French société anonyme
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EDF Group

2021 MANAGEMENT REPORT

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1 SIGNIFICANT EVENTS AND KEY FIGURES

Financial targets achieved

Strong increase in EBITDA [(1)] and Net Income compared to 2020 and 2019

Successful disposal and cost savings plans

Decrease in carbon intensity

- **Nuclear**
  - ◊ Nuclear power included in European taxonomy [(2)]
  - ◊ **France**:
    - Existing nuclear and "*Grand carénage"* programme: 5 fourth 10-year inspections completed, 2 in progress, and extension of 1,300MW French nuclear fleet depreciation period to 50 years
    - EDF is a major actor of the "France 2030" plan, bringing €1bn of support for the nuclear industry, particularly for SMRs [(3)] and of the "France Relance" national recovery plan through the creation with the French State of the "*Fonds France Nucléaire"* for SME growth in the nuclear sector
    - Flamanville 3:
      - Update of fuel loading target from end-2022 to Q2 2023 and construction costs from €12.4bn to €12.7bn [(4)]
      - Finalisation of repair work on the 8 welds on the main secondary circuit
    - New nuclear: Submission to the public authorities by EDF and the nuclear industry of their contribution to the programme to build 3 pairs of new EPR 2 reactors in France
  - ◊ **China**: Anomaly in the fuel assemblies of Taishan reactor 1 [(5)]
  - ◊ **United Kingdom**:
    - Sizewell C:
      - Draft law introduced by the UK government on a funding scheme (Regulated Asset Base) of new nuclear projects
      - Announcements by the UK government of future investment of up to €1.7bn in development of large-scale nuclear projects
  - ◊ **India**: Binding technical and commercial offer submitted for the construction of six EPRs [(6)] at the Jaitapur site
  - ◊ **Poland**: Submission of a non-binding preliminary offer for engineering, procurement and construction services for 4 to 6 EPR reactors in Poland (6.6 to 9.9GW)

- **Renewables**
  - ◊ Increased production: 20.9TWh, +8.3 % vs end-2020
  - ◊ Acceleration in commissioning: 3.1GW gross (vs 2.5GW in 2020)
  - ◊ Growth in installed capacities: 12GW net at end-2021 (+13% vs 2020)
  - ◊ Substantial capacity under construction: 7.9GW gross at end-2021, notably including the Courseulles-sur-Mer wind farm (448MW), France's first offshore wind farm at Saint Nazaire [(7)] and a 300MW solar power plant at Jeddah
  - ◊ Project pipeline: ~ 76GW gross (+27% vs end-2020) including the 1.5GW Atlantic Shores project in the United States

- **Customers and services**
  - ◊ 1.4 million residential electricity customers with market offers in France, up 40% vs end-2020 and consistent with the target of 3 million in 2023
  - ◊ Strong growth in electric mobility: close to 200,000 charging points installed and managed at end-2021, mainly Pod Point, the leader in home charging in the United Kingdom with over 150,000 charging points
  - ◊ Signature of renewable power purchase agreements (PPAs) with Bouygues Telecom, SNCF and RATP
  - ◊ Dalkia Electrotechnics / Citelum winner of a 10-year public street lighting contract for the city of Paris
  - ◊ Dalkia: creation of an innovative monitoring system for operation and maintenance of 122 SNCF railway stations, and signature of an agreement with Futuroscope for a green heating and air-conditioning network [(8)] using renewable energies [(9)]

- **Enedis**
  - ◊ Successful roll-out of the Linky smart meters, final programme target achieved in terms of time, cost and performance

- **Italy**
  - ◊ Strategic repositioning of Edison: reorganisation of renewable assets [(10)] and refocus on core businesses

(1) The English term EBITDA is used in financial communication (press releases and presentations) for the Operating profit before depreciation and amortisation.
(2) According to the complementary delegated act adopted on 2 February 2022 subject to definitive adoption in 2022
(3) Small Modular Reactors
(4) See the press release of 12 January 2022. Costs in 2015 euros and excluding interest during the period of construction.
(5) See the press releases of 14 June 2021 and 22 July 2021
(6) EDF is neither an investor nor in charge of construction.
(7) See the press release of 28 August 2021.
(8) Technology similar to that of heat pumps, circular economy, environment protection.
(9) 40% reduction in greenhouse gas emissions for Futuroscope and 70% energy self-consumption by 2025.
(10) Purchase of remaining shares in the E2i holding company and investment by a new financial partner. Edison retains control of the new platform.

- **Innovations**
  - ◊ Commissioning of 50MW of batteries in the United Kingdom as part of the ESO [(1)] project
  - ◊ Inauguration of the first hydrogen production and distribution plant by Hynamics at Auxerre, France

- **International**
  - ◊ Signature of a development agreement for a 240MW hybrid floating solar project on the Nam Theun 2 reservoir in Laos
  - ◊ Finalisation of financing for an innovative project combining solar power and gas, with development of Chile's largest solar power plant so far (480MW)
  - ◊ Construction of the Nachtigal hydro powerplant (420MW) in Cameroon: progress on civil engineering and electro-mechanical work (more than half completed). Industrial commissioning planned for 2024

- **Phase-out of coal-fired plants in Europe**
  - ◊ France: closure of Le Havre coal-fired power plant on 31 March 2021 [(2)]
  - ◊ United Kingdom: closure of the West Burton A plant planned for September 2022, two years before the deadline set by the UK government

- **Achievements and environmental and social targets**
  - ◊ Carbon intensity: 48 $gC0_2$/kWh in 2021 vs 51 gC02/kWh in 2020, level around 5 times lower than the European average for utilities
  - ◊ Gender equality: women accounted for 29.8% of management committee members at Group's entities in 2021 vs 28.7% in 2020, in line with Group targets
  - ◊ EDF listed on "CAC 40 ESG", the Euronext index of 40 socially responsible companies

Disposal and cost savings plan achieved one year ahead of schedule

To offset the impacts of the health crisis on the Group's financial situation, cost savings and disposal plans were launched mid-2020 with a view to reducing operating expenses by €500 million between 2019 and 2022 [(3)], and generating approximately €3 billion in disposals between 2020 and 2022 [(4)]. At end-2021, €545 million in cost savings had been achieved. Asset disposals signed or completed at 31 December 2021 had a favourable effect of around €3 billion on net debt and around €3.7 billion on the Group's economic debt [(5)]. These disposals are consistent with Group strategy and have helped to refocus on core businesses and to withdraw from carbonised activities (mainly the sales of the E&P business and of the IDG gas distribution network). Both plans have exceeded their targets one year ahead of schedule.

Extension to 50 years of the depreciation period of 1,300MW reactors in France

The Group changed the depreciation period of its 1,300MW PWR plants in France on 1 January 2021, as the technical, economic and governance conditions had been met. Since then, the provisions related to nuclear production decrease by €1,016 million. This decrease is largely taxed and generated a tax disbursement of €184 million The impact of the 50-year depreciation period extension on net income - Group share for this year is +€405 million (see note 1.4.1 to the 2021 consolidated financial statements).

(1) Energy Superhub Oxford, with 100% renewable energies.
(2) The coal-fired plant in Le Havre has been shut down and mothballed (multi-year guaranteed shutdown) since end-March 2021
(3) Sum of personnel expenses and other external expenses. At constant scope, accounting standards, exchange and pensions discount rates, and excluding inflation. Excluding sales costs of energy service activities and nuclear engineering services of Framatome and in particular projects such as Jaitapur
(4) Signed or completed disposals: impact on Group's economic debt (Standard and Poor's definition)
(5) Net economic debt according to Standard and Poor's definition

Key figures

The financial information presented in this document is prepared from the EDF group's consolidated financial statements at 31 December 2021.

Impact of the Covid-19 pandemic: see note 1.4.3 to the 2021 consolidated financial statements "Consequences of the Covid-19 pandemic".

(in millions of euros)	**2021**	**2020**	**Variation**	**Variation (%)**	**Organic variation (%)**
Sales	84,461	69,031	15,430	22.4	21.6
Operating profit before depreciation and amortisation (EBITDA)	18,005	16,174	1,831	11.3	11.3
Operating profit (EBIT)	5,225	3,875	1,350	34.8	35.9
Income before taxes of consolidated companies	5,585	1,293	4,292	331.9	334.3
EDF net income	5,113	650	4,463	686.6	719.1
Net income excluding non-recurring items (1)	4,717	1,969	2,748	139.6	150.3
Net income excluding non-recurring items, adjusted for the remuneration of hybrid bonds	4,170	1,468	2,702	184	n.a
Group cash flow (2)	(1,525)	(2,660)	1,135	42.7	n.a
Net indebtedness (3)	42,988	42,290	698	1.6	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 5.6 "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). The 2020 figure is a proforma figure.

(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).

2 ECONOMIC ENVIRONMENT

2.1 Market prices for electricity and the principal energy sources

2.1.1 *Spot electricity prices in Europe* [1]

	France	United Kingdom	Italy	Belgium
Average baseload price for 2021 *(€/MWh)*	109.2	137.6	125.7	104.1
Variation in average baseload prices, 2021/2020	+ 239.0 %	+ 247.5 %	+ 223.1 %	+ 226.6 %
Average peakload price for 2021 *(€/MWh)*	127.4	161.7	141.5	120.5
Variation in average peakload prices, 2021/2020	+ 227.0 %	+ 250.6 %	+ 216.4 %	+ 218.0 %

The comments below concern baseload prices.

In **France**, spot electricity prices rose by €77.0/MWh from 2020.

The significant increase in commodity prices during the second half of 2021 led to a substantial rise in the cost of fossil-fired electricity generation. The upturn in demand, partly driven by the economic recovery, especially in the second and fourth quarters, also contributed to this taut situation. The lower renewable energy output than in 2020 (-3.8% or -1.9TWh) was another factor.

In 2021, demand in France totalled 471TWh, up by 21.6TWh or +4.8% from 2020 due to lower average temperatures in 2021 and the smaller impact of the Covid-19 pandemic. In response to this growing demand, French power generation increased by 21.1TWh, with higher output by the nuclear plants (+25.2TWh), fossil-fired plants (+0.8TWh) and solar plants (+1.3TWh), while wind power and hydropower output were down by 3.2TWh and 3.3TWh respectively.

France's export balance for 2021 stood at 44.3TWh. Despite a rise in consumption, the high level of power generation kept this balance at the same level as last year. Exports were up by 7.9TWh to 86.5TWh. They were higher across all borders except in the CWE [2] zone, where they retreated by 4.3TWh. Imports stood at 42.2TWh, up by 0.8TWh, with increases across all borders except from Italy (-0.03TWh) and Switzerland (-0.3TWh) where they registered a slight decrease.

In the **United Kingdom**, average spot electricity prices rose by €98.0/MWh compared to 2020. The rise was observed throughout the whole year, but more pronounced from September to the end of December. It is explained by a recovery in demand, higher generation costs for gas-fired electricity, and a downturn in renewable energy output across all of western Europe.

In **Italy**, average spot prices were up by €86.8/MWh from 2020. This increase illustrates the recovery in demand, and the importance of gas in the electricity mix in Italy, as gas prices rose significantly during the year while stocks were low at the start of the winter in Europe.

In **Belgium**, average spot prices increased by €72.2/MWh over 2020, again driven by high prices for gas, coal and CO_2, lower renewable energy output, a cold winter and a rise in demand.

*(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.
(2) Central Western Europe

2.1.2 *Forward electricity prices in Europe* (1)

	France	United Kingdom	Italy	Belgium
Average forward baseload price under the 2022 annual contract in 2021 *(€/MWh)*	95.5	96.0	96.9	86.0
Variation in average forward baseload price under the annual contracts, 2021/2020	+112.8%	+98.6%	+97.2%	+111.4%
Forward baseload price under the 2022 annual contract at 31 December 2021 *(€/MWh)*	249.54 [2]	174.96	169.33	159.96
Average forward peakload price under the 2022 annual contract in 2021 *(€/MWh)*	122.5	110.7	106.4	102.8
Variation in average forward peakload price under the annual contracts, 2021/2020	+111.7%	+102.3%	+92.4%	+98.2%
Forward peakload price under the 2022 annual contract at 31 December 2021 *(€/MWh)*	330.0 [3]	211.15	198.73	197.93

Average annual contract prices for baseload and peakload electricity showed a substantial increase all over Europe between 2020 and 2021, due to the rise in commodity prices (for gas, coal and CO_2).

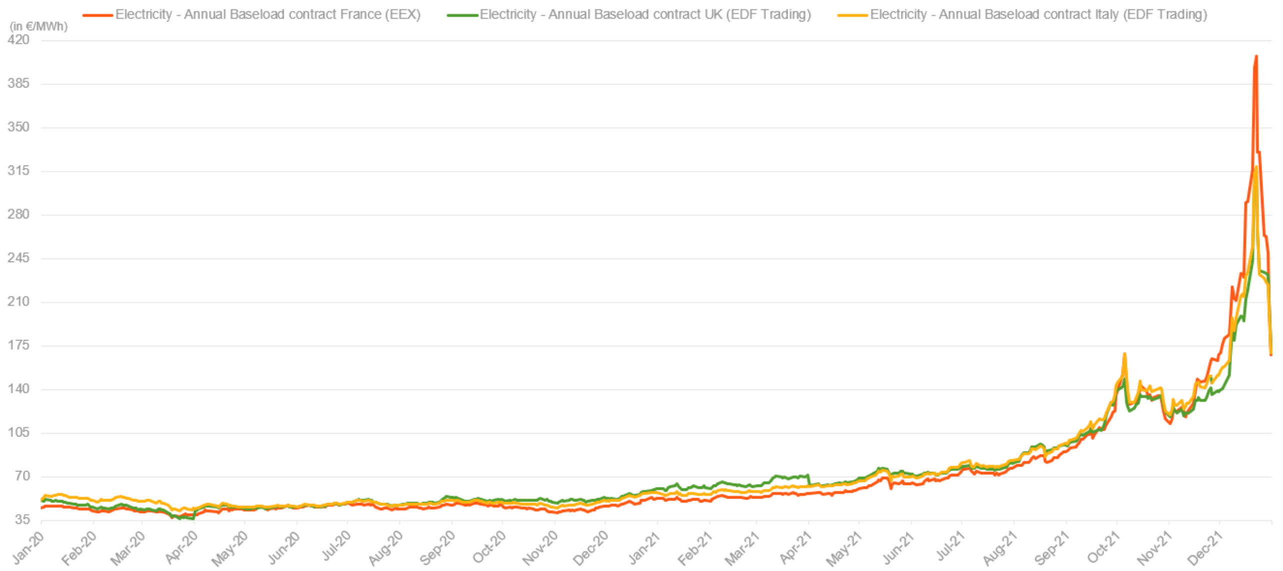
In **France**, the average annual contract baseload price for next-year delivery rose steadily over the whole year before a sharp increase in December, when it reached the monthly average of €256.5/MWh. A major factor in this rise was the very substantial increase in prices on the gas market, and to a lesser degree, CO_2 and coal prices, particularly in the second half of the year. This trend amplified in the last weeks of December due to anticipations of tension on the supply-demand balance following announcements of unavailability at certain nuclear plants. Electricity prices for next-year delivery thus reached record levels, peaking at €407.5/MWh on 22 December.

In the **United Kingdom**, the April Ahead contract baseload price for 1 April Y+1 to 31 March Y+2 increased by 98.6%. This price rose throughout the year and showed a leap in December following the increase in commodity prices.

In **Italy**, the +97.2% increase in the annual contract baseload price for next-year delivery reflects the rise in commodity prices. CO_2 prices remained volatile and followed an upward trend that affected electricity prices due to the high gas component in the Italian electricity mix.

In **Belgium**, the 111.4% increase in the annual contract baseload price for next-year delivery was particularly pronounced in the fourth quarter, due to the rise in commodity prices.

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



(1) ***France*** *and* ***Germany****: average year-ahead EEX price;*
Belgium *and* ***Italy****: average year-ahead EDF Trading price;*
United Kingdom*: average ICE annual contract prices, April 2021 then April 2022 (in the UK, annual contract deliveries take place from 1 April to 31 March).*
(2) *Final quoted price of the year for Cal+1 baseload, France, 29/12/2021*
(3) *Final quoted price of the year for Cal+1 peakload, France 29/12/2021*

2.1.3 CO_2 emission quota prices [(1)]

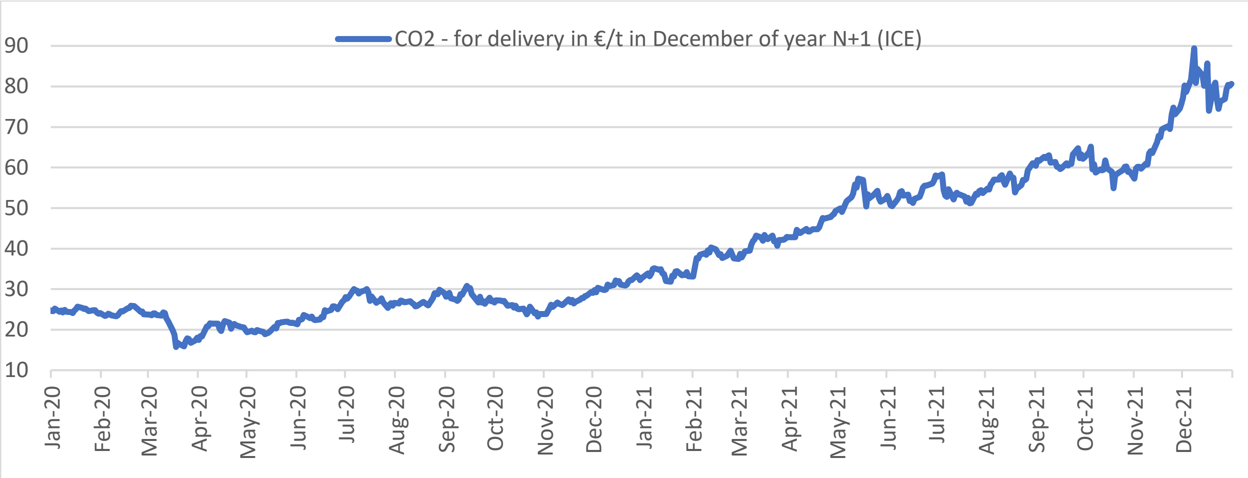
The price of **emissions certificates** for delivery in December Y+1 stood at an average €54.0/t in 2021 (+115.0% or +€28.9/t vs 2020). The CO_2 quota price followed a robust upward trend throughout the year 2021.

CO_2 emission quota prices began the year in a favourable political environment, after the announcement in January that the United States would rejoin the Paris Agreement. Then on 14 July the European Union presented its proposals to cut EU greenhouse gas emissions by 55% by 2030, rather than the initial 40% target. Late in the year, the German government's proposal to set a minimum carbon price reinforced the upward price trend.

As well as these developments, temperatures were lower than normal in April and greater use of fossil-fired power plants was necessary. From the third quarter onwards, gas prices soared among fears over the levels of European stocks, and this pushed up the output by coal-fired generation.

Finally, prices fluctuated with speculative position-taking, which also contributed to higher volatility in CO_2 quotas.

➔ **CO_2 emission quota prices in €/t for next-year deliveries in December (ICE)**



2.1.4 Fossil fuel prices [(2)]

	Coal *(US$/t)*	Oil *(US$/bbl)*	Natural gas *(€/MWhg)*
Average price for 2021	94.6	70.9	30.2
Average price variation, 2021/2020	+63.2%	+64.0%	+131.8%
Highest price in 2021	184.0	86.4	140.3
Lowest price in 2021	64.2	51.1	15.8
Price at 31 December 2021	99.3	77.78	50.0
Price at 31 December 2020	68.85	51.8	16.4

Coal prices for next-year delivery in Europe rose by +63.2% compared to 2020. In China, imports and higher production were not enough to cope with the increase in demand. Then gas prices soared, and coal-fired energy plants became competitive in a long-term perspective. In Europe, waves of cold weather drove countries to rebuild their coal stocks. Finally, some coal-producing countries (Colombia, Russia, South Africa, Australia, Indonesia) had production problems due to social contests and unfavourable weather conditions.

Oil prices were up by +64.0% compared to 2020 as demand rose significantly all over the world, driven by the resumption of normal economic activity and introduction of recovery plans in the United States and Europe. The rise in oil prices was limited by the OPEP+ countries' adjustment of production to the IEA [(3)]'s forecast worldwide demand.

The **annual gas contract** price for next-year delivery in the PEG zone increased by +131.8%. Lower temperatures in the spring brought gas stocks down in Europe. In Asia, more extreme temperatures led to high gas consumption for heating and air conditioning. China imported more gas in a politically tense situation that drove it to halt imports of Australian coal. Uncertainties over gas supplies from Russia via Ukraine, or via NordStream 2, stoked tensions on the European market. Competition between European and Asian markets to attract LNG cargo ships also contributed to upward price trends. Finally, gas prices shot up in the early winter in response to announcements by the Russian president and geopolitical tensions in eastern Europe.

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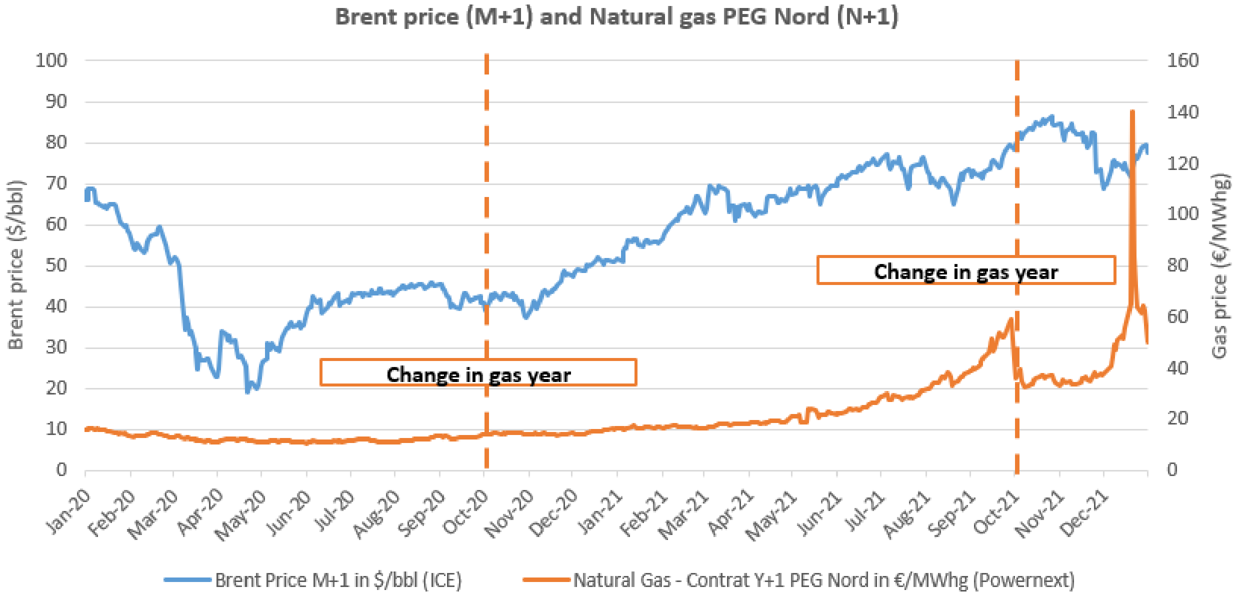
(1) Average ICE prices for the annual contract, Phase III (2013-2020) and Phase IV (2021-2030).
*(2) **Coal**: average ICE prices for delivery in Europe (CIF ARA) for the next calendar year (US$/t);*
***Oil**: ICE price for Brent crude oil barrel (front month) (US$/barrel);*
***Natural gas**: average ICE OTC prices, for delivery starting from October of the following year in France (PEG Nord - €/MWhg).*
(3) International Energy Agency

➔ **Natural gas and oil prices**



2.2 Consumption of electricity and natural gas

2.2.1 *Consumption of electricity and gas in France*

Electricity consumption in France in 2021 showed a significant increase of 21.6TWh or +4.8% compared to 2020. This increase was mainly due to a weather effect (lower temperatures) of +15TWh, and the economic recovery after the Covid-19 pandemic (+6TWh). However, as 2020 was a leap year, there was a negative effect of 1.4TWh due to 2021 having one day less.

Gas consumption in France rose by 27.3TWh compared to 2020. This rise was principally driven by an increase in demand, except in the third quarter when it declined by 8.8TWh, as average temperatures in the second quarter were 0.3°C below normal and had pushed demand up by 21.7TWh. Also, episode of cold weather (in mid-February and the first fortnight of April) led to peaks in household consumption, while gas consumption by industrial sites was relatively stable.

2.2.2 *Consumption of electricity and gas in the United Kingdom*

Electricity consumption in the United Kingdom increased by 3% compared to 2020, mainly as a result of the economic recovery in 2021 after 2020 was affected by the Covid-19 pandemic.

Gas consumption in the United Kingdom also increased, by 5% compared to 2020, due to lower temperatures.

2.2.3 *Consumption of electricity and gas in Italy*

Electricity consumption in Italy (1) totalled 319.4TWh in 2021, up by 5.5% from 2020, essentially due to resumption of business activity after the Covid-19 crisis of 2020. This rise in demand was addressed by using thermal and wind power plants (especially in the final quarter when wind conditions were favourable). Net imports returned to their pre-pandemic level at 42.8TWh, an increase of 32.9% compared to 2020.

Domestic demand for natural gas in Italy (2) totalled 76.2bcm, 7.8% higher than in 2020, confirming the general resumption of economic activity after Covid-related restrictions were lifted. All segments registered an increase, with a particularly big rise in residential consumption (+10.2% compared to 2020), due to a colder winter in 2021 than in 2020.

2.3 Sales tariffs for electricity and natural gas

In **France**, the "blue" regulated sales tariffs were raised:

- on 1 February 2021 by +1.93% excluding taxes (+1.61% including taxes) for residential customers and +3.23% excluding taxes (+2.61% including taxes) for non-residential customers,
- on 1 August 2021 by +1.08% excluding taxes (+0.48% including taxes) for residential customers and +0.84% excluding taxes (+0.38% including taxes) for non-residential customers.

(1) Source of data for Italy: unadjusted data and data provided by Terna, the Italian national grid operator, and adjusted by Edison.
(2) Sources of data for Italy: Ministry for Economic Development (MSE), Snam Rete Gas data adjusted by Edison on the basis of 1Bcm = 10.76TWh.

In the **United Kingdom**, a cap on the variable gas and electricity tariffs for residential customers was introduced on 1 January 2019. It is updated every six months, mainly to take account of market price movements in the previous six months. This tariff set for the period 1 October 2021 to 31 March 2022 (a 12% rise) did not reflect the significant increase in supply costs caused by the rise in energy prices, particularly gas prices, since September 2021. Consequently, Ofgem held a consultation on the price cap methodology, to make sure that energy prices adequately reflect the costs, risks and contingencies faced by suppliers.

On 4 February 2022 Ofgem announced a 54% increase in the energy price cap for the period 1 April – 30 September 2022. In view of this very large increase, the UK government announced consumer support measures totalling around £9 billion in the form of a £200 reduction on every household's October 2022 energy bill, to be repaid over 5 years, and other aids for the most vulnerable consumers.

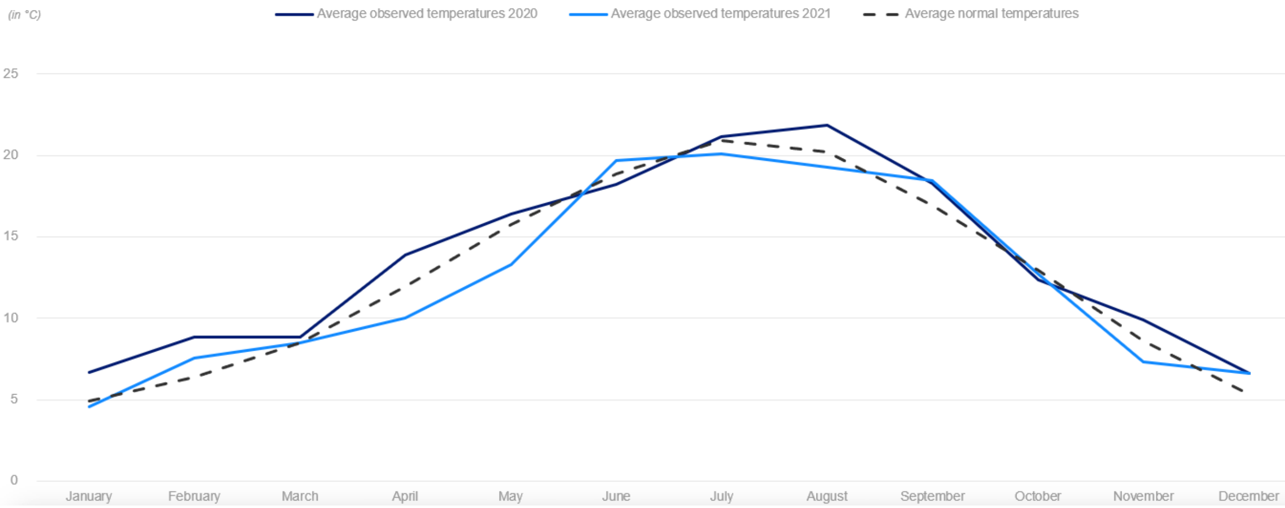
In **Italy**, the average PUN TWA (Time Weighted Average Single National Price) electricity tariff for 2021 was €125.5/MWh, up by 222.4% from 2020 (€38.9/MWh). This significant increase is explained by a substantial rise in demand associated with the post-Covid economic recovery, and higher thermal generation costs (gas and CO_2 quotas). The spot price for gas registered a significant increase of 342.8% over its 2020 level. The rise was accentuated by colder temperatures from May, which led to greater consumption of gas reserves.

2.4 Weather conditions: temperatures and rainfall

2.4.1 *Temperatures in France*

2021 was a relatively cool year, with an average temperature of 12.4°C (0.3°C below normal). This cooler weather was particularly noticeable in the months of May, July, August and November. Nonetheless, there were warmer episodes in 2021 in September, and in the winter (late January, late February, late March and late December).

➔ **Average monthly temperatures (1) (2) in France**



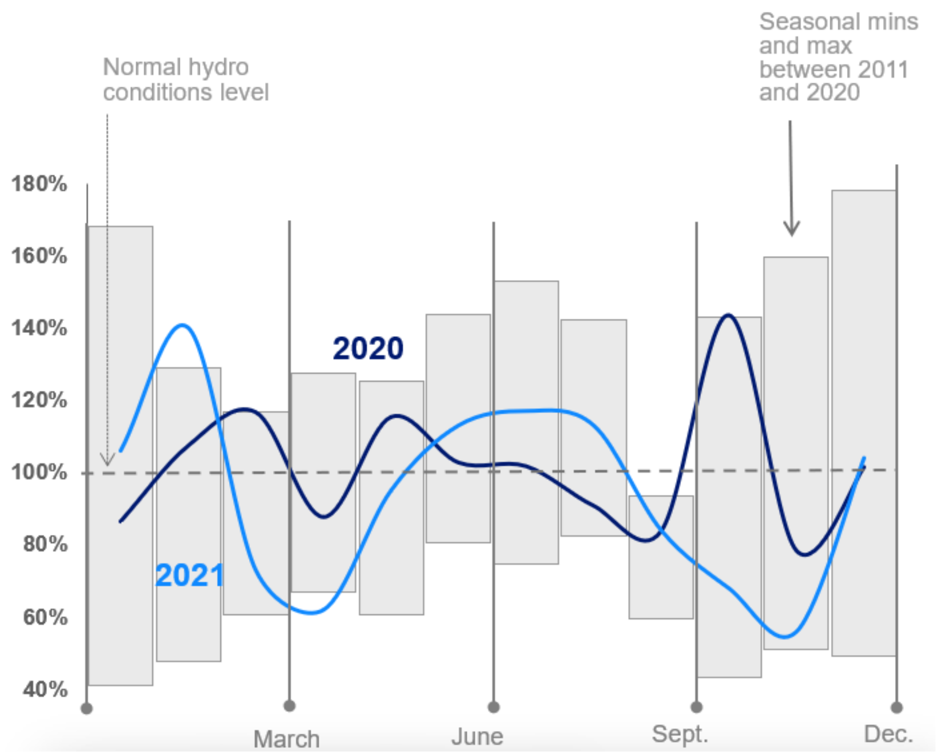
(1) Average temperatures recorded in 32 cities, weighted by electricity consumption
(2) Source: Météo France.

2.4.2 *Rainfall in France*

Rainfall in Europe was close to normal overall in 2021, although there were disparities between the South of Europe (Spain, south-France, Italy) which was drier than normal, and the East of Europe which registered surplus rainfall.

In **France**, the aggregate annual water flow coefficient was slightly below normal, with contrasting situations between the Northern half of the country (above normal) and the Southern half (below normal). There were pronounced differences between individual months, particularly in the first quarter. In April, the water flow coefficient was the lowest in 50 years under the combined effect of a shortage of rain and the absence of thawing snow. The summer was marked by abundant rainfall in July and the absence of any heatwave. In the autumn, long dry spells resulted in decreasing water flow coefficients until the rain returned at the end of the year.

➔ **Hydrological conditions in France ***



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

3 ANALYSIS OF THE BUSINESS AND THE CONSOLIDATED INCOME STATEMENT FOR 2021 AND 2020

Presentation and analysis of the consolidated income statement for 2021 and 2020 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)	2021	2020
Sales	**84,461**	**69,031**
Fuel and energy purchases	(44,299)	(32,425)
Other external purchases (1)	(8,595)	(8,461)
Personnel expenses	(14,494)	(13,957)
Taxes other than income taxes	(3,330)	(3,797)
Other operating income and expenses	4,262	5,783
Operating profit before depreciation and amortisation (EBITDA)	**18,005**	**16,174**
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	(215)	(175)
Net depreciation and amortisation (2)	(10,789)	(10,838)
(Impairment)/reversals	(653)	(799)
Other income and expenses	(1,123)	(487)
Operating profit (EBIT)	**5,225**	**3,875**
Cost of gross financial indebtedness	(1,459)	(1,610)
Discount effect	(2,670)	(3,733)
Other financial income and expenses	4,489	2,761
Financial result	**360**	**(2,582)**
Income before taxes of consolidated companies	**5,585**	**1,293**
Income taxes	(1,400)	(945)
Share in net income of associates and joint ventures	644	425
Net income of discontinued operations	(1)	(158)
CONSOLIDATED NET INCOME	**4,828**	**615**
EDF net income	**5,113**	**650**
EDF net income - continuing operations	5,114	804
EDF net income - discontinued operations	(1)	(154)
Net income attributable to non-controlling interests	**(285)**	**(35)**
Net income attributable to non-controlling interests - continuing operations	(285)	(31)
Net income attributable to non-controlling interests - discontinued operations	-	(4)

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

(2) Including net increases in provisions for renewal of property, plant and equipment operated under concessions.

3.1 Sales

Sales amounted to €84,461 million in 2021, up by €15,430 million (+22.4%) from 2020. Excluding the effect of movements in exchange rates (-€238 million) and changes in the scope of consolidation (+€274 million), sales registered organic growth of +21.6%.

3.1.1 *Change in Group sales and breakdown by segment*

(in millions of euros)	2021	2020	Variation	Variation (%)	Organic variation (%)
Sales	**84,461**	**69,031**	**15,430**	**22.4**	**21.6**

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

(in millions of euros)	2021	2020	Variation	Variation (%)	Organic variation (%)
France - Generation and supply (1)	33,182	28,361	4,821	17.0	17.0
France - Regulated activities (2)	17,564	16,228	1,336	8.2	8.2
EDF Renewables	1,767	1,582	185	11.7	12.3
Dalkia	5,196	4,212	984	23.4	23.9
Framatome	3,362	3,295	67	2.0	1.9
United Kingdom	10,114	9,041	1,073	11.9	8.4
Italy	11,212	5,967	5,245	87.9	88.1
Other international	3,353	2,420	933	38.6	28.1
Other activities	3,905	2,127	1,778	83.6	84.2
Inter-segment eliminations	(5,194)	(4,202)	(992)	23.6	23.6
GROUP SALES	**84,461**	**69,031**	**15,430**	**22.4**	**21.6**

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

3.1.1.1 France – Generation and supply

Sales by the **France - Generation and supply** segment amounted to €33,182 million in 2021, up by €4,281 million (+17.0%) from 2020.

The "energy" portion of sales increased by €250 million, comprising a positive volume effect of €1,106 million driven largely by the 25.3TWh rise in nuclear power output, and a negative price effect of €856 million due to electricity purchases required to make up for output shortfalls at the end of 2021, which were made at very high prices.

Downstream market conditions had a positive effect estimated at €385 million on the change in sales. This increase primarily results from the reinvoicing of capacity guarantee purchases to final customers (+€519 million), despite the negative impact of loss of market shares (-€221 million).

Resales of electricity subject to purchase obligations were up by €2,656 million, mainly due to a rise in spot and forward market prices throughout the year, partly offset by a decline in volumes following the very windy year of 2020 (the effect on EBITDA was neutral because expenses relating to purchase obligations are compensated by the CSPE mechanism).

The results of sales subsidiaries and aggregators, and gas sales, also contributed +€1,530 million to the increase in sales.

Electricity generation

Nuclear power generation in France produced 360.7TWh in 2021, 25.3TWh more than in 2020. This increase is principally explained by better plant availability and much lower modulation of generation than in 2020, when demand was lower due to the Covid-19 pandemic. The fuller schedule for maintenance outages was offset by a lower number of unscheduled outages, unforeseen contingencies and prolongations.

Gross hydropower output stood at 41.8TWh (1), down by 2.6TWh from 2020. This decrease is mainly explained by unfavourable hydrological conditions in 2021, although they had been better than historical averages in 2020 (see section 2.4 "Weather conditions: temperatures and rainfall").

Thermal generation plants were used to produce 10.5TWh, an increase of 1.7TWh compared to 2020.

Sales volumes to final customers (a market segment that includes the local distribution firms and excludes foreign operators) rose slightly by 0.3TWh, including +9.7TWh attributable to weather effects.

EDF was a net seller on the wholesale markets to the extent of 69.5TWh, an increase of 15.6TWh from 2020 despite periods of energy purchases during the year. The higher nuclear and fossil-fired power output was partly counterbalanced by lower hydropower output and lower volumes of purchase obligations. There was also an increase in sales to the ARENH scheme.

3.1.1.2 France – Regulated activities

Sales in 2021 by the **France - Regulated activities** segment amounted to €17,564 million, an increase of €1,336 million (+8.2%) compared to 2020.

(1) After deduction of pumped-storage hydropower volumes, hydropower production stood at 35.9TWh for 2021 (38.5TWh for 2020).

For Enedis [1], the €1,138 million rise in sales was principally driven by colder weather in first-half 2021 than the mild weather of first-half 2020 (+€426 million), a favourable price effect (+€489 million) principally due to developments in the indexed adjustment to the TURPE 6 distribution tariff [2] and higher income from connections (+€159 million) following the impact of the Covid-19 pandemic in 2020.

Électricité de Strasbourg and SEI's sales rose by €202 million.

3.1.1.3 EDF Renewables

The **EDF Renewables** segment's sales totalled €1,767 million and registered an organic increase of €194 million (+12.3%) compared to 2020.

Sales of energy produced saw organic growth of 5.3% thanks to the increase in the volume output of wind and solar power, due to new facilities commissioned during the second half of 2020 and in 2021. The spell of extremely cold weather in Texas in the first quarter had no significant impact on EDF Renewables' sales but affected EBITDA because the company had to purchase energy at very high prices in order to honour its contractual commitments.

The distributed solar power business in the United States registered sales growth, reflecting the dynamic business environment in this sector (with no significant impact on EBITDA).

3.1.1.4 Dalkia

Sales by **Dalkia** amounted to €5,196 million for 2020, an organic increase of €1,006 million (+23.9%) compared to 2020.

This growth reflects the significant increase in gas prices (with no impact on EBITDA), the resumption of business activity (after work was suspended and services to industry and buildings were significantly scaled back in early 2020 due to the Covid-19 pandemic), and dynamic sales activity in France (in industrial refrigeration), and in the United Kingdom. Dalkia's sales also benefited from slightly colder-than-normal weather conditions in 2021 compared to the milder year of 2020.

3.1.1.5 Framatome

Framatome's sales amounted to €3,362 million in 2021, an organic increase of 1.9% over 2020. A significant portion of sales are made within the Group. This growth is explained by more sustained levels of business with the Group.

3.1.1.6 United Kingdom

Sales by the **United Kingdom** segment amounted to €10,114 million in 2021, an organic increase of €762 million (+8.4%) from 2020.

This rise is explained by higher electricity prices and the increase in volumes sold, reflecting the takeover of Utility Point and Green Network Energy customers (under the supplier of last resort mechanism). Cold weather in the first quarter and the 5% rebound in consumption by business customers also contributed to sales growth. These favourable developments were partly counterbalanced by a decrease in nuclear power output (-4TWh) and by lower realised sales prices for nuclear power due to purchases of energy at high prices.

3.1.1.7 Italy

The **Italy** segment's sales totalled €11,212 million in 2021, showing organic growth of €5,258 million (+88.1%) compared to 2020.

In the gas activities, sales were up as a result of rising prices on all markets (although the effect on the margin was limited). The recovery in sales volumes to business customers following the Covid-19 measures of 2020 and the colder winter than in 2020 also contributed to the increase in volumes.

In the electricity activities, despite lower sales volumes to industrial customers, sales also rose significantly due to the rise in prices.

3.1.1.8 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 in 2021 amounted to €3,353 million, an organic increase of €681 million (+28.1%) from 2020.

In **Belgium** [3], sales registered organic growth of €474 million (+27.3%) compared to 2020, benefiting from higher electricity and gas prices, an increase in volumes sold to business, industrial and residential customers, and weather effects. The residential customer market is still intensely competitive. Annual indexed adjustments of contracts (particularly for residential customers), which are applied throughout the year, do not yet fully reflect the recent rise in electricity and gas prices on the wholesale markets. Greater use was made of the thermal generation fleet, leading to an increase in system services. Wind power development continued, reaching net installed capacity of 591MWh [4] at end-2021.

In **Brazil**, there was an organic increase of €188 million (+39.7%) in sales, principally due to higher volumes sold on the market and the +28% adjustment in November 2020 of the Power Purchase Agreement (PPA) price attached to EDF's Norte Fluminense power plant, in line with the change in the ICMS tax [5] (which had no impact on EBITDA). The foreign exchange effect was unfavourable in 2021 (the Brazilian real declined against the euro).

In **Vietnam**, sales showed an organic increase of €18 million (+10%), in keeping with the rise in gas prices (on a pass-through basis, so there is no impact on EBITDA).

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(1) Enedis is an independent EDF subsidiary as defined in the French Energy Code.

(2) Indexed adjustments to the TURPE 5 distribution tariff: +2.75% at 1 August 2020 and 0.91% at 1 August 2021.

(3) Belgium comprises Luminus and EDF Belgium.

(4) Net capacity of Luminus. Gross installed wind capacity amounted to 658MW (588MW at 31 December 2020).

(5) Tax on Circulation of Merchandise and Services in Brazil.

3.1.1.9 Other activities

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

Sales by this segment amounted to €3,905 million in 2021, an organic increase of €1,791 million (+84.2%) from 2020.

- Sales by the **gas activities** amounted to €1,860 million, an organic increase of €1,131 million compared to 2020, essentially explained by the favourable effect of the increase in prices on the wholesale gas market (+€772 million).
- **EDF Trading**'s sales totalled €1,518 million, an organic increase of 67.7% compared to 2020. Trading activities performed very well in Europe and the United States, particularly as a result of very high volatility on the commodity markets, especially during the weather event in Texas during the first quarter.

3.2 EBITDA

The Group's consolidated EBITDA for 2021 amounted to €18,005 million, an organic increase of 11.3% from 2020.
This trend was also driven by the extremely positive performance in the trading business, by the significant improvements in Italy and in the French regulated activities, and by the reduction in production tax. However, outages and extended outages of nuclear reactors at the end of the year in France required the purchase of volumes on the market against a backdrop of a sharp rise in electricity prices. This had a strongly unfavourable impact. The United Kingdom was negatively impacted by the decrease in nuclear output and the sharp decline in realised nuclear prices stemming from substantial buybacks at high market prices.

(in millions of euros)	2021	2020	Variation	Variation (%)	Organic variation (%)
Sales	**84,461**	**69,031**	**15,430**	**22.4**	**21.6**
Fuel and energy purchases	(44,299)	(32,425)	(11,874)	36.6	35.3
Other external expenses	(8,595)	(8,461)	(134)	1.6	1.3
Personnel expenses	(14,494)	(13,957)	(537)	3.8	3.5
Taxes other than income taxes	(3,330)	(3,797)	467	(12.3)	(12.0)
Other operating income and expenses	4,262	5,783	(1,521)	(26.3)	(26.1)
EBITDA	**18,005**	**16,174**	**1,831**	**11.3**	**11.3**

3.2.1 *Change in Group EBITDA and analysis*

- The Group's **fuel and energy purchases** amounted to €44,299 million in 2021, an organic increase of €11,435 million (+35.3%) compared to 2020.
  - In the **France - Generation and supply** segment, fuel and energy purchases showed an organic increase of €2,486 million (+18.8%) from 2020, principally due to a large volume of energy purchases at high prices.
  - In the **United Kingdom**, the organic increase of €1,824 million (+30.9%) in fuel and energy purchases principally relates to the unfavourable impact of rising market prices on energy purchases. Also, gas and electricity sales volumes were higher, notably after EDF took over insolvent suppliers' customer portfolios in application of the supplier of last resort mechanism, which made additional energy purchases necessary.
  - In **Italy**, the organic increase of €4,882 million (+111.8%) in fuel and energy purchases essentially reflects higher wholesale market prices and volumes for gas.
- The Group's **other external expenses** amounted to €8,595 million, an organic increase of €108 million (+1.3%) compared to 2020.
  - In the **France - Generation and supply** segment, other external expenses registered an organic increase of €193 million (+8.3%). This increase mainly reflects the economic recovery for service activities, which were affected by the Covid-19 pandemic in 2020, and development of engineering projects.
  - In the **France - Regulated activities** segment, other external expenses showed an organic decrease of €102 million (-6.4%) compared to 2020, reflecting a higher level of capitalised production, in line with the level of network connection activity.
  - In the **United Kingdom**, there was an organic decrease of €191 million (-22.8%) in other external expenses after expenses for permanently shut-down power plants (Dungeness B) were transferred to the Nuclear Liability Fund. Changes to the pension system negotiated in 2021 generated an exceptional contribution, and a reduction in expenses.
  - **EDF Renewables** registered a €105 million (+17.7%) organic increase in other external expenses, principally due to growth in the distributed solar power business in the United States
  - **Dalkia's** other external expenses showed an organic increase of €145 million (+8.4%), driven by the recovery of service activities and site work, which had been significantly affected by the Covid-19 pandemic in 2020.

- The Group's **personnel expenses** for 2021 totalled €14,494 million, an organic increase of €495 million (+3.5%) from 2020.
  - In the **France - Generation and supply** segment, personnel expenses registered an organic increase of €50 million (+0.8%) that mainly reflects the impact of higher salaries and pension expenses, which were partly offset by a decrease in workforce numbers.
  - In the **France - Regulated activities** segment, there was an organic increase of €47 million (+1.5%) in personnel expenses. Price effects on salaries were partly offset by the decrease in workforce numbers.
  - **EDF Renewables** registered a €55 million (+14.1%) organic increase in personnel expenses, principally explained by a rise in workforce numbers, notably due to growth in the development and construction businesses.
  - **Dalkia** saw an organic increase of €85 million (+7.9%) in personnel expenses, essentially driven by recovery in the service activities which had been affected by the Covid-19 pandemic in 2020, and a workforce increase to support business growth.
  - In the **United Kingdom**, personnel expenses rose by €67 million (+6.2%), largely due to the unfavourable impact of revised discount rates.
- **Taxes other than income taxes** amounted to €3,330 million in 2021, an organic decrease of €455 million (-12.0%) compared to 2020.
  - In the **France - Generation and supply** segment, the €393 million (-16.7%) organic decrease is mainly attributable to the lower generation taxes introduced under the national recovery plan.
  - In the **France - Regulated activities** segment, the €138 million (-14.5%) organic decrease is also explained by lower generation taxes.
- **Other operating income and expenses** generated net income of €4,262 million in 2021, an organic decrease of €1,510 million (-26.1%) compared to 2020.
  - In the **France - Generation and supply** segment, the €2,104 million organic decrease (-49.8%) in the income generated by other operating income and expenses is primarily attributable to a decrease in CSPE compensation (neutral impact on EBITDA), due to the rise in spot market prices.
  - In the **France – Regulated activities** segment, the €214 million (+15.2%) organic increase in the income generated by other operating income and expenses mainly resulted from an increase in CSPE for SEI under the mechanism to compensate for additional costs in French islands.

3.2.2 *Change in consolidated EBITDA and analysis by segment*

(in millions of euros)	2021	2020	Variation	Variation (%)	Organic Variation (%)
France - Generation and supply	7,394	7,412	(18)	(0.2)	(0.3)
France - Regulated activities	5,992	5,206	786	15.1	15.1
EDF Renewables	815	848	(33)	(3.9)	(3.7)
Dalkia	378	290	88	30.3	31.7
Framatome	310	271	39	14.4	18.5
United Kingdom	(21)	823	(844)	(102.6)	(108.0)
Italy	1,046	683	363	53.1	53.0
Other international	267	380	(113)	(29.7)	(22.9)
Other activities	1,824	261	1,563	n.a	n.a
GROUP EBITDA	**18,005**	**16,174**	**1,831**	**11.3**	**11.3**

n.a.: not applicable

3.2.2.1 France - Generation and supply

The net impact on EBITDA of the 25.3TWh increase in nuclear output, combined with the 2.6TWh decline in hydropower output after the deduction of pumped volumes, is estimated at +€1,081 million.

Energy prices had a negative impact on EBITDA estimated at -€1,140 million, outages and extended outages at the end of the year having required purchases on the market at extremely high prices. In contrast, energy buybacks in 2020 were made at low prices.

The impacts on the downstream market were negative and estimated at -€249 million owing to a loss of customers, while capacity prices invoiced to customers had a favourable impact.
Furthermore, EBITDA benefitted from the reduction in production taxes as part of the recovery plan for an estimated €322 million.

3.2.2.2 France - Regulated activities

The substantial increase in EBITDA resulted primarily from an increase in distributed volumes, at 15.8TWh for an estimated €251 million, stemming from colder weather and following the impact of the health crisis in 2020. It also resulted from growth in the grid connection services activities, which made a positive contribution to EBITDA for an estimated €159 million.

The trend in prices had a positive effect estimated at €30 million, mainly owing to the positive trend in the TURPE [(1)] indexation despite the negative effect of loss purchases against a backdrop of strong price increases on the market.

Furthermore, EBITDA benefitted from a €130 million reduction in production taxes as part of the recovery plan.

3.2.2.3 EDF Renewables

The extreme cold snap in Texas in the first quarter had a significant negative impact on production EBITDA estimated at -€95 million. EDF Renewables was obliged to buy back energy at very high prices to meet its contractual commitments and had to book an impairment for one of its fleet assets, leading to a negative impact on net income.

The production EBITDA also benefits from an increase (+1.6TWh) in volumes produced thanks to the capacities commissioned.

"Development & Sale of Structured Assets" made a favourable contribution to EBITDA, notably owing to disposals in the United States and Portugal.

Development costs increased, supporting the 27% growth in the portfolio of wind and solar projects of 73GW.

3.2.2.4 Dalkia

The strong EBITDA growth can be attributed primarily to the recovery in services and works following a first-half 2020 negatively impacted by the closure of numerous customer sites, the postponement of construction projects, and continued gains in performance in heating and cooling networks. It is also explained by a very good rebound in the works and energy efficiency activities in the UK.

Sales development remained strong, particularly in greening and operation and maintenance of heating networks, with contracts won in Issoire, Puteaux and Monplaisir (Angers) for example.

3.2.2.5 Framatome

EBITDA rose sharply as a result of brisk activity at "Fuel" and "Primary Component" production plants and the lesser impact of the health crisis.

The "Installed base" activity, mainly in North America and France, also contributed favourably to EBITDA.

The action plan on structural costs also continues to contribute to EBITDA.

Order intake amounted to around €3.7 billion at end-2021 [(2)], an improvement relative to 2020.

Framatome is developing its engineering expertise and expanding its Instrumentation and Control (I&C) capabilities with the acquisition of the I&C activity of Rolls-Royce [(3)].

3.2.2.6 United Kingdom

The extremely sharp decrease in EBITDA resulted mainly from a 4TWh downturn in nuclear output for an estimated -€198 million and from a substantial decrease in realised nuclear prices (-£12.6/MWh) stemming from a considerable volume of buybacks at high market prices, estimated at -€550 million.

Downstream activity was also impacted by the energy crisis in the United Kingdown. In particular, the contribution of the residential customer segment decreased as the rise in energy prices was not fully passed on in 2021 to customers with capped prices.

The acquisition of Green Network Energy's customers, on the one hand, the integration of Utility Point and Zog Energy clients 'portfolio in accordance with the supplier of last resort mechanism, on the other hand, have required additional purchases.

Business in the professional segment increased relative to 2020, the latter having been adversely affected by the health crisis.

3.2.2.7 Italy

The electricity activities reported EBITDA growth, in particular thanks to the improved use of combined cycle gas turbines and of ancillary services in an environment of highly volatile market prices. The contribution from renewable energy generation also increased, especially wind power, against a backdrop of high prices.

Gas business benefited from the capital gain generated from the disposal of Infrastrutture Distribuzione Gas (IDG), the surge in activity (impact of the health crisis) in the industrial customer segments and a colder weather in 2021 than in 2020.

Ebitda also benefited from the growth of the services activities.

Other notable developments included the entry of a new financial partner, which acquired a 49% stake, in renewables platform: the aim being to develop new generation capacities.

3.2.2.8 Other international

In **Belgium** [(4)], the decline in EBITDA resulted primarily from reduced wind farm production, linked to less favourable wind conditions compared with 2020, and purchases at high prices, particularly at the end of the year.

Net installed wind capacity increased to 591MW [(5)], up 7.8% compared with end-2020. Nuclear output is increasing. The improved availability of thermal plants helped to increase the services provided to the electric system.

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(1) Indexation TURPE 5 Distribution de +2,7 5% et du TURPE 5 Transport de - 1,08 % au 1er août 2020 et du TURPE 6 Distribution de + 0,91 % et du TURPE 5 Transport de + 1,09 % au 1er août 2021.
(2) At Framatome scope
(3) See the Framatome press release of 8 November 2021
(4) Luminus and EDF Belgium
(5) Net capacity for Luminus. Gross installed wind capacity totaled 658MW at end- 2021 (+11.9%).

After the slowdown in 2020 owing to the health crisis, service activities returned to growth and downstream activities held up well against a backdrop that continued to suffer from intense competition and extensions to social tariffs.

Luminus finalised the acquisition of around 330,000 customers from Essent Belgium, the Belgian gas and electricity supplier [(1)].

In **Brazil**, EBITDA increased in organic terms thanks to the increase in the price of the Power Purchase Agreement (PPA) relating to the EDF Norte Fluminense plant, by 28% in November 2020 and 7% in November 2021, as well as sales at high prices on the spot market.

3.2.2.9 Other activities

The increased EBITDA of gas activities resulted mainly from the revaluation of long-term contracts (with no cash effect) in line with the substantial improvement in medium- and long-term USA-Europe spreads and an improvement in the operational margins of the Group's gas businesses.

EDF Trading posted EBITDA of €1,200 million, up an organic 89.6% relative to 2020. This was an outstanding performance given the extreme volatility on the commodities markets.

The trend was also underpinned by the sale of real estate in France.

3.3 EBIT

The Group's **consolidated EBIT** for 2021 amounted to €5,225 million, up by €1,350 million (+34.8%) from 2020, or an organic increase of €1,393 million (+35.9%).

(in millions of euros)	2021	2020	Variation	Variation (%)
EBITDA	**18,005**	**16,174**	**1,831**	**11.3**
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	(215)	(175)	(40)	(22.9)
Net depreciation and amortisation*	(10,789)	(10,838)	49	(0.5)
(Impairment)/reversals	(653)	(799)	146	(18.3)
Other income and expenses	(1,123)	(487)	(636)	130.6
EBIT	**5,225**	**3,875**	**1,350**	**34.8**

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

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

The net changes in fair value on energy and commodity derivatives, excluding trading activities, decreased by €40 million compared to 2020, in line with EDF Trading's operations for EDF entities.

3.3.2 *Net depreciation and amortisation*

Net depreciation and amortisation was down by €49 million from 2020. The decrease principally concerns the **France** - **Generation and supply** segment (€164 million) and essentially reflects the impact of extension of the depreciation period of 1,300MWe-series power plants, which more than compensated for the additional depreciation and amortisation resulting from the increase in investments.

3.3.3 *(Impairment)/reversals*

Impairment recognised in 2021 amounted to €653 million, and mainly related to impairment of nuclear assets in the **United Kingdom** in view of the decision to close down the Dungeness B plant early [(2)]. Smaller amounts of impairment were recognised in respect of **EDF Renewables'** photovoltaic plants, in view of a decree that reduced purchase tariffs from October 2021 for electricity generated by plants of over 250kWp in France for which the contracts were signed between July 2006 and August 2010.

3.3.4 *Other income and expenses*

Other income and expenses amounted to -€1,123 million for 2021, comprising:

- -€427 million for the **France - Generation and supply** segment, principally additional costs relating to repair work on penetration welds at the Flamanville 3 site, less the settlement indemnity from Areva [(3)];
- -€437 million for the **Other international** segment, notably as a result of the sale of the 49.99% investment in CENG;

(1) See the Luminus press release of 3 May 2021.
(2) On 7 June 2021 EDF decided to move the Dungeness B AGR nuclear power plant in south-east England into the defueling phase.
(3) Settlement agreement signed on 29 June 2021 for a payment by Areva to EDF of €563 million by 31 December 2021, 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.

- -€212 million for the **United Kingdom** segment, mainly relating to the decision to shut down the Dungeness B plant early in 2021;
- - €155 million for the Italy segment, principally relating to litigation concerning the former company Montedison.

3.4 Financial result

(in millions of euros)	2021	2020	Variation	Variation (%)
Cost of gross financial indebtedness	(1,459)	(1,610)	151	(9.4)
Discount effect	(2,670)	(3,733)	1,063	(28.5)
Other financial income and expenses	4,489	2,761	1,728	62.6
FINANCIAL RESULT	**360**	**(2,582)**	**2,942**	**n.a**

n.a.: not applicable

The financial result for 2021 is financial income of €360 million, an improvement of €2,942 million compared to 2020. This change is explained by:

- A €1,728 million improvement in other financial income and expenses, driven mainly by the strong performance by the dedicated asset portfolio (+€1,521 million) (see section 8.1.6);
- the €1,063 million decrease in the discount expense charges, largely owing to the lesser decline in the discount rate for nuclear provisions in France between 2020 and 2021 than between 2019 and 2020;
  The discount rate used to calculate nuclear provisions at 31 December 2021 was 3.7%, assuming inflation of 1.7% (respectively 3.3% and 1.2% at 31 December 2020);
- a €151 million decline in the cost of gross financial indebtedness, attributable to refinancing operations in an environment of low interest rates.

3.5 Income taxes

Income taxes amounted to €1,400 million at 31 December 2021, corresponding to an effective tax rate of 25.09% (compared to a tax expense of €945 million at 31 December 2020, corresponding to an effective tax rate of 73.10%).

The €455 million increase in the Group's tax expense in 2021 essentially reflects the €4,292 million increase in net income before taxes, thanks to a good operating and financial performance (unrealised positions) generating an additional tax expense of €1,219 million. The increase also includes the favourable impact of deferred tax asset recognition in the United States and the tax revaluation of assets in Italy, partly mitigated by the unfavourable effect of the forthcoming increase in the UK income tax rate from 19% to 25% from 2023 (creating a larger negative effect than in 2020, when the rate was raised from 17% to 19%).

Regarding the tax revaluation of assets in Italy, special tax measures introduced in response to the Covid-19 pandemic allow Italian companies, by virtue of article 110 of decree-law 104/2020, to realign the tax value of certain assets and goodwill with their accounting value in return for payment of a 3% tax. The Group's Italian companies opted to realign the tax value of certain tangible assets and goodwill 31 December 2021.

Finally, the income tax expense in 2020 was strongly affected by the unfavourable Council of State decision issued in December 2020 rejecting the tax-deductibility of certain long-term liabilities of EDF SA, a factor that had no equivalent in 2021.

After elimination of these non-recurring items (principally changes in unrealised gains and losses on the financial asset portfolio, impairment, restatements of the tax value of assets in Italy, the impact of changes in the UK tax rate and the sale of CENG), the effective current tax rate for 2021 is 21.3%, compared to 19.0% in 2020.

3.6 Net income excluding non-recurring items

The Group's net income excluding non-recurring items [(1)] stood at €4,717 million in 2021, up by €2,748 million from 2020 (see note 19.1, "Net income excluding non-recurring items", to the 2021 consolidated financial statements).

(1) EDF net income excluding non-recurring items, net changes in fair value on energy and commodity derivatives (excluding trading activities), and net changes in the fair value of debt and equity instruments, net of tax.
Amount of non-recurring items, net changes in fair value on energy and commodity derivatives (excluding trading activities), and net changes in the fair value of debt and equity instruments, net of tax:

- *- €1,480 million of impairment and other non-recurring items in 2021, compared to -€2,068 million in 2020,*
- *-€149 million of net changes in the fair value of energy and commodity derivatives (excluding trading activities) net of tax in 2021, compared to -€124 million in 2020,*
- *+€2,025 million of net changes in the fair value of debt and equity instruments in 2021, compared to +€873 million in 2020.*

3.7 EDF net income

EDF net income amounted to €5,113 million at end-2021, up €4,463 million. Apart from the considerable increase in net income excluding non-recurring items, the change includes the following after-tax items:

- the change in fair value of financial instruments for €1,152 million,
- income of €362 million corresponding to a payment as part of an agreement signed between EDF and Areva on 29 June 2021,
- additional costs relating to repair work on the main secondary circuit welds at the Flamanville 3 EPR, totalling -€410 million, or an additional charge of - 140 million compare to 2020,
- costs related to the planned closure of Dungeness B, amounting to -€366 million. The latter includes the loss of value of the plant and the depreciation of fuel inventories and spare parts as well as the provisioning of penalties due under the capacity mechanism.

4 NET INDEBTEDNESS, CASH FLOWS AND INVESTMENTS

(in millions of euros)	**2021**	**2020 [5]**	**Variation**	**Variation (%)**
EBITDA	**18,005**	**16,174**	**1,831**	**11.3**
Cancellation of non-monetary items included in EBITDA	(869)	328	(1,197)	n.a
Cash EBITDA	**17,136**	**16,502**	**634**	**3.8**
Change in working capital	(1,526)	(1,679)	153	(9.1)
Net investments [1] (excluding Group disposals 2020-2022)	(15,725)	(14,145)	(1,580)	11.2
Other items including dividends received from associates and joint ventures	(98)	(17)	(81)	n.a
Operating cash flow [2]	**(213)**	**661**	**(874)**	**n.a**
Asset disposals	2,847	187	2,660	n.a
Income taxes paid	(2,276)	(983)	(1,293)	n.a
Net financial expenses disbursed	(588)	(929)	341	(36.7)
Dedicated assets	(501)	(828)	327	(39.5)
Dividends paid in cash	(794)	(768)	(26)	3.4
Group cash flow [3]	**(1,525)**	**(2,660)**	**1,135**	**(42.7)**
Issues of hybrid notes	1,235	2,074	(839)	(40.5)
Issues of OCEANE bonds	-	169	(169)	(100)
Redemption of hybrid notes	(267)	-	(267)	n.a
Other monetary changes	(776)	(49)	(727)	n.a
(Increase)/decrease in net indebtedness, excluding the impact of changes in exchange rate	**(1,333)**	**(466)**	**(600)**	**n.a**
Effect of change in exchange rates	(515)	445	(960)	n.a
Effect of other non-monetary changes	1,150	(1,126)	2,276	n.a
(Increase)/decrease in net indebtedness of continuing operations	**(698)**	**(1,147)**	**716**	**(62.4)**
(Increase)/decrease in net indebtedness of discontinued operations [4]	**-**	**(10)**	**10**	**n.a**
Net indebtedness at beginning of year	**42,290**	**41,133**	**1,157**	**2.8**
NET INDEBTEDNESS AT END OF YEAR	**42,988**	**42,290**	**698**	**1.6**

(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.

(5) The published figures for 2020 include a €79 million reclassification between net financial expenses disbursed, dedicated assets and other non-monetary changes.

n.a.: not applicable

4.1 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.

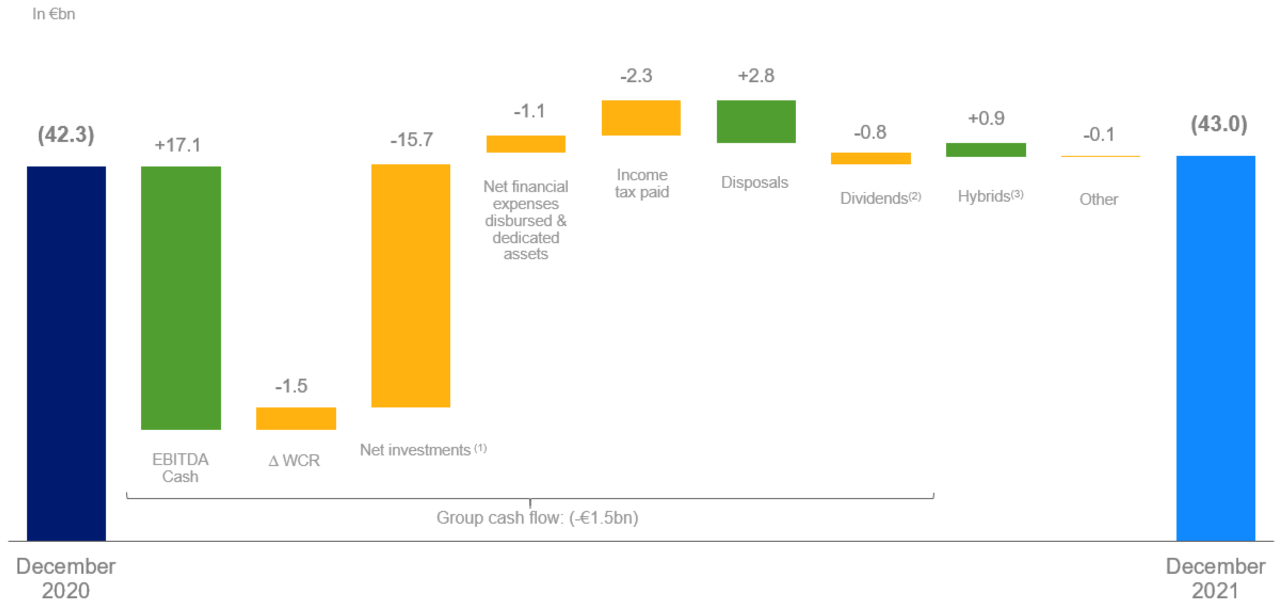
The Group's net indebtedness was €42,988 million at 31 December 2021. It stood at €42,290 million at 31 December 2020.

(in millions of euros)	31/12/2021	31/12/2020	Variation	Variation (%)
Loans and other financial liabilities	69,406	65,591	3,815	5.8
Derivatives used to hedge liabilities	(3,762)	(1,986)	(1,776)	(89.4)
Cash and cash equivalents	9,919	6,270	3,649	58.2
Debt and equity securities - liquid assets	(12,737)	(15,028)	2,292	15.2
Net indebtedness of assets held for sale	-	(17)	17	n.a
NET INDEBTEDNESS (1)	**42,988**	**42,290**	**698**	**1.6**

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

Net debt was limited to €43.0 billion on a strong performance in terms of cash EBITDA (€17.1 billion), completed disposals (€2.8 billion) and a social hybrid bond issue (€1.2 billion).

Change in net indebtness between 31 December 2020 and 31 December 2021



NB: figures rounded up to the nearest whole number.
(1) Net investments excluding Group disposals.
(2) Dividends paid including hybrid bond remuneration.
(3) Hybrid issue of €1.2bn and announced repayment of -€0.3bn

4.2 Operating cash flow

The operating cash flow was -€213 million for 2021, compared to €661 million for 2020, a decrease of €874 million.

4.2.1 *Cash EBITDA*

EBITDA after adjustment for non-cash items amounted to €17,136 million, up by €634 million from 2020, principally due to the post-Covid business recovery, and:

- the increase in **Enedis'** gross margin delivery and non-delivery services;
- business growth in **Italy** (thermal power generation, sales, gas optimisation, renewable energies and services).

4.2.2 *Change in working capital*

Working capital deteriorated by -€1,526 million in 2021. This change is mainly explained by higher market prices in 2021, leading to an increase in margin calls in the optimisation/trading activities (-€1,931 million) and in the Group's operating working capital, principally driven by price movements at the end of the year (-€1,805 million on the net amount of trading receivables/payables). Conversely, the lower net expense for purchase obligations led to surplus CSPE compensation, which reduced EDF's receivable on the State (+€2,350 million impact on working capital).

4.2.3 *Net investments*

Net investments (excluding Group disposals 2020-2022 and including HPC and Linky) amounted to €15,725 million for 2021, up by €1,580 million from 2020 when investments were down because of the Covid-19 pandemic.

(in millions of euros)	2021	2020	Variation	Variation (%)
France - Generation and supply	5,338	5,484	(146)	(3)
France - Regulated activities	4,617	4,049	569	14
EDF Renewables	853	812	41	5
Dalkia	284	180	104	58
Framatome	381	219	162	74
United Kingdom	3,054	2,625	428	16
Italy	909	531	379	71
Other international	289	207	81	39
Other activities	-	38	(38)	-
NET INVESTMENTS	**15,725**	**14,145**	**1,580**	**11**

Net investments by the **France - Generation and supply** segment decreased by €146 million, notably due to lower nuclear maintenance expenses and schedule adjustments on the Flamanville 3 project.

Net investments by the **France - Regulated activities** segment (including Linky), were up by €569 million due to a noticeable rise in the number of connections, and the deferral to 2021 of certain work initially scheduled for 2020, as a result of the Covid-19 pandemic.

In the **United Kingdom**, net investments rose by €428 million due to the higher investments in the HPC project (+€477 million).

In **Italy**, net investments increased by €379 million, particularly due to acquisitions in the renewable energies sector, and development projects for new-generation thermal power plants.

The increase in net investments by the **Other International** segment is principally attributable to Luminus' acquisition of Essent.

4.3 Group cash flow

Group cash flow for 2021 amounted to -€1,525 million, a clear improvement from 2020 when it was -€2,660 million.

4.3.1 *Asset disposals*

Asset disposals generated €2,847 million in 2021. They include the sale of E&P operations in Norway, the sale of the IDG gas distribution network and 49% of the renewables platform in Italy, the sale of the 49.99% stake in CENG in the United States, the sale of the West Burton B plant and the Pod Point IPO in the United Kingdom, as well as the sale of Dalkia Wastenergie and some real estate assets in France.

4.3.2 *Dedicated assets*

In compliance with the French Law no. 2006-739 of 28 June 2006 on the sustainable management of radioactive materials and waste, EDF has built up a portfolio of dedicated assets for secure financing of its long-term nuclear obligations (see section 8.1.6).

Overall, the changes in dedicated assets comprise:

- allocations to reach full coverage of obligations;
- reinvestment of financial income (dividends and interest) generated by these assets;
- withdrawals of assets corresponding to the costs incurred over the period to meet long-term nuclear obligations falling within the scope 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 -€501 million in dedicated assets in 2021 corresponds to the second and third of these categories.

4.3.3 *Dividends paid in cash*

Dividends paid in cash during 2021 amounted to €794 million, comprising:

- the 2020 dividend (€36 million) and the interim 2021 dividend (€48 million) paid by EDF SA [(1)];
- payments made in 2021 to bearers of perpetual subordinated bonds for the "hybrid note" issues (€547 million);
- dividends paid by Group subsidiaries to their minority shareholders (€163 million).

(1) The French State has opted for a scrip dividend for 2021 and 2022.

4.4 Effect of change in exchange rates

The foreign exchange effect (mainly the rise of the pound sterling and the US dollar against the euro [1]) had an unfavourable impact of €515 million on the Group's net indebtedness in 2021.

4.5 Other non-monetary changes

Other non-monetary changes had an effect of €1,150 million in 2021, compared to -€1,126 million in 2020, and mainly comprise changes in the fair value of debt instruments and new leases (IFRS 16).

4.6 Financial ratios

	2021	**2020**	**2019**
Net indebtedness/EBITDA	2.39	2.61	2.46
Net indebtedness/(Net indebtedness + equity) (1)	41%	43%	42%

(1) Equity including non-controlling interests.

(1) *The pound sterling rose by 7.0% against the Euro, from €1.112 /£1 at 31 December 2020 to €1.190 /£1 at 31 December 2021.*
The US dollar rose by 8.3% against the Euro, from €0.815/$1 at 31 December 2020 to €0.883/$1 at 31 December 2021.

5 SUBSEQUENT EVENTS

- **Exceptional regulatory measures to limit tariff increases in 2022 [(1)]**
  - Additional allocation of 20TWh of ARENH volumes [(2)] for 2022
  - 12-month postponement to February 2023 of part of the price increase relative to 2022 [(3)]

- **Nuclear**
  - Outages or extended outages of nuclear reactors owing to the detection of defaults on pipes in the safety injection system
  - French nuclear output estimate updated to 295 - 315TWh for 2022 [(4)] and 300 - 330TWh for 2023 [(5)]

- Signature of an exclusive agreement with GE to acquire part of GE Steam Power's nuclear activities [(6)], excluding the American continent

- **Announcements by the French President on 10 February 2022 in Belfort**
  - Support to the French nuclear sector:
    - launch of a construction program of 6 EPR2 reactors and potentially 8 more
    - extended operations for all reactors except for safety issues
    - development of the French SMR programme, including €500 million for NUWARD™
  - Acceleration in renewable energy development (solar, offshore and onshore wind and hydro)
  - Confirmation of the growing role of low-carbon electricity in France's climate ambition, in a context of reduction in energy consumption

- **2022**
  - EDF draw attention to the 2022 EBITDA. Starting from a 2021 base of €18bn, this figure will include:
    - around €6bn improvement in price effect
    - around -€8bn related to exceptional regulatory measures [(7)]
    - around -€11bn linked to nuclear output reduction
    - and other effects due to the Group's performance

These estimates, which are highly sensitive to market prices, are presented for illustrative purposes [(8)] and are based on current information that the Group has currently available.

- **Launch of an action plan**

As announced on 13 January 2022 [(9)], EDF presented to its Board of Directors 'meeting on 17 February 2022 an action plan aimed at strengthening its balance sheet structure in the context of the events of early 2022.

This plan aims at pursuing the Group's strategy, which is based on a balanced mix of nuclear and renewable energies, develops energy efficiency services and provides its customers with even more innovation.

In order to finance this strategy, EDF notified its intention to:

- Submit as soon as possible to the Board of Directors, and subject to market conditions, a proposed rights issue with preferential subscription rights leading to the issuance of approximately 510 million new shares for an amount of approximately €2.5 billion, including issue premium [(10)].
- Propose an option to receive a script dividend [(11)] for fiscal years 2022 and 2023.

The French State, EDF's largest shareholder, has indicated its position to the Board of Directors on the two points above, which will be communicated separately.

- Carry out additional disposals of around €3 billion [(12)] over 2022 - 2024.

(1) See the press release of 13 January 2022 and note 23 to the 2021 consolidated financial statements
(2) ARENH: Regulated access to historic nuclear power. Attribution of an additional 20TWh for the period 1 April to 31 December 2022 at €46.2/MWh.
(3) For regulated sales tariffs to residential customers, "blue" tariffs and all customers (both residential professional) located in non-interconnected zones.
(4) See the press release of 13 January 2022 and 7 February 2022
(5) See the press release of 11 February 2022
(6) See the press release of 10 February 2022
(7) This amount includes an estimate of the impact of the tariff postponement on the 2022 cashflow amounting to approximately €1.5bn, based on market prices at 31 December 2021
(8) Base on the assumption of 31 December 2021 forward prices for 2022
(9) See 13 January 2022 press release "Exceptional measures announced by the French government".
(10) Base on, purely for illustrative purpose, a reference share price of €8 per share and a discount in line with market practice
(11) Target payout ratio of net income excluding non-recurring items (adjusted for the remuneration of hybrid bonds accounted for in equity) for 2022 and 2023 of 45-50%
(12) Signed or completed disposals: impact on the Group's economic debt reduction (S&P definition).

6 FINANCIAL OUTLOOK

2023 Ambitions [1]

- Net financial debt/EBITDA: ~ 3x
- Adjusted net debt/Adjusted EBITDA [2]: 4.5x to 5x

(1) Based on scope and exchange rates at 01/01/2022. At stable regulatory environment (ARENH ceiling at 100TWh), with the assumption of 31 December 2021 forward prices for 2023, and considering an assumption of French nuclear output 2022 and 2023 as announced in the press releases of 7 and 11 February 2022
(2) As per current S&P methodology

7 MANAGEMENT AND CONTROL OF MARKET RISKS

See section 2.2.2. "Management of financial and market risks" of the 2021 Universal Registered 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, interest rate, foreign exchange rate and equity risks), and the Group counterparty risk management policy set up by the EDF group. These principles apply only to EDF and operationally controlled subsidiaries or subsidiaries that do not benefit by law from specific guarantees of independent management such as Enedis. In compliance with IFRS 7, the following paragraphs describe the nature of risks resulting from financial instruments, based on analyses of sensitivities and credit (counterparty) risks.

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 (July 2015). 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*

7.1.1.1 Liquidity position

At 31 December 2021, the Group's liquidities, consisting of liquid assets, cash and cash equivalents, totalled €22,656 million and available credit lines amounted to €13,039 million.

At 31 December 2021, the Group's loans and other financial liabilities maturing within one year totalled €15,072 million and included €3,632 million relating to bonds, including accrued interest not yet due. This amount also comprises the negative cash position (including €2,691 million for margin calls on derivatives) and the liability relating to lease obligations (see note 18.3 to the 2021 consolidated financial statements). The associated requirements may when necessary be funded by the group's liquidities and available credit lines mentioned below, and other short-term resources mentioned below.

No Group company was in default on any borrowing at 31 December 2021.

7.1.1.2 Management of liquidity risk

The EDF group was able to meet its financing needs by conservative liquidity management and has obtained financing on satisfactory terms. On 26 May 2021, €1.25 billion of social hybrid notes were issued at the initial rate of 2.625%. On 23 November 2021, EDF issued a senior green bond for a total amount of €1.75 billion, with 12-year maturity and a fixed coupon of 1.000%, complemented on 30 November 2021 by a further issue of €100 million of senior green bonds, fungible with initial issue of 23 November 2021.

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

- the Group's cash pooling system, which centralises cash management for controlled subsidiaries. The subsidiaries' cash balances are made available to EDF SA in return for interest, so as to optimise the Group's cash management and provide subsidiaries with a system that guarantees them market-equivalent financial terms;
- centralisation of financing for controlled subsidiaries at the level of the Group's cash management department. Changes in subsidiaries' working capital are financed by this department 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*) and US commercial paper. For EDF, the ceilings for these programmes are €6 billion for French NEU CP commercial paper and $10 billion for US commercial paper;
- transfer of bond liabilities to banking counterparties under cash repurchase agreements

At 31 December 2021, the amount of the Group's commercial paper outstanding was €4,462 million for French commercial paper, and US$730 million for US commercial paper. 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 13.7 years at 31 December 2021, compared to 14.5 years at 31 December 2020.

At 31 December 2021, EDF SA had a total amount of €12,297 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 31 December 2021;
- 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 31 December 2021. The cost will be indexed on four Group ESG KPIs, with a particular focus on its social responsibility;
- bilateral lines representing an available amount of €6,397 million, with expiry dates extending to December 2026. The level of this available financing is reviewed very regularly to ensure the Group has sufficient backup credit facilities;
- credit lines with the European Investment Bank representing an available amount of €400 million. Five of these six credit lines were fully drawn at 31 December 2021, for amounts of €500 million, €225 million, €500 million, €250 million and €400 million.

Edison has notably a credit line with the European Investment Bank (available amount €300 million at 31 December 2021).

7.1.2 *Credit rating*

At 18 February 2022, the financial rating 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 measures concerning changes in regulated electricity tariffs and 2022 nuclear power output.

Company	Agency	Long-term rating	Short-term rating
EDF	Standard & Poor's	BBB+/CreditWatch Negative	A-2
	Moody's	A3/on review for downgrade	P-2
	Fitch Ratings	BBB+/Rating Watch Negative	F2
EDF Trading	Moody's	Baa2/on review for downgrade	n. a.
EDF Energy	Standard & Poor's	BB+/CreditWatch Negative	B
	Moody's	Baa2/on review for downgrade	n. a.
	Fitch Ratings	BBB/Rating Watch Negative	n. a.
Edison	Standard & Poor's	BBB/stable outlook	A-2
	Moody's	Baa2/on review for downgrade	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 31 December 2021 breaks down as follows by currency after hedging:

GROSS DEBT STRUCTURE AT 31 DECEMBER 2021, BY CURRENCY BEFORE AND AFTER HEDGING

31 December 2021 *(in millions of euros)*	**Initial debt structure**	**Impact of hedging instruments***	**Debt structure after hedges**	**% of debt**
Borrowings in euros (EUR)	38,003	11,119	49,122	71%
Borrowings in US dollars (USD)	18,128	(12,910)	5,218	8%
Borrowings in pounds sterling (GBP)	10,018	2,410	12,428	18%
Borrowings in other currencies	3,257	(619)	2,638	4%
TOTAL DEBT	**69,406**	**-**	**69,406**	**100%**

** Hedges of liabilities and net foreign investment.*

The table below presents the impact on equity of a variation in exchange rates on the Group's gross debt at 31 December 2021:

EXCHANGE RATE SENSITIVITY OF THE GROUP'S GROSS DEBT

31 December 2021 *(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)	49,122	-	49,122
Borrowings in US dollars (USD)	5,218	522	5,740
Borrowings in pounds sterling (GBP)	12,428	1,243	13,671
Borrowings in other currencies	2,638	264	2,902
TOTAL DEBT	**69,406**	**6,941**	**76,347**

Due to the Group's hedging policy for foreign exchange risk on the Group's gross debt, the income statement of 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

31 December 2021 * *(in millions of currency units)*	**Net assets**	**Bonds**	**Derivatives**	**Net assets after management**
USD	4,075	1,450	1,997	628
CHF (Switzerland)	21	-	21	-
PLN (Poland)	281	-	153	128
GBP (United Kingdom)	21,049	5,435	4,825	10,789
BRL (Brazil)	1,471	-	-	1,471
CNY (China)	10,615	-	6,610	4,005

* *Net assets as at 31 December 2021; bonds and derivatives as at 31 December 2021. 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

The following table sets forth the risk for equity of foreign exchange losses on net assets in foreign currencies of the Group's principal subsidiaries at 31 December 2021, assuming unfavourable, uniform exchange rate variations of 10% against the Euro. Net assets are converted at the closing rate and impacts are reported in absolute value.

EXCHANGE RATE SENSITIVITY OF NET ASSETS

	At 31 December 2021			**At 31 December 2020**		
(in millions of currency units)	**Net assets after management into currency**	**Net assets after management converted into Euros**	**Impact on equity of a 10% variation in exchange rates**	**Net assets after management into currency**	**Net assets after management converted into Euros**	**Impact on equity of a 10% variation in exchange rates**
USD	628	554	55	1,923	1,567	157
CHF (Switzerland)	-	-	-	2	2	-
PLN (Poland)	128	28	3	132	29	3
GBP (United Kingdom)	10,789	12,840	1,284	10,678	11,877	1,188
BRL (Brazil)	1,471	233	23	1,371	215	22
CNY (China)	4,005	557	56	11,026	1,374	137

The foreign exchange risk on debt and equity securities is mostly concentrated in EDF's dedicated asset portfolio, which is detailed in section 7.1.6.

The foreign exchange risk associated with short-term investments and operating liabilities in foreign currencies remains under control for the Group at 31 December 2021.

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.

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 31 December 2021 comprised 70% at fixed rates and 30% at floating rates.

A 1% uniform annual rise in interest rates would generate an approximate €205 million increase in financial expenses at 31 December 2021, based on gross floating-rate debt after hedging.

The average cost of Group debt (weighted interest rate on outstanding amounts) was 2.06% at 31 December 2021.

STRUCTURE AND INTEREST RATE SENSITIVITY OF GROUP DEBT

31 December 2021 *(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	64,335	(15,434)	48,901	-
Floating rate	5,071	15,434	20,505	205
TOTAL	**69,406**	**-**	**69,406**	**205**

Concerning financial assets, the table below presents the interest rate risk on the floating-rate notes (FRN) held by EDF, and their sensitivity to interest rate risks (impact on net income).

INTEREST RATE SENSITIVITY OF FLOATING-RATE INSTRUMENTS

31 December 2021 *(in millions of euros)*	**Value**	**Impact on income of a 1% variation of interest rates**	**Value after a 1% variation in interest rates**
FLOATING-RATE INSTRUMENTS	**370**	**(4)**	**366**

The Group's interest rate risk notably relates to the value of the Group's long-term nuclear obligations (see note 15 to the 2021 consolidated financial statements) and its pension and other specific employee benefit obligations (see note 16 to the 2021 consolidated financial statements), 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 8.1.6).

7.1.5 *Management of equity risk*

Coverage of EDF's nuclear obligations

Analysis of the equity risk is presented in section 8.1.6.

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.

32.3% of the assets covering EDF SA's employee benefit obligations were invested in equities at 31 December 2021, representing an amount of €4.2 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). This fund is invested to the extent of 10.1% in equities and equity funds (excluding diversified growth funds), representing an amount of £1,114 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 for secure financing of its long-term nuclear obligations. The Law of 28 June 2006, codified in France's Environment code (articles L594-1 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 15.1.2 to the 2021 consolidated financial statements, "EDF's dedicated assets".

The dedicated asset portfolio is managed under the supervision of the Board of Directors and its advisory committees (Nuclear commitments monitoring committee (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 expenses. Strategic allocation is validated by EDF's Board of Directors and reviewed every three years unless circumstances require otherwise. A new strategic allocation was validated 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 31 December 2021, the total value of the portfolio was €37,454 million compared to €33,848 million in 2020. Changes in dedicated assets in 2021 are described in note 15.1.2.1 to the 2021 consolidated financial statements, and details of their realisable value and book value are also presented in note 15.1.2.2.

CONTENT AND PERFORMANCE OF EDF'S DEDICATED ASSET PORTFOLIO

	31/12/2021			31/12/2020		
(in millions of euros)	**Share of portfolio**	**Stock market or realisable value**	**Performance for 2021**	**Share of portfolio**	**Stock market or realisable value**	**Performance for 2020**
Yield assets	21.1%	7,908	17.1%	19.0%	6,420	2.3%
Growth assets	40.9%	15,320	22.6%	40.5%	13,692	10.3%
Fixed-income assets	38.0%	14,226	-0.7%	40.5%	13,736	4.1%
TOTAL DEDICATED ASSETS	**100%**	**37,454**	**11.9%**	**100%**	**33,848**	**5.9%**

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 €14,801 million at 31 December 2021. The volatility of the listed equities at the same date was 10.93% based on 52 weekly performances, compared to 26.6% at 31 December 2020. Applying this volatility to the value of listed equity assets at 31 December 2021, the Group estimates the annual volatility of the equities portion of dedicated assets at €1,618 million.

At 31 December 2021, the sensitivity of the listed bonds (€13,011 million) was 5.3, i.e. a uniform 100 base point rise in interest rates would result in a €685 million decline in market value. This sensitivity was 5.5 at 31 December 2020.

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 3.7% discount rate used to calculate nuclear provisions at 31 December 2021 (see note 15.1.1.5 to the 2021 consolidated financial statements).

The average annualised performance of dedicated assets since 2004, the year when their value first exceeded €1 billion, was 6.5% at 31 December 2021.

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 cover assets may be made in 2022 (see note 17.1 to the 2021 consolidated financial statements).

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

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

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 30 September 2021, 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 31/03/2021	91%	8%	1%	100%
At 30/09/2021	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 31/03/2021	6%	1%	9%	76%	8%	100%
At 30/09/2021	7%	1%	10%	62%	20%	100%

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

For counterparties dealing with EDF's trading room, the CRFI department has drawn up a framework specifying counterparty authorisation procedures and the methodology for calculation of allocated limits. The level of exposure can be consulted in real time and is systematically monitored on a daily basis. The suitability of limits is reviewed without delay in the event of an alert or unfavourable development affecting a counterparty. 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 energy market risks, governing the various Group entities' asset portfolio management activities (energy generation, optimisation and sale), and trading for 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 principle*

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 consistent with the financial objectives, and thus direct operational management of energy market risks over market horizons (generally three years).

The basic principle for hedging 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, potentially with overweighting of year N-1 in view of liquidity constraints on the forward markets.

For electricity generated in France, EDF is exposed to very high uncertainty over its net exposure due to the fact that the ARENH scheme is optional and uncertainty regarding possible changes to the relevant regulations (the risk that the ceiling for volumes made available could be raised to 150TWh under the Energy and Climate law adopted in 2019). Since the volumes subscribed are only known

(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.

shortly before the delivery period, EDF is obliged to use assumptions for ARENH subscriptions. EDF thus remains subject to risks that the assumptions may not correspond to reality, such that during the year it could find itself obliged to sell reserved volumes that in the end were not actually subscribed, or conversely to purchase volumes sold before the ARENH bids took place on the assumption that there would be no subscriptions. Also, on 13 January 2022 the French government announced that EDF would have to sell an additional 20TWh to competitors under the ARENH scheme for the period 1 April to 31 December 2022 at the price of €46.2/MWh. The practicalities of its implementation remain to be defined in detail, but this decision exposes EDF to a risk of loss equivalent to the difference between the market price of volumes purchased on the wholesale markets and the price of €46.2/MWh.

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 Group's exposure to energy market risks through 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 system, generation plant availability, and customer consumption). In view of the controls of the nuclear fleet announced on 13 January 2022, and announcements of additional ARENH volumes, the volume risk in France is particularly high for 2022.

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 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 risk limits (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 2021, EDF Trading's commitment on the markets was subject to a VaR limit of €35 million from 1 January to 31 October, then €70 million from 1 November, a CaR limit for long-term contracts and a CaR limit for operations on illiquid markets of €250 million each throughout the year, and a stop-loss limit of €180 million from 1 January to 31 October, then €210 million from 1 November.

In an extremely volatile market environment, the VaR and stop-loss limits were exceeded during the second half of 2021, triggering the procedures defined for such situations. Both indicators had returned below their limits at 31 December 2021.

For an analysis of fair value hedges of the Group's commodities, see note 6 to the 2021 consolidated financial statements. For details of commodity derivatives, see note 18.7.4 to the 2021 consolidated financial statements.

8 TRANSACTIONS WITH RELATED PARTIES

The types of transaction undertaken with related parties are detailed in note 22 to the 2021 consolidated financial statements, "Related parties".

9 SCOPE OF CONSOLIDATION

A list of all consolidated companies at 31 December 2021 is presented in note 3 to the 2021 consolidated financial statements; "Scope of consolidation".

(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.