

Rosefield Solar Farm

Funding Statement

EN010158/APP/4.2
September 2025
Rosefield Energyfarm Ltd

APFP Regulation 5(2)(h)
Planning Act 2008
Infrastructure Planning
(Applications: Prescribed Forms
and Procedure) Regulations 2009



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1. The Scheme

1.1. Introduction

- 1.1.1. This Funding Statement has been prepared by Rosefield Energyfarm Limited (the **Applicant**). It forms part of the DCO Application (the **DCO Application**) for a development consent order (**DCO**) that has been submitted to the Secretary of State for Energy Security and Net Zero (the **Secretary of State**) under section 37 of the Planning Act 2008.

1.2. The Proposed Development

- 1.2.1. Rosefield Solar Farm is a proposed solar farm which will generate renewable energy for exporting to the National Grid (the **Proposed Development**).
- 1.2.2. It will comprise of the construction, operation (including maintenance), and decommissioning of solar photovoltaic (**PV**) development and energy storage, together with associated infrastructure and an underground cable connection to the National Grid East Claydon Substation.
- 1.2.3. The Proposed Development would include a generating station with a total exporting capacity exceeding 50 megawatts (**MW**). The agreed grid connection for the Proposed Development would allow the export and import of up to 500MW of electricity to the grid.
- 1.2.4. The location of the Proposed Development is shown on **Environmental Statement (ES) Volume 3, Figure 1.1: Location Plan [EN010158/APP/6.3]**. The Proposed Development would be located within the Order Limits (the land shown on the **Works Plans [EN010158/APP/2.3]** within which the Proposed Development can be carried out). The Order Limits plan is provided as **ES Volume 3, Figure 1.2: Order Limits [EN010158/APP/6.3]**. A summary of the description of the Proposed Development can be found in the **ES Volume 1: Chapter 3 [EN010158/APP/6.1]**.
- 1.2.5. The Proposed Development qualifies as a Nationally Significant Infrastructure Project (**NSIP**) and will require a DCO to be granted from the Secretary of State, due to its generating capacity exceeding 50 MW.

1.3. Purpose and structure of this document

- 1.3.1. This Statement has been produced pursuant to Regulation 5(2)(h) of the Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009 (the **APFP Regulations**) and the Department of Communities and Local Government guidance 'Planning Act 2008: Guidance related to procedures for the compulsory acquisition of land' (September 2013).
- 1.3.2. This Statement is required because the DCO sought for the Proposed Development would authorise the compulsory acquisition of land or interests in land. This gives rise to the requirement under Regulation 5(2)(h) of the APFP

Regulations for the Applicant to provide a statement indicating how the DCO containing these powers is proposed to be funded. While this Statement confirms at Section 2.2 that the cost estimate for the Proposed Development includes decommissioning costs, this is to pre-empt any question of the Applicant being in a position to fund decommissioning (as has been raised during the examination of recent solar farm projects). The Applicant maintains that including this is not required because there is no statutory or policy requirement that requires an applicant to evidence how it would fund decommissioning of a project.

- 1.3.3. This Statement is one of a number of documents accompanying the DCO Application submitted to the Secretary of State. It should be read in conjunction with the rest of the documents comprising the DCO Application, particularly the **Statement of Reasons [EN010158/APP/4.1]**.

2. Funding

2.1. Corporate structure

- 2.1.1. The Applicant for the DCO Application, Rosefield Energyfarm Limited (company number 11618221), is registered in England and Wales. The majority shareholder of the Applicant, with 51% ownership, is EDF Energy Renewables Limited (**EDF Renewables**), a company registered in England and Wales under company number 06456689.
- 2.1.2. The other shareholder of the Applicant, with 49% ownership, is Padero Solaer Ltd (**Padero**) trading as PS Renewables. This is a company registered in England and Wales under company number 08021337.
- 2.1.3. EDF Renewables (and the wider EDF Group) has more than 25 years' worth of experience in delivering renewable energy projects in more than 20 countries around the world. As of 31 December 2024, EDF Renewables had gross installed capacity of 23.2GW across wind, solar and storage, net installed capacity of 14.2GW and 8.4GW gross currently under construction. The portfolio of projects, which are under development and secured, represented 71GW at the end of 2024.
- 2.1.4. Established in 2012, PS Renewables is one of the UK's largest renewable energy development and construction companies, with an existing solar portfolio totalling more than 1.35GW.
- 2.1.5. A detailed ownership structure diagram is shown in the organogram at **Appendix A**.

2.2. Estimated cost of the Proposed Development

- 2.2.1. The current cost estimate of the Proposed Development is approximately £300m - £400m.
- 2.2.2. This estimate has been arrived at by including construction costs, preparation costs, supervision costs, land acquisition costs (including compensation payable in respect of any compulsory acquisition), equipment purchase, installation, commissioning, power export and decommissioning.
- 2.2.3. The estimate also includes an allowance for inflation and project contingencies and has taken account of costs of inflation.

2.3. Funding for the Proposed Development

- 2.3.1. The Proposed Development may be funded on balance sheet or by leveraging debt from reputable lenders. We have provided the latest financial statements for EDF Renewables, being the majority shareholder of the Applicant. These show the financial robustness of EDF Renewables which is ultimately supported by its parent EDF SA. Combined cash and cash equivalents as at 31 December 2024 of the EDF Group were €7,597m, as shown in **Appendix B – Financial**

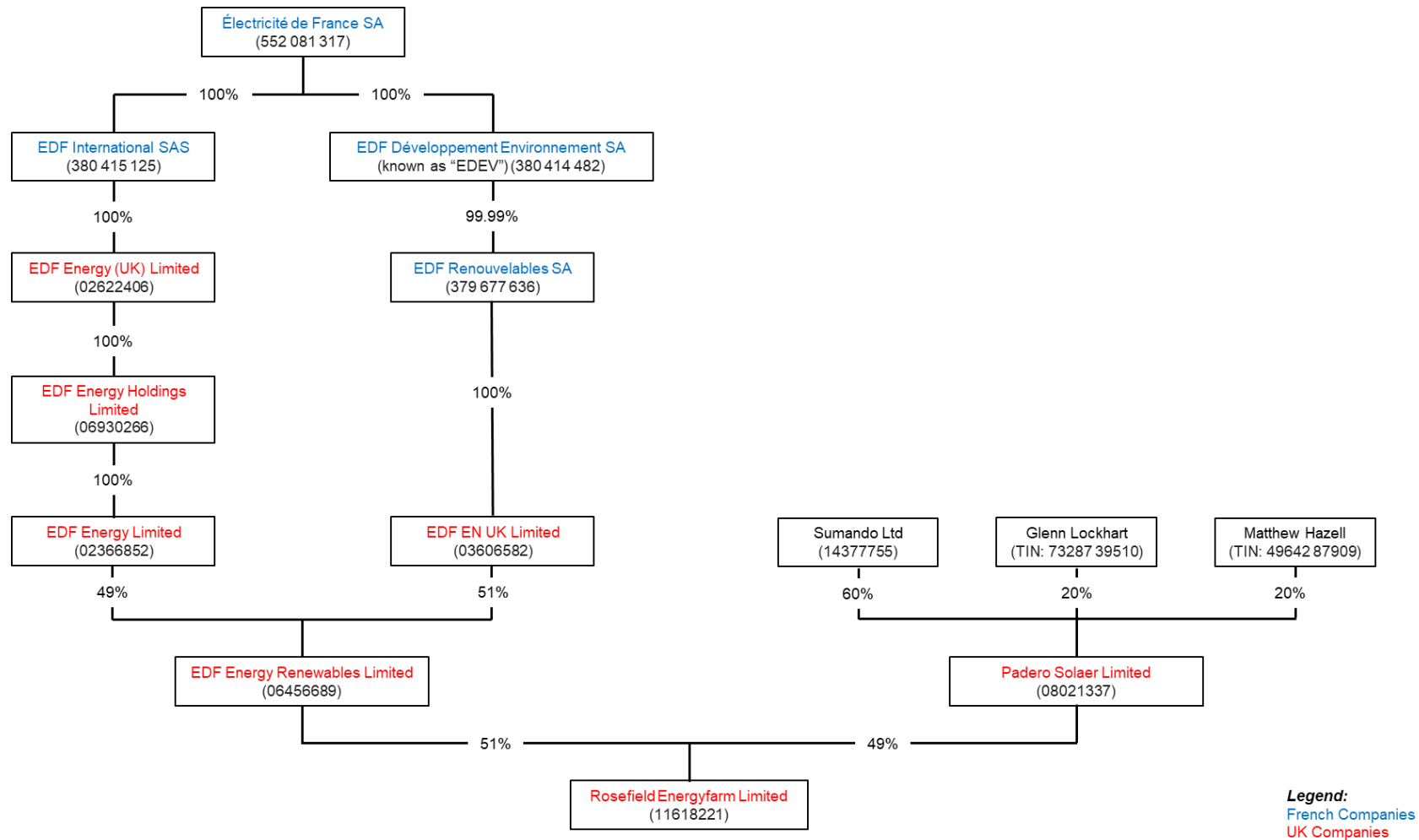
statements of EDF Renewables and EDF Group. This is approximately over £6,383m.

- 2.3.2. Once the DCO for the Proposed Development is granted the final investment decision would be made by the Applicant. Following a final investment decision, the owners will commit funding to the Applicant for financing of the construction phase of the Proposed Development in accordance with their respective obligations under the shareholders agreement entered into by them.
- 2.3.3. As can be seen from the above, the Applicant, through its owners, has sufficient funds to finance the estimated cost of the Proposed Development.
- 2.3.4. The Applicant has appointed a number of professional advisors in connection with the development of the Proposed Development, including solicitors, project managers and technical consultants, all of whom have extensive experience of working with projects similar to the Proposed Development. The Applicant is confident that the Proposed Development is commercially viable through its own detailed analysis and having taken the advice of these professional advisors.

2.4. Land acquisition and blight

- 2.4.1. The delivery of the Proposed Development requires the acquisition of land or rights (including the creation of rights and the imposition of restrictions) in, under, over land, and the temporary possession of land.
- 2.4.2. As set out in the **Statement of Reasons [EN010158/APP/4.1]**, the Applicant has already secured an option agreement over the majority of the site. The Applicant also has agreed Heads of Terms and is finalising the option and lease agreement for the remainder of the site. There is, however, an area required for abnormal loads access. The Applicant has made an offer for the purchase of this land, but no agreement has yet been reached. The Applicant will continue to engage with the relevant landowner.
- 2.4.3. The current cost estimate of the Proposed Development is £300m - £400m. As mentioned above, this includes an amount to cover the compensation payable in respect of any compulsory acquisition included in the DCO and required for the Proposed Development.
- 2.4.4. Should any claims for blight arise because of the DCO Application, the Applicant, has sufficient funds to meet the cost of acquiring these interests at whatever stage they are served. However, the Applicant has not identified any interests which it considers could be eligible to serve a blight notice.

Appendix A – Rosefield Energyfarm Limited Organogram



Appendix B – Financial Statements of EDF Renewables and EDF SA

**CONSOLIDATED FINANCIAL STATEMENTS
AT 31 DECEMBER 2024**

Consolidated income statement

(in millions of euros)	Notes	2024	2023
Sales	5.1	118,690	139,715
Fuel and energy purchases	5.2	(54,217)	(80,989)
Other external expenses ⁽¹⁾		(10,798)	(10,493)
Personnel expenses	5.3	(16,916)	(15,470)
Taxes other than income taxes	5.4	(4,142)	(4,064)
Other operating income and expenses	5.5	3,906	11,228
Operating profit before depreciation and amortisation	5	36,523	39,927
Net changes in fair value on energy and commodity derivatives, excluding trading activities	6	443	363
Net depreciation and amortisation		(11,970)	(11,161)
(Impairment)/reversals	10.7	(1,835)	(13,011)
Other income and expenses	7	(4,834)	(2,944)
Operating profit		18,327	13,174
Cost of gross financial indebtedness	8.1	(4,094)	(3,830)
Discount effect	8.2	(3,190)	(3,988)
Other financial income and expenses	8.3	6,352	4,469
Financial result	8	(932)	(3,349)
Income before taxes of consolidated companies		17,395	9,825
Income taxes	9	(4,887)	(2,470)
Share in net income of associates and joint ventures	12	(683)	257
Net income of discontinued operations		29	-
CONSOLIDATED NET INCOME		11,854	7,612
EDF net income		11,406	10,016
EDF net income - continuing operations		11,378	10,016
EDF net income - discontinued operations		28	-
Net income attributable to non-controlling interests		448	(2,404)
Net income attributable to non-controlling interests - continuing operations		447	(2,404)
Net income attributable to non-controlling interests - discontinued operations		1	-

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

Consolidated statement of comprehensive income

(in millions of euros)	Notes	2024			2023		
		EDF's share	Non-controlling interests	Total	EDF's share	Non-controlling interests	Total
Consolidated net income		11,406	448	11,854	10,016	(2,404)	7,612
Fair value of cash flow hedges							
Fair value of cash flow hedges - gross change	18.7.5	2,146	(7)	2,139	7,089	77	7,166
Fair value of cash flow hedges - tax effects		(534)	1	(533)	(1,844)	(18)	(1,862)
Fair value of net investment hedges							
Fair value of net investment hedges - gross change	18.7.5	(666)	-	(666)	(107)	-	(107)
Fair value of net investment hedges - tax effects		10	-	10	23	-	23
Change in fair value of debt instruments							
Gross change in fair value of debt instruments	18.1.2	539	-	539	970	-	970
Related tax effect		(139)	-	(139)	(247)	-	(247)
Fair value of hedging costs (foreign currency basis spread)							
Fair value of hedging costs (foreign currency basis spread) - gross change	18.7.5	133	-	133	(126)	-	(126)
Fair value of hedging costs (foreign currency basis spread) - tax effects		(34)	-	(34)	32	-	32
Translation adjustments - controlled entities		1,356	385	1,741	326	204	530
Share in net income of associates and joint ventures - items that can be recycled to profit and loss		166	(7)	159	(244)	(12)	(256)
Gains and losses recorded in equity with recycling		2,977	372	3,349	5,872	251	6,123
Change in fair value of equity instruments							
Gross change in fair value of equity instruments	18.1.2	8	-	8	46	1	47
Related tax effect		-	-	-	-	-	-
Change in actuarial gains and losses on post-employment benefits							
Gross change in actuarial gains and losses on post-employment benefits	16.1.3	(791)	67	(724)	564	(151)	413
Related tax effect		7	(19)	(12)	164	35	199
Share in net income of associates and joint ventures - items that cannot be recycled to profit and loss		149	-	149	(19)	-	(19)
Gains and losses recorded in equity with no recycling		(627)	48	(579)	755	(115)	640
Total gains and losses recorded in equity		2,350	420	2,770	6,627	136	6,763
CONSOLIDATED COMPREHENSIVE INCOME		13,756	868	14,624	16,643	(2,268)	14,375
Comprehensive income of continuing operations		13,727	868	14,595	16,643	(2,268)	14,375
Comprehensive income of discontinued operations		29	-	29	-	-	-

Consolidated balance sheet

ASSETS	Notes	31/12/2024	31/12/2023
(in millions of euros)			
Goodwill	10.1	7,108	7,895
Other intangible assets	10.2	12,567	11,300
Property, plant and equipment used in generation and other tangible assets, including right-of-use assets	10.3	108,100	100,587
Property, plant and equipment operated under French public electricity distribution concessions	11.1	68,663	66,128
Property, plant and equipment operated under concessions other than French public electricity distribution concessions	10.5	6,616	6,544
Investments in associates and joint ventures	12	10,167	9,037
Non-current financial assets	18.1	55,951	48,327
Other non-current receivables	13.4	1,979	2,110
Deferred tax assets	9.3	4,553	7,403
Non-current assets		275,704	259,331
Inventories	13.2	19,248	18,092
Trade receivables	13.3	24,139	26,833
Current financial assets	18.1	26,739	39,442
Current tax assets		834	669
Other current receivables	13.4	10,355	9,074
Cash and cash equivalents	18.2	7,597	10,775
Current assets		88,912	104,885
Assets classified as held for sale	3.2	589	596
TOTAL ASSETS		365,205	364,812
EQUITY AND LIABILITIES	Notes	31/12/2024	31/12/2023
(in millions of euros)			
Capital	14	2,084	2,084
EDF net income and consolidated reserves		60,771	50,084
Equity (EDF share)		62,855	52,168
Equity (non-controlling interests)	14.4	11,029	11,951
Total equity	14	73,884	64,119
Provisions related to nuclear generation - back-end of the nuclear cycle, plant decommissioning and last cores	15	68,829	60,206
Provisions for employee benefits	16	17,284	15,895
Other provisions	17	6,022	4,878
Non-current provisions		92,135	80,979
Special French public electricity distribution concession liabilities	11.2	50,603	50,010
Non-current financial liabilities	18.3	71,096	69,724
Other non-current liabilities	13.6	6,039	5,685
Deferred tax liabilities	9.3	1,070	978
Non-current liabilities		220,943	207,376
Current provisions	15, 16.1 and 17	6,920	7,294
Trade payables	13.5	19,466	19,687
Current financial liabilities	18.3	18,888	38,103
Current tax liabilities		351	1,111
Other current liabilities	13.6	24,631	26,975
Current liabilities		70,256	93,170
Liabilities classified as held for sale	3.2	122	147
TOTAL EQUITY AND LIABILITIES		365,205	364,812

Consolidated cash flow statement

(in millions of euros)	Notes	2024	2023
Operating activities:			
Consolidated net income		11,854	7,612
Net income of discontinued operations		29	-
Net income of continuing operations		11,825	7,612
Impairment/(reversals)	10.7.1	1,835	13,011
Accumulated depreciation and amortisation, provisions and changes in fair value		14,027	18,116
Financial income and expenses		1,076	1,934
Dividends received from associates and joint ventures		582	702
Capital gains/losses		141	234
Income taxes	9	4,887	2,470
Share in net income of associates and joint ventures	12	683	(257)
Change in working capital	13.1	(1,452)	(7,785)
Net cash flow from operations		33,604	36,037
Net financial expenses disbursed ⁽¹⁾		(2,362)	(2,241)
Income taxes paid		(3,384)	(3,695)
Net cash flow from continuing operating activities		27,858	30,101
Net cash flow from operating activities relating to discontinued operations		29	-
Net cash flow from operating activities		27,887	30,101
Investing activities:			
Acquisitions of equity investments, net of cash acquired		(557)	(181)
Disposals of equity investments, net of cash transferred		88	227
Investments in intangible assets and property, plant and equipment	10.6	(24,779)	(21,021)
Net proceeds from sale of intangible assets and property, plant and equipment		148	126
Changes in financial assets		1,140	(2,196)
Net cash flow from continuing investing activities		(23,960)	(23,045)
Net cash flow from investing activities relating to discontinued operations		(29)	-
Net cash flow from investing activities		(23,989)	(23,045)
Financing activities:			
EDF capital increase		-	-
Transactions with non-controlling interests ⁽²⁾		2,840	1,746
Dividends paid by parent company		-	-
Dividends paid to non-controlling interests		(670)	(482)
Cash flows with shareholders		2,170	1,264
Issuance of borrowings	18.3.2.1	15,385	11,947
Repayment of borrowings ⁽³⁾	18.3.2.1	(26,564)	(21,712)
Issuance of perpetual subordinated bonds	14.3	1,728	1,377
Remunerations paid to bearers of perpetual subordinated bonds	14.3	(582)	(630)
Funding contributions received for assets operated under concessions and investment subsidies		676	496
Other cash flows from financing activities		(9,357)	(8,522)
Net cash flow from continuing financing activities		(7,187)	(7,258)
Net cash flow from financing activities relating to discontinued operations		-	-
Net cash flow from financing activities		(7,187)	(7,258)
Net cash flow from continuing operations		(3,289)	(202)
Net cash flow from discontinued operations		-	-
Net increase/(decrease) in cash and cash equivalents		(3,289)	(202)
CASH AND CASH EQUIVALENTS - OPENING BALANCE		10,775	10,948
Net increase/(decrease) in cash and cash equivalents		(3,289)	(202)
Currency fluctuations		174	(53)
Other non-monetary changes		(63)	82
CASH AND CASH EQUIVALENTS - CLOSING BALANCE	18.2	7,597	10,775

(1) At 31 December 2024, "financial income on cash and cash equivalents", which was previously presented on a separate line detailing cash and cash equivalents, is reclassified and included in "Net financial expenses disbursed" in the amount of €351 million (€293 million in 2023). The 2023 comparative figures have been restated accordingly.

(2) In 2024, these transactions notably include a capital injection of €2,359 million by the UK government into the Sizewell C project (€485 million in 2023), a capital injection of €500 million by Natixis Belgique Investissements into EDF Investissements Groupe, and the purchase of Assystem's minority interests in Framatome for €(205) million.

(3) Including €(3,031) for redemption of perpetual subordinated bonds in 2024 (€(2,789) million in 2023).

Change in consolidated equity

Details of the change in equity between 1 January and 31 December 2024 are as follows:

(in millions of euros)	Capital	Treasur y shares	Translation adjustments	Fair value adjustment of financial instruments (OCI with recycling) ⁽¹⁾	Other consolidated reserves and net income ⁽²⁾	Equity (EDF share)	Equity (non-controlling interests)	Total equity
EQUITY AS PUBLISHED AT 31/12/2022	1,944	(7)	(175)	(7,451)	40,029	34,340	12,272	46,612
Gains and losses recorded in equity	-	-	156	5,716	755	6,627	136	6,763
Net income	-	-	-	-	10,016	10,016	(2,404)	7,612
Consolidated comprehensive income	-	-	156	5,716	10,771	16,643	(2,268)	14,375
Remuneration on perpetual subordinated bonds	-	-	-	-	(630)	(630)	-	(630)
Issuance/Redemption of perpetual subordinated bonds and OCEANES	140	-	-	-	2,523	2,663	-	2,663
Dividends paid	-	-	-	-	-	-	(482)	(482)
Purchases/sales of treasury shares	-	7	-	-	-	7	-	7
Other changes ⁽³⁾	-	-	-	3	(858)	(855)	2,429	1,574
EQUITY AT 31/12/2023	2,084	-	(19)	(1,732)	51,835	52,168	11,951	64,119
Gains and losses recorded in equity	-	-	1,598	1,379	(627)	2,350	420	2,770
Net income	-	-	-	-	11,406	11,406	448	11,854
Consolidated comprehensive income	-	-	1,598	1,379	10,779	13,756	868	14,624
Remuneration on perpetual subordinated bonds	-	-	-	-	(582)	(582)	-	(582)
Issuance/Redemption of perpetual subordinated bonds (see note 14.3)	-	-	-	-	(1,962)	(1,962)	-	(1,962)
Dividends paid	-	-	-	-	-	-	(672)	(672)
Other changes ⁽³⁾	-	-	-	(4)	(521)	(525)	(1,118)	(1,642)
EQUITY AT 31/12/2024	2,084	-	1,579	(357)	59,549	62,855	11,029	73,884

(1) Changes in reserves recorded in OCI (Other Comprehensive Income) with recycling are shown in the Statement of Comprehensive Income. They correspond to the effects of fair value adjustments of debt securities and financial instruments hedging cash flows and net foreign investments, including amounts recycled to profit and loss in respect of unwound hedging contracts and debt instruments sold. They also include changes in the value of hedging costs resulting from the foreign currency basis spread on cross-currency swaps.

(2) Fair value changes recorded in OCI with no recycling are presented in this column.

(3) In 2024, "Other changes" in equity (non-controlling interests) notably include the increase in the UK government's percentage interest in the Sizewell C project in the United Kingdom for the amount of €2,971 million (€485 million in 2023) including €2,359 million through capital increases, a capital injection of €500 million by Natixis Belgique Investissements into EDF Investissements Groupe, and the loss of control over Sizewell C (Holding) Ltd (€(4,486) million) (see note 3.1.3).

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Notes to the consolidated financial statements

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

The consolidated financial statements reflect the accounting position of the Company and its subsidiaries (which together form the “Group”) and the Group’s interests in associates, joint arrangements classified as joint operations, and joint ventures, for the year ended 31 December 2024.

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

The Group’s consolidated financial statements at 31 December 2024 were prepared under the responsibility of the Board of Directors and approved by the Directors at the Board meeting held on 20 February 2025.

Note 1 Group accounting policies

1.1 Declaration of conformity and Group accounting policies

Pursuant to European regulation 1606/2002 of 19 July 2002 on the adoption of international accounting standards, the EDF group’s consolidated financial statements at 31 December 2024 are prepared under the presentation, recognition and measurement rules set out in the international accounting standards published by the IASB and approved by the European Union for application at 31 December 2024. These international standards are IAS (International Accounting Standards), IFRS (International Financial Reporting Standards), and SIC and IFRIC interpretations.

1.2 Changes in accounting standards

The parent company’s functional currency is the Euro. The Group’s financial statements are presented in millions of euros. As the totals in the tables are aggregates of figures that are not rounded up or down, there may be variances between these totals and the sum of their rounded up/down component figures.

The accounting and valuation methods applied by the Group in the consolidated financial statements at 31 December 2024 are identical to those used in the consolidated financial statements at 31 December 2023, with the exception of the changes presented below in notes 1.2.1 to 1.2.3. Information is also given on the standards, amendments and interpretations published by the IASB that are applicable for the Group from 1 January 2025 and have not been applied early in the 2024 consolidated financial statements, and others that will be applicable at a later date, in some cases subject to adoption by the European Union (note 1.2.3).

The accounting principles and methods used are described in individual notes to the financial statements.

1.2.1 Amendments to IAS 7 “Statement of cash flows” and IFRS 7 “Financial Instruments: Disclosures” - Supplier finance arrangements

In 2023 the IASB published an amendment to IAS 7 and IFRS 7 defining required quantitative and qualitative disclosures about supplier finance arrangements, to assess how such arrangements affect the entity’s liabilities and cash flows, and also its exposure to liquidity risk.

The Group provides the required disclosures in note 13.5. Application of these amendments has no material impact on the Group’s financial statements.

1.2.2 Amendments to IAS 1 “Presentation of financial statements” - Classification of liabilities as current or non-current and Non-current liabilities with covenants

The following amendments, applicable since 1 January 2024, have no impact on the Group’s financial statements:

- Classification of liabilities as current or non-current, which clarifies the principles for classifying a balance sheet liability as current or non-current;
- Non-current liabilities with covenants, which states that covenants with which an entity is required to comply after the closing date do not affect the classification of a liability as current or non-current at that date. This amendment aims to improve disclosures on long-term liabilities containing covenants.

1.2.3 Standards published by the IASB and applicable for financial years beginning on or after 1 January 2025

IFRS 18 “Presentation and Disclosure in Financial Statements”

Application of IFRS 18, which was issued on 9 April 2024, is mandatory for financial years beginning on or after 1 January 2027. This standard sets out requirements concerning the presentation and disclosure of information in financial statements and will replace IAS 1 “Presentation of financial statements”.

Work is currently being done to identify the principal issues and impacts for the Group.

Other standards

The Group does not anticipate any material impact to result from the first application of the following amendments:

Applicable from 1 January 2025:

- Amendments to IAS 21 “The Effects of Changes in Foreign Exchange Rates” - Lack of Exchangeability: These amendments introduce information to help entities determine whether a currency is exchangeable for another currency, and when it is not exchangeable, the exchange rate to apply and the additional disclosures required.

Applicable from 1 January 2026:

- Annual improvements – Volume 11: Amendments to certain IFRS standards are issued every year under the IASB’s annual improvements process, to clarify wording and correct relatively minor unintended consequences, conflicts or oversights.
- Amendments to IFRS 9 and IFRS 7 - Amendments to the Classification and Measurement of Financial Instruments: On 30 May 2024 the IASB published amendments concerning the IFRS 9 classification and measurement requirements, to address diversity in accounting practices and make the requirements clearer and more coherent.

1.3 Basis for preparation of the financial statements

1.3.1 Valuation

The consolidated financial statements are prepared on a historical cost basis, with the exception of assets acquired and liabilities assumed through business combinations, and of certain financial instruments, which are stated at fair value.

1.3.2 Translation methods

1.3.2.1 Functional currency

An entity’s functional currency is the currency of the economic environment in which it primarily operates. In most cases, the local currency is the functional currency.

1.3.2.2 Translation of the financial statements of foreign companies whose functional currency is not the Euro

The financial statements of foreign companies whose functional currency is not the Euro are translated as follows:

- balance sheets are translated into Euros at the closing rate;
- income statements and cash flows are translated at the average rate for the period;
- resulting differences are recognised in equity under the heading “Translation adjustments”.

Translation adjustments affecting a monetary item that is an integral part of the Group’s net investment in a consolidated foreign company are included in consolidated equity until the disposal or liquidation of the net investment, at which date they are recognised as income or expenses in the income statement, in the same way as other exchange differences concerning the Company.

1.3.2.3 Translation of transactions in foreign currencies

In application of IAS 21, transactions expressed in foreign currencies are initially translated and recorded in the functional currency of the entity concerned, using the rate in force at the transaction date.

At each reporting date, monetary assets and liabilities expressed in foreign currencies are translated at the closing rate. The resulting foreign exchange differences are taken to the income statement.

However, any payment or receipt of a non-monetary advance in a foreign currency is translated at the exchange rate of the transaction date, with no subsequent adjustment.

1.3.3 Financial statement presentation rules

Assets and liabilities contributing to working capital used in the entity’s normal operating cycle are classified as current in the consolidated balance sheet. Other assets and liabilities are classified as current if they mature within one year of the closing date, and non-current if they mature more than one year after the closing date.

The income statement presents items by nature. The heading “Other income and expenses” presented below the operating profit before depreciation and amortisation comprises items of an unusual nature or amount.

1.3.4 Management judgements and estimates

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

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

The principal items for which the Group uses estimates and judgments are the following:

1.3.4.1 Depreciation periods of nuclear power plants in France

In the specific case of the depreciation period of its French nuclear power plants, the EDF group's industrial strategy is to continue operation beyond 40 years, in optimum conditions as regards safety and efficiency.

The Group has therefore been making preparations for several years to extend the operating lifetime and making the necessary investments under its *Grand Carénage* industrial refurbishment programme which was approved in principle by the Board of Directors in January 2015.

The depreciation period of 900MW-series power plants was extended from 40 years to 50 years in 2016 (except for Fessenheim where both reactors were permanently shut down in the first half of 2020) since all the technical, economic and governance conditions were fulfilled.

On 23 February 2021, the Nuclear Safety Authority (*Autorité de Sûreté Nucléaire* - ASN) issued a resolution on the conditions for continued operation of EDF's 900MW reactors beyond their fourth 10-year inspection. The ASN considered that "the measures planned by EDF combined with those prescribed by ASN open the prospect of continued operation of these reactors for a further ten years following their fourth 10-year inspection". This resolution ended the "generic" phase of the review, which concerned the studies and modifications of facilities common to all the 900MW reactors, which all have a similar design.

The fourth 10-year inspections have been completed at 21 of the 32 reactors in the 900MW series, including Bugey 3, Gravelines 2, Dampierre 3, Blayais 2, Chinon B1, Tricastin 4, Gravelines 4, Dampierre 4 and Blayais 3 in 2024, and one more is currently in process (Cruas 3).

In 2021, the technical, economic and governance conditions for extending the depreciation period of 1,300MW-series plants were fulfilled, and it was also extended from 40 to 50 years.

The depreciation period of the 1,450MW-series units (the four reactors at Chooz and Civaux), which are much more recent, currently remains at 40 years as the conditions for extension are not yet fulfilled.

These depreciation periods take into account the date of recoupling with the network after the most recent 10-year inspection.

Two preparatory analysis processes are currently under way concerning the extension of power plants' operating lifetimes beyond 50 years:

- for the fifth 10-year inspections of the 900MW series, EDF sent its proposed 10-year Inspection Guidelines to the ASN in June 2023 and the ASN issued its position on those guidelines in November 2024. EDF's written response concerning the objectives of these inspections will be submitted in late 2026. At the end of the process, in mid-2028 the ASN will issue its position regarding a further 10-year extension for operation of the 900MW reactors, based on the conclusions of the generic phase of the fifth 10-year inspections.
- operating lifetime analysis: A "long-term" reflection on plant operation beyond 60 years was initiated in 2023 for all series. It is included in the timetable set by the ASN, which will state its position in late 2026 after expert assessment and examination phases in 2025 and 2026 respectively.

1.3.4.2 Nuclear provisions

The measurement of provisions for the back-end of the nuclear cycle, decommissioning and last cores is sensitive to assumptions concerning technical processes, costs, inflation rates, long-term discount rates, the depreciation period of plants currently in operation and disbursement schedules.

These parameters are therefore re-estimated at each closing date to ensure that the amounts accrued correspond to the best estimate of the costs eventually to be borne by the Group.

The Group considers that the assumptions used at 31 December 2024 are appropriate and justified. However, any future change in assumptions could have a significant impact on the Group's financial statements (see note 15).

For France, the main assumptions and sensitivity analyses relating to EDF's nuclear provisions are presented in note 15.1.1.5.

The calculation of provisions incorporates a level of risks and unknowns as appropriate to the operations concerned, together with uncertainty factors such as:

- changes in the regulations, particularly on safety, security and environmental protection, and financing of long-term nuclear expenses;
- changes in the regulatory decommissioning process and the time necessary for issuance of administrative authorisation;
- future methods for storing long-lived radioactive waste and provision of storage facilities by the French agency for radioactive waste management ANDRA (*Agence nationale pour la gestion des déchets radioactifs*);
- changes in the contractual terms for spent fuel management and more generally the outlook for Orano's long-term industrial strategy in line with French energy policy, the operating performance of its installations, and the level of associated costs and investments;
- changes in certain financial parameters such as discount rates and/or inflation rates;
- the useful life of nuclear facilities (calculation of decommissioning provisions for nuclear plants in operation is based on the depreciation period of the assets concerned, i.e. 50 years for 900MW-series and 1,300MW-series power plants and 40 years for 1,450MW-series power plants).

1.3.4.3 Pensions and other long-term and post-employment benefit obligations

The value of pensions and other long-term and post-employment benefit obligations is based on actuarial valuations that are sensitive to all the actuarial assumptions used, particularly concerning discount rates, inflation rates and wage increase rates.

The principal actuarial assumptions used to calculate these post-employment and long-term benefits at 31 December 2024 are presented in note 16. These assumptions are updated annually. The Group considers the actuarial assumptions used at 31 December 2024 appropriate and well-founded, but future changes in these assumptions could have a significant effect on the amount of the obligations and the Group's equity and net income. Sensitivity analyses are therefore presented in note 16.

1.3.4.4 Impairment of goodwill and long-term assets

Impairment tests on goodwill and long-term assets are sensitive to the macro-economic and segment assumptions used, particularly concerning changes in energy prices, and to medium-term financial forecasts (discount and inflation rates) and completion costs for assets under construction. The Group therefore revises the underlying estimates and assumptions based on regularly updated information.

These assumptions, which are specific to Group companies, are presented in note 10.7.

1.3.4.5 Financial instruments

In measuring the fair value of unlisted financial instruments (principally the debt and equity securities included in dedicated assets, and energy contracts), the Group uses valuation models based on a certain number of assumptions subject to unforeseeable developments.

1.3.4.6 Energy supplied but not yet measured and billed

As explained in note 5.1, the quantities of energy supplied but not yet measured and billed are calculated at the reporting date based on statistic consumption models and selling price estimates. Determination of the unbilled portion of sales revenues at the year-end is sensitive to the assumptions used to prepare these statistics and estimates.

1.3.4.7 Obligations concerning French public distribution concession assets to be replaced

In view of the specific nature of French public electricity distribution concessions, the Group has opted to present its obligations to replace concession assets in the balance sheet at a value based on the amount of contractual commitments as calculated and disclosed to the concession-granting authorities in the annual business reports (see note 11). Measurement of the concession liabilities concerning assets to be replaced is notably subject to unforeseeable developments in terms of costs, the useful life of assets and disbursement dates.

1.3.4.8 Deferred tax assets

The use of estimates and assumptions over recovery horizons is particularly important in the recognition of deferred tax assets.

1.3.4.9 Sustainability issues

The Group is concerned by the effects of climate, biodiversity, resource management and waste management issues. These effects of these environmental issues are an implicit factor in application of the methods and models used to estimate the values of certain accounting items (see note 20), particularly impairment of non-financial assets.

1.3.4.10 Other judgements and estimates

When there is no standard or interpretation applicable to a specific transaction, the Group exercises judgment to define and apply accounting methods that supply relevant and reliable information for preparation of its financial statements.

For the application of IFRS 10 and IFRS 11, the Group uses judgment to assess control or classify the type of partnership arrangement represented by a jointly-controlled entity. For example, EDF has set up "reserved" investment funds (FCPRs) for some of its funds set aside for secure financing of nuclear plant decommissioning expenses and long-term storage expenses for radioactive waste (see note 15.1.2.2). In view of the funds' characteristics, the prerogatives exercised by their managers and the procedures for defining the management strategies applicable to them, the Group does not consolidate these investment funds. They are consequently treated as debt securities, in application of IFRS 9.

Through its subsidiary Luminus, the Group has a 49% stake in Luminus Seraing 2.0 SA. The governance and contractual agreements give Luminus exclusive control over this entity, which is fully consolidated in application of IFRS 10.

Through its subsidiary EDF Energy, the Group has a 16.23% stake in Sizewell C (Holding) Ltd, the holding company for the Sizewell C project (49.44% at 31 December 2023). The Group exercises significant influence over this company, mainly through having representation on its Board, and supplying it with technical information and equipment that are essential for project development. Sizewell C (Holding) Ltd was previously fully consolidated and is now accounted for by the equity method from 31 December 2024 (see note 3.1.3).

1.3.5 Restrictions on the Group's ability to access and use assets or settle liabilities

The main restrictions that may limit the Group's ability to access or use its assets or settle its liabilities concern the following items:

- assets held to fund employee benefits (principally in France and the United Kingdom – see note 16) and expenses related to nuclear liabilities (principally in France – see note 15.1.2 – and the United Kingdom – see note 15.2);
- tangible and intangible assets and the related liabilities associated with concession agreements, whether or not they are subject to regulatory mechanisms (obligations to supply energy or energy-related services, rules governing investments, an obligation to return concession facilities at the end of the contract, amounts payable at the end of the contract, tariff constraints, etc.). These restrictions mainly apply to assets of this type in France (EDF, Enedis, Électricité de Strasbourg and Dalkia), and to a lesser extent in Italy (see note 10.5);
- the disposal of Group investments in certain subsidiaries may require authorisations from State bodies, particularly when they exercise a regulated activity or operate nuclear power plants (this is the case for EDF Nuclear Generation Ltd. in the United Kingdom and Taishan (TNPJVC) in China);
- prudential reserves established and measures taken as regards distribution capacity, so that the insurance subsidiaries will meet their prudential ratio requirements;
- the cash of certain entities that use financing arrangements stipulating that dividend distribution is subject to conditions concerning repayment of bank debt (or qualification for loans) and shareholders, or are subject to regulatory limitations in certain countries.

Certain shareholder agreements concerning companies controlled by the Group include clauses to protect minority shareholders, requiring approval from minority shareholders for certain particularly important decisions.

Finally, certain financing loans granted to Group entities contain early repayment clauses (see note 18.3.4), and certain items of cash and cash equivalents are subject to restrictions (see note 18.2).

Note 2 Summary of significant events

The main significant events and transactions for the Group in 2024 are the following (references indicate the relevant notes in the 2024 consolidated financial statements):

• Nuclear developments:

- > Flamanville 3 EPR: Following issuance on 8 May 2024 of the French Nuclear Safety Authority's (ASN's) authorisation for commissioning of the Flamanville EPR, EDF's teams loaded 241 nuclear fuel assemblies into the reactor vessel between 8 and 15 May. On 2 September 2024, the ASN issued approval to proceed with the first nuclear reaction for the Flamanville 3 reactor. EDF carried out a large number of technical tests and brought the facilities into the required conditions allowing the start of nuclear fission. Its teams then conducted a programme of tests and controls for a gradual reactor ramp-up, and the Flamanville 3 reactor was coupled to France's national network on 21 December 2024. Following this initial coupling, testing and grid connection/disconnection phases will continue for several months, under the supervision of the ASN, until the reactor reaches 100% power (see the Group press releases of 8 May, 2 September, and 21 December 2024 and note 10.3);
- > Nuclear power output in France totalled 361.7TWh confirming the revised estimate announced by the Group on 11 December 2024 (upward adjustment from 340-360TWh to 358-364TWh) (see the Group press release of 11 December 2024);
- > EDF completed the acquisition of GE Steam Power's nuclear activities (now renamed Arabelle Solutions) on 31 May 2024 (see the Group press release of 31 May 2024 and note 3.1.2).

• Renewable energies:

- > EDF Renewables and its partners inaugurated the Fécamp offshore wind farm, with capacity of around 500MW (see the EDF Renewables press release of 15 May 2024);
- > EDF Renewables announced the construction of 1.2GW of renewable electricity production capacity in South Africa, consisting of 763MW of wind power, 355MW of solar power and 75MW of storage, for €1.65 billion. The various installations will be commissioned progressively between 2024 and 2026 (see the EDF Renewables press release of 21 May 2024);
- > CEME 1, Chile's largest solar power plant, was inaugurated on 8 July 2024. This 480 MW solar plant will be operated by Generadora Metropolitana, a joint venture between EDF and the Chilean company AME (see the Group press release of 9 July 2024);
- > EDF Renewables announced the commissioning of its largest wind farm in South America, the Serra do Seridó farm located in north-east Brazil which comprises 85 wind turbines with installed capacity of 480 MW (see the EDF Renewables press release of 18 July 2024);
- > EDF Renewables acquired its first offshore wind power project in South Korea, in the province of Yeonggwang. It will now continue to develop the project, which has maximum capacity of 1.5GW (see the EDF Renewables press release of 3 September 2024);
- > EDF started construction work for the Ricanto bioenergy plant in Corsica, consisting of 8 new-generation engines with total output of 130MW. This plant will run on liquid biomass and is to replace the Vazzio oil-fired power station (see the Group press release of 22 November 2024);
- > EDF Renewables announced that the 177MW Morris Ridge solar power plant in the United States had been commissioned (see the EDF Renewables press release of 20 December 2024).

• Financing operations:

The Group undertook several bond issues during 2024 totalling €6,672 million, including €3,329 million of green bonds (see note 18.3.2). On 5 July 2024 EDF redeemed the hybrid notes issued on 4 October 2018 with nominal value of €1,250 million. On 10 September 2024 EDF announced that it intended to exercise its redemption option on 29 January 2025 for the €1,250 million hybrid notes issued on 29 January 2013 with nominal value of €1,250 million, and this redemption was carried out on 29 January 2025 (see note 14.3).

• Corporate plan:

The Group has presented its corporate plan, "Ambitions 2035", to the Board of Directors: the objective is to build the electricity system of the future to serve its customers. Electricity is set to double its share of the worldwide energy mix by 2050 to meet decarbonisation targets, and flexibility solutions are being developed to cope with the intermittence of renewable energies and meet consumers' needs. This plan will advance decarbonisation in France and the other countries where the Group has operations. EDF is consolidating its position as a leader in the European energy sector for the 2035 horizon, wishing to lead the new electric revolution and build the electricity system of the future to provide its customers with low carbon, available and competitively-priced electricity.

Note 3 Scope of consolidation

ACCOUNTING PRINCIPLES AND METHODS

CONTROLLED ENTITIES

Subsidiaries are companies in which the Group exercises exclusive control and are fully consolidated. The Group controls an entity when the three following conditions are fulfilled:

- it holds power over the entity;
- it is exposed, or has rights, to variable returns from its involvement with the entity;
- it has the ability to use its power to affect the amount of the investor's returns.

The Group considers all facts and circumstances when assessing control. All substantive potential voting rights exercisable, including by another party, are also taken into consideration.

INVESTMENTS IN ASSOCIATES AND JOINT VENTURES

An associate is an entity in which the Group exercises significant influence on financial and operational policies without having exclusive or joint control. Significant influence is presumed to exist when the Group's investment is at least 20%.

A joint venture is a partnership in which the parties (joint venturers) that exercise joint control over the entity have rights to the entity's net assets. Joint control is the contractually agreed sharing of control of an entity operated jointly by a limited number of partners or shareholders, such that the financial and operational policies result from unanimous consent of the parties.

Investments in associates and joint ventures are accounted for by the equity method. They are carried in the balance sheet at historical cost, adjusted for the share in net assets generated after the acquisition, less any impairment. The share in the net income for the period is reported in "Share in net income of associates and joint ventures" in the income statement (see note 12).

INVESTMENTS IN JOINT OPERATIONS

A joint operation is a joint arrangement in which the parties (joint operators) that exercise joint control over the entity have direct rights to its assets, and obligations for its liabilities. The Group, as an operator in a joint operation, reports the assets and liabilities and income and expenses related to its investment line by line.

The Group's principal joint operations are the LNG optimisation activities of JERA Global Markets, co-owned by EDF Trading, and the gas storage operator activity carried out by Friedeburger Speicherbetriebsgesellschaft mbH (FSG).

BUSINESS COMBINATIONS

In application of IFRS 3 business combinations are measured and recognised under the following principles:

- at the date of acquisition, the identifiable assets acquired and liabilities assumed, measured at fair value, and any non-controlling interests in the company acquired (minority interests) are recorded separately from goodwill;
- non-controlling interests may be valued either at fair value (full goodwill method) or their share in the fair value of the net assets of the acquired company (partial goodwill method). The decision is made individually for each transaction;
- any acquisition or disposal of an investment in a subsidiary that does not affect control is considered as a transaction between shareholders and must be recorded directly in equity;
- if additional interests are acquired in a joint venture, joint operation or associate without resulting in acquisition of control, the value of the previously-acquired assets and liabilities remains unchanged in the consolidated financial statements;
- if control is acquired in stages, the cost of the business combination includes the fair value, at the date control is acquired, of the purchaser's previously-held interest in the acquired company;
- related costs directly attributable to an acquisition leading to control are treated as expenses for the periods in which they were incurred, except for issuance costs for debt securities or equity instruments, which must be recorded in compliance with IAS 32 and IFRS 9;
- IFRS 3 does not apply to common control business combinations, which are examined on a case-by-case basis to determine the appropriate accounting treatment;
- commitments given by the Group to purchase minority interests in Group-controlled companies are included in liabilities. The differential between the value of the non-controlling interests and the liability corresponding to the commitment is recorded in equity.

3.1 Changes in the scope of consolidation

3.1.1 Changes in the scope of consolidation

The following changes took place in the Group's scope of consolidation during 2024:

- acquisition on 25 January 2024 of the 5% of Framatome held by the minority shareholder Assystem, raising EDF's investment in the Framatome Group to 80.5% and in Edvance to 96.1%;
- acquisition on 31 January 2024 of a 50% share in Nordic Logistics (portfolio of warehouses in Sweden) for the purposes of the Group's dedicated asset management. This investment is accounted for by the equity method in the consolidated financial statements;
- acquisition on 8 February 2024, as part of a consortium, of a 40.05% stake in the Norwegian electric ferry operator Fjord1, for the purposes of the Group's dedicated asset management. This investment is accounted for by the equity method in the consolidated financial statements;
- acquisition on 31 May 2024 of GE Steam Power's nuclear activities. This subgroup is fully consolidated under the name Arabelle Solutions, and belongs to the Group's "Industry and Services" segment (see note 3.1.2);
- acquisition on 23 September 2024 of 50% of the shares of the real estate investment fund (OPPC) Parcolog Invest (a portfolio of logistics warehouses in France) for the purposes of the Group's dedicated asset management. This investment is accounted for by the equity method in the consolidated financial statements;
- acquisition on 6 December 2024 of 49% of the shares of the real estate partnership (SCI) Encore+ Bergère which owns an office building in Paris, for the purposes of the Group's dedicated asset management. This investment is accounted for by the equity method in the consolidated financial statements;
- acquisition on 19 December 2024, as part of a consortium, of a 40.1% stake in the Austrian telecoms tower operator OnTower, now renamed Optimus Tower, for the purposes of the Group's dedicated asset management. This investment is accounted for by the equity method in the consolidated financial statements.

At 31 December 2023 Sizewell C (Holding) Ltd, which the Group owned 49.4%, was controlled by the Group and fully consolidated. Certain events of the second half of 2024 have led the Group to change the consolidation method for this company, which is accounted for by the equity method from 31 December 2024 (see note 3.1.3).

In 2023, there were no changes with a significant impact in the scope of consolidation. The following disposals took place:

- sale of the 50% investment in the Sloe CCGT plant in the Netherlands on 25 January 2023;
- sale of 100% of Suir Engineering by Imtech, a Dalkia subsidiary in the United Kingdom on 1 February 2023;
- sale of Edison's 11.25% stake in the North Reggane gas field licence in Algeria on 12 October 2023.

Changes in the scope of consolidation expected after 31 December 2024

On 25 July 2024, Edison signed an agreement for the sale of its gas storage assets (Stoccaggio) to Snam SpA. The assets and liabilities concerned have been classified as assets held for sale and related liabilities since 31 December 2023 (see note 3.2).

On 9 December 2024, Edison, which owns 50% of Elpedison BV, a company that is accounted for by the equity method in the consolidated financial statements, accepted a purchase offer from HELLENiQ Energy Holdings S.A. Elpedison operates two natural gas-powered plants in Thessaloniki with combined capacity of 820MW. The sale will be completed when the purchase contract is signed by both parties (see the Edison press release of 9 December 2024). The investment in Elpedison BV remains accounted for by the equity method in the consolidated financial statements.

3.1.2 Acquisition of the Arabelle Solutions subgroup

Following the binding agreement signed on 4 November 2022 with General Electric and fulfilment of all the required conditions, including issuance of the necessary regulatory authorisations, acquisition of the activities of GE Vernova relating to the conventional islands of nuclear plants (formerly GE Steam Power and now renamed Arabelle Solutions) was finalised on 31 May 2024.

These activities include the supply of conventional island equipment for new nuclear power plants, including Arabelle steam turbines, as well as maintenance and upgrading of existing nuclear power plants in all regions other than the Americas. These steam turbines can be installed in European pressurized reactors (EPR and EPR 2) and small modular reactors (SMR). This acquisition strengthens the EDF group's conventional island technologies and skills, which are essential for the durability of the existing nuclear fleet and future projects, and brings the Group additional key technologies and skills for the nuclear industry and European energy security. These nuclear activities employ a total 3,300 people mostly located in France, the United Kingdom and India. This investment is fully consolidated in the Group's consolidated financial statements as of 31 May 2024, in the "Industry and Services" segment.

Arabelle Solutions' contribution to the consolidated financial statements at 31 December 2024 amount to €255 million in sales, €(120) million in Operating profit before depreciation and amortisation, €(117) million in the net income and €(266) million in the net indebtedness.

The Group has established the provisional purchase price allocation by estimating the fair value of the assets acquired and liabilities transferred at the date of the acquisition of control, based on the work of an independent assessor. However, this work and the final accounts are not expected to be finalised until the first half of 2025, and so the accounting recognition of the operation at 31 December 2024 is still provisional. In accordance with IFRS 3, the Group has 12 months to finalise the valuations.

The provisional purchase price is €904 million, including €309 million for cash acquired. This price will be adjusted on the basis of audited post-acquisition accounts and contractual price adjustment clauses.

The provisional acquisition balance sheet at the transaction date is presented below, before elimination of positions with Group entities, which mainly concern trade receivables, deferred income and advances received.

ASSETS (in millions of euros)	Provisional Acquisition Balance sheet	EQUITY AND LIABILITIES (in millions of euros)	Provisional Acquisition Balance sheet
Property, plant and equipment and intangible assets	722	Equity (EDF share)	391
Investments in associates	43	Equity (non-controlling interests)	1
Financial assets and other non-current assets	38	Total equity	392
Deferred tax assets	151	Non-current provisions	112
Non-current assets	954	Financial liabilities and other non-current liabilities ⁽¹⁾	172
Inventories	176	Deferred tax liabilities	182
Trade receivables	340	Non-current liabilities	466
Financial assets and other current assets	254	Current provisions	27
Current tax assets	23	Trade payables	209
Cash and cash equivalents	309	Financial liabilities and other non-current liabilities ⁽¹⁾	956
Current assets	1,102	Current tax liabilities	6
TOTAL ASSETS	2,056	Current liabilities	1,198
		TOTAL EQUITY AND LIABILITIES	2,056

(1) Including €827 million of contract liabilities (current portion: €684 million).

The principal statements resulting from fair value adjustments of the assets acquired and liabilities transferred concern the following items:

- Intangible assets: €390 million, comprising:
 - > €38 million for the Arabelle Solutions brand, valued by the royalty relief method. This brand is considered to have an indefinite useful life,
 - > €255 million for customer relations, valued by the excess earnings method. The useful life of these customer relations was determined for each business unit, and the average is approximately 10 years,
 - > €97 million for technology, valued by the royalty relief method. The useful life of this technology was determined for each business unit, and the average is approximately 15 years.
- Property, plant and equipment: €176 million, principally at the Belfort site in France and the Sanand site in India:
 - > €94 million for land and buildings, valued by reference to market price,
 - > €82 million for other installations, equipment and other assets valued by the replacement cost method.
- Net deferred taxes: €160 million: the deferred taxes recognised mainly correspond to tax effects associated with fair value adjustments applied for the purposes of the opening balance sheet (€566 million before tax).

The provisional goodwill amounts to €513 million, corresponding to the estimated future economic benefits expected from this acquisition, particularly:

- Arabelle Solutions' pre-existing and future customer relations with the EDF group;
- future external customer relations;
- the future technological potential of the businesses acquired;
- Arabelle Solutions' human capital.

Details of the provisional goodwill are as follows:

(in millions of euros)	
Net assets acquired	391
Provisional purchase price	904
PROVISIONAL GOODWILL	513

3.1.3 Loss of control over Sizewell C (Holding) Limited

Sizewell C is a project to build a 3.3GW two-EPR nuclear power plant at Sizewell in Suffolk, England. This project is founded on a strategy of replication of Hinkley Point C.

The Sizewell C project was designated in November 2022 as eligible to benefit from the Regulated Asset Base (RAB) funding model, but the decision to build the plant still depends on the Final Investment Decision (FID).

The UK government has been a shareholder in the project since 29 November 2022. EDF's project funding commitment up to the FID date is subject to a limit that was reached in late 2023, and consequently the UK government has been the sole funder of the project since then.

At 31 December 2024, the UK Government's share of the project is 83.77%, (50.56% at 31 December 2023), with EDF owning the remaining 16.23% (49.44% at 31 December 2023).

At 31 December 2024, EDF no longer controls Sizewell C at that date, due to the following developments:

- with the gradual decrease in its ownership percentage, EDF has lost rights in the governance of Sizewell C. Its current stake is close to the Group's target investment at the FID date;
- the UK government has made funding available for the project up to mid-2026, demonstrating its support for the project;
- a Leadership team (independent of EDF) has been established for Sizewell C, with the necessary skills to make decisions and head the plant's construction.

From 31 December 2024, Sizewell C (Holding) Ltd is therefore accounted for by the equity method, since the Group now exercises significant influence over the company (see note 1.3.4.10).

The impacts on the balance sheet of the loss of control over Sizewell C (Holding) Ltd are as follows:

(in millions of euros)	Notes	31/12/2024
Goodwill	10.1	1,417
Property, plant and equipment and other assets	10.3	3,686
TOTAL ASSETS		5,103
Equity	14	4,487
<i>Non-controlling interests</i>	14	4,486
Other liabilities		616
TOTAL LIABILITIES		5,103

The Group's investment in Sizewell C (Holding) Ltd is accounted for by the equity method at 31 December 2024 at the value of €652 million (see note 12).

The impact of the change of consolidation method for Sizewell C (Holding) Ltd on the Group's income statement amounts to €(63) million and is presented in "Other income and expenses" (see note 7). It has also led to an increase in off-balance sheet operating sale commitments received, due to €1,591 million of contracts signed in relation to the project taking effect (see note 22.2.1.1).

3.2 Assets held for sale and related liabilities

ACCOUNTING PRINCIPLES AND METHODS

Assets that qualify as held for sale and related liabilities are disclosed separately from other assets and liabilities in the balance sheet.

When assets or groups of assets are classified as discontinued operations, income and expenses relating to these discontinued operations are disclosed in a single net amount after taxes in the income statement and net changes in cash and cash equivalents of discontinued operations are also reported separately in the cash flow statement.

Impairment is booked when the realisable value is lower than the net book value.

In accordance with IFRS 5:

- for assets or groups of assets that are identified and classified as held for sale during the year, there is no change of presentation or retrospective restatement in prior year balance sheets;
- assets or groups of assets that qualify as discontinued operations are restated in the income statement and the cash flow statement for the prior periods presented in the financial statements.

At 31 December 2024, assets and liabilities held for sale mainly comprise Edison's gas storage assets in Italy (Stoccaggio). On 25 July 2024 Edison signed an agreement to sell these assets to Snam SpA (see the Edison press release of 25 July 2024).

The disposal of the EDF Energy gas storage assets in the United Kingdom, which were classified as assets and liabilities held for sale at 31 December 2023, was completed in March 2024, with no significant impact on the Group's profit and loss or indebtedness.

In application of IFRS 5, details of assets and liabilities held for sale are shown below:

(in millions of euros)	31/12/2024	31/12/2023
ASSETS HELD FOR SALE	589	596
Property, plant and equipment and intangible assets	417	440
Other current assets ⁽¹⁾	172	156
LIABILITIES RELATED TO ASSETS HELD FOR SALE	122	147
Provisions and other non-current liabilities	100	137
Other current liabilities ⁽¹⁾	22	10

(1) Other current assets and liabilities comprise components of working capital.

3.3 Scope of consolidation at 31 December 2024

The Group's business sectors are defined as follows:

- **"Generation/Supply" (G):** generation of nuclear energy, thermal energy, and renewable energies (wind, solar, hydro, ...) and energy sales to industry, local authorities, small businesses and private customers;
- **"Distribution" (D):** management of the low and medium-voltage public electricity distribution networks. This sector includes Enedis and Électricité de Strasbourg's distribution activities, and EDF's island activities;
- **"Services" (S):** services and production of equipment and fuel for nuclear reactors and energy services (district heating, thermal energy services, etc.) for industry and local authorities. This sector includes Framatome, Arabelle Solutions and Dalkia;
- **"Other activities" (A):** this activity includes the other energy services, EDF Invest's holding companies and entities that are classified as dedicated assets. This sector also includes trading activities.

The companies and subgroups included in the EDF group consolidation are listed below.

3.3.1 Fully consolidated companies

		Percentage ownership at 31/12/24	Percentage ownership at 31/12/2023	Business sector
France - Generation and Supply				
Electricité de France – Parent Company		100.00	100.00	G, D, A
Group Support Services (G2S)		100.00	100.00	A
Edvance		96.10	95.10	A
NUWARD		100.00	100.00	A
Cyclife		100.00	100.00	A
IZI Confort		100.00	100.00	A
Sowee ⁽¹⁾		-	100.00	A
IZI Solutions Durables (formerly IZI Solutions)		100.00	100.00	A
IZI Solutions Renov ⁽²⁾		-	100.00	A
IZIVIA		100.00	100.00	A
EDF Pulse Holding		100.00	100.00	A
Hynamics		100.00	100.00	G
Agregio solutions		100.00	100.00	A
Energy2Market (E2M)		100.00	100.00	A
EDF Solutions Solaires (formerly EDF ENR)		100.00	100.00	A
Immo C47		51.00	51.00	A
Other holding companies (EDF Invest)		100.00	100.00	A
France - Regulated activities				
Enedis		100.00	100.00	D
Électricité de Strasbourg		88.64	88.64	G, D
EDF Production Electrique Insulaire (EDF PEI)		100.00	100.00	G
Industry and Services				
Framatome	France	80.50	75.50	S
Arabelle Solutions ⁽³⁾	France	100.00	n.a.	S
Arabelle Solutions SAS (formerly Société C109)	France	100.00	n.a.	S
Arabelle Solutions Holding UK	United Kingdom	100.00	n.a.	S
United Kingdom				
EDF Energy Holdings Limited (EDF Energy)		100.00	100.00	G, A
EDF Energy UK Ltd.		100.00	100.00	A
Italy				
Edison SpA (Edison)		97.17	97.17	G, A
Transalpina di Energia SpA (TdE SpA)		100.00	100.00	A
Other international				
EDF International SAS	France	100.00	100.00	A
EDF Belgium SA	Belgium	100.00	100.00	G
Luminus SA	Belgium	68.63	68.63	G, A
EDF Brasil Holding ⁽⁴⁾	Brazil	100.00	n.a.	G, A
EDF Norte Fluminense SA	Brazil	100.00	100.00	G
EDF (China) Holding Ltd.	China	100.00	100.00	A
EDF Inc.	USA	100.00	100.00	A
Mekong Energy Company Ltd. (MECO)	Vietnam	56.25	56.25	G
Lingbao	Chine	65.00	65.00	G
EDF Andes Spa	Chili	100.00	100.00	G

(1) Sowee was merged into EDF SA on October 31, 2024.

(2) IZI Solutions Rénov was merged into the company IZI Solutions Durables on May 31, 2024.

(3) Arabelle Solutions corresponds to the nuclear activities of GE Steam Power acquired on May 31, 2024.

(4) Some subsidiaries previously owned by EDF Norte Fluminense (including Compagnie Énergétique de Sinop, a 51%-owned company accounted for by the equity method) are now owned by EDF Brasil Holding.

		Percentage ownership at 31/12/2024	Percentage ownership at 31/12/2023	Business sector
EDF Renewables				
EDF Renewables	France	100.00	100.00	G, A
Dalkia				
Dalkia	France	99.94	99.94	S
Other activities				
EDF Développement Environnement SA	France	100.00	100.00	A
EDF IMMO and real estate subsidiaries	France	100.00	100.00	A
Société C3	France	100.00	100.00	A
EDF Holding SAS	France	100.00	100.00	A
Citégestion	France	100.00	100.00	A
EDF Trading Ltd.	United Kingdom	100.00	100.00	A
Wagram Insurance Company DAC	Ireland	100.00	100.00	A
EDF Investissements Groupe SA	Belgium	86.22	92.46	A
Océane Re	Luxembourg	99.98	99.98	A
EDF Gas Deutschland GmbH	Germany	100.00	100.00	A

3.3.2 Joint operations

		Percentage ownership at 31/12/2024	Percentage ownership at 31/12/2023	Business sector
Other activities				
Friedeburger Speicherbetriebsgesellschaft GmbH (Crystal)	Germany	50.00	50.00	A

3.3.3 Companies accounted for by the equity method

		Percentage ownership at 31/12/2024	Percentage ownership at 31/12/2023	Business sector
France - Generation and Supply				
Domofinance	France	45.00	45.00	A
CTE (EDF Invest) ⁽¹⁾	France	50.10	50.10	A
Elisandra IV (Madrileña Red de Gas Holding) (EDF Invest)	Spain	20.00	20.00	A
Central Sicaf (EDF Invest)	Italy	24.50	24.50	A
Thyssengas (EDF Invest)	Germany	-	50.00	A
Aéroports Côte d'Azur (EDF Invest)	France	19.40	19.40	A
Ecowest (EDF Invest)	France	50.00	50.00	A
Fallago Rig (EDF Invest)	United Kingdom	20.00	20.00	G
Fenland Wind Farm (EDF Invest)	United Kingdom	20.00	20.00	G
Catalinar Solar (EDF Invest)	USA	50.00	50.00	G
Switch (EDF Invest)	USA	50.00	50.00	G
Red Pine (EDF Invest)	USA	50.00	50.00	G
Energy Assets Group (EDF Invest)	United Kingdom	40.00	40.00	A
Valentine Solar (EDF Invest)	USA	50.00	50.00	G
Glacier's Edge (EDF Invest)	USA	50.00	50.00	G
Nicolas Riou (EDF Invest)	Canada	50.00	50.00	G
Clariane & Partenaires Immobilier 1 & 2 (EDF Invest)	France	24.50	24.50	A
Issy Shift (EDF Invest)	France	33.33	33.33	A
Holding d'Infrastructures Numériques	France	33.33	n.a.	A
Orange Concessions (EDF Invest)	France	16.67	16.67	A
92 France (EDF Invest)	France	50.00	50.00	A
Memphis (EDF Invest)	France	50.00	50.00	A
Nordic Logistic (EDF Invest)	Sweden	50.00	n.a.	A
Fjord1 (EDF Invest)	Norway	40.05	n.a.	A
Parcolog Invest (EDF Invest)	France	50.00	n.a.	A
Encore + Bergère (EDF Invest)	France	49.00	n.a.	A
Optimus Tower Holding (EDF Invest)	Austria	40.10	n.a.	A
Other international				
Shandong Zhonghua Power Company, Ltd.	China	19.60	19.60	G
Datang Sanmenxia Power Generation Co., Ltd.	China	35.00	35.00	G
Taishan Nuclear Power Joint Venture Company Ltd. (TNPJVC)	China	30.00	30.00	G
Jiangxi Datang International Fuzhou Power Generation Company Ltd.	China	49.00	49.00	G
Nam Theun 2 Power Company (NTPC) (EDF Invest)	Laos	40.00	40.00	G
Generadora Metropolitana (GM)	Chile	50.00	50.00	G
Nachtigal Hydro Power Company	Cameroon	40.00	40.00	G

(1) Coentreprise de Transport d'Electricité or CTE, the company holding 100% of RTE.

3.3.4 Companies in which the EDF group's voting rights differ from its percentage ownership

The percentage of voting rights, which is decisive for assessing control, differs from the Group's percentage ownership for the following entities:

	Percentage ownership at 31/12/2024	Percentage of voting rights held at 31/12/2024
Edison SpA	97.17	100.00
EDF Investissements Groupe SA	86.22	50.00

Note 4 Segment reporting

4.1 Reporting by operating segment

ACCOUNTING PRINCIPLES AND METHODS

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

Segment reporting is presented before inter-segment eliminations. Inter-segment transactions take place at market prices.

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

The Group's segments are:

- **"France – Generation and Supply"**: EDF SA's energy production and sales activities. This segment also includes entities operating on the downstream sectors (B2B and B2C, aggregation) and all EDF Invest's shareholdings;
- **"France – Regulated activities"**: Enedis and Électricité de Strasbourg's distribution activities, and EDF's island activities;
- **"Industry and Services"**: the entities of the Framatome and Arabelle Solutions subgroups;
- **"United Kingdom"**: the entities of the EDF Energy subgroup;
- **"Italy"**: the entities of the Edison subgroup and TdE SpA;
- **"Other international"**: EDF International and the entities located in continental Europe, the US, Latin America and Asia;
- **"EDF Renewables"**: the entities of the EDF Renewables subgroup;
- **"Dalkia"**: the entities of the Dalkia subgroup;
- **"Other activities"**: comprising in particular EDF Trading and EDF Investissements Groupe.

The "Framatome" segment was renamed "Industry and Services" following the Group's acquisition of Arabelle Solutions on 31 May 2024 (see note 3.1.2). This segment comprises industrial activities relating to equipment manufacturing and provision of services for the nuclear activities of Framatome and Arabelle Solutions.

No segments have been merged.

4.1.1 At 31 December 2024

(in millions of euros)	France – Generation and Supply	France – Regulated activities	Industry and Services ⁽¹⁾	United Kingdom	Italy	Other inter- national	EDF Renewables	Dalkia	Other activities ⁽²⁾	Inter- segment eliminations	Total
Income statement:											
External sales	47,991	20,037	2,525	17,477	15,197	4,280	1,534	5,323	4,326	-	118,690
Inter-segment sales	2,975	34	2,648	21	26	316	620	695	522	(7,857)	-
Total sales	50,966	20,071	5,173	17,498	15,223	4,596	2,154	6,018	4,848	(7,857)	118,690
Other external expenses and personnel expenses	(10,250)	(5,413)	(4,131)	(1,943)	(1,433)	(1,005)	(1,392)	(3,603)	(239)	1,695	(27,714)
Operating profit before depreciation and amortisation	20,950	5,576	499	3,485	1,762	835	1,387	425	1,985	(381)	36,523
Operating profit	11,698	1,823	92	1,283	531	557	506	45	2,149	(357)	18,327
Balance sheet:											
Goodwill	127	223	2,023	3,596	142	56	195	634	112	-	7,108
Intangible assets and property, plant and equipment	67,128	74,265	3,917	25,829	5,699	2,542	13,368	2,644	554	-	195,946
Investments in intangible assets and property, plant and equipment	7,709	5,803	522	7,152	596	413	2,068	478	38	-	24,779
Total assets	214,091	76,443	7,296	18,781	4,577	20,345	14,852	5,429	3,391	-	365,205
Loans and other financial liabilities	91,049	7,280	928	8,115	1,417	23,031	13,515	2,157	1,150	(66,840)	81,802

(1) The "Industry and Services" segment comprises the activities of the Framatome and Arabelle Solutions subgroups. In the case of Arabelle Solutions, the contribution to the Group's income statement corresponds to 7 months of business since its first consolidation at 31 May 2024 (see note 3.1.2).

(2) Sales by the "Other activities" segment include the €1,908 million trading margin realised by EDF Trading.

4.1.2 At 31 December 2023

(in millions of euros)	France - Generation and Supply	France - Regulated activities	Framatome	United Kingdom	Italy	Other inter- national	EDF Renewables	Dalkia	Other activities ⁽¹⁾	Inter- segment eliminations	Total
Income statement:											
External sales	60,313	19,370	2,010	21,094	17,745	5,168	1,338	5,733	6,944	-	139,715
Inter-segment sales	3,931	43	2,056	38	42	415	693	662	733	(8,613)	-
Total sales	64,244	19,413	4,066	21,132	17,787	5,583	2,031	6,395	7,677	(8,613)	139,715
Other external expenses and personnel expenses	(9,589)	(5,181)	(3,259)	(1,767)	(1,416)	(967)	(1,292)	(3,595)	(365)	1,468	(25,963)
Operating profit before depreciation and amortisation	24,677	3,707	597	3,967	1,855	872	932	407	3,255	(342)	39,927
Operating profit	18,651	13	238	(9,823)	789	245	206	35	3,162	(342)	13,174
Balance sheet:											
Goodwill	130	223	1,475	4,901	150	51	197	626	142	-	7,895
Intangible assets and property, plant and equipment	64,499	71,353	2,953	21,593	5,721	2,495	13,060	2,429	456	-	184,559
Investments in intangible assets and property, plant and equipment	6,584	5,217	341	5,529	520	315	2,124	366	125	-	21,021
Total assets	164,285	76,381	7,280	46,240	10,067	6,917	18,942	6,197	28,503	-	364,812
Loans and other financial liabilities	96,129	6,152	296	7,984	1,780	18,754	11,603	2,086	2,795	(60,932)	86,647

(1) Sales by the "Other activities" segment include the €3,666 million trading margin realised by EDF Trading

4.2 Sales to external customers by geographic area

(in millions of euros)	2024	2023
France	70,346	81,153
United Kingdom	22,261	28,987
Italy	13,129	15,463
Belgium	3,659	4,589
Other	9,295	9,523
Europe	5,462	6,042
Americas	2,626	2,438
Asia	911	833
Africa	282	204
CHIFFRE D'AFFAIRES	118,690	139,715

Note 5 Operating profit before depreciation and amortisation

(in millions of euros)	Notes	2024	2023
Sales	5.1	118,690	139,715
Fuel and energy purchases	5.2	(54,217)	(80,989)
External services		(19,754)	(17,281)
Other purchases (excluding external services, fuel and energy)		(4,958)	(4,550)
Change in inventories and capitalised production		13,579	11,041
(Increase)/decrease in provisions on other external expenses		335	297
Other external expenses⁽¹⁾		(10,798)	(10,493)
Personnel expenses	5.3	(16,916)	(15,470)
Taxes other than income taxes	5.4	(4,142)	(4,064)
Other operating income and expenses	5.5	3,906	11,228
OPERATING PROFIT BEFORE DEPRECIATION AND AMORTISATION		36,523	39,927

(1) After elimination of foreign exchange effects and changes in the scope of consolidation, other external expenses increased by 0.5% compared to 2023.

After elimination of foreign exchange effects and changes in the scope of consolidation, the Group's operating profit before depreciation and amortisation showed an organic variation of €(3,354) million (-8.4%). This decrease is principally explained by the lower contributions of the **France - Generation and Supply** segment (€(3,727) million), **Other activities** segment (€(1,269) million) and the **United Kingdom** segment (€(595) million), whereas there was a growth in the contributions of the **France - Regulated activities** segment (€1,869 million) and the **EDF Renewables** segment (€456 million).

In the **France - Generation and Supply** segment, there was an organic decrease of €(3,727) million in the operating profit before depreciation and amortisation despite the higher output of nuclear power (+41.3TWh) and hydropower (+11.8TWh) in 2024, as market prices declined.

The lower EBITDA in the **Other activities** segment (down by €(1,269) million) is mainly explained by the Trading activity (€(1,621) million) which was affected by falling volatility and market prices. EBITDA for the gas activities was up by +€341 million, primarily as a result of higher realised margins on the storage activity.

The €(595) million organic decrease in the **United Kingdom** segment's operating profit before depreciation and amortisation principally results from a downturn in margins in the residential and small business customer segments, and the impact of falling market prices.

In the **France - Regulated activities** segment, the organic increase of €1,869 million in operating profit before depreciation and amortisation is principally explained by a positive price effect, due to lower market prices for purchases to cover network losses compared to 2023, and the favourable effect of the increase in the TURPE network access tariff at 1 November 2024.

Arabelle Solutions, which has been consolidated since 31 May 2024, generated operating profit before depreciation and amortisation of €(120) million in the **Industry and Services** segment.

5.1 Sales

ACCOUNTING PRINCIPLES AND METHODS

Sales essentially comprise income from energy sales (to final customers and as part of trading activities), delivery services related to use of the transmission and distribution network, and connection services. They also comprise income from other services and deliveries of goods, mainly engineering, operating and maintenance services, services related to energy sales, design, delivery and commissioning services for power plants or their major components.

Income on energy sales is recognised as deliveries are made to customers.

The quantities of energy supplied but not yet measured and billed are calculated using consumption statistics and selling price estimates, and are recognised in sales on that basis.

Some Group entities conduct optimisation operations on the wholesale gas and electricity markets, to balance supply and demand in compliance with the Group's risk management policy. The sales concerned are recorded net of purchases. When an entity has a net short position in euros, it is included in "energy sales". A net long position in euros is included in "fuel and energy purchases".

In accordance with IFRS 15 on the principal/agent distinction, energy delivery services are recognised in sales upon delivery to the customer in the following two cases:

- when these services are not distinct from the energy supply service;
- when they are distinct from the energy supply service and the entity concerned is acting as a principal, notably because it bears the risk of execution of the service or is able to set the tariff for delivery to the final customer.

Income from connections to the French electricity network is recognised in sales at the date when the connection becomes operational.

The sales revenue from other services or deliveries of goods is recognised over time in the three following cases, based on a contractual analysis:

- when the customer simultaneously receives and consumes all the benefits generated as the service is performed by the Group (this is notably the case of operations and maintenance services);
- when the good or service to be supplied cannot be reallocated to another customer, and the Group is entitled to payment for the work done so far (this is notably the case of certain design, delivery and commissioning activities for power plants or major components designed specifically for a customer);
- when the service creates or enhances an asset (good or service) for which the customer acquires control as performance of the service progresses.

This notably applies to certain design, delivery and commissioning activities for power plants or major components designed specifically for a customer (particularly by Framatome and Arabelle Solutions).

TRADING ACTIVITIES

Sales revenues include the margin realised, essentially by EDF Trading, on energy market trading operations that fall within the scope of IFRS 9 and are recognised at fair value.

EDF Trading is the Group's trading entity. It operates on the markets on behalf of other Group entities and through trading activity for its own purposes or for non-Group entities, backed by the Group's industrial assets and within its assigned risk mandate.

It operates on organised or OTC markets in derivatives such as futures, forwards, swaps and options.

EDF Trading undertakes purchase and sale operations on the wholesale markets in Europe and North America for:

- electricity and fuel (principally gas);
- CO₂ emission permits, weather derivatives and other environmental instruments;
- capacity guarantees for electricity production.

For LNG, optimisation activities (recognised as a joint operation) and trading activities (recognised as a joint venture) are carried out through JERA Global Markets, which is jointly owned with JERA.

CAPACITY MECHANISM

The operations related to the capacity mechanisms are recorded as follows:

- Sales of certificates are recognised in income when the auctions or OTC sales take place;
- The cost of the capacity mechanism passed on to final customers through regulated sales tariffs and market-price offers is recognised in sales revenues as and when the electricity is delivered. In addition, the ARENH price is considered to include a capacity value;
- Stocks of certificates are stated either at their certification value (*i.e.* cost of certification by RTE) or at their purchase value on the markets;
- Decreases in the stock of certificates are valued at the weighted average unit cost. The timing of recognition depends on the actor:
 - > operators of installations: when the auction sales take place;
 - > obligated actors: over the 5-month peak period;
- For operators of installations, if the effective capacity is lower than the certified capacity, a liability (accrued expenses or provision) is recorded equivalent to the best estimate of the expense necessary to extinguish the obligation (rebalancing or settlement mechanism);
- For obligated actors, if there is a shortfall in the stocks of capacity certificates, a provision is recorded equivalent to the best estimate of the expense necessary to extinguish the obligation;
- At the closing date, if the realisable value of the stock of capacity certificates is lower than its net book value, impairment is recognised.

5.1.1 Regulatory changes

Regulated electricity sales tariffs in France

In accordance with article L. 337-4 of the French Energy Code, regulated electricity sales tariffs are set by the Ministers for Energy and the Economy following proposals by the French Energy Regulation Commission (*Commission de Régulation de l'Énergie* or CRE).

France's Council of State ruled in decisions of 18 May and 3 October 2018 that the principle of regulated electricity sales tariffs is compatible with European Union law when such tariffs serve the general economic interest objective of guaranteeing consumers an electricity price that is more stable than market prices.

The French Energy and Climate law of 8 November 2019 authorised continuation of regulated sales tariffs for sites with a subscribed power level of up to 36kVA, but they are reserved for residential or business consumers on condition, as required by European Directive 2019/944 on common rules for the internal market for electricity, that they have fewer than 10 employees and their annual sales income or balance sheet total is below €2 million ("blue" tariffs). In application of Law 2024-330 of 11 April 2024 and decree 2025-49 of 15 January 2025, the restriction on beneficiaries' subscribed power is abolished from 1 February 2025, such that the same consumers will also be eligible for regulated sales tariffs for their sites with power above 36kVA ("yellow" tariffs).

Tariff changes

In accordance with article L. 337-4 of the French Energy Code, the CRE is responsible for sending the Ministers for the Economy and Energy its reasoned proposals for regulated sales tariffs for electricity. If no objections are made within three months, the proposals are deemed to have been approved.

The comparability of sales between periods is affected by the tariff changes presented in the table below:

Date of the CRE proposal	Change in "blue" residential customer tariffs (incl. taxes / excl. taxes)	Change in "blue" non-residential customer tariffs (incl. taxes/excl. taxes)	Date of the tariff decision	Date of application
19/01/2023	+15% / +20.0%	+15% / +19.9%	31/01/2023	01/02/2023
22/06/2023	+10% / +10.0%	+10% / +10.0%	28/07/2023	01/08/2023
18/01/2024	+9.5% / +0.18%	+5.7% / -3.55%	29/01/2024	01/02/2024
15/01/2025	-15% / (-22.61%)	-15.06% / (-22.67%)	28/01/2025	01/02/2025

In a decision of 15 January 2025, the CRE proposed an average decrease (excluding taxes) of 22.61% in the "blue" tariffs for residential customers, and an average decrease of 22.67% in the "blue" tariffs for non-residential customers from 1 February 2025. This proposal was adopted by the tariff decision of 28 January 2025. Another order of 20 December 2024 set out the excise duty rates on electricity applicable from 1 February 2025. These steps have the combined effect of reducing the "blue" tariffs (including taxes) by an average 15% for residential customers, and 15.06% for non-residential customers.

In a decision of 16 January 2025, the CRE proposed tariff scales for the "yellow" and "green" tariffs applicable for sites with subscribed power above 36kVA. Like the scales for sites with lower power levels, these scales are constructed by the "cost stacking" method described in articles L.337-6 and R.337-19 of the French Energy Code.

"Financial shock absorber" mechanism for electricity

Article 225 of the Finance Law for 2024 (Law 2023-1322 of 29 December 2023) extended the "financial shock absorber" mechanism for electricity (or "electricity buffer"), with amendments for 2024. This mechanism was first introduced by article 181 of the Finance Law for 2023 (the law of 30 December 2022), in order to support businesses and local authorities that were not eligible for the "tariff shield" price cap.

Decrees 2023-1421 and 2023-1422 of 30 December 2023 then defined the application rules for the "financial shock absorber" mechanism for electricity in 2024: eligible customers benefited from a price reduction of 75% (100% for very small businesses) on the volumes consumed during the month concerned (up to a maximum of 90% of their past consumption), calculated as the difference between the average price of the variable component of their contract (excluding taxes and TURPE fees) over 2024, and the reference price was set at €250/MWh for 2024 (€230/MWh for very small businesses).

"TURPE" Network access tariffs

The costs borne by the network operators Enedis and RTE for management of the public electricity distribution and transmission networks, provided they are in line with the costs of an efficient network operator, are covered by the "TURPE" tariffs for using the networks, as stipulated in Articles L. 341 - 2 and following of the French Energy Code.

These tariffs apply to users connected to the distribution and transmission networks.

TURPE 6 Distribution and Transmission tariffs

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

In its decision 2024-122 of 26 June 2024, the CRE proposed a rise in the average TURPE Distribution tariff of +4.81% from 1 August 2024. Previous increases had been +6.51% from 1 August 2023 and +2.26% from 1 August 2022, after the CRE set the margin on assets at 2.5% and the additional return on regulated equity at 2.3% in its decision 2021-13 of 21 January 2021.

In its decision 2024-121 of 26 June 2024, the CRE proposed a rise in the average TURPE Transmission tariff of +4.99% from 1 August 2024. Previous tariff changes had been +6.69% from 1 August 2023 and -0.01% from 1 August 2022, after the CRE set a nominal pre-tax weighted average cost of capital (WACC) of 4.6% in its decision 2021-12 of 21 January 2021.

In a letter dated 29 August 2024 published in France's *Journal Officiel* on 31 August 2024, the delegate minister in charge of industry and energy for the Minister for the economy, finance and industrial and digital sovereignty asked the CRE to issue a new decision on adjustment of the TURPE tariffs that would better reflect the French government's energy policy orientations for tariff stability, given the expected reduction in regulated sales tariffs from 1 February 2025. The CRE published its decision 2024-158 on 10 September 2024, stating that it did not consider its previous decisions had ignored the energy policy orientations. It requested that those decisions should be published in the *Journal Officiel* by the administrative authority, stipulating that the effective date of its new decisions would be 1 November 2024. This was duly done.

In its decision 2025-08 of 15 January 2025, the CRE proposed an exceptional increase of 7.7% in the average TURPE distribution tariff from 1 February 2025. This change is intended to achieve early clearance of Enedis' income and expense adjustment account established during the first years of the TURPE 6 period in order to avoid any change in the TURPE 7 distribution tariff when it takes effect on 1 August 2025.

Similarly, for the TURPE transmission tariff, the CRE proposed an exceptional increase of 9.61% from 1 February 2025 in its decision 2025-09 of 15 January 2025.

Users of the public electricity transmission network, including Enedis, received an exceptional advance payment from RTE in February 2023 (corresponding to a share of the balance of RTE's income and expense adjustment account). The Group therefore recognised a sales credit receivable from RTE at 31 December 2022, amounting to €1,723 million.

TURPE 7 Distribution and Transmission

On 4 February 2025 the CRE published its decision 2025-40 containing its proposals for the TURPE 7 Distribution tariff, setting the margin on assets at 2.5% the additional return on equity at 2.9%, and interest on financial borrowings at 2.1% for the TURPE 7 period. In view of the charges to be covered, based on current information the CRE stated that the exceptional increase of 7.7% from 1 February 2025 is intended to cover the forecast charges for the tariff period with no tariff change at 1 August 2025, and that subsequent changes from 1 August 2026, 2027 and 2028 should be close to inflation. In the event that the charges covered by the TURPE tariff are transferred from the fund for electrification charges FACÉ (*Fonds d'Amortissements des Charges d'Électrification*) in the French State budget of 1 August 2025, the TURPE Distribution tariff will be reduced by 1.92%.

Also on 4 February 2025, the CRE published its decision 2025-39 containing its proposals for the TURPE 7 Transmission tariff, setting the return on the regulated asset base at the pre-tax rate of 5%. The proposals also add a specific additional return of 0.5% for component assets of offshore wind farm grid connections, which entail greater complexity and higher risks than the rest of RTE's activity. In view of the charges to be covered, based on current information, the CRE stated that the exceptional increase of 9.6% from 1 February 2025 is intended to cover the forecast charges for the tariff period with no tariff change at 1 August 2025, and that subsequent changes from 1 August 2026, 2027 and 2028 should be close to inflation based on the current available information.

Electricity Equalisation Fund

The TURPE tariff for the medium and low-voltage network is identical for every electricity network operator. It is determined on the basis of forecast expenses to be borne by Enedis, provided they correspond to an efficient network operator, and forecasts of the number of consumers connected to Enedis' networks, their consumption, and the power level subscribed.

To equalise electricity distribution charges between the different network operators, as the TURPE tariff cannot always cover the specific needs of certain service zones, the Electricity Equalisation Fund (FPE) exists to compensate for some or all of the charges resulting from disparities in network operating conditions that are not taken into consideration in the tariff. There are two equalisation mechanisms: one based on fixed rates, the other established by the CRE at the request of the network operator based on analysis of its accounts. The calculation method for the fixed-rate allocation mechanism is defined by ministerial decree and order. The EDF entities concerned by the Electricity Equalisation Fund are Enedis, Électricité de Strasbourg and SEI.

In its decision 2024-97 of 13 June 2024, following analysis of the network operators' accounts, the CRE set the final amount of the allocation from the Electricity Equalisation Fund (*Fonds de Péréquation de l'Électricité*) to SEI at €252 million for 2024.

For the fixed-rate mechanism, the order of 22 November 2023 set the 2023 contributions payable and allocations receivable from the Electricity Equalisation Fund for distribution network operators. The fixed contributions due by Strasbourg Électricité Réseaux and Enedis amount to around €1.1 million and €30.1 million respectively. Enedis is also the CRE's designated operator for collection and payment of Electricity Equalisation Fund contributions from all the Local Distribution Companies.

ARENH scheme

General description of the scheme

The ARENH (*Accès Régulé à l'Énergie Nucléaire Historique*) scheme for regulated access to historic nuclear power, set up in 2011 and due to end on 31 December 2025, allows alternative suppliers to purchase electricity from EDF to supply their final customers, after signing a framework agreement, at a regulated price for set quantities determined under the provisions of the French Energy Code. This scheme is also open to network operators to cover their energy losses.

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

The maximum total ARENH volume that can be sold by law to suppliers who apply to the scheme to cover the needs of their final customers is set by ministerial order and cannot exceed a legal ceiling. Until 31 December 2019, the ceiling was 100TWh per year. It was then raised to 150TWh by the Energy and Climate law of 8 November 2019.

The "MUPPA" law of 16 August 2022 introducing urgent measures to protect purchasing power reduced this legal ceiling to 120TWh. The MUPPA law also set a minimum ARENH price of €49.50/MWh, although its application is conditional on prior approval by the European Commission, which has not yet been given.

Dispute over the additional 20TWh of electricity for the period April-December 2022

Under measures imposed on EDF by the French government in early 2022, eligible alternative electricity suppliers could benefit from an additional volume of up to 20TWh at the price of €46.20/MWh during the period 1 April to 31 December 2022, provided they first sold EDF an equivalent volume at the price of €256.98/MWh. The alternative suppliers only made applications for 19.5TWh of the additional ARENH volume offered.

This caused very significant prejudice for the company, and on 9 August 2022 EDF filed an appeal against the measures before the Council of State, on the grounds that the State had exceeded its power.

EDF also lodged a claim before the Paris Administrative Court on 27 October 2022 to obtain full compensation from the French government for the prejudice caused by these measures.

On 3 February 2023, the Council of State rejected EDF's appeal against these measures, in a decision that cannot be challenged. The proceedings brought by EDF in 2023 before the Paris Administrative Court claiming full reparation from the State for the prejudice borne by EDF as a result of the measures are ongoing. The prejudice suffered was estimated by EDF at €7.96 billion at 13 October 2023, the date when the company filed its reply submissions.

The ARENH scheme in 2024

For the ARENH allocations for 2024 determined by the CRE's decision 2023-330 of 26 October 2023, as required by the Energy Code (article R.336-14 of the Energy Code modified by decree 2022-1380 of 29 October 2022), the CRE defined the method for allocating ARENH volumes if applications exceeded the maximum total volume allowed for 2024. It also laid down criteria for assessing ARENH applications (verification methods, and where relevant correction procedures for ARENH applications from alternative suppliers).

The decision stated that any application by EDF-controlled subsidiaries (this excludes network operators, as stipulated in the decision of 28 April 2011) taking the total volume above the limit would be fully curtailed, but they could enter into contracts directly with their parent company for supplies on terms identical to the ARENH framework agreement, including the curtailment conditions applied to other alternative suppliers.

On 15 November 2023, in its decision 2023-333, the CRE decided on a change to the calculation rules for the CP2 ARENH price supplement paid by alternative suppliers whose ARENH applications are excessive in view of their actual sales volumes. These changes made the penalty for such disproportionate applications more dissuasive.

ARENH applications during the November 2023 session for delivery in 2024 totalled 130.45TWh (excluding applications from EDF subsidiaries and network operators). The CRE scaled down certain applications (- 0.04TWh in total), bringing the total application volumes validated by the CRE to 130.41TWh. The CRE also curtailed each supplier's application, to respect the ARENH ceiling of 100TWh. The final attribution rate after curtailment was 76.68%. Further volumes were also sold by EDF to its subsidiaries through contracts that replicate the ARENH scheme, and to compensate for network electricity losses (25.54TWh).

The CRE notified EDF of three suspensions to ARENH deliveries during 2024. In two cases this was due to decisions by the CRE's Dispute Resolution and Enforcement Committee (CoRDIS), and the third case related to the transfer of all the assets of the subsidiary Sowee to EDF SA. These suspensions concerned a total 7.3MW of baseload electricity, of which 1.1MW resulted from CoRDIS decisions.

Decree 2024-556 published on 18 June 2024 modified the regulatory part of the French Energy Code to align it with changes in legislation introduced by the Finance Law for 2024 concerning the ARENH price supplement. The CP1 price supplement collected for ARENH deliveries made since 2023 is no longer be allocated between alternative suppliers but paid to EDF via a deduction from its public service charges. This has no impact on the Group's net income.

On 26 June 2024 the CRE published its decision 2024-125 concerning ARENH price supplements, which are set at €555.1 million for the CP1 and €0.5 million for the CP2.

Finally, ARENH applications during the November 2024 session for delivery in 2025 totalled 135.04TWh (excluding applications from EDF subsidiaries and network operators). The CRE scaled down four suppliers' applications (- 0.11TWh in total), bringing the total application volumes validated by the CRE to 134.93TWh. The CRE also curtailed each supplier's application, to respect the ARENH ceiling of 100TWh. The final attribution rate after curtailment was 74.12%. Further volumes were also sold by EDF to its subsidiaries through contracts that replicate the ARENH scheme, and subscriptions to compensate for network electricity losses (22.7TWh).

An order of 29 November 2024, published in the *Journal Officiel* of 5 December, introduced changes to the ARENH framework agreement, notably re-introducing parts of the appendices of the previous decision concerning the scheme.

Post-ARENH market framework

To provide customers with additional protection in high-price periods, the new framework, which is now defined in article 17 of France's Finance Law for 2025, also requires payment by EDF of a portion of its historical nuclear power plants' net annual energy revenues derived from use of nuclear fuel when they exceed a certain level. Two thresholds are set for this contribution: a taxation threshold and a capping threshold, above which the contribution rate will be 50% and 90% respectively. These thresholds will be set by ministerial order every three years, based on the full production cost for electricity generated by the historical plants as valued by the CRE, plus an amount of €5-€25/MWh for the taxation threshold and €35-€55/MWh for the capping threshold. EDF will remain watchful regarding retention of the thresholds agreed in November 2023, namely €78/MWh and €110/MWh (both in 2022 euros).

Capacity mechanisms

Capacity mechanisms have been set up in France, the UK, Belgium and Italy to ensure secure power supplies during peak periods.

French system: French law 2010-1488 of 7 December 2010 on the new organisation of the electricity market introduced an obligation in France to contribute to guaranteeing a secure power supply from 1 January 2017.

Operators of electricity generation plants and load-shedding operators must have their capacities certified by RTE, and commit to a forecast level of availability for a given year of delivery. In return, they are awarded capacity certificates.

Meanwhile, electricity suppliers and purchasers of power to compensate for network losses (obligated actors) must have capacity certificates equivalent to consumption by their customers in peak periods. Suppliers pass on the cost of the capacity mechanism to final customers through their sale prices.

Capacity auctions are held several times a year.

The Group is concerned by both aspects of this system, as an operator of electricity plants (EDF SA, Dalkia, EDF Renewables), as an electricity supplier (EDF SA, Électricité de Strasbourg) and as a purchaser of power to compensate for network losses (Enedis and Électricité de Strasbourg).

The revised capacity mechanism rules that took effect in October 2023 set frameworks for early termination of purchase obligation contracts, and restriction of the inclusion of capacities using fossil fuels from 2025.

The duration of the current mechanism's final delivery year, 2026, has been modified so that the future capacity mechanism can be introduced from November 2026; delivery year 2026 of the current capacity mechanism is thus "shortened" and will run from 1 January to 31 March 2026.

A consultation process is being held for the future capacity mechanism, whose principal feature would be the centralisation of purchases to ensure a secure power supply, with a single actor (RTE) collecting availability commitments. This centralisation, combined with a lower number of capacity auctions, should make the market fundamentals more transparent for all actors. The change to the mechanism must be approved by the French Parliament and the European Commission (regarding State aid rules).

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

Delivery year	2023	2024	2025
Price (€/kW)	45.6	27.1	14.7

For the delivery year 2026, four auctions have been held, with the following results: €15.5/kW in April €6.1/kW in September, €3.5/kW in October and €2.5/kW in December.

British system:

The British capacity mechanism was introduced in 2014. It is based on a system of auctions for operators, organised by the electricity system operator National Grid ESO to procure capacity 4 years ahead of delivery. Capacity providers which have been successful at the auctions are remunerated in the delivery year (which runs from 1 October to 30 September) out of a fund consisting of contributions from electricity suppliers, but may be liable for penalties if they fail to meet their obligations.

The electricity suppliers' contribution to this mechanism is proportional to their sales to customers in the peak demand period and the cost of capacity is passed on to final customers through their sale price.

EDF Energy is concerned by both aspects of this system, as an operator of electricity plants and a supplier.

For accounting purposes, the remuneration received as an operator is recognised in sales revenues in the year of delivery, and the contribution paid to the mechanism as an electricity supplier is recognised in energy purchases over the peak period. The cost of the capacity mechanism passed on to final customers is recognised in sales revenues as and when the electricity is delivered.

The UK government is currently exploring options for reform of the Capacity Market to improve delivery assurance and to support alignment with Net Zero electricity system and its commitment to deliver a decarbonised electricity system by 2035. Any changes to the rules should apply to all new capacity agreements awarded, but would not materially change the rights and obligations of capacity providers under existing capacity agreements.

Italian system: The Italian capacity mechanism was set up in 2019 and is based on an auction process for each delivery year organised by Terna, the Italian transmission grid operator. Operators of existing and future generation or storage installations can participate in the auctions. The operators of the power plants selected must offer their capacity on the markets and are paid through a fixed premium during one year for existing capacities and 15 years for future capacities. The fixed premium is paid during the delivery year.

If the sale price on these markets exceeds the strike price defined by the Italian Regulatory Authority for Energy, Networks and Environment (ARERA), the operator must repay the surplus to Terna.

In 2024, the capacity offered by Edison (from existing 2.3GW power plants) was entirely assigned to the mechanism, at the annual price of 33k€/MW for existing plants.

The fixed premium is recorded in income during the corresponding delivery year, and reduced if appropriate by any repayments made to Terna, or if the power plant is unavailable.

5.1.2 Sales

Sales are comprised of:

(in millions of euros)	2024	2023
Generation/Supply	87,086	108,015
Distribution	18,978	18,046
Services	8,289	7,743
Other activities	4,337	5,911
<i>including Trading</i>	<i>1,908</i>	<i>3,666</i>
SALES	118,690	139,715

After elimination of foreign exchange effects and changes in the scope of consolidation, the Group's sales for 2024 were down by -15.7% or €(21.9) billion. The decrease principally concerns the France - Generation and supply segment (€(12.3) billion or -20.4%), the United Kingdom (€(4.2) billion or -19.8%), Other activities (€(2.6) billion or -37.7%) and Italy (€(2.5) billion or -14.3%).

Sales revenues from optimisation operations on the wholesale gas and electricity markets amount to €3,855 million in 2024 (€5,330 million in 2023). These operations are carried out by certain Group entities to balance supply and demand, in compliance with the group's risk management policy. In 2024 as 2023, the principal operating segments with a net short position in euros on the markets are **Other activities** (gas), **Italy** (electricity) and **Dalkia** (electricity).

Generation/Supply

Sales by the **France - Generation and supply** segment showed an organic decrease of €(12.3) billion, mostly explained by the lower prices for customers on market-price contracts, offset by the higher output of nuclear power (+41.3TWh) and hydropower (+11.8TWh).

Sales in the **United Kingdom** segment registered an organic decrease of €(4.2) billion, principally attributable to the impact of energy prices decrease on customer sales tariffs, although nuclear power output was stable compared to 2023.

The organic downturn in sales by the **Italy** segment reached €(2.5) billion, essentially due to a decline in gas prices.

Distribution

The rise in distribution sales was driven by a €746 million increase in sales by Enedis (part of the **France - Regulated activities** segment), essentially due to the indexed adjustment of the TURPE 6 tariff (+4.81% excluding taxes from November 1, 2024).

Delivery services included in the line "Distribution" concern the distribution network operators Enedis, Électricité de Strasbourg and EDF SA for non-interconnected zones. However, delivery services concerning EDF Energy and Edison are included in "Generation and Supply", because those entities are classified as the principal under IFRS 15 for both supply and delivery. The delivery services by EDF Energy and Edison have no impact on net income because they are also included in "Transmission and delivery expenses" in note 5.2.

Services

Sales by **Dalkia** amounted to €5,323 million for 2024, an organic decrease of €(379) million (-6.6%). This principally reflects the drop in average gas prices and ad hoc disposals of generation assets during 2023, which had no equivalent in 2024.

Sales by **Framatome** amounted to €2,270 million in 2024, an organic increase of €140 million (+7%) compared to 2023, due to a step-up in fuel deliveries in the United States and Europe.

Sales by **Arabelle Solutions** for the 7 months of its inclusion in the EDF group consolidation since 31 May 2024 amounted to €255 million.

Other activities

The organic decrease in sales by the **Other activities** segment €(2,618) million was caused by a lower trading margin (€(1,758) million) as volatility and energy market prices decreased, and a lower contribution by the gas businesses (€(851) million) due to declining wholesale gas market prices.

5.2 Fuel and energy purchases

Fuel and energy purchases comprise:

(in millions of euros)	2024	2023
Fuel purchases used – power generation ⁽¹⁾	(17,598)	(21,497)
Energy purchases ⁽¹⁾	(27,823)	(51,600)
Transmission and delivery expenses	(9,602)	(8,509)
Gain/loss on hedge accounting	218	(257)
(Increase)/decrease in provisions related to nuclear fuels and energy purchases	588	874
FUEL AND ENERGY PURCHASES	(54,217)	(80,989)

(1) In 2024, these include optimisation operations on the wholesale gas and electricity markets amounting to €126 million and €6,636 million respectively (€1,867 million and €26,792 million in 2023). In 2024 the principal operating segments with net long positions in euros on the markets are France – Generation and supply (gas and electricity), the United Kingdom (gas and electricity), Other international (Luminus – gas and electricity) and Dalkia (gas). The same segments were concerned in 2023.

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

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

After elimination of foreign exchange effects and changes in the scope of consolidation, the Group's fuel and energy purchases were €27.1 billion lower than in 2023, principally in the **France-Generation and Supply** segment (€17.2 billion, essentially for electricity purchases), the **United Kingdom** (€3.6 billion, essentially for gas and electricity purchases) and **Italy** (€2.4 billion, mainly for gas purchases). In France, this decrease is mainly explained by the decrease in market prices, and to a lesser extent a volume effect associated with better generation plant availability.

5.3 Personnel expenses

Personnel expenses comprise:

(in millions of euros)	2024	2023
Wages and salaries	(11,140)	(10,428)
Social contributions	(2,606)	(2,247)
Employee profit sharing	(500)	(386)
Other contributions related to personnel	(389)	(365)
Other expenses linked to short-term benefits	(263)	(222)
Short-term benefits	(14,898)	(13,648)
Expenses under defined-contribution plans	(1,335)	(1,258)
Expenses under defined-benefit plans	(506)	(423)
Post-employment benefits	(1,841)	(1,681)
Other long-term benefits	(154)	(120)
Termination payments	(23)	(21)
Other personnel expenses	(177)	(141)
PERSONNEL EXPENSES	(16,916)	(15,470)

After elimination of foreign exchange effects and changes in the scope of consolidation, personnel expenses increased by +7.6% compared to 2023. The increase in wages and salaries reflects the effect of pay rises introduced in the various Group entities, in line with inflation and the rise in the average workforce in 2024 (+5.8% compared to 2023).

Details of the average workforce are as follows:

(in full time equivalent)	2024	2023
Employees covered by the IEG statutes	98,549	96,093
Other employees	83,301	75,769
AVERAGE WORKFORCE	181,850	171,862

5.4 Taxes other than income taxes

(in millions of euros)	2024	2023
Payroll taxes	(375)	(347)
Energy taxes	(1,589)	(1,556)
Other non-income taxes	(2,178)	(2,161)
TAXES OTHER THAN INCOME TAXES	(4,142)	(4,064)

After elimination of foreign exchange effects and changes in the scope of consolidation, taxes other than income taxes showed an organic increase of €(68) million or +1.7%, principally concerning the **France - Generation and supply** segment (€(141) million, due to higher local taxes) and the **United Kingdom** segment (€(91) million, caused by the Electricity Generator Levy which reached €(491) million in 2024 after €(400) million in 2023). These increases were offset by a €172 million decrease in taxes in the **Other international** segment following discontinuation of the inframarginal revenue cap mechanism in 2024 in Belgium (€(146) million in 2023, recorded in "Other non-income taxes").

The EU Inframarginal revenue cap on electricity production

On 6 October 2022 the **European Union** adopted a regulation for harmonised action to address the energy price crisis. Among other measures, this regulation set targets for reducing energy consumption during the winter of 2023, and introduced state aid for businesses and households, funded by a windfall tax on the fossil fuel sectors, and an inframarginal revenue cap on electricity production.

This inframarginal revenue cap is a compulsory tax measure requiring electricity producers to pay to the State all revenues above a threshold expressed in €/MWh. Under the EU regulation, this cap was applicable from 1 December 2022 to 30 June 2023 with a threshold of €180/MWh, but some EU member states decided to lengthen the application period and set different thresholds, well below the EU level, for different generation technologies.

In the **EDF group**, this regulation mainly concerns activities in France and the United Kingdom, as the inframarginal revenue cap was not renewed in Belgium for 2024.

In **France**, the inframarginal revenue cap was renewed for the period from 1 January 2024 to 31 December 2024 by article 80 of France's Finance Law for 2024 with minor amendments to the thresholds and calculation methods. The tax on inframarginal rents was set at 50% (as opposed to 90% during the previous periods). Any deficit in one period could still be partially carried over to the next.

Consequently, in the EDF group in **France** in 2024, the inframarginal revenue cap concerned EDF SA (no tax was payable under this regulation at 31 December 2024 due to tax loss carryforwards), the French entities of Dalkia (€0.1 million in 2024 and €9 million in 2023), and EDF Renewables (€9 million in 2024 and €12 million in 2023), for their cogeneration and renewable energy output.

On 1 January 2023 the **United Kingdom** introduced a 45% tax on revenues from electricity generation in excess of £75/MWh, revised to £77.95/MWh on 1 April 2024 (the Electricity Generator Levy). It is payable by entities producing electricity from coal, renewable and nuclear sources but does not apply to gas-fired power plants. This levy is expected to apply until 30 March 2028 and generated an expense of €491 million for EDF Energy in 2024 (€400 million in 2023).

5.5 Other operating income and expenses

Other operating income and expenses comprise:

(in millions of euros)	Notes	2024	2023
Operating subsidies (including CSPE)	5.5.1	7,127	14,493
Net income on deconsolidation	5.5.2	470	55
Gains on disposal of fixed assets	5.5.2	(201)	(228)
Net increase/decrease in provisions on current assets	5.5.3	(164)	(702)
Net increase in provisions for operating contingencies and losses ⁽¹⁾		(492)	(77)
Other items	5.5.4	(2,834)	(2,313)
OTHER OPERATING INCOME AND EXPENSES		3,906	11,228

(1) See notes 15.1.1.1, 17.1 and 17.2.

5.5.1 Operating subsidies

This item mainly comprises the subsidy received or receivable by EDF in respect of the compensation for public energy service charges, reflected in the financial statements through recognition of income of €6,861 million for 2024 (14,126€ million in 2023). This sum consists of:

- €3,018 million of compensation for purchase obligations (compared to an expense of €2,193 million at 31 December 2023). In 2023, the public service charges to be covered for purchase obligations were negative because market prices were very high and above the State-guaranteed support prices;
- an amount of €1,562 million to cover the loss of income caused by national measures to support final customers (compared to €13,992 million in 2023). This comprises €1,730 million under the “tariff shield” price cap for electricity, which ended on 31 January 2024, reduced by an accrued liability of €(168) million payable under the “financial shock absorber” mechanism for electricity. As the “tariff shield” price cap for gas was discontinued in July 2023, no subsidy under that mechanism is recognised at 31 December 2024;
- income of €2,281 million for non-interconnected and solidarity zones.

This CSPE income gave rise to a corresponding entry in “Other liabilities” at 31 December 2024 (see note 13.4).

Compensation for public energy service charges (CSPE) (France)

Mechanism

The compensation mechanism for public energy service charges (*compensation des Charges de Service Public de l’Energie*) resulted from a reform introduced by France’s amended Finance Law for 2015. Since 1 January 2021 public energy service charges have been compensated partly out of the State’s general budget and, following France’s initial Finance Law for 2024, partly out of ARENH price supplements.

For the compensation of 2024 charges, the initial Finance Law for 2024 introduced a €4.9 billion “public energy service” budget (P345) to cover additional costs (purchase obligations and additional remuneration) incurred on support contracts for renewable energies and biogas, expenses associated with protection of consumers’ electricity purchasing power (see note 5.1.1), solidarity charges borne by gas and electricity suppliers, costs associated with support for non-renewable energy production (essentially cogeneration), and the cost of applying the standard national tariffs to zones that are not connected to France’s mainland network. The allocated budget was reduced by €0.2 billion in February 2024 to €4.7 billion.

Income generated by the excise duty on electricity (previously named the domestic tax on the final consumption of electricity (TICFE), and shown on customer invoices as the “Contribution to the public energy service” (CSPE)) goes directly into the general budget. This excise duty is collected by electricity suppliers directly from final consumers through an additional levy on the electricity sale price, or paid directly by electricity producers that produce electricity for their own uses.

The level of this excise duty is set at a full rate of €32/MWh for residential users. The law also defines a special rate, reduced rates and exemptions for businesses depending on their activity and consumption levels. However, due to the continuation of measures to protect electricity purchasing power, a rate of €21/MWh was applied from 1 February 2024 for residential customers eligible for the full rate.

In accordance with decree 2016-158 of 18 February 2016 concerning compensation for public service energy charges, and the Finance Law for 2024, the CRE published two decisions in 2024. The first, decision 2024-139 of 11 July 2024, set out a forecast of EDF’s public service charges for 2025, a revised forecast of charges for 2024, and the actual charges recorded for 2023. The second, decision 2024-216 of 5 December 2024, stated the revised amount of public service energy charges to be compensated in 2024 and 2025 under the “tariff shield” and “financial shock absorber” mechanisms.

5.5.2 Net income on deconsolidation and gains on disposal of fixed assets

In 2024, net income on deconsolidation and gains on disposal of fixed assets includes gains on sales of EDF Renewables’ generation assets as part of the Development and Sale of Structured Assets activities, amounting to €505 million (€48 million in 2023).

The impact of the loss of control over Sizewell C (Holding) Ltd is presented in “Other income and expenses” and amounts to €(63) million (see notes 3.1.3 and 7).

5.5.3 Net increase/decrease in provisions on current assets

In 2024, the net increase/decrease in provisions on current assets principally concerns trade receivables in the United Kingdom and France. In 2023, €230 million of provisions on the coal stock at the Cordemais power plant were booked.

5.5.4 Other items

Other items mainly include costs incurred to obtain energy savings certificates, losses on non-recoverable operating receivables, French hydropower concession fees and additional remuneration paid to producers of electricity from renewable sources in France.

The additional remuneration paid to producers of electricity from renewable sources was introduced by France's law on the Energy Transition for green growth. This mechanism complements the purchase obligation system in France. It is intended to guarantee reasonable remuneration for producers who sell their energy directly on the markets, by compensating for the differential between the revenues from those sales and a reference amount. Conversely, when their sales revenues are higher than the reference amount, the producer must repay the differential received. The amount repayable was previously capped in certain cases, but article 2030 of France's Finance Law for 2023 removed the cap with retroactive effect from 1 January 2022.

In its decision 2024-1119/1125 QPC of 24 January 2025, the Constitutional Council cancelled the removal of the cap on the amounts payable by producers of electricity from renewable sources under additional remuneration contracts, but deferred the effect of this step to 31 December 2025 at the latest.

The potential reimbursement would be offset through the CSPE compensation mechanism.

Other items also include expenses and income related to closure of the Fessenheim plant at 31 December 2024, mainly comprising:

- expenses of €72 million (salaries and social security charges for labour at the site amounting to €21 million, purchases of goods and services amounting to €45 million, taxes other than income taxes, mainly payroll taxes, energy taxes and local taxes amounting to €6 million);
- the compensation defined in the protocol for expenses that will be incurred after the closure, amounting to €36 million, recognised as an operating subsidy in the income statement as explained below.

Closure of Fessenheim nuclear power plant

In accordance with the application for termination of operations and the declaration of the permanent shutdown of both reactors at Fessenheim nuclear power plant sent by EDF to the Minister for the Ecological and Inclusive Transition and to the ASN on 30 September 2019, EDF shut down reactor 1 on 22 February 2020 and reactor 2 on 30 June 2020.

On 27 September 2019, due to the cap on nuclear power output set by the "energy transition for green growth" law of 17 August 2015, the French State and EDF signed a protocol agreement whereby the State will compensate EDF for the early closure of Fessenheim.

The compensation paid under the terms of this protocol comprises:

- Initial payments to compensate for expenses incurred after the closure of the plant (end-of-operations expenditure, INB taxes on basic nuclear installations, dismantling costs and staff redeployment costs): apart from dismantling costs, these will essentially be paid over a 4-year period following the closure. An amount of €370 million was received on 14 December 2020 (see note 13.6);
This compensation is recognised as income in profit and loss as and when the associated costs are incurred;
- Subsequent payments corresponding to the lost income that would have been generated by future power generation up until 2041, based on Fessenheim's previous output figures and calculated "ex post" on the basis of nuclear power sale prices, particularly observed market prices. There is no reason to recognise such income in the financial statements at this stage.

Once decoupled from the network, the Fessenheim plant entered a post-operating phase of approximately five years. Units 1 and 2 continue to be operated and maintained as "defueled core" and then "evacuated fuel" reactors until the effective date of the dismantling decree to be issued in 2026.

ENERGY SAVINGS CERTIFICATES

ACCOUNTING PRINCIPLES AND METHODS

In France, the Law of 13 July 2005 introduced a system of Energy Savings Certificates. Suppliers of energy (electricity, gas, heat, cold, domestic fuel oil and fuel for vehicles) with sales above a certain level became subject to energy savings obligations, initially for a three-year period then, since 2018, for a four-year period.

To meet this obligation, three sources are available to the EDF group: supporting consumers in their energy efficiency operations, funding State-approved energy savings certificate schemes, and purchasing certificates on the secondary market.

Expenses incurred for this purpose are recorded in expenses of the year concerned, in "Other operating income and expenses". Expenses in excess of the accumulated obligation at year-end are included in inventories and may be used to cover the obligation in later years.

A provision is recognised if the volume of energy savings certificates obtained is lower than the cumulative energy savings obligation at the year-end. The amount of the provision is equal to the cost of actions still to be taken to extinguish the obligations related to the energy sales made.

ENERGY SAVING REGULATIONS IN FRANCE

The fifth period of France's energy savings certificates scheme (2022-2025) began on 1 January 2022. Decree 2021-712 tightened up the scheme (for example by significantly reducing special measures and bringing calculations closer to the real savings), and directs more funding to very vulnerable households (raising the "energy poverty" obligations, restricting the scope to very vulnerable households, and increasing the penalties in this category from €15/MWhc initially to €20/MWhc).

However, to reinforce the dynamic, the French Department for Energy and Climate (*Direction Générale de l'Énergie et du Climat* or DGEC) issued a decree just ten months after the fifth period began (decree 2022-1368 of 27 October 2022) that raised the scheme obligations for the period from 1 January 2023 as follows:

- "Standard" obligation: 1,970TWhc vs 1,770TWhc initially, and +200TWhc for the period 2023-2025;
- "Energy poverty" obligation: 1,130TWhc vs 730TWhc initially, and +400TWhc for the period 2023-2025.

These regulatory changes introduced during the period are obliging the actors concerned to make adaptations.

Note 6 Net changes in fair value on energy and commodity derivatives, excluding trading activities

ACCOUNTING PRINCIPLES AND METHODS

This item essentially consists of changes over the period in the fair value of derivatives used for economic hedging of commodity purchases or sales that are not eligible for hedge accounting as defined in IFRS 9, and are therefore included directly in profit and loss. The Group reports these changes in a specific line of the income statement, "Net changes in fair value on Energy and Commodity derivatives, excluding trading activities" below the operating profit before depreciation and amortisation.

(in millions of euros)	2024	2023
NET CHANGES IN FAIR VALUE ON ENERGY AND COMMODITY DERIVATIVES, EXCLUDING TRADING ACTIVITIES	443	363

Net changes in fair value on Energy and Commodity derivatives, excluding trading activities, stood at €443 million at 31 December 2024 (€363 million at 31 December 2023).

Note 7 Other income and expenses

Other income and expenses amount to €(4,834) million for 2024. They principally comprise:

- increases in provisions for spent fuel management in France totalling €(3,301) million (see note 15.1);
- an increase of €(775) million in the provision related to the Cigéo project in France (see note 15.1);
- an increase of €(587) million in provisions following the environmental agreement with ENI (see note 21.3);
- exceptional additional costs relating to repairs of the main secondary circuit welds at the Flamanville 3 EPR, totalling €(143) million (these are defined by IAS 16 paragraph 22 as abnormal costs and cannot be included in the cost of assets in progress);
- the impact of the loss of control over Sizewell C (Holding) Ltd amounting to €(63) million (see note 3.1.3).

Other income and expenses amounted to €(2,944) million for 2023. They principally comprised:

- an exceptional additional increase of €(1,073) million in provisions for spent fuel management, in view of the agreement signed in September 2023 with Orano Recyclage fixing the principles of future amendments for the period 2024-2026 (see note 15.1.1);
- an increase of €(525) million in Edison's provisions for environmental litigation;
- exceptional additional costs totalling €(499) million, relating to repair work on the main secondary circuit welds at the Flamanville 3 EPR;
- an increase of €(345) million in provisions following the final agreement signed on 13 December 2023 between ENGIE and the Belgian government concerning all nuclear waste-related obligations;
- a past service cost of €(338) million resulting from the pension plan amendment introduced by France's pension reform;
- a provision of €(162) million for surplus costs related to the design of the Hinkley Point C project, to be reimbursed to CGN under a specific agreement;
- income of €92 million resulting from the United Kingdom's pension cap.

Note 8 Financial result

8.1 Cost of gross financial indebtedness

Details of the components of the cost of gross financial indebtedness are as follows:

(in millions of euros)	2024	2023
Interest expenses on financing operations ⁽¹⁾	(3,984)	(3,924)
Change in the fair value of derivatives and hedges of liabilities	(23)	17
Transfer to income of changes in the fair value of cash flow hedges	(14)	(34)
Net foreign exchange gain on indebtedness	(73)	111
COST OF GROSS FINANCIAL INDEBTEDNESS	(4,094)	(3,830)

(1) Including interest on the lease liability amounting to €(131) million in 2024 and €(100) million in 2023.

Interest expenses on financing operations are stable, as the effect of a reduction in gross indebtedness is offset by a slight increase in average interest rates during the year.

8.2 Discount effect

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

Details of the final discount effect are as follows:

(in millions of euros)	2024	2023
Provisions for long-term and post-employment benefits ⁽¹⁾	(1,227)	(1,337)
Provisions for the back-end of the nuclear cycle, decommissioning and last cores ⁽²⁾	(1,848)	(2,603)
Other provisions and advances	(115)	(48)
DISCOUNT EFFECT	(3,190)	(3,988)

(1) See note 16.1.2.

(2) Including the effect of discounting the receivable corresponding to amounts reimbursable by the NLF (see note 18.1.3).

The decrease in the discount expense on provisions for long-term and post-employment benefits in 2024 is explained by the lower discount rate applicable at 1 January 2024 (in France: 3.4%, against 3.9% at 1 January 2023).

The decrease in the discount expenses on nuclear provisions in 2024 results mainly from a rate effect of €487 million attributable to the 0.1% increase in the real discount rate in France over the period (2.6% in 2024 and 2.5% in 2023, see note 15.1), and the €396 million impact of the adjustment to economic conditions in December 2023 to take account of substantially higher inflation, which had no equivalent in 2024.

8.3 Other financial income and expenses

Other financial income and expenses comprise:

(in millions of euros)	2024	2023
Financial income on cash and cash equivalents	351	293
Gains/(losses) on other financial assets (including loans and financial receivables)	148	374
Gains/(losses) on debt and equity securities	978	760
Changes in financial instruments carried at fair value through profit and loss	3,280	2,058
Other financial expenses	(327)	(403)
Foreign exchange gain/loss on financial items other than debts	(61)	(143)
Return on fund assets	668	708
Capitalised borrowing costs	1,315	822
OTHER FINANCIAL INCOME AND EXPENSES	6,352	4,469

"Gains/(losses) on debt and equity securities" in 2024 principally include:

- €1,216 million of dividends and interest income on debt securities (€877 million in 2023);
- €(237) million of net gains and losses on sales of debt securities carried at fair value through OCI with recycling (including €(156) million on dedicated assets), compared to €(118) million in 2023 (including €(101) million on dedicated assets).

In 2024, other financial income and expenses include changes in the fair value of financial instruments amounting to €3,280 million (€2,058 million in 2023) in a market environment that remained volatile. €2,998 million of this change related to the fair value of dedicated assets (€2,220 million in 2023).

Note 9 Income taxes

ACCOUNTING PRINCIPLES AND METHODS

Income taxes include the current tax expense (income) and the deferred tax expense (income), calculated under the tax legislation in force in the countries where earnings are taxable.

In compliance with IAS 12, current and deferred taxes are generally recorded in the income statement or in equity symmetrically to the underlying operation.

In application of IFRS 9, the Group considers that payments made to holders of perpetual subordinated bonds qualify as "dividends" under the definition given in the standard. Consequently, in compliance with IAS 12, the tax effects of such distributions are included in profit and loss of the relevant period, in the same way as the effects of dividend payments.

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

The current tax expense (income) is the estimated amount of tax due on the taxable income for the period, calculated using the tax rates adopted at the year-end.

Deferred taxes result from temporary differences between the book value of assets and liabilities and their tax basis, except in specific cases defined in IAS 12, for which no deferred taxes are recognised.

Deferred tax assets and liabilities are valued at the expected tax rate for the period in which the asset will be realised or the liability extinguished, based on tax rates adopted at the year-end. If the tax rate changes, deferred taxes are adjusted to the new rate and the adjustment is recorded in the income statement, unless it relates to an underlying for which changes in value are recorded in equity, for example in accounting for actuarial gains and losses or fair value on hedging instruments and debt or equity securities.

Deferred taxes are reviewed at each closing date, to take into account changes in tax legislation and the prospects for recovery of deductible temporary differences. Deferred tax assets are only recognised when it is probable that the Group will have sufficient taxable profit to utilise the benefit of the asset in the foreseeable future, or beyond that horizon, if there are deferred tax liabilities with the same maturity.

Deferred tax assets and liabilities are reported on a net basis, determined at the level of a tax entity or tax group.

Pillar two rules

To address concerns about declining corporate income tax bases and the shifting of taxable profits between States by large multinational companies, a worldwide agreement to introduce a minimum corporate tax rate of 15% was reached in 2021 by more than 135 countries (the "Pillar Two Rules").

Following the European Union's adoption of the "Pillar Two" directive on 15 December 2022, on 20 December the OECD published simplified procedures which will only apply for financial years beginning on or before 31 December 2026 (which in practice for the Group means financial years 2024 to 2026). During that transition period, provided certain requirements are met in the country of operation, groups will be exempt from calculating top-up tax under the Pillar Two rules. France's Finance Law for 2024 transposed these new rules into French legislation. The first application is in 2024 and the first declaration will be filed in June 2026.

In 2024, the Group finalised its "Pillar Two" evaluation work, and concluded that these rules will not have any significant impact on the consolidated financial statements (below €5 million).

9.1 Breakdown of tax expense

The tax income / (expense) breaks down as follows:

(in millions of euros)	2024	2023
Current tax expense	(2,918)	(3,887)
Deferred taxes	(1,969)	1,417
TOTAL	(4,887)	(2,470)

In 2024, €(1,851) million of the current tax expense relates to French companies, and €(1,067) million relates to foreign subsidiaries (€(2,167) million and €(1,720) million respectively in 2023).

9.2 Reconciliation of the theoretical and effective tax expense (tax proof)

(in millions of euros)	2024	2023
Income of consolidated companies before tax	17,395	9,825
Income tax rate applicable to the parent company	25.82%	25.82%
Theoretical tax expense	(4,491)	(2,537)
Differences in tax rate ⁽¹⁾	(1)	(61)
Permanent differences ⁽²⁾	(374)	(1,188)
Taxes without basis ⁽³⁾	157	253
Unrecognised deferred tax assets ⁽⁴⁾	(178)	1,062
Other	-	1
ACTUAL TAX EXPENSE	(4,887)	(2,470)
EFFECTIVE TAX RATE	28.09%	25.13%

The income tax expense amounts to €(4,887) million at 31 December 2024, corresponding to an effective tax rate of 28.09% (€(2,470) million in 2023, corresponding to an effective tax rate of 25.13%).

The €(2,417) million change essentially reflects the €7,570 million increase in the Group's pre-tax income, generating additional tax of €(1,955) million.

The change in the income tax expense in 2024 is also affected by write-downs of deferred tax assets in the United States, whereas in 2023 the Group recognised the entire deferred tax asset on the loss reported in 2022 by the French tax group (EDF SA, Enedis, PEI and other French subsidiaries owned more than 95%). The change in the income tax expense in 2023 was also unfavourably affected by impairment in the United Kingdom which included a significant non-tax-deductible portion, and that situation had no equivalent in 2024.

After elimination of these non-recurring items (principally impairment, certain nuclear provisions, and changes in unrealised gains and losses on the financial asset portfolio and commodities), the effective current tax rate for 2024 is 26.48%, compared to 20.6% in 2023.

The main factors explaining the difference between the theoretical tax rate and this effective rate are:

- In 2024:
 - > ⁽²⁾ the unfavourable impacts in the United Kingdom of non-tax-deductible impairment (€(122) million), loss of control over Sizewell C (Holding) Limited (€(63) million), and the Electricity Generator Levy, a 45% tax on electricity producers' windfall revenues (€(123) million);
 - > ⁽³⁾ the favourable impact of deduction of the payments made to bearers of perpetual subordinated bonds, amounting to €150 million;
 - > ⁽⁴⁾ the unfavourable impacts of write-downs of deferred tax assets in the United States (€183 million) due to political and economic situations that are adversely affecting offshore wind farms and other projects.
- In 2023:
 - > ⁽¹⁾ the unfavourable €(62) million impact of tax rate differences in Italy, where the normative tax rate applicable in 2023 is 27.9%;
 - > ⁽²⁾ the unfavourable impacts in the United Kingdom of impairment (€(1,020) million) and the Electricity Generator Levy (€(100) million);
 - > ⁽³⁾ the favourable impact of deduction of the payments made to bearers of perpetual subordinated bonds, amounting to €164 million;
 - > ⁽⁴⁾ the favourable impacts of recognition and reversals of write-downs of deferred tax assets of the tax group in France (€938 million) (including €1,060 million relating to the loss reported in 2022), and in the United States (€182 million).

9.3 Change in deferred tax assets and liabilities

(in millions of euros)	2024	2023
Deferred tax assets	7,403	8,696
Deferred tax liabilities	(978)	(1,533)
Net deferred taxes at 1 January	6,425	7,163
Change in net income	(1,969)	1,417
Change in equity	(978)	(2,040)
Translation adjustments	30	(28)
Changes in scope of consolidation	(26)	(78)
Other movements	1	(9)
NET DEFERRED TAXES AT 31 DECEMBER	3,483	6,425
Deferred tax assets	4,553	7,403
Deferred tax liabilities	(1,070)	(978)

In 2024, the change in deferred taxes in equity includes €(12) million of actuarial gains and losses on post-employment benefits (+€199 million in 2023), €(641) million of changes in the fair value of hedges (+€2,216 million in 2023), €(150) million of foreign exchange effects on derivatives (€(66) million in 2023), and €(139) million of changes in the fair value of bonds (+€247 million in 2023).

9.4 Breakdown of deferred tax assets and liabilities by nature

(in millions of euros)	31/12/2024	31/12/2023
Deferred taxes:		
Fixed assets and right-of-use assets	(5,721)	(5,114)
Provisions for employee benefits	4,190	3,938
Other provisions and impairment	269	216
Financial instruments	(367)	509
Tax loss carryforwards and unused tax credits	6,765	7,915
Lease liability	774	838
Other	453	544
Total deferred tax assets and liabilities	6,363	8,846
Unrecognised deferred tax assets	(2,880)	(2,421)
NET DEFERRED TAXES	3,483	6,425

At 31 December 2024, unrecognised deferred tax assets represent a potential tax saving of €2,880 million (€2,421 million at 31 December 2023), mainly relating to France, Italy and the United States.

The unrecognised potential tax saving in France, amounting to €1,956 million (€1,709 million in 2023), essentially relates to the stock of deferred tax assets on employee benefits. Some of the corresponding deferred taxes are unrecognised, in application of the Group's policy for recognition of deferred taxes beyond a 10-year horizon.

The potential tax saving in Italy, amounting to €311 million (€308 million in 2023), relates to the tax value of goodwill, which was revised in 2021 and is amortisable over 50 years for tax purposes. Some of the corresponding deferred tax assets are unrecognised due to the Group's policy for recognition of deferred taxes beyond a 10-year horizon (deferred tax assets that will reverse within 10 years are recognised in full, while other deferred tax assets are recognised to the extent of concurrent deferred tax liabilities).

The unrecognised deferred tax assets in the United States, amounting to €491 million (€287 million in 2023) mainly relate to tax losses that can be carried forward until dates between 2029 and 2037 (this concerns losses generated before 31 December 2017, and long-term capital losses), or for an unlimited period (for losses generated after 2017), and tax credits expiring between 2025 and 2042.

Recognised deferred tax assets on tax loss carryforwards and tax credits utilised amount to €6,151 million (€7,538 million in 2023) and principally concern France (€4,824 million in 2024, €6,190 million in 2023), the United States (€231 million in 2024, €561 million in 2023), and the United Kingdom (€721 million in 2024, €475 million in 2023).

In France, they include a deferred tax asset of €4,733 million generated by the loss reported in 2022 by the French tax group (EDF SA, Enedis, PEI and other French subsidiaries owned more than 95%), which has not yet been totally utilised.

Based on the projected future tax results of the French tax group, the gross deferred tax asset of €4,733 million is expected to be recovered within 10 years. These projections take account of the Group's 2025 budget as approved by the Board of Directors and the Group's internal financial trajectory.

In the United Kingdom, deferred tax assets on tax loss carryforwards and tax credits were recognised due to the existence of deferred tax liabilities in the same entities that will reverse over the same time horizons, or because taxable profits are expected.

In the United States, a portion of tax losses and credits were similarly recognised due to expectations of taxable profits.

Note 10 Property, plant and equipment and intangible assets (excluding French public electricity distribution concession assets)

Details of property, plant and equipment and intangible assets (excluding French electricity distribution concession assets) are as follows:

(in millions of euros)	Notes	31/12/2024	31/12/2023
Goodwill	10.1	7,108	7,895
Other intangible assets	10.2	12,567	11,300
Property, plant and equipment used in generation and other tangible assets, including right-of-use assets	10.3	108,100	100,587
Right-of-use assets	10.4	4,302	4,173
Property, plant and equipment operated under concessions other than French electricity distribution concessions	10.5	6,616	6,544
TOTAL PROPERTY, PLANT AND EQUIPMENT AND INTANGIBLE ASSETS (EXCLUDING FRENCH ELECTRICITY DISTRIBUTION CONCESSION ASSETS)		134,391	126,326

n.a.: not applicable.

10.1 Goodwill

ACCOUNTING PRINCIPLES AND METHODS

DETERMINATION OF GOODWILL

In application of IFRS 3, "Business combinations" (see note 3), goodwill is the difference between:

- the sum of the following items:
 - the acquisition-date fair value of the price paid to acquire control;
 - the value of non-controlling interests in the entity acquired; and
 - for acquisitions achieved in stages, the acquisition-date fair value of the Group's share in the acquired entity before it acquired control; and
- the net value of the assets acquired and liabilities assumed, measured at fair value at the acquisition date.

When this difference is negative it is immediately included in net income.

The fair values of assets and liabilities and the resulting goodwill are finalised within twelve months of the acquisition.

MEASUREMENT AND PRESENTATION OF GOODWILL

Goodwill on acquisition of subsidiaries is disclosed separately in the balance sheet. Impairment on this goodwill is reported under the heading "Impairment" in the income statement. After initial recognition, goodwill is carried at cost less any impairment recognised.

Goodwill on acquisition of associates and joint ventures is included in the investment's net book value. Impairment on this goodwill is included under the heading "Share in income of associates and joint ventures".

Goodwill is not amortised, but impairment tests are carried out as soon as there is an indication of possible loss of value, and at least annually, as described in note 10.7.

Changes in goodwill were as follows:

(in millions of euros)	Note	31/12/2024	31/12/2023
Net book value at opening date		7,895	9,513
Acquisitions		594	43
Disposals		(1,417)	(24)
Impairment	10.7	(151)	(1,779)
Translation adjustments		212	134
Other changes		(25)	8
NET BOOK VALUE AT CLOSING DATE		7,108	7,895
Gross value at closing date		11,359	11,832
Accumulated impairment at closing date		(4,251)	(3,937)

At 31 December 2024, goodwill primarily relates to EDF Energy (€3,596 million) and Framatome (€1,511 million).

The net change in goodwill essentially results from:

- acquisition of the Arabelle Solutions subgroup, which led to recognition of provisional goodwill of €513 million (see note 3.1.2);
- loss of control over Sizewell C (Holding) Ltd leading to a decrease of €(1,417) million (see note 3.1.3).

Impairment of goodwill in the United Kingdom amounting to €(108) million was recognised during the year (see note 10.7).

The €212 million increase in translation adjustments reflects the rise of the pound sterling against the Euro.

10.2 Other intangible assets

ACCOUNTING PRINCIPLES AND METHODS

GENERAL PRINCIPLES

Other intangible assets mainly comprise:

- software, which is amortised on a straight-line basis over its useful life, including SaaS (Software as a Service) contracts which are not treated as service contracts and included in expenses. To qualify for treatment as fixed assets, SaaS contracts must confer a right of control to the user in addition to access to the software for a fixed period;
- development costs that qualify for capitalisation under IAS 38 amortised on a straight-line basis over their foreseeable useful life;
- purchased brands with an indefinite useful life, or amortised on a straight-line basis over their useful life;
- operating or usage rights for power plants, which are amortised on a straight-line basis over the useful life of the underlying asset;
- the positive value of energy purchase/sale contracts stated at fair value as part of a business combination governed by IFRS 3: this value is amortised as the contractual deliveries take place;
- assets related to concession contracts governed by IFRIC 12, under the “intangible model” (see note 10.5);
- purchased technology related to activities of Framatome and Arabelle Solutions;
- purchased customer contracts and relations, amortised over their useful life;
- incremental costs of winning or renewing customer contracts, which are amortised over the average duration of customer contracts;
- intangible assets related to environmental regulations.

INTANGIBLE ASSETS RELATING TO ENVIRONMENTAL REGULATIONS

These include greenhouse gas emission certificates and renewable energy certificates purchased (see notes 20.1.1 and 20.1.2).

Greenhouse gas emission certificates

EU Directive 2003/87/EC set up a greenhouse gas emission quota system for the European Union. The UK has its own emissions trading scheme (UK ETS) which has been in operation since 1 January 2021.

This quota system was incorporated into national laws. Among other things it requires obligated actors, which is the case of EDF, to surrender to the State a number of greenhouse gas emission credits each year, corresponding to their emissions for the year.

In the EDF group, the entities subject to these regulations are EDF, EDF Energy, Edison, Dalkia, and Luminus.

The accounting treatment of emission certificates depends on the holding intention. Two economic models coexist in the Group:

- Certificates held under the “Trading” model are included in “Other inventories” at fair value. The change in fair value observed over the year is recorded in the income statement;
- Certificates held to comply with regulatory requirements on greenhouse gas emissions (the “Generation” model) are recorded in other intangible assets:
 - > at acquisition cost when purchased on the market,
 - > at nil value when allocated free of charge (in countries that still have a free allocation system).

A provision corresponding to emissions for the year is established at the year-end (see note 17.2).

This provision is equal to the acquisition cost up to the amount of certificates acquired on forward markets, and by reference to market prices for the balance. It is cancelled when the certificates are surrendered to the State.

At the closing date, the certificates held and the obligation to surrender certificates for the emissions of the year are presented gross, without netting.

If the number of emission certificates at the end of the year not subject to forward sale is higher than the number of certificates to be surrendered to the State for the year's emissions, an impairment test is applied to the excess and impairment is recognised if the net book value exceeds the market value.

Renewable energy certificates (green certificates)

In application of EU Directive 2009/28/EC on the promotion of the use of energy from renewable sources, every EU member state has set national targets for consumption of electricity from renewable sources. The UK has its own equivalent system.

States can use two possible mechanisms to meet these targets:

- introducing a specific sales tariff for energy from renewable sources (this system is used in France and Italy);
- introducing a system of renewable energy certificates to be surrendered by energy suppliers (this system is used in the United Kingdom (Renewable Obligation Certificates) and Belgium (*Certificats verts*)).

For renewable energy certificate systems, the Group applies the following accounting treatment:

- certificates earned through energy generation are not recognised, since their cost is nil;
- certificates purchased are recognised as intangible assets in the line "Greenhouse gas emission rights - green certificates";
- a provision is established to reflect the obligation to surrender certificates. It is based on the cost of certificates earned (with nil value) and purchased (on the spot or forward market), the market price of the certificates still be purchased, and where relevant the market penalty price for the balance. The provision is cancelled when the certificates are surrendered to the State (see note 17.2).

The net value of other intangible assets breaks down as follows:

(in millions of euros)	31/12/2023	Acquisitions	Disposals	Translation adjustments	Changes in scope ⁽¹⁾	Other movements	31/12/2024
Software	7,964	916	(192)	52	-	17	8,757
Positive fair value of commodity contracts acquired in a business combination	504	-	-	-	-	-	504
Greenhouse gas emission certificates - green certificates	1,008	2,172	(2,196)	16	-	2	1,002
Other intangible assets	8,829	753	(37)	30	412	(212)	9,775
Intangible assets in development ⁽²⁾	2,600	1,072	(41)	2	7	(37)	3,603
Gross value	20,905	4,913	(2,466)	100	419	(230)	23,641
Software	(5,249)	(851)	187	(47)	-	19	(5,941)
Positive fair value of commodity contracts acquired in a business combination	(291)	(25)	-	-	-	-	(316)
Other intangible assets	(4,065)	(946)	33	(24)	-	185	(4,817)
Accumulated amortisation and impairment	(9,605)	(1,822)	220	(71)	-	204	(11,074)
NET VALUE	11,300	3,091	(2,246)	29	419	(26)	12,567

(1) The changes in scope essentially concern Arabelle Solutions (see note 3.1.2).

(2) Increases in intangible assets in development are stated net of the effects of newly-commissioned assets.

Intangible assets in progress at 31 December 2024 essentially comprise €2,481 million for studies concerning the EPR 2 including capitalised interim interest of €204 million (€1,651 million at 31 December 2023, including capitalised interim interest of €161 million).

The net value of other intangible assets (except intangible assets in development) at 31 December 2024 includes:

- Enedis' network map, amounting to €547 million (€500 million in 2023);
- the Edison brand and intangible assets related to Edison's hydropower concessions amounting to €1,047 million;
- the Dalkia brand and intangible assets related to Dalkia's concession agreements in France amounting to €1,691million;
- the Framatome brand, Framatome's nuclear technology-related intangible assets and Framatome's customer contracts amounting to €873 million.

The change during 2024 is explained by the impairment of €(228) million recognised in connection with NUWARD (Small modular reactors) (see note 10.7.2).

New nuclear reactors in France: the EPR2 project

The EPR2 project concerns a new pressurised water nuclear reactor that meets the objectives for third-generation reactor safety, aiming to incorporate design, construction and commissioning experience acquired from EPR reactors and the nuclear reactors currently in operation.

EDF is in charge of design development for this reactor, and the principal safety options were validated by the ASN in 2019.

The EPR2 will offer superior operating performance in terms of power (1,650MW compared to 1,450MW N4 for the most powerful reactor currently in operation except Flamanville 3), efficiency, availability and manoeuvrability. It will confirm the advance begun with the Flamanville 3 EPR, which was coupled to the network for the first time on 21 December 2024 and is due to start operation in 2025.

On 10 February 2022, the French President announced the launch of a programme to construct 6 EPR2 reactors by 2035, and begin studies for an additional 8 EPR2 reactors by 2050. He also observed that it was necessary to aim to have the first new reactor commissioned by 2035-2040, and said that these new EPR2 units would be built and operated by EDF.

On 29 June 2023, EDF announced that it was making the necessary applications for authorisation to launch construction of the first pair of EPR 2 reactors at Penly, and starting other administrative procedures required for their completion and connection to the electricity transmission network. EDF is proposing to build three pairs of EPR 2 reactors, at Penly (Normandy), Gravelines (Hauts-de-France) and Bugey (Auvergne-Rhône-Alpes), in that order (see the press release by the French President's Office of 19 July 2023).

While awaiting a final investment decision (FID) for the EPR 2 programme, EDF was authorised by its Board of Directors on 15 February 2024 to continue development work on this project until the end of 2024, with a budget extension of approximately €1.2 billion, bringing the total development budget for the EPR 2 programme to €3,042 million.

Major milestones were reached during 2024 for the EPR 2 project : a technical maturity review in July confirmed the move to the detailed design phase for the nuclear buildings, the launch of primary component production was greenlit (as technical maturity had been reached and the ASN had officially lifted its hold points), and the decree authorising the convention for use of the maritime zone at Penly was published in the *Journal officiel* on 6 July, allowing preparatory work at the site to begin in July 2024. Active preparation of the Gravelines and Bugey projects also progressed. The public debate concerning Gravelines was held from 17 September 2024 to 17 January 2025. The Bugey project was submitted to France's National Public Debate Commission (CNDP), which also decided to hold a debate in the first half of 2025. Work on the competitiveness plan, the technical maturity review, asset regulation, and programme consolidation continued through regular contacts with the French State, including the Interministerial Nuclear New Build Delegation (*Délégation Interministérielle du Nouveau Nucléaire* or DINN), on the pathway towards the final investment decision. A financial audit by the State is expected to take place in 2025.

At 31 December 2024, the EPR 2 project consists of €2,481 million of intangible assets and €381 million of tangible assets.

The Group's 2025 budget, approved on 18 December 2024, includes expenditure of €1.1 billion in 2025 on the French nuclear new build programme. The Board of Directors' meeting of 5 February 2025 took note of the opinion of its Commitments Committee which met on 27 January 2025: the Committee considered this level of expenditure appropriate, as it is focused on the work required for a final investment decision to be made in late 2026, and the programme's priorities (design maturity and progress on the licence and permit procedures, funding arrangements, etc).

NUWARD, France's Small Modular Reactor (SMR) project

The Basic Design phase of this project continued throughout the first half of 2024, with deeper consideration of the project's design and market positioning. In view of what was learned, a new strategic orientation was adopted, consisting of developing a new design based on proven technological building blocks.

This orientation will build on the technical, industrial and commercial knowledge accumulated by NUWARD and the Group's own experience in nuclear power and PWR technology.

In view of these factors, the Group recognised impairment at 31 December 2024 on the amounts capitalised to date for this project which now amount to €(228) million net of subsidies (see note 10.7). Expenditure on the project in 2024 amounted to €90 million.

The EDF group is continuing its strategy of developing a third-generation SMR jointly with its subsidiary NUWARD, to support the energy transition and meet industrial operators' needs in Europe and internationally.

On 26 April 2024, the European Commission approved French State aid to support NUWARD's research and development for SMRs. €75 million of this aid was received in the first half of 2024. These subsidies are included in Other liabilities (see note 13.6.5).

10.3 Property, plant and equipment used in generation and other tangible assets by the Group

ACCOUNTING PRINCIPLES AND METHODS

Property, plant and equipment is recorded at acquisition or production cost:

- the cost of facilities developed in-house includes all labour and materials costs, and all other production costs that can be included in the construction of the asset;
- borrowing costs attributable to the financing of an asset incurred during the construction period are included in the value of the asset provided it is a qualifying asset as defined by IAS 23 "Borrowing costs";
- the cost of property, plant and equipment also includes the initial estimate of decommissioning costs. These costs are recognised in assets against the provision recognised to cover these obligations. At the date of initial commissioning, these assets are measured and recorded in the same way as the corresponding provision (see note 15);
- decommissioning costs for nuclear generation installations also include last core costs (see note 15).

When some of the decommissioning costs for a plant are to be borne by a partner, the expected reimbursement is recognised as accrued income in the assets.

The Group capitalises safety expenses incurred as a result of legal and regulatory obligations sanctioning non-compliance by an administrative ban from operation.

Strategic safety spare parts for generation facilities are treated as property, plant and equipment, and depreciated over the residual useful life of the installations.

The costs of operations that are necessary for generation assets to remain in service, and are undertaken at the time of scheduled shutdowns, particularly during major inspections, are capitalised and amortised over a period corresponding to the time elapsing between two inspections.

DEPRECIATION

Items of property, plant and equipment are depreciated on a straight-line basis over their useful life, defined as the period during which the Group expects to draw future economic benefits from their use.

When a part of an asset has a different useful life from the overall asset's useful life, it is identified as an asset component and depreciated over a specific period.

Depending on each country's specific regulations and contractual arrangements, the expected useful lives for the main facilities are as follows:

• nuclear generation facilities	40 to 50 years
• wind farm and photovoltaic facilities	20 to 25 years
• fossil-fired power plants (mainly CCGT-Combined Cycle Gas Turbine plants)	25 to 45 years
• transmission and distribution installations (lines, substations)	20 to 60 years
• other general plant and machinery	10 to 20 years

Depreciation periods of nuclear plants in France

As stated in note 1.3.4.1, the depreciation period of nuclear power plants currently in operation in France, i.e. thirty-two 900MW reactors, twenty 1,300MW reactors and four 1,450MW reactors, is 50 years for 900MW-series plants (since 1 January 2016) and 1,300MW-series plants (since 1 January 2021), and 40 years for N4-series plants which do not yet fulfil the conditions for a longer depreciation period.

Under France's multi-year energy programme (PPE, standing for *Programmation Pluriannuelle de l'Énergie*) for the period 2019-2028, adopted in April 2020, twelve French nuclear reactors are to be shut down by 2035. As this includes the shutdowns of two 900MW reactors in 2027 and 2028 ahead of their fifth 10-year inspection, an early shutdown scenario for two 900MW reactors was adopted. Its effects on nuclear provisions and depreciation in the Group's financial statements are not significant. Application of this scenario continued at 31 December 2024 while awaiting the next multi-year energy programme, which could be adopted in 2025 as part of the current revision of France's Energy and Climate strategy.

Depreciation period of the Cordemais coal-fired plant in France

In view of France's Energy and Climate law of 8 November 2019, the end of the depreciation period for the Cordemais coal-fired plant was brought forward to 2026 at the 2021 year-end.

In September 2024, since the technical and economic conditions necessary for the repowering project to run the Cordemais plant on biomass were not fulfilled, EDF announced that it was considering stopping electricity generation by the Cordemais coal-fired plant in 2027. The repowering project is subject to consultation with employee representative bodies.

The net values of property, plant and equipment used in generation and other tangible assets are as follows:

(in millions of euros)	31/12/2023	Increases	Assets commissioned	Decreases	Translation adjustments	Changes in the scope of consolidation	Other movements	31/12/2024
Land and buildings	14,561	84	405	(99)	44	139	20	15,154
Nuclear power plants	82,796	15	5,163	(2,042)	477	-	(34)	86,375
Fossil-fired & hydropower plants	17,878	65	617	(1,972)	50	10	13	16,661
Other installations, plant, machinery, equipment & other	25,955	251	2,986	(564)	142	(966)	297	28,101
Right-of-use assets ⁽¹⁾	7,157	846	-	-	54	(58)	(15)	7,984
Assets in progress	58,041	17,959	(9,171)	(247)	1,521	(3,707)	304	64,700
Gross value	206,388	19,220	-	(4,924)	2,288	(4,582)	585	218,975
Land and buildings	(8,768)	(406)	-	80	(25)	(1)	(5)	(9,125)
Nuclear power plants	(56,818)	(3,900)	-	1,945	(328)	-	(158)	(59,259)
Fossil-fired & hydropower plants	(13,007)	(495)	-	1,956	(43)	-	(290)	(11,879)
Other installations, plant, machinery, equipment & other	(12,918)	(1,677)	-	550	(121)	70	731	(13,365)
Right-of-use assets ⁽¹⁾	(2,984)	(804)	-	-	(14)	6	114	(3,682)
Assets in progress	(11,306)	(1,173)	-	14	(570)	(11)	(519)	(13,565)
Depreciation and impairment	(105,801)	(8,455)	-	4,545	(1,101)	64	(127)	(110,875)
NET VALUE	100,587	10,765	-	(379)	1,187	(4,518)	458	108,100
<i>Including assets in operation</i>	<i>53,852</i>	<i>(6,021)</i>	<i>9,171</i>	<i>(146)</i>	<i>236</i>	<i>(800)</i>	<i>673</i>	<i>56,965</i>
<i>Including assets in progress</i>	<i>46,735</i>	<i>16,786</i>	<i>(9,171)</i>	<i>(233)</i>	<i>951</i>	<i>(3,718)</i>	<i>(215)</i>	<i>51,135</i>

(1) See note 10.4.

The change in the net value of property, plant and equipment in 2024 amounts to €7,513 million, of which €4,400 million relates to assets in progress and €3,113 million to assets commissioned and in operation.

Assets in progress

At 31 December 2024, the net value of assets in progress (property, plant and equipment used in generation and other tangible assets) is €51,135 million, mainly comprising:

- Assets for Hinkley Point C amounting to €21,190 million, including capitalised interim interest of €2,704 million (€15,723 million and €1,682 million respectively at 31 December 2023). The value of these assets includes accumulated impairment booked on the project which amounts to €(13,405) million at 31 December 2024 (€(11,172) million at 31 December 2023);
- Assets for the Flamanville 3 EPR amounting to €15,878 million, including capitalised interim interest of €3,471 million (€15,485 million and €3,471 million respectively at 31 December 2023);

The €6,659 million increase in the gross value of these assets during 2024 comprises:

- €4,496 million concerning the major projects in the United Kingdom: €6,131 million for Hinkley Point C and €(1,635) million for Sizewell C (the €2,112 million of investments made during the year are included in "increases" and the €(3,747) million effects of loss of control are included in "changes in the scope of consolidation", see note 3.1.3);
- €6,038 million concerning France, including €2,931 million for the *Grand Carénage* industrial refurbishment programme and €393 million for Flamanville 3;
- €1,877 million concerning various solar and wind energy projects at EDF Renewables;
- €1,521 million of translation adjustments mainly due to the pound sterling's rise against the euro;
- €(9,171) million concerning new installations commissioned during the period: €(5,651) million in France, essentially relating to nuclear power plants, €(2,122) million for solar and offshore wind energy projects at EDF Renewables, and €(621) million in Italy, relating to thermal and hydropower generation facilities.

Assets in operation

The gross value at 31 December 2024 of property, plant and equipment in operation is €154,275 million. The increase of €5,928 million is explained by:

- €9,171 million reflecting the commissioning of new facilities during the period;
- a decrease of €(4,677) million, including €(2,278) million in France, mainly relating to major refurbishments under the *Grand Carénage* programme and 10-year inspections, and €(2,134) million in the United Kingdom;
- €(875) million resulting from changes in the scope of consolidation, essentially at EDF Renewables (principally relating to the sales of the Fox Squirrel and Desert Quarritz solar plants in the United States (€(1,333) million);
- €767 million of translation adjustments mainly due to the pound sterling's rise against the euro.

Principal projects in progress and investments during the year

Investment programme for the existing nuclear fleet in France: *Grand Carénage*

Since 2014 EDF has been implementing its *Grand Carénage* industrial refurbishment programme for the French nuclear fleet, designed to enhance reactor safety and extend their operating lifetimes significantly beyond 40 years. On 31 March 2022, EDF's Board of Directors validated a new roadmap for the period 2022-2028. This incorporates information gained from current ASN inspections, particularly the fourth 10-year inspections of 900MW and 1,300MW plants, and includes the start of the research phase for the fifth 10-year inspections of 900MW plants, for a re-estimated total investment of €36.1 billion in current euros, i.e. €32.0 billion in 2021 euros. Investments made under the programme in 2024 totalled €5.2 billion. These amounts include the cost of work to address the stress corrosion issue, estimated at €1.3 billion in current euros (€1.2 billion in 2021 euros) for the period 2022-2025.

Stress corrosion

During scheduled controls included in the 10-year inspection of the Civaux 1 reactor in late 2021, stress corrosion was identified on parts of the auxiliary circuit pipework in the reactor's main primary circuit. EDF immediately carried out inspections and expert appraisals of the four series of reactors making up the French nuclear fleet (900MW, 1,300MW-P4, 1,300MW-P'4 and N4).

The examinations performed in 2022 led to an initial characterisation of the stress corrosion sensitivity of the fleet's 56 reactors, and the industrial programme for preventive replacement of pipe sections in reactors sensitive to stress corrosion was completed in the first quarter of 2024.

The planned checks were carried out in full and confirmed the reactors' sensitivity classification and the specific risk associated with repaired welds. The checks carried out on these units identified a few cases of suspected stress corrosion, which led to around 10 additional replacement projects in 2024. Inspections are carried out during scheduled maintenance shutdowns, and no additional or dedicated shutdown took place in 2024.

EDF sent the ASN its monitoring and maintenance strategy in late 2024 and the ASN is expected to state its position during 2025.

Flamanville 3 EPR project

The Flamanville 3 project saw the following developments during 2024:

The Compliance Declaration for the nuclear steam supply systems, which was required before fuel components could be loaded in the reactor vessel, was issued on 7 May 2024. This also marked the completion and compliance of the repairs to the welds on the main secondary circuit.

Following issuance on 8 May 2024 of the ASN's authorisation for commissioning of the Flamanville 3 EPR, EDF's teams loaded 241 nuclear fuel assemblies into the reactor vessel between 8 and 15 May.

After this operation was completed, the vessel head was closed on 26 May, so that the temperature and pressure in the circuits could be gradually increased in preparation for nuclear testing.

EDF's teams thus put the facilities into the required conditions to initiate nuclear fission.

The first nuclear reaction took place on 3 September 2024. The generation unit was connected to the electricity network on 21 December 2024 when it reached 17% of its nominal power (the "coupling" milestone), and the reactor ramp-up will continue gradually until 100% of nominal power is reached. On 31 January 2025, the ASN authorised EDF to exceed 25% of its nominal power. Authorisation from the ASN will also be required before reaching the 80% threshold.

The ASN issued a decision on 16 May 2023 authorising use of Flamanville's current reactor vessel head until "the reactor shutdown during which the first complete requalification of the primary circuit takes place". As a result, the reference scenario for EDF now assumes that the reactor vessel head will be replaced during the first scheduled shutdown for a full inspection, which should begin at the end of the reactor's first operating cycle (see note 15.1).

The construction cost (excluding interim interest) is stated in the consolidated financial statements at 31 December 2024 at €12.8 billion.

This amount includes the following items:

- pre-operating expenses and other property, plant and equipment related to the project, totalling €1,222 million;
- an inventory of spare parts and capitalised amounts totalling €863 million for related projects (notably the initial comprehensive inspection and North Area development).

The completion cost is unchanged at €13.2 billion in 2015 euros.

Hinkley Point C

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

The Contract for Difference signed on 29 September 2016 aims to provide security in the revenues generated from electricity produced and sold by HPC over a period of 35 years from commissioning of Unit 2. From the plant's start date, if the reference price at which HPC sells electricity on the market is lower than the strike price defined in the contract, i.e. £92.50/MWh (in 2012 sterling), index-linked to UK inflation through the Consumer Price Index, HPC will receive an additional payment. If the reference price is higher than the strike price, HPC must pay the difference.

On 23 January 2024, the Group announced that the schedule and construction cost for the two nuclear reactors at Hinkley Point C had been revised. Reactor 1 is now expected to be commissioned around the end of the decade. The cost of civil engineering and the longer duration of the electromechanical phase (and its impact on other work) were the two main reasons for this cost and schedule revision. The completion cost for the project is estimated at £31-34 billion (in 2015 sterling) depending on the situation. In the scenario assuming a further 1-year duration, the estimated additional cost would be around £1 billion in 2015 values (see note 10.7).

The consequences of the revised schedule and costs were taken into consideration in the valuation of assets at 31 December 2023, leading to recognition of impairment of €(11,151) million (see note 10.8 to the consolidated financial statements at 31 December 2023).

Construction of HPC continued during 2024, particularly with the following advances:

- installation of heat exchangers for Unit 1's diesel systems;
- the transfer pool and the cavity pool were installed for the Unit 2 reactor building;
- Unit 2's third liner ring was lifted into place;
- the reactor pressure vessel for Unit 1 was installed;
- the generator stator was installed in Unit 1's turbine hall.

The shareholders' funding commitments have been fully honoured, and in accordance with the agreements, from the fourth quarter of 2023 construction of the project is funded by the shareholders on a voluntary basis. The Group has financed the project alone since then.

At 31 December 2024, EDF's share in HPC is 72.6%, with CGN owning the remaining 27.4%.

Sizewell C

The Sizewell C project saw the following developments during 2024:

- In May 2024 the Office for Nuclear Regulation granted the Nuclear Site Licence required to start building the plant;
- the Sizewell C project company purchased the principal site land from EDF Energy during the first half of 2024, and on-site construction work officially started;
- Framatome signed several contracts with the Sizewell C project company in April 2024. Framatome will supply the two nuclear heat production systems and the plant's safety instrumentation and control systems. The agreements signed also cover a long-term fuel supply contract and a long-term maintenance and service contract to support the plant's operation. Production of all the forged components for Unit 1 has begun;
- a consortium formed by EDF SA and Edvance signed several contracts in July 2024 for design rights and engineering services.

Continuing the equity raise process launched in September 2023 to seek additional funding for the construction of Sizewell C, the final phase of investor selection is now in process, with the UK government's final investment decision to be taken in 2025.

At 31 December 2024, EDF owns only a 16.23% share of the project company (49.44% at 31 December 2023), and the UK government holds 83.77% (50.56% at 31 December 2023).

10.4 Right-of-use assets

ACCOUNTING PRINCIPLES AND METHODS

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

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

RECOGNITION OF A LEASE CONTRACT AS LESSEE UNDER IFRS 16

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

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

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

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

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

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

Off-balance sheet commitments presented in note 22.1.1 concern:

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

RECOGNITION OF A LEASE CONTRACT AS LESSOR

The accounting treatment of a lease contract in which the Group is lessor depends on the classification of the contract. For a finance lease which transfers substantially all risks and rewards inherent to ownership of the underlying asset to the lessee, the Group recognises a financial asset in its balance sheet instead of the initial fixed asset; in this case, the receivable is equal to the discounted value of future lease payments.

10.4.1 Change in right-of-use assets

(in millions of euros)	31/12/2023	Increases	Decreases	Changes in the scope of consolidation	Other movements	31/12/2024
Land and buildings	5,936	598	-	(72)	160	6,622
Other installations, plant, machinery, equipment & other	1,221	248	-	14	(121)	1,362
Gross value	7,157	846	-	(58)	39	7,984
Land and buildings	(2,300)	(616)	-	6	5	(2,905)
Other installations, plant, machinery, equipment & other	(684)	(188)	-	-	95	(777)
Depreciation and impairment	(2,984)	(804)	-	6	100	(3,682)
NET VALUE	4,173	42	-	(52)	139	4,302

The change in right-of-use assets at 31 December 2024 essentially concerns EDF SA (€1,504 million), Enedis (€780 million) and EDF Renewables (€677 million).

Increases (except in depreciation) relate to right-of-use assets arising from new lease contracts, including €355 million concerning EDF SA's office building leases.

"Other movements" are principally explained by the impact of the obligation to restore leased HPC land (€90 million) and the foreign exchange effect at EDF Renewables and EDF Energy (€41 million).

10.4.2 Impacts in the income statement

The main impacts in the income statement of the Group's lease contracts as lessee are as follows:

(in millions of euros)	2024	2023
Income from subleases	7	7
Variable lease expenses	(67)	(74)
Expenses on short-term leases or leases of low-value assets	(176)	(140)
Income from sale and leaseback operations	-	-
Operating profit before depreciation and amortisation	(236)	(207)
Depreciation on right-of-use assets	(804)	(772)
Operating profit	(1,040)	(979)
Interest expense on the lease liability	(131)	(100)
INCOME BEFORE TAXES OF CONSOLIDATED COMPANIES	(1,171)	(1,079)

10.4.3 Payments relating to leases

(in millions of euros)	2024	2023
TOTAL PAYMENTS RELATING TO THE LEASE LIABILITY	(867)	(845)

Payments relating to the lease liability mainly concern principal repayments, and amount to €770 million in 2024 (€752 million in 2023).

10.5 Property, plant and equipment operated under concessions other than French public electricity distribution concessions

ACCOUNTING PRINCIPLES AND METHODS

The accounting treatment of concession agreements depends on the nature of the agreements and their specific contractual features.

CONCESSIONS IN FRANCE

In France, the Group is the operator for three types of concessions:

- public electricity distribution concessions granted by local authorities (municipalities or syndicated municipalities) (see note 11);
- hydropower concessions granted by the State;
- heat generation and distribution concessions from public authorities.

HYDROPOWER CONCESSIONS

Hydropower concessions follow standard rules approved by decree. For concessions granted before 1999, hydropower concession assets consist solely of hydropower generation equipment (dams, pipes, turbines, etc.), while for more recent concessions, they also include hydropower generation equipment and switching facilities (alternators, etc.).

Most concessions that expired before 2012 were initially for 75 years and were renewed for terms of 30 to 50 years. However, the French government has not yet renewed 36 concessions that have expired. Since their expiry these concessions have thus been in the "rolling extension" situation defined by the law, which stipulates that at the expiry date of a concession, if no new concession has been established "the concession is extended on the existing terms until such time as a new concession is granted", so as to ensure continuity of operations in the meantime (Article L. 521 - 16 par. 3 of the French Energy Code).

As these concession agreements are not concerned by IFRIC 12 "Service concession agreements", the assets used, whether directly owned or part of the concession, are recorded under "Property, plant and equipment operated under concessions other than French public electricity distribution concessions" at acquisition cost.

The main useful lives are the following; for concession assets, the depreciation periods also take account of the duration of the concession agreement:

- | | |
|---|----------|
| • Hydroelectric dams | 75 years |
| • Electromechanical equipment used in hydropower plants | 50 years |

HEAT GENERATION AND DISTRIBUTION CONCESSIONS FROM PUBLIC AUTHORITIES

Heat generation and distribution concession agreements signed by Dalkia with public authorities confer the right to operate facilities remitted by or constructed at the request of those authorities for a limited period, under the concession-granting authority's supervision.

These agreements set the terms for remuneration and transfer of the facilities to the concession-granting authority or another operator taking over at the end of the agreement.

The assets are recorded as "Other intangible assets", in accordance with IFRIC 12 "Service concession agreements". Intangible assets are depreciated on a straight-line basis over the term of the concession, which is generally between 15 and 25 years.

Almost all of these assets are located in France.

FOREIGN CONCESSIONS

Foreign concessions are governed by a range of contracts and national laws. Most assets operated under foreign concessions are recorded under "Property, plant and equipment operated under concessions other than French public electricity distribution concessions". Foreign concessions essentially concern Edison in Italy, which operates local gas distribution networks, hydropower generating plants and energy services under concessions. Edison owns all the assets except for some items of property, plant and equipment on the hydropower generation sites, which will be returned to the concession-granting authority for nil consideration or with an indemnity when the concession ends. In compliance with IFRIC 12, certain concession agreements are recorded as intangible assets.

Hydropower generation assets which will be returned for nil consideration at the end of the concession are depreciated over the duration of the concession.

The net values of property, plant and equipment operated under concessions other than French public electricity distribution concessions are as follows:

(in millions of euros)	31/12/2023	Increases	Commissioning	Decreases	Changes in the scope of consolidation	Other movements	31/12/2024
Land and buildings	1,674	4	26	(5)	-	(4)	1,695
Fossil-fired & hydropower plants	11,890	20	238	(25)	2	33	12,158
Other	699	11	28	(31)	-	11	718
Assets in progress	792	443	(292)	(8)	(13)	8	930
Gross value	15,055	478	-	(69)	(11)	48	15,501
Land and buildings	(1,054)	(37)	-	5	-	2	(1,084)
Fossil-fired & hydropower plants	(6,931)	(323)	-	21	-	(40)	(7,273)
Other	(509)	(33)	-	31	-	-	(511)
Assets in progress	(17)	(2)	-	-	-	2	(17)
Depreciation and impairment	(8,511)	(395)	-	57	-	(36)	(8,885)
NET VALUE	6,544	83	-	(12)	(11)	12	6,616

At 31 December 2024, property, plant and equipment operated under concessions other than French public electricity distribution concessions comprise concession facilities mainly located in France and in Italy (hydropower, excluding public electricity distribution).

10.6 Investments in intangible assets and property, plant and equipment

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

(in millions of euros)	2024	2023
Acquisitions of intangible assets	(2,733)	(2,183)
Acquisitions of property, plant and equipment	(22,739)	(19,667)
Change in payables to suppliers of fixed assets	693	829
INVESTMENTS IN INTANGIBLE ASSETS AND PROPERTY, PLANT AND EQUIPMENT	(24,779)	(21,021)

Investments in intangible assets and property, plant and equipment during 2024 mainly concern:

- the **France - Generation and Supply** segment: €7,709 million, primarily investments in the nuclear fleet currently in operation, essentially made under the *Grand Carénage* programme, investments in hydropower generation, and investments in new nuclear projects, essentially the EPR 2 programme (see note 10.2);
- the **United Kingdom** segment: €7,152 million, mainly concerning investments made for the Hinkley Point C and Sizewell C;
- the **France - Regulated activities** segment: €5,803 million, essentially investments related to connections for customers and producers, but also investments for network renewal and modernisation, and quality;
- the **EDF Renewables** segment: €2,068 million, mainly investments in wind and solar capacities under construction in North America, Brazil and the United Kingdom.

10.7 Impairment / reversals

ACCOUNTING PRINCIPLES AND METHODS

At the year-end and at each interim reporting date, in application of IAS 36, the Group assesses whether there is an indication that an asset could have been significantly impaired. An impairment test is also carried out at least once a year on cash-generating units (CGUs) or groups of CGUs including an intangible asset with an indefinite useful life, or to which goodwill has been partly or totally allocated.

Impairment tests are carried out as follows:

- the Group measures any long-term asset impairment by comparing the carrying value of these assets and goodwill, grouped into CGUs where necessary, and their recoverable amount;
- CGUs are groups of homogeneous assets that generate identifiable independent cash flows. They reflect the way activities are managed in the Group: they may be subgroups when the activity is optimised across the whole subgroup, or CGUs formed by parts of subgroups corresponding to different types of activity that are managed separately (thermal generation, renewable energy production, services), or single assets;
- the recoverable value of these CGUs is the higher of fair value net of disposal costs, and value in use. When this recoverable value is lower than the carrying amount in the balance sheet, an amount equal to the difference is booked under the heading "Impairment". The loss is allocated first to goodwill, and any surplus to the other assets of the CGU concerned; impairment booked on goodwill is irreversible;
- fair value is the asset's potential sale price in a normal transaction between economic actors;
- value in use is calculated based on projected future cash flows:
 - > over a horizon that is coherent with the asset's useful life and/or operating life,
 - > for certain intangible assets with an indefinite useful life (such as brands), beyond the horizon that can be observed or modelled, a terminal value is determined by discounting to infinity a normative cash flow,
 - > excluding development projects other than those that have been decided at the valuation date, and
 - > discounted at a rate that reflects the risk profile of the asset or CGU;
- the discount rates used are based on the weighted average cost of capital (WACC) for each asset or group of assets concerned, determined by geographical area and by business segment under the CAPM. WACC is calculated after taxes;
- future cash flows are calculated on the basis of the best available information at the closing date:
 - > for the first few years, the cash flows correspond to the budget, then the Medium-Term Plan (MTP). Over this horizon, energy and commodity prices are determined based on available forward prices, taking hedges into consideration,
 - > beyond the MTP horizon, cash flows to 2050 are estimated based on long-term assumptions prepared for each country where the Group controls industrial assets, using a financial trajectory and scenario-building process that is updated annually. Long-term electricity prices are constructed analytically based on a set of assumptions concerning factors such as economic growth, commodity (oil, gas, coal) and CO₂ prices, demand for electricity, interconnections, changes in the energy mix (rise of renewable energies, installed nuclear capacity, etc.) and fundamental models of supply-demand balance. The Group compares each principal component of assumptions with analyses by external bodies (for example, for commodities and CO₂, which are primary influences on electricity prices). The scenarios used are also based on the objectives of public energy and climate policies such as Fit For 55 and RepowerEU at European Union level, and the National Low Carbon Strategy (*Stratégie Nationale Bas Carbone*) in France, and the Group compares its own scenarios with scenarios developed by organisations such as the IEA, IHS, Wood Mackenzie or Aurora, bearing in mind that each of these analysts itself proposes a cone of scenarios. Additionally, in constructing these long-term prices, the impact of climate contingencies is incorporated into assumptions concerning demand (particularly energy requirements for heating, and summer comfort), generation of renewable energies (onshore and offshore wind power, solar power) for all European countries, the contribution of hydropower, and environmental cuts for nuclear power generation in France. Climate time series analyses are based on the European EUROCORDER model and include the impact of climate change. A deliberately prudent approach is adopted to avoid any bias towards underestimation of the practical effects of climate change on the relevant physical quantities as such as temperatures, cloud coverage or wind speeds and ultimately on the European electricity system between 2030 and 2050;
- income from capacity market mechanisms is also taken into consideration in valuing generation assets, provided the countries concerned have introduced or announced the future introduction of a capacity revenue mechanism.

These calculations may be influenced by several variables:

- changes in discount rates;
- changes in market prices for energy and commodities and tariff regulations;
- changes in demand and the Group's market shares, and the attrition rate on customer portfolios;
- the useful life of facilities, or the duration of concession agreements where relevant;
- the growth rates used beyond the medium-term plans and where relevant the terminal values taken into consideration.

10.7.1 Impairment by category of asset

Details of impairment recognised and reversed are as follows:

(in millions of euros)	Notes	2024	2023
Impairment of goodwill	10.1	(151)	(1,779)
Impairment of other intangible assets	10.2	(372)	(44)
Impairment of tangible assets	10.3-10.5	(1,312)	(11,188)
IMPAIRMENT NET OF REVERSALS		(1,835)	(13,011)

Impairment recognised in 2024 amounts to €(1,835) million. Details are given below.

As a reminder, impairment recognised in 2023 amounted to €(13,011) million and concerned:

- the goodwill of EDF Energy (€(1,738) million);
- nuclear power plants in operation and under construction Hinkley Point C (HPC) in the United Kingdom (€(11,151) million);
- wind farms and various CGUs of EDF Renewables, principally in the United States, France and China (€(84) million);
- and other assets (total impairment €(38) million).

10.7.2 Impairment tests on goodwill, intangible assets and property, plant and equipment

The following tables present the results of impairment tests carried out on the principal goodwill, intangible assets with indefinite useful lives and other Group assets at 31 December 2024, the key assumptions used and the sensitivity to certain changes in assumptions.

Impairment of goodwill and intangible assets with indefinite useful lives

€(151) million of new impairment was recorded on the Group's goodwill at 31 December 2024.

Operating segment	Cash-Generating Unit or asset	Net book value (in millions of euros)	WACC after tax	Growth rate to infinity	Impairment recognised in 2024 (in millions of euros)
United Kingdom (EDF Energy) ⁽¹⁾	Goodwill	3,596	6.85%	-	(108)
	<i>Including Pod Point</i>	-			(38)
Italy (Edison)	Goodwill (energy services)	142	< 7.5% - 8.4% >	1.5%	-
	Edison brand	945			-
Framatome	Goodwill	1,511	7.6%	1.5%	-
	Framatome brand	151	7.6%	1.5%	-
Dalkia	Goodwill	634	5.8%	2.0%	-
	Dalkia brand	130	5.8%	2.0%	-
Other impairment					(43)
IMPAIRMENT OF GOODWILL AND INTANGIBLE ASSETS WITH INDEFINITE USEFUL LIVES					(151)

(1) The impairment test of EDF Energy goodwill covers the useful life of industrial assets, currently in operation or under construction, with no projection to infinity. The WACC determined for goodwill takes account of the WACC applicable to each of EDF Energy's CGUs, including the WACC applicable to the HPC CGU, which benefits from a regulated model.

Impairment of other intangible assets and property, plant and equipment

Impairment of €(1,685) million was recorded in respect of other intangible assets and property, plant and equipment at 31 December 2024.

Operating segment	Cash-Generating Unit or concerned asset	Impairment indicators	WACC after tax	Impairment recognised in 2024 (in millions of euros)
United Kingdom (EDF Energy)	Nuclear assets currently under construction	The Hinkley Point C (HPC) project: Change in the long-term inflation assumption curve (faster convergence towards long-term inflation)	6.8%	(1,116)
	Wind and solar assets in the United Kingdom	Increased construction cost and commissioning delay		(62)
EDF Renewables	Wind and solar assets in China	Unfavourable change in tariffs set by law	From 5.5% to 6.6%	(60)
	Solar asset in the United States	Loss of profitability by a project in development		(35)
France (Generation and supply)	NUWARD	Change in project design	-	(228)
Other impairment				(184)
IMPAIRMENT OF OTHER INTANGIBLE ASSETS AND PROPERTY, PLANT AND EQUIPMENT				(1,685)

€(1,454) million of impairment net of reversals was also recognised in respect of associates at 31 December 2024, mainly concerning assets owned by EDF Renewables (see note 12.3) but also including impairment of loans to associates amounting to €(315) million. Impairment of associates totalling €(240) million was recognised at 31 December 2023.

General assumptions

At 31 December 2024, the Group applied its usual method for impairment testing, updating the annual tests for goodwill and intangible assets with an indefinite useful life.

As in 2023, particular attention was paid to the determination of WACC in an environment of rising and volatile interest rates (see the section on the Discount rates), given the sensitivity of certain tests to variations in this parameter. For both impairment and sensitivity tests, the effects of scenarios concerning prices and measures announced or introduced by the authorities in countries where the Group does business were subjected to specific monitoring.

Electricity prices

Over the market horizon (generally three years), the forward prices used in the impairment tests concerning all geographical areas are the market prices observed at 31 December 2024, including hedged positions. The assumptions used thus take account of the current market environment, in which forward electricity prices have decreased compared to the 2023 year-end, in France partly due to better nuclear fleet availability and higher renewable energy output.

Over the long-term horizon, these tests use analytically constructed price curves (to 2050) founded on assumptions and fundamental models of the supply-demand balance, in an annually updated scenario-building process that is subject to specific internal governance.

The scenarios used include high CO₂ prices supporting the move to carbon-free electricity generation in Europe and demand for energy more generally as more uses shift to electricity.

The long-term price curves in the 2024 scenario are lower than in the 2023 scenario in the early part of the horizon, due to a decrease in the average value of baseload electricity by around -€5 to -€9/MWh (in 2023 euros) in the three core countries (France, Italy and Belgium).

Beyond 2035, over a long-term horizon (to 2050), electricity prices remain close to the levels set in the 2023 scenario. The change in the short term is explained by several factors:

- pressures on gas supplies following the Russian invasion of Ukraine have been partly relieved through diversified sourcing (notably for LNG), and group procurement contracts by EU member states, making it possible to purchase larger volumes. An easing of gas prices is thus confirmed in the 2024 scenario, which applies a lower short-term price than in the 2023 scenario, and similar prices over the long term;
- a more relaxed supply-demand balance in the short term, particularly in Germany (where demand has been revised downwards slightly, and solar power is developing a little faster than anticipated).

Demand for electricity rises over the scenario horizon across all timescales in Europe due to the electrification of uses, particularly in transport and industry, reinforced by a greater need for electrolytic hydrogen. These developments, in addition to the RePowerEU plan to accelerate energy independence in Europe, have led to application of a higher assumption concerning electricity requirements.

As these assumptions are key for the determination of the recoverable value of the Group's assets, sensitivity analyses are carried out on long-term price curves as part of the impairment tests.

In the assumptions concerning European countries' capacity mechanisms in general, the necessary additional capacity remuneration varies greatly depending on the energy mix and time horizon. Early in the horizon covered by the 2024 scenario, because of the current energy crisis, the lower assumptions for prices in energy-only markets has reduced the profitability of peakload generation facilities on the supply-demand balance market, generating a need for additional revenue for those facilities. In the long term, this capacity market revenue is in line with the level in the 2023 scenario.

Discount rates

The estimated discount rate has been reduced for the 2024 closing, for all Euro-zone countries and the United Kingdom.

This change is generally due to the downward trend in risk-free rates. EDF's spread was also revised downwards.

The decrease since 2023 in the principal WACCs used in impairment tests was thus 10-30 base points for France and Belgium, and 70 base points for Italy. The WACC for the United Kingdom is stable.

The impairment test results are analysed for sensitivity to the discount rate (+/-30bp and +/-50bp). With the exception of the United Kingdom, which is sensitive to any new increase, these tests did not indicate any risk of impairment on the Group's geographic areas.

United Kingdom - EDF Energy (Goodwill and tangible and intangible assets: €29,425 million)

Sales and Supply segment

After the end of the energy crisis and a return to a more favourable situation in 2023 in the United Kingdom, the sales and supply segment consolidated its margins and market shares in 2024 with a good sales performance in the medium and large BtoB customer segments.

The recoverable value of the Sales and Supply segment is higher than in 2023, principally due to improved long-term margin forecasts for BtoB customers, and the volumes delivered to business customers in the medium term. The Sales and Supply segment remains relatively insensitive to price scenarios, as wholesale energy costs are generally passed on to consumers over time.

Sensitivity analysis:

Sensitivity tests were conducted, based on major reductions in long-term margin rates and losses of market share. These tests did not identify any risk of impairment for this operating segment, which has few fixed assets (mainly information systems).

Nuclear assets (plants in operation)

The recoverable value of EDF Energy's nuclear plants in operation is determined by discounting future cash flows over the assets' useful life. At 31 December 2024, this operating segment is comprised of Sizewell B PWR plant, assuming that it will remain in operation until 2055, Torness and Heysham 2 AGR plants, where the end of operations has been deferred by two years to March 2030, and Hartlepool and Heysham 1 AGR plants, where the end of operations has been deferred by one year to March 2027 (see the EDF Energy press release of 4 December 2024).

The lower projections for forward market prices compared to the prices included in impairment tests at 31 December 2023 are partly offset by the favourable impact of the extended plant operating lifetimes. As a result, the recoverable value remains higher than the book value.

Sensitivity analysis:

Sensitivity tests were conducted on the assumptions to which this operating segment is particularly sensitive, i.e. a -5% downturn in electricity prices or nuclear power output across the whole horizon or a 50bp increase in the discount rate. These sensitivities are not likely to generate any risk of impairment, individually or in combination, all other things being equal.

Goodwill and the HPC Project

EDF Energy's gross goodwill amounted to €6.8 billion (or £5.6 billion) including Pod Point at 31 December 2024. It mainly results from the takeover of British Energy in 2009, and has been reduced by the £1.2 billion portion concerning Sizewell C following loss of control over the project in 2024. At 31 December 2022 and 31 December 2023, the updated impairment test led to recognition of partial impairment amounting to €(1.2) billion and €(1.7) billion respectively.

On 23 January 2024, the Group announced that the schedule and cost for construction of the two nuclear reactors at Hinkley Point C had been revised, to update assumptions regarding the cost of civil engineering work and extension of the electromechanical work (MEH) phase, and the resulting consequences for the other work. Three scenarios have been analysed. In the first two, the completion cost for the project was estimated at £31-34 billion⁽¹⁾ (in 2015 sterling) depending on the situation, as opposed to the previous estimate of £25-26 billion (in 2015 sterling).

A third scenario mentioned in the announcement, based on a further 12-month delay in commissioning, involved an estimated additional cost of around £1 billion in 2015 values.

The three scenarios were weighted for the test, such that they converge towards the baseline scenario which assumes that electricity generation by HPC Unit 1 will now start in 2030 instead of June 2027 as previously (and 2031 in the case of Unit 2 instead of June 2028 previously). This scenario incorporated the risk of an additional one-year deferral compared to the 120-month timetable scenario used for organisation and management of the project.

Based on the revised schedule and cost assumptions, impairment of €(11,151) million was recognised on the project at 31 December 2023.

The recoverable value of EDF Energy is determined by discounting future cash flows over the assets' useful life, taking into consideration the two reactors with a 60-year operating lifetime currently under construction at the Hinkley Point site. Future cash flows from these plants are determined by reference to the Contract for Difference (CfD) between the Group and the UK government. The CfD sets stable, predictable prices for EDF Energy for an initial period of 35 years from the date the two EPRs are first commissioned (this duration has been shortened by around 18 months due to the revised schedule); if market prices fall below the CfD strike price, EDF Energy will receive an additional payment. The CfD strike price for HPC is set at £92.50/MWh (in 2012 sterling) and is indexed on UK inflation via the consumer price index (CPI) (£128/MWh in current sterling based on inflation rates available at 31 March 2024). Thus, for the operation period under the CfD, future cash flows include a long-term inflation assumption of 2.0% from 2030 (compared to 2.2% between 2030 and 2050 then 2.1% from 2050 at 31 December 2023). For the 25 years of operation after the CfD period, future cash flows include a price assumption based on the CfD strike price of £92.50/MWh (in 2012 sterling) in the absence of corresponding price scenarios. This assumption is based on an internal study of electricity market prices in the United Kingdom, which, given the small number of plants (including Hinkley Point C) so far known to be able to supply baseload electricity after the CfD for Hinkley Point C expires (ie after 2064), concluded that market prices for electricity would converge towards the costs of that type of power plant. This assumption could be adjusted if new long-term electricity price scenarios are drawn up (internally or externally).

The WACC determined for HPC is a hybrid rate that reflects the specificity of the cash flows being first regulated by the CfD, then exposed to market prices in subsequent years. The rate applicable to the project is 6.8% at 31 December 2024, unchanged from 2023. The WACC used to test EDF Energy goodwill takes account of the WACC applicable to each of the company's CGUs (HPC, Nuclear assets (plants in operation), Sales and Supply). Given the respective importance of cash flows from each CGU, the overall WACC for EDF Energy's goodwill is 6.85% at 31 December 2024, compared to 6.9% at 31 December 2023.

Given the negative impact of the decrease in long-term inflation curve assumptions and the absence of any change to the other key assumptions such as the WACC, the impairment test of the HPC project at 31 December 2024 identified impairment of €(1,116) million at that date. This impairment is reversible if there is evidence of a significant recovery in the value of the asset, other than the effect of the passage of time on discounted cash flows.

Regarding the value of EDF Energy's goodwill, although EDF Energy's other CGUs (Nuclear assets (plants in operation), Sales and Supply) still show substantial headroom, their values are generally lower (nuclear plants in operation were affected by the downturn in forward prices). These effects therefore led to recognition of partial additional impairment of €(70) million on EDF Energy's goodwill at 31 December 2024. This impairment is irreversible by nature.

Sensitivity analysis:

The recoverable value of the HPC project, like the book value of EDF Energy's goodwill, remains sensitive to any unfavourable variation in assumptions.

A 30bp increase in discount rates would have a negative impact of £(2.2) billion on the recoverable value.

A 20bp decrease in inflation rates after 2030 would have a negative impact of £(1.2) billion on the recoverable value.

A linear decrease of £10/MWh (in 2024 values) in electricity prices over the post-CfD period (beyond 2064) would have an impact of £(0.5 billion) on the recoverable value.

(1) £41.6-46.5 billion in current currency based on inflation rates available at 30 June 2023.

Italy – Edison (Goodwill and tangible and intangible assets: €5,841 million)

As an intangible asset with an indefinite useful life, the impairment test of the Edison brand, first recognised at the value of €945 million when Edison was taken over in 2012, is updated annually using the royalty relief method and a 100bp risk premium in determining the discount rate. The test was updated at 31 December 2024, and showed that there had been an increase in the brand's recoverable value, principally as a result of a further decrease in the WACC.

Sensitivity analysis:

Sensitivity tests based on a 50bp increase in the WACC, and a -5% decrease in royalties, did not indicate any risk of impairment.

For Edison's other generation CGUs (Thermal assets, Wind power, Solar power, Gas), the test found that the headroom has decreased, reflecting the lower price assumptions.

For the Thermal assets CGU, the headroom indicated by the impairment test remains clearly positive despite the unfavourable impact of a narrowing of clean spark spreads in the short and medium term. This headroom essentially relates to the two new-generation CCGT plants at Marghera and Presenzano commissioned in 2023 (carbon emissions 40% below the national average, NOx emissions reduced by 70%), which will benefit from capacity revenues.

For the Hydropower CGU, the recoverable value was lower due to the lower price assumptions and the assumption that concessions will not be renewed upon expiry, although these effects were partly offset by the lower WACC. Despite the decrease in recoverable value, no risk of impairment was observed for this CGU.

Sensitivity analysis:

Sensitivity tests based on a 50bp increase in the WACC, and a 10% decrease in clean spark spreads, did not affect the test conclusions.

Framatome (Goodwill and tangible and intangible assets: €4,714 million)

The recoverable value of Framatome is determined on the basis of a 10-year business plan and a terminal value. This business plan is sensitive to assumptions concerning the completion of major construction projects that are incorporated into the reactor scenario, market share assumptions concerning services to the installed base, and assumptions concerning fuel deliveries to customers' reactors. The baseline scenario includes expansion of the EPR2 programme in France and realisation of the Sizewell C project in the United Kingdom, but does not include realisation of other EPR projects, particularly the Jaitapur nuclear power plant in India.

The long-term growth rate used in impairment testing was stable (at 1.5%).

The WACC used to discount future cash flows is weighted according to Framatome's different businesses and their risk profiles. The headroom indicated by the test increased compared to 31 December 2023 as a result of favourable business development in the medium term and the 10bp decrease in the WACC.

Framatome's intangible assets recognised at the time of its acquisition (technologies, including the EPR, which are depreciated over an average 15 to 20 years; customer relations amortised over an average period of 11 years; and the brand) were tested, and no risk of impairment was identified.

Sensitivity analysis:

Sensitivity tests based on a 50bp increase in discount rates or a 50bp decrease in the growth rate to infinity did not indicate any risk of impairment.

EDF Renewables (Goodwill and tangible and intangible assets: €13,563 million)

EDF Renewables' assets mainly consist of CGUs that benefit from Power Purchase Agreements (PPAs) providing contractually defined revenues over most of the assets' useful lives, and consequently have low market risk exposure.

Impairment of €(176) million was identified, mainly concerning wind farms and solar power plants in operation in China (where there were slightly unfavourable changes in the tariffs set by law), solar plants and wind farms in operation in the United Kingdom (construction budget overruns), and a solar plant in the United States (due to insufficient profitability).

€(911) million of impairment of associates and related receivables was also recognised (see notes 12.3 and 18.1.3).

Dalkia (Goodwill and tangible and intangible assets: €3,278 million)

At 31 December 2024, Dalkia's goodwill amounts to €634 million, principally resulting from acquisition of the Dalkia group in France in 2014.

The recoverable value of Dalkia is based on future cash flows projected over a medium-term horizon, and a terminal value that represents cash flow projections to infinity. The test update at 31 December 2024 found that the recoverable value had increased, principally due to the 20bp decrease in the WACC (from 6.0% to 5.8%), growth in the works business, and sales effects driven by a good business dynamic.

The Dalkia brand, which was recognised as an asset when the Group took control of Dalkia in 2014 at the value of €130 million, is valued by the royalty relief method. The updated impairment test at 31 December 2024 did not call into question the value recorded in the financial statements.

Sensitivity analysis:

Sensitivity tests based on an additional 50bp increase in the WACC, and a 20bp decrease in the growth rate to infinity, did not indicate any risk of impairment.

France – Generation and Supply (Goodwill and tangible and intangible assets: €67,255 million)

In terms of asset value, this segment consists almost entirely of the generation fleet in mainland France. Due to the integrated management and interdependence of the different generation facilities that make up the French fleet (nuclear, thermal and hydropower plants), independently of their maximum technical capacities, the Group considers the entire fleet as a single CGU. It includes the Flamanville 3 plant, with net book value of €16,131 million (see note 10.3). It does not include any goodwill.

No indication of impairment was identified in 2024 for the CGU consisting of the French generation fleet.

However, in view of the decrease in electricity prices, the recoverable value was updated.

The recoverable value is estimated by discounting future cash flows by the Group's usual methodology, described in the accounting policies, over the assets' useful life, using an after-tax WACC of 6.9% at 31 December 2024 (7% at 31 December 2023). For nuclear assets, the Group's benchmark model assumes an operating lifetime of 50 years for 900MW and 1,300MW-series plants and 40 years for N4-series plants, consistent with the depreciation periods used in the consolidated financial statements at 31 December 2024, although it is the Group's strategy to keep plants in operation well beyond 50 years. The recoverable value also incorporates the most recent forecasts concerning Flamanville 3 (which will have a 60-year operating lifetime, see note 10.3).

For 2025, the key assumptions concerning price and regulation include forward prices (lower over this horizon than at the 2023 year-end) and take account of hedges already contractualised, a maximum 100TWh volume for ARENH deliveries to alternative suppliers (and 26TWh for network operators), and an ARENH price of €42/MWh.

For the post-ARENH period, the French government announced on 14 November 2023 that a 50% and 90% contribution of nuclear power revenues would be payable above respective thresholds of €78/MWh and €110/MWh (both in 2022 euros). This information was used as key assumptions in estimating recoverable value at 31 December 2024, in the absence of any other official regulations setting thresholds for payment of the contribution. The measures adopted in France's Finance Law for 2025 stipulate that these thresholds will be set by ministerial order every three years, based on the full production cost for electricity generated by the historical plants as valued by the CRE, plus an amount of €5-€25/MWh for the taxation threshold and €35-€55/MWh for the capping threshold. EDF will remain watchful regarding retention of the thresholds agreed in November 2023, namely €78/MWh and €110/MWh (both in 2022 euros) (see note 5.1.1).

The new market organisation aims to develop medium-term products in addition to the short-term products and renewable energy PPAs currently available on the wholesale electricity markets: 4 or 5-year annual baseload supply contracts allowing EDF and all electricity suppliers in France to offer supply contracts that provide customers with visibility and stability over horizons of up to 5 years.

EDF also offers certain electro-intensive customers long-term industrial partnership contracts relating to the historic nuclear fleet (Nuclear Generation Allocation Contracts).

The recoverable value resulting from the test decreases but remains well above the net book value. The key assumptions in the test still concern:

- the operating lifetimes of nuclear assets;
- the long-term market price scenario (after the end of the ARENH scheme) and to a lesser degree the changes in forward prices over the medium-term horizon;
- post-ARENH regulations;
- the volume of nuclear power output;
- the discount rate; and
- to a lesser extent, changes in costs and investments, and the assumed capacity revenue.

Sensitivity analysis:

These key assumptions were subjected to individual sensitivity analyses (a 50bp increase in the WACC; a 10TWh annual decrease in nuclear power output over the whole period; an 5% increase in investments or operating expenses over the whole period; a decline in capacity prices, and post-2026 market prices 10€/TWh below the baseline scenario price for a sustained period) and the results did not call into question the existence of a positive difference between the book value and the recoverable value.

For example, a decrease of 10TWh a year over the whole generation period would have a negative impact of €(3.8) billion on recoverable value.

A 50bp increase in the discount rate would have a negative impact of €(3.4) billion on the recoverable value.

A 10% increase in investments over the whole period would have a negative impact of €(3.9) billion on the recoverable value.

Other International – Belgium (Goodwill and tangible and intangible assets of the whole Other International segment: €2,598 million)

The impairment test update for Luminus confirmed the absence of risk of impairment in this segment, which still has substantial headroom, as the 30bp decrease in the WACC (from 7.2% to 6.9%) compensated for the lower price assumptions.

Sensitivity analysis:

The sensitivity tests conducted based on a 50bp increase in the WACC, or the risk that hydropower concessions may be shortened, did not show any risk of impairment.

Note 11 French public electricity distribution concessions

ACCOUNTING PRINCIPLES AND METHODS

The accounting treatment of public distribution electricity concessions in France is determined by the concession agreements, with particular reference to their special clauses. It takes into consideration the possibility that the EDF group, particularly Enedis, may one day lose its status as the sole authorised State concession operator.

In application of the concession agreements, the concession operator manages the facilities at its own risk for the entire term of the concession, and bears substantially all the risks and benefits (both technical and economic) over the useful life of the network infrastructure. Under IAS 16, the assets are controlled by the operator and the grantors have no decisive characteristics of control over the infrastructures as defined by IFRIC 12.

All concession assets are consequently carried in the balance sheet, regardless of their origin (facilities constructed or purchased by the concession operators, and facilities provided by the concession grantors) and the source of financing, while the contractual obligations to the grantor are recognised in the liabilities.

Public electricity distribution facilities that are constructed or purchased by the concession operator are carried at production or acquisition cost:

- purchased facilities are initially recognised at acquisition cost including directly attributable expenses incurred to make the asset ready for use;
- the production cost of facilities developed in-house includes all labour and materials costs, and all other production costs attributable to the construction of the asset, whether incurred directly by the company or invoiced by third parties.

New facilities provided by the concession grantors are carried at the value of the cost the Group would have borne if it had constructed them itself.

In the specific case of rising mains transferred for no consideration to the public distribution network in application of article 176 of French law 2018 - 1021 on housing, development and digital affairs (the "ELAN" law), these assets are carried at their market value.

Balance sheet liabilities are recognised in respect of new facilities provided for no consideration by the concession grantors and the rising mains transferred under the ELAN law are included in "Special French public electricity distribution concession liabilities" in the balance sheet liabilities.

Distribution assets (pipes, substations, connections) are depreciated over periods of 30 to 60 years, meters and metering equipment over periods of 20 to 30 years. The Group regularly checks the relevance of the main accounting parameters for concession assets (depreciation periods, replacement values, management levels).

Regulations governing distribution concessions in France

Since the enactment of the French Law of 8 April 1946, EDF, and subsequently Enedis, has been the concession operator of most of the public distribution networks in France.

SEI is the concession operator for distribution network zones that are not interconnected with the network in mainland France, under identical concession regulations to Enedis.

Électricité de Strasbourg is the concession operator for public distribution networks in a limited zone depending on a non-nationalised distributor, in application of the Law of 8 April 1946.

In accordance with France's Energy Code and Local Authorities Code, the public distribution of electricity is principally operated under the public service concessions system. The authorities granting the concessions (local authorities or public establishments for cooperation invested with the relevant competence) organise the public electricity distribution service through concession agreements with specifications that define the respective rights and obligations of the parties. Enedis distributes electricity to 95% of the population of mainland France under such concessions, with 356 concession agreements at 31 December 2024. The other 5% are served by Local Distribution Companies (including Électricité de Strasbourg).

2017 concession agreement model

On 21 December 2017, the FNCCR, France Urbaine, EDF and Enedis signed a framework agreement for a new concession agreement model. This new model modernises the relationship between Enedis and concession-granting authorities in the long term and reflects the parties' attachment to the principles of French concessions for electricity distribution: public service, regional solidarity and national optimisation. The FNCCR and France Urbaine represent the concession-granting authorities, particularly towns, syndicated municipalities, boroughs and major cities when they are the authorities with competence to grant public electricity distribution concessions.

At the effective date of a new agreement, the existing special concession liabilities recorded in application of the previous concession agreement (corresponding to the 1992 model) to represent the concession-granting authority's rights in the concession assets remain in the accounts. Like earlier concession agreements signed since 2011, the contractual obligation to establish provisions for replacement no longer exists, and the governance of investments is different.

To provide an effective public service, the distribution network operator and the concession-granting authority agree to jointly set up a governance system to oversee investments in the public electricity distribution network over the area covered by the concession, including replacement of infrastructures. This system mainly takes the form of an investment master plan taking a long-term view of developments in the network over the concession area, and multi-year investment plans (*programmes pluriannuels d'investissements* - PPIs) for 4 and 5-year periods that are medium-term applications of the master plan.

PPIs contain detailed objectives for each investment purpose, covering a selection of quantified, localised investments with financial valuations for the duration of the plan.

PPIs are revised when necessary, after consulting with Enedis and the authority granting the concession, to take account of changes in each party's investment priorities and financial resources.

If it were observed at the end of a PPI that any investment concerned by Enedis' financial commitment had not been made, the concession-granting authority could oblige Enedis to deposit a sum equal to 7% of the investments still to be made. This deposit would then be returned or retained after a two-year period, depending on the investments made by that time.

11.1 Property, plant and equipment operated under French public electricity distribution concessions

(in millions of euros)	31/12/2023	Increases ⁽¹⁾	Assets Commissioned	Decreases	Other movements ⁽²⁾	31/12/2024
Land and buildings	3,644	-	156	(11)	(2)	3,787
Networks	112,463	866	3,959	(502)	-	116,786
Other installations, plant, machinery, equipment & other	5,254	2	614	(122)	(5)	5,743
Assets in progress	2,698	5,218	(4,729)	(15)	4	3,176
Gross value	124,059	6,086	-	(650)	(3)	129,492
Land and buildings	(1,803)	(89)	-	11	(9)	(1,890)
Networks	(52,860)	(190)	-	316	(2,598)	(55,332)
Other installations, plant, machinery, equipment & other	(3,268)	(291)	-	118	(166)	(3,607)
Depreciation and impairment	(57,931)	(570)	-	445	(2,773)	(60,829)
NET VALUE	66,128	5,516	-	(205)	(2,776)	68,663

(1) Increases also include facilities provided by the concession-granting authorities.

(2) Other movements mainly concern depreciation of assets operated under concessions, booked against a decrease in concession liabilities.

11.2 Special French public electricity distribution concession liabilities

ACCOUNTING PRINCIPLES AND METHODS

Concession liabilities represent the contractual obligations specific to the concession rules for public electricity distribution concessions in France, and comprise the following:

- the concession-granting authority's rights in existing assets (its right to recover all the concession assets), corresponding to:
 - > the value in kind of the facilities (the net book value of assets operated under concessions),
 - > less any as yet unamortised financing provided by the operator;
- the concession-granting authority's rights in assets to be replaced (the operator's obligations relating to assets due for replacement):
 - > amortisation of financing by the grantor: this is a liability owed by the concession operator to the grantor and is recognised progressively as the asset is used,
 - > provision for replacement: this provision exclusively concerns assets due for replacement before the end of concessions using the 1992 concession agreement model, except for the rising mains transferred in application of the ELAN law. It is accrued over the asset's useful life, based on the difference between the asset's replacement value for identical capacity and functions, and the original value. In application of the 2017 concession model, used in almost all current concession agreements, no provision for renewal is now established for concession assets. The balance of provisions at the end of the previous concession agreement have been transferred to the new concession and the provisions for renewal continue to be used for their intended purpose.

When assets are replaced, amortisation recognised on the portion of assets considered to be financed by the grantor, and the provision for replacement established for the relevant asset, are cancelled and transferred to rights in existing assets. Any excess provision is taken to income.

During the concession, the grantor's rights in assets to be replaced are transferred upon the asset's replacement to become the grantor's rights in existing assets, with no outflow of cash to the benefit of the grantor.

The Group considers that the obligations related to assets to be replaced are to be valued on the basis of the special clauses contained in the concession agreements. Under this approach, these obligations are stated at the value of the contractual obligations as calculated and reported annually in the reports to the grantors. This contractual value also reflects the eventuality that the EDF group may one day lose its status as the mandatory concession operator.

The changes in special concession liabilities for existing assets and assets to be replaced are as follows:

(in millions of euros)	31/12/2024	31/12/2023
Value in kind of assets ⁽¹⁾	59,123	57,300
Unamortised financing by the operator	(34,978)	(33,176)
Rights in existing assets - net value	24,145	24,124
Amortisation of financing by the grantor	17,717	17,007
Provisions for replacement	8,741	8,879
Rights in assets to be replaced	26,458	25,886
SPECIAL FRENCH PUBLIC ELECTRICITY DISTRIBUTION CONCESSION LIABILITIES	50,603	50,010

(1) Including contributions received to finance concession assets, amounting to €133 million (€144 million in 2023).

Note 12 Investments in associates and joint ventures

Investments in associates and joint ventures are as follows:

(in millions of euros)	Notes	31/12/2024		31/12/2023	
		Ownership%	Share of net equity	Share of net income	Share of net equity
CTE	12.1	50	1,888	68	1,793
Other investments (dedicated assets) of EDF SA	15.1.2	n.a.	2,290	(26)	1,850
Investments held by EDF Renewables	12.3	n.a.	2,235	(1,057)	2,509
Taishan (TNPJVC)	12.2	30	n.c.	n.c.	n.c.
Investments in EDF Trading	12.3	n.a.	948	214	867
Sizewell C (Holding) Ltd	12.3	n.a.	652	-	n.a.
Other investments	12.3	n.a.	n.c.	n.c.	n.c.
TOTAL			10,167	(683)	9,037

n.a. = not applicable.

n.c. = not communicated.

12.1 Coentreprise de Transport d'Électricité (CTE)

The key financial indicators for the CTE subgroup (on a 100% basis) are as follows:

(in millions of euros)	31/12/2024	31/12/2023
Non-current assets	23,140	21,528
Current assets	4,225	3,946
TOTAL ASSETS	27,365	25,474
Equity	3,768	3,579
Non-current liabilities	16,976	15,571
Current liabilities	6,621	6,324
TOTAL EQUITY AND LIABILITIES	27,365	25,474
Sales	5,559	6,131
Operating profit before depreciation and amortisation	1,629	1,891
Net income	135	380
Net indebtedness	14,665	13,287
Gains and losses recorded directly in equity	291	(39)
Dividends paid	238	287

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

EDF's investment in CTE (50.1%) is accounted for by the equity method due to RTE's specific governance arrangements, and is entirely allocated to dedicated assets.

On 10 January 2024, CTE issued a €500 million senior bond with maturity of 12 years and a rate of 3.75%.

12.2 Taishan

12.2.1 Taishan financial indicators

As CGN (Taishan's parent company) publishes its consolidated financial statements later than the Group, the following table presents the key financial indicators published for Taishan at 31 December 2023 (on a 100% basis):

(in millions of euros)	31/12/2023	31/12/2022
Non-current assets	10,760	11,838
Current assets	897	884
TOTAL ASSETS	11,657	12,722
Equity	3,137	3,606
Non-current liabilities	6,684	7,457
Current liabilities	1,836	1,659
TOTAL EQUITY AND LIABILITIES	11,657	12,722
Sales	729	640
Net income	(254)	(327)
Dividends paid	-	-

12.2.2 Transactions between the EDF group and Taishan

EDF owns 30% of Taishan Nuclear Power Joint Venture Company Limited (TNPJVC), which operates two 1,750MW EPR nuclear reactors in Taishan, in the Chinese province of Guangdong. CGN holds a 51% stake and Guangdong Energy Group a 19% stake.

Taishan reactor 1 was taken offline during the first quarter of 2023 for a scheduled refuelling outage. As CGN stated in a press release of 9 June 2023, during that outage TNPJVC added some inspections and tests to collect data and experience for the unit's stable long-term operation. Reactor 1 was recoupled to the network on 27 November 2023 and has operated safely since then. Reactor 2's third scheduled maintenance and refuelling outage took place in the spring of 2024. It has now been recoupled to the network and is operating safely.

The provision booked principally to cover tariff uncertainties affecting the Taishan plant remains in the financial statements, as no new information has been published by the NDRC (National Development and Reform Commission).

In application of the shareholder pact of TNPJVC Guangdong Taishan Nuclear Power Company Limited, formed for the construction, operation, maintenance and management of the Taishan nuclear power plant, EDF began an "interpretation" arbitration procedure in January 2021 in the Singapore International Chamber of Commerce (SIAC) against its partners China General Nuclear Power Co. Ltd, Guangdong Nuclear Power Investments Co. Ltd and Taishan Nuclear Power Industry Investments Co. Ltd. (Group CGN).

The disagreement concerned the accounting policy for the power plant, particularly its depreciation period. EDF wanted a period in line with the plant's operating lifetime, while CGN considered the depreciation period should be limited to the duration of the entity TNPJVC.

In June 2023, the SIAC's Court of Arbitration ruled in favour of EDF. In May 2024, the parties signed a letter of intent to frame discussions concerning changes to the shareholder pact and the depreciation policy.

12.3 Other investments in associates and joint ventures

At 31 December 2023, Sizewell C, in which the Group owned 49.44%, was controlled and fully consolidated. At 31 December 2024, the Group owned 16.23% of the project and certain events of 2024 led the Group to change the consolidation method for this company, which is accounted for by the equity method from 31 December 2024 (see notes 3.1.3 and 10.3).

The other investments held by EDF Renewables are mainly located in North America, and to a lesser degree in Europe, China and Brazil.

Other investments in associates and joint ventures principally concern:

- JERA Global Markets (JERA GM), 33%-owned by EDF Trading, a company specialising in trading and optimisation activities, particularly for liquified natural gas (LNG);
- the supercritical coal-fired plant owned by Jiangxi Datang International Fuzhou Power Generation Company Ltd. in China, 49% - owned by the Group;
- the dam owned by Compagnie Énergétique de Sinop (CES) in Brazil, 51% - owned by the Group;
- the Nachtigal dam in Cameroon, 40%-owned by the Group. The first turbine, with 60MW capacity, began to supply electricity in early June 2024. Six turbines with combined power of 360MW had been commissioned by the end of 2024, and the seventh and last is due to be commissioned in early 2025, bringing the total installed capacity to 420MW.

During 2024, €(1,036) million of impairment was booked in respect of investments in associates and joint ventures, principally concerning the investments in the Atlantic Shores Offshore Wind (ASOW) project which is fully impaired (€(764) million), dedicated assets (€(118) million), the Spinning Spur Wind Two, LLC wind farm in the United States (€(48) million) and solar projects in Mexico (€(25) million).

ASOW is the joint venture formed by Shell and EDF Renewables to develop offshore wind farm projects in the United States. Five projects are currently in development. After unfavourable changes in the political situation in the United States and the decision by the State of New Jersey on 4 February 2025 to cancel the tender for which ASOW had bid its most advanced project, the Group has recognised all the consequences of these events through a total expense of €(934) million booked in the net income of associates.

During 2023, €(240) million of impairment was booked in respect of investments in associates and joint ventures, principally concerning dedicated assets (€(86) million), the Jiangxi Datang International Fuzhou Power Generation Company Ltd. supercritical coal-fired plant in China (€(79) million), the Neart na Gaoithe (NnG) project in the United Kingdom (€(54) million), and wind farms in Mexico (€(16) million).

Note 13 Working capital

13.1 Working capital: composition and change

Changes in working capital during 2024 are as follows:

(in millions of euros)	Notes	31/12/2023	Monetary changes	Non-monetary changes	31/12/2024
Inventories and work-in-process	13.2	(18,092)	(590)	(566)	(19,248)
Trade receivables net of provisions	13.3	(26,833)	3,106	(412)	(24,139)
Trade payables	13.5	19,687	(359)	138	19,466
Compensation receivable for Public Energy Service charges : CSPE payable/(receivable)	13.4	2,030	(2,822)	-	(792)
Other receivables and payables ⁽¹⁾	13.4 and 13.6	12,468	(947)	821	12,342
Other components of working capital ⁽²⁾		(628)	160	(1,056)	(1,524)
NET WORKING CAPITAL		(11,368)	(1,452)	(1,075)	(13,895)

(1) Excluding receivables and payables on acquisition/disposal of assets and investment subsidies.

(2) Other components of working capital include CO₂ emission certificates and green certificates presented in intangible assets in the balance sheet, and operating derivatives.

Monetary changes in working capital were less favourable in 2024 at €(1,452) million, mainly as a result of the €(2,822) million variation in CSPE positions: a receivable of €792 million was booked at 31 December 2024, compared to a payable of €(2,030) million in 2023 (see note 13.4).

Non-monetary changes include the effect of changes in the scope of consolidation, foreign exchange effects, changes in fair values and reclassifications. The variation in non-monetary changes in 2024 is mainly explained by changes in fair value primarily concerning inventories and operating derivatives, totalling €(1,614) million, and scope effects totalling €347 million, essentially the loss of control over Sizewell C (Holding) Ltd (€120 million) and the acquisition of Arabelle Solutions (€237 million).

13.2 Inventories

ACCOUNTING PRINCIPLES AND METHODS

Inventories are recognised at the lower of acquisition cost or net realisable value, except for inventories held for trading activities, which are carried at market value. Inventories consumed are generally valued by the weighted average unit cost method.

Cost includes all direct materials costs, labour costs, and a share of indirect production costs.

NUCLEAR FUEL

Inventory accounts include:

- nuclear materials, whatever their form during the fuel production cycle;
- and fuel components in the warehouse or in the reactor.

The stated value of nuclear fuel and materials and work-in-progress is determined based on direct processing costs including materials, labour and subcontracted services (e.g. fluorination, enrichment, fabrication, etc.).

In accordance with regulatory obligations specific to each country, inventories of fuel (new or not entirely consumed) may also comprise expenses for spent fuel management and long-term radioactive waste management, with corresponding provisions or debts in the liabilities, or full and final payments made when the fuel is loaded.

In France, in application of the concept of "loaded fuel" as defined in article D594-1 of the Environment Code, the cost of inventories for fuel loaded in the reactors but not yet irradiated includes expenses for spent fuel management and long-term radioactive waste management. The corresponding amounts are taken into account in the relevant provisions.

In compliance with IAS 23, interest expenses incurred in financing inventories of nuclear fuels are charged to expenses for the period provided these inventories are manufactured in large quantities on a repetitive basis.

Nuclear fuel consumption is determined by component (natural uranium, fluorination, enrichment, fuel assembly fabrication) as a proportion of the expected output when the fuel is loaded in the reactor. These quantities are valued at weighted average cost of inventories. Inventories are periodically corrected in view of forecast spent quantities based on neutronic measurements and physical inventories.

OTHER INVENTORIES

Other inventories comprise:

- other fuels, comprising fossil fuels required for operation of fossil-fired power plants and gas stocks;
- other operating supplies, consisting of operating materials and equipment such as spare parts supplied under a maintenance programme (excluding capitalised strategic safety spare parts);
- goods and services in progress, particularly relating to the businesses of EDF Renewables, Dalkia and Framatome;
- other inventories, mainly consisting of certificates issued under the various environmental schemes (see notes 5.5.4 and 10.2) and capacity obligation mechanisms (capacity guarantees in France – see note 5.1).

Other non-trading operating inventories are generally valued at weighted average cost including direct and indirect purchasing costs.

Impairment of spare parts principally depends on the turnover of these parts.

The carrying value of inventories, broken down by nature, is as follows:

(in millions of euros)	31/12/2024			31/12/2023		
	Gross value	Provision	Net value	Gross value	Provision	Net value
Nuclear fuel	12,376	(430)	11,946	11,760	(431)	11,329
Other fuel	1,547	(274)	1,273	1,556	(260)	1,296
Other supplies	2,241	(428)	1,813	2,047	(413)	1,634
Work-in-progress for production of goods and services	973	(24)	949	771	(22)	749
Other inventories	3,335	(68)	3,267	3,144	(60)	3,084
TOTAL INVENTORIES	20,472	(1,224)	19,248	19,278	(1,186)	18,092

The long-term portion (more than one year) mainly concerns nuclear fuel inventories and amounts to €9,183 million at 31 December 2024 (€8,810 million at 31 December 2023).

The change in inventories in 2024 is principally explained by the increase in nuclear fuel inventories essentially due to a price effect.

13.3 Trade receivables

ACCOUNTING PRINCIPLES AND METHODS

Trade receivables are initially recognised at the fair value of the consideration received or receivable, and subsequently carried at amortised cost or at fair value through OCI.

Trade receivables also include the value of unbilled receivables for energy already supplied, which are presented net of advances received from customers who pay in regular monthly instalments.

The Group applies IFRS 9's simplified approach to measure expected credit losses on trade receivables, using provision matrices established on the basis of credit loss histories.

Details of net trade receivables are as follows:

(in millions of euros)	Note	31/12/2024	31/12/2023
Trade receivables, gross value – excluding EDF Trading contract assets	13.3.3	23,370	24,232
		200	286
Trade receivables, gross value – EDF Trading		2,627	4,341
Impairment		(1,858)	(1,740)
TRADE RECEIVABLES - NET VALUE		24,139	26,833

Most trade receivables mature within one year.

Advances received from customers in France who pay in regular monthly instalments, amounting to €2,168 million at 31 December 2024 (€1,808 million at 31 December 2023), are deducted from trade receivables.

Trade receivables are lower than at 31 December 2023, in line with the change in sales by the different segments: **France – Generation and supply** €(1.6) billion, **EDF Trading** €(1.7) billion, and **France – Regulated activities** (€0.3 billion). In the **Industry et Services** segment, the €0.4 billion increase in sales is notably attributable to the acquisition of Arabelle Solutions (€0.2 billion).

13.3.1 Trade receivables due and not yet due

(in millions of euros)	31/12/2024			31/12/2023		
	Gross value	Provision	Net value	Gross value	Provision	Net value
TRADE RECEIVABLES	25,997	(1,858)	24,139	28,573	(1,740)	26,833
overdue by up to 6 months	2,330	(351)	1,979	2,263	(392)	1,871
overdue by 6-12 months	1,438	(428)	1,010	1,100	(401)	699
overdue by more than 12 months	1,692	(1,012)	680	1,066	(728)	338
Trade receivables due	5,460	(1,791)	3,669	4,429	(1,521)	2,908
Trade receivables not yet due	20,537	(67)	20,470	24,144	(219)	23,925

13.3.2 Assignment of receivables

ACCOUNTING PRINCIPLES AND METHODS

The EDF group manages several factoring and securitisation programmes that are used to assign eligible trade receivables in return for a cash payment.

The trade receivables concerned are derecognised in accordance with IFRS 9 when the Group:

- has transferred its rights to receive payments relating to the asset or fulfilled its obligation to pay cash flows received from a third party (other than a consolidated structured entity) under a transfer agreement, and
- has transferred substantially all of the risks and rewards attached to the receivables.

Otherwise, the receivables assigned remain in the balance sheet assets, and the financing received is treated as financial liabilities.

In 2023, the Group entered into a securitisation contract through a Securitisation Fund (a special purpose entity). As this entity is consolidated, the receivables concerned have not been derecognised.

(in millions of euros)	31/12/2024	31/12/2023
Trade receivables assigned and retained in the balance sheet	75	57
Trade receivables assigned and derecognised	1,323	1,764

The Group assigned trade receivables for a total of €1,323 million at 31 December 2024, mainly concerning Edison, EDF SA, Dalkia and Luminus (€1,764 million at 31 December 2023).

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

13.3.3 Contract assets

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

The contract assets included in receivables represent an amount of €200 million at 31 December 2024 (€286 million at 31 December 2023) and in 2024 mainly concern Dalkia, EDF Renewables, Arabelle Solutions and the Other International segment.

13.4 Other receivables

Details of other receivables are as follows:

(in millions of euros)	31/12/2024	31/12/2023
Prepaid expenses	1,652	1,609
VAT receivables	2,460	2,193
Other tax receivables	344	315
CSPE receivable	792	-
Other operating receivables ⁽¹⁾	7,086	7,067
OTHER RECEIVABLES	12,334	11,184
<i>Non-current portion</i>	<i>1,979</i>	<i>2,110</i>
<i>Current portion</i>	<i>10,355</i>	<i>9,074</i>
<i>Gross value</i>	<i>12,424</i>	<i>11,252</i>
<i>Impairment</i>	<i>(90)</i>	<i>(68)</i>

(1) Including receivables related to asset disposals.

At 31 December 2024, other operating receivables mainly include €2.4 billion of margin calls made in the trading activity (€3.1 billion in 2023). The decrease in margin calls is notably due to the replacement of collateral with letters of credit, and lower volatility on the markets. The amounts of margin calls recognised in assets cannot be netted with the margin calls recognised in liabilities (see note 13.6).

EDF's public service charges

The amount of public service charges to be compensated to EDF for 2024 is €6,861 million. The compensation mechanism is presented in note 5.5.1.

The amounts received in 2024 out of the State's General Budget totalled €3,472 million, notably corresponding to the €227 million balance outstanding under the mechanism for the year 2023, and payments of €3,245 million for the year 2024.

In compliance with the CRE's decision 2024-124 of 26 June 2024, taken in application of article L.336-5 of the French Energy Code amended by article 225 of France's Finance Law for 2024 (Law 2023- 1322 of 29 December 2023) and article 5 of decree 2024-556, the compensation to be financed by the State's budget in 2025 will be reduced by the amount of ARENH price supplements received in 2024 (€556 million). This has lowered EDF SA's 2024 receivable for public energy service charges at 31 December 2024.

At 31 December 2024, EDF SA therefore has a €792 million operating receivable on the State for the compensation of its public service charges (compared to a €2,030 million operating liability at 31 December 2023).

13.5 Trade payables

(in millions of euros)	31/12/2024	31/12/2023
Trade payables - excluding EDF Trading	15,302	14,533
Trade payables - EDF Trading	4,164	5,154
TRADE PAYABLES	19,466	19,687

The €0.8 billion increase in trade payables excluding EDF Trading mainly concerns EDF Energy (€0.4 billion), Arabelle Solutions (€0.3 billion), Edison (€0.2 billion) and Enedis (€0.4 billion).

The Group has a reverse factoring programme allowing suppliers to transfer their receivables on EDF to a factoring company, at their own initiative. For the Group, this programme does not cause any change in the substance and features of the receivables held by suppliers on EDF. In particular, it does not affect the sequences of operating cash flows. The associated liabilities therefore remain in "Trade payables" in the Group's financial statements for an amount of €985 million at 31 December 2024.

13.6 Other liabilities

Details of other liabilities are as follows:

(in millions of euros)	31/12/2024	Including contract liabilities	31/12/2023	Including contract liabilities
Advances and progress payments received	3,614	2,435	4,011	2,099
Liabilities related to property, plant and equipment	5,542	-	5,464	-
Tax liabilities	5,167	-	4,740	-
Social charges	6,717	-	6,236	-
Deferred income on long-term contracts	3,975	3,974	3,548	3,548
Other deferred income ⁽¹⁾	1,219	897	1,267	857
Margin calls - trading activity	486	-	922	-
CSPE liability	-	-	2,030	-
Other ⁽²⁾	3,950	-	4,442	-
OTHER LIABILITIES	30,670	7,306	32,660	6,504
<i>Non-current portion</i>	<i>6,039</i>	<i>3,367</i>	<i>5,685</i>	<i>3,539</i>
<i>Current portion</i>	<i>24,631</i>	<i>3,939</i>	<i>26,975</i>	<i>2,965</i>

(1) Including the initial payment made under the Fessenheim compensation protocol, received in 2020 and not yet transferred to other operating income and expenses (see note 5.5.4).

(2) Including payables on acquisition of assets and investment subsidies.

13.6.1 Advances and progress payments received

At 31 December 2024, advances and progress payments received comprise €1,501 million of payments made by the customers in Framatome's long-term contracts (€719 million at 31 December 2023).

13.6.2 Tax liabilities

At 31 December 2024, tax liabilities mainly include an amount of €1,409 million for the excise duty on electricity, reflecting the successive application of tariffs of €20.5/MWh for business customers and €21/MWh for residential customers from 1 February 2024, compared to €0.5/MWh and €1/MWh from 1 February 2023.

13.6.3 Deferred income on long-term contracts

EDF's deferred income on long-term contracts at 31 December 2024 comprises partner advances for nuclear plant financing of €2,137 million to EDF (€2,089 million at 31 December 2023) and €329 million to Arabelle Solutions.

Deferred income on long-term contracts also includes the remaining balance of the advance of €1.7 billion paid to the EDF group in 2010 under the agreement with the Exeltium consortium. This advance is transferred to the income statement progressively over the term of the contract (24 years).

13.6.4 Margin calls - trading activity

At 31 December 2024, other operating liabilities include €0.5 billion of margin calls made in the trading activity (€0.9 billion in 2023). The amounts of margin calls recognised in liabilities cannot be netted with margin calls recognised in assets (see note 13.4), as they concern different counterparties.

13.6.5 Other

At 31 December 2024, the "Other" line in the above table includes €1.6 billion of investment subsidies, the same as at December 2023. Subsidies received in 2024, net of the effects of changes in the scope of consolidation, amount to €232 million (€258 million in 2023).

Investment subsidies received by Group companies are included in this item in the liabilities and recognised in the income statement based on the rate of consumption of the economic benefits of the related assets.

13.6.6 Contract liabilities

Contract liabilities represent an entity's obligations to provide customers with goods or services for which it has already been paid, or for which payment is due.

Changes in contract liabilities were as follows:

(in millions of euros)	31/12/2023	Amounts recorded during the period	Amounts transferred to sales during the period	Amounts cancelled during the period with no impact on sales	Effect of unwinding the discount	Change in scope of consolidation	Foreign exchange effect	31/12/2024
Advance payments received	2,099	1,710	(1,395)	(34)	-	25	30	2,435
Deferred income on long-term contracts	3,548	872	(684)	(167)	49	334	22	3,974
Other deferred income	857	673	(686)	-	-	51	2	897

These liabilities comprise the majority of advances and progress payments received, amounting to €2,435 million (principally concerning the Industry and Services, United Kingdom and France – Regulated Activities segments), and the majority of deferred income (on long-term and other contracts), amounting to €4,871 million (principally concerning the France – Generation and Supply and Industry and Services segments). They thus total €7,306 million at 31 December 2024 (€6,504 million at 31 December 2023). Changes in the scope of consolidation in 2024 essentially concern the acquisition of Arabelle Solutions.

Contracts with a duration of more than one year on which obligations are unfulfilled or partially fulfilled at the closing date should generate sales revenues of approximately €19,191 million which have not yet been recognised. €778 million of these sales revenues will be recognised progressively until 2034 on the Exeltium contract, and the balance will be recognised until the end of the operating period for contracts relating to jointly-operated power plants, and over the term of the contract for other firm sale contracts (excluding energy sales).

Note 14 Equity

14.1 Share capital

ACCOUNTING PRINCIPLES AND METHODS

Share issue expenses correspond exclusively to external costs expressly related to the capital increase. They are charged against the issue premium at their net-of-tax value.

Other expenses are classified as expenses of the period.

At 31 December 2024, EDF's share capital amounts to €2,084,365,041 comprising 4,168,730,082 fully subscribed and paid-up shares with nominal value of €0.50, owned 100% by the French State since 8 June 2023.

14.2 Dividends

At the General Shareholders' Meeting of 11 June 2024 it was decided not to pay out any dividend in 2024 in respect of 2023.

No interim dividend was paid for 2024.

14.3 Perpetual subordinated bonds

ACCOUNTING PRINCIPLES AND METHODS

The perpetual subordinated bonds issued by the Group ("hybrid" bond issue) incorporate options for redemption at the initiative of EDF. These options may be exercised after a minimum period that depends on the specific terms of each issue, and subsequently at each coupon date or in the event of highly specific circumstances. The annual yield is fixed and reviewable based on contractual clauses that vary according to the specific terms of the issuance. There is no obligation for EDF to make any payment, due to the existence of contractual clauses entitling it to defer payment indefinitely.

However, those clauses stipulate that any deferred payments must be made in the event of a dividend distribution. All these features give EDF an unconditional right to avoid paying out cash or another financial asset for the principal or interest. Consequently, in compliance with IAS 32, these bonds are recorded as equity instruments and any payment made is treated in the same way as dividends.

At 31 December 2024, perpetual subordinated bonds carried in equity amounted to €10,047 million (less net-of-tax transaction costs) (€12,009 million at 31 December 2023).

On 5 June 2024 EDF announced that it intended to exercise its option on 5 July 2024 to redeem the €1,250 million tranche of hybrid notes issued in October 2018 with a coupon of 4%, due to mature on 30 October 2024. As the operation was certain, at 30 June 2024 EDF reclassified the amount of €1,243 million carried in equity to other financial liabilities (€1,250 million) and premiums and reserves (€7) million corresponding to the issue expenses). The notes were redeemed on 5 July 2024 for €1,250 million.

On 10 September 2024 EDF launched contractual redemption offers for the €1,000 million perpetual subordinated bonds issued in January 2014 with a coupon of 5.0% (for which EDF's first-call option date was 22 January 2026) and the €1,250 million perpetual subordinated bonds issued in January 2013 with a coupon of 6.0% (for which EDF's first-call option date is 29 January 2026). Following this offer, €499 million was paid to redeem the €1,000 million January 2014 tranche of bonds, and €730 million (€621 million) was paid to redeem the €1,250 million January 2013 tranche of bonds.

On 10 September 2024 EDF announced that it intended to exercise its redemption option on 29 January 2025 to redeem the €1,250 million hybrid notes issued in January 2013 with a coupon of 5.38% which were due to mature in January 2025. At 31 December EDF reclassified the €1,229 million carried in equity to other financial liabilities (€1,250 million) and premiums and reserves (€21 million corresponding to issue expenses).

Also on 10 September 2024, EDF issued three hybrid green bonds, recorded in equity at the respective values of €500 million (coupon of 5.125%), €650 million (coupon of 5.625%) and £500 million (coupon of 7.375%).

Interest paid by EDF to the bearers of perpetual subordinated bonds issued totalled €582 million in 2024 (€630 million in 2023). The resulting cash payout is recorded as a reduction in Group equity.

In January 2025, EDF paid interest of €74 million to the bearers of perpetual subordinated bonds.

Perpetual subordinated bonds in the accounts of EDF

(in millions of currency units)

Entity	Issue date ⁽¹⁾	Nominal amount	Currency	Redemption option	Coupon
EDF	01/2013	629	GBP	13 years	6.00%
EDF	01/2014	501	EUR	12 years	5.00%
EDF	01/2014	750	GBP	15 years	5.88%
EDF	12/2019	500	EUR	8 years	3.00%
EDF	09/2020	850	EUR	6.5 years	2.88%
EDF	09/2020	1,250	EUR	10 years	3.38%
EDF	06/2021	1,250	EUR	7 years	2.63%
EDF	12/2022	1,000	EUR	6 years	7.50%
EDF	06/2023	1,500	USD	10 years	9.13%
EDF	09/2024	500	EUR	5 years	5.13%
EDF	09/2024	650	EUR	8 years	5.63%
EDF	09/2024	500	GBP	11 years	7.38%

(1) Date funds were received.

14.4 Non-controlling interests (minority interests)

The following table presents details of the principal non-controlling interests:

(in millions of euros)	31/12/2024			31/12/2023	
	Ownership %	Equity (non-controlling interests)	Net income attributable to non-controlling interests	Equity (non-controlling interests)	Net income attributable to non-controlling interests
Principal non-controlling interests:					
EDF Energy Nuclear Generation Ltd.	20.00%	1,453	300	2,014	136
NNB Holding Company (HPC) Ltd.	27.40%	5,915	(87)	5,349	(2,703)
Sizewell C (Holding) Ltd.	83.77%	-	(5)	1,475	-
EDF Investissements Groupe SA	13.78%	1,024	17	520	13
Luminus SA	31.37%	995	102	698	25
Framatome	19.50%	200	(23)	218	(34)
Other non-controlling interests		1,442	144	1,677	158
TOTAL		11,029	448	11,951	(2,404)

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

Non-controlling interests in NNB Holding Company (HPC) Ltd, the holding company for the Hinkley Point C project, which is owned 72.60% (67.72% at 31 December 2023) by the Group via EDF Energy, correspond to CGN's share.

Following the loss of control over Sizewell C (Holding) Ltd, the holding company for the Sizewell C project which is owned 16.23% (49.44% at 31 December 2023) by the Group via EDF Energy, the company is accounted for by the equity method at 31 December 2024. At 31 December 2023, the non-controlling interests in Sizewell C (Holding) Ltd corresponded to the UK Government's share in the project.

Non-controlling interests in Framatome, owned 80.5% by the Group via EDF SA, correspond entirely to the 19.5% share held by Mitsubishi Heavy Industries since 25 January 2024 when EDF purchased the 5% held by Assystem.

Non-controlling interests in Luminus correspond principally to the investments held by Belgian local authorities, and partner contributions to the Seraing CCGT project.

Non-controlling interests in EDF Investissements Groupe (EDF IG) correspond to the investment held by Natixis Belgique Investissements. On 6 November 2024, Natixis Belgique Investissements subscribed a €500 million capital increase and now holds 13.78% of EDF IG at 31 December 2024 (7.54% at 31 December 2023) while EDF holds the remaining 86.22% via C3 (92.46% at 31 December 2023).

Other non-controlling interests principally consist of the minority interests in subsidiaries of the Edison and EDF Renewables subgroups.

They also include instruments in the form of bonds convertible into shares, issued by the Dalkia group and subscribed by minority interests, amounting to a total €66 million at 31 December 2024 (€96 million in 2023).

Note 15 Provisions related to nuclear generation and dedicated assets

ACCOUNTING PRINCIPLES AND METHODS

The Group recognises provisions when it has a present obligation (legal or constructive) arising from a past event, an outflow of resources will probably be required to settle the obligation, and the obligation amount can be estimated reliably.

If it is anticipated that all or part of the expenses covered by a provision will be reimbursed, the reimbursement is recognised under receivables if and only if the Group is reasonably certain of receiving it.

Provisions are determined based on the Group's expectation of the cost necessary to settle the obligation. Estimates are based on management data from the information system, assumptions adopted by the Group, and if necessary, experience of similar transactions or operations, based on independent expert reports, or contractor quotes. The various assumptions are reviewed for each closing of the accounts.

In the case of decommissioning provisions for power plants in operation, adjustments are recorded via fixed assets.

The discount effect generated at each closing to reflect the passage of time is recorded under "Discount effect" in financial expenses.

Changes in provisions resulting from a change in discount rates, a change in the disbursement schedule or a change in contractor quote are recorded:

- as an increase or decrease in the corresponding assets, up to the net book value, if the provision was initially covered by balance sheet assets;
- in the income statement in all other cases.

Provisions related to nuclear generation mainly cover the following:




- back-end nuclear cycle expenses: provisions for spent fuel management, for waste removal and conditioning and long-term radioactive waste management are established in accordance with the obligations and final contributions specific to each country;
- costs for decommissioning power plants;
- costs relating to fuel in the reactor when the reactor is shut down (provisions for last cores). These correspond to the cost of the fuel stock in the reactor that is not totally spent at the time of the final reactor shutdown and cannot be reused due to technical and regulatory constraints, the cost of processing for that fuel, and the cost of removal and storage of the resulting waste.

Obligations can vary noticeably depending on each country's legislation and regulations, and the technologies and industrial scenarios involved.

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

(in millions of euros)	31/12/2024			31/12/2023		
	Non-current	Current	Total	Non-current	Current	Total
Provisions for the back-end of the nuclear cycle	33,220	1,995	35,215	28,193	2,069	30,262
Provisions for decommissioning and last cores	35,609	1,453	37,062	32,013	1,269	33,282
Provisions related to nuclear generation	68,829	3,448	72,277	60,206	3,338	63,544

The breakdown of provisions by company is shown below:

(in millions of euros)	 EDF	 EDF Energy	 Belgium	Total
	Note 15.1	Note 15.2	Note 15.3	
Provisions for spent fuel management	17,449	1,265	-	18,714
Provisions for waste removal and conditioning	-	520	-	520
Provisions for long-term radioactive waste management	14,156	1,446	379	15,981
PROVISIONS FOR THE BACK-END OF THE NUCLEAR CYCLE AT 31/12/2024	31,605	3,231	379	35,215
Provisions for nuclear plant decommissioning	19,221	12,878	599	32,698
Provisions for last cores	2,995	1,369	-	4,364
PROVISIONS FOR DECOMMISSIONING AND LAST CORES AT 31/12/2024	22,216	14,247	599	37,062
PROVISIONS RELATED TO NUCLEAR GENERATION AT 31/12/2024	53,821	17,478	978	72,277

The movement in provisions for the back-end of the nuclear cycle, provisions for decommissioning and provisions for last cores break down as follows:

(in millions of euros)	31/12/2023	Increases	Decreases	Discount effect	Translation adjustments	Other movements	31/12/2024
Provisions for spent fuel management	15,114	4,074	(1,248)	638	59	77	18,714
Provisions for waste removal and conditioning	406	-	-	22	21	71	520
Provisions for long-term radioactive waste management	14,742	881	(348)	371	61	274	15,981
Provisions for the back-end of the nuclear cycle	30,262	4,955	(1,596)	1,031	141	422	35,215
Provisions for nuclear plant decommissioning	29,291	400	(1,000)	1,321	537	2,149	32,698
Provisions for last cores	3,991	-	-	193	62	118	4,364
Provisions for decommissioning and last cores	33,282	400	(1,000)	1,514	599	2,267	37,062
PROVISIONS RELATED TO NUCLEAR GENERATION	63,544	5,355	(2,596)	2,545	740	2,689	72,277
Current portion	3,338						3,448
Non-current portion	60,206						68,829
EDF SA	48,220						53,821
<i>Provisions within the scope of the law of 28 June 2006</i>	<i>47,001</i>						<i>52,583</i>
United Kingdom	14,365						17,478
Belgium	960						978

The change in provisions related to nuclear generation in 2024 is mainly explained by the following:

- In France (see note 15.1.1):
 - > an increase of €3,301 million in provisions for spent fuel management due to revision of the industrial scenario for interim spent fuel storage (see note 15.1.1.1);
 - > an increase of €823 million in provisions for long-term radioactive waste management due to revision of storage costs (Cigéo) for high-level waste and long-lived intermediate-level waste (HLW and ILW-LL) (see note 15.1.1.2);
 - > the first nuclear reaction at the Flamanville 3 power plant, leading to an increase of €428 million in provisions related to nuclear generation (see note 15.1.1.3);
 - > a 10 base points increase in the real discount rate in France (see note 15.1.1.5) which led to a €(964) million decrease in provisions.
- In the United Kingdom (see note 15.2):
 - > a €3,440 million update to the cost estimate based on Integrated Plan 25, approved by the Non-Nuclear Liabilities Assurance team (NLA) in December 2024;
 - > an increase in the real discount rate in the United Kingdom (including +30 base points on provisions for the back-end of the cycle and decommissioning) leading to a €(825) million decrease in provisions;
 - > the new assumptions (announced by the Group in December 2024) concerning the closure of the Heysham 1 and Hartlepool AGR plants, which are now scheduled for 2027 instead of 2026 previously, and the closure of the Heysham 2 and Torness AGR plants, which are now scheduled in 2030 rather than 2028, leading to a €(366) million decrease in provisions for the back-end of the cycle and decommissioning.

15.1 Provisions related to nuclear generation and dedicated assets in France

15.1.1 Nuclear provisions

In France, the provisions established by EDF SA for the nuclear generation fleet result principally from the Law of 28 June 2006 on long-term management of radioactive materials and waste, and the associated implementing provisions concerning secure financing of nuclear expenses.

In compliance with the accounting principles described above:

- EDF books provisions to cover all obligations related to the nuclear facilities it operates;
- EDF also holds dedicated assets for secure financing of long-term obligations (see note 15.1.2).

The calculation of provisions incorporates a level of risks and uncertainties as appropriate to the operations concerned. It also involves estimates, judgment and uncertainty factors as described in note 1.3.4.2. At 31 December 2024 the level of uncertainties was rising due to the specific situations presented below, which are likely to evolve in the short and medium term, particularly: (i) conceptual design studies in 2025 and 2026 concerning new interim spent fuel storage capacities (the ADEC project) in the Back-End of the Future programme (see note 15.1.1); (ii) recent changes in the regulations for processing paint containing asbestos, and analysis of the potential impact on the decommissioning cost estimate for installations currently in operation (an analysis action plan has begun in 2025 given the complexity of sampling, and the scale and diversity of the surfaces concerned) (see note 15.1.1.3). Additionally, the French government is expected to publish the new official decision on the costs of the Cigéo project in September 2025 (see note 15.1.1.2).

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

(in millions of euros)	Notes	31/12/2023	Increases	Decreases	Discount effect	Other movements	31/12/2024
Provisions for spent fuel management	15.1.1.1	13,876	4,058	(1,113)	573	55	17,449
Amount unrelated to the operating cycle		1,760	2,678	(36)	76	18	4,496
Amount outside the scope of the Law of 28 June 2006		1,219	-	(42)	61	-	1,238
Provisions for long-term radioactive waste management	15.1.1.2	13,205	869	(348)	301	129	14,156
Provisions for the back-end of the nuclear cycle		27,081	4,927	(1,461)	874	184	31,605
Provisions for nuclear plant decommissioning	15.1.1.3	18,419	399	(274)	753	(76)	19,221
Provisions for last cores	15.1.1.4	2,720	-	-	126	149	2,995
Provisions for decommissioning and last cores		21,139	399	(274)	879	73	22,216
PROVISIONS RELATED TO NUCLEAR GENERATION		48,220	5,326	(1,735)	1,753	257	53,821
Provisions related to nuclear generation within the scope of the Law of 28 June 2006 ⁽¹⁾		47,001	5,326	(1,693)	1,692	257	52,583
Provisions related to nuclear generation outside the scope of the Law of 28 June 2006 ⁽¹⁾		1,219	-	(42)	61	-	1,238

(1) Scope of application of the law of 28 June 2006 on the sustainable management of radioactive materials and waste and its application decrees concerning secure financing of nuclear expenses. The provisions that do not fall within the scope of this law are provisions for the back-end of the nuclear cycle concerning non-EDF installations (see below).

The change in EDF SA's provisions related to nuclear generation is mainly explained by:

- an increase of €3,301 million in provisions for spent fuel management in France due to revision of the industrial scenario for interim spent fuel storage (see note 15.1.1.1), recorded as follows: €3,291 million in "Increases", corresponding to provisions adjusted via profit and loss, and €10 million in "Other movements", corresponding to the change in provisions backed by assets;
- the first nuclear reaction at the Flamanville 3 power plant, leading to an increase of €428 million in provisions related to nuclear generation (see note 15.1.1.3), allocated as follows: €235 million to provisions for decommissioning of plants currently in operation (see note 15.1.1.3), €22 million to provisions for last cores, €73 million to provisions for spent fuel management, and €98 million to provisions for long-term radioactive waste management. These amounts are principally recorded in "Other movements", corresponding to the change in provisions backed by assets;
- an increase of €823 million in provisions for long-term radioactive waste management due to revision of storage costs (Cigéo) for high-level and long-lived intermediate-level waste (HLW and ILW-LL) (see note 15.1.1.2), recorded as follows: €775 million in "Increases", corresponding to provisions adjusted via profit and loss, and €48 million in "Other movements", corresponding to the change in provisions backed by assets.

There was also a 10 base points increase in the real discount rate in France (see note 15.1.1.5) which led to a €(964) million decrease in provisions, recorded as follows: €(514) million in the "Discount effect", corresponding to provisions adjusted via profit and loss, and €(450) million in "Other movements", corresponding to the decrease in provisions backed by assets (assets associated with provisions and underlying assets).

The discount effect also includes the €2,267 million cost of unwinding the discount, recorded in the financial result.

Concerning non-EDF installations:

- EDF, Orano Recyclage and the French Atomic Energy Commission (*Commissariat à l'Énergie Atomique* or CEA) signed an agreement in December 2004 which transferred the management and financing of final shutdown, decommissioning and waste recovery and reconditioning for the UP1 reprocessing facility at Marcoule to the CEA. In return, EDF paid the CEA a one-time financial contribution covering its full share of the cost of outstanding operations, while remaining the owner of its final waste and bearing only the transport and storage costs;
- EDF and Orano Recyclage signed two agreements in December 2008 and July 2010 defining the legal and financial terms for the transfer to Orano Recyclage of EDF's contractual obligations regarding its financial contribution to the dismantling of La Hague installations and the recovery and conditioning of waste. In application of those agreements, EDF paid Orano Recyclage a one-time financial contribution covering its full share of the cost of outstanding operations, while remaining the owner of its final waste and bearing only the transport and storage costs.

15.1.1.1 Provisions for spent fuel management

Spent fuel processing

EDF's currently adopted strategy with regards to the fuel cycle, in agreement with the French State, is to process spent fuel, recycle the separated plutonium in the form of MOX fuel (Mixed OXide of plutonium and uranium), and recycle the reprocessed uranium.

The nominal quantities to be processed by Orano Recyclage at the request of EDF, totalling approximately 1,100 tonnes per year, are determined based on the quantity of recyclable plutonium in the reactors that are authorised to load MOX fuel (currently, 24 reactors under the authorisation for creation).

Consequently, provisions for spent fuel management (€17,449 million) mainly cover the following services to be provided by Orano Recyclage:

- removal of spent fuel from EDF's generation centres, and its reception and interim storage;
- processing, including conditioning and storage of recyclable matter.

The processing expenses included in these provisions concern spent fuel that can be recycled in existing facilities, including the portion in reactors but not yet irradiated.

Expenses are mainly measured based on forecast physical flows at the closing date, with reference to the contracts with Orano Recyclage which define the terms of application of the framework agreement for the period 2008-2040. These contracts contain price indexes that are revised annually.

With the previous contract due to terminate at the end of 2023, in September 2023 negotiations between EDF and Orano Recyclage achieved convergence, and an agreement was signed on the principles for the next contract covering the period 2024-2026. This led to a €2,216 million increase in provisions for spent fuel management at 31 December 2023. The agreement took account of changes in the economic conditions underlying the contract, and the requirements expressed by Orano Recyclage regarding the necessary operating costs to enhance its plants' performance.

The new contract for the period 2024-2026, reiterating the principles agreed in September 2023 as stated above, was signed on 1 October 2024, and thus has no significant impact on provisions for spent fuel management in 2024.

Spent fuel storage

The interim storage of spent fuel is a key issue for the back-end of the nuclear cycle. The situation at 31 December 2023 was as follows:

- there was a risk that the pools at La Hague could be saturated by 2030, based particularly on load factor forecasts for interim storage facilities for spent fuel from EDF's generation fleet. To prevent saturation, the long-term storage capacity for spent fuel was to be increased by constructing a first pool in a centralised spent fuel pool facility under EDF's supervision and subsequent operation, to be commissioned in 2034. This first pool was to act as an extension of the reactor pools to ensure continuity of operation by the generation fleet, and was therefore considered as a tangible asset. In the meantime, studies were undertaken of transitional workaround solutions involving densification of the existing pools at Orano's La Hague site, and the supplementary solution of a dry storage facility for spent plutonium (MOX) fuel and reprocessed uranium (RepU). The costs of these studies were covered by provisions;
- there was a need for long-term storage for spent fuel that cannot currently be recycled in industrial facilities that already exist or are under construction: spent plutonium (MOX) fuel and reprocessed uranium (RepU), and the fuel from Creys-Malville until fourth-generation reactors become available. This need was covered by provisions founded on a scenario assuming construction of a second pool in the centralised spent fuel pool facility, to be commissioned in 2047.

The following developments relating to spent fuel management took place during the first half of 2024:

- France's Nuclear Policy Council held a meeting on 26 February 2024. The Council confirmed the major orientations of France's policy for the back-end of the nuclear cycle, which combines reprocessing, reuse of spent fuel and use of a closed nuclear fuel cycle, through extended operating lifetimes and resilience of existing installations, and upgrading of the nuclear fuel cycle facilities at La Hague;
- The ASN Commission called Orano and EDF to a hearing on 11 April 2024. This was an opportunity, in view of the above Nuclear Policy Council meeting, to present a joint report on the existing storage capacities at La Hague, and the projected quantities of spent fuel to be stored. After the hearing, the ASN's statement of 17 April 2024 noted that the risk of storage pool saturation at La Hague had been deferred, while re-emphasising the need to introduce transitional solutions to restore safety margins. The ASN also called for new long-term storage capacities to be implemented by operators as soon as possible, with high-level safety objectives.

The industrial scenario presented to the ASN Commission by EDF on 11 April 2024 thus incorporated the expected easing of the risk of saturation at La Hague's spent fuel pools in the short term (through application of transitional solutions), combined with the prospect of upgrades to installations at La Hague, notably the plan to use a single pool (as opposed to two as originally considered and mentioned above) for long-term storage of spent plutonium (MOX) fuel and the fuel from Creys-Malville. The work would be supervised by EDF, in accordance with the ministerial order of 9 December 2022 made in application of Decree 2022-1547 of 9 December 2022. The estimates used for calculations under this scenario are founded on these key assumptions.

At 30 June 2024, this change of industrial scenario led to impairment of capitalised costs for the first pool, amounting to €142 million, and adjustment of the provisions for spent fuel management based on the most recent estimates, as follows:

- regarding the risk of spent fuel pool saturation at La Hague in the short term (between 2030 and 2040), implementation of the transitional solution of pool densification was confirmed and the development studies were finalised, leading to a €311 million increase in provisions at 30 June 2024. The supplementary solution of dry storage was also still under consideration at this stage;
- regarding the need for long-term storage of spent plutonium (MOX) fuel and the fuel from Creys-Malville, the provision was adjusted to take account of the new capacity corresponding to a single pool, assuming it will be commissioned as soon as possible, based on revised project costs put forward by EDF in the Conceptual Design phase which was completed in the first quarter of 2024 and incorporated the latest safety and security requirements. These factors led to an increase of €2,657 million at 30 June 2024 in the provision, which is unrelated to the operating cycle as defined by the law of 2006 and is thus backed by dedicated assets;
- regarding the current spent uranium fuel derived from processing (spent RepU), the new industrial scenario assumes that it will be processed (dilution of the spent RepU) in the existing facilities at La Hague (instead of undergoing long-term interim storage followed by direct storage). The portion of provisions for spent fuel management related to reprocessing was increased by €333 million, and the provisions for long-term radioactive waste management were reduced by €120 million.

In the autumn of 2024, EDF and Orano submitted an industrial plan for future nuclear fuel cycle facilities (the Back-End of the Future programme) at Orano's La Hague site for examination by the French General Directorate for Energy & Climate (*Direction générale de l'énergie et du climat* or DGEC) and the ASN. This plan will include a new spent fuel reprocessing plant, and a MOX fuel fabrication plant. It will be supervised by Orano, and will also comprise a project for new storage capacities (ADEC) that will later be connected to the future reprocessing facilities.

The proposed plan was still under examination by the competent authorities at 31 December 2024. If validated, the ADEC project supervised by Orano would replace the initial storage pool project supervised by EDF.

Orano recently began studies for the Conceptual design phase of its Back-End of the Future programme which comprises the ADEC new storage capacities project. These studies should continue until the end of 2026. The funding arrangements for the programme are not yet finalised.

Given the key information that remains to be clearly defined, the current best estimate of the amount to be covered by the provision for the spent fuel storage obligations is still based on the underlying assumptions updated during the first half of 2024.

In total, provisions for specific storage solutions for spent fuel amount to €504 million for the cost of densification of Orano's pools at La Hague, and €4,496 million for interim storage of spent MOX fuel and Creys-Malville fuel (these fuels cannot be recycled in existing facilities or facilities currently under construction).

Recycling of RepU

In 2018, the Board of Directors approved resumption of reprocessed uranium recycling, which had been suspended in 2013 pending availability of a new industrial schema. The corresponding contracts were signed with the respective suppliers in the second quarter of 2018. The first assemblies were made at the Framatome plant in Romans sur Isère and loaded in 2023 into a 900MW reactor that is already authorised and resumed operation on 4 February 2024. Subject to completion of technical modifications and issuance of the necessary authorisations by the ASN, other 900MW reactors and certain 1,300MW reactors will be loaded with assemblies based on reprocessed uranium by 2027. Since 2021, the provision for storage of reprocessed uranium included in the provisions for spent fuel management (€485 million) has been based on a 50-year operating lifetime for nuclear plants for the series concerned, following the extension of the depreciation period of 1,300MW-series plants from 40 to 50 years.

Audit commissioned by the DGEC and the French Treasury

In accordance with its powers under Article 594-4 of the Environment Code, in early 2024 the DGEC and the French Treasury commissioned an external audit of the the valuation of EDF's spent fuel management costs at 31 December 2023. This audit began in the second quarter of 2024 and should be completed in the first quarter of 2025. It is not currently expected to have any significant impacts on the provisions for spent fuel management.

15.1.1.2 Provisions for long-term radioactive waste management

Provisions for long-term radioactive waste management concern the following future expenses:

- interim storage, removal and storage of radioactive waste packages resulting from spent fuel processing;
- direct storage, after long-term interim storage where relevant, of spent fuel that cannot be recycled in existing installations: specifically plutonium (MOX) fuel or uranium fuel derived from processing, and fuel from Creys-Malville and Brennilis;
- characterisation, processing, conditioning and interim storage of radioactive waste resulting from decommissioning and certain operating waste, and removal and final storage of this radioactive waste;
- EDF's share of the costs of studies, construction, operation and maintenance, shutdown and surveillance of existing and future storage centres.

The volumes of waste concerned by provisions include existing packages of waste and all waste to be conditioned, resulting in particular from plant decommissioning or spent fuel processing at La Hague (comprising all fuel in reactors at 31 December, irradiated or otherwise). These volumes are regularly reviewed, in keeping with the data declared for the purposes of the national waste inventory undertaken by ANDRA.

The provisions for long-term radioactive waste management break down as follows:

(in millions of euros)	Storage centre	31/12/2024	31/12/2023
Very low-level and low and intermediate-level waste	Very low-level waste: CIRES -Morvilliers (ANDRA)	3,310	3,176
	Low and intermediate-level waste: CSA - Soulaines (ANDRA)		
Long-lived low-level waste	Project under examination: Soulaines (ANDRA)	371	369
Long-lived intermediate-level and high-level waste	Geological storage centre (Cigéo project) / ICEDA conditioning and interim storage facility	10,475	9,660
PROVISIONS FOR LONG-TERM RADIOACTIVE WASTE MANAGEMENT		14,156	13,205

Very low-level and low and intermediate-level waste

Basis for estimation

Very low-level waste (VLLW) and low and intermediate-level waste (LILW) come from nuclear facilities in operation or in the process of being decommissioned:

- VLLW mainly comes from nuclear plant decommissioning, and generally takes the form of metals (large components, piping, support structures, etc.) or rubble (concrete, earth, etc.). This type of waste is stored at surface level at the Morvilliers storage centre managed by ANDRA, commissioned in 2003;
- LILW (gloves, filters, resins, materials, etc.) is stored at surface level at the Soulaines storage centre managed by ANDRA, commissioned in 1992.

The cost of removing, processing and storing short-lived waste (VLLW and LILW) is assessed on the basis of:

- current contracts with transporters, and ANDRA for operation of the existing storage centres;
- the costs of the plant run by the subsidiary Cyclife France (the Centraco site at Codolet commissioned in 1999) for processing some of this waste that can be melted or incinerated prior to storage in the ANDRA's centres;
- an estimate of the cost of a centralised facility for interim storage, segmentation and conditioning of major components such as steam generators.

For the management of VLLW, the regulations (decrees issued by the Ministry for the Ecological Transition) governing recycling of very low-level metallic waste in France were published in the *Journal Officiel* of 15 February 2022. EDF is thus continuing with the development of the Technocentre, a segmentation and fusing facility to process and recycle the very low-level metallic waste resulting from decommissioning of nuclear plants. The target commissioning date is 2031. In line with France's 5th National Plan for Managing Radioactive Matter and Waste, a roadmap setting out the objectives and timetable for the Technocentre project was sent to the DGEC in early 2023. The project was referred to the National Public Debate Commission in mid-January 2024. The public debate began in October 2024 and will end in February 2025.

Developments in 2023

In 2023, the annual review of cost estimates incorporated the most recent assumptions regarding management of radioactive waste. This had no significant impact on provisions. It should be noted that this review took account of the effects of France's Finance Law for 2024, which introduced a general tax on polluting activities in order to encourage recycling of very low-level metallic waste, and reduced the INB tax on storage centres once they are permanently shut down. These steps will modify the storage costs invoiced by ANDRA.

Developments in 2024

In 2024, the annual review of cost estimates incorporated the most recent assumptions regarding management of radioactive waste, particularly assumptions relating to VLLW (based on the current contract with ANDRA). This led to a €56 million increase in provisions.

Long-lived low-level waste

Long-lived low-level waste (LLW-LL) belonging to EDF essentially consists of graphite waste from the ongoing decommissioning of the former UNGG (natural uranium graphite gas-cooled) nuclear plants.

As this waste has a long lifetime but is lower-level than long-lived intermediate-level and high-level waste (ILW-LL and HLW), specific subsurface storage requirements apply under the French Law of 28 June 2006.

Following the initial geological investigations, in July 2015 ANDRA remitted a report on a proposed storage centre for LLW-LL on a site located in the Soulaines region (Aube) in France. This report was submitted to the ASN for its opinion. In compliance with the ASN's opinion 2020-AV-0357 issued on

6 August 2020, and the 5th National Plan for Managing Radioactive Matter and Waste (PNGMDR⁽¹⁾), in March 2024 ANDRA produced a file presenting the technical and safety options selected for storage of LLW-LL at the Vendeuvre-Soulaines site, leading to consideration of alternative sites for graphite waste storage. The ASN is currently examining the file.

In addition, the studies conducted by EDF to characterise the radiological inventory of this waste suggest that it should be possible to store the graphite from the first decommissioned reactor (Chinon A2) in the existing Aube surface level storage centre, with no need to wait for a specific LLW-LL storage facility.

The provisions for Chinon A2 graphite waste extracted from the reactor up to 2045 are thus currently based on a scenario assuming storage at the Aube centre. For this graphite, the construction of an interim storage facility at Chinon and final storage in a specific LLW-LL repository are treated as risks.

For graphite from other reactors, the provisions cover direct storage in an LLW-LL repository.

High-level and long-lived intermediate-level waste

High-level waste (HLW) and long-lived intermediate-level waste (ILW-LL) essentially comes from processing of spent fuel, and to a lesser extent waste resulting from nuclear plant operation, maintenance and decommissioning (metallic components that have been inside the reactor).

The French Law of 28 June 2006 requires reversible storage in deep geological layers for long-lived medium and high-level waste. This is the aim of the Cigéo project for an industrial geological storage centre

On 15 January 2016 the Ministry of Ecology, Sustainable Development and Energy issued a ministerial order setting the target cost for the Cigéo storage project at €25 billion under 2011 year-end economic conditions. The cost as defined constitutes an objective to be met by ANDRA, in compliance with safety standards set by the ASN, working in close cooperation with the operators of nuclear installations.

In application of this ministerial order, the cost of the Cigéo project is regularly updated, at least at each key milestone in the course of the project's development (authorisation to create the facility, commissioning, end of the "pilot industrial phase", safety reviews) in accordance with the opinion of the ASN.

ANDRA is to remit an updated file on the costing of Cigéo in April 2025 to the DGEC, the ASN and the competent parliamentary commissions will be followed by consultation of stakeholders, including producers of waste, and the State will then define the new "objective cost" of Cigéo by September 2025.

Work on this file is currently in process and several points remain open to discussion. Estimation of the total effects of the various dimensions of the work and the interactions between them will need to be based on an all-round view, which will be finalised in 2025.

EDF has nonetheless updated the Cigéo provision in the 2024 financial statements to take account of information that is sufficiently certain and was not included in the 2016 cost calculation. This update resulted in a €823 million increase in the provision, independently of the rest of the ongoing cost calculations.

The provisions established for storage of HLW and ILW-LL amount to €9,508 million. They are based on the cost of storage, taking account of the waste producers' share, which depends on the volumes and characteristics of the waste, and also preliminary interim storage of radioactive waste resulting from spent fuel processing, removal to the storage site, and direct storage of spent fuel that cannot be recycled in existing installations.

The Cigéo project has passed the following principal milestones since 2016:

On 11 January 2018, the ASN considered that the Cigéo project had reached satisfactory overall technological maturity at the safety options file stage. A detailed design review by a group of independent experts was organised at the request of the DGEC. In late 2020, this group issued a generally favourable opinion on the file presented by ANDRA.

The public inquiry regarding the Cigéo project's public utility was held between 15 September and 23 October 2021. It resulted in a favourable opinion from the inquiry commissioners (along with five recommendations to the project manager), made public on 20 December 2021. The findings of the commission noted that the public enquiry had "attracted a large number of contributions from the public, most of them with extensive supporting arguments" and that Cigéo was "opportune, relevant, and robust".

Prior to the enquiry, a second appraisal of Cigéo's socioeconomic assessment by France's General Secretariat for Investment (SGPI) had resulted in a favourable opinion "both for the overall project and its transport component". It highlighted the fact that "the Cigéo project has strong prudential and insurance value to cope with environmental and health risks".

In an opinion issued on 13 January 2021, the French Environmental Authority emphasised the educational nature of the environmental assessment. It made a series of recommendations, which ANDRA took into account in the public inquiry.

Decree 2022-993 of 7 July 2022 declared Cigéo to be in the public interest and adjusted the Pays Barrois (Meuse) area land use master plan, the Haute-Saulx (Meuse) local inter-municipality urban planning document, and the Gondrecourt-le-Château (Meuse) local urban planning document for compatibility. Decree 2022-992 of 7 July 2022 also included the Cigéo project among the operations of national interest specified in Article R. 102-3 of the French Urban Planning Code.

The application for authorisation to create the Cigéo storage centre was filed on 17 January 2023.

On 22 June 2023 the ASN declared the application admissible and on 27 June 2024 France's Environmental Authority also issued an opinion on the application to create the centre. This meant that technical examination of the application could begin. This involves three meetings of the ASN's Advisory Committee of Experts: the first took place in April 2024, the second in December 2024, and the third is scheduled for mid-2025, with issuance of the ASN opinion expected in November 2025.

The aim is to receive authorisation by the end of 2027.

Under ANDRA's current reference schedule, Cigéo will begin with a pilot industrial phase and the first waste packages will be delivered between 2035 and 2040.

For the specific case of bituminous waste, when examining the safety options file, the ASN required examination of alternatives to the proposal to store bituminous waste at Cigéo with no processing. In September 2018, a group of experts was appointed by the DGEC to draw up a report on current bituminous waste management practices. In September 2019, this group concluded that various options (storage or neutralisation) were in theory feasible, but stressed the importance of continuing the studies in order to identify the most appropriate option. A four-party research programme involving producers and ANDRA is still exploring this question.

(1) *Plan National de Gestion des Matières et des Déchets Radioactifs*. Decree 2022-1547 and the implementation order published in the *Journal Officiel* of 10 December 2022.

Finally, regarding the tax status of Cigéo, article 127 of France's Finance Law for 2021 modified the tax treatment of the project (from the standard tax regime to a storage tax-based regime), but the associated measures and their potential impact on the level of taxation on the installation still remained to be clarified at 31 December 2024.

ICEDA

The provision established for HLW and ILW-LL also includes €968 million to cover the conditioning and interim storage of ILW-LL, principally at the ICEDA radioactive waste conditioning and storage facility (*Installation de Conditionnement et d'Entreposage des Déchets Activés*).

ICEDA, located at the Bugey plant, is dedicated facility for the conditioning and interim storage of ILW-LL resulting from operation (other than fuel management) and decommissioning of power plants. The facility was commissioned in 2020 and conditioned its first waste in 2021.

Since 2021, all the radioactive waste from Chooz A and the initial operating waste from Fessenheim has been conditioned at the ICEDA facility.

In 2024, the ASN approved a modification to the regulatory characteristics of waste that that could be received for conditioning at the ICEDA facility. As a result of this modification, the facility is now authorised to condition 100% of the waste for which it was designed. The conditioning permit corresponding to the new scope is expected in early 2025.

Finally, after the two reactors at the Fessenheim plant were shut down permanently, EDF filed an application to modify the ICEDA's authorisation decree in order to allow the facility to condition waste resulting from the decommissioning of Fessenheim. The amended decree is expected in 2025.

15.1.1.3 Provisions for nuclear plant decommissioning

EDF bears full technical and financial responsibility for decommissioning of the basic nuclear facilities (*Installations Nucléaires de Base*, INB) it operates. The final shutdown and decommissioning process is governed by legal provisions and regulations set out in Articles L.593-20 to L.593-25 and R.593-65 to R.593-74 of the environmental code. It involves the following operations for each INB:

- a definitive shutdown declaration, to be made at least two years prior to the planned shutdown date:
 - since the Energy Transition Law of 17 August 2015, the final shutdown of the INB, which takes place during its operating phase, is considered separately from its dismantling, as a significant modification of lesser importance (simply requiring a declaration by the operator to the Minister and the ASN);
- a dismantling plan compiled by the operator and sent to the minister in charge of nuclear safety, which after examination by the authorities and a public inquiry, leads to a decree prescribing dismantling that authorises the start of dismantling operations;
- key-stage progress reviews submitted for the ASN's approval, with a safety file specific to the dismantling operations to be performed;
- an internal control process concerning significant modifications introduced by the operator in the case of operations that must be declared to or approved by the ASN;
- finally, once these operations are complete, declassification of the facility, which removes it from the scope of the laws governing basic nuclear facilities.

The decommissioning scenario adopted by EDF complies with France's Environmental Code, which requires as short a period as possible to elapse between final shutdown and dismantling in economically acceptable conditions and in compliance with the principles laid down in Article L. 1333 - 1 of the Public Health Code (radioprotection) and section II of Article L. 110 - 1 of the Environmental Code (protection of the environment). The intended end-state is industrial use: the sites will be restored to their original condition and will be reusable for industrial purposes.

The ongoing dismantling operations concern plants that were constructed and operated before the nuclear fleet currently in operation, known as "first-generation" plants, the Superphenix plant, the Tricastin Operational Hot Unit (BCOT) and the Irradiated Materials Workshop in Chinon. These operations cover four different technologies: a heavy water reactor (Brennilis), a sodium-cooled fast-neutron reactor (the Superphenix at Creys-Malville), natural uranium graphite gas-cooled (UNGG) reactors (at Chinon, Saint Laurent and Bugey) and a pressurised water reactor (PWR, at Chooz).

For the Fessenheim PWR plant, the dismantling application is currently under examination by the ASN, and the operations completed concern the pre-dismantling phase.

Each of these operations is a first for EDF, and apart from the PWR, they concern reactor technologies for which there is little or no international experience. They therefore require development of new methods and technologies that are riskier than technologies for which feedback already exists. Decommissioning of the PWR is benefiting from past experience (essentially in the US and limited). The Chooz plant also has the specificity of being partly located in a cave: this means it is also a unique operation, generating experience that is not immediately transposable and involves specific challenges.

Based on the ongoing decommissioning operations at permanently shut-down plants (particularly the experience gained from the Chooz PWR), the studies conducted for the Summary Preliminary Plan for the two 900MW reactors at Fessenheim, and the preparatory work for dismantling of Fessenheim, it was possible at the end of 2021 to establish a detailed reference estimate of future decommissioning costs for the nuclear fleet currently in operation ("second-generation" plants). However, neither EDF nor any other operator has yet begun a decommissioning programme on a scale comparable to the current PWR fleet, and as a result the estimates include both opportunities and risks, especially associated with the scale effect.

The decommissioning provisions cover future decommissioning expenses as described above (excluding the cost of removing waste from the site and storing it, which is covered by the provisions for long-term waste management).

Details of changes in provisions for nuclear plant decommissioning are as follows:

(in millions of euros)	31/12/2023	Increases	Decreases	Discount effect	Other movements	31/12/2024
Provisions for decommissioning nuclear plants in operation	13,002	-	(10)	594	(76)	13,510
Provisions for decommissioning permanently shut-down nuclear plants	5,417	399	(264)	159	-	5,711
PROVISIONS FOR NUCLEAR PLANT DECOMMISSIONING	18,419	399	(274)	753	(76)	19,221

"Other movements" in provisions for decommissioning nuclear plants in operation (provisions backed by assets) principally include the effects of the change in real discount rates at 31 December 2024, and recognition of the decommissioning provision for Flamanville 3 (€235 million) following the reactor's first nuclear reaction in September 2024.

"Decreases" correspond to decommissioning expenses paid in 2024. "Increases" essentially reflect the consequences of annual cost estimate updates for permanently shut-down plants (principally relating to hazardous material reprocessing and obsolescence, as discussed below), and therefore concern provisions not backed by assets.

For nuclear power plants currently in operation (PWR pressurized water reactor plants with 900MW, 1300MW and N4 reactors)

The bases for estimation described in the next two sections concern the 56 nuclear reactors currently in operation (for Flamanville 3, see the section on "Developments in 2024" below).

History of the calculation of provisions and the 2014-2015 Audit commissioned by the DGEC

Until 2013, provisions were estimated based on a 1991 study by the French Ministry of Trade and Industry, which set an estimated benchmark cost for decommissioning expressed in €/MW, confirming the assumptions defined in 1979 by the PEON commission. These estimates were confirmed from 2009 by a detailed study of decommissioning costs conducted by EDF at the representative site of Dampierre (four 900MW units), and the results of that study were corroborated by an intercomparison with the study carried out by consultants La Guardia, based mainly on the Maine Yankee reactor in the United States.

In 2014, the Dampierre study was reviewed by EDF to make sure that the previous calculations were still valid in view of recent developments and experience, both internationally and internally, which called the past estimates into question. For this review, the decommissioning provisions for plants in operation were based on costs resulting from the Dampierre study, in order to incorporate the company's best estimates and experience from inside and outside France. This change of estimate had no significant impact on the level of provisions at 31 December 2014.

Between June 2014 and July 2015, an audit of decommissioning costs for EDF's nuclear fleet currently in operation was conducted by specialised consulting firms, at the request of the DGEC. On 15 January 2016 the DGEC published a summary of the audit report. It stated that although estimating the cost of decommissioning nuclear reactors is a demanding exercise due to relatively limited past experience, the prospects of changes in techniques and the distant timing of the expenditure, overall, the audit confirmed EDF's estimate of decommissioning costs for its nuclear fleet currently in operation. The DGEC also made a number of recommendations to EDF following this audit.

Revision in 2016 and current basis for estimation

In 2016, EDF revised the decommissioning estimate, in order to incorporate the recommendations resulting from the audit commissioned by the DGEC, and past experience gained from dismantling operations for first-generation reactors (particularly Chooz A).

A detailed analytical approach was used to revise this estimate, identifying all costs for the engineering, construction work, operation and waste processing involved in future decommissioning of reactors currently in operation. This led to figures based on detailed timetables for plant decommissioning. The approach adopted provided a more thorough assessment of costs specific to the first-of-their-kind units, estimated for each series based on transposition coefficients applied to the baseline costs for the initial 900MW unit, and the series and mutualisation effects, as these costs and effects are inherent to the fleet's size and configuration. In 2021, the reference estimate of decommissioning costs for the first 900MW unit was updated based on preliminary studies conducted in preparation for the decommissioning of Fessenheim, and experience gained at the beginning of the pre-dismantling phase.

The natures of the principal series and mutualisation effects used to arrive at the estimate are explained below.

Series effects (effects of work at a first-of-a-kind site on the following sites of the same series) are mainly of two types:

- first, in a fleet using the same technology, many studies do not need to be repeated each time;
- second, in a fleet using the same technology, robots and tooling can be largely reused from one site to another.

Mutualisation effects (effects between units on the same site, whether in operation or being decommissioned) are of several different types:

- some of them relate to the fact that several reactors may share common buildings and facilities on the same site, and these buildings and facilities will not have to be dismantled twice;
- certain costs are not higher when two or four reactors are dismantled on the same site. This is usually the case for surveillance costs, common equipment, and the cost of maintaining safe operating conditions on the site.

Due to mutualisation effects, dismantling a pair of reactors on the same site costs less than dismantling two standalone reactors on two different sites. In France, unlike other countries, there are no single reactors but sites with two or four, and in one case six reactors.

Series and mutualisation effects reduce the estimated decommissioning cost by 9% and 7% respectively compared to an estimate for the PWR fleet currently in operation that ignores these effects. Series and mutualisation effects vary depending on the series: they are greater when there are more units in a series (series effect) and more units on a site (mutualisation effect), leading to a combined effect (series and mutualisation effect) of over 16% for the 900MW series.

In particular, series and mutualisation effects explain why it is not appropriate simply to compare the average dismantling cost per reactor between the French fleet and other countries' nuclear fleets.

Conversely, the estimates only marginally reflect changes in productivity and the learning effect. The DGEC-ordered external audit of the decommissioning cost for the fleet currently in operation considered that this approach resulted in a prudent estimation method.

For reasons of prudence, the estimate also includes an assessment of risks and uncertainties as follows:

- incorporation of uncertainties relating to each "elementary" block of costs, the schedule, series effects, mutualisation effects, transposition coefficients and fleet expenses;
- incorporation of risks, corresponding to the completion risks (which are identifiable and quantifiable, but only contingent). From the 2023 year-end, the financial consequences of these risks are based on valuation of a register of identified risks that incorporates the schedule impact (referring notably to an adapted version of the Fessenheim project risk register, rather than applying a flat-rate increase as previously).

The above method for assessing risks and uncertainties led to an overall margin of some 19.4% for the whole fleet currently in operation (34.1% for the reference Fessenheim cost estimate).

Since its in-depth revision in 2016 this cost estimate has been reviewed annually. The reviews have led to non-significant annual adjustments.

EDF also confirms its analyses through an international intercomparison, taking care to identify and characterise a number of factors that could distort direct comparisons, for example differences in the scope concerned by the cost estimate, or national and regulatory contexts.

Developments in 2023

The annual review of the decommissioning estimate in 2023 took into consideration methodological changes and experience acquired from Fessenheim, principally:

- methodological changes (which were also applied to provisions for decommissioning permanently shut-down power plants and long-term waste management) regarding the assessment of requirements for research and engineering, a first reference to the risk of obsolescence in existing equipment that is needed for dismantling, and the implementation of an analytical method for assessment of scheduling risks that was already applied in 2022 to most decommissioning projects for permanently shut-down power plants;
- inclusion of an assumption that decommissioning of the 900MW series will begin with pairs of reactors (as opposed to the previous assumption of independent start dates for each reactor), following experience gained from preparations for the Fessenheim decommissioning;
- an update to property costs (covering general operation and maintenance of the non-industrial sections of the plants), particularly by reference to the most recent cost figures for the Fessenheim site;
- reference to a register of risks identified in the PWR fleet (instead of the previous practice of assigning standard values to risks), applying the valuation methods used for other plants being decommissioned (based in particular on an adapted version of the Fessenheim project risk register);
- revised extrapolation coefficients (transposition and mutualisation) for operating purchase costs, based on historical data for the currently active fleet.

Overall, the above factors in the annual cost estimate review had a non-significant impact on provisions for decommissioning of nuclear power plants currently in operation.

Developments in 2024

The annual review of the decommissioning estimate for the 56 nuclear reactors currently in operation did not have a significant impact on the provisions.

Based on the estimates of the different types of cost, the cost to completion (in 2024 euros) amounts to approximately €0.67 billion for one reactor at Fessenheim, compared to an average cost of €0.42 billion per unit for the entire PWR fleet when the series and mutualisation effects described above are taken into account.

At Flamanville 3, after the nuclear fuel was loaded into the reactor in May 2024, EDF carried out the first nuclear reaction (started the chain reaction process) on 3 September 2024, once the ASN had given its approval. In the Group's consolidated financial statements, this first nuclear reaction led to recognition of provisions for Flamanville 3, amounting to €235 million for decommissioning. The estimate is based on transposition of the reference decommissioning cost for the first 900MW reactor, adapting it to the configuration of Flamanville 3 (which has an operating lifetime of 60 years).

For permanently shut-down nuclear power plants

Decommissioning of shut-down reactors involves pilot operations corresponding to four different technologies, each with clear specificities: a PWR reactor at Chooz A located in a cave, UNGG (natural uranium graphite gas-cooled) reactors at Bugey, Saint-Laurent and Chinon, a heavy water reactor at Brennilis, a sodium-cooled fast neutron reactor at Creys-Malville, and the first-of-a-kind second-generation PWR reactor at Fessenheim.

Basis for estimation

The decommissioning costs are based on estimates that take account of accumulated industrial experience, unforeseeable and regulatory developments, and the latest available figures. They have been revised annually since 2015.

The industrial scenario for dismantling of the UNGG reactors was reviewed in depth in late 2015, leading in particular to a switch from "underwater" to "in-air" dismantling, which involves:

- an essentially remote-controlled dismantling process;
- qualification of tools and the remote operation platform on an "industrial demonstrator", which was inaugurated in 2022;
- dismantling of the initial first-of-a-kind reactor (Chinon A2), and putting the 5 other reactors into a safe storage configuration.

Under this strategy, dismantling operations for the reactor caissons (including the site decontamination and rehabilitation phase) should be completed between 2063 and 2093, depending on the reactors.

Updating the industrial decommissioning scenario for first-generation power plants, particularly UNGG plants, led to a €590 million increase in the provision at 31 December 2015.

From 2016 to 2022:

The amendment made in 2015 to the industrial scenario for dismantling of the UNGG reactors was presented to the ASN's commissioners on 29 March 2016, and examined by the ASN until 2019. It was reviewed by international experts, examined by the Institute for Radiation protection and Nuclear Safety IRSN, and was the subject of three hearings before the ASN's commissioners, before the ASN issued two decisions dated 3 March 2020. These decisions and the discussions prior to their adoption by the ASN showed that there was convergence on most major technical questions: the dismantling technique ("in-air"), the usefulness of setting up an industrial demonstrator to develop the tools required for these complex operations, the timetable for dismantling the Chinon A2 reactor, and the need to gain experience from operations on a first reactor.

Regarding the timetable of operations, in draft decisions issued for public consultation in 2019, the ASN asked for this work to be brought forward compared to EDF's proposed schedule, so that dismantling operations on the five reactors after Chinon A2 would begin "no later than 31 December 2055".

In view of this request for a shorter timescale, the nuclear provisions were increased in 2019 by a total €108 million: €77 million for decommissioning provisions for permanently shut-down nuclear power plants and €31 million for provisions for long-term radioactive waste management (for long-lived low-level waste, very low-level and low and medium-level waste).

The ASN's decisions concerning dismantling of the UNGG reactors were published in March 2020 and did not contradict the principles of the draft decisions of 2019. Consequently, the nuclear provisions for decommissioning of UNGG plants were not subjected to any particular reestimation in 2020, and reflect the best estimate of the industrial and technical scenario.

Finally, in accordance with its powers under Article 594-4 of the Environment Code, in June 2020 the DGEC commissioned an external audit of the estimated cost of dismantling operations for EDF's permanently shut-down nuclear facilities (the UNGG plants and management of its long-lived low-level waste, Superphenix and Brennilis), conducted by a consortium of specialist firms. This audit took place from December 2020 to July 2021, and the audit report was posted on the Ministry for the Ecological Transition website in November 2021. Its conclusions (confirming the ASN's observations during its inspection of complex project management, the conclusions of which were released in the first quarter of 2021) highlight "an organisation with a structural focus on execution of dismantling projects", an "annual estimation and revision process [that] is robust, and provides good traceability for the assumptions used and the original data", and "a long-term industrial approach to overcome the small number of technological challenges that remain". Finally, the report states that apart from a non-significant correction (taken into account in the 2021 provisions), "the provisions are coherent with the basic scenarios of the projects and cover the full scope of expenses for the scope audited", and were found to be of "adequate scale" through testing the scale of EDF's expenses and provisions.

In 2022, following the recommendations made by the DGEC-commissioned audit to confirm scheduling risk assessments and the uncertainty levels concerning estimates, an analytical methodology for assessment of scheduling risks and uncertainties (applied to most of decommissioning projects currently in process) and an additional level of uncertainty for estimates "based on expert assessment" (used in provisions for decommissioning and radioactive waste management) were introduced. This led to an increase of €116 million to decommissioning provisions for permanently shut-down nuclear plants.

Developments in 2023

The annual review in 2023 of the cost estimate for decommissioning of permanently shut-down power plants took into consideration methodological changes regarding the assessment of requirements for research and engineering, the risk of obsolescence in existing equipment that is needed for dismantling (such as maintenance and lifting equipment), and the general application of an analytical method for estimating schedule risks and uncertainties that was already applied in 2022 to most current decommissioning projects. These factors led to an €182 million increase in provisions.

It should also be noted that provisions for decommissioning of permanently shut-down power plants were increased by €41 million to reflect property costs (covering general operation and maintenance of the non-industrial sections of the plants), after the estimate for those costs was updated.

Developments in 2024

In 2024, methodological work was undertaken and the two following subjects of general relevance were studied in more detail:

- the treatment of hazardous materials (asbestos, lead, etc): a multi-year action plan was launched to consolidate the inventories of asbestos and lead on the sites, reinforce control of the hazardous materials risk, and assess the additional costs for management of such materials and the potential scheduling impacts. This led to a €229 million increase in provisions (including €70 million for the effect on the Fessenheim decommissioning of recent changes in the regulations on paint containing asbestos). From the few cases of paint containing asbestos identified at plants in operation, it is not possible to establish whether the asbestos is localised and confined to one type of equipment in particular, in which case an ad hoc treatment would be possible at no significant additional cost, or if its presence is as widespread as in the paint on equipment in certain buildings at Fessenheim. Further tests are necessary to characterise these installations. An action plan will therefore be applied from 2025 to collect the data available in the information system and draw up a characterisation programme, focusing in priority on major painted components that are determinant for the dismantling work, then extending the analysis to other electromechanical equipment. This characterisation programme will take account of the maintenance programme for the fleet currently in operation, and the analysts' capabilities.
- the treatment of obsolescence: a detailed study was conducted following the work done in 2023 on the highest-risk systems. It was based on an analysis of the Saint Laurent A systems, extrapolated to all the permanently shut-down sites, and led to a €108 million increase in provisions.

At 31 December 2024, the gross amounts estimated under year-end economic conditions (amounts still to be spent) and the present value of those amounts are as follows, presented by type of reactor technology:

(in millions of euros)	31/12/2024	
	Costs based on year-end economic conditions	Amounts in provisions at present value
Pressurised water reactor - PWR - Chooz A	334	294
Pressurised water reactor - PWR - Fessenheim ⁽¹⁾	1,161	971
Natural uranium graphite gas-cooled reactors - UNGG - Bugey, Saint Laurent, Chinon	6,348	3,258
Heavy water reactor - Brennilis	444	381
Sodium-cooled fast neutron reactor - Superphenix at Creys Malville	690	604

(1) Excluding interim storage and processing of steam generators.

Provisions for decommissioning of permanently shut-down nuclear plants also cover dismantling costs for related facilities such as the APEC Fuel Storage Workshop at Creys-Malville and the BCOT Operational Hot Unit at Tricastin.

Compared to decommissioning costs for the PWR technology, the cost at completion (all costs both settled and remaining) for decommissioning of the other reactors is higher, to different extents depending on their specific characteristics:

- costs are around twice as high for Brennilis (completion cost of approximately €1.1 billion for one reactor) due to its compactness, the fact that the core is encased in concrete and thus difficult to access, the absence of a fuel pool, which complicates remote-controlled segmentation, and the presence of zircaloy (a fire hazard), meaning that segmentation work takes longer and must be more closely supervised;
- costs are around twice as high for UNGG reactors (completion cost of approximately €7.6 billion for six reactors), because they require removal of 20 times more material than a PWR due to their size, and contain graphite which is hard to access and requires special handling such that specific remote-controlled equipment must be developed;
- costs are around four times as high for Superphenix (completion cost of approximately €2.3 billion for one reactor), due to processing of sodium for which elimination is very sensitive, and the size of the facilities, especially the reactor (with a vessel 20 times bigger than the vessel of the 1,300MW PWR).

The following progress has been made on permanently shut-down plants:

- Chooz A: the reactor was shut down in 1991 and nuclear dismantling began in 2007 after the dismantling decree was issued. The final stage of dismantling began in 2016 and involves segmentation, conditioning and removal of reactor vessel internals, to be followed by dismantling of the vessel itself. Difficulties were encountered on the site until 2022 (the Covid crisis, unavailability of the bridge crane), but significant progress was made in 2023 and 2024, including emptying of the pool after segmentation of the reactor vessel internals, segmentation of the primary system pipework before lifting out the reactor vessel, and renovation of the reactor cavern fuel handling machine. Dismantling work on the vessel itself is scheduled for 2027. Also, a partnership agreement with the French national research agency CNRS was signed on 7 September 2022 for reuse of the caverns for fundamental research on neutrinos.
- Fessenheim: the two pressurised water reactors were permanently shut down on 22 February 2020 and 30 June 2020 respectively, in accordance with the law and before the end of their technical operating lifetime. At the end of 2024, progress on the trajectory for decommissioning preparation activities was in line with the projected schedule, and the following operations had taken place:
 - > all the spent fuel was removed from the site and sent to La Hague;
 - > Full System Decontamination (FSD) was successfully completed on both reactors in June 2023;
 - > treatment in Sweden of the upper components of the used steam generators (after their replacement during the operation of Fessenheim units 1 & 2) was completed, and the multilateral agreement was in negotiation with the safety authorities of the countries the lower components will transit through on the way to Sweden (France, Belgium, Germany, the Netherlands and Sweden);
 - > electromechanical dismantling of the turbine hall, with a view to converting it into a radioactive waste decoupling and transit facility;

Major steps were taken towards obtaining the decree ordering decommissioning operations, which will mark the start of the decommissioning phase: the decommissioning application for Fessenheim was filed with the Minister of Ecological Transition and the ASN in December 2020, the ASN Advisory Committee held a meeting on 22 June 2023, a public inquiry took place (from 25 March to 30 April 2024) and subsequently the Inquiry Committee and the Prefecture issued favourable opinions.

Under the current schedule, the decommissioning decree for the Fessenheim installations is expected to be issued in mid-2025, and to take effect in early 2026 once the ASN has approved the general operating rules applicable to decommissioning.

- **UNGG reactors:** these six reactors were shut down between 1973 and 1994 and received their dismantling decrees between 2008 and 2010 (except for Chinon A1 and A2). Defuelling and circuit draining have been completed for all these reactors, and dismantling operations are in process for the conventional and nuclear buildings in the periphery of the “reactor caissons”. Following the ASN’s decision of 2020, applications for dismantling permits were submitted for all these reactors in December 2022, to obtain new decrees allowing continuation of dismantling operations under an “in-air” strategy (these are expected for the end of 2026 at the earliest). Updated versions of all these applications were sent by EDF in February 2024, in response to requests made by the nuclear safety body MSNR (*Mission de la Sureté Nucléaire et de la Radioprotection*) in connection with the admissibility assessment. Examination of these applications by the ASN and the IRSN began on 25 November 2024 ahead of a meeting of the ASN Advisory Committee scheduled for March 2026. Opening of the top part of the first UNGG reactor caisson – Chinon A2 – is expected in 2034: the initial extractions of vessel internals and graphite blocks are due to start in 2044 and last 14 years. In parallel, the other UNGG sites are finalising work to put the sites into a safe storage configuration (by 2040). A safe storage configuration state means that 80% of surfaces have been dismantled and the reactor caissons are safe while awaiting the full benefit of experience on dismantling the caisson of the Chinon A2 first-of-a-kind unit. Opening of subsequent caissons is scheduled to begin from 2056;
- **Superphenix:** this plant was shut down in 1998 and received its dismantling decree in 2006. The following key stages have been completed: removal of the fuel to a building located on site (the APEC project), dismantling of the turbine hall, drainage of the circuits, processing and elimination of the sodium used for cooling in all circuits, filling the reactor vessel, opening and extracting the vessel caps, and the start of dismantling of the core vessel cap. After removal of the reactor vessel containment plugs, installation of the “SCOT”⁽¹⁾ rotating confinement structure and commissioning of the automated workshop, segmentation of the reactor vessel internals began in 2024. In late 2024, the neutron shield support (the first part of the vessel internals) was extracted, segmented and conditioned in waste packages. The second part, the diagrid (the last large-scale component to be removed from inside the vessel) will be extracted for segmentation in the first quarter of 2025. Meanwhile, work inside the reactor building continued: in 2024, dismantling of the vessel head plus was completed, and dismantling work began on the reactor pit and the safety containment vessel. The end of the Superphénix reactor decommissioning is scheduled for 2034.
- **Brennilis:** this plant was shut down in 1985 and received a partial dismantling decree in 2011 allowing dismantling of all installations peripheral to the “reactor block”. The following key stages have been completed: defuelling, dismantling of the turbine hall, the fuel building, auxiliary buildings, heat exchangers and the effluent treatment station. On 26 September 2023 the Brennilis plant received its “full dismantling” decree. Its implementation was marked in June 2024 by the ASN’s approval of the new general operating rules, and in November 2024 by issuance of the ASN’s final authorisation concerning the new water discharge and withdrawal practices allowing work to begin on dismantling the reactor block and demolition of the containment building, with site rehabilitation expected in 2041.

15.1.1.4 Provisions for last cores

These provisions cover the future expenses resulting from scrapping fuel that will only be partially irradiated when the reactor is shut down. They are estimated based on:

- the cost of the loss on fuel in the reactor that is not totally spent at the time of final reactor shutdown and cannot be reused due to technical and regulatory constraints (“front-end” expenses);
- the cost of fuel processing, and waste removal and storage operations (“back-end” expenses). These costs are estimated in a similar way to provisions for spent fuel management and long-term radioactive waste management.

These unavoidable costs are components of the cost of nuclear generating unit shutdown and decommissioning. As such, they are fully covered by provisions from the commissioning date and an asset associated with the provision is recognised. In a decision of 11 December 2020, France’s Council of State challenged the tax-deductibility of the consequences of immediate recognition of a provision for dismantling of the last core (“front-end” last core expenses). In a ruling of 31 March 2023, the Council of State definitively confirmed that this nuclear provision is not tax-deductible (see note 21.1).

In 2023, provisions for last cores were increased by €103 million after the costs of processing operations were updated.

In 2024, provisions for last cores include €22 million for the last core of the Flamanville 3 plant.

(1) Structure de Confinement Tournante

15.1.1.5 Discount rate, inflation and sensitivity analyses

Calculation of the discount rate and inflation rate

The discount rate is based on an interest rate curve, which comprises a sovereign yield curve constructed on year-end market data for liquid horizons (OAT bond 0-20 year curve) and then converging, using an interpolation curve, towards the very long-term rate UFR (Ultimate Forward Rate) - with yields that become close to the UFR after 50 years - plus a curve of the spread of corporate bonds rated A to BBB. Based on the disbursement outflows expected to meet nuclear obligations, a single equivalent discount rate is deduced by applying the discount rates from the interest rate curve constructed in this way to each flow as appropriate to its maturity. This single discount rate is then applied to the forecast disbursement schedules for the costs of the obligations, to determine the provisions.

The UFR was defined by the European Insurance and Occupational Pensions Authority (EIOPA) for very long-term insurance liabilities that will involve disbursements beyond market horizons. The UFR calculated for 2024 (taking into account a 2% inflation rate) is 3.22%. This is used in the calculation methodology, in compliance with the decision by the French authorities, which in the ministerial order of 1 July 2020 amending the order of 21 March 2007 on secure financing of nuclear expenses (see below) changed the formula of the regulatory ceiling for the discount rate, such that it now refers to the UFR instead of the arithmetic 48-month average of the TEC 30-year rate. The UFR is considered more relevant for nuclear provisions in view of the very long-term maturities. The sovereign yield curve at 31 December 2024 indicates rates in a range of [2.3%; 3.6%] ([2.2%; 3%] in 2023) for outflows between 0 and 20 years, [3.4%; 3.6%] ([3%; 3.2%] in 2023) for outflows between 20 and 50 years, and a rate moving towards 3.22% (3.35% in 2023) for outflows after 50 years.

This calculation methodology for the discount rate provides the best assessment of the time value of money with regard to nuclear provisions, which are characterised by very long-term disbursement outflows, well beyond market horizons. This assessment is largely achieved through:

- use of an interest rate curve based on observed year-end market data with liquid horizons, converging over nonliquid horizons towards a very long-term rate with no cycle effect, i.e. yield data for all the maturities associated with nuclear provisions;
- use of a very long-term rate (calculated UFR) produced by an independent body and now adopted by the French authorities in setting the formula for the regulatory ceiling, to take account of long trends in yield movements, in coherence with the distant disbursement horizon;
- references to spreads on corporate bonds rated A to BBB by ratings agencies, in order to construct a robust spread curve since there are few AA-rated bonds, particularly on long maturities, whereas most "Investment Grade" bonds are BBB-rated and the great majority of them have longer maturities.

The inflation assumption is based on an inflation curve constructed by reference to inflation-indexed market products and economic forecasts, in long-term coherence with the inflation assumption underlying the UFR (2%).

By this calculation method, and taking account of the high volatility at the end of 2024 in OAT bond rates, which are expected to decrease, and the interest rate volatility in 2025, the discount rate determined is thus 4.5% at 31 December 2024 (4.5% at 31 December 2023), assuming inflation of 1.9% (2.0% at 31 December 2023), i.e. a real discount rate of 2.6% at 31 December 2024 (2.5% at 31 December 2023).

The decrease in the inflation rate assumption reflects the lower inflation forecasts in France. A 2% long-term inflation rate is still used given the ECB's target level, consistent with the inflation assumption underlying the UFR (Ultimate Forward Rate).

Regulatory discount rate limit

The discount rate must comply with two regulatory limits. Under article D594-4 of the Environmental Code and the ministerial order of 1 July 2020 on secure financing for nuclear expenses (which amended the initial ministerial order of 21 March 2007), it must be lower than:

- a regulatory maximum, expressed in real value, i.e. net of inflation; this value is equal to the unrounded value representative of expectations concerning the real long-term interest rate, as used for the calculation of the Ultimate Forward Rate (UFR) applicable at the date concerned published by the European Insurance and Occupational Pensions Authority (EIOPA), plus 150bp;
- and the expected rate of return on assets covering the liability (dedicated assets).

The maximum discount rate calculated by reference to the UFR is 2.72% at 31 December 2024 (2.85% at 31 December 2023).

The real discount rate used in the financial statements at 31 December 2024, calculated by the method presented above, is 2.6%.

Analyses of sensitivity to macro-economic assumptions

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

(in millions of euros)	31/12/2024		31/12/2023	
	Costs based on year-end economic conditions	Amounts in provisions at present value	Costs based on year-end economic conditions	Amounts in provisions at present value
Spent fuel management	24,849	16,211	18,998	12,657
<i>amount unrelated to the operating cycle</i>	7,794	4,496	3,658	1,760
Long-term radioactive waste management	40,405	14,156	38,467	13,205
BACK-END NUCLEAR CYCLE EXPENSES	65,254	30,367	57,465	25,862
Decommissioning of nuclear plants in operation	25,154	13,510	23,335	13,002
Decommissioning of shut-down nuclear plants	9,313	5,711	8,832	5,417
Last cores	5,167	2,995	4,668	2,720
DECOMMISSIONING AND LAST CORE EXPENSES	39,634	22,216	36,835	21,139
PROVISIONS RELATED TO NUCLEAR GENERATION within the scope of the law of 28 June 2006	-	52,583	-	47,001

The cumulative disbursements of nuclear expenses (based on gross values at year-end economic conditions) are distributed as follows:

	31/12/2024		
	Costs based on year-end economic conditions		
(in millions of euros)	Disbursement expected within 10 years	Disbursement expected after 10 years ⁽¹⁾	Total
Spent fuel management	12,589	12,260	24,849
<i>amount unrelated to the operating cycle</i>	2,977	4,817	7,794
Long-term radioactive waste management	6,548	33,857	40,405
BACK-END NUCLEAR CYCLE EXPENSES	19,137	46,117	65,254
Decommissioning of nuclear plants in operation	623	24,531	25,154
Decommissioning of shut-down nuclear plants	3,854	5,459	9,313
Last cores	1,146	4,021	5,167
DECOMMISSIONING AND LAST CORE EXPENSES	5,623	34,011	39,634

(1) Over a 20-year and 50-year horizon, 24% and 45% respectively of cumulative disbursements (at year-end economic conditions) will concern long-term radioactive waste management provisions, and 37% and 93% respectively will concern decommissioning provisions.

For additional information, the table below shows the estimated impact of a +/-20bp change in the discount rate on the present value of provisions for the back-end of the nuclear cycle, decommissioning of nuclear plants and last cores:

At 31 December 2024

(in millions of euros)	Amounts in provisions at present value	Sensitivity to discount rate			
		Balance sheet provisions		Pre-tax net income	
		+20bp	-20bp	+20bp	-20bp
Back-end nuclear cycle expenses:					
- spent fuel management	17,449	(314)	332	269	(285)
- long-term radioactive waste management	14,156	(712)	795	543	(613)
Decommissioning and last core expenses:					
- decommissioning of nuclear plants in operation	13,510	(588)	621	-	-
- decommissioning of shut-down nuclear plants	5,711	(164)	175	164	(175)
- last cores	2,995	(97)	103	-	-
TOTAL	53,821	(1,875)	2,026	976	(1,073)
<i>Amount covered by dedicated assets</i>	<i>38,507</i>	<i>(1,636)</i>	<i>1,777</i>	<i>833</i>	<i>(924)</i>

The impact of a +/-10 base point variation in discount rates on the present value of provisions for the back-end of the nuclear cycle, decommissioning and last cores is estimated at €(956)/993 million, including €499/(523) million on the pre-tax net income.

15.1.2 EDF's dedicated assets

15.1.2.1 Regulations

Articles L. 594-1 and following of France's Environment Code and their implementing regulations require assets (dedicated assets) to be set aside for secure financing of nuclear plant decommissioning expenses and long-term storage expenses for radioactive waste. These regulations govern the way dedicated assets are built up, and the management and governance of the funds themselves. Dedicated assets are clearly identified and managed separately from the Company's other financial assets and investments. They are also subject to specific monitoring and control by the Board of Directors and the administrative authorities.

The law requires the realisable value of dedicated assets to be higher than the value of the provisions corresponding to the present value of the long-term nuclear expenses defined in France's Environment Code.

The Decree of 1 July 2020 codified the regulatory obligations concerning dedicated assets in articles D594-1 and following of the Environment Code, modified by a decree of 22 November 2023 and complemented by the ministerial order of 21 March 2007 amended by the order of 1 July 2020.

Since the decree of 1 July 2020, EDF is no longer obliged to add to dedicated assets when the coverage rate of obligations, determined by the ratio of the assets' realisable value to the amount of the provisions concerned, is above 100%, and withdrawals from assets are not authorised unless that rate is above 120%. The decree also set the maximum period for allocating funds to dedicated assets in the event of undercoverage at 5 years, subject to authorisation by the administrative authority.

15.1.2.2 Strategic allocation and composition of dedicated assets

Given the regulations governing dedicated assets, they form a highly specific category of assets.

Dedicated assets are structured and managed according to a strategic allocation defined by the Board of Directors and reported to the administrative authorities. The strategic allocation is designed to meet the overall objective of long-term coverage of obligations, and determines the structure and management of the portfolio as a whole. It takes into account regulatory constraints concerning the nature and liquidity of the dedicated assets, the financial outlook for the equity and bond markets, and the diversifying contribution of unlisted assets.

Several changes have been made to this strategic allocation in order to pursue the diversification into unlisted assets, particularly in 2010 when the shares in RTE (now held via CTE) were allocated to dedicated assets, and in 2013 when an unlisted asset portfolio (consisting of infrastructures, real estate and debt or equity funds) was set up. This portfolio is managed by EDF SA's "EDF Invest" Division.

The strategic allocation validated by the Board of Directors on 28 June 2024 adjusted the previous allocation approved on 29 June 2018, and the composition of dedicated assets is as follows:

- yield assets (target of 29% of dedicated assets), consisting of infrastructure assets, including the shares of CTE, and real estate property;
- growth assets (target of 41% of dedicated assets), consisting of equity funds investing in listed or unlisted equities;
- fixed-income assets (target of 30% of dedicated assets), consisting of listed bonds or listed bond funds, unlisted debt funds, receivables and cash.

These targets will be reached gradually.

EDF Invest manages yield assets, but through unlisted investment funds it also manages some of the growth and fixed-income assets.

At 31 December 2024 the total realisable value of assets managed by EDF Invest is €10,839 million, including €9,485 million for yield assets.

Yield assets

The yield assets consist mainly of assets related to investments in infrastructures and real estate, made either directly or by investment funds under delegated management arrangements.

Yield assets particularly include:

- the Group's investments in CTE, Madrileña Red de Gas (MRG), *Aéroports de la Côte d'Azur*, Fjord 1 Orange Concessions, Optimus Tower, Energy Assets Group, Nam Theun Power Company, companies that own wind and solar power plants (in the United States, Canada, and the United Kingdom) and companies that own real estate assets (Central Sicaf, Ecwest, Clariane & Partenaires Immobilier, Issy Shift, 92 France, and LF Memphis, Nordic Logistics, Parcolog Invest, Encore+Bergère), presented in investments in associates in the consolidated balance sheet;
- the Group's investments in Teréga, Porterbrook, Autostrade per l'Italia, Q-Park, Géosel, Norlys Fiber, Databank and companies that own wind farms in the United Kingdom, presented in debt and equity securities in the consolidated balance sheet.

Growth assets and fixed-income assets

Certain growth and fixed-income assets take the form of bonds held directly by EDF. Others consist of specialised collective investment funds on leading international markets and French general-purpose investment funds (FIVGs), managed by independent asset management companies. They take the form of open-end funds and "reserved" funds located in France, established for the company. The reserved funds are owned by EDF and are not consolidated as EDF does not participate in management of these funds and provides no financial support for them.

The value of the assets of the reserved investment funds amounts to €17,802 million at 31 December 2024 (€14,579 million at 31 December 2023). These funds mainly consist of 20 listed funds with total value of €16,341 million (at 31 December 2023, 18 listed funds with total value of €13,298 million).

The listed equity funds consist of international equities (mainly in North America but also in Europe, Asia-Pacific and emerging countries). Listed bonds and listed bond funds consist of sovereign and corporate bonds.

These investments are structured and managed in line with the strategic allocation, which takes into consideration international stock market cycles, for which the statistical inversion generally observed between equity market cycles and bond market cycles – as well as between geographical areas –

has led the Group to define a long-term investment policy with appropriate allocation between growth assets and fixed-income assets.

Growth assets also include a small portion of funds invested in unlisted equities, and fixed-income assets also include a small portion of funds invested in unlisted debt. These funds are managed by EDF Invest.

At the year-end, dedicated assets are presented in debt and equity securities in the balance sheet, at their liquidation value.

In the course of operational asset monitoring, the Group applies long-term, specific management rules defined and supervised by its governance bodies (maximum investment ratios, volatility analyses and assessment of individual fund manager quality).

15.1.2.3 Changes in dedicated assets in 2024

Equity market performances were strong for a second successive year in 2024, particularly in the US. Economic growth in the United States was surprisingly vigorous all year long, and the economy was very well oriented generally towards services, and investment in artificial intelligence. The outcome of the American presidential elections had positive effects on the markets in late 2024 (due to expectations of lower taxes and deregulation) despite the potentially unfavourable effects on inflation, and the resulting lack of visibility regarding changes to the Fed's monetary policy. In Europe, conversely, economic growth remained sluggish.

The divergence between Europe and the United States is clearly reflected in the 2024 performances, which were substantially higher in the US. This led to the indexes concentrating more on American equities, the technology sector and certain specific names (the Magnificent Seven).

The listed equities portfolio grew by 21.67% in 2024. In more detail, the net growth in euros was 26.93% on North American equities, 6.58% in Europe, 19.78% in Japan, and 15.08% in emerging countries.

Listed bonds grew by 4.30% in 2024. The portfolio benefited from tactical management of interest rate sensitivity, and good credit performances in general. The sovereign bond portfolio registered a performance of 2.48%, the inflation-indexed bond portfolio 0.37%, the Euro investment grade credit portfolio 5.99%, and the high-yield short-term credit portfolio 5.02%.

Positive changes in the fair value of the dedicated asset portfolio (investment funds, equities) amounting to +€2,998 million were recognised in the financial result in 2024 (see note 8.3), compared to positive changes amounting to +€2,220 million in 2023. Positive changes in the fair value of the bonds in the dedicated asset portfolio amounting to +€164 million were also recognised in OCI in 2024 (see note 18.1.2), compared to positive changes amounting to +€431 million in 2023.

EDF Invest continued to extend its portfolio of unlisted assets in 2024, purchasing minority stakes in infrastructures and real estate (logistics, offices), and investing in private equity and private debt funds.

During the first half of 2024, EDF Invest finalised the acquisition of a 50% share in Nordic Logistic (logistics warehouses in Sweden), and the acquisition, as part of a consortium, of a 40% stake in the Norwegian electric ferry operator Fjord1. During the second half of 2024, EDF Invest purchased 50% of Parcolog Invest, a portfolio of logistics warehouses in France, 49% of the shares of a real estate partnership which owns an office building in Paris, and a 40.1% stake in the consortium that has taken over the Austrian telecoms tower operator On Tower, now renamed Optimus Tower.

Withdrawals from dedicated assets in 2024 totalled €527 million, equivalent to payments made in respect of the long-term nuclear obligations to be covered during the year (€465 million in 2023).

15.1.2.4 Valuation of EDF's dedicated assets

EDF's dedicated assets are included in the Group's consolidated financial statements at the following values:

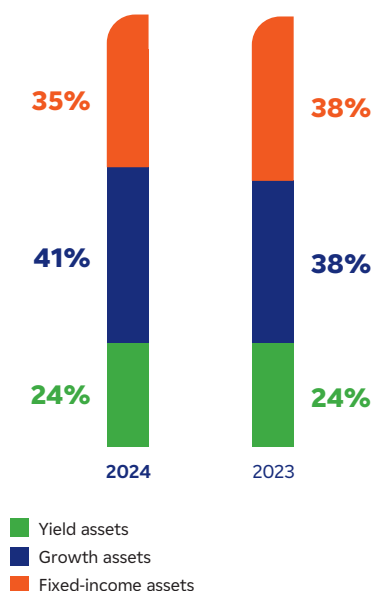
(in millions of euros)		31/12/2024		31/12/2023	
		Book value	Realisable value	Book value	Realisable value
YIELD ASSETS (EDF Invest)⁽¹⁾		6,877	9,485	6,196	8,657
Other associates (including CTE)	Investments in associates ⁽²⁾	4,534	7,135	3,834	6,287
Other unlisted assets	Debt and equity securities and other net assets ⁽³⁾	2,354	2,361	2,359	2,367
Derivatives	Fair value of derivatives	(11)	(11)	3	3
GROWTH ASSETS (EDF INVEST)		16,633	16,633	14,036	14,036
Equities (investment funds)	Debt securities	15,995	15,995	13,392	13,392
Unlisted equity funds (EDF Invest)	Debt securities	699	699	589	589
Derivatives	Fair value of derivatives	(61)	(61)	55	55
FIXED-INCOME ASSETS (EDF Invest)		14,202	14,202	14,192	14,192
Bonds and negotiable debt instruments	Debt securities	13,172	13,172	12,488	12,488
Unlisted debt funds (EDF Invest)	Debt securities	260	260	236	236
Diversified debt funds (EDF Invest)	Debt securities	395	395	363	363
Cash portfolio	Debt securities	365	365	1,104	1,104
Derivatives	Fair value of derivatives	10	10	1	1
TOTAL DEDICATED ASSETS		37,712	40,320	34,424	36,885

(1) Including 50.1% of CTE, the company that holds 100% of the shares in RTE (see note 12). The realisable value of EDF Invest in the above table has been determined by an independent assessor.

(2) Including the value of the share in equity of the controlled companies owning these investments.

(3) Including debt and equity securities amounting to €2,235 million and the value of the share in equity of other controlled companies.

The structure of the dedicated asset portfolio in 2024 and 2023 is as follows (in realisable value):



15.1.3 Coverage of EDF's long-term nuclear obligations

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

(in millions of euros)	31/12/2024	31/12/2023
Provisions for spent fuel management – portion unrelated to the operating cycle as defined in the regulations	4,496	1,760
Provisions for long-term radioactive waste management	14,156	13,205
Provisions for nuclear plant decommissioning	19,221	18,419
Provisions for last cores – portion for future long-term radioactive waste management	634	605
PRESENT COST OF LONG-TERM NUCLEAR OBLIGATIONS	38,507	33,989
REALISABLE VALUE OF DEDICATED ASSETS	40,320	36,885
REGULATORY COVERAGE RATE	104.7%	108.5%

At 31 December 2024, by the regulatory calculations provisions are 104.7% covered by dedicated assets. The potential regulatory caps on the realisable value of certain investments set in the Environment Code were not applicable at 31 December 2024.

As the coverage of provisions by dedicated assets was above 100%, EDF had no obligation to add to the dedicated asset portfolio in 2024 and no allocation was made during the year.

At 31 December 2023, by the regulatory calculations provisions were 108.5% covered by dedicated assets (and the regulatory caps were again not applicable). No allocation to dedicated assets was made in 2023.

15.2 EDF Energy's nuclear provisions

The specific financing terms for long-term nuclear commitments related to EDF Energy are reflected as follows in the EDF group's financial statements:

- the obligations are reported in liabilities in the form of provisions amounting to €17,478 million at 31 December 2024;
- in the assets, EDF Energy reports receivables corresponding to the amounts payable under the restructuring agreements by the Nuclear Liabilities Fund (NLF), for non-contracted obligations or decommissioning obligations, and by the UK Government for contracted obligations (or historical liabilities).

These receivables are discounted at the same real rate as the obligations they are intended to finance. They are included in "Financial assets" in the consolidated balance sheet (see note 18.1.3) at the amount of €16,142 million at 31 December 2024 (€13,104 million at 31 December 2023).

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

(in millions of euros)	31/12/2023	Increases	Decreases	Discount effect	Translation adjustments	Other movements	31/12/2024
Provisions for spent fuel management	1,238	16	(135)	65	59	22	1,265
Provisions for waste removal and conditioning	406	-	-	22	21	71	520
Provisions for long-term radioactive waste management	1,173	2	-	64	61	146	1,446
Provisions for the back-end of the nuclear cycle	2,817	18	(135)	151	141	239	3,231
Provisions for nuclear plant decommissioning	10,277	-	(724)	554	538	2,233	12,878
Provisions for last core	1,271	-	-	66	62	(30)	1,369
Provisions for decommissioning and last cores	11,548	-	(724)	620	600	2,203	14,247
PROVISIONS RELATED TO NUCLEAR GENERATION	14,365	18	(859)	771	741	2,442	17,478

"Other movements" include the changes in nuclear liabilities with a corresponding adjustment in the amount of reimbursements receivable from the NLF and the British government, and the change in the provision for last cores *via* an adjustment to fixed assets.

The overall change in "other movements" is mainly due to:

- an update of the costs estimates based on the Integration plan 25 (IP 25) approved by the Non-Nuclear Liabilities Assurance team (NLA) in December 2024 of € 3,440 million driven primarily by a combination of : increases to AGR back-end of the cycle costs (known as the Uncontracted Liabilities), following engagement to Sellafield on a joint working panel ; increases to AGR Deconstruction costs due to a combination of updated assumptions regarding the length of the pre-Care and Maintenance phase (arising following initial work on the Hunterston B Single Site Delivery Plan) ; and an update of the forecast staff (full time equivalent) requirements to deliver AGR deconstruction scope, and increases to operational costs, staff costs and centre costs forecasts, arising as a result of inflationary pressure;
- an increase in the real discount rate in the United Kingdom (particularly +30 base point on provisions for the backend of the cycle and decommissioning), resulting in a decrease of the provisions for an amount of €(825) million;
- the new assumptions (as announced by the Group in December 2024) regarding the closure of Heysham 1 and Hartlepool AGR plants, scheduled for 2027 (previously 2026), and the closure of Heysham 2 and Torness plants, scheduled for 2030 (previously 2028), resulting in a decrease of the provisions for the backend of the cycle and decommissioning for an amount of €(366) million.

15.2.1 Regulatory and contractual framework

Amendments signed with the Nuclear Liabilities Fund (NLF – an independent trust set up by the UK Government as part of the restructuring of British Energy) following the EDF group's acquisition of British Energy had a limited impact on the contractual financing commitments made to British Energy by the UK Secretary of State and the NLF under the "Restructuring Agreements". These agreements were entered into by British Energy on 14 January 2005 as part of the restructuring led by the UK Government in order to stabilise British Energy's financial position. These agreements were amended and restated on 5 January 2009 as part of the acquisition of the British Energy Generation Limited by the Group. British Energy Generation Limited changed its name to EDF Energy Nuclear Generation Limited on 1 July 2011 and replaced British Energy in these agreements and amendments.

Under the terms of the Restructuring Agreements:

- the NLF agreed to fund, to the extent of its assets: (i) qualifying contingent and/or latent nuclear liabilities (including liabilities for management of spent fuel from the Sizewell B power station); and (ii) qualifying decommissioning costs for EDF Energy's existing nuclear power stations;
- the Secretary of State agreed to fund: (i) qualifying contingent and/or latent nuclear liabilities (including liabilities for the management of spent fuel from the Sizewell B power station) and qualifying decommissioning costs related to EDF Energy's existing nuclear power stations, to the extent that they exceed the assets of the NLF; and (ii) subject to a cap of £2,185 million (in December 2002 monetary values, adjusted accordingly), qualifying known existing liabilities for EDF Energy's spent fuel (including liabilities for management of spent fuel from plants other than Sizewell B loaded in reactors prior to 15 January 2005);
- EDF Energy is responsible for funding certain excluded or disqualified liabilities (e.g. those defined as EDF Energy liabilities), and additional liabilities which could be created as a result of failure by EDF Energy to meet minimum performance standards under applicable law. The obligations of EDF Energy to the NLF and the Secretary of State are guaranteed by the assets of the principal members of EDF Energy.

EDF Energy also made commitments to pay:

- annual decommissioning contributions for a period limited to the useful life of the plants as at the date of the "restructuring agreements"; the corresponding provision amounts to €67 million at 31 December 2024;
- £150,000 (indexed to inflation) per tonne of uranium loaded in the Sizewell B reactor after the date of the "restructuring agreements".

Furthermore, EDF Energy entered into a separate contract with the Nuclear Decommissioning Authority (NDA) for management of AGR spent fuel and associated radioactive waste resulting from operation of power plants other than Sizewell B after 15 January 2005, and bears no responsibility for this fuel and waste once it is transferred to the processing site at Sellafield. The corresponding costs of £150,000 (indexed to inflation) per tonne of loaded uranium – plus a rebate or surcharge dependent on market electricity price and electricity generated in the year – are included in inventories.

On 23 June 2021 EDF and the UK government signed an update to the Restructuring Agreements. The changes and clarifications to the Agreements confirm the recovery of qualifying costs and stipulate that once the AGR stations have finished defueling under EDF Energy responsibility, they will transfer to the NDA which will be responsible for subsequent decommissioning activities. These amended agreements had no consequences in the Group financial statements at 31 December 2024.

On an annual basis the cost estimates which form the basis of EDF Energy's Back End Nuclear Cycle and Nuclear Plants Decommissioning provision are updated based on Integrated Plan (IP) assumptions. The IP is submitted to the NLA for approval. The IP24 and the IP25 were approved by the NLA respectively in December 2023 and in December 2024.

The cost estimates from IP25, updated for the announced AGR Plant Life Extension, together with the assumption of Sizewell B life extension from 2035 to 2055 form the basis of the nuclear liabilities as at 31st December 2024.

15.2.2 Provisions for the back-end of the nuclear cycle

Spent fuel from the Sizewell B PWR (pressurised water reactor) plant is stored on site. Spent fuel from the AGR plants is transferred to Sellafield for storage and reprocessing.

EDF Energy's provisions for the back-end of the nuclear cycle concern obligations for reprocessing and storage of spent fuel and long-term storage of radioactive waste, required by the existing regulations in the UK approved by the Nuclear Decommissioning Authority (NDA). Their amount is based on contractual agreements or if this is not possible, on the most recent technical estimates.

(in millions of euros)	31/12/2024		31/12/2023	
	Costs based on year-end economic conditions ⁽¹⁾	Amounts in provisions at present value	Costs based on year-end economic conditions ⁽¹⁾	Amounts in provisions at present value
Spent fuel management	4,173	1,265	3,790	1,238
Waste removal and conditioning	3,086	520	2,071	406
Long-term radioactive waste management	7,780	1,446	5,784	1,173
BACK-END NUCLEAR CYCLE EXPENSES	15,039	3,231	11,645	2,817

(1) The costs based on year-end economic conditions include spent fuel and associated waste management over the operating life of the reactors (including future load fuel for Sizewell B only); the provisions are based on the fuel committed to date.

15.2.3 Provisions for nuclear plant decommissioning

Provisions for decommissioning of nuclear plants cover the full cost of decommissioning and are measured on the basis of existing techniques and methods that are most likely to be used for application of current regulations.

As explained above, the Restructuring Agreements updated in June 2021 provide that once the AGR power plants have finished defueling that they will transfer to the NDA for subsequent decommissioning activities.

The signature of these agreements has no immediate accounting consequences for decommissioning provisions or the receivable representing reimbursements to be made by the NLF and the UK government. Nuclear decommissioning liabilities and the associated assets will be derecognised during the agreement's operational implementation phase.

(in millions of euros)	31/12/2024		31/12/2023	
	Costs based on year-end economic conditions	Amounts in provisions at present value	Costs based on year-end economic conditions	Amounts in provisions at present value
PLANT DECOMMISSIONING EXPENSES	27,273	12,809	20,459	10,195

15.2.4 Discounting of EDF Energy's provisions related to nuclear generation

The method used to determine the discount rate is the following:

- Like the discount rate for nuclear provisions in France, the discount rate for EDF Energy's provisions is based on an interest rate curve, which comprises a sovereign yield curve constructed on year-end market data for liquid horizons (UK gilt 0-20 year yield) and then converging, using an interpolation curve, towards the very long-term rate UFR (Ultimate Forward Rate) plus a curve of the spread of corporate bonds rated A to BBB. Based on expected disbursements corresponding to nuclear obligations, a single equivalent discount rate is deduced from the curve constructed in this way. This single discount rate is then applied to the forecast disbursement schedules for the costs of the obligations, to determine the provisions;
- The inflation assumption is based on an inflation curve constructed by reference to economic forecasts and inflation-indexed market products, in long-term coherence with the inflation assumption underlying the UFR (2%).

As a consequence, the real discount rate used to calculate provisions for the back-end of the nuclear cycle and decommissioning of nuclear plants is 3.4% (3.1% as at 31 December 2023).

15.3 Nuclear provisions in Belgium

(in millions of euros)	31/12/2023	Increases	Decreases	Discount effect	Other movements	31/12/2024
Provisions for the back-end of the nuclear cycle	364	10	-	5	-	379
Provisions for decommissioning and last cores	596	1	(2)	15	(11)	599
PROVISIONS RELATED TO NUCLEAR GENERATION	960	11	(2)	20	(11)	978

In Belgium, the law of 11 April 2003 assigned management of provisions concerning the Belgian nuclear plants, and the funds that cover them, to Synatom (a subsidiary of the ENGIE group). Luminus contributes via Synatom to these funds, to cover its share of plant decommissioning and back-end nuclear fuel expenses as a co-owner of 4 nuclear plants. These funding mechanisms are reflected through the following items in the consolidated financial statements:

- provisions, amounting to €352 million at 31 December 2024 (€352 million at 31 December 2023);
- a receivable representing the advance payments made to Synatom, recognised as financial assets carried at fair value (see note 18.1.3) at the value of €354 million at 31 December 2024 (€298 million at 31 December 2023). This receivable, which corresponds to the fair value of the share of funds held by Synatom on behalf of Luminus, is reported at present value in Luminus' financial statements, applying the same real discount rate used to determine the obligations these funds will cover.

Other provisions related to nuclear generation in Belgium correspond to provisions that are not part of the mechanisms described above.

At 31 December 2023, nuclear provisions in Belgium included an increase of €367 million mainly resulting from the final agreement between ENGIE and the Belgian State on 13 December 2023 on all the nuclear waste-related obligations for Luminus and EDF Belgium (the agreement defines a fixed amount for future nuclear waste processing costs), and extension of the operating lifetimes of Tihange 3 and Doel 4.

On 19 April 2024 the Belgian Chamber of Representatives approved the proposed laws that will extend the operating lifetimes of the Doel 4 and Tihange 3 reactors. Clearance by the European Commission, which is currently conducting an investigation, has yet to be issued.

Note 16 Provisions for employee benefits

ACCOUNTING PRINCIPLES AND METHODS

The Group grants its employees post-employment benefits (pension plans, retirement indemnities, etc.) and other long-term benefits (e.g. long-service awards) in compliance with the specific laws and measures in force in each country where it does business.

CALCULATION AND RECOGNITION OF EMPLOYEE BENEFIT OBLIGATIONS

Obligations under defined-benefit plans are calculated by the projected unit credit method, which determines the present value of entitlements earned by employees at year-end under all types of plan, taking into consideration the prospects for wage increases and each country's specific economic conditions.

Post-employment benefit obligations are valued mainly using the following methods and assumptions:

- retirement age, determined on the basis of the applicable rules for each plan, and the requirements to qualify for a full pension;
- career-end salary levels, with reference to employee seniority, projected salary levels at the time of retirement based on the expected effects of career advancement, and estimated trends in pension levels;
- forecast numbers of pensioners, determined based on employee turnover rates and mortality data available in each country;
- reversion pensions where relevant, taking into account both the life expectancy of the employee and his/her spouse and the marriage rate;
- a discount rate that depends on the geographical zone and the duration of the obligations, determined at the year-end date by reference to the market yield on high-quality corporate bonds or the rate on government bonds whose duration is coherent with EDF group's commitments to employees.

The amount of the provision corresponds to the value of obligations less the fair value of the fund assets that cover those obligations.

The net expense booked during the year for employee benefit obligations includes:

- in the income statement:
 - > the current service cost, corresponding to additional benefit entitlements earned during the year,
 - > the net interest expense, corresponding to interest on obligations net of the return on fund assets, which is calculated using the same discount rate as for the obligations,
 - > the past service cost, including the income or expense related to amendments or settlements of benefit plans or introduction of new plans,
 - > the actuarial gains and losses relating to other long-term benefits;
- in other components of consolidated comprehensive income:
 - > the actuarial gains and losses relating to post-employment benefits and any return on hedging assets in excess of the discount rates used,
 - > the effect of the limitation to the asset ceiling if any.

POST-EMPLOYMENT BENEFIT OBLIGATIONS

When they retire, Group employees benefit from pensions determined under local rules. They may also be entitled to benefits directly paid by the companies, and additional benefits prescribed by the relevant regulations.

French entities covered by the IEG statutes

Entities covered by the specific IEG (electricity and gas sector) statutes, namely EDF, Enedis, Électricité de Strasbourg and EDF PEI, are Group companies where a great many employees benefit from those statutes, including IEG statutory benefits and, for employees hired before 1 September 2023, the special IEG pension system.

Obligations under the special IEG pension system

After the financing reform for the special IEG pension system took effect on 1 January 2005 (law of 9 August 2004), pension provisions were recognised by IEG companies to cover entitlements not funded by France's standard pension system (through the CNAV, AGIRC and ARRCO pension funds), to which the IEG system is affiliated, or by the CTA (*Contribution Tarifaire d'Acheminement*) levy on gas and electricity transmission and distribution services.

As a result of the system affiliation mechanism, any change in the standard French pension system (whether favourable or unfavourable to employees) that is not incorporated into the IEG pension system is likely to cause a variation in the amount of the provisions recorded by the Group to cover its obligations.

The IEG pension obligations for which a provision is recorded include:

- specific benefits of employees covered by the IEG statutes in the deregulated or competitive activities;
- specific benefits earned by employees covered by the IEG statutes from 1 January 2005 for the regulated activities (transmission and distribution) (benefits earned prior to that date are financed by the CTA levy).

In application of France's pension reform law of 14 April 2023, employees covered by the IEG statutes hired from 1 September 2023 are affiliated to the standard pension system (CNAV, AGIRC and ARRCO). These employees' pensions are funded under the standard French pension rules, but they are still entitled to other IEG statutory benefits (energy at preferential prices, family benefits, etc).

Obligations for IEG statutory benefits other than pensions

All retired employees covered by the IEG statutes, regardless of their pension system, are entitled to other IEG statutory benefits, including:

- benefits in kind (energy): Article 28 of the national IEG personnel statutes entitles retirees receiving an IEG or standard pension to the same benefits in kind as currently active employees covered by the IEG statutes. Consequently, they are granted preferential prices for electricity and natural gas. The obligation relating to supplies of energy to present and past IEG-status employees of the EDF and ENGIE groups corresponds to the probable present value of kWh to be supplied to those employees or their dependants during their retirement, valued on the basis of the unit cost (which mainly depends on the marginal production cost and taxes). It also includes the balancing payment made under the energy exchange agreement with ENGIE: under agreements signed with ENGIE in 1951, EDF supplies electricity to the entire population of current and retired EDF and ENGIE employees, while ENGIE supplies gas to the same population, and EDF pays (or receives) an amount to balance the costs of energy exchanges between the two companies that concern EDF's employees covered by the IEG statutes;
- family benefits and help with the cost of studies: retirees receiving an IEG or standard pension have the same entitlements as current employees covered by the IEG statutes.
- bereavement benefit: this is paid out upon the death of an inactive employee covered by the IEG statutes, regardless of their pension system, to provide financial assistance for the expenses incurred at such a time (Article 24 - § 3 of the National Statutes). It is paid to the deceased retiree's principal dependants (statutory indemnity equal to three months' pension, subject to a limit) or to a third party that has paid funeral costs (discretionary indemnity equal to the costs incurred).

Obligations for benefits payable to employees covered by the IEG statutes at the time of retirement

All retired employees covered by the IEG statutes, regardless of their pension system, are entitled to the following benefits when they take retirement:

- retirement gratuities: these are paid upon retirement to employees covered by the IEG statutes, regardless of their pension system, or to their dependants if the employee dies before reaching retirement. These obligations are almost totally covered by an insurance policy;
- bonus pre-retirement paid leave: all employees covered by the IEG statutes, regardless of their pension system, who are immediately eligible for an old-age pension and are aged at least 55 at their retirement date are entitled to 18 days of bonus paid leave during the last twelve months of their employment.

Obligations for benefits awarded for exposure to physically arduous work to employees affiliated to the special IEG pension system

The IEG statutes contain early retirement measures for employees affiliated to the special IEG pension system who are exposed to physically arduous work. Employees hired before 1 January 2009 benefit from bonus contribution periods for calculation of their pension, and employees hired after 1 January 2009 are attributed paid leave entitlements through a special "Pension days" time banking system.

EDF Energy

Regarding pension obligations in the United Kingdom, EDF Energy's three defined-benefit plans (BEGG (British Energy Generation Group), EEGSG (EDF Energy Generation and Supply Group), and EEPS (EDF Energy Pension Scheme)) were closed at 31 December 2021, and replaced by a defined-contribution plan called "myRetirement Plan". The rights vested under the previous plans up to their closing date still exist, and the corresponding obligations are updated for changes in discount and inflation rates, but are no longer affected by new members or wage increases. Meanwhile, the closed plans were merged into a single plan called "EDF group of the Electricity Supply Pension Scheme (ESPS)" (EDFG).

OTHER LONG-TERM BENEFIT OBLIGATIONS

These benefits concern employees currently in service, and are earned according to local regulations, particularly the statutory regulations for the electricity and gas sector for EDF and French subsidiaries covered by the IEG regime. They include:

- annuities following incapacity, invalidity, industrial accident or work-related illness;
- long-service awards;
- specific benefits for employees who have been in contact with asbestos.

16.1 Group provisions for employee benefits

(in millions of euros)	31/12/2024	31/12/2023
Provisions for employee benefits – current portion	778	665
Provisions for employee benefits – non-current portion	17,284	15,895
PROVISIONS FOR EMPLOYEE BENEFITS	18,062	16,560

16.1.1 Change in the provision by geographical area: obligations, fund assets, net liability

(in millions of euros)	France ⁽¹⁾	United Kingdom	Other	Total
Obligations at 31/12/2023	26,187	6,913	822	33,922
Net expense for 2024	1,500	294	65	1,859
Actuarial gains and losses	1,252	(1,145)	(5)	102
Employees' contributions to funds	-	1	1	2
Benefits paid	(1,190)	(317)	(45)	(1,552)
Translation adjustment	-	308	-	308
Changes in scope of consolidation	-	-	51	51
Other movements	-	-	-	-
OBLIGATIONS AT 31/12/2024	27,749	6,054	889	34,692

(in millions of euros)	France ⁽¹⁾	United Kingdom	Other	Total
Fund assets at 31/12/2023	(10,001)	(7,033)	(470)	(17,504)
Net expense for 2024	(332)	(319)	(17)	(668)
Actuarial gains and losses	(191)	846	(33)	622
Employer's contributions to funds	-	(72)	(34)	(106)
Employees' contributions to funds	-	4	(1)	3
Benefits paid	431	317	14	762
Translation adjustment	-	(322)	-	(322)
Changes in scope of consolidation	-	-	-	-
Other movements	-	-	28	28
FUND ASSETS AT 31/12/2024	(10,093)	(6,579)	(513)	(17,185)

(in millions of euros)	France ⁽¹⁾	United Kingdom	Other	Total
Net employee benefit liability at 31/12/2023⁽²⁾	16,186	(120)	352	16,418
Net expense for 2024	1,168	(25)	48	1,191
Actuarial gains and losses	1,061	(299)	(38)	724
Employer's contributions to funds	-	(72)	(34)	(106)
Employees' contributions to funds	-	5	-	5
Benefits paid	(759)	-	(31)	(790)
Translation adjustment	-	(14)	-	(14)
Changes in scope of consolidation	-	-	51	51
Other movements	-	-	28	28
NET EMPLOYEE BENEFIT LIABILITY AT 31/12/2024	17,656	(525)	376	17,507
Including:				
Provisions for employee benefits				18,062
Non-current financial assets				(555)

(1) France comprises the two operating segments "France – Generation and Supply" and "France – Regulated activities" (see note 16.2).

(2) The net liability at 31 December 2023 comprised €16,560 million of provisions for employee benefits and €(142) million of non-current financial assets, giving a net amount of €16,418 million.

Actuarial gains and losses on obligations

Actuarial gains and losses on obligations amount to €102 million for 2024, including:

- €1,252 million in France as a result of:
 - > the €1,694 million change in experience adjustments,
 - > the €(446) million change in the inflation rate, and
- €(1,145) million in the United Kingdom, essentially associated with changes in the discount and inflation rates (€(1,015) million), demographic assumptions (€(14) million) and experience adjustments (€(116) million) (see note 16.1.3).

Actuarial gains and losses on obligations amounted to €(9) million for 2023, including:

- €(509) million in France as a result of:
 - > the €2,037 million change in the discount rate,
 - > the €(1,165) million change in the inflation rate,
 - > the €(1,382) million change in experience adjustments; and
- €470 million in the United Kingdom, essentially associated with changes in the discount and inflation rates (€306 million), demographic assumptions (€(119) million) and experience adjustments (€284 million) (see note 16.1.3).

Actuarial gains and losses on fund assets in 2024

Actuarial gains and losses on fund assets amount to €622 million for 2024, contributing to the increase in provisions. They mainly result from a €846 million change in the United Kingdom where the return on fund assets, principally bonds, was lower than the discount rate due to a rise in interest rates in 2024, and a €191 million decrease in France where fund assets outperformed the discount rate by +1.8%, largely thanks to a good equity market performance.

Net employee benefit liability at 31 December 2024

The net liability at 31 December 2024 amounts to €17,507 million, including:

- €17,656 million in France;
- €(525) million in the United Kingdom, reflecting recognition by EDF Energy of surplus funding on its EDFG pension scheme totalling €540 million, compared to €134 million at 31 December 2023. This surplus funding, which has increased primarily as a result of the higher sovereign rates in the United Kingdom compared to the 2023 year-end, is recognised in balance sheet assets under "non-current financial assets".

16.1.2 Actuarial assumptions and sensitivity analyses

The following actuarial assumptions are used:

(in %)	France		United Kingdom	
	31/12/2024	31/12/2023	31/12/2024	31/12/2023
Discount rate/rate of return on assets ⁽¹⁾	3.40%	3.40%	5.55%	4.50%
Inflation rate	1.90%	2.00%	2.95%	2.90%
Wage increase rate ⁽²⁾	2.90%	3.10%	2.85%	2.75%

(1) The interest income generated by assets is calculated using the discount rate. The difference between this interest income and the real return on assets is recorded in actuarial gains and losses in equity.

(2) Average wage increase rate, including inflation and projected over a full career.

The discount rate used for employee benefit obligations is determined by applying the yield rate on high-quality corporate bonds of appropriate duration to maturities corresponding to the future disbursements resulting from these obligations. For longer durations, the calculation also takes into consideration data from a wider selection of corporate bonds adjusted for comparability with the high-quality bonds, as the panel of bonds with these durations is limited.

In France, changes in the economic and market parameters used have led the Group to set the nominal discount rate at 3.40% at 31 December 2024 (stable compared to 31 December 2023).

The inflation assumption is based on an inflation curve constructed from economic forecasts and inflation-indexed market products. As a result of changes in the economic and market parameters, the assumed average inflation rate used as the Group's benchmark for Euro zone countries is 1.90% at 31 December 2024 (2.00% at 31 December 2023).

Wage law projections from 2024 onwards are based on average wage increases observed in the IEG sector in recent years (adjusted for non-recurring effects).

The mortality table used to calculate obligations is based on the INSEE 2013-2070 generation table (produced by the French statistics office), corrected for differences in mortality between the general French population and the population covered by the IEG regime.

Sensitivity analyses on the amount of the obligations are as follows:

(in millions of euros)	31/12/2024	
	France	United Kingdom
Impact of a +/- 25bp variation in the discount rate	(1,128) / 1,210	(226) / 236
Impact of a +/- 25bp variation in the inflation rate	1,176 / (1,100)	180 / (191)
Impact of +/- 25bp variation in the wage increase rate	1,176 / (1,105)	n.a

n.a. : not applicable.

16.1.3 Breakdown by geographical area of post-employment and other long-term employee benefits

(in millions of euros)	2024			
	France	United Kingdom	Other	Total
Current service cost	(475)	(14)	(37)	(526)
Past service cost	-	31	-	31
Actuarial gains and losses - other long-term benefits	(138)	-	1	(137)
Net expenses recorded as operating expenses	(613)	17	(36)	(632)
Interest expense (discount effect)	(887)	(311)	(29)	(1,227)
Return on fund assets	332	319	17	668
Net interest expense included in financial result	(555)	8	(12)	(559)
EMPLOYEE BENEFIT EXPENSES RECORDED IN THE INCOME STATEMENT	(1,168)	25	(48)	(1,191)
Actuarial gains and losses - post-employment benefits	(1,252)	1,145	5	(102)
Actuarial gains and losses on fund assets	191	(846)	33	(622)
Actuarial gains and losses	(1,061)	299	38	(724)
Translation adjustments	-	14	-	14
GAINS AND LOSSES ON EMPLOYEE BENEFITS RECORDED DIRECTLY IN EQUITY	(1,061)	313	38	(710)

(in millions of euros)	2023			
	France	United Kingdom	Other	Total
Current service cost	(402)	(16)	(18)	(436)
Past service cost	(338)	92	(5)	(251)
Actuarial gains and losses - other long-term benefits	(102)	-	-	(102)
Net expenses recorded as operating expenses	(842)	76	(23)	(789)
Interest expense (discount effect)	(1,008)	(298)	(31)	(1,337)
Return on fund assets	357	336	15	708
Net interest expense included in financial result	(651)	38	(16)	(629)
EMPLOYEE BENEFIT EXPENSES RECORDED IN THE INCOME STATEMENT	(1,493)	114	(39)	(1,418)
Actuarial gains and losses - post-employment benefits	509	(470)	(30)	9
Actuarial gains and losses on fund assets	652	(259)	11	404
Actuarial gains and losses	1,161	(729)	(19)	413
Translation adjustments	-	19	(6)	13
GAINS AND LOSSES ON EMPLOYEE BENEFITS RECORDED DIRECTLY IN EQUITY	1,161	(710)	(25)	426

The actuarial gains and losses on obligations in France are as follow:

(in millions of euros)	2024	2023
Experience adjustments	(1,848)	1,308
Changes in demographic assumptions	-	-
Changes in financial assumptions ⁽¹⁾	458	(901)
ACTUARIAL GAINS AND LOSSES ON OBLIGATIONS	(1,390)	407
Actuarial gains and losses on post-employment benefits	(1,252)	509
Actuarial gains and losses on other long-term benefits	(138)	(102)

(1) Financial assumptions mainly concern the discount rate, inflation rate and wage increase rate.

16.2 France (Generation and supply, and Regulated activities)

The two operating segments "France - Generation and Supply" and "France - Regulated activities" (see note 4.1) are combined here into a single subtotal, "France", which primarily includes EDF and Enedis. Almost all of these companies' employees have IEG status, including the special IEG pension and other IEG benefits.

16.2.1 Breakdown of obligations by type of beneficiary

(in millions of euros)	31/12/2024	31/12/2023
Current employees	13,078	12,673
Retirees	14,671	13,514
OBLIGATIONS	27,749	26,187

16.2.2 Provision for employee benefits by nature

At 31 December 2024

(in millions of euros)	Obligations	Fund assets	Provisions in the balance sheet
Pensions	20,190	(9 432) ⁽¹⁾	10,758
Benefits in kind (electricity/gas)	3,864	-	3,864
Retirement gratuities	794	(645)	149
Other	1,381	(16)	1,365
Provisions for post-employment benefits at 31/12/2024	26,229	(10,093)	16,136
Annuities following work-related accident and illness, and invalidity	1,270	-	1,270
Long service awards	225	-	225
Other	25	-	25
Provisions for other long-term employee benefits at 31/12/2024	1,520	-	1,520
PROVISIONS FOR EMPLOYEE BENEFITS AT 31/12/2024	27,749	(10,093)	17,656

(1) Mainly EDF SA's fund assets (52% of pension obligations were covered by funds at 31 December 2024).

At 31 December 2023

(in millions of euros)	Obligations	Fund assets	Provisions in the balance sheet
Pensions	19,667	(9,367) ⁽¹⁾	10,300
Benefits in kind (electricity/gas)	2,968	-	2,968
Retirement gratuities	781	(619)	162
Other	1,311	(15)	1,296
Provisions for post-employment benefits at 31/12/2023	24,727	(10,001)	14,726
Annuities following work-related accident and illness, and invalidity	1,214	-	1,214
Long service award	221	-	221
Other	25	-	25
Provisions for other long-term employee benefits at 31/12/2023	1,460	-	1,460
PROVISIONS FOR EMPLOYEE BENEFITS AT 31/12/2023	26,187	(10,001)	16,186

(1) Mainly EDF SA's fund assets (52% of pension obligations were covered by funds at 31 December 2023).

16.2.3 Fund assets

For France, fund assets, managed under an asset/liability model, amount to €10,093 million at 31 December 2024 (€10,001 million at 31 December 2023) and concern the coverage of retirement gratuities and the specific benefits of the special pension system.

They consist of insurance contracts with the following risk profile:

- 65% in a hedging pocket consisting of bonds, designed to replicate variations in the obligation caused by changes in interest rates;
- 33% in a growth asset pocket consisting of international equities.
- 2% in real estate investments

Fund assets break down as follows:

(in millions of euros)	31/12/2024	31/12/2023
FUND ASSETS	10,093	10,001
Assets funding special pension benefits	9,432	9,367
<i>Including (%)</i>		
Listed debt instruments (bonds)	65%	67%
Listed equity instruments (shares)	33%	31%
Real estate property	2%	2%
Assets funding retirement gratuities	645	619
<i>Including (%)</i>		
Listed debt instruments (bonds)	58%	59%
Listed equity instruments (shares)	42%	41%
Other fund assets	16	15

At 31 December 2024, the bonds held as part of fund assets are distributed as follows:

- approximately 72% of the total are AAA and AA rated bonds;
- approximately 28% of the total are bonds with A, BBB and other ratings.

Around 60% of bonds are sovereign bonds issued by Euro zone countries, and the balance mainly consists of bonds issued by financial and non-financial firms.

At 31 December 2024, the equities held as part of fund assets are distributed as follows:

- approximately 70% of the total are shares in North American companies;
- approximately 13% of the total are shares in European companies;
- approximately 17% of the total are shares in companies in the Asia-Pacific zone and emerging countries.

This distribution is stable compared to the distribution at 31 December 2023.

The performance of pension fund assets in France is 5.2% in 2024.

16.2.4 Future Cash Flows

Cash flows related to future employee benefits are as follows:

(in millions of euros)	Cash flow under year-end economic conditions	Amount covered by provisions (present value)
Less than one year	1,232	1,212
One to five years	4,903	4,422
Five to ten years	6,095	4,680
More than ten years	49,257	17,435
CASH FLOWS RELATED TO EMPLOYEE BENEFITS	61,487	27,749

At 31 December 2024, the average duration of employee benefit commitments in France is 16.7 years.

16.3 United Kingdom

16.3.1 Breakdown of obligations by type of beneficiary

(in millions of euros)	31/12/2024	31/12/2023
Current employees	2,328	2,916
Retirees	3,726	3,997
OBLIGATIONS	6,054	6,913

16.3.2 Fund assets

The investment strategy applied in these funds is a liability driven investment strategy. The allocation between growth and back-to-back is regularly reviewed by the trustees, at least after every actuarial valuation, to ensure that the funds' overall investment strategy remains coherent in order to achieve the target coverage level required.

These assets break down as follows:

(in millions of euros)	31/12/2024	31/12/2023
FUND ASSETS	6,579	7,033
<i>Including (%)</i>		
<i>Listed equity instruments (shares)</i>	9%	5%
<i>Listed debt instruments (bonds)</i>	92%	91%
<i>Real estate properties</i>	5%	9%
<i>Cash and cash equivalents</i>	1%	4%
<i>Other (including private equity)⁽¹⁾</i>	-8%	-9%

(1) Including the fair value of derivatives hedging listed instruments

At 31 December 2024, the bonds held as part of fund assets are distributed as follows:

- approximately 84% of the total are AAA and AA-rated bonds;
- approximately 16% of the total are bonds with A, BBB and other ratings.

Around 77% of all these bonds are sovereign bonds, mainly issued by the United Kingdom. The balance mainly consists of bonds issued by financial and non-financial firms.

16.3.3 Future cash flows

Cash flows related to future employee benefits are as follows:

(in millions of euros)	Cash flow under year-end economic conditions	Amount covered by provisions (present value)
Less than one year	298	303
One to five years	1,271	1,090
Five to ten years	1,793	1,212
More than ten years	10,995	3,449
CASH FLOWS RELATED TO EMPLOYEE BENEFITS	14,357	6,054

The average weighted duration of funds in the United Kingdom is 16 years at 31 December 2024.

Note 17 Other provisions

(in millions of euros)	Notes	31/12/2024			31/12/2023		
		Non-current	Current	Total	Non-current	Current	Total
Other provisions for decommissioning	17.1	2,147	147	2,294	1,943	116	2,059
Other provisions	17.2	3,875	2,547	6,422	2,935	3,175	6,110
OTHER PROVISIONS		6,022	2,694	8,716	4,878	3,291	8,169

17.1 Other provisions for decommissioning

The breakdown of other provisions for decommissioning by company is as follows:

(in millions of euros)	31/12/2024	31/12/2023
EDF	1,133	1,017
EDF Energy	40	48
Edison	132	127
Framatome	449	430
Other	540	437
TOTAL	2,294	2,059

Other provisions for decommissioning principally concern fossil-fired power plants, installations for the production of nuclear fuel assemblies, and dismantling of wind farms.

The costs of decommissioning fossil-fired power plants are calculated using regularly updated studies based on estimated future costs, measured by reference to the charges recorded on past operations and the most recent estimates for plants still in operation. The provision recorded at 31 December 2024 reflects the most recent known cost estimates and includes rehabilitation costs for generation sites.

Provisions for decommissioning notably include €154 million for Basic nuclear installations (INB) in France, in the amounts of €110 million for Framatome and €44 million for Cyclife France. Dedicated assets are set aside to cover these provisions as required by the regulations.

Dedicated assets of Framatome and Cyclife France

The dedicated assets of Framatome and Cyclife France relating to Basic nuclear installations (INB) in France have realisable values of €114 million at Framatome and €66 million at Cyclife France and the degree of coverage of provisions according to the regulations is 102% for Framatome and 149% for Cyclife France.

17.2 Other provisions

Details of changes in other provisions are as follows:

(in millions of euros)	31/12/2023	Decreases			Changes in scope	Other changes	31/12/2024
		Increases	Utilisations	Reversals			
Provisions for contingencies related to subsidiaries and investments	638	6	(7)	-	-	169	806
Provisions for tax liabilities (excluding income tax)	30	13	(4)	(1)	-	3	41
Provisions for litigation	233	86	(93)	(15)	(109)	121	223
Provisions for onerous contracts and losses on completion	676	75	(182)	-	16	24	609
Provisions related to environmental schemes	1,707	2,062	(2,122)	-	-	53	1,700
Other provisions for contingencies and losses	2,826	1,267	(935)	(77)	53	(91)	3,043
TOTAL	6,110	3,509	(3,343)	(93)	(40)	279	6,422

Provisions for onerous contracts

Provisions for onerous contracts are mainly related to the Group's LNG activities (a long-term regasification contract with Dunkerque LNG). Losses on these contracts are measured by comparing the costs of fulfilling the contract with the resulting economic benefits, based on market and sales assumptions.

Framatome's and Arabelle Solutions' long-term contracts are recorded under the percentage-of-completion method. When the estimated result upon completion is negative, the expected loss is immediately recorded in profit and loss, and a provision is booked to cover the portion of the loss not yet recognised.

Provisions related to environmental schemes

Provisions related to environmental schemes include provisions for greenhouse gas emission quota trading, renewable energy certificates and where relevant energy savings certificates (see notes 5.5.4 and 20).

At 31 December 2024, a provision of €1,392 million (€1,176 million at 31 December 2023) was booked in connection with the obligation to surrender **renewable energy certificates** at that date, essentially concerning EDF Energy (United Kingdom) and Luminus (Belgium). For reminder, a large portion of these obligations is covered by purchases of certificates included in intangible assets (see note 10.2).

One of the main features of the fourth period (2021-2030) of the European Union **greenhouse gas emission quota system** (SEQUEU or EU-ETS) is to achieve the emission reduction targets set in the 2030 Climate and Energy framework, and the EU's contribution to the Paris Climate Agreement adopted in 2015.

In the EDF group, the entities concerned by this European system are EDF, Edison, Dalkia, PEI and Luminus.

The volume of emissions at 31 December 2024 stood at 11.1 million tonnes (13.5 million tonnes for 2023), reflected in the recognition of provisions of €309 million at 31 December 2024 (€531 million at 31 December 2023).

In 2024, the Group surrendered 13 million tonnes in respect of emissions generated in 2023 under the EU ETS (in 2023 it surrendered 18 million tonnes in respect of emissions generated in 2022).

The United Kingdom has set up its own system, the UK ETS (Emissions Trading Scheme), which uses a bidding system, covers the same sectors as the EU ETS and operates under generally similar rules, with comparable accounting treatment.

In 2024 EDF Energy did not produce any CO₂ emissions subject to certificates (compared to 4,000 tonnes for 2023), and consequently did not establish a provision at 31 December 2024 (a provision of €0.4 million was recognised in 2023).

Other provisions for contingencies and losses

Following the agreement signed by Edison and ENI on 31 July 2023 concerning the industrial sites contributed to Enimont in 1989, a provision of €430 million was established at 31 December 2023. This provision was increased by €587 million at 31 December 2024 in view of new technical and legal assessments of the actions taken or to be taken together with ENI in the next few years (see note 21.3). Concerning the costs prior to 31 December 2023 borne by ENI, the share to be paid by Edison stands at €545 million. Edison paid €245 million to ENI in December 2024, and the balance was reclassified as liabilities at 31 December 2024 and should be paid in two equal instalments in 2025 and 2026. The provision recorded at 31 December 2024 for the future costs of action to be taken amounts to €416 million.

Other provisions for contingencies and losses also cover various contingencies and expenses related to operations (employers' matching contributions to employee profit sharing, restructuring operations, contractual maintenance obligations, etc.). No individual provision is significant.

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

Note 18 Financial assets and liabilities

ACCOUNTING PRINCIPLES AND METHODS

Financial assets comprise equity instruments (particularly non-consolidated investments), debt securities, loans and receivables at amortised cost, derivative assets and cash and cash equivalents.

The classification and measurement of financial instruments depend on the business model and the instruments' contractual characteristics. They are carried at amortised cost, fair value through other comprehensive income (OCI), or fair value through profit and loss.

Financial liabilities comprise loans and other financial liabilities, bank credit and derivative liabilities.

Financial assets and liabilities are recorded in the balance sheet as current if they mature within one year and non-current if they mature after one year, apart from derivatives held for trading, which are all classified as current.

DERECOGNITION OF FINANCIAL ASSETS AND LIABILITIES

The Group derecognises a financial asset when:

- the contractual rights to the cash flows generated by the asset expire, or
- the Group transfers the rights to receive contractual cash flows related to the financial asset through the transfer of substantially all of the risks and rewards associated with ownership of the asset.

Any interest created or retained by the Group in transferred financial assets is recorded as a separate asset or liability.

The Group derecognises a financial liability when its contractual obligations are extinguished, cancelled or expire. When a debt is renegotiated with a lender the Group derecognises the debt and recognises a new liability when the new terms are substantially different; otherwise, the book value is recalculated. In either case, the impacts of the debt renegotiation are recorded in profit and loss.

18.1 Financial assets

ACCOUNTING PRINCIPLES AND METHODS

The accounting treatment of financial assets depends on their contractual characteristics and business model

FINANCIAL ASSETS CARRIED AT FAIR VALUE THROUGH OCI WITH OR WITHOUT RECYCLING

Financial assets carried at fair value through OCI comprise:

- non-consolidated investments for which the Group has irrevocably opted to recognise subsequent fair value changes in OCI, with no recycling to profit and loss in the event of sale. Only dividends received from these investments are recognised in the income statement, under "Other financial income";
- debt securities (such as bonds) invested under a mixed "collect and sell" business model for which contractual cash flows consist entirely of principal and interest payments reflecting the time value of money and the credit risk associated with the instrument (the IFRS 9 "SPPI" test - Solely Payment of Principal and Interest). Changes in fair value are recorded directly in OCI with recycling and transferred to profit and loss when the securities are sold. For these debt securities, interest income is calculated at the effective interest rate and credited to the income statement under the heading "Other financial income".

Upon initial recognition, these financial assets are recorded at fair value plus transaction costs attributable to their acquisition.

At each reporting date, they are adjusted to fair value based on quoted prices where possible, or using the discounted future cash flow method or by reference to external sources otherwise. Changes in the fair value of these instruments are recorded directly in OCI with recycling (for debt securities) or OCI with no recycling (for equity instruments) in the income statement.

FINANCIAL ASSETS CARRIED AT FAIR VALUE THROUGH PROFIT AND LOSS

Financial assets carried at fair value through profit and loss comprise:

- assets acquired from inception with the intention of resale in the short term;
- derivatives not classified as hedges (derivatives held for trading);
- equity instruments (non-consolidated investments) which the Group has not irrevocably opted to classify as at fair value through OCI with no recycling;
- debt securities that do not meet the requirements of the SPPI test, regardless of their business model. This chiefly concerns shares in investment funds.

These assets are recorded at the transaction date at fair value, which is generally equal to the amount of cash paid out. Transaction costs directly attributable to the acquisition are recorded in the income statement.

At each reporting date, they are adjusted to fair value based on quoted prices where possible, or using recognised valuation techniques such as the discounted cash flow method or reference to external sources otherwise. Changes in the fair value of these instruments are recorded in the income statement under the heading "Other financial income and expenses".

FINANCIAL ASSETS CARRIED AT AMORTISED COST

Loans and financial receivables are carried at amortised cost if the business model involves holding the instrument in order to collect contractual cash flows which consist entirely of principal and interest.

The interest received is calculated under the effective interest rate method and recorded in "Other financial income" in the income statement.

Loans and financial receivables that are not eligible for classification at amortised cost are carried at fair value through profit and loss, and recorded in "Other financial income and expenses" in the income statement.

IMPAIRMENT MODEL

The impairment model is based on expected credit loss (ECL). The Group applies a rating-based approach for counterparties with low credit risk. In application of the risk management policy, the Group's bond portfolio consists almost entirely of instruments issued by low-risk counterparties rated "Investment Grade".

In this situation, the ECL is estimated over a 12-month horizon following the year-end.

The threshold indicating a significant increase in credit risk is reached when the counterparty ceases to be rated "Investment Grade". The significant increase in the default risk may lead to reassessment of the ECL over the instrument's residual life.

For loans and receivables, the Group has chosen an approach based on the probability of default by the counterparty and assessment of changes in the credit risk.

18.1.1 Breakdown between current and non-current financial assets

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

(in millions of euros)	31/12/2024			31/12/2023		
	Non-current	Current	Total	Non-current	Current	Total
Instruments at fair value through OCI with recycling	6,459	15,304	21,763	5,894	18,014	23,908
Instruments at fair value through OCI with no recycling	302	5	307	268	30	298
Instruments at fair value through profit and loss	28,613	1,939	30,552	25,629	1,845	27,474
Debt and equity securities	35,374	17,248	52,622	31,791	19,889	51,680
Trading derivatives – Positive fair value	-	4,915	4,915	-	14,519	14,519
Hedging derivatives – Positive fair value ⁽¹⁾	4,109	1,892	6,001	3,512	2,654	6,166
Loans and financial receivables ⁽²⁾	16,468	2,684	19,152	13,024	2,380	15,404
CURRENT AND NON-CURRENT FINANCIAL ASSETS	55,951	26,739	82,690	48,327	39,442	87,769

(1) Including €3,937 million for derivatives used to hedge liabilities in 2024.

(2) Including impairment of €(653) million at 31 December 2024 (€(353) million at 31 December 2023).

The decrease in the positive fair value of trading derivatives (€(9.6) billion) is explained by a decrease in the value of derivatives used in the trading activity, principally associated with commodity market price movements observed in 2024.

18.1.2 Debt and equity securities

Details of debt and equity securities

Financial assets are monitored and managed by the Group with two main objectives:

- **dedicated assets set aside in France for secure financing of nuclear plant decommissioning expenses and long-term storage expenses for radioactive waste**, as required by article L. 594 of France's Environment Code. These assets consist of diversified investments in bonds, monetary and equity investment funds, and equity investments held by EDF Invest. The general management policy for dedicated assets and a breakdown of the portfolio is presented in note 15.1.2;
- **assets managed according to a liquidity-oriented policy ("liquid assets")**. These are financial assets consisting of funds or interest rate instruments with initial maturity of over three months that are readily convertible into cash. EDF's monetary investment funds included in liquid assets amount to €1,430 million at 31 December 2024 (€1,369 million at 31 December 2023).

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

(in millions of euros)	31/12/2024			31/12/2023	
	At fair value through OCI with recycling	At fair value through OCI with no recycling	At fair value through profit and loss	Total	Total
EDF dedicated assets	5,566	-	27,557	33,123	30,410
Liquid assets	16,132	-	1,867	17,999	20,077
Other assets ⁽¹⁾	65	307	1,128	1,500	1,193
TOTAL	21,763	307	30,552	52,622	51,680

(1) Investments in non-consolidated companies.

Changes in debt and equity securities

(in millions of euros)	31/12/2023	Net decreases	Changes in fair value	Changes in scope	Translation adjustments	Other	31/12/2024
Instruments at fair value through OCI with recycling	23,908	(2,594)	362	-	111	(24)	21,763
Instruments at fair value through OCI with no recycling	298	57	8	1	-	(57)	307
Instruments at fair value through profit and loss	27,474	(400)	3,420	(11)	9	60	30,552
TOTAL DEBT AND EQUITY SECURITIES	51,680	(2,937)	3,790	(10)	120	(21)	52,622

Changes in fair value recorded in equity

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

(in millions of euros)	2024			2023		
	Gross changes in fair value recorded in OCI with recycling ⁽¹⁾	Gross changes in fair value recorded in OCI with no recycling ⁽¹⁾	Gross changes in fair value recycled to profit and loss ⁽²⁾	Gross changes in fair value recorded in OCI with recycling ⁽¹⁾	Gross changes in fair value recorded in OCI with no recycling ⁽¹⁾	Gross changes in fair value recycled to profit and loss ⁽²⁾
EDF dedicated assets	6	-	(158)	319	-	(112)
Liquid assets	290	-	(85)	525	-	(14)
Other assets	-	8	-	-	46	-
DEBT AND EQUITY SECURITIES ⁽³⁾	296	8	(243)	844	46	(126)

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

(2) +/(-): increase / (decrease) in income (EDF share).

(3) Excluding associates and joint ventures.

In 2024, gross changes in fair value recorded in OCI with recycling (before transfer to profit and loss) principally concern EDF (€539 million, including €164 million for dedicated assets). In 2023, gross changes in fair value recorded in OCI with recycling principally concern EDF (€970 million, including €431 million for dedicated assets).

No significant impairment was recorded in 2024.

18.1.3 Loans and financial receivables

Loans and financial receivables consist of the following:

(in millions of euros)	31/12/2024	31/12/2023
Amounts receivable from the NLF	16,142	13,104
Loans and financial receivables – other	3,010	2,300
LOANS AND FINANCIAL RECEIVABLES	19,152	15,404

At 31 December 2024 loans and financial receivables mainly include:

- amounts representing reimbursements receivable from the Nuclear Liabilities Fund (NLF) and the UK government for coverage of long-term nuclear obligations, totalling €16,142 million at 31 December 2024 (€13,104 million at 31 December 2023), discounted at the same rate as the provisions they finance (see note 15.2);
- other loans and financial receivables notably include:
 - > the overfunding of EDF Energy's EDFG (EDF group of the ESPS) pension scheme by €525 million at 31 December 2024, compared to €120 million at 31 December 2023 (see note 16.1.1),
 - > an amount of €354 million representing the advance payments made by Luminus to Synatom to cover long-term nuclear obligations (€298 million at 31 December 2023) which are discounted at the same rate as the provisions they fund (see note 15.3). This receivable is equal to the fair value of the amounts held by Synatom on behalf of Luminus as fund assets,
 - > loans made by EDF Renewables to entities accounted for by the equity method for its project development activity, amounting to €814 million at 31 December 2024 compared to €903 million at 31 December 2023. These loans mainly relate to wind farms in the United Kingdom (including €464 million for the NnG offshore wind farm, written down by €(248) million), France (including €55 million for the Provence Grand Large offshore wind farm, written down by €(35) million) and North America.

Changes in loans and financial receivables

(in millions of euros)	31/12/2023	Net increases	Discount effect	Changes in scope	Translation adjustments	Other	31/12/2024
Loans and financial receivables	15,404	16	700	(177)	710	2,499	19,152

Other changes in loans and financial receivables principally correspond to the changes in the receivable representing amounts reimbursable by the Nuclear Liabilities Fund (NLF) and the UK government, and the surplus funding of EDF Energy's EDFG pension scheme.

18.2 Cash and cash equivalents

ACCOUNTING PRINCIPLES AND METHODS

Cash and cash equivalents comprise immediately available liquidities and very short-term investments that are readily convertible (e.g. in monetary funds) into a known amount of cash, usually maturing within three months or less of the acquisition date, and with negligible risk of fluctuation in value. These items are held to cover short-term obligations rather than for short-term investments or other purposes. When they mature in more than 3 months, they are included in Liquid assets in Debt and equity securities (see note 18.1.2).

"Cash equivalents" are recorded at fair value, with changes in fair value included in the heading "Other financial income and expenses".

Cash and cash equivalents include the following amounts recorded in the balance sheet:

(in millions of euros)	31/12/2024	31/12/2023
Cash	6,354	8,861
Cash equivalents	1,243	1,914
CASH AND CASH EQUIVALENTS	7,597	10,775

Cash restrictions

Cash and cash equivalents include €437 million of cash subject to restrictions at 31 December 2024 (€369 million at 31 December 2023) (see note 1.3.5).

18.3 Financial liabilities

ACCOUNTING PRINCIPLES AND METHODS

Loans and other financial liabilities are carried at amortised cost, adjusted for changes in the value of the risks hedged when they are covered by a fair value hedge (see note 18.7). Interest expenses are calculated at the effective interest rate and recorded in the income statement in "Cost of gross financial indebtedness" over the duration of the loan or financial liability.

18.3.1 Breakdown between current and non-current financial liabilities

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

(in millions of euros)	31/12/2024			31/12/2023		
	Non-current	Current	Total	Non-current	Current	Total
Loans and other financial liabilities	68,871	12,931	81,802	67,769	18,878	86,647
Trading derivatives - negative fair value	-	4,315	4,315	-	14,418	14,418
Hedging derivatives - negative fair value ⁽¹⁾	2,225	1,642	3,867	1,955	4,807	6,762
FINANCIAL LIABILITIES	71,096	18,888	89,984	69,724	38,103	107,827

(1) Including €2,065 million of derivatives used to hedge liabilities included in net indebtedness in 2024 (see note 19.2).

The decrease in the negative fair value of trading derivatives (€(10.1) billion) is explained by the lower value of derivatives used in the trading activity, mainly resulting from the downturn in commodity market prices observed in 2024.

18.3.2 Loans and other financial liabilities

18.3.2.1 Changes in loans and other financial liabilities

(in millions of euros)	Bonds	Loans from financial institutions	Other financial liabilities	Lease liability	Accrued Interest	Total
BALANCES AT 31/12/2023	49,083	18,313	13,447	4,318	1,486	86,647
Increases	6,672	7,279	1,434	846	289	16,520
Decreases	(2,904)	(12,977)	(10,073)	(770)	(100)	(26,824)
Translation adjustments	447	(35)	94	30	(7)	529
Changes in scope of consolidation	49	146	15	(62)	17	165
Changes in fair value	770	78	23	-	-	871
Other changes	(1)	(27)	3,885	59	(22)	3,894
BALANCES AT 31/12/2024	54,116	12,777	8,825	4,421	1,663	81,802

In 2024, EDF issued €6,672 million (or equivalent value) of **bonds** on various markets. The main bond issues were:

- On 15 April 2024, a three-tranche senior bond issue of €1,852 million (\$2,050 million) (see the Group press release of 16 April 2024);
- On 13 May 2024, a two-tranche senior bond issue of €506 million (CAD 750 million) (see the Group press release of 14 May 2024);
- On 11 June 2024, a three-tranche senior green bond issue of €3,000 million (see the Group press release of 11 June 2024);
- On 21 August 2024, a two-tranche senior green bond issue of €329 million (CHF 310 million) (see the Group press release of 21 August 2024);
- On 31 October 2024, a senior bond issue of €589 million (£500 million) (see the Group press release of 31 October 2024).

The principal operations in 2024 concerning **loans from financial institutions** relate to drawings on credit lines totalling €6,982 million (€4,950 million and \$1,650 million, excluding credit from the European Investment Bank (EIB)) and their partial repayment of €(12,599) million (€12,414 million excluding credit from the EIB).

At 31 December 2024, EDF's **other financial liabilities** include negotiable debt instruments amounting to €2,918 million, and an amount of €565 million recognised in respect of the cash received for debt securities transferred to several banks under repurchase agreements. These operations are carried out for liquidity management purposes and do not affect the net indebtedness.

The Group redeemed perpetual subordinated bonds for a total €3,031 million in 2024 (€539 million of the €1,500 million issue of 2014 was redeemed in January; the €1,250 million issue of 2018 was redeemed in full in July 2024; €504 million of the €1,000 million issue of 2014 was redeemed in September; and €738 million of the £1,250 million bond issue was redeemed in September). Prior to these redemptions, the instruments concerned were reclassified from equity to other financial liabilities under "Other changes".

On 10 September 2024 EDF announced that it intended to exercise its redemption option for the €1,250 million hybrid bonds issued on 29 January 2013 with nominal value of €1,250 million, and this redemption was carried out on 29 January 2025. At 31 December 2024, the amount of €1,250 million was reclassified from equity to other financial liabilities under "Other changes"(see note 14.3).

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

(in millions of euros)	Bonds	Loans from financial institutions	Other financial liabilities	Lease liability	Termination of hedging derivatives	31/12/2024
Issuance of borrowings	6,672	7,279	1,434	-	-	15,385
Repayments of borrowings	(2,904)	(12,977)	(10,073)	(770)	160	(26,564)

18.3.2.2 Principal borrowings of the Group

The Group's principal borrowings of more than €650 million or equivalent value at the time of issuance (excluding Green Bonds) at 31 December 2024 are as follows:

Type of borrowing (in millions of currencies)	Issue date ⁽¹⁾	Maturity	Issue amount	Currency	Rate
Euro MTN	11/2010	11/2025	750	EUR	4.00%
Bond	10/2022	12/2026	750	EUR	3.88%
Bond	01/2017	01/2027	107,900	JPY	1.09%
Euro MTN	03/2012	03/2027	1,000	EUR	4.13%
Bond	05/2023	05/2028	1,000	USD	5.70%
Bond	09/2018	09/2028	1,800	USD	4.50%
Bond	04/2024	04/2029	650	USD	5.65%
Bond	10/2022	10/2029	1,000	EUR	4.38%
Euro MTN	04/2010	04/2030	1,500	EUR	4.63%
Euro MTN	10/2018	10/2030	1,000	EUR	2.00%
Euro MTN	07/2001	07/2031	650	GBP	5.88%
Euro MTN	01/2023	01/2032	1,000	EUR	4.25%
Euro MTN	02/2003	02/2033	850	EUR	5.63%
Bond	05/2023	05/2033	1,000	USD	6.25%
Bond	04/2024	04/2034	650	USD	5.95%
Euro MTN	06/2009	06/2034	1,500	GBP	6.13%
Euro MTN	10/2016	10/2036	750	EUR	1.88%
Bond	09/2018	09/2038	650	USD	4.88%
Bond	01/2009	01/2039	1,750	USD	6.95%
Bond	01/2010	01/2040	850	USD	5.60%
Euro MTN	11/2010	11/2040	750	EUR	4.50%
Euro MTN	10/2011	10/2041	1,250	GBP	5.50%
Euro MTN	01/2023	01/2043	1,000	EUR	4.63%
Bond	01/2014	01/2044	1,000	USD	4.88%
Bond	10/2015	10/2045	1,500	USD	4.75%
Bond	10/2015	10/2045	1,150	USD	4.95%
Bond	09/2018	09/2048	1,300	USD	5.00%
Euro MTN	12/2019	12/2049	1,250	EUR	2.00%
Euro MTN	09/2010	09/2050	1,000	GBP	5.13%
Bond	05/2023	05/2053	1,000	USD	6.90%
Euro MTN	10/2016	10/2056	2,164	USD	4.99%
Bond	04/2024	04/2064	750	USD	6.00%
Euro MTN	11/2019	12/2069	2,000	USD	4.50%
Bond	01/2014	01/2114	700	USD	6.00%
Bond	01/2014	01/2114	1,350	GBP	6.00%

(1) Date funds were received.

At 31 December 2024, the Group's **Green Bonds** (see note 20.3.1) are as follows:

Type of borrowing (in millions of currency units)	Issue date ⁽¹⁾	Maturity	Issue amount	Currency	Rate
Bond	10/2015	10/2025	1,250	USD	3.63%
Euro MTN	10/2016	10/2026	1,750	EUR	1.00%
Euro MTN	12/2023	06/2027	1,000	EUR	3.75%
Euro MTN	08/2023	09/2027	200	CHF	2.30%
Bond	01/2017	01/2029	19,600	JPY	1.28%
Euro MTN	09/2024	09/2029	155	CHF	1.57%
Euro MTN	06/2024	06/2031	1,000	EUR	4.13%
Euro MTN	08/2023	09/2031	125	CHF	2.55%
Bond	01/2017	01/2032	6,400	JPY	1.57%
Euro MTN	09/2024	09/2032	155	CHF	1.74%
Euro MTN	11/2021	11/2033	1,850	EUR	1.00%
Bond	10/2022	10/2034	1,250	EUR	4.75%
Euro MTN	06/2024	06/2036	750	EUR	4.38%
Euro MTN	06/2024	06/2044	1,250	EUR	4.75%

(1) Date funds were received.

18.3.3 Loans and financial liabilities by maturity, currency and interest rate

18.3.3.1 Maturity of loans and financial liabilities

(in millions of euros)	Bonds	Loans from financial institutions	Other financial liabilities	Lease liability	Accrued Interest	Total
Less than one year	1,920	1,367	7,624	726	1,294	12,931
From one to five years	11,466	9,184	456	2,208	40	23,354
More than five years	40,730	2,226	745	1,487	329	45,517
LOANS AND OTHER FINANCIAL LIABILITIES AT 31/12/2024	54,116	12,777	8,825	4,421	1,663	81,802

The non-discounted lease liability matures as follows:

(in millions of euros)	31/12/2024				31/12/2023
	Maturity				Total
	Total	< 1 year	1-5 years	> 5 years	
NON-DISCOUNTED CONTRACTUAL CASH FLOWS	5,026	816	2,434	1,776	5,089

18.3.3.2 Breakdown of loans and other financial liabilities by currency

The breakdown of loans and other financial liabilities by currency includes the effect of derivatives classified as hedges (of debts in foreign currencies and net investments in foreign subsidiaries) under IFRS 9.

At 31 December 2024

(in millions of euros)	Initial debt structure		Impact of hedging instruments	Debt structure after hedging	
	amount	% of debt	amount	amount	% of debt
Euro (EUR)	43,009	53%	22,327	65,336	80%
American dollar (USD)	22,841	27%	(21,543)	1,298	2%
Pound sterling (GBP)	10,580	13%	1,843	12,423	15%
Other	5,372	7%	(2,627)	2,745	3%
LOANS AND OTHER FINANCIAL LIABILITIES	81,802	100%	-	81,802	100%

At 31 December 2023

(in millions of euros)	Initial debt structure		Impact of hedging instruments	Debt structure after hedging	
	amount	% of debt	amount	amount	% of debt
Euro (EUR)	51,346	59%	12,811	64,157	74%
American dollar (USD)	20,860	24%	(16,634)	4,226	5%
Pound sterling (GBP)	9,849	12%	5,989	15,838	18%
Other	4,592	5%	(2,166)	2,426	3%
LOANS AND OTHER FINANCIAL LIABILITIES	86,647	100%	-	86,647	100%

18.3.3.3 Breakdown of loans and other financial liabilities by type of interest rate

The breakdown of loans and other financial liabilities by type of interest rate includes the effect of derivatives classified as hedges under IFRS 9.

At 31 December 2024

(in millions of euros)	Initial debt structure		Impact of hedging instruments	Debt structure after hedging	
	amount	% of debt	amount	amount	% of debt
Fixed rates	68,605	84%	(25,766)	42,839	52%
Floating rates	13,197	16%	25,766	38,963	48%
LOANS AND OTHER FINANCIAL LIABILITIES	81,802	100%	-	81,802	100%

At 31 December 2023

(in millions of euros)	Initial debt structure		Impact of hedging instruments	Debt structure after hedging	
	amount	% of debt	amount	amount	% of debt
Fixed rates	67,531	78%	(16,197)	51,334	59%
Floating rates	19,116	22%	16,197	35,313	41%
LOANS AND OTHER FINANCIAL LIABILITIES	86,647	100%	-	86,647	100%

A large portion of the Group's fixed-rate loans is swapped to variable rates.

18.3.4 Early repayment clauses

Project financing loans from non-Group parties to SPV-type project companies, mainly owned by EDF Renewables, may include early repayment clauses that principally apply when the project company concerned fails to respect certain covenants, particularly a minimum Debt Service Coverage Ratio (DSCR). In general, early repayment clauses are activated when this ratio falls below 1. However, the clauses contained in the contracts concerned have no impact on the classification of underlying assets as current or non-current in the Group's financial statements, because they only concern companies accounted for by the equity method.

In other Group entities, certain clauses contained in contracts for financing or other commitments may make reference to Group credit ratings but are not classified as covenants.

Eleven loans with a combined total of €2,647 million contain a clause for modification of the terms of the loan, subject to certain conditions, if the borrower's credit rating falls below a specified level.

No early repayment took place in 2024 as a result of any Group entity's failure to comply with contractual clauses concerning loans.

18.4 Unused credit lines

At 31 December 2024, the Group has unused credit lines with various banks totalling €14,315 million (€15,842 million at 31 December 2023). This total includes €11,688 million of credit lines indexed on ESG criteria, which were totally undrawn at 31 December 2024 (€11,175 million at 31 December 2023).

The decrease in these credit lines notably relates to the termination of the €1 billion credit line granted to Edison by a pool of banks, and the expiry of €2.2 billion of credit lines granted to EDF by various banks, partly offset by the opening of new credit lines totalling €1.4 billion.

Also, on 29 November 2024, EDF signed an agreement for a €6 billion syndicated credit facility with five-year maturity, renewable for two additional 1-year periods. The cost will be indexed on three Group sustainable development performance indicators, in accordance with the Loan Markets Association's Sustainability Linked Loans Principles:

- direct greenhouse gas emissions;
- avoided CO₂ emissions;
- the proportion of women senior executives in the Group.

(in millions of euros)	31/12/2024				31/12/2023
	Maturity				Total
	Total	< 1 year	1-5 years	> 5 years	
CONFIRMED CREDIT LINES	14,315	3,050	11,240	25	15,842

18.5 Fair value of financial instruments

ACCOUNTING PRINCIPLES AND METHODS

Financial instruments are stated at fair value, which corresponds to the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction on the principal or most advantageous market at the measurement date. The valuation methods for each level are generally as follows:

- level 1 (unadjusted quoted prices): prices accessible to the entity at the measurement date on active markets, for identical assets or liabilities;
- level 2 (observable data): data concerning the asset or liability, other than the market prices included in initial level 1 input, which are directly observable (such as a price) or indirectly observable (i.e. deduced from observable prices);
- level 3 (non-observable data): data that are not observable on a market, including observable data that have been significantly adjusted.

Level 3 debt and equity securities are principally non-consolidated investments carried at historical value, and shares in real estate or infrastructure investment companies carried at fair value.

The distribution of financial assets and liabilities in the balance sheet by level is as follows:

At 31 December 2024

(in millions of euros)	Balance sheet value	Fair value	Level 1 Unadjusted quoted prices	Level 2 Observable data	Level 3 Non-observable data
Equity securities	2,765	2,765	21	452	2,292
Debt securities	49,857	49,857	7,230	42,494	133
Hedging derivatives	6,001	6,001	25	5,973	3
Trading derivatives	4,915	4,915	122	4,200	593
Cash equivalents	1,243	1,243	62	1,181	-
FINANCIAL ASSETS CARRIED AT FAIR VALUE	64,781	64,781	7,460	54,300	3,021
Receivables from the NLF	16,142	16,142	-	16,142	-
Other loans and financial receivables	3,010	3,010	-	3,010	-
FINANCIAL ASSETS CARRIED AT AMORTISED COST	19,152	19,152	-	19,152	-
Hedging derivatives	3,867	3,867	21	3,846	-
Trading derivatives	4,315	4,315	93	3,718	504
FINANCIAL LIABILITIES CARRIED AT FAIR VALUE	8,182	8,182	114	7,564	504
Loans and other financial liabilities	81,802	78,793	-	78,793	-
FINANCIAL LIABILITIES CARRIED AT AMORTISED COST	81,802	78,793	-	78,793	-

At 31 December 2023

(in millions of euros)	Balance sheet value	Fair value	Level 1 Unadjusted quoted prices	Level 2 Observable data	Level 3 Non-observable data
Equity securities	2,527	2,527	-	2,020	507
Debt securities	49,153	49,153	6,599	42,400	154
Hedging derivatives	6,166	6,166	14	6,152	-
Trading derivatives	14,519	14,519	477	11,851	2,191
Cash equivalents	1,914	1,914	61	1,853	-
FINANCIAL ASSETS CARRIED AT FAIR VALUE	74,279	74,279	7,151	64,276	2,852
Receivables from the NLF	13,104	13,104	-	13,104	-
Other loans and financial receivables	2,300	2,300	-	2,300	-
FINANCIAL ASSETS CARRIED AT AMORTISED COST	15,404	15,404	-	15,404	-
Hedging derivatives	6,762	6,762	37	6,725	-
Trading derivatives	14,418	14,418	487	12,921	1,010
FINANCIAL LIABILITIES CARRIED AT FAIR VALUE	21,180	21,180	524	19,646	1,010
Loans and other financial liabilities	86,647	84,736	-	84,736	-
FINANCIAL LIABILITIES CARRIED AT AMORTISED COST	86,647	84,736	-	84,736	-

18.6 Market and counterparty risks

As an operator in the energy sector worldwide, the EDF group is exposed to financial market risks, energy market risks and counterparty risks. All these risks could generate volatility in the financial statements.

A more detailed description of these risks and the sensitivity analyses required by IFRS 7 can be found in chapter 7 "Management and control of market risks" of the 2024 Management Report.

Financial market risks

The main financial market risks to which the Group is exposed are the liquidity risk, the foreign exchange risk, the interest rate risk and the equity risk.

The objective of the Group's liquidity risk management is to seek resources at optimum cost and ensure their constant accessibility.

The foreign exchange risk relates to the diversification of the Group's businesses and geographical locations, and results from exposure to the risk of exchange rate fluctuations. These fluctuations can affect the Group's translation differences, balance sheet items, financial expenses, equity and net income.

The interest rate risk results from exposure to the risk of fluctuations in interest rates that can affect the value of assets invested by the Group, the value of the liabilities covered by provision, or its financial expenses.

The Group is exposed to equity risks, particularly through its dedicated asset portfolio held for secure financing of long-term nuclear commitments, through external pension funds, and to a lesser extent through its cash assets and directly-held investments.

Energy market risks

The EDF group operates on deregulated energy markets, mainly in Europe, through its generation, supply and trading activities. This exposes the Group to price variations on the wholesale markets for energy (electricity, gas, coal, oil products) and the CO₂ emissions quota market, with a potentially significant impact on the financial statements.

Counterparty risks

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

Regarding the customer risk, which is another component of the counterparty risk, a statement of receivables not yet due and overdue is shown in note 13.3.1.

18.7 Derivatives and hedge accounting

ACCOUNTING PRINCIPLES AND METHODS

The Group uses derivatives such as swaps and forward contracts to hedge its interest rate, foreign exchange, energy and commodity risks.

In accordance with IFRS 9, hedge accounting can be applied to derivatives when they meet certain eligibility criteria. Some derivatives classified as "own use" are excluded from application of IFRS 9.

DERIVATIVES NOT COVERED BY IFRS 9: "OWN USE" CONTRACTS

Forward purchase and sale contracts for physical delivery of energy or commodities are considered to fall outside the scope of application of IFRS 9 when they are entered into as part of the Group's normal business activity ("own use"). This is demonstrated to be the case when all the following conditions are fulfilled:

- a physical delivery takes place under all such contracts;
- the volumes purchased or sold under these contracts correspond to the Group's operating requirements;
- the contracts cannot be considered as options as defined by the standard. In the specific case of electricity sale contracts, the contract is equivalent to a firm forward sale or can be considered as a capacity sale.

The Group considers that transactions negotiated with a view to balancing the volumes between electricity purchase and sale commitments are part of its normal business as an integrated electricity operator, and are thus outside the scope of IFRS 9.

MEASUREMENT AND RECOGNITION OF DERIVATIVES

Derivatives are initially recorded at fair value, based on quoted prices and market data available from external sources. If no quoted prices are available, the Group may refer to recent comparable transactions or, if no such transactions exist, base its valuation on internal models that are recognised by market participants, giving priority to information directly derived from observable data such as over-the-counter listings.

In application of IFRS 13, the fair value of derivatives incorporates the counterparty credit risk for derivative assets and the own credit risk for derivative liabilities.

DERIVATIVES CLASSIFIED AS HEDGES

The EDF group uses derivatives to hedge its foreign exchange and interest rate risks, as well as risks related to certain commodity contracts.

The Group applies the criteria defined by IFRS 9 to identify operations subject to hedge accounting, particularly regarding the existence of formal documentation from their inception and compliance with hedge effectiveness requirements.

The hedging relationship ends when it ceases to satisfy the above criteria. This includes situations in which the hedging instrument expires or is sold, terminated or exercised, or when the risk management objectives initially defined are no longer met.

Only derivatives external to the Group, and internal derivatives that are matched with similar transactions external to the Group, qualify for hedge accounting.

The Group uses the following categories for hedges:

- fair value hedge;
- cash flow hedge;
- net foreign investment hedge.

HEDGE CATEGORIES

Fair value hedge

This is a hedge of exposure to changes in the fair value of an asset or liability recorded in the balance sheet, or a firm commitment to purchase or sell an asset. Changes in the fair value of the hedged item attributable to the hedged component of that item are recorded in profit and loss and offset by corresponding variations in the fair value of the hedging instrument. Only the ineffective portion of the hedge has an impact on profit and loss.

Some loans and financial liabilities, and some commodity contracts, are covered by a fair value hedge. In such cases their balance sheet value is adjusted for changes in fair value attributable to the hedged risks (foreign exchange, interest rate and price risks).

Cash flow hedge

This is a hedge of exposure to variability in cash flows associated with an asset or liability or a highly probable future transaction for which variations in cash flows generated by the hedged item are offset by changes in the value of the hedging instrument.

The effective portion of accumulated changes in the hedging instrument's fair value is recorded in equity, and the ineffective portion (i.e. changes in the fair value of the hedging instrument in excess of changes in the fair value of the hedged item) is recorded in profit and loss.

When the hedged cash flows materialise, the amounts previously recognised in equity are recycled to profit and loss in the same way as for the hedged item, or are treated as an adjustment to the value of the non-financial asset acquired.

Net foreign investment hedge

This is a hedge of exposure to the foreign exchange risk related to a net investment in an entity which does not have the same functional currency as the Group. The effective portion of accumulated changes in the hedging instrument's fair value is recorded in equity until the disposal or liquidation of the net investment, when it is included in the gain or loss on disposal. The ineffective portion (defined in the same way as for cash flow hedges) is recorded directly in profit and loss.

This risk is hedged in the EDF group level either by matching it with debts in the same currency, or by using derivatives.

Hedging costs: foreign currency basis spread on cross-currency swaps

Hedging costs include the foreign currency basis spread on cross-currency swaps. Fair value variations are included in equity with recycling, and subsequently transferred to interest expenses on financing operations, which are included in the cost of gross financial indebtedness in the income statement.

TRADING DERIVATIVES

Trading derivatives comprise:

- derivatives subscribed for economic hedging that do not qualify as hedges for accounting purposes; changes in the value of these instruments are reported in profit and loss. When the derivatives are used for economic hedging of negotiable debt instruments and purchased bonds, they are included in "Other financial income and expenses". When the derivatives are used for economic hedging of generation and supply operations, they are included in "Net changes in fair value on Energy and Commodity derivatives, excluding trading activities" (see note 6);
- derivatives used in trading activities; changes in the fair value of these instruments are included in sales (see note 5.1).

18.7.1 Breakdown of hedging and trading derivatives

The fair value of hedging and trading derivatives reported in the balance sheet breaks down as follows:

(in millions of euros)	Notes	31/12/2024	31/12/2023
Positive fair value of hedging derivatives	18.1.1	6,001	6,166
Negative fair value of hedging derivatives	18.3.1	(3,867)	(6,762)
FAIR VALUE OF HEDGING DERIVATIVES		2,134	(596)
Positive fair value of trading derivatives	18.1.1	4,915	14,519
Negative fair value of trading derivatives	18.3.1	(4,315)	(14,418)
FAIR VALUE OF TRADING DERIVATIVES		600	101

The fair value of hedging and trading derivatives by type of risk hedged is shown below:

(in millions of euros)	Notes	31/12/2024	31/12/2023
Hedging derivatives - interest rate risk	18.7.2	489	997
Hedging derivatives - foreign exchange risk	18.7.3	1,851	795
Hedging derivatives - commodity risks	18.7.4	(206)	(2,388)
FAIR VALUE OF HEDGING DERIVATIVES		2,134	(596)
Trading derivatives - interest rate risk	18.7.2	(129)	(4)
Trading derivatives - foreign exchange risk	18.7.3	133	(72)
Trading derivatives - commodity risk	18.7.4	596	177
FAIR VALUE OF TRADING DERIVATIVES		600	101

The fair value of hedging derivatives by type and purpose of hedge is shown below:

(in millions of euros)	Notes	31/12/2024	31/12/2023
Fair value hedges of loans and liabilities		(552)	(1,006)
Cash flow hedges of loans and liabilities		2,424	2,385
Sub-total	19.2	1,872	1,379
Fair value hedges of commodity contracts		(35)	220
Cash flow hedges of commodity contracts		111	(2,478)
Sub-total		76	(2,258)
Net foreign investment hedges		272	191
Fair value hedges of dedicated assets		(74)	57
Fair value hedges of liquid assets	19.2	(12)	35
FAIR VALUE OF HEDGING DERIVATIVES		2,134	(596)

18.7.2 Interest rate derivatives

The Group is exposed to the risk of fluctuations in interest rates that can affect the value of its loans and financial liabilities, its assets (liquid assets and dedicated assets), and its future financial expenses.

The Group hedges its exposure to changes in the fair value of fixed-rate debts, many of which are converted to floating rates. The derivatives used for these hedges are fixed/floating interest rate swaps and cross-currency swaps, with changes in fair value recorded in profit and loss symmetrically to changes in the value of the hedged debts.

The Group also hedges its floating-rate debt against future changes in interest rates by using floating/fixed interest rate swaps for cash flow hedges.

Details of interest rate derivatives used in a hedging relationship or designated as trading derivatives are shown below:

(in millions of euros)	Notional at 31/12/2024				Notional at 31/12/2023	Fair Value	
	< 1 year	1-5 years	> 5 years	Total	Total	31/12/2024	31/12/2023
Purchases of Caps	6	225	27	258	61	5	7
Sales of Floors	-	200	-	200	-	-	-
Interest rate transactions	6	425	27	458	61	5	7
Fixed rate payer/floating rate receiver	1,573	5,083	8,216	14,872	13,380	1,274	1,448
Floating rate payer/fixed rate receiver	2,068	7,314	24,745	34,127	24,759	(1,388)	(1,176)
Floating rate/floating rate	-	7,054	3,530	10,584	3,680	201	79
Fixed rate/fixed rate	144	5,586	6,182	11,912	10,828	397	639
Interest rate swaps	3,785	25,037	42,673	71,495	52,647	484	990
INTEREST RATE DERIVATIVES - HEDGING	3,791	25,462	42,700	71,953	52,708	489	997
Purchase of options	-	-	-	-	520	29	(11)
Interest rate swaps	705	821	9,218	10,744	2,384	(158)	7
INTEREST RATE DERIVATIVES - TRADING	705	821	9,218	10,744	2,904	(129)	(4)

The fair value of interest rate/exchange rate cross-currency swaps comprises the interest rate effect only.

The notional value of cross-currency swaps is included both in this note and the note on currency derivatives (see note 18.7.3).

18.7.3 Currency derivatives

The Group is exposed to the risk of exchange rate fluctuations due to the diversification of its businesses, supply contracts in foreign currencies for goods and services, and its geographical locations. These fluctuations can affect the Group's translation differences recognised in equity, balance sheet items, financial expenses, equity and net income.

There are several types of hedged item:

- Liabilities in foreign currencies, for which cross-currency swaps are used in cash flow hedge;
- Financial assets subscribed in foreign currencies;
- Purchases of commodities and fuels, for which the Group hedges the associated foreign exchange risk;
- Net investments in subsidiaries in foreign currencies.

Details of currency derivatives used in a hedging relationship or designated as trading derivatives are shown in the following tables. The notional value of cross-currency swaps is included both in this note and the note on interest rate hedging derivatives (see note 18.7.2).

At 31 December 2024

(in millions of euros)	Notional amount to be received at 31/12/2024				Notional amount to be given at 31/12/2024				Fair value 31/12/2024
	< 1 year	1-5 years	> 5 years	Total	< 1 year	1-5 years	> 5 years	Total	
Forward exchange transactions	2,068	477	-	2,545	2,024	467	-	2,491	44
Swaps	35,375	19,152	17,294	71,821	34,922	18,500	16,193	69,615	1,807
Options	1	-	-	1	1	-	-	1	-
CURRENCY DERIVATIVES - HEDGING	37,444	19,629	17,294	74,367	36,947	18,967	16,193	72,107	1,851
Forward transactions	4,642	1,210	104	5,956	4,593	1,209	99	5,901	60
Swaps	19,242	2,674	4,447	26,363	19,269	2,781	4,308	26,358	26
Options	48	-	-	48	48	-	-	48	-
Embedded currency derivatives	82	195	-	277	62	148	-	210	47
CURRENCY DERIVATIVES - TRADING	24,014	4,079	4,551	32,644	23,972	4,138	4,407	32,517	133

At 31 December 2023

(in millions of euros)	Notional amount to be received at 31/12/2023				Notional amount to be given at 31/12/2023				Fair value 31/12/2023
	< 1 year	1-5 years	> 5 years	Total	< 1 year	1-5 years	> 5 years	Total	
Forward exchange transactions	4,644	639	-	5,283	4,641	629	-	5,270	10
Swaps	32,046	11,920	15,030	58,996	31,773	11,792	14,665	58,230	785
Options	3,371	-	-	3,371	3,426	-	-	3,426	-
CURRENCY DERIVATIVES - HEDGING	40,061	12,559	15,030	67,650	39,840	12,421	14,665	66,926	795
Forward transactions	5,854	3,310	-	9,164	5,815	3,275	-	9,090	54
Swaps	21,767	4,666	2,012	28,445	21,879	4,697	2,018	28,594	(126)
Options	-	-	-	-	-	-	-	-	-
CURRENCY DERIVATIVES - TRADING	27,621	7,976	2,012	37,609	27,694	7,972	2,018	37,684	(72)

The notional value of cross-currency swaps shown in this note is also included in the note on interest rate derivatives (see note 18.7.2).

18.7.4 Commodity derivatives

The Group is exposed to price variations on the wholesale markets for energy (electricity, gas, oil products) and the CO₂ emissions certificates market with a potentially significant impact on the financial statements.

The Group hedges its forecast sales and purchases of electricity and gas using futures, forwards, options and swaps, essentially through cash flow hedges.

Details of commodity derivatives used for hedging are as follows:

(in millions of euros)	Units of measure	31/12/2024				31/12/2023	
		Net notional				Net notional	Fair value
		< 1 year	1-5 years	> 5 years	Total		
Electricity	TWh	(5)	(29)	-	(34)	(499)	17
Gas	Millions of therms	929	357	-	1,286	309	650
Oil products	Thousands of barrels	2,422	-	-	2,422	(30)	6,645
CO ₂	Thousands of tonnes	2,921	365	-	3,286	14	2,362
COMMODITY DERIVATIVES - HEDGING						(206)	(2,388)

The negative fair value of commodity derivatives used for hedging at 31 December 2024 (€(0.2) billion) is mainly explained by the narrowing of the market price / strike price spread on gas and electricity hedging instruments, due to the lower commodity price volatility observed in 2024.

Details of commodity derivatives used for trading, principally in the EDF Trading portfolio, are as follows:

(in millions of euros)	Units of measure	31/12/2024		31/12/2023	
		Net notional	Fair value	Net notional	Fair value
Electricity	TWh	(50)	267	(18)	1,213
Gas	Millions of therms	(2,886)	376	(3,623)	(1,071)
Oil products	Thousands of barrels	(6,666)	4	3,380	(73)
CO ₂	Thousands of tonnes	(3,985)	8	(4,429)	21
Coal and other	Millions of tonnes	-	(59)	(1)	87
COMMODITY DERIVATIVES - TRADING			596		177

18.7.5 Impact of hedging derivatives on comprehensive income

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

(in millions of euros)	2024			2023		
	Gross changes in fair value recorded in equity ⁽¹⁾	Gross changes in fair value transferred to income - Recycling ⁽²⁾	Gross changes in fair value transferred to income - Ineffectiveness	Gross changes in fair value recorded in equity ⁽¹⁾	Gross changes in fair value transferred to income - Recycling ⁽²⁾	Gross changes in fair value transferred to income - Ineffectiveness
Interest rate hedging ⁽³⁾	117	-	(2)	(202)	-	6
Exchange rate hedging	254	605	(5)	(1,069)	(335)	12
Net foreign investment hedging	(666)	-	-	(107)	-	-
Commodity hedging	1,462	(1,051)	(76)	4,833	(3,066)	(8)
HEDGING DERIVATIVES⁽⁴⁾	1,167	(446)	(83)	3,455	(3,401)	10

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

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

(3) Gross changes in fair value recorded in equity in 2024 include +€133 million of changes in the fair value of hedging costs resulting from the foreign currency basis spread on interest rate swaps and cross-currency swaps. These changes are transferred to profit and loss via interest expenses on financing operations, which are included in the cost of gross indebtedness in the income statement (see note 8.1).

(4) Excluding associates and joint ventures.

The gross change in the fair value of hedging instruments recognised in equity (EDF share), including the effect of recycling, is +€1,613 million in 2024 (+€6,856 million in 2023).

In 2024 this change is explained by the gross fair value changes in net foreign investment hedges, amounting to €(666) million (€(107) million in 2023), interest rate, exchange rate and commodity hedges, amounting to +€2,146 million (+€7,089 million in 2023) and hedging costs associated with the foreign currency basis spread on interest rate swaps and cross-currency swaps, amounting to +€133 million in 2024 (see the consolidated statement of comprehensive income).

The amount transferred to operating profit before depreciation and amortisation in 2024 in respect of commodity hedges is €(1,051) million comprising:

- €(908) million for electricity hedging contracts, concerning the France - Generation and supply and United Kingdom segments,
- €(183) million for gas hedging contracts, concerning the France - Generation and supply and United Kingdom segments,
- +€40 million for other hedging contracts.

18.7.6 Offsetting of financial assets and liabilities

ACCOUNTING PRINCIPLES AND METHODS

A financial asset and financial liability must be offset if the entity currently has a legally enforceable right to do so and intends either to settle the net amount or to realise the asset and settle the liability simultaneously.

At 31 December 2024

(in millions of euros)	As reported in balance sheet	Balance without offsetting	Balance with offsetting under IAS 32		Net amount recognised after offsetting under IAS 32		Amounts covered by a general offsetting agreement but not offset under IAS 32	
			Gross amount recognised (before offsetting)	Gross amount offset under IAS 32			Financial instruments	Fair value of financial collateral
Fair value of derivatives – assets	10,917	466	14,623	(4,172)	10,451	(1,715)	(1,849)	6,887
Fair value of derivatives – liabilities	(8,180)	(42)	(12,310)	4,172	(8,138)	1,715	317	(6,106)

At 31 December 2023

(in millions of euros)	As reported in balance sheet	Balance Without offsetting	Balance with offsetting under IAS 32		Net amount recognised after offsetting under IAS 32		Amounts covered by a general offsetting agreement but not offset under IAS 32	
			Gross amount recognised (before offsetting)	Gross amount offset under IAS 32			Financial instruments	Fair value of financial collateral
Fair value of derivatives – assets	20,685	9,618	17,835	(6,768)	11,067	(1,504)	(2,718)	6,845
Fair value of derivatives – liabilities	(21,180)	(8,554)	(19,394)	6,768	(12,626)	1,504	3,974	(7,148)

Note 19 Financial indicators

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

19.1 Net income excluding non-recurring items

The net income excluding non-recurring items amounts to €15,233 million at 31 December 2024, down by €3,248 million compared to 2023.

Net income excluding non-recurring items corresponds to the Group's share of net income (EDF net income) excluding non-recurring items, net changes in the fair value of energy and commodity derivatives (excluding trading activities), and net changes in the fair value of debt and equity instruments, net of tax.

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

(in millions of euros)	Notes	2024			2023	
		Gross value	Income taxes	Non-controlling interests	EDF net income	EDF net income
Net income					11,406	10,016
Changes in the fair value of debt and equity instruments		(3,094)	798	7	(2,289)	(1,653)
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	6	(443)	129	-	(314)	(263)
Impairment		3,289	(401)	(122)	2,766	8,250
<i>impairment of goodwill, intangible and tangible assets⁽¹⁾</i>	10.7	1,835	(392)	(123)	1,320	8,019
<i>impairment and provisions related to investments in associates and joint ventures⁽²⁾</i>	12.3	1,454	(9)	1	1,446	231
Other items		4,834	(1,158)	(12)	3,664	2,131
<i>other income and expenses</i>	7	4,834	(1,158)	(12)	3,664	2,120
NET INCOME EXCLUDING NON-RECURRING ITEMS					15,233	18,481

(1) At 31 December 2024, this impairment notably concerns the assets related to Hinkley Point C (€(1,116) million) and NUWARD (€(228) million). In 2023, it mainly concerned EDF Energy (€(12,871) million gross).

(2) Including impairment of investments in associates and joint ventures, and associated receivables and provisions associated with these investments. At 31 December 2024, this impairment notably concerns assets related to the Atlantic Shores offshore wind project (€934 million), the Neart na Gaoithe (NnG) project in the United Kingdom (€248 million) and dedicated assets (€118 million). In 2023, concerned dedicated assets (€86 million), the Fuzhou plant in China (€79 million), the Neart na Gaoithe (NnG) project in the United Kingdom (€54 million) and wind farms in Mexico (€16 million).

19.2 Net indebtedness

The Group's net indebtedness amounts to €54,346 million at 31 December 2024 (€54,381 million at 31 December 2023).

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

Net indebtedness are as follows:

(in millions of euros)	Notes	31/12/2024	31/12/2023
Loans and other financial liabilities	18.3.2	81,802	86,647
Derivatives used to hedge liabilities	18.7.1	(1,872)	(1,379)
Cash and cash equivalents	18.2	(7,597)	(10,775)
Debt and equity securities - liquid assets	18.1.2	(17,999)	(20,077)
Derivatives hedging liquid assets	18.7.1	12	(35)
NET INDEBTEDNESS		54,346	54,381

Note 20 Sustainability-issues in the financial statements

Introduction and background

EDF's *raison d'être*, **"To build a net zero energy future with electricity and innovative solutions and services, to help save the planet and drive well-being and economic development"**, is founded on four key issues which are addressed together to ensure that the Group's action for the energy transition is fair and inclusive. For a detailed presentation, see the "Just Transition principles, from strategy to action" publication on the Group's website⁽¹⁾. The EDF group's CSR objectives are consistent with the "Ambitions 2035" corporate plan and the Group's *raison d'être*: EDF is committed to building the electricity system of tomorrow, working within the planetary boundaries and acting for a just transition.

These commitments and their implementation in the Group are managed and monitored by several Group governance bodies.

On 10 December 2021 the European Union adopted article 8 of European regulation 2020 - 852 which aims to classify economic activities based on their contribution to the achievement of environmental objectives. This **"Taxonomy regulation"** is part of the European strategy to promote emergence of sustainable finance that contributes to attainment of carbon neutrality by 2050, particularly by encouraging capital inflows into sustainable investments. It was supplemented by a specific Delegated Act for nuclear and gas activities, published on 2 February 2022 and applicable from 2022. The information and indicators contained in this regulation (proportion of sales, capital expenditure and operating expenditure associated with eligible activities and aligned with the European taxonomy) are described in section 3.7.4 of the 2023 Universal Registration Document, "European taxonomy".

To complement the Taxonomy, the European Union adopted the **Corporate Sustainability Reporting Directive (CSRD)** in January 2022. This directive was transposed into French law in December 2023 and is applicable for the Group in 2024 for the first time. It is designed to reinforce the quality and comparability of sustainability reporting and to structure the environmental and social information published by companies. The EDF group will publish its first Sustainability Report in its 2024 Universal Registration Document (chapter 3). The CSRD has replaced the Non-Financial Reporting Directive (NFRD) and is part of an integrated management dynamic that combines financial and non-financial dimensions.

The Group's financial statements incorporate sustainability issues at different levels, as summarised below. Those issues are taken into consideration through the Group's investment and divestment strategy, introduction of sustainable financing, specific expenditure incurred in response to environmental and social challenges, particularly under applicable laws and regulations, mobilising Group employees and executives to engage with sustainability issues, and also through the valuation methods used for the Group's assets and liabilities.

Themes	Notes	Content
Regulatory mechanisms related to greenhouse gas emission rights, Energy Savings Certificates, Renewable Energy Certificates - see note 20.1	Note 5.5.4 "Other items" Note 10.2 "Other intangible assets" Note 17.2 "Other provisions"	Climate and environmental issues are addressed in compliance with the regulatory systems existing in different countries for greenhouse gas emission rights, renewable energy certificates and energy savings certificates. These systems have an impact on the Group's financial statements at several levels: the income statement and the balance sheet.
Nuclear provisions and provisions for contingencies and losses incorporating environmental risks - see note 20.2.1	Note 15 "Provisions related to nuclear generation and dedicated assets" Note 17 "Other provisions"	These are provisions relating to: <ul style="list-style-type: none"> • nuclear generation, comprising provisions for the back-end of the cycle (spent fuel management and long-term radioactive waste management), provisions for plant decommissioning, and provisions for last cores; • environmental measures; • environmental litigations.
Valuation of assets - see note 20.2.2	Note 10.7 "Impairment/reversals"	Climate issues are addressed in impairment tests, notably through the long-term scenarios applied for electricity prices in different countries in line with the trajectories of European decarbonisation objectives
Sustainable finance - see note 20.3	Note 18.3.2 "Loans and other financial liabilities" Note 14.3 "Perpetual subordinated bonds" Note 18.4 "Unused credit lines"	The Group has made several finance issues indexed on environmental indicators or to advance CSR projects: <i>Green bonds</i> , <i>Social bonds</i> and credit lines indexed on ESG criteria
Low carbon investments and expenses in favour of sustainability - see notes 20.4, 20.5 et 20.6 et 20.7	Note 10.2 "Other intangible assets"	The Group devotes a significant portion of its research and development budget to decarbonisation and the energy system transition, and undertakes other expenses for the environment or to adapt its installations to changes in the climate. The accounting policies applicable to research and development expenses are described in note 10.2.

(1) <https://www.edf.fr/en/the-edf-group/taking-action-as-a-responsible-company/corporate-social-responsibility/just-transition>

20.1 Regulatory expenses

20.1.1 Greenhouse gas emission trading systems

EU Emissions Trading System (EU ETS)

The European Union's Emissions Trading System (SEQE-UE or EU ETS) exists to fight climate change and reduce greenhouse gas emissions.

This system, which applies in all EU countries, sets an annual cap on emissions. Businesses (including EDF) receive or buy emission quotas, then the following year surrender to the European Commission a number of greenhouse gas emission certificates corresponding to their Scope 1 emissions for the year elapsed, such as direct greenhouse gas emissions from production of the goods sold (e.g. electricity, heat, steel, paper, etc.). Fines are payable if there is a shortfall (€100 per tonne of CO₂ not covered by quotas, and an obligation to cover these amounts by quota the following year).

The cap is being progressively reduced in order to bring down the total emissions in Europe.

The legislative framework of the EU-ETS for the fourth trading period (2021 - 2030) has been tightened up to achieve the emission reduction targets set in the 2030 Climate and Energy framework, and the EU's contribution to the Paris Climate Agreement adopted in 2015 (which set a general target of a 40% cut in emissions compared to 1990 levels for the whole EU)⁽¹⁾

As part of the Fit for 55 package of legislation, the European Commission adopted laws in April 2023 raising the target for cuts in CO₂ emissions to at least 62% by 2030 for sectors concerned by the Emissions Trading System. The new rules also introduce a reduction in the number of quotas automatically allocated to each company concerned by the Emissions Trading System.

Having halved its direct CO₂ emissions between 2017 and 2022, the Group has set itself new targets for 2025, 2030 and 2035, defining an ambitious short and medium-term trajectory to achieve a carbon-free electricity mix (see the Group press release of 28 November 2023):

- a 60% reduction (compared to 2017) in its scope 1 emissions by 2025;
- a 70% reduction in its scope 1 emissions, and carbon intensity of 30gCO₂/kWh, by 2030;
- an 80% reduction in its scope 1 emissions, and carbon intensity of 22gCO₂/kWh, by 2035.

In the EDF group, the entities concerned by application of these European regulations are EDF, Edison, Dalkia, PEI and Luminus.

The volume of emissions at 31 December 2024 stood at 11.1 million tonnes (13.5 million tonnes for 2023).

Actual greenhouse gas emissions amounted to €309 million at 31 December 2024 (€531 million at 31 December 2023) and are included in provisions.

In 2024, the Group surrendered 13 million tonnes in respect of emissions generated in 2023 under the EU ETS (in 2023 it surrendered 18 million tonnes in respect of emissions generated in 2022).

UK Emissions Trading Scheme (UK ETS)

The United Kingdom has set up its own system (UK ETS - Emissions Trading Scheme). The UK ETS, which uses a bidding system, covers the same sectors as the EU ETS and operates under generally similar rules, with comparable accounting treatment.

In 2024 EDF Energy did not produce any CO₂ emissions subject to certificates (compared to 4,000 tonnes for 2023), and consequently did not establish a provision at 31 December 2024 (a provision of €0.4 million was recognised in 2023).

Accounting treatment of CO₂ emission certificates

Emission certificates acquired to comply with the regulatory requirements on greenhouse gas emissions are recorded in intangible assets.

At the year-end a provision corresponding to the emissions is established, equal to the acquisition cost up to the amount of certificates acquired on the spot or forward markets, and to market prices for the balance. This provision is cancelled when the certificates are surrendered to the State.

(1) The current EU ETS allocations trajectory does not yet include changes to be made in application of the Fit for 55 package.

20.1.2 Renewable energy certificates (green certificates)

In application of EU Directive 2009/28/EC on the promotion of the use of energy from renewable sources, every EU member state has set national targets for consumption of electricity from renewable sources. The United Kingdom has its own equivalent system.

Guarantee of Origin certificates prove the renewable origins of this electricity, which transits through the grid. They are sold by operators of renewable energy plants and bought by customers who want to use renewable-source electricity.

There are two systems for States to meet their targets:

- setting a specific sales tariff for renewable energies (this is the approach taken in France and Italy);
- setting an obligation for electricity producers to surrender a certain volume of renewable energy certificates (as is the case in the United Kingdom and Belgium).

The renewable energy certificate system may apply to:

- non-obligated electricity producers when the obligation applies to sales (EDF Renewables);
- obligated electricity producers when the obligation applies to generation;
- electricity producers who are also sellers of electricity when the obligation applies to energy sales (EDF Energy, Edison and Luminus).

At 31 December 2024, a provision of €1,392 million (€1,176 million at 31 December 2023) was booked in connection with the obligation to surrender renewable energy certificates at that date, essentially concerning EDF Energy (United Kingdom) and Luminus (Belgium). For reminder, a large portion of these obligations is covered by purchases of certificates included in intangible assets (see note 10.2).

Accounting treatment of green certificates

For the entities that produce and sell electricity:

- certificates earned through energy generation are not recognised, since their cost is nil;
- certificates purchased are recognised as intangible assets in the line “Greenhouse gas emission certificates – green certificates”.

A provision is also established to reflect the obligation to surrender certificates. It is based on the cost of certificates earned (with nil value) and purchased (on the spot or forward market), the market price of the certificates still to be purchased, and where relevant the market price or penalty price for the balance. This provision is cancelled when the certificates are surrendered to the State.

20.1.3 Energy savings certificates

In all its subsidiaries, the Group is engaged in a process to control its energy consumption through various legislative measures in application of European Union Directives and national laws.

In France, the Law of 13 July 2005 introduced a system of energy savings certificates, imposing energy savings obligations on suppliers of energy (electricity, gas, heat, cold, domestic fuel oil and fuel for vehicles) with sales above a certain level. At the end of the period concerned, obligated actors are required to present energy savings certificates that correspond to their obligatory energy savings, otherwise sanctions apply. These certificates are obtained in return for energy savings operations conducted directly or indirectly, or purchased from other obligated or “eligible” economic actors.

For the fifth period, which began on 1 January 2022 and will end on 31 December 2025, the obligation has been raised significantly by a series of significant regulatory changes from 1 January 2024, particularly for major home retrofits. Consultation with the government regarding the terms for the sixth period continued in 2024. As a result of these new measures, actors concerned by the system are having to partly reconsider their model for obtaining energy savings certificates.

To meet this obligation, three sources are available to the EDF group: supporting consumers undertaking energy efficiency operations (in 2024, for example, over 324,000 home retrofits were completed), funding State-approved energy savings programmes, and purchasing certificates from eligible actors.

In the United Kingdom, EDF Energy voluntarily helps companies explore and develop solutions by enabling them to save energy, carbon and costs, particularly through its Powershift flexibility platform.

Accounting treatment of energy savings certificates

Expenses incurred for energy savings certificates are recorded in expenses of the year concerned, in “Other operating income and expenses”. Expenses in excess of the accumulated obligation at the year-end are included in inventories and the stocks of energy savings certificates may be used to cover the obligation in later years.

A provision is recognised if the volume of certificates earned is lower than the accumulated energy savings obligation at the year-end. The amount of the provision is equal to the cost of actions still to be taken to extinguish the obligation related to energy sales, or where applicable the cost of the penalty payable for the portion of energy savings certificates the company considers it will be unable to earn or purchase.

20.2 Valuation of assets and liabilities

20.2.1 Provisions relating to environmental issues

Most of these provisions are provisions related to nuclear generation, which comprise provisions for back-end nuclear cycle expenses (management of spent fuel and radioactive waste), provisions for plant decommissioning and provisions for last cores. Obligations can vary noticeably depending on each country's legislation and regulations, and the technologies and industrial scenarios involved. Details of these provisions are provided in note 15.

They also include provisions for environmental schemes including provisions for greenhouse gas emission certificates, renewable energy certificates and energy savings certificates. At 31 December 2024, these provisions totalled €1,700 million (€1,707 million in 2023, see note 17.2).

Contingent liabilities also exist in connection with environmental litigation, described in note 21.3. They largely arose following the sale of Ausimont (the Bussi site) to Solvay by Edison in 2002, and the sale of Enimont industrial sites contributed to ENI in 1989.

20.2.2 Valuation of assets

In valuing the Group's long-term assets, climate issues are taken into account through impairment testing. The long-term scenarios used for electricity prices in countries where the Group does business are consistent with the trajectories of European decarbonisation targets, particularly as set out in the Paris Agreement. As explained in note 10.7, in constructing long-term electricity prices, the impact of climate contingencies is incorporated into assumptions concerning demand (particularly energy requirements for heating, and summer comfort), generation of renewable energies (onshore and offshore wind power, solar power) for all European countries, the contribution of hydropower, and environmental tax cuts for nuclear power generation in France. Climate time series analyses are based on the European EUROCORDEX model and include the impact of climate change. This is taken into account through an approach that avoids bias towards underestimation of the practical effects of climate change on the relevant physical quantities (temperatures, cloud coverage and wind speeds) and ultimately on the European electricity system between 2030 and 2050. Scenarios also take account of the objectives of public energy and climate policies such as the Paris Agreement, the European Union's Fit For 55 package and RepowerEU plan, and the National Low Carbon Strategy (*Stratégie Nationale Bas Carbone*) in France. The scenarios used mainly use high CO₂ prices conducive to achieving carbon-free electricity production in Europe, and a lower-carbon economy more generally through electrification of uses.

The impairment tests at 31 December 2024 are thus based on CO₂ prices (in 2023 euros) of €130/t for 2030, €170/t for 2040 and €210/t for 2050.

The Group controls and operates thermal (gas-fired, oil-fired) electricity generation plants principally in France and Italy, to a smaller extent in Brazil, in Laos and Belgium. The net book value of the assets concerned is €4.9 billion at 31 December 2024 (€5.2 billion at 31 December 2023), including €2.8 billion for assets in France and €1.4 billion for assets in Italy (€3.2 billion for assets in France and €1.4 billion for assets in Italy at 31 December 2023). The operating lifetimes of these plants take account of the Group's current emission reduction commitments, and local regulations.

In **mainland France**, the electricity generated by EDF's fleet of thermal power plants (CCGT, CT), with net book value of €1.5 billion at 31 December 2024 (€1.6 billion at 31 December 2023) accounted for around 0.65% of EDF's total electricity output in 2024. These plants operate in semi-baseload and peak periods and are used to variable degrees throughout the year, playing a significant role in system security when there are tensions in the supply-demand balance, which was the case during the winter of 2022.

Coal-fired generation in France is to end in application of the multi-year energy programme. The Cordemais plant, with a net book value of €0.1 billion, is due to cease operations in 2026 at the latest (its operating lifetime has been extended by the French government).

EDF is modernising its fleet of natural gas CCGT plants (Blénod, Martigues, Bouchain) to reduce air emissions of CO₂, NO_x and SO₂. The Bouchain plant in particular produces CO₂ emissions of around 360g/kWh on average. This fleet of plants has a net book value of €1.0 billion, and their operating lifetimes are due to end between 2036 and 2041.

In France's **island territories**, electricity is principally generated by an oil-fired fleet with net book value of €1.3 billion at 31 December 2024 (€1.6 billion at 31 December 2023), and to a smaller degree by hydropower and other renewable energy plants. On 4 October 2023, EDF announced that it would be moving to carbon-free electricity generation for all island territories under its responsibility by 2033, by converting the thermal power plants presently located there so they can be run on bioliquid instead of fossil fuels (the Port Est plant was converted to liquid biomass on 4 December 2023, and the Group is planning to convert the Lucciana plant in Corsica in late 2025).

In **Belgium**, Luminus has a thermal fleet made up of several power plants (both combined cycle and open cycle). The new CCGT plant at Seraing was selected under the Capacity Remuneration Mechanism (CRM). This new plant will be a gas-steam turbine (GST) type plant with total capacity of approximately 870MW. Work started in autumn 2022 and commissioning is scheduled for the second half of 2025.

In **Italy**, Edison's thermal fleet consists of 14 CCG (Combined-Cycle Gas) plants. In keeping with the "National plan for energy and the climate" supporting development of gas-based electricity generation and its integration with renewable energy generation, Edison commissioned the first new-generation CCG plant at the Marghera Levante site (780MW), and a 760MW greenfield project at Presenzano, using the same technology, with a more moderate environmental impact (CO₂ emissions 40% below the national average, and a 70% reduction in NO_x emissions). The combined net book value of these two plants is €1.4 billion, and they account for approximately 65% of the total net book value with an operating lifetime currently set at 25 years. The operating lifetimes of the other CCG plants are currently scheduled to end before 2037.

20.3 Sustainable financing

20.3.1 Green Bonds

Since 2013 the Group has issued Green Bonds for a value equivalent to €16.4 billion, of which €12.2 billion were still outstanding at 31 December 2024. The Group's financing framework for green bonds (the Green Financing Framework) includes financing of eligible projects that meet the European Taxonomy criteria. In 2022, the Green Financing Framework was reviewed by an independent body which confirmed that it respects best practices on the Green Loan market (the Green Loan Principles, published by the Loan Syndications and Trading Association).

In 2024, EDF has issued several green bonds to finance distribution networks, the existing nuclear fleet and renewables projects for an amount of €5,082 million including two hybrid emissions for €1,150 million and £500 million.

Allocation of the funds raised by EDF's Green Bond issues is certified by one of the statutory auditors (see section 6.7 of the 2023 Universal Registration Document). This certification can be consulted on the EDF website's sustainable development page.

20.3.2 Social bonds (social hybrid notes)

On 26 May 2021 EDF launched an issue of Euro-denominated perpetual social hybrid notes with total nominal value of €1.25 billion and a first redemption date in 2028.

The proceeds were used to finance eligible projects, as defined in the EDF group's Social Bond Framework. These projects include investment expenditure by EDF in Small and Medium-Sized Enterprises (SMEs) that contribute to the development and maintenance of electricity generation and distribution assets in Europe (including the United Kingdom).

The Social Bond Framework's compliance with the Social Bond Principles published by the International Capital Markets Association (ICMA) has been validated by an independent body.

20.3.3 Bilateral green loans

EDF has signed bilateral green loans with several major international banks since 2022. Their total amount is €6.2 billion, including €5.2 billion signed in 2024. These funds are dedicated to refinancing investments in existing nuclear reactors in France in connection with extension of their operating lifetimes as defined in EDF's Green Financing Framework⁽¹⁾.

20.3.4 Credit lines indexed on sustainability criteria

The EDG group has 22 renewable bilateral credit lines and two syndicated credit facilities indexed on the Group's sustainable development performance (incorporating a cost adjustment mechanism for financing costs):

- a €6 billion syndicated credit facility with more than 36 banks, with five-year maturity, renewable for two additional 1-year periods. The margin is adjusted based on three environmental key performance indicators. This facility, set up in November 2024, replaces the previous syndicated credit lines of €4 billion and €1.5 billion.
- 21 renewable bilateral credit lines indexed on sustainability criteria. The margins are adjusted based on the Group's performance on KPIs selected with the banks.

At 31 December 2024, undrawn renewable credit lines (including syndicated credit facilities) indexed on sustainability criteria totalled €11.7 billion, or 82% of the EDF group's total undrawn credit lines (see note 18.4). In 2024, the Group respected the required indicators.

20.4 Low-carbon investments

In 2024, the Group continued its programme of operating investments, which amounted to €26.4 billion (€21.4 billion in 2023, see notes 4 and 10.7) and included €24.8 billion of gross investments in intangible assets and property, plant and equipment (€21 billion in 2023) and €1.6 billion of gross financial investments (€0.4 billion in 2023).

In 2024, nearly 94% of the Group's investments were in low-carbon technologies (€24.8 billion, comprising 64% in the nuclear sector, 23% in network activities, 11% in renewable energies (solar, wind, hydropower) and 2% in energy services). These investments cover the gross increases in tangible assets, intangible assets and right-of-use assets (IFRS 16 leases), including assets resulting from business combinations in the consolidated financial statements (first consolidation of a subsidiary). They do not include the effects of deconsolidation, financial investments by the Group in entities accounted for by the equity method, or investments made by such entities, and investment subsidies are eliminated.

59% of the Group's investments in 2024 were aligned with the European Green Taxonomy (64% in 2023). These investments totalled €15.6 billion, including 26% in the nuclear sector in the European Union, 22% in network activities, and 10% in renewable energy generation facilities (solar, wind, hydropower). These indicators do not include the following activities, which are non-eligible under the Taxonomy but are considered low-carbon by the Group: nuclear activities outside the European Union (EDF's nuclear activities in the United Kingdom), and activities associated with nuclear power generation such as Framatome's and Arabelle Solutions' activities of design, construction and supply of nuclear power plant equipment. Without these restrictions, 94% of the Group's investments for all activities would be taxonomy-aligned.

(1) According to the Life Cycle Analysis of EDF's nuclear kWh, published by EDF in 2022 and reviewed by independent experts: https://www.edf.fr/sites/groupe/files/2022-11/edfgroup_acv-4_plaquette_2022111_en.pdf

20.5 Expenses to address sustainability issues

ACCOUNTING PRINCIPLES AND METHODS

Other expenses for protection of the environment and climate are identifiable expenses incurred to prevent, reduce or repair damage that has been or may be caused by the Group as a result of its activities. These expenses are treated as follows:

- they are capitalised if they are incurred to prevent or reduce future damage or protect resources (e.g. expenses for structures to facilitate the passage of migrating fish, effluent treatment installations, etc.);
- they are booked as environmental liabilities and increases to provisions for environmental risks if they correspond to an obligation that exists at the year-end and it is probable or certain at the closing date that they will lead to an outflow of resources;
- they are recognised as expenses if they are operating expenses for the units in charge of environmental concerns, environmental supervision, environmental duties and taxes, processing of liquid and gas effluents and non-radioactive waste, or research unrelated to an investment.

All of the Group's functions, employees, activities and projects are mobilised to fulfil EDF's objective of being an environmentally responsible company. Some of the actions concerned are presented below.

20.5.1 Research and development (R&D) expenses

Given the goal of carbon neutrality by 2050, and the fact that electricity is a major lever in action to decarbonise the French economy, R&D has a crucial role to play in the electricity, climate, digital and societal transition.

In 2024, the EDF group's total R&D expenses amounted to €752 million, comprising €533 million for EDF SA's R&D, and expenditure for separate R&D by certain subsidiaries, principally Framatome, Arabelle Solutions, EDF Energy and Edison.

In France, the entire EDF's R&D expenses is dedicated to achieving the net zero goal, and the energy system transition.

The R&D budget is particularly channelled into research into energy efficiency, uses of electricity as a substitute for fossil fuel-based energies, renewable energies and their insertion into the grid, energy storage and production, carbon-free hydrogen and its applications for decarbonising the economy, sustainable cities, the local impacts of climate change and other environmental issues such as biodiversity, water quality, and the mitigation of all forms of pollution.

Research concerning electricity storage, enhancement of energy performance diagnosis methods, improvement of techniques for urban heating and cooling networks, platforms for sharing studies relevant to the ecological transition, and increasing safety at nuclear power plants is supported by public subsidies, notably from the European Union.

20.5.2 Other expenses to address sustainability issues

Action for biodiversity

The EDF group has been committed to action for biodiversity since 2006 with a dedicated policy, and today its biodiversity ambitions are reflected in formal commitments made through two initiatives, *Entreprises engagées pour la nature* (Committed companies for nature) and "Act4nature international". These voluntary commitments cover some twenty actions to reduce contributions to major pressure points on biodiversity (as identified by IPBES, the biodiversity equivalent of the IPCC), recreate biodiversity-friendly spaces and conditions, further improve and share knowledge, strengthen biodiversity governance and raise employee awareness.

In addition to these commitments, between 2014 and 2024, the Group undertook more than 70 operations through EDF Hydro and its hydropower activities for a cumulative total investment of €126 million (including subsidies received for all the operations), to facilitate fish migration at ecologically sensitive sites in mainland France ("list 2" sites for the purposes of the "national law on water and aquatic environments"), installing fish passes and fish ladders and removing river weirs.

Adaptation of nuclear plants

To adapt France's current and future nuclear power plants, in addition to work on safety and security in compliance with regulations and ASN recommendations, EDF has established a plan to adapt its facilities and their operations. The ADAPT project is part of a systemic approach for analysing the resilience of all ecosystems, natural or socio-economic, which are decisive for generation capacity.

This plan considers that climate change is systemic and evolving. Among other things, the analyses conducted are a basis for:

- imagining the climate futures of different areas and regions over different time horizons;
- improving the level of protection for the group's installations against unforeseeable natural events, through better quantification of their extreme versions;
- reducing the environmental impact of the Group's facilities;
- identifying innovative solutions, for example for recovering evaporated water from cooling towers, and testing the most promising ideas on site in the near future.

The increasing pace of climate change is also leading the Group to reinforce its R&D and engineering capacities, by increasing the number of people hired with key skills in all the related areas: climatology, hydrogeology, environmental matters, and of course technical engineering.

20.6 EDF, a responsible investor

EDF promotes innovation to contribute to the achievement of the net zero objective, by investing in startups and venture capital funds dedicated to innovation (the EDF Pulse Ventures programme), and by developing intrapreneurial projects (the EDF Pulse Incubation programme). The Group has formed several subsidiaries for these purposes, such as Hynamics, a company that produces and sells low-carbon hydrogen produced by water electrolysis to meet the needs of the heavy-duty transport industry and Oklima, a subsidiary of the EDF group specialising in carbon contribution which develops projects that contribute to carbon sequestration and to the reduction of greenhouse gas emissions.

The Group's *raison d'être* is also expressed in the management policy for its portfolio of dedicated assets held to finance long-term nuclear expenses in France (realisable value of €40.3 billion at 31 December 2024), and its responsible investor's charter introduced in 2020, which has three focal points (compliance with the United Nations' Principles for Responsible Investment; respect of the major international agreements on human rights; and annual reporting on responsible investments). This charter is applicable both to assets managed directly and assets managed by specialist companies under delegated management arrangements.

In 2024, a review was conducted of these delegated management companies' compliance with the United Nations' Principles for Responsible Investment and the major international agreements, and for climate risks, a carbon emission assessment was established for listed and unlisted assets. The climate scenarios incorporated into risk/return studies of dedicated assets were analysed in accordance with the recommendations of the NGFS (Network for Greening the Financial System), to assess the risk of nuclear provisions being underfunded in the event of a climate stress scenario that could affect the value of dedicated assets, depending on different time horizons. Additionally, projections of the portfolio's carbon emissions were calculated for each of the climate scenarios analysed.

Carbon emissions by EDF Gestion's listed investments are close to their benchmark levels, and emissions by the listed companies' bonds were below benchmark thanks to active portfolio management.

For unlisted dedicated assets, EDF is committed to integrating environmental, social and governance (ESG) considerations, notably by encouraging its partners and the management of directly-owned assets to introduce carbon reviews, define net-zero emission objectives for 2050 and action plans to achieve them, and undertake a climate risk assessment.

The Group's captive insurance company Wagram became a signatory to the United Nations' Principles for Sustainable Insurance (PSI) in 2024.

20.7 Mobilisation of Group employees and executives on sustainability issues

Sustainability performance-related remuneration for Group executives

In line with EDF's aim to promote integrated performance based on both finance and CSR, the annual variable salary of the Group's senior executives is also based on financial and non-financial environmental and social criteria that can represent up to 21% of their remuneration. They consist of climate and social criteria.

For certain Group executives, the long-term remuneration (3-year plan) also depends on financial performance plus non-financial criteria. These criteria account for 30% of the variable remuneration, up from the previous 20%.

Vehicle fleet electrification

As the first French Group to sign the EV100 initiative, EDF made a commitment to have a fully-electric light vehicle fleet by 2030. By the end of 2024 the worldwide fleet numbered more than 48,000 light vehicles (especially in Europe) and 35.6% were already electric (over 17,150 electric vehicles, an increase of more than 3,450 from 2023). Joining the EV100 initiative is also an encouragement for Group employees to control their energy consumption and reduce their carbon footprint, as it gives them access to competitive offers from car suppliers and offers for recharging services sold by EDF group subsidiaries.

For 2024, the vehicle fleet electrification indicator accounted for 9.6% of Enedis' profit share criteria. Under EDF SA's new profit share agreement effective from 2024, the level of use of EDF SA's electric light vehicles accounts for 7.5% of profit share criteria.

Note 21 *Contingent liabilities and assets*

ACCOUNTING PRINCIPLES AND METHODS

A contingent liability is:

- a potential obligation arising from past events, which will only be confirmed by the occurrence (or non-occurrence) of one or more uncertain future events that are not completely within the entity's control, or
- a present obligation arising from past events that is not recognised in the financial statements because an outflow of resources representing economic benefits is unlikely to be necessary to extinguish the obligation, or because the amount of the obligation cannot be measured reliably.

A contingent asset is a potential asset arising from past events, whose existence will only be confirmed by the occurrence (or non-occurrence) of one or more uncertain future events that are not completely within the entity's control.

The principal contingent liabilities and assets at 31 December 2024 are the following:

21.1 Tax inspections

EDF

The French tax authorities questioned the tax-deductibility of certain long-term nuclear liabilities for the years 2012-2021. The Paris Administrative Appeal Court issued a ruling on 5 July 2024 that was identical to the original first-instance ruling on all points: it validated EDF's position for one of the contested provisions, but upheld the tax adjustment for the other. This decision has no financial impact for EDF, as the Company had already paid €297 million in 2022 in execution of the original ruling. The Company has filed an appeal before the Court of Cassation against the unfavourable part of the new ruling, and the Minister concerned has done the same regarding the part of the ruling that was favourable to the Company.

EDF International

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

In judgements of 2 July 2019 for the period 2009 - 2013 and 30 January 2020 for the year 2014, Montreuil Administrative Court confirmed the tax reassessments. EDF International therefore paid the tax in execution of these decisions, but also appealed against them. In a ruling of 25 January 2022, Versailles Administrative Court found in favour of EDF International and cancelled the first-instance judgements, thus nullifying the notified reassessments. In early 2022, EDF International received a full refund of the amounts it had paid. In a decision of 16 November 2022, the Council of State overturned the Administrative Court's ruling and sent the case back to be rejudged before the same court. In application of this decision, EDF International repaid the full amount previously received.

On 28 November 2023, the Administrative Court dismissed the new arguments put forward by EDF International, which lodged an appeal against this decision before the Council of State in late January 2024.

21.2 ARENH dispute – *Force majeure*

In the crisis caused by the Covid-19 pandemic, some suppliers requested total suspension of their ARENH deliveries, and/or partial suspension to the extent of the decrease in electricity consumption by their customer portfolio during the crisis, citing the *force majeure* clause contained in the master ARENH agreement signed with EDF.

Seven cases concerning the substance of the matter were brought by suppliers, claiming compensation from EDF for the prejudice caused by its allegedly unlawful refusal to apply the *force majeure* clause. The suppliers concerned were Hydroption, Vattenfall, Priméo Energie Grands Comptes and Priméo Energie Solutions, Arcelor Mittal Energy, Plüm Energy et Entreprises et Collectivités, TotalEnergies and Ekwater.

Of the seven cases, four are now closed, and the three still ongoing concern Hydroption, TotalEnergies and Ekwater.

On 13 April 2021, the Paris Commercial Court issued a first judgement on the merits in the Hydroption case, ordering EDF to pay the claimant €5.88 million in damages. On 15 October 2021, the Paris Court of Appeal overturned the Commercial Court's judgement, considering that the exemption clause of *force majeure* was not established, and that EDF was not obliged to satisfy a request for suspension of the contract. On 2 December 2021, the Toulon Commercial Court placed Hydroption SAS in liquidation. The liquidator filed an appeal before the Court of Cassation on 19 January 2022. In a ruling of 22 March 2023, the Court of Cassation overturned and cancelled all the terms of the Paris Court of Appeal's verdict, solely on procedural grounds, and sent the case back before that Court. On 24 June 2024, the Paris Court of Appeal cancelled the Commercial Court's judgement and dismissed Hydroption's claims for compensation. On 8 November 2024, the liquidator took the case to the Court of Cassation.

In the cases brought by TotalEnergies and Ekwater, on 30 November 2021 the Paris Commercial Court issued two judgements on the merits ordering EDF to pay damages of €53.9 million to TotalEnergies and €1.8 million to Ekwater. EDF appealed against these two judgments. The case is to be heard by the Paris Court of Appeal on 20 March 2025.

21.3 Edison

Environmental agreement with ENI

On 31 July 2023 Edison and ENI signed an agreement concerning the industrial sites contributed to Enimont in 1989. The main purposes of this agreement are: i) to put an end to the litigation cases pending before the Milan Court of Appeal and prevent all further litigation on similar matters that could arise in future; ii) to define a mutual framework for conduct in environmental matters relating to these sites and resolve the environmental issues resulting from past pollution, on a 50/50 basis.

This agreement marked a major turning point in local regeneration and restoration activities for places like the sites it covers, which were significantly affected by the industrialisation processes of the last century.

Following the signature of the agreement, Edison established a provision of €430 million at 31 December 2023. An additional provision of €587 million was recorded at 31 December 2024, based on new technical and legal assessments of the actions taken or to be taken together with ENI in the next few years (see note 17.2). Future costs estimates are underway.

In 2024, Edison formed a new company Edison Regea S.r.l. to act as operational facilitator for execution of the agreement and generally coordinate all the Edison group's environmental activities.

Mantua - criminal proceedings

The Public Prosecutor's Office of Mantua decided to initiate criminal proceedings on the basis of Legislative Decree 231 of 2001, against certain executive directors working or having worked for Edison since 2015 and some of Edison's representatives for alleged environmental offences claimed to have occurred in certain areas of the Mantua petrochemical plant. These orders of the Province of Mantua were confirmed by the Council of State's ruling of April 2020 as described below. These proceedings are ongoing.

The Mantua petrochemical plant - which Edison (as the successor of Montedison) has not owned or managed since 1990 - is subject to a large-scale and complex programme of environmental clean-up and restoration activities which also concerned all of the areas targeted by the proceedings initiated by the Public Prosecutor. The ENI group has begun implementation of the programme. Since the clean-up projects were transferred to Edison in June of 2022 following the above-mentioned ruling of the Council of State, Edison is carrying out many of these activities.

Mantua - environmental proceedings

Over the past few years, the Italian province of Mantua notified Edison of eight orders to rehabilitate the land and the whole Mantua petrochemical site sold by Montedison to the ENI group in 1990, despite two settlement agreements concerning these environmental issues signed by ENI and the Italian Ministry for the Environment.

Edison appealed against all these orders before the Brescia Division of the Lombardy regional administrative court, but lost its appeal in August 2018. Edison then took the matter to the Italian Council of State, which rejected Edison's appeal in a ruling of 1 April 2020 confirming the first-instance decisions. Edison pursued its appeal before the ECHR, and the proceedings are ongoing. However, as mentioned above, Edison has already begun cleanup work on the site, taking over from the previous operators and conducting a series of tenders.

Sale of Ausimont (site of Bussi)

Several legal actions before the civil, administrative and criminal courts were begun following the sale by Edison of the Ausimont SpA industrial complex to Solvay Solexis SpA in 2002. The following proceedings are still ongoing:

Administrative cases

- On 28 February 2018, the Province of Pescara notified Solvay Speciality Polymers Italy SpA (formerly Solvay Solexis SpA) and Edison SpA of the launch of an administrative procedure to determine who was responsible for the pollution of the land outside the industrial complex belonging to Ausimont SpA which had been sold. The Province also ordered Edison to remove waste that was on the land concerned. Edison first appealed against this order before Pescara regional administrative court, and then before the Italian Council of State. In April 2020 the Council of State rejected the claim and Edison, considering the ruling unfair and unlawful, filed applications for its annulment before the Italian Court of Cassation, the Italian Council of State and the European Court of Human Rights (ECHR). The application before the Council of State has been rejected, while the case before the ECHR is still in process.
- Edison has nonetheless begun work to make the site safe in agreement with the competent Public Administrations.

Arbitration

- In 2012, arbitration proceedings were launched by Solvay SA and Solvay Specialty Polymers Italy SpA (the purchaser of Ausimont) for violation by Edison of the representations and warranties in environmental matters concerning the Bussi and Spinetta Marengo sites contained in the sale agreement.
- At the end of June 2021, the Arbitral Tribunal issued a partial award, largely accepting the claims by Solvay Specialty Polymers Italy in relation to the environmental warranties given by Montedison under the Ausimont sale agreement signed in 2001. The Tribunal ordered Edison to pay compensation of €91 million for the period from May 2002 (closing date) to December 2016. This sentence was issued with one dissenting opinion by a member of the Arbitral Tribunal.
- Edison's appeal against this award to the Swiss federal court of Lausanne was rejected in January 2022. The enforcement proceedings before the Milan Court of Appel ended on 24 January 2023 when Edison's action was dismissed, making the Arbitral Tribunal award enforceable. Edison has appealed before the Court of Cassation, and no hearing date has yet been set.
- The Arbitral Tribunal postponed quantification of the damages suffered by Solvay Specialty Polymers Italy in the period after December 2016 and the legal fees incurred by the parties to a further phase of the arbitration, unless the parties were able to reach an agreement in this respect. A hearing was held in September 2023 and the Tribunal's final decision was notified to the parties on 20 January 2025: Edison was ordered to pay approximately €90 million of additional compensation to Solvay Specialty Polymers Italy which has been provisioned.

Two civil cases:

- On 8 April 2019, the Italian Ministry for the Environment, the Abruzzo region and the President of the Council of Ministers brought a civil action against Edison, claiming damages for environmental contamination. A court-ordered technical report was received in December 2024, and Edison submitted its arguments in response to the Court. The time limit for concluding these proceedings is unknown, and they are still ongoing.
- In 2023, a similar civil action was brought by the town of Bussi sul Tirino, claiming damages for the prejudice allegedly suffered as a result of pollution in the zone. The debates are currently in the introductory phase.

21.4 Investigations by France's Competition Authority (ADLC)

Since 31 December 2024 France's Competition Authority (the ADLC) has been investigating the EDF group in relation to two separate matters (the Plüm complaint, the Xélan complaint). These proceedings are ongoing.

21.5 Inframarginal revenue cap in Belgium

In Belgium, the inframarginal revenue cap applicable from 1 August 2022 to 30 June 2023 is currently being challenged before the courts, notably on the grounds that it is unconstitutional and violates international treaties. This revenue cap was introduced as part of the European mechanism for capturing inframarginal rents on electricity production, adopted by the European Union on 6 October 2022. This challenge is currently under examination by the European authorities.

21.6 Litigation with E-Pango

On 14 December 2023 the alternative energy supplier E-Pango filed a claim against EDF, RTE and Enedis before the Paris Commercial Court for full compensation of the prejudice allegedly caused by the termination of its Balance Responsible Entity agreement with RTE. Following that termination E-Pango's authorisation to purchase electricity for resale was suspended, and as a result its customers were switched to a fallback contract with EDF as the temporary supplier.

E-Pango considers that its agreement with RTE was wrongfully terminated, and argues that it was a deliberate exclusion strategy by RTE, with the support of Enedis, for the benefit of EDF.

E-Pango is therefore claiming full compensation for its prejudice, valued at approximately €150 million based particularly on the end of its supply business, and the loss of the economic value of its competitive position.

In parallel, E-Pango filed a complaint with France's Competition Authority, which declared in a decision of 7 September 2023 that it was not competent to rule on the unfair practices alleged by E-Pango. E-Pango lodged an appeal against this decision before the Paris Court of Appeal.

The hearing before the Paris Commercial Court took place on 27 May 2024. EDF (like Enedis and RTE) requested postponement of the decision pending the verdict of the Paris Court of Appeal. On 2 July 2024 the Paris Commercial Court issued its ruling ordering postponement of the decision.

21.7 Compensation claim by ENGIE

On 13 June 2024 ENGIE brought a claim before the Paris Commercial Court against EDF and its subsidiaries Dalkia, Dalkia Smart Building, Citelum and IZI Confort, seeking reparation for the prejudice allegedly suffered as a result of practices sanctioned by the Competition Authority in its decision 22-D-06 of 22 February 2022.

EDF firmly disputes the validity of ENGIE's claim. The Commercial Court proceedings are still ongoing.

21.8 Consultancy contracts - Criminal investigation

On 28 July 2016, the French Court of Accounts sent the National Financial Prosecutor's Office its report on EDF's procurement policy. The National Financial Prosecutor's Office then opened a preliminary investigation which was conducted by the Economic Crime Unit of the police (*Brigade de répression de la délinquance économique* or BRDE). In October 2023, Henri Proglio, Alain Tchernonog and EDF received summons to appear in court between 21 May and 13 June 2024 on charges of favouritism in the hiring of external consultants (14 consultants). EDF argued that the case is time-barred, and contested the charges.

At the end of the hearing, the Prosecution asked the judge to give Henri Proglio a 2-year prison sentence and a €200,000 fine, and to sentence EDF to a €1 million fine. They did not request the additional penalty of exclusion from public procurement procedures.

In the verdict announced on 30 September 2024, the Paris Court acquitted EDF and all the defendants.

21.9 Labour litigation

EDF and its subsidiaries are party to a number of labour lawsuits. The Group considers that none of these lawsuits, individually, is likely to have a significant impact on its results or financial position. However, because they relate to situations that could concern a large number of EDF's employees in France, any increase in such litigations could have a potentially negative impact on the Group's financial position.

Additionally, EDF and its subsidiaries in France regularly undergo inspections by social security bodies such as URSSAF.

21.10 Arbitration proceedings against Venture Global

In 2017, Edison signed a contract with the American company Venture Global LNG Inc to import liquefied natural gas from the United States. Deliveries were to start in 2023.

In breach of its contractual obligations, Venture Global has still not started to make the agreed volumes available to Edison, having chosen instead to sell this gas to other parties on the short-term wholesale market.

In response to this decision, in May 2023 Edison began arbitration proceedings against the American company, claiming compensation of some \$1,500 million. The hearing before the London Court of International Arbitration took place in October 2024 and the decision is still pending.

21.11 Litigation concerning defective electricity meters

On 30 July 2024 Enedis initiated legal action before Nanterre Commercial Court against the meter manufacturer Itron, claiming compensation of approximately €113 million due to defects observed in 2022 on certain electricity meters supplied to Enedis' small and medium business customers.

Note 22 Off-balance sheet commitments

This note presents off-balance sheet commitments given and received by the Group at 31 December 2024. The amounts of commitments correspond to non-discounted contractual values.

22.1 Commitments given

The table below shows off-balance sheet commitments given by the Group that have been valued. Other commitments are described separately in the detailed notes.

(in millions of euros)	Notes	31/12/2024	31/12/2023
Operating commitments given	22.1.1	70,464	64,201
Investment commitments given	22.1.2	17,984	17,605
Financing commitments given	22.1.3	6,004	6,043
TOTAL COMMITMENTS GIVEN		94,452	87,849

In almost all cases, these are reciprocal commitments, and the third parties concerned are under a contractual obligation to supply the Group with assets or services related to operating, investment and financing activities.

22.1.1 Operating commitments given

Operating commitments given by the Group are as follows:

(in millions of euros)	31/12/2024	31/12/2023
Fuel and energy purchase commitments ⁽¹⁾	45,895	43,548
Operating contract performance commitments given	24,222	20,103
Operating lease commitments as lessee	347	550
TOTAL OPERATING COMMITMENTS GIVEN	70,464	64,201

(1) Excluding gas purchases and related services

22.1.1.1 Fuel and energy purchase commitments

In the course of its ordinary generation and supply activities, the Group has entered into long-term contracts for purchases of electricity, gas, other energies and commodities and nuclear fuel, for periods of up to 20 years.

The Group has also entered into long-term purchase contracts with a certain number of electricity producers, by contributing to the financing of power plants.

At 31 December 2024, fuel and energy purchase commitments mature as follows:

(in millions of euros)	31/12/2024					31/12/2023
	Maturity					Total
	Total	< 1 year	1 to 5 years	5 to 10 years	> 10 years	
Electricity purchases and related services	30,548	4,216	8,392	6,951	10,989	29,142
Other energy and commodity purchases ⁽¹⁾	413	103	158	152	-	390
Nuclear fuel purchases	14,934	2,331	6,482	4,498	1,623	14,016
FUEL AND ENERGY PURCHASE COMMITMENTS	45,895	6,650	15,032	11,601	12,612	43,548

(1) Excluding gas purchases and related services (see note 22.1.1.1.4).

22.1.1.1 Electricity purchases and related services

Electricity purchase commitments at 31 December 2024 mainly concern EDF Energy and EDF. In the case of EDF many of these commitments are borne by the Island Energy Systems (SEI), which have made commitments to purchase the electricity generated using bagasse and coal.

The change over the year is mainly explained by a rise in the volume of purchase commitments at EDF (Island energy systems) driven by new contracts, and a positive foreign exchange effect at EDF Energy, partly offset by a decrease in projected electricity prices and volumes contracted by EDF Energy.

In addition to the obligations reported above and under Article 10 of the Law of 10 February 2000, in mainland France, EDF is obliged, at the producer's request and subject to compliance with certain technical features, to purchase the power produced by co-generation plants and renewable energy generation units (wind turbines, small hydro-electric plants, photovoltaic power, etc.). The additional costs generated by this obligation are offset, after validation by the CRE, by the CSPE. These purchase obligations total 48TWh for 2024 (50TWh for 2023), including 5TWh for co-generation (5TWh for 2023), 20TWh for wind power (23TWh for 2023), 15TWh for photovoltaic power (14TWh for 2023) and 2TWh for hydropower (2TWh for 2023).

22.1.1.2 Other energy and commodity purchases

Purchase commitments for other energies and commodities mainly concern purchases of biomass fuel used by Dalkia in the course of its business.

22.1.1.3 Nuclear fuel purchases

Commitments for purchases of nuclear fuel arise from supply contracts for the nuclear plants intended to cover the EDF group's needs for uranium and fluorination, enrichment and fuel assembly production services.

22.1.1.4 Gas purchases and related services

Gas purchase commitments are principally undertaken by Edison and EDF. The volumes concerned for both entities at 31 December 2024 are as follows:

(in billions of m3)	31/12/2024				31/12/2023
	Total	Maturity			Total
		< 1 year	1 to 5 years	> 5 years	
Edison	101	12	42	47	112
EDF	51	2	13	36	52

Gas purchase contracts

Edison has entered into agreements to import natural gas from Libya, Algeria, Azerbaijan and Qatar, for a total maximum volume of 11.9 billion m³ per year. The residual terms of these contracts vary between 3 and 20 years.

In 2020, EDF signed a 5-year purchase contract for 0.5 billion m³ of gas per year from Norway.

In 2017 Edison signed a purchase contract for LNG from the United States (1 million tonnes per year, i.e. 1.4 billion m³ of natural gas, for a 20 - year term). Deliveries under this contract were due to start in 2023. As no deliveries of LNG have been made, Edison began arbitration proceedings against the supplier Venture Global before the London International Court of Arbitration (LCIA) (see note 21.10).

In 2014, EDF signed a contract for LNG imports from the United States, for an annual supply of 0.8 million tonnes of LNG (1 billion m³ of natural gas per year) over a 20-year period starting from May 2020. In 2020 EDF also signed a 20-year purchase contract for LNG from the United States (1 million tonnes per year, i.e. 1.4 billion m³ of natural gas). Deliveries under this contract are due to begin in 2026.

Some of these contracts contain "take-or-pay" clauses committing the buyer to pay for a minimum volume of gas every year, whether or not it actually takes delivery of that volume.

Gas-related service contracts

Under the contract with Terminale GNL Adriatico, Edison also benefits from approximately 80% of the terminal's regasification capacities until 2034.

Under the contract with the Dunkerque LNG methane terminal, EDF benefits from approximately 61% of the terminal's regasification capacities until 2037, in return for payment of an annual premium of approximately €150 million. A provision for onerous contracts has been recorded in connection with this contract (see note 17.2).

22.1.1.2 Operating contract performance commitments given

At 31 December 2024, these commitments mature as follows:

(in millions of euros)	31/12/2024				31/12/2023
	Maturity				Total
	Total	< 1 year	1 to 5 years	> 5 years	
Operating guarantees given	14,773	4,314	5,459	5,000	11,805
Operating purchase commitments ⁽¹⁾	9,307	4,928	3,480	899	8,116
Other operating commitments	142	51	78	13	182
OPERATING CONTRACT PERFORMANCE COMMITMENTS GIVEN⁽²⁾	24,222	9,293	9,017	5,912	20,103

(1) Excluding fuel and energy

(2) Including commitments given by controlled entities to joint ventures, amounting to €2,697 million at 31 December 2024 (€2,186 million at 31 December 2023).

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

Operating guarantees given at 31 December 2024 mainly consist of guarantees given by EDF Renewables in connection with its development projects, EDF, Edison and Framatome.

The change in these guarantees is essentially explained by EDFs takeover of €2 billion of parent company guarantees given to Arabelle Solutions customers, as part of its acquisition of GE Vernova's nuclear activities on 31 May 2024.

22.1.1.2.1 Operating guarantees given

Operating guarantees given are as follows:

(in millions of euros)	31/12/2024	31/12/2023
EDF Renewables	5,392	4,912
Edison	2,031	2,228
EDF	3,618	1,413
Framatome	971	977
EDF Energy	941	847
Other entities	1,820	1,428
TOTAL	14,773	11,805

22.1.1.2.2 Operating purchase commitments

Operating purchase commitments are as follows:

(in millions of euros)	31/12/2024	31/12/2023
EDF	3,316	3,294
Framatome	1,572	1,724
Enedis	1,066	1,029
Arabelle Solutions	1,364	-
EDF Renewables	832	673
EDF Energy	404	380
Other entities	753	1,016
TOTAL	9,307	8,116

22.1.1.2.3 Lease commitments as lessee

At 31 December 2024, lease commitments as lessee break down as follows:

(in millions of euros)	31/12/2024				31/12/2023
	Total	Maturity			Total
		< 1 year	1 to 5 years	> 5 years	
LEASE COMMITMENTS AS LESSEE	347	54	156	137	550

The only remaining off-balance sheet lease commitments are:

- Leases that are exempt from recognition in application of IFRS 16. The total amount concerned at 31 December 2024 is €105 million (€108 million at 31 December 2023);
- Leases of assets that have not yet been made available to the Group (principally real estate and LNG tankers under construction). The right-of-use assets and the lease liability will be recognised in the balance sheet when the leased asset is made available. The total amount concerned at 31 December 2024 is €242 million (€442 million at 31 December 2023). The decrease is notably due to the delivery of a tanker in December 2024.

22.1.2 Investment commitments given

At 31 December 2024, details of investment commitments are as follows:

(in millions of euros)	31/12/2024				31/12/2023
	Total	Maturity			Total
		< 1 year	1 to 5 years	> 5 years	
Commitments related to acquisition of tangible and intangible assets	16,865	11,052	5,456	357	16,065
Commitments related to acquisition of financial assets	908	71	837	-	1,247
Other commitments related to investments	211	148	17	46	293
TOTAL INVESTMENT COMMITMENTS GIVEN⁽¹⁾	17,984	11,271	6,310	403	17,605

(1) Including commitments given by controlled entities to joint ventures, amounting to €163 million at 31 December 2024 (€161 million at 31 December 2023).

22.1.2.1 Commitments related to acquisition of tangible and intangible fixed assets

The commitments related to acquisition of tangible and intangible fixed assets are as follows:

(in millions of euros)	31/12/2024	31/12/2023
EDF	5,268	4,820
EDF Energy	4,476	4,662
Enedis	4,229	3,089
EDF Renewables	920	1,995
PEI	911	557
Framatome	600	572
Other entities	461	370
TOTAL	16,865	16,065

Commitments related to acquisition of tangible and intangible fixed assets principally concern EDF SA (€5.3 billion, including commitments for the *Grand Carénage* industrial refurbishment programme, the 10-year plant inspections, and a small amount for the EPR 2 project), EDF Energy (€4.5 billion, mainly commitments related to HPC), and Enedis (€4.2 billion).

For the EPR 2 project, until the final investment decision is made, the amounts recorded in off-balance sheet commitments correspond to the unavoidable commitment for EDF, not the total value of the contracts signed.

The rise in 2024 in commitments given related to acquisition of tangible and intangible fixed assets is mainly explained by the renewal of Enedis' contract to supply cables and medium/low-voltage transformers that link the medium-voltage and low-voltage network, the launch by EDF of construction of the Ricanto bioenergy plant in Corsica, led by the subsidiary PEI (see the Group press release of 22 November 2024), and new contracts related to the programme of 10-year inspections of nuclear power plants. Conversely, commitments by EDF Renewables have decreased due to progress on projects that were under construction.

22.1.2.2 Commitments related to acquisition of financial assets

The increase in commitments related to acquisition of financial assets is principally attributable to EDF SA's commitment to invest in Nordic's logistics warehouses in Sweden and the Norwegian ferry operator Fjord1 in 2024. These operations relate to management of the dedicated assets held to secure financing of the Group's long-term nuclear obligations in France.

Some commitments related to acquisition of financial assets cannot be estimated. They mainly concern Belgium: Luminus signed an amendment to the shareholder pact on 26 October 2015. It contains a liquidity clause for the investments held by its minority shareholders, which could, in certain conditions under the control of EDF, result in sale of their shares through an IPO, or purchase of their shares by the Group at market value. This liquidity clause is valid at all times from 1 July 2018 to 31 December 2025.

Regarding the investment in EDF Investissements Groupe (EIG), C3 (a fully-owned EDF subsidiary) has a call option to buy the EIG shares held by NBI (Natixis Belgique Investissement, a subsidiary of the Natixis group) at a fixed price, exercisable at any time until August 2031. Meanwhile, NBI has a cash-settled put option to sell EDF all of its EIG shares for a fixed price, exercisable subject to certain conditions between May 2029 and August 2031.

Due to their features, in compliance with IAS 32, NBI's put option and C3's call option are considered as derivatives and their net value is included in the positive or negative fair value of trading derivatives. At 31 December 2024, the fair value of these trading derivatives is limited.

22.1.2.3 Other commitments related to investments

Other commitments given related to investments at 31 December 2024 mainly comprise guarantees given by EDF Norte Fluminense in connection with its 51% investment in Sinop Energia.

22.1.3 Financing commitments given

Financing commitments given by the Group at 31 December 2024 comprise the following:

(in millions of euros)	31/12/2024				31/12/2023
	Total	Maturity			Total
		< 1 year	1 to 5 years	> 5 years	
Security interests in real property	3,656	1,250	418	1,988	3,760
Guarantees related to borrowings	1,195	73	617	505	1,216
Other financing commitments	1,153	886	253	14	1,067
TOTAL FINANCING COMMITMENTS GIVEN⁽¹⁾	6,004	2,209	1,288	2,507	6,043

(1) Including commitments given by controlled entities to joint ventures, amounting to €1,540 million at 31 December 2024 (€2,113 million at 31 December 2023). These financing commitments to joint ventures mainly concern EDF Renewables and EDF Trading.

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

The guarantees given for borrowings are essentially guarantees provided by EDF Renewables for its project financing.

22.2 Commitments received

The table below shows off-balance sheet commitments received by the Group that have been valued. Other commitments received are described separately in the detailed notes.

(in millions of euros)	Notes	31/12/2024	31/12/2023
Operating commitments received ⁽¹⁾	22.2.1	13,841	9,466
Investment commitments received	22.2.2	532	206
Financing commitments received ⁽²⁾	22.2.3	15	13
TOTAL COMMITMENTS RECEIVED		14,388	9,685

(1) Excluding commitments related to supplies of energy and related services (see note 22.1.3).

(2) Excluding commitments related to credit lines, which are described in note 18.4.

22.2.1 Operating commitments received

Operating commitments received by the Group at 31 December 2024 comprise the following:

(in millions of euros)	31/12/2024				31/12/2023
	Total	Maturity			Total
		< 1 year	1 to 5 years	> 5 years	
Operating lease commitments as lessor	104	29	55	20	429
Operating sale commitments	11,885	3,258	5,727	2,900	7,098
Operating guarantees received	1,791	1,129	437	225	1,895
Other operating commitments received	61	41	19	1	44
OPERATING COMMITMENTS RECEIVED	13,841	4,457	6,238	3,146	9,466

22.2.1.1 Operating sale commitments

Operating sale commitments received exclude energy deliveries and principally concern firm orders made through contracts recorded on a percentage-of-completion basis at Framatome (construction and engineering contracts), EDF Renewables (agreements for operation services, maintenance services, and Development and Sale of Structured Assets), and Arabelle Solutions (equipment delivery contracts concerning turbines and alternators for nuclear power plants). The significant €4,787 million increase in these commitments is essentially attributable to inclusion of the order book of Arabelle Solutions (acquisition finalised on 31 May 2024) and the implementation of contracts signed by the Group for the Sizewell C nuclear plant project in the United Kingdom, which is accounted for by the equity method in the Group's financial statements from 31 December 2024 (see note 3.1.3).

22.2.1.2 Operating guarantees received

Operating guarantees received principally concern Framatome, and relate to supply and technical assistance contracts for EDF's nuclear power plants with guarantees received from suppliers, particularly in connection with ARENH deliveries.

22.2.1.3 Electricity supply commitments

In the course of its business, the EDF group has signed long-term contracts to supply electricity as follows:

- long-term contracts with a number of European electricity operators, for a specific plant or a defined group of plants in the French nuclear generation fleet, corresponding to installed power capacity of 3GW;
- in execution of France's "NOME" Law on organisation of the French electricity market, EDF has a commitment to sell some of the energy generated by its existing nuclear power plants to other suppliers, until 31 December 2025. This has concerned a maximum volume of 120TWh each year since enactment of the law of 16 August 2022 (see note 5.1.1).

22.2.2 Investment commitments received

(in millions of euros)	31/12/2024				31/12/2023
	Total	Maturity			Total
		< 1 year	1 to 5 years	> 5 years	
INVESTMENT COMMITMENTS RECEIVED	532	360	-	172	206

€345 million of the increase in investment commitments received relates to bonds received from a banking partner as a guarantee in a repurchase agreement concerning securities held by EDF.

22.2.3 Financing commitments received

(in millions of euros)	31/12/2024				31/12/2023
	Total	Maturity			Total
		< 1 year	1 to 5 years	> 5 years	
FINANCING COMMITMENTS RECEIVED	15	3	12	-	13

Note 23 Related parties

ACCOUNTING PRINCIPLES AND METHODS

Related parties include the French State, companies in which the State holds majority ownership and certain of their subsidiaries, and companies in which the EDF group exercises joint control or significant influence. They also include members of the Group's management and governance bodies.

Details of transactions with related parties are as follows:

	Associates and joint ventures		Joint operations		French State or State-owned entities ⁽¹⁾		Group Total	
(in millions of euros)	31/12/2024	31/12/2023	31/12/2024	31/12/2023	31/12/2024	31/12/2023	31/12/2024	31/12/2023
Sales	913	1,112	-	-	3,058	3,514	3,971	4,626
Energy purchases	4,038	4,218	2	2	3,547	2,893	7,587	7,113
External purchases	4	11	7	7	202	126	213	144
Financial assets	355	180	-	-	-	-	355	180
Other assets	724	952	-	-	659	672	1,383	1,624
Financial liabilities	-	-	-	-	1	-	1	-
Other non-financial liabilities	1,001	1,495	1	1	851	754	1,853	2,250

(1) Excluding tax and social liabilities and the CSPE liability.

23.1 Transactions with associates included in the scope of consolidation

Transactions with the principal associates (CTE (the company that owns RTE) and Taishan) are presented in note 12.

Transactions with other associates, joint ventures, and partner entities in joint arrangements with the Group mainly consist of sales and purchases of energy.

23.2 Relations with the French State and State-owned entities

23.2.1 Relations with the French State

Following the compulsory squeeze-out on 8 June 2023 and the purchase of treasury shares, the French State holds 100% of the capital of EDF at 31 December 2024, and is thus entitled in the same way as any majority shareholder to control decisions that require approval by the shareholders.

In accordance with the legislation applicable to all companies having the French State as their majority shareholder, the EDF group is subject to certain inspection procedures, in particular economic and financial inspections by the State, audits by the French Court of Auditors (*Cour des Comptes*) or Parliament, and verifications by the French General Finance Inspectorate (*Inspection générale des finances*).

The public service contract between the French State and EDF was signed on 24 October 2005. This contract is intended to form the framework for public service missions assigned to EDF by the lawmaker for an unlimited period. The Law of 9 August 2004 does not stipulate the duration of the contract.

23.2.2 Relations with ENGIE

Enedis and GRDF's common service function, defined by Article L. 111 - 71 of the French Energy Code, is not a legal entity in its own right. Enedis and GRDF are bound by an agreement that defines their relations within this common service function, its competences, and the resulting division of costs. The agreement has an unlimited term and can be terminated at any time subject to 18 months' notice: in such a case, the parties undertake to renegotiate the agreement during the notice period. It is updated regularly. In 2019, the Enedis-GRDF governance agreements were entirely reviewed. The Medical and Social Unit is last remaining joint body in the common function that serves both distributors (Enedis and GRDF).

Concerning the common service of LPG distribution and supply in the cities of Ajaccio and Bastia in Corsica, following adoption of article 96 of France's Finance Law for 2022, decree 2023-554 of 30 June 2023 introducing a simplified modification of Corsica's multi-year energy programme stipulated that the Corsican LPG networks would cease operations on 31 December 2038 and set out measures for progressive discontinuation of use from 2024.

Another decree, 2023-872 of 12 September 2023, defines the terms on which the State will bear part of the costs associated with conversion of the LPG networks to electricity or renewable energies. The tenders for the Ajaccio and Bastia concessions were reissued after failing to find a suitable bidder. Engie is preparing to submit offers, and the concessions should be awarded by the summer of 2025.

These developments have no impact for EDF at this stage, but once the concession renewals are finalised EDF will be required to work on some pilot sectors, to determine the schedule for progressive discontinuation of LPG use over the next 15 years. Ultimately, the prospect of ending LPG distribution operations and converting uses to electricity will need investments to reinforce the electricity distribution networks.

23.2.3 Relations with public sector entities

The EDF group's relations with public sector entities mainly concern Orano.

Transactions with Orano concern:

- the front-end of the nuclear fuel cycle (uranium supplies, conversion and enrichment services);
- the back-end of the nuclear fuel cycle (transportation, storage, processing and recycling services for spent fuel).

Front-end of the cycle

Several important agreements were negotiated between EDF and Orano:

- for supplies of natural uranium: Orano Mining contracts;
- for fluorination and enrichment of natural uranium into uranium 235: an Orano Chimie-Enrichissement contract.

Back-end of the cycle

Relations between EDF and Orano Recyclage concerning transportation, processing and recycling of spent fuels are described in note 15.1.1.1.

23.3 Management compensation

The Company's key management and governance personnel are the Chairman and CEO, the members of the COMEX (Executive Committee) throughout 2024 or since their date of appointment if they joined the COMEX during the year, and the Directors. Directors representing the employees receive no remuneration for their services.

The total compensation paid by EDF and controlled companies to the Group's key management and governance personnel amounted to €17.1 million in 2024 (€18.7 million in 2023 including long-term bonuses that were conditional on meeting performance criteria for 2022-2023). This amount covered short-term benefits (basic salaries, performance-related salary, profit share and benefits in kind), special IEG post-employment benefits where relevant, and the corresponding employer contributions, plus any director's fees.

EDF's key management and governance personnel benefit from no special pension system, starting bonus or severance payment entitlement except by contractual negotiation.

Note 24 Subsequent events

On 6 January 2025, EDF issued a \$1.9 billion senior bond in three tranches, for which settlement and delivery took place on 13 January 2025, and a \$500 million senior green bond, for which settlement and delivery took place on 20 January 2025 (see the Group press release of 6 January 2025).

Note 25 Statutory auditors' fees

The following table sets forth the fees paid for work done by the Statutory Auditors and their network during 2024:

(in thousands of euros)	PWC network		KPMG network	
	Amount (excluding taxes)	%	Amount (excluding taxes)	%
Audit -Statutory audit, certification, review of company and consolidated accounts				
EDF	3,399	15.4	2,553	10.2
Controlled entities ⁽¹⁾	10,907	49.3	15,757	63.1
Sub-total	14,306	64.7	18,310	73.3
Certification of sustainability reporting⁽²⁾				
EDF	1,000	4.5	1,000	4.0
Controlled entities ⁽²⁾	-	-	336	1.4
Sub-total	1,000	4.5	1,336	5.4
Other services⁽³⁾				
EDF	1,604	7.3	4,471	17.9
Controlled entities ⁽¹⁾	5,206	23.5	860	3.4
Sub-total	6,810	30.8	5,331	21.3
TOTAL	22,116	100.0	24,977	100.0

(1) Fully consolidated subsidiaries and jointly controlled entities whose auditors' fees are included in the consolidated income statement.

(2) The CSRD (Corporate Sustainability Reporting Directive) was transposed into French law in December 2023 and is applicable to the Group from the 2024 financial year (see note 20). Controlled entities are Edison and Électricité de Strasbourg, which publish their own sustainability reports.

(3) This covers services (other than audit and sustainability reporting certification services) required by laws and regulations, and services supplied at the request of the Group, mainly (i) certifications of financial and accounting information, (ii) issuance of comfort letters for the Group's financing operations, (iii) services relating to acquisitions or disposals of entities, (iv) tax services authorised by local legislation, and (v) operating process reviews and information system consulting services that are unrelated to the production of accounting and financial information.

Statutory Auditors' fees for 2023

(in thousands of euros)	PWC network		KPMG network		Deloitte network	
	Amount (excluding taxes)	%	Amount (excluding taxes)	%	Amount (excluding taxes)	%
Audit -Statutory audit, certification, review of company and consolidated accounts						
EDF	2,628	15.3	2,523	11.7	-	-
Controlled entities ⁽¹⁾	5,362	31.3	16,920	78.3	1,758	83.7
Sub-total	7,990	46.6	19,443	89.9	1,758	83.7
Non-audit services⁽²⁾						
EDF	1,302	7.6	1,181	5.5	-	-
Controlled entities ⁽¹⁾	7,849	45.8	996	4.6	343	16.3
Sub-total	9,151	53.4	2,176	10.1	343	16.3
TOTAL	17,141	100.0	21,620	100.0	2,101	100.0

(1) Fully consolidated subsidiaries and jointly controlled entities whose auditors' fees are included in the consolidated income statement.

(2) These are services required by laws and regulations, and services supplied at the request of the Group, mainly (i) certifications of financial and accounting information or Independent Reports on social, environmental and societal information required under Article L. 225 - 102 - 1 of the French Commercial Code, (ii) services relating to acquisitions or disposals of entities, (iii) tax services authorised by local legislation, and (iv) operating process reviews and information system consulting services that are unrelated to the production of accounting and financial information.



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