2,242	45	66	2,282	102
Investments held by EDF Renewables	11.2	n.a.	2,281	(121)	(65)	1,453	(117)
Other investments in associates and joint ventures	11.2	n.a.	n.c	n.c	116	1,661	260
Subtotal			**9,681**	**444**	**239**	**8,084**	**513**
CENG (sold on 6 August 2021)	3.1.2	n.a.	n.a.	n.a.	105	n.a.	131
Subtotal			**-**	**-**	**105**	**-**	**131**
TOTAL			**9,681**	**444**	**344**	**8,084**	**644**

n.a. : not applicable

n.c. = not communicated.

[1]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.

[2]The financial data for Taishan at 30 June 2022 are not reported in this table as CGN (Taishan's parent company) publishes its consolidated financial statements later than the Group.

11.1 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. Comprising two 1750MW EPR reactors, Taishan nuclear power plant is the biggest cooperation project between China and France in the energy sector. CGN holds a 51% stake and Guangdong Energy Group a 19% stake.

Following the start of commercial operation by the first reactor on 13 December 2018, the second reactor began commercial operation on 7 September 2019. 2020 saw the first shutdown for refuelling of Taishan 1.

On 20 March 2019, the NDRC (National Development and Reform Commission) attributed regulated tariffs to the first three third-generation nuclear projects in China, one of which is Taishan. The tariff attributed to Taishan was set at RMB435/MWh until the end of 2021, with retroactive effect to the date the first unit was commissioned (13 December 2018). The indexing mechanisms applicable from 2022 were not set out in this decision and are still currently unknown. The NDRC announced that the current tariffs would be extended to 3rd-generation plants (including Taishan).

On 14 June 2021, during its second cycle of operation, a build-up of noble gases was detected in the primary circuit of reactor 1 at the Taishan plant. The Chinese ministry for ecology and the environment stated that this was due to some unsealed fuel rods. Following an initial analysis of the situation, on 30 July 2021 the operator of the Taishan plant decided to shut down reactor 1 to assess the situation in more detail, prevent it from progressing, and take remedial action. Defueling operations were completed on 22 August 2021. Inspections carried out on the fuel assemblies of Taishan reactor 1 following the technical issue encountered during its second operating cycle showed mechanical wear on certain assembly components. This phenomenon has already been encountered in several reactors in the French nuclear fleet. During the first half of 2022, EDF and Framatome contributed to drawing up the documentation to safely restart Taishan reactor 1, and supported TNPJVC for its examination by the Chinese authorities.

Reactor 2 generated energy continuously throughout the first half of 2022, but the net output by the site has been affected by the long unscheduled outage at Reactor 1. The date at which it will be reconnected to the network is currently unconfirmed.

The net value of the investment in Taishan in the financial statements includes a provision based on a conservative approach to tariff projections beyond 2022, updates to certain operational assumptions relating to the above information, and consideration of sensitivity to the discount rate in view of the current rises in interest rates on the Chinese market.

Under the TNPJVC shareholder pact, EDF began an "interpretation" arbitration procedure in January 2021 in the Singapore International Chamber of Commerce against its partner CGN. The disagreement concerns the accounting policy for the power plant, particularly its depreciation period. EDF recommends a 60-year period in line with the plant's operating lifetime, while CGN considers it should be 41 years, ending at the same time as the entity TNPJVC. This accounting policy could have consequences for the remuneration received by the EDF group through this partnership. EDF filed an initial request for arbitration in November 2021, and CGN responded in March 2022. Hearings have been scheduled for 10 - 14 October 2022.

11.2 OTHER INVESTMENTS IN ASSOCIATES AND JOINT VENTURES

The other investments held by EDF SA are included in dedicated assets (see note 14.2).

The other investments held by EDF Renewables are mainly located in North America, and to a lesser degree in Europe, China and Brazil. The increase in these investments over the first half of the year is mainly attributable to the Atlantic Shores project (see below).

Other investments in associates and joint ventures principally concern:

- JERA Global Markets (JERA GM), 33%-owned by EDF Trading, a company specializing in trading and optimization activities, particularly for liquified natural gas (LNG);
- the supercritical coal-fired plant owned by Jiangxi Datang International Fuzhou Power Generation Company Ltd. in China, 49%-owned by the Group.
- the dam owned by Compagnie Énergétique de Sinop (CES) in Brazil, 51%-owned by the Group;
- the Nachtigal dam in Cameroon, 40%-owned by the Group: construction began in March 2019, with commissioning expected in early 2024;

During the first half of 2022, €(137) million of impairment was booked in respect of investments in associates and joint ventures principally concerning wind power assets belonging to EDF Renewables in the United States (see note 10.4).

During the first half of 2021, €(101) million of impairment was booked in respect of investments in associates and joint ventures principally concerning wind farms owned by EDF Renewables in the United States following the weather crisis in Texas in February 2021, and photovoltaic plants belonging to EDF Renewables in France following revision of the purchase obligation tariffs introduced for some facilities by the Finance Law for 2021 (see note 10.4).

Developments in investments accounted for by the equity method owned by EDF Renewables in 2022

Successful bid for a maritime zone in New York bight to develop offshore wind energy

On 1 March 2022, EDF Renewables and Shell New Energies US LLC (Shell), equal partners in the Atlantic Shores Offshore Wind LLC (Atlantic Shores) consortium, won development rights for a 32,112-hectare offshore area in the New York Bight, between Long Island and the New Jersey coast. After completing the development phase, the consortium will be able to build and operate an offshore wind project with an estimated capacity of 1.5 gigawatts (GW) for a period of 33 years.

EDF and its partner won one of six proposed lease areas to host offshore wind projects in an auction held by the Bureau of Ocean Energy Management (BOEM) from February 23 – 25, 2022.

Saint-Nazaire offshore wind farm: erection of France's first offshore wind turbine

On 13 April 2022, EDF Renewables, EIH SARL (owned by Enbridge Inc. and CPP Investments), the joint owners of the Saint-Nazaire offshore wind farm, and GE Renewable Energy, the wind turbine supplier, announced the erection of France's first offshore wind turbine, 12 km off the coast of the Guérande peninsula in the Loire-Atlantique department. This is a key milestone in the construction of the Saint-Nazaire offshore wind farm, launched in 2019. The work is progressing as planned, and the entire offshore wind farm is scheduled for commissioning by the end of 2022. The 480MW Saint-Nazaire offshore wind farm is expected to start generating the equivalent of 20% of the Loire-Atlantique department's total annual electricity consumption.

EDF Renewables commissioned four solar power plants, including two floating, in Israel

On 8 June 2022, EDF Renewables announced the commissioning of four new solar farms in Israel, with a total 54MW of installed capacity. These new facilities are part of the Israeli government's target to increase the share of renewable energy in the country's energy mix to 30% by 2030. It also contributes to the EDF Group's Cap 2030 strategy, which aims to double its net renewable energy capacity from 28GW to 60GW between 2015 and 2030.

NOTE 12 WORKING CAPITAL

12.1 WORKING CAPITAL: COMPOSITION AND CHANGE

12.1.1 Composition of working capital

Changes in net working capital during the first half of 2022 are as follows:

(in millions of euros)	Notes	31/12/2021	Monetary changes	Non-monetary changes	30/06/2022
Inventories and work-in-process		**(16,197)**	(103)	(184)	**(16,484)**
Trade receivables net of provisions	12.2	**(22,235)**	1,725	(114)	**(20,624)**
Trade payables	12.4	**19,565**	(3,773)	157	**15,949**
Compensation receivable for Public Energy Service charges (CSPE payable)	12.5.4	**294**	3,082	-	**3,376**
Other receivables and payables[1]	12.3 and 12.5	**6,050**	6,139	(437)	**11,752**
Other components of working capital[2]		**(648)**	(266)	512	**(402)**
NET WORKING CAPITAL		(13,171)	6,804	(66)	(6,433)

[1]Excluding receivables and payables on acquisition/disposal of assets and investment subsidies.

[2]The other components of working capital includes CO_2 emission rights and green certificates presented in intangible assets in the balance sheet, and derivatives related to operations.

12.1.2 Non-monetary changes in working capital

Non-monetary changes include the effect of changes in the scope of consolidation, foreign exchange effects, changes in fair values and the effect of reclassifications. The variation in non-monetary changes in the first half of 2022 is principally due to foreign exchange effects of €(245) million, fair value variations on inventories and operating derivatives totalling €(76) million, and other effects amounting to €255 million, mainly associated with the adjustment for loaded fuel.

12.1.3 Monetary changes in working capital

(in millions of euros)	Notes	30/06/2022	31/12/2021
Change in inventories		(103)	(626)
Change in trade receivables	12.2	1,725	(7,411)
Change in trade payables	12.4	(3,773)	7,407
Change in the Compensation receivable for Public Energy Service charges (CSPE payable)	12.5.4	3,082	2,268
Change in other receivables and payables[1]	12.3 and 12.5	5,873	(3,164)
CHANGE IN WORKING CAPITAL		6,804	(1,526)

[1]The change in other receivables and payables includes monetary changes in CO_2 emission rights and green certificates presented in intangible assets in the balance sheet, and derivatives related to operations.

Monetary changes in working capital improved by €6.8 billion in the first half of 2022, driven by lower net margin call requirements (€6.3 billion), the surplus CSPE compensation (€3.1 billion) (see note 12.5.4) and the change in the net position of trade receivables and payables (€(2) billion).

12.2 TRADE RECEIVABLES

Details of net trade receivables are as follows:

(in millions of euros)	30/06/2022	31/12/2021
Trade receivables, gross value – excluding EDF Trading	19,422	19,781
- contract assets[1]	*555*	*545*
Trade receivables, gross value – EDF Trading	2,377	3,545
Impairment	(1,175)	(1,091)
Trade receivables - net value	**20,624**	**22,235**

[1]Contract assets represent an amount of €555 million at 30 June 2022 (€545 million at 31 December 2021), and mainly concern the Framatome, Dalkia and EDF Renewables operating segments.

Most trade receivables mature within one year.

Advances received from customers in France who pay in regular monthly instalments, amounting to €7,474 million at 30 June 2022 (€7,071 million at 31 December 2021), are deducted from trade receivables.

The decrease in the gross value of trade receivables compared to 2021 is principally explained by a variation of €(1.2) billion for EDF Trading and €(0.3) billion for other Group subsidiaries, including €(0.4) billion for Enedis (essentially relating to the decline in trade receivables for delivery services, due to seasonal factors) and €+0.1 billion for EDF Energy.

12.2.1 Trade receivables due and not yet due

	30/06/2022			31/12/2021		
(in millions of euros)	Gross value	Provision	Net value	Gross value	Provision	Net value
Trade receivables	**21,799**	**(1,175)**	**20,624**	**23,326**	**(1,091)**	**22,235**
overdue by up to 6 months	1,807	(283)	1,524	1,285	(215)	**1,070**
overdue by 6-12 months	475	(170)	305	481	(136)	**345**
overdue by more than 12 months	894	(528)	366	978	(551)	**427**
Trade receivables due	**3,176**	**(981)**	**2,195**	**2,744**	**(902)**	**1,842**
Trade receivables not yet due	**18,623**	**(194)**	**18,429**	**20,582**	**(189)**	**20,393**

12.2.2 Assignment of receivables

(in millions of euros)	30/06/2022	31/12/2021
Trade receivables assigned and wholly retained in the balance sheet	141	340
Trade receivables assigned and partly retained in the balance sheet	-	-
Trade receivables assigned and wholly derecognised	1,993	1,456

The Group assigned trade receivables for a total of €1,993 million at 30 June 2022, mainly concerning EDF SA, Edison, Luminus and Dalkia (€1,456 million at 31 December 2021).

As most assignment operations are carried out on a recurrent, without-recourse basis, the corresponding receivables are no longer carried in the Group's consolidated balance sheet.

12.3 OTHER RECEIVABLES

At 30 June 2022, other operating receivables include €5.9 billion of margin calls made in the trading activity (€9.8 billion in 2021), the decrease is essentially caused by replacing the collateral with letters of credit. The amounts of margin calls recognised in assets cannot be netted with the margin calls recognised in liabilities (see note 12.5).

At 30 June 2022, other receivables also include tax receivables of €1,787 million (€2,399 million at 31 December 2021) and prepaid expenses of €1,597 million (€1,485 million at 31 December 2021).

12.4 TRADE PAYABLES

(in millions of euros)	30/06/2022	31/12/2021
Trade payables – excluding EDF Trading	12,860	14,041
Trade payables – EDF Trading	3,089	5,524
TRADE PAYABLES	**15,949**	**19,565**

The €1.2 billion decrease in trade payables excluding EDF Trading in the first half year of 2022 notably includes €0.9 billion concerning Enedis (in line with the lower energy transmission services due to seasonal effects).

The Group has a reverse factoring programme allowing suppliers to transfer their receivables on EDF to a factoring company, at their own initiative. For the Group, this programme does not cause any change in the substance and features of the receivables held by suppliers on EDF. In particular it does not affect the sequences of operating cash flows. The associated liabilities are therefore included in "trade payables" in the Group's financial statements.

12.5 OTHER LIABILITIES

Details of other liabilities are as follows:

(in millions of euros)	30/06/2022	Including contract liabilities	31/12/2021	Including contract liabilities
Advances and progress payments received	3,114	1,630	2,114	1,635
Liabilities related to property, plant and equipment	3,684	-	4,368	-
Tax liabilities	3,786	-	5,093	-
Social charges	5,106	-	5,092	-
Deferred income on long-term contracts	3,262	3,206	3,146	3,110
Other deferred income(1)	1,083	684	997	592
Other	15,337	-	9,254	-
OTHER LIABILITIES	**35,372**	**5,520**	**30,064**	**5,337**
Non-current portion	*5,302*	*2,409*	*4,816*	*3,107*
Current portion	*30,070*	*3,111*	*25,248*	*2,230*

(1) Including the initial payment made under the Fessenheim compensation protocol received in 2020.

12.5.1 Advances and progress payments received

At 30 June 2022, advances and progress payments received comprise €557 million of payments made by the customers in Framatome's long-term contracts (€642 million at 31 December 2021).

12.5.2 Tax liabilities

At 30 June 2022, tax liabilities mainly include an amount of €370 million for the CSPE tax to be collected by EDF on energy supplied but not yet billed, less the CSPE tax collected on advances from customers who pay in regular monthly instalments (€562 million at 31 December 2021).

12.5.3 Deferred income on long-term contracts

EDF's deferred income on long-term contracts at 30 June 2022 comprises €1,837 million (€1,746 million at 31 December 2021) of partner advances made to EDF under the nuclear plant financing plans.

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).

12.5.4 Other

The final line of the table of other liabilities includes investment subsidies received during the first half of 2022, amounting to €108 million (€376 million for the first half of 2021).

At 30 June 2022, other operating liabilities include €8.3 billion of margin calls made in the trading activity (€5.8 billion in 2021). The amounts of margins calls recognised in liabilities cannot be netted with margin calls recognised in assets (see note 12.3).

Other liabilities at 30 June 2022 also include a €3,376 million operating liability due to the State in connection with the CSPE (€294 million at 31 December 2021).

EDF's public service charges

The amount of expenses to be compensated to EDF for the first half of 2022 is €1,339 million.

The amounts received between 1 January and 30 June 2022 from the State's General Budget, the sole source of funding for the mechanism since 2021, totalled €4,424 million. This is in line with the French Finance Law for 2021, which was based largely on the CRE's decision of July 2021.

Based on a liability of €294 million at 31 December 2021, the operating liability at 30 June 2022 thus amounts to €3,376 million. The surplus compensation principally results from changes in market prices since the start of the year. The renewable electricity support charges to be compensated in mainland France decreased significantly due to the rise in market prices in 2022, whereas the compensation received from the State is still based on market prices of spring 2021, which were lower than the prices observed in the first half of 2022.

In accordance with decree 2016-158 of 18 February 2016 concerning compensation for public energy service charges, on 18 July 2022 the CRE published its decision 2022-202 of 13 July 2022 setting out a forecast of EDF's public service charges for 2023 (€(1,139) million), a revised forecast of charges for 2022 (€(637) million), and the actual charges recorded for 2021 (€(5,627) million).

Due to the exceptional crisis on the wholesale electricity and gas markets, EDF, like other operators, will be obliged to make repayments to the State in 2023 for the surplus compensation received in 2022, and compensatable expenses that were negative in 2023.

The compensation mechanism for public energy service charges in France is presented in note 5.4.1 to the consolidated financial statements at 31 December 2021.

12.5.5 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.

Changes in contract liabilities were as follows:

(in millions of euros)	31/12/2021	Amounts recorded during the period	Amounts transferred to sales during the period	Amounts cancelled during the period with no impact on sales	Effect of unwinding the discount	Change in scope of consolidation	Foreign exchange effect	30/06/2022
Advance payments received	**1,635**	1,048	(1,024)	(13)	-	1	(17)	**1,630**
Deferred income on long-term contracts	**3,110**	535	(455)	(31)	26	5	16	**3,206**
Other deferred income	**592**	575	(490)	-	-	1	6	**684**

These liabilities comprise the majority of advances and progress payments received, amounting to €1,630 million (principally concerning the Framatome, United Kingdom and France – Regulated Activities segments), and the majority of deferred income (on long-term and other contracts), amounting to €3,206 million (principally concerning the France – Generation and Supply segment). They thus total €5,520 million at 30 June 2022 (€5,337 million at 31 December 2021).

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 €12,240 million which have not yet been recognised. €1,046 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 13 EQUITY

13.1 SHARE CAPITAL

At 30 June 2022, EDF's share capital amounts to €1,934,240,171.50 comprising 3,868,480,343 fully subscribed and paid-up shares with nominal value of €0.50, owned 84.08% by the French State, 14.80% by the public (institutional and private investors) and 1.08% by current and retired Group employees, with 0.04% held by EDF as treasury shares.

On 7 April 2022, EDF carried out a cash capital increase, maintaining the shareholders' preferential subscription rights.

This capital increase totalled €3,164 million gross (including the issue premium) and led to the issuance of 498,257,960 new shares with a unit issue price of €6.35, recognised in the financial statements as follows:

- a €249 million increase to the share capital;
- a €2,899 million increase to the issue premium, net of expenses.

The French State, as undertaken, subscribed €2.7 billion or approximately 83.88% of this capital increase.

In June 2022, the payment of part of the dividend for 2021 in the form of a scrip dividend led to a €66 million increase in the share capital and an issue premium of €913 million following issuance of 131,545,635 new shares. The legal formalities for this operation were finalised in June 2022.

The Employee Reserved Offer led to a €9 million increase in the share capital and an issue premium of €94 million, following the issue of 18,100,741 new EDF shares on 25 July 2022. The shares were delivered on 25 July 2022 (see note 7).

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.

13.2 DIVIDENDS

At the General Shareholders' Meeting of 12 May 2022 it was decided to distribute an ordinary dividend of €0.58 per share in respect of 2021, 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 have held their shares continuously for at least 2 years at the year-end and still hold 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 €0.638 per share.

The French government opted for the scrip dividend for 2021.

The amount of the cash dividend paid to shareholders who did not opt for the scrip dividend for 2021 amounts to €72 million.

13.3 PERPETUAL SUBORDINATED BONDS

At 30 June 2022, perpetual subordinated bonds carried in equity amounted to €12,264 million (less net-of-tax transaction costs), unchanged from 31 December 2021.

Interest paid by EDF to the bearers of perpetual subordinated bonds issued totalled €332 million in the first half of 2022, compared to €288 million in the first half of 2021 and €547 million in 2021. The resulting cash payout is reflected in a corresponding reduction in Group equity.

In the second half of 2022, EDF paid interest of €166 million to the bearers of perpetual subordinated bonds in July 2022, compared to €152 million in July 2021.

13.4 CONVERTIBLE GREEN BONDS *(OCÉANES)*

On 8 September 2020, EDF made an issuance of Green Bonds convertible into new shares and/or exchangeable for existing shares (*OCÉANEs Vertes*) with the nominal amount of €2,400 million and an issue value of €2,569 million.

These bonds are recorded at an amount of €2,389 million net of expenses and taxes in "Financial loans and borrowings" and €126 million in "Equity". At 30 June 2022, no subscriber has exercised their option to convert and/or exchange bonds into new and/or existing shares.

13.5 NON-CONTROLLING INTERESTS (MINORITY INTERESTS)

(in millions of euros)	30/06/2022			30/06/2021	
	Ownership %	Equity (non-controlling interests)	Net income attributable to non-controlling interests	Equity (non-controlling interests)	Net income attributable to non-controlling interests
Principal non-controlling interests:					
EDF Energy Nuclear Generation Ltd.	20.0%	2,583	50	2,509	(181)
NNB Holding Ltd.	33.5%	6,747	(14)	5,494	(39)
EDF Investissements Groupe SA	7.54%	518	5	518	6
Luminus SA	31.4%	389	4	401	1
Framatome	24.5%	85	1	111	1
Other non-controlling interests		**1,889**	**92**	**1,246**	**56**
TOTAL		**12,211**	**138**	**10,279**	**(156)**

Non-controlling interests in EDF Energy Nuclear Generation Ltd., which is owned 80% by the Group *via* EDF Energy, correspond to Centrica's share.

Non-controlling interests in NNB Holding Limited, the holding company for the Hinkley Point C project, which is owned 66.5% by the Group *via* EDF Energy, correspond to CGN's share.

Non-controlling interests in EDF Investissements Groupe correspond to the investment held by Natixis Belgique Investissements.

Non-controlling interests in Luminus correspond to the investments held by Belgian local authorities.

Non-controlling interests in Framatome, owned 75.5% by the Group *via* EDF SA, correspond to the 19.5% share held by Mitsubishi Heavy Industries and the 5% share held by Assystem.

Other non-controlling interests principally consist of the minority interests in Sizewell C Holding Co., owned 80% by the Group *via* EDF Energy and 20% by CGN, and subsidiaries of the Edison and EDF Renewables subgroups.

Other non-controlling interests also include instruments in the form of bonds convertible into shares, issued by the Dalkia group and subscribed by minority interests, amounting to a total €131 million at 30 June 2022 (€167 million in the first half of 2021).

NOTE 14 PROVISIONS RELATED TO NUCLEAR GENERATION AND DEDICATED ASSETS

The breakdown between current and non-current provisions related to nuclear generation is as follows:

(in millions of euros)	30/06/2022			31/12/2021		
	Current	Non-current	Total	Current	Non-current	Total
Provisions for the back-end of the nuclear cycle	1,369	25,934	**27,303**	1,359	28,155	**29,514**
Provisions for decommissioning and last cores	1,509	31,887	**33,396**	1,346	33,912	**35,258**
Provisions related to nuclear generation	**2,878**	**57,821**	**60,699**	**2,705**	**62,067**	**64,772**

Details of changes in provisions for the back-end of the nuclear cycle, decommissioning and last cores are as follows:

(in millions of euros)	31/12/2021	Increases	Decreases	Discount effect	Translation adjustments	Other movements	30/06/2022
Provisions for spent fuel management	**13,220**	238	(559)	43	(34)	113	**13,021**
Provisions for waste removal and conditioning	**639**	-	-	38	(8)	(345)	**324**
Provisions for long-term radioactive waste management	**15,655**	46	(174)	(723)	(20)	(826)	**13,958**
Provisions for the back-end of the nuclear cycle	**29,514**	**284**	**(733)**	**(642)**	**(62)**	**(1,058)**	**27,303**
Provisions for nuclear plant decommissioning	**30,759**	83	(317)	885	(256)	(1,746)	**29,408**
Provisions for last cores	**4,499**	-	(279)	62	(33)	(261)	**3,988**
Provisions for decommissioning and last cores	**35,258**	**83**	**(596)**	**947**	**(289)**	**(2,007)**	**33,396**
PROVISIONS RELATED TO NUCLEAR GENERATION	**64,772**	**367**	**(1,329)**	**305**	**(351)**	**(3,065)**	**60,699**
EDF SA	**46,442**	351	(731)	(740)	-	(1,446)	**43,876**
- provisions within the scope of the Law of 28 June 2006	***45,306***	*329*	*(708)*	*(768)*	-	*(1,446)*	***42,713***
United Kingdom	**17,889**	16	(598)	1,040	(351)	(1,618)	**16,378**
Belgium	**441**	-	-	5	-	(1)	**445**

The change in the first half of 2022 in provisions related to nuclear generation is mainly explained by:

- a 30 base point increase in the real discount rate in France (see note 14.1): the corresponding effects are included in the "Discount effect" (€(1,596) million) for provisions adjusted *via* profit and loss, and in "Other movements" (€(1,249) million) for changes in provisions backed by assets (assets associated with provisions and underlying assets);
- an increase in the real discount rate in the United Kingdom (particularly +50 base point on provisions for the back-end of the cycle and decommissioning): the corresponding effects are included in "Other movements" (€1,687 million) for changes in provisions backed by assets (the receivable representing reimbursements due from the Nuclear Liabilities Fund (NLF) and the British government in the case of provisions for decommissioning and the back-end of the nuclear cycle, or associated assets and underlying assets in the case of provisions for last cores).

The regulatory and contractual framework related to EDF's provisions for the back-end of the nuclear cycle and decommissioning of EDF Energy's power plants is described in note 15.2 to the consolidated financial statements at 31 December 2021.

As planned, EDF Energy ended power generation at the Hunterston B power plant on 7 January 2022 and the defueling phase began in May 2022. The provision for last cores consequently decreased by €(279) million and the stock of nuclear fuel decreased by an equivalent amount, corresponding to the fuel stock still in the reactor.

14.1 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 industrial scenarios and technical processes, costs, inflation rates, long-term discount rates, depreciation periods 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 15.1.1 to the consolidated financial statements at 31 December 2021.

Regarding the Cigéo storage centre, the DUP (*Déclaration d'utilité publique*) decree officially recognising its public utility was published on 8 July 2022. This decree was issued following the ANDRA's application for a DUP filed in August 2020, its examination by the government departments, the public inquiry held in the second half of 2021, and the unreservedly favourable opinion given by the inquiry commissioners on 20 December 2021.

Discount rate and inflation rate

The methods for calculation of the discount rate and inflation rate are described in note 15.1.1.5 to the consolidated financial statements at 31 December 2021.

Applying these methods, the discount rate is 4.5% at 30 June 2022 (3.7% at 31 December 2021), assuming inflation of 2.2% (1.7% at 31 December 2021), *i.e.* a real discount rate of 2.3% at 30 June 2022 (2% at 31 December 2021).

The increase in the discount rate reflects the observed rise on OAT bonds and corporate bond spreads since 31 December 2021, notably driven by changes in the ECB's monetary policy.

The increase in the inflation assumption reflects the higher inflation forecasts in France since that date, especially for 2022 and 2023, and the forecast breakeven inflation rate beyond that horizon in the current context of geopolitical and economic crisis. A 2% long-term inflation rate is still used in the interest rate curve given the ECB's target level, consistent with the inflation assumption underlying the UFR (ultimate forward rate).

Furthermore, over the short-term horizon, the provisions take into account expectations that the rises in certain commodity, energy and transport prices will exceed forecast inflation, particularly given the types of purchases relating to decommissioning expenses.

Regulatory discount rate limit

The discount rate must comply with two regulatory limits. Under the decree of 1 July 2020 on secure financing for nuclear expenses (which codified and updated the initial decree of 23 February 2007 as part of the Environmental Code) and the ministerial order of 1 July 2020 on secure financing for nuclear expenses (which amended the initial ministerial order of 21 March 2007), it must be lower than:

- a regulatory maximum, expressed in real value, *i.e.* net of inflation; this value is equal to the unrounded value representative of expectations concerning the real long-term interest rate, as used for the calculation of the Ultimate Forward Rate (UFR) applicable at the date concerned published by the European Insurance and Occupational Pensions Authority (EIOPA), plus 150 bp. This maximum is applicable from 2024. Until 2024, the maximum is the weighted average of 2.3% and the above calculation. The weighting applied to the 2.3% rate is set at 50% for 2020, 25% for 2021, 12.5% for 2022 and 6.25% for 2023;
- and the expected rate of return on assets covering the liability (dedicated assets).

The maximum discount rate calculated by reference to the UFR in application of the order that took effect on 1 July 2020 is 2.85% at 30 June 2022 (2.80% at 31 December 2021).

Studies incorporating the risk-return profile of the different asset classes show a 20-year average forecast return on dedicated assets that is close to the average annualised return of 5.8% observed between 1 January 2004 and 30 June 2022, and thus higher than the discount rate.

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

Provisions related to nuclear generation within the scope of the Law of 28 June 2006	**30/06/2022**		**31/12/2021**	
(in millions of euros)	**Costs based on year-end economic conditions**	**Amounts in provisions at present value**	**Costs based on year-end economic conditions**	**Amounts in provisions at present value**
Spent fuel management	16,235	10,223	16,121	10,683
- amount unrelated to the operating cycle	3,289	1,617	*3,282*	*1,726*
Long-term radioactive waste management	36,959	13,050	36,779	14,233
BACK-END NUCLEAR CYCLE EXPENSES	**53,194**	**23,273**	**52,900**	**24,916**
Decommissioning of nuclear plants in operation	20,649	12,090	20,479	12,680
Decommissioning of shut-down nuclear plants	7,776	4,894	7,718	5,050
Last cores	4,193	2,456	4,349	2,660
DECOMMISSIONING AND LAST CORE EXPENSES	**32,618**	**19,440**	**32,546**	**20,390**
PROVISIONS RELATED TO NUCLEAR GENERATION within the scope of the law of 28 June 2006		**42,713**		***45,306***

Apart from impacts of the increase in the real discount rate, there has been little change in nuclear provisions during the first half of 2022 since there were no notable changes in cost estimates.

However, the decommissioning provision for Chooz A (which is part of the decommissioning provisions for permanently shut-down power plants) has been increased by €37 million (from €259 million at 31 December 2021) due to consolidation during the first half of 2022 of information about unforeseen events and delays experienced during dismantling of the vessel (segmentation progressed more slowly than expected and the maintenance bridge was unavailable). Based on this experience, the vessel dismantling timetable has been extended by one year, and the risk of an additional 18-month delay on the overall decommissioning schedule has been identified.

In addition to sensitivity analyses, the table below shows the estimated impact of a +/-10 base point change in the discount rate on the present value of EDF's provisions for the back-end of the nuclear cycle, decommissioning and last cores:

At 30 June 2022

(in millions of euros)	Amounts in provisions at present value	Sensitivity to discount rate			
		Balance sheet provisions		Pre-tax net income	
		+ 0.10%	- 0.10%	+ 0.10%	- 0.10 %
Back-end nuclear cycle expenses:	**24,436**	**(500)**	**528**	**409**	**(434)**
- spent fuel management	11,386	(106)	109	91	(94)
- long-term radioactive waste management	13,050	(394)	419	318	(340)
Decommissioning and last core expenses:	**19,440**	**(393)**	**405**	**78**	**(81)**
- decommissioning of nuclear plants in operation	12,090	(269)	276	-	-
- decommissioning of shut-down nuclear plants	4,894	(78)	81	78	(81)
- last cores	2,456	(46)	48	-	-
TOTAL	**43,876**	**(893)**	**933**	**487**	**(515)**
Amount covered by dedicated assets	***32,158***	***(798)***	***835***	***432***	***(459)***

14.2 EDF'S DEDICATED ASSETS

As required by French regulations, 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 15.1.2 to the consolidated financial statements at 31 December 2021.

14.2.1 Changes in dedicated assets in the first half of 2022

As the coverage of provisions by dedicated assets was above 100% at 31 December 2021 (109.3%), EDF had no obligation to add to the dedicated asset portfolio in 2022, and no allocation was made during the first half of the year (in 2021, there was also no such obligation and no allocation to dedicated assets was made).

Inflation, the rise in interest rates and the war in Ukraine were the dominant events affecting the financial markets during the first half of 2022. Inflation in particular was much less transient than anticipated, and together with tensions on the energy market drove the central banks to take a more pessimistic line than in 2021. The Fed, for example, had to raise rates faster, and expects to continue to do so in the second half of the year. The same applies to the ECB, which decided to give up its negative rate policy and began to raise rates this summer. 10-year government bond rates rose from –0.18% to +1.33% in Germany and from +1.51% to +3.01% in the United States. This situation put great pressure on the credit market, due among other factors to the central banks' announcements that they were ending their quantitative easing programmes. The credit spread index in Europe thus rose from +0.95% to +2.18%.

The equity markets were extensively affected by this very large increase in rates and inflation, especially as the war in Ukraine stretched supply chains for energy and agricultural commodities, increasing geopolitical tensions and the risks of instability. The equity markets declined by -15.7% (MSCI All Country World index). It would have dropped even further without the substantial appreciation of the US dollar, from 1.133 to 1.039 against the euro.

Negative changes in the fair value of the dedicated asset portfolio (investment funds, equities) amounting to €(3,196) million were consequently recognised in the financial result in the first half of 2022 (see note 8.2), compared to positive changes amounting to €1,836 million in the first half of 2021 and €2,739 million in 2021. Similarly, negative changes in the fair value of the bonds in the dedicated asset portfolio amounting to €(637) million were recognised in OCI in the first half of 2022 (see note 17.1.2), compared to negative changes amounting to €(182) million in the first half of 2021 and €(244) million for the year 2021.

During the first half of 2022, EDF Invest continued to extend its portfolio of unlisted assets in telecoms infrastructures (*via* acquisition of a minority stake in Norlys Tele, which owns a fibre optics network in Denmark) and shares in diversified unlisted investment funds. EDF Invest also sold its entire interest in Thyssengas (a gas network) in Germany.

Withdrawals from dedicated assets in the first half of 2022 totalled €273 million, equivalent to payments made in respect of the long-term nuclear obligations to be covered during the first half of 2022 (€245 million in the first half of 2021 and €389 million in 2021).

14.2.2 Valuation of EDF's dedicated assets

Details of EDF's dedicated assets are as follows:

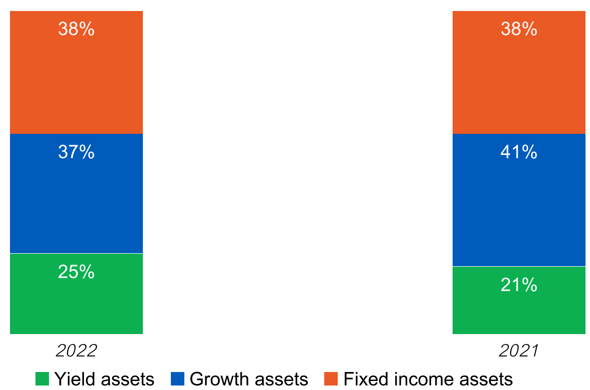
(in millions of euros)	Consolidated balance sheet presentation	30/06/2022 Book value	30/06/2022 Realisable value	31/12/2021 Book value	31/12/2021 Realisable value
Yield assets (EDF Invest)		**6,379**	**8,546**	**5,626**	**7,908**
CTE	Investments in associates[1]	1,886	3,676	1,478	3,343
Other associates	Investments in associates[2]	2,433	2,749	2,567	2,923
Other unlisted assets	Debt and equity securities and other net assets[3]	2,068	2,129	1,581	1,642
Derivatives	Fair value of derivatives	(8)	(8)	-	-
Growth assets		**12,351**	**12,351**	**15,320**	**15,320**
Equities (investment funds)	Debt securities	11,862	11,862	14,815	14,815
Unlisted equity funds (EDF Invest)	Debt securities	542	542	519	519
Derivatives	Fair value of derivatives	(53)	(53)	(14)	(14)
Fixed-income assets		**12,979**	**12,979**	**14,226**	**14,226**
Bonds	Debt securities	12,149	12,149	13,007	13,007
Unlisted debt funds (EDF Invest)	Debt securities	206	206	199	199
Cash portfolio	Debt securities	641	641	1,016	1,016
Derivatives	Fair value of derivatives	(17)	(17)	4	4
TOTAL EDF DEDICATED ASSETS		**31,709**	**33,876**	**35,172**	**37,454**

[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 €1,944 million and the value of the share in equity of other controlled companies.

The structure of the dedicated asset portfolio in the first half of 2022 and 2021 is as follows (in realisable value):



14.3 COVERAGE OF EDF'S LONG-TERM NUCLEAR OBLIGATIONS

The Group's long-term nuclear obligations in France concerned by the regulations for dedicated assets related to nuclear generation are included in the EDF group's consolidated financial statements at the following values:

(in millions of euros)	30/06/2022	31/12/2021
Provisions for spent fuel management – portion unrelated to the operating cycle as defined in the regulations	1,617	1,726
Provisions for long-term radioactive waste management	13,050	14,233
Provisions for nuclear plant decommissioning	16,984	17,730
Provisions for last cores – portion for future long-term radioactive waste management	507	587
PRESENT COST OF LONG-TERM NUCLEAR OBLIGATIONS	**32,158**	**34,276**
REALISABLE VALUE OF DEDICATED ASSETS	**33,876**	**37,454**
REGULATORY COVERAGE RATE	**105.3%**	**109.3%**

At 30 June 2022, by the regulatory calculations provisions are 105.3% covered by dedicated assets. The regulatory caps on the realisable value of certain investments set in the Environment Code were not applied at 30 June 2022.

At 31 December 2021, by the regulatory calculations provisions were 109.3% covered by dedicated assets and these regulatory caps on realisable value were also respected.

NOTE 15 PROVISIONS FOR EMPLOYEE BENEFITS

15.1 GROUP PROVISIONS FOR EMPLOYEE BENEFITS

(in millions of euros)	30/06/2022	31/12/2021
Provisions for employee benefits – current portion	748	792
Provisions for employee benefits – non-current portion	12,402	21,716
PROVISIONS FOR EMPLOYEE BENEFITS	**13,150**	**22,508**

15.1.1 Breakdown of the change in the provision: obligations, fund assets, net liability

(in millions of euros)	Obligations	Fund assets	Net liability
Net employee benefit liability at 31/12/2021	**46,756**	**(26,981)**	**19,775**
Net expense for first half 2022	460	(214)	246
Actuarial gains and losses	(15,620)	6,478	(9,142)
Employer's contributions to funds	-	(52)	(52)
Employees' contributions to funds	1	(1)	-
Benefits paid	(911)	264	(647)
Translation adjustment	(151)	211	60
Other movements	(1)	37	36
NET EMPLOYEE BENEFIT LIABILITY AT 30/06/2022	**30,534**	**(20,258)**	**10,276**
Including:			
Provisions for employee benefits			*13,150*
Non-current financial assets			*(2,874)*

The breakdown of the net liability by geographical area is as follows:

(in millions of euros)	Obligations	Fund assets	Net liability
France	23,197	(10,474)	12,723
United Kingdom	6,560	(9,417)	(2,857)
Other countries	777	(367)	410
Net employee benefit liability at 30/06/2022	**30,534**	**(20,258)**	**10,276**
Including:			
Provisions for employee benefits			*13,150*
Non-current financial assets			*(2,874)*

(in millions of euros)	Obligations	Fund assets	Net liability
France	35,436	(13,411)	22,025
United Kingdom	10,410	(13,124)	(2,714)
Other countries	910	(446)	464
Net employee benefit liability at 30/06/2021	**46,756**	**(26,981)**	**19,775**
Including:			
Provisions for employee benefits			*22,508*
Non-current financial assets			*(2,733)*

Actuarial gains and losses on obligations amount to €(15,620) million for the first half of 2022, including:

- €(11,921) million in France as a result of:
  - the €(15,511) million change in the discount rate (+250 bp);
  - the €3,590 million change in the inflation rate (+50 bp);
- €(3,569) million in the United Kingdom, essentially associated with changes in the discount and inflation rates (see note 15.2).

Actuarial gains and losses on fund assets amount to €6,478 million for the first half of 2022. They mainly result from a €3,427 million change in the United Kingdom and a €3,023 million change in France, due to a downturn on the bond markets where rising interest rates rose had an unfavourable impact on the assets associated with funded obligations, and the downturn on the international equity markets.

15.1.2 Post-employment and other long-term employee benefits

(in millions of euros)	H1 2022	H1 2021
Current service cost	(427)	(569)
Past service cost	-	32
Actuarial gains and losses – other long-term benefits	302	(1)
Net expenses recorded as operating expenses	**(125)**	**(538)**
Interest expense (discount effect)	(335)	(245)
Return on fund assets	214	151
Net interest expense included in financial result	**(121)**	**(94)**
EMPLOYEE BENEFIT EXPENSES RECORDED IN THE INCOME STATEMENT	**(246)**	**(632)**
Actuarial gains and losses – post-employment benefits	15,620	2,842
Actuarial gains and losses on fund assets	(6,478)	(217)
Actuarial gains and losses	**9,142**	**2,625**
Translation adjustments	**(60)**	**68**
GAINS AND LOSSES ON EMPLOYEE BENEFITS RECORDED DIRECTLY IN EQUITY	**9,082**	**2,693**

15.2 ACTUARIAL ASSUMPTIONS

The methods for determining actuarial assumptions are unchanged from 31 December 2021.

The principal assumptions used to value employee benefits are the following:

	France		United Kingdom	
(in %)	30/06/2022	31/12/2021	30/06/2022	31/12/2021
Discount rate/rate of return on assets[(1)]	3.80%	1.30%	3.90%	1.90%
Inflation rate	2.20%	1.70%	2.80%	2.95%
Wage increase rate[(2)]	3.30%	2.80%	2.50%	2.70%

[(1)] 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.

NOTE 16 OTHER PROVISIONS AND CONTINGENT LIABILITIES

		30/06/2022			31/12/2021		
(in millions of euros)	Note	Current	Non-current	Total	Current	Non-current	Total
Other provisions for decommissioning	16.1	141	1,979	**2,120**	95	1,872	**1,967**
Other provisions	16.2	6,081	3,584	**9,665**	3,245	3,570	**6,815**
OTHER PROVISIONS		6,222	5,563	11,785	3,340	5,442	8,782

16.1 OTHER PROVISIONS FOR DECOMMISSIONING

The composition of other provisions for decommissioning is presented in note 17.1 to the consolidated financial statements at 31 December 2021.

The increase over the first half of 2022 in other provisions for decommissioning is mainly attributable to revaluation of the contractor quotes for decommissioning of EDF SA's fossil-fired power plants, particularly based on experience gained from recent operations.

16.2 OTHER PROVISIONS

Details of changes in other provisions are as follows:

			Decreases				
(in millions of euros)	31/12/2021	Increases	Utilisations	Reversals	Changes in scope	Other changes	30/06/2022
Provisions for contingencies related to subsidiaries and investments	**585**	274	(17)	(45)	-	(9)	**788**
Provisions for tax liabilities (other than income tax)	**112**	-	(51)	(9)	(1)	2	**53**
Provisions for litigation	**327**	40	(37)	(26)	-	2	**306**
Provisions for onerous contracts and losses on completion	**1,651**	9	(235)	(148)	-	(104)	**1,173**
Provisions related to environmental schemes	**1,572**	1,453	(616)	-	-	(33)	**2,376**
Other provisions for risks and liabilities	**2,568**	3,074	(547)	(101)	(1)	(24)	**4,969**
TOTAL	6,815	4,850	(1,503)	(329)	(2)	(166)	9,665

Provisions for onerous contracts

Provisions for onerous contracts are mainly attributable to the Group's LNG activities (long-term LNG purchase contracts and a long-term regasification contract with Dunkerque LNG).

A partial recovery of a provision for a liquefied natural gas (LNG) supply contract from the United States was recognised at 30 June 2022 following an improvement in medium-term and long-term United States/Europe spreads, in a market that remains very volatile.

Provisions related to environmental schemes

Provisions related to environmental schemes include provisions for greenhouse gas emission rights, renewable energy certificates and energy savings certificates, where relevant. The increase in provisions over the half-year principally corresponds to allocations for renewable energy certificates in the United Kingdom. Many of the obligations under the renewable energy certificates scheme are covered by purchased certificates recorded as intangible assets.

Other provisions for risks and liabilities

At 30 June 2022, other provisions for risks and liabilities include a provision of €2,749 million for the cost in the second half of 2022 of the specific additional ARENH scheme, introduced by the decree of 11 March 2022 and its implementing orders. This provision will be reversed during the second half-year as and when the electricity sales and purchases take place (see note 5.3).

Given the revised target for nuclear power output to 280-300TWh (see note 2), at 30 June 2022 this item also includes a provision of €48 million to cover the expected capacity shortfall in 2022.

In general, 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.

In extremely rare cases, description of a specific litigation covered by a provision may be omitted from the notes to the financial statements if such disclosure could cause serious prejudice to the Group.

At 31 December 2021, other provisions for risks and liabilities include a provision related to proceedings before the French Competition Authority (ADLC). On 22 February 2022, in a settlement procedure, the ADLC fined the EDF Group €300 million for abuse of its dominant position. The provision was reversed when the expense, which was disbursed in July 2022, was recognised.

16.3 CONTINGENT LIABILITIES

Apart from proceedings mentioned below, no change was observed during the first half of 2022 in the Group's contingent liabilities as presented in note 17.3 to the consolidated financial statements at 31 December 2021.

16.3.1 Tax inspections

EDF

For the period 2008 to 2019, EDF was notified of proposed tax adjustments, notably concerning the tax-deductibility of certain long-term nuclear liabilities. In two rulings made in 2017 and one in 2019, Montreuil Administrative Court recognised the tax-deductibility of these liabilities and validated the position taken by the Company. The Minister appealed against two of these rulings. In January 2020, the Versailles Administrative Court upheld EDF's position for the year 2008, but the Minister appealed. In a decision of 11 December 2020 the Council of State overturned the Versailles court's decision and sent the case back before the same court. On 17 June 2021 the Court found against the Company and cancelled the first-instance judgements that had been in its favour. In execution of this decision, EDF paid €374 million in July 2021, and €85 million for the years 2014 and 2015. The Company has lodged an appeal against this decision before the Council of State and is still awaiting its decision. EDF recognised a net tax liability covering the total residual risk for years after 2017.

For the years 2012 to 2019, 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 certain long-term nuclear provisions. Montreuil Administrative Court is expected to rule on the matter soon.

EDF International

Following the tax inspections of EDF International for the years 2009 to 2014, the French tax authorities questioned the valuation of the bond convertible into shares issued to refinance the acquisition of British Energy. The total amount concerned was approximately €310 million. EDF International contested this reassessment.

In judgements of 2 July 2019 for the period 2009-2013 and 30 January 2020 for the year 2014, Montreuil Administrative Court confirmed the tax reassessments. EDF International therefore paid the tax in execution of these decisions, but also appealed against them. In a ruling of 25 January 2022, Versailles Administrative Court found in favour of EDF International and cancelled the first-instance judgments, thus nullifying the notified reassessments. In early 2022, EDF International received a full refund of the amounts it had paid. The Minister has lodged an appeal against this decision before the Council of State.

16.3.2 Investigations by France's Competition Authority ("ADLC")

At 31 December 2022, France's Competition Authority (the ADLC) was investigating the EDF group in relation to four separate matters, which are described in the notes to the consolidated financial statements at 31 December 2021.

There were significant developments in the first half of 2022 in the second of these investigations, which followed a complaint filed by Engie on 19 June 2017 relating to EDF's commercial practices regarding retail electricity and gas sales, and specifically the circumstances in which EDF gave electricity suppliers, upon request, access to its file of customers paying the regulated "Green" and "Yellow" tariffs from the end of 2015, when these tariffs were about to be discontinued. Documents collected during search and seizure operations in November 2016 were used in the Engie proceedings. On 27 May 2021 EDF, Dalkia, Dalkia Smart Building, Citelum and Cham were notified of the ADLC's objections concerning the markets for retail electricity and gas supply, multi-technique management/maintenance and energy optimisation services, and energy control measures leading to issuance of energy savings certificates.

On February 22, 2022, the ADLC fined the EDF Group €300 million for dominant position abuse practices that allegedly enabled it to maintain its market shares in the electricity supply sector and strengthen its position in the associated gas supply and energy services markets. EDF benefited from the settlement procedure in this case and made two commitments: firstly, to make its file of customers on the "blue" regulated tariff available to alternative electricity suppliers upon request, and secondly, to separate the telephone subscription process for existing and prospective "blue" tariff customers from the process for existing and prospective customers on market-price contracts. A related provision was recognised at 31 December 2021. It was reversed when the expense, which was disbursed in July 2022, was recognised (see note 16.2).

There were no significant developments in the other three ADLC investigations.

Finally, in a decision of 18 January 2022 the ADLC dismissed a complaint and application for interim measures made against EDF by ANODE (the national association of retail energy operators). This complaint concerned EDF's refusal to provide access to the database of non-residential customers concerned by discontinuation of the "blue" regulated sales tariffs, who were switched automatically to a follow-on market-price contract at 31 December 2020. However, the ADLC considered that ANODE's arguments were not backed up by sufficient evidence proving the existence of the alleged practices. ANODE filed an appeal against this decision on 1 March 2022 before the Paris Court of Appeal.

NOTE 17 FINANCIAL ASSETS AND LIABILITIES

17.1 FINANCIAL ASSETS

17.1.1 Breakdown between current and non-current financial assets

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

	30/06/2022			31/12/2021		
(in millions of euros)	Current	Non-current	Total	Current	Non-current	Total
Instruments at fair value through OCI with recycling	21,254	5,720	**26,974**	10,519	5,810	**16,329**
Instruments at fair value through OCI with no recycling	41	258	**299**	37	253	**290**
Instruments at fair value through profit and loss	2,041	22,462	**24,503**	2,855	25,369	**28,224**
Debt and equity securities	***23,336***	***28,440***	***51,776***	***13,411***	***31,432***	***44,843***
Trading derivatives – Positive fair value	47,337	-	**47,337**	20,061	-	**20,061**
Hedging derivatives – Positive fair value [(1)]	14,568	7,297	**21,865**	4,522	5,388	**9,910**
Loans and financial receivables[(2)]	1,300	18,050	**19,350**	1,943	18,789	**20,732**
CURRENT AND NON-CURRENT FINANCIAL ASSETS	**86,541**	**53,787**	**140,328**	**39,937**	**55,609**	**95,546**

[(1)] Including €4,689 million of derivatives hedging liabilities included in net indebtedness (see note 18.2).

[(2)]Including impairment of €(370) million at 30 June 2022 (€(299) million at 31 December 2021).

The increase in the positive fair value of trading derivatives (+€27.3 billion) is explained by an increase in the value of derivatives used in the trading activity, principally associated with commodity market price movements observed in the first half of 2022, and to a lesser extent the higher volumes contracted.

17.1.2 Debt and equity securities

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

(in millions of euros)	30/06/2022 At fair value through OCI with recycling	30/06/2022 At fair value through OCI with no recycling	30/06/2022 At fair value through profit and loss	30/06/2022 Total	31/12/2021 Total
Debt and equity securities					
EDF dedicated assets	5,538	-	21,806	**27,344**	**31,013**
Liquid assets	21,341	-	1,982	**23,323**	**12,737**
Other assets[1]	95	299	715	**1,109**	**1,093**
TOTAL	**26,974**	**299**	**24,503**	**51,776**	**44,843**

[1] *Investments in non-consolidated companies.*

Information on EDF's dedicated assets is given in note 14.1.2. The general management policy for dedicated assets is presented in note 15.1.2 of the consolidated financial statements for the year ended 31 December 2021.

Changes in fair value recorded in equity

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

(in millions of euros)	H1 2022 Gross changes in fair value recorded in OCI with recycling[1]	H1 2022 Gross changes in fair value recorded in OCI with no recycling[1]	H1 2022 Gross changes in fair value recycled to profit and loss[2]	H1 2021 Gross changes in fair value recorded in OCI with recycling[1]	H1 2021 Gross changes in fair value recorded in OCI with no recycling[1]	H1 2021 Gross changes in fair value recycled to profit and loss[2]
EDF dedicated assets	(753)	-	(116)	(148)	-	34
Liquid assets	(591)	-	(24)	(26)	-	8
Other assets	-	(4)	-	-	15	-
DEBT AND EQUITY SECURITIES[3]	**(1,344)**	**(4)**	**(140)**	**(174)**	**15**	**42**

[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 2022, gross changes in fair value recorded in OCI with recycling (before reclassification to profit and loss) principally concern EDF (€(1,204) million, including €(637) million for dedicated assets). In the first half of 2021, gross changes in fair value recorded in OCI with recycling (before reclassification to profit and loss) principally concern EDF (€(216) million, including €(182) million for dedicated assets).

No significant impairment was recorded in the first half of 2022.

17.1.3 Loans and financial receivables

Loans and financial receivables consist of the following:

(in millions of euros)	30/06/2022	31/12/2021
Amounts receivable from the NLF	14,818	15,986
Loans and financial receivables – other	4,532	4,746
LOANS AND FINANCIAL RECEIVABLES	**19,350**	**20,732**

At 30 June 2022 loans and financial receivables mainly include:

- amounts representing reimbursements receivable from the Nuclear Liabilities Fund (NLF) and the British government for coverage of long-term nuclear obligations, totalling €14,818 million at 30 June 2022 (€15,986 million at 31 December 2021), discounted at the same rate as the provisions they finance (see note 14.2);
- other loans and financial receivables notably include:
  - the overfunding of EDF Energy's EDFG (EDF Group of the ESPS) pension schemes by €2,874 million at 30 June 2022, compared to €2,733 million at 31 December 2021,

- an amount of €253 million representing the advance payments made by Luminus to Synatom to cover long-term nuclear obligations (€282 million at 31 December 2021). In Luminus' financial statements these amounts are discounted at the same rate as the provisions they fund. This receivable is equal to the fair value of the amounts held by Synatom on behalf of Luminus as fund assets,
- loans made by EDF Renewables in the course of its project development activity, mainly in connection with wind farms in France and North America, amounting to €672 million at 30 June 2022 compared to €525 million at 31 December 2021.

17.2 FINANCIAL LIABILITIES

17.2.1 Breakdown between current and non-current financial liabilities

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

	30/06/2022			31/12/2021		
(in millions of euros)	Non-current	Current	Total	Non-current	Current	Total
Loans and other financial liabilities	63,720	13,705	**77,425**	54,334	15,072	**69,406**
Trading derivatives - negative fair value	-	46,601	**46,601**	-	22,027	**22,027**
Hedging derivatives - negative fair value[1]	4,354	14,887	**19,241**	2,209	7,915	**10,124**
FINANCIAL LIABILITIES	**68,074**	**75,193**	**143,267**	**56,543**	**45,014**	**101,557**

[1] Including €796 million of derivatives used to hedge liabilities included in net indebtedness (see note 18.2).

The increase in the negative fair value of trading derivatives (+€25.1 billion) is explained by the increase in the value of derivatives used in the trading activity, principally associated with the changes in commodity market prices observed in the first semester 2022, and to a lesser extent the increase in volumes contracted.

17.2.2 Loans and other financial liabilities

17.2.2.1 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 at 31/12/2021	**49,242**	**3,690**	**10,992**	**4,337**	**1,145**	**69,406**
Increases	-	13,452	1,927	146	58	**15,583**
Decreases	(2,332)	(99)	(3,301)	(348)	(27)	**(6,107)**
Translation adjustments	(3)	166	10	22	2	**197**
Changes in scope of consolidation	-	9	(10)	(9)	-	**(10)**
Changes in fair value	(1,829)	(1)	24	-	-	**(1,806)**
Other changes	-	(2)	77	92	(5)	**162**
BALANCES AT 30/06/2022	**45,078**	**17,215**	**9,719**	**4,240**	**1,173**	**77,425**

The principal operations in 2022 concerning **loans from financial institutions** were the conclusion of 12 new bilateral credit lines amounting to €10.3 billion and $2.2 billion maturing in 3 years (a total of €12.4 billion), and new drawings on European Investment Bank credit of €0.8 billion, maturing in 2032.

Redemptions of **bonds** totalled €2.3 billion during the period (€2 billion in January 2022 and €0.3 billion in June 2022).

Changes in **other financial liabilities** in the first half of 2022 mainly result from the net decrease of €(2,381) million in negotiable debt instruments, and an amount of €1,047 million recognised in respect of the cash received for debt securities transferred to several banks under repurchase agreements. These operations do not affect the net indebtedness.

A breakdown of the issuance and repayments of borrowings as presented in the cash flow statement is presented below:

(in millions of euros)	Bonds	Loans from financial institutions	Other financial liabilities	Lease liability	Termination of hedging derivatives	30/06/2022
Issuance of borrowings	-	13,452	1,927	-	(9)	**15,370**
Repayments of borrowings	(2,332)	(99)	(3,301)	(348)	97	**(5,983)**

17.2.2.2 Principal borrowings of the Group

The Group's principal borrowings (excluding Green Bonds and OCÉANEs) at 30 June 2022 are as follows:

Type of borrowing *(in millions of currencies)*	Entity	Issue[1]	Maturity	Issue amount	Currency	Rate
Euro MTN	EDF	09/2012	03/2023	2,000	EUR	2.75%
Euro MTN	EDF	09/2009	09/2024	2,500	EUR	4.63%
Euro MTN	EDF	11/2010	11/2025	750	EUR	4.00%
Bond	EDF	01/2017	01/2027	107,900	JPY	1.09%
Euro MTN	EDF	03/2012	03/2027	1,000	EUR	4.13%
Bond	EDF	09/2018	09/2028	1,800	USD	4.50%
Euro MTN	EDF	04/2010	04/2030	1,500	EUR	4.63%
Euro MTN	EDF	10/2018	10/2030	1,000	EUR	2.00%
Euro MTN	EDF	07/2001	07/2031	650	GBP	5.88%
Euro MTN	EDF	02/2003	02/2033	850	EUR	5.63%
Euro MTN	EDF	06/2009	06/2034	1,500	GBP	6.13%
Euro MTN	EDF	10/2016	10/2036	750	EUR	1.88%
Bond	EDF	09/2018	09/2038	650	USD	4.88%
Bond	EDF	01/2009	01/2039	1,750	USD	6.95%
Bond	EDF	01/2010	01/2040	850	USD	5.60%
Euro MTN	EDF	11/2010	11/2040	750	EUR	4.50%
Euro MTN	EDF	10/2011	10/2041	1,250	GBP	5.50%
Bond	EDF	01/2014	01/2044	1,000	USD	4.88%
Bond	EDF	10/2015	10/2045	1,500	USD	4.75%
Bond	EDF	10/2015	10/2045	1,150	USD	4.95%
Bond	EDF	09/2018	09/2048	1,300	USD	5.00%
Euro MTN	EDF	12/2019	12/2049	1,250	EUR	2.00%
Euro MTN	EDF	09/2010	09/2050	1,000	GBP	5.13%
Euro MTN	EDF	10/2016	10/2056	2,164	USD	4.99%
Euro MTN	EDF	11/2019	12/2069	2,000	USD	4.50%
Bond	EDF	01/2014	01/2114	700	USD	6.00%
Bond	EDF	01/2014	01/2114	1,350	GBP	6.00%

[1] *Date funds were received.*

At 30 June 2022, the Group's principal Green Bonds are as follows:

Type of borrowing *(in millions of currencies)*	Entity	Issue	Maturity	Issue amount	Currency	Rate
Bond (Green Bond)	EDF	10/2015	10/2025	1,250	USD	3.63%
Euro MTN (Green Bond)	EDF	10/2016	10/2026	1,750	EUR	1.00%
Euro MTN (Green Bond)	EDF	11/2021	11/2033	1,850	EUR	1.00%

On 8 September 2020, EDF made an offering of Green Bonds convertible into new shares and/or exchangeable for existing shares (*OCÉANEs Vertes*). The key features of this issue are as follows:

Type of borrowing *(in millions of currencies)*	Entity	Issue	Maturity	Issue amount	Currency	Rate
OCÉANEs Vertes Green Bonds	EDF	09/2020	09/2024	2,400	EUR	0%

Holders of these bonds have the right to convert them into new EDF shares and/or exchange them for existing EDF shares.

The conversion and/or exchange ratio was set at one share per bond, subject to the standard adjustments including anti-dilution and dividend protections as described in the terms of the issue.

In 2021, for the 2020 dividend distribution to EDF shareholders, the conversion/exchange rate was raised to 1.018 EDF share per bond from 7 June 2021, and when the interim dividend for 2021 was paid, the conversion/exchange ratio was raised to 1.042 EDF share per bond from 2 December 2021.

In 2022, the conversion/exchange ratio was raised to 1.087 EDF share per bond after the capital increase of 7 April 2022, then 1.124 EDF share per bond from 13 June 2022 when the dividend for 2021 was paid. Finally, at the time of the capital increase following the Employee Reserved Offer (see note 7), the conversion/exchange ratio was raised to 1.129 EDF share per bond from 25 July 2022.

The bonds may be redeemed prior to maturity at the option of the Company, subject to certain conditions.

Unless previously converted, exchanged, redeemed or repurchased and cancelled, the bonds will be redeemed at nominal value when they reach maturity.

All of the €12.4 billion of bank credit lines subscribed during the first half of 2022 were used during the first half-year. The credit lines in euros were drawn in March and April: they mature in March 2025 and bear interest at 3-month Euribor. The USD credit lines were drawn in April and May 2022: they mature in March or April 2025 and bear interest at the rate of SOFR CMP LOOKBACK (-5BD) (a compounded in arrears SOFR with a 5 business day observation shift).

17.2.2.3 Maturity of loans and financial liabilities

(in millions of euros)	Bonds	Loans from financial institutions	Other financial liabilities	Lease liability	Accrued Interest	Total
Less than one year	2,473	655	9,113	655	809	**13,705**
From one to five years	10,912	14,510	105	2,032	118	**27,677**
More than five years	31,693	2,050	501	1,553	246	**36,043**
LOANS AND OTHER FINANCIAL LIABILITIES AT 30/06/2022	**45,078**	**17,215**	**9,719**	**4,240**	**1,173**	**77,425**

17.3 UNUSED CREDIT LINES

At 30 June 2022, the Group has unused credit lines with various banks totalling €11,975 million (€13,039 million at 31 December 2021). This total includes €10,042 million of credit lines indexed on ESG criteria, which were totally undrawn at 30 June 2022 (€9,348 million at 31 December 2021).

	30/06/2022				31/12/2021
	Total	Maturity			Total
(in millions of euros)		< 1 year	1-5 years	> 5 years	
CONFIRMED CREDIT LINES	11,975	174	11,780	21	13,039

17.4 FAIR VALUE OF LOANS AND OTHER FINANCIAL LIABILITIES

	30/06/2022		31/12/2021	
(in millions of euros)	Fair value	Balance sheet value	Fair value	Balance sheet value
LOANS AND OTHER FINANCIAL LIABILITIES	75,119	77,425	78,114	69,406

17.5 FAIR VALUE OF HEDGING DERIVATIVES

Changes in the fair value of hedging derivatives included in equity (EDF share) and profit and loss are detailed below:

	H1 2022			H1 2021			2021		
(in millions of euros)	Gross changes in fair value recorded in equity[(1)]	Gross changes in fair value transferred to income - Recycling[(2)]	Gross changes in fair value transferred to income - Ineffectiveness	Gross changes in fair value recorded in equity[(1)]	Gross changes in fair value transferred to income - Recycling[(2)]	Gross changes in fair value transferred to income - Ineffectiveness	Gross changes in fair value recorded in equity[(1)]	Gross changes in fair value transferred to income - Recycling[(2)]	Gross changes in fair value transferred to income - Ineffectiveness
Interest rate hedging	148	(4)	(1)	36	-	-	(98)	-	-
Exchange rate hedging	2,779	773	(70)	1,441	248	(29)	2,684	720	(38)
Net foreign investment hedging	(74)	-	-	(666)	-	-	(1,078)	(405)	-
Commodity hedging	(1,396)	(2,827)	(133)	(65)	367	(5)	(7,356)	(2,198)	(2)
HEDGING DERIVATIVES[(3)]	**1,457**	**(2,058)**	**(204)**	**746**	**615**	**(34)**	**(5,848)**	**(1,883)**	**(40)**

[(1)] +/( ): increase/(decrease) in equity (EDF share).

[(2)] +/( ): increase/(decrease) in net income (EDF share).

[(3)] Excluding associates and joint ventures.

The gross change in the fair value of hedging instruments recognised in equity (EDF share), including recycling, is +€3,515 million in the first half of 2022 (+€131 million in the first half of 2021 and €(3,965) million in 2021).

In 2022 this change is explained by the gross fair value changes in net foreign investment hedges, amounting to €(74) million (€(666) million in the first half of 2021 and €(673) million in 2021), and interest rate, exchange rate and commodity hedges, amounting to +€3,589 million (+€797 million in the first half of 2021 and €(3,292) million in 2021) – see the consolidated statement of comprehensive income.

The amount transferred to operating profit before depreciation and amortisation in the first half of 2022 in respect of commodity hedges is €(2,827) million, comprising:

- €(1,787) million for electricity hedging contracts, mainly concerning the France - Generation and Supply and the United Kingdom segments;
- €(1,102) million for gas hedging contracts, mainly concerning the France - Generation and Supply and United Kingdom segments;
- +€62 million for other hedging contracts.

NOTE 18 FINANCIAL INDICATORS

The financial indicators are not defined by the accounting standards and are not directly visible in the Group's financial statements. The principal financial indicators are the following.

18.1 NET INCOME EXCLUDING NON-RECURRING ITEMS

Net income excluding non-recurring items 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.

As noted earlier, at 30 June 2022 the Group's share of net income (EDF net income) includes a provision of €2,039 million (after tax) for the cost in the second half of 2022 of the specific additional ARENH scheme, introduced by the decree of 11 March 2022 and its implementing orders. This provision will be reversed in the second half of 2022 as and when the electricity sales and purchases take place.

The following tables show the transition from EDF net income to net income excluding non-recurring items:

At 30 June 2022

(in millions of euros)	Notes	H1 2022 Gross value	Income taxes	Non-controlling interests	EDF net income
Net income					**(5,293)**
Changes in the fair value of debt and equity instruments[(1)]	**8.2**	**3,289**	**(850)**	**(10)**	**2,429**
Net changes in fair value on energy and commodity derivatives, excluding trading activities	**6**	**993**	**(247)**	**-**	**746**
Impairment		**390**	**(98)**	**(25)**	**267**
- impairment of fixed assets[(2)]	*10.4*	*253*	*(66)*	*(25)*	*162*
- impairment of investments in associates and joint ventures[(3)]	*11.2*	*137*	*(32)*	*-*	*105*
Other items		**577**	**(37)**	**(1)**	**539**
- other income and expenses[(4)]	*7*	*388*	*(109)*	*(1)*	*278*
- tax on exceptional profits (Italy)	*9*	*-*	*71*	*-*	*71*
NET INCOME EXCLUDING NON-RECURRING ITEMS					**(1,312)**

[(1)]Including fair value hedges of dedicated assets.

[(2)]In 2022, this impairment notably concerns wind farms in the United States and Mexico (€(100) million) and impairment of land in the United Kingdom (€(121) million).

(3)In 2022, this impairment principally concerns wind farms in the United States (€(134) million.

(4)In 2022 other income and expenses notably include exceptional additional costs relating to work for repairs to the main secondary circuit welds at the Flamanville 3 EPR, totalling €(308)) million, the expense of the employee reserved offer (ERO), amounting to €(64) million, and the €(15) million loss on the sale of Dalkia Russia.

The net income excluding non-recurring items amounts to €(1,312) million at 30 June 2022, decreased by €(5,052) million compared to the first half of 2021.

At 30 June 2021

(in millions of euros)	Notes	H1 2021 Gross value	Income taxes	Non-controlling interests	EDF net income
Net income					**4,172**
Changes in the fair value of debt and equity instruments[(1)]	**8.2**	**(1,917)**	**524**	**3**	**(1,390)**
Net changes in fair value on energy and commodity derivatives, excluding trading activities	**6**	**541**	**(148)**	**-**	**393**
Impairment		**603**	**(125)**	**(66)**	**412**
- impairment of fixed assets[(2)]	10.4	*502*	*(125)*	*(66)*	*311*
- impairment of investments in associates and joint ventures	11.2	*101*	*-*	*-*	*101*
Other items		**160**	**20**	**(27)**	**153**
- other operating income and expenses[(3)]	*7*	*92*	*(1)*	*(27)*	*64*
- accelerated depreciation of thermal power plants in France	*10.2*	*72*	*(20)*	*-*	*52*
- Other		*(4)*	*41[(4)]*	*-*	*37*
NET INCOME EXCLUDING NON-RECURRING ITEMS					**3,740**

[(1)]Including fair value hedges of dedicated assets and changes in the fair value of debt and equity instruments comprised in investments in associates and joint ventures.

[(2)]In the first half of 2021, impairment includes €(441) million for the Dungeness plant assets.

[(3)]In the first half of 2021, other operating income and expenses mainly include €505 million received in application of the settlement indemnity agreement between Areva and EDF, €(161) million of costs associated with the early closure of Dungeness, and €(278) million of exceptional additional costs relating to repair work on the main secondary circuit welds in the Flamanville 3 EPR.

[(4)]This amount includes the tax income recognised following the tax revaluation of assets in Italy, offset by the unfavourable effect of the tax rate increase in the United Kingdom from 2023 (see note 9).

18.2 NET INDEBTEDNESS

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 interest rate instruments with initial maturity of over three months that are readily convertible into cash and are managed according to a liquidity-oriented policy.

Net indebtedness are as follows:

(in millions of euros)	Notes	30/06/2022	31/12/2021
Loans and other financial liabilities	17.2.2	77,425	69,406
Derivatives used to hedge liabilities	17.1.1 and 17.2.1	(3,893)	(3,762)
Cash and cash equivalents		(7,418)	(9,919)
Debt and equity securities – liquid assets	17.1.2	(23,323)	(12,737)
Derivatives hedging assets		(20)	-
NET INDEBTEDNESS		**42,771**	**42,988**

NOTE 19 OFF-BALANCE SHEET COMMITMENTS

This note presents off-balance sheet commitments given and received by the Group at 30 June 2022. The amounts of commitments correspond to non-discounted contractual values.

19.1 COMMITMENTS GIVEN

(in millions of euros)	Notes	30/06/2022	31/12/2021
Operating commitments given[(1)]	19.1.1	17,984	16,047
Investment commitments given	19.1.2	16,492	16,996
Financing commitments given	19.1.3	6,561	5,837
TOTAL COMMITMENTS GIVEN		**41,037**	**38,880**

[(1)]Excluding fuel and energy purchases and 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.

19.1.1 Operating commitments given

19.1.1.1 Fuel and energy purchase commitments

Commitments to purchase commodities, energy and nuclear fuel (excluding purchases of gas and related services) amounted to €37,908 million at 31 December 2021.

These commitments increased during the first half of 2022, principally as a result of higher electricity prices and updating of indexes (particularly for EDF Energy and EDF).

19.1.1.2 Operating contract performance commitments given

At 30June 2022, these commitments mature as follows:

	30/06/2022				31/12/2021
		Maturity			
(in millions of euros)	Total	< 1 year	1 to 5 years	> 5 years	Total
Operating guarantees given	**9,478**	3,435	2,933	3,110	8,693
Operating purchase commitments[(1)]	**8,284**	4,919	2,661	704	7,173
Other operating commitments	**222**	53	95	74	181
OPERATING CONTRACT PERFORMANCE COMMITMENTS GIVEN[(2)]	**17,984**	**8,407**	**5,689**	**3,888**	**16,047**

[(1)]Excluding fuel and energy.

[(2)]Including commitments given by controlled entities to joint ventures, amounting to €1,893 million at 30 June 2022 (€1,928 million at 31 December 2021).

In the course of its business, the Group provides contract performance guarantees, generally through the intermediary of banks.

Operating guarantees given at 30 June 2022 mainly consist of guarantees given by EDF Renewables in connection with its development projects, Edison, Framatome and EDF. The change in these guarantees is essentially explained by new EDF Renewables projects in development, particularly in the United States and Greece.

The increase in operating purchase commitments (excluding fuel and energy) principally concerns EDF, particularly commitments made for maintenance of its generation fleet.

19.1.1.3 Lease commitments as lessee

Lease commitments as lessee that are not recognised in the balance sheet amounted to €313 million at 31 December 2021, including €109 million for assets not yet available to the Group (principally real estate properties and LNG carriers currently in construction). New leases for this type of asset were signed during the first half of 2022 for a total of some €400 million.

19.1.2 Investment commitments given

At 30 June 2022, details of investment commitments are as follows:

	30/06/2022				31/12/2021
	Total	Maturity			Total
(in millions of euros)		< 1 year	1 to 5 years	> 5 years	
Commitments related to acquisition of tangible and intangible assets	**15,360**	9,043	5,941	376	15,905
Commitments related to acquisition of financial assets	**940**	166	664	110	929
Other commitments related to investments	**192**	180	12	-	162
TOTAL INVESTMENT COMMITMENTS GIVEN[1]	16,492	9,389	6,617	486	16,996

[1] Including commitments given by controlled entities to joint ventures, amounting to €201 million at 30 June 2022 (€194 million at 31 December 2021).

Commitments related to acquisition of tangible and intangible assets principally concern EDF Energy, EDF SA, Enedis and EDF Renewables.

Commitments related to acquisition of financial assets rose in the first half of 2022 due to a new commitment made by EDF to DigitalBridge to invest in Databank. This was counterbalanced by the finalisation of acquisition operations.

19.1.3 Financing commitments given

Financing commitments given by the Group at 30 June 2022 comprise the following:

	30/06/2022				31/12/2021
	Total	Maturity			Total
(in millions of euros)		< 1 year	1 to 5 years	> 5 years	
Security interests in real property	**4,123**	1,875	521	1,727	3,986
Guarantees related to borrowings	**1,271**	41	659	571	1,265
Other financing commitments	**1,167**	1,048	29	90	586
TOTAL FINANCING COMMITMENTS GIVEN[1]	6,561	2,964	1,209	2,388	5,837

[1] Including commitments given by controlled entities to joint ventures, amounting to €2,259 million at 30 June 2022 (€1,597 million at 31 December 2021). These financing commitments to joint ventures mainly concern EDF Renewables.

Security interests and assets provided as guarantees mainly concern pledges or mortgages of tangible assets and shares representing investments in consolidated subsidiaries which hold property, plant and equipment of EDF Renewables.

The increase in guarantees related to borrowings principally concerns guarantees given by EDF Renewables in connection with its project funding.

The increase in financing commitments given principally reflects the repayment to EDF Trading by JERA GM of drawings made in 2021 on three credit lines, and a rise in exchange rates in Brazil, the United States and Canada.

19.2 COMMITMENTS RECEIVED

The table below shows off-balance sheet commitments received by the Group that have been valued.

(in millions of euros)	30/06/2022	31/12/2021
Operating commitments received[(1)]	8,833	8,404
Investment / divestment commitments received	191	609
Financing commitments received	18	18
TOTAL COMMITMENTS RECEIVED[(2)]	**9,042**	**9,031**

[(1)]Excluding commitments related to supplies of energy and related services and operating lease commitments as lessor (€661 million at 31 December 2021).

[(2)]Excluding commitments related to credit lines, which are described in note 17.3.

Operating sale commitments received exclude energy deliveries and principally 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).

The decrease in investment/divestment commitments received is explained by the end of the guarantee received for in connection with a repurchase agreement concerning securities held by EDF.

NOTE 20 SUBSEQUENT EVENTS

Following the French Prime Minister's announcements, and discussions with the French Financial Markets Authority, EDF SA requested that its shares be suspended from trading on 13 July 2022. They resumed trading on 19 July after the French government had issued the following statement.

Launch by the French State of a simplified buyout offer for shares in the capital of EDF, with the objective of delisting the company

On 19 July 2022 the French State, the majority shareholder of EDF SA (EDF), announced its intention to buy the shares in the capital of EDF held by non-State parties, with the objective of delisting the company. This plan is undertaken in a context of climate emergency at a time when the geopolitical situation requires strong decisions to ensure France's independence and energy sovereignty, including the ability to form very long-term plans for electricity generation, transmission and distribution facilities. In this new configuration with the State as sole shareholder, EDF would be able to press ahead more swiftly with several crucial projects announced by the President of the Republic in his speech at Belfort, notably the programme to build six EPR2-technology reactors by 2050. These projects will commit the company for the coming decades, during which time EDF will continue to play a critical role for energy supplies in France. This is why the State is ensuring the Group has appropriate governance and the necessary resources, particularly financial resources, to accomplish this mission of national interest in the long term. To achieve this, the State intends to purchase the 15.9%[1] of the capital of EDF, and 60% of the bonds with an option for conversion into and/or exchange for new or existing shares (*OCÉANEs*) that it does not hold[2], through a simplified public buyout offer (the Offer) which is expected to be filed with the French Financial Markets Authority (the "AMF"), subject to enactment of an amended Finance Law for 2022 allocating the necessary budget funding for the Offer.

It is proposed that the draft Offer, which will be submitted to the AMF for examination, should be at the price of:

- €12.0 per EDF share, including dividend rights, representing a premium of respectively 53%, 46% and 34% over the closing stock market price of 5 July 2022 (the day before the Prime Minister's announcement of the State's intention to hold 100% of the capital of EDF), and the average volume-weighted stock market price for the last 60 days, and the twelve months preceding 5 July 2022;
- €15.64 per *OCÉANE* bond, based on an adjusted conversion ratio on the illustrative assumption that the opening date of the Offer will be 29 September 2022[3].

The Offer would if relevant be followed by a compulsory buyout procedure[4] if the conditions for implementation were fulfilled. This Offer is expected to represent a cash total for the shares and *OCÉANE* bonds of approximately €9.7 billion, assuming that 100% of the EDF shares and EDF *OCÉANE* bonds not held by the State are tendered to the offer. The Offer is expected to be filed with the AMF in early September 2022, provided an amended Finance Law for 2022 is enacted approving the necessary budget funding for the Offer. The draft Offer and the draft prospectus will be submitted for review to the AMF, which will assess their compliance with the applicable laws and regulations. Also, an independent expert designated by EDF will draw up an expert opinion on the proposed financial terms of the Offer.

1 Before the capital increase reserved for employees.
2 Based on share capital issued and fully paid-up at 30 June 2022.
3 The adjusted conversion ratio would then be 1.3030 instead of 1.1240.
4 In compliance with article L433-4 of the French Monetary and Financial Code.

On Tuesday 26 July when the proposed amended budget for 2022 was examined by the French parliament, sufficient funding was approved for the State's public buyout offer for the shares of EDF.

Formation of an *ad hoc* committee

On 19 July 2022, EDF announced that its Board of Directors held a meeting on 19 July 2022 and took note of the intention of the French State, subject to the enactment of an amended Finance Law for 2022 (currently being discussed in the National Assembly) providing the financial resources necessary for the Offer, to file a simplified public tender offer (the "Offer") for the shares of the Company and the bonds convertible into new shares and/or exchangeable for existing shares maturing in 2024 issued by the Company (the "*OCÉANE*s") that the French State does not hold, at a price of:

- €12.0 per EDF share, with dividend rights attached; and
- €15.64 per *OCÉANE*, taking into account an adjustment of the conversion ratio based on the illustrative scenario of the Offer opening on 29 September 2022[1].

The French State expects the Offer to be filed with the AMF by early September 2022, subject to enactment of an amended Finance Law for 2022 providing the financial resources necessary for the Offer.

If the legal and regulatory conditions are met, the Offer will be followed by a compulsory buyout procedure for all the shares and *OCÉANE*s that the French State does not hold at the end of the Offer.

In accordance with Article 261-1-III of the AMF's general regulations, the Board of Directors of the Company formed an *ad hoc* committee.

The *ad hoc* committee is tasked with nominating an independent export for appointment to the Board of Directors, monitoring the work of the independent expert who is appointed by the Board of Directors, and issuing a recommendation to the Board of Directors on the benefits of the Offer for the Company, the shareholders, the holders of *OCÉANE*s and the employees.

In accordance with Articles 261-1-I 1° and 5° and 261-1-II of the AMF's general regulations, the Board of Directors, by decision of 27 July 2022 upon the *ad hoc* committee's proposal, appointed Finexsi, as an independent expert in order to draw up a report on the financial terms of the Offer followed, if applicable, by a squeeze-out, under the conditions set out in AMF Instruction no. 2006-08 and AMF Recommendation no. 2006-15.

The Board of Directors will issue a reasoned opinion on the proposed Offer after having taken note of the report of the independent expert and the recommendation of the *ad hoc* committee.

The report of the independent expert and the reasoned opinion of the Board of Directors of the Company will be included in the Company's draft response document.

1 *The adjusted conversion ratio would then be 1.3030 instead of 1.1240.*

Electricité de France S.A.

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Statutory Auditors' Review Report on the Half-yearly Financial Information

Period from January 1st to June 30, 2022

This is a free translation into English of the statutory auditors' review report on the half-yearly financial information issued in French and is provided solely for the convenience of English-speaking users. This report includes information relating to the specific verification of information given in the Group's half-yearly management report. This report should be read in conjunction with, and construed in accordance with, French law and professional standards applicable in France.

To the Shareholders,

In compliance with the assignment entrusted to us by your General Meeting and in accordance with the requirements of article L. 451-1-2-III of the French Monetary and Financial Code (*"code monétaire et financier"*), we hereby report to you on:

- the review of the accompanying condensed half-yearly consolidated financial statements of Electricité de France S.A, for the six-month period from January 1st to June 30, 2022,
- the verification of the information presented in the half-yearly management report.

These condensed half-yearly consolidated financial statements are the responsibility of the Board of Directors. Our role is to express a conclusion on these financial statements based on our review.

1. 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 and consequently 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 condensed half-yearly consolidated financial statements are not prepared, in all material respects, in accordance with IAS 34 - standard of the IFRSs as adopted by the European Union applicable to interim financial information.

2. Specific verification

We have also verified the information presented in the half-yearly management report on commenting on the condensed half-yearly consolidated financial statements subject to our review.

We have no matters to report as to its fair presentation and consistency with the condensed half-yearly consolidated financial statements.

Paris-La Défense, July 27, 2022

The Statutory Auditors

French original signed by

KPMG S.A.		**Deloitte & Associés**	
Marie Guillemot	Michel Piette	Damien Leurent	Christophe Patrier