CREDIT OPINION
4 June 2024

Update

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RATINGS

Electricite de France

Domicile	Paris, France
Long Term Rating	Baa1
Type	LT Issuer Rating
Outlook	Stable

Please see the ratings section at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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Electricite de France

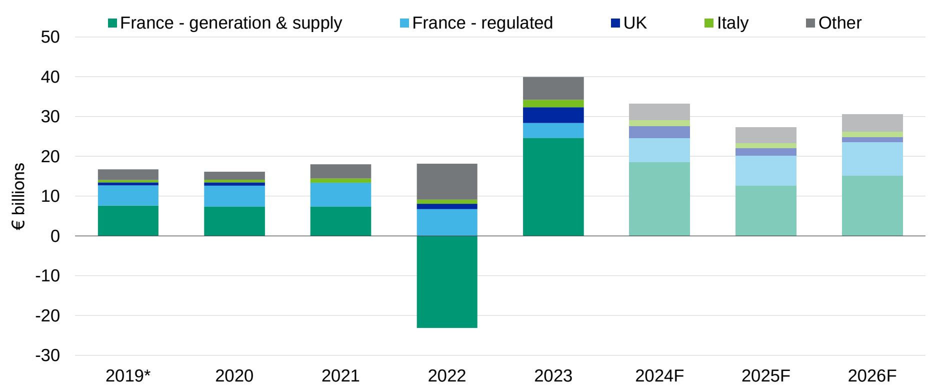
Update to credit analysis

Summary

Electricite de France's (EDF) credit quality is underpinned by the scale and breadth of its businesses across the energy value chain in France (Aa2 stable), which accounted for more than 62% of its EBITDA in 2023; the earnings contribution of its domestic regulated activities and renewables business, which together we expect to account for around 25% of group's EBITDA over 2024-26; and its geographical diversification, given its sizeable market positions in Italy (Baa3 stable) and the UK (Aa3 stable).

These positives are balanced against EDF's fixed-cost merchant power generation in France and the UK, which exposes it to volatile power prices; a significant capital spending programme; and the construction risk associated with the Hinkley Point C (HPC) new nuclear project in the UK, and to a lesser extent with the Flamanville new nuclear reactor in France, which is in commissioning stage, and which EDF expects to be fully operational by year end 2024.

Exhibit 1
Recovery in the performance of generation and supply businesses in France in 2023



*Application of IFRS 16 is from 2019.
All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. Periods are financial year-end unless indicated. Moody's forecasts are Moody's opinion and do not represent the views of the issuer.
Source: Moody's Financial Metrics™ and Moody's Ratings forecasts

The Baa1 rating incorporates three notches of uplift for potential extraordinary government support from the baseline credit assessment (BCA) of ba1, given the company's full ownership by the government of France. The uplift reflects our assessment of a high probability of extraordinary support from, and high default dependence with, the government.

Credit strengths

» Status as the leading electric utility in France

» Regulated activities and geographical diversification, which support cash flow stability

» Support from the French government, the sole shareholder after renationalisation

Credit challenges

» High volumes of fixed-cost merchant power generation in France and the UK, which increases EDF's exposure to power price volatility

» Earnings sensitivity to the incremental risks associated with an ageing nuclear fleet, resulting in longer outages and higher maintenance costs

» Significant capital spending programme which depresses free cash flow

» Construction risk associated with the HPC nuclear power plant project in the UK, and to a lesser extent with the Flamanville new nuclear reactor in France as it is in commissioning phase, supplemented with the development of six (potentially 14) new European pressurised reactors (EPRs) by 2050

» Regular political interventions because of affordability concerns, which could be detrimental to EDF's economic interests

Rating outlook

The stable rating outlook reflects our expectation that EDF's credit metrics will remain strong in the next 18-24 months, on the back of favourable market conditions and the gradual recovery in the French nuclear output.

Factors that could lead to an upgrade

Upward rating pressure is unlikely in the near term, given EDF's business mix, earnings exposure to volatile power prices and the nuclear fleet's availability, as well as its commitment to nuclear projects in the long term. Nevertheless, upward rating pressure could develop over time if the availability of the existing French nuclear fleet continues to improve on a sustained basis; we perceive that EDF can develop new nuclear plants on time and within budget, and that the French government would support the financing of the forthcoming construction; and EDF manages to deliver at least neutral free cash flow on a sustainable basis.

Factors that could lead to a downgrade

We could downgrade the ratings if EDF's credit metrics appear likely to remain persistently below the guidance for a ba1 BCA, namely funds from operations (FFO)/net debt in the mid-to-high teens in percentage terms; a change in the group's relationship with the French government were to cause us to remove the uplift for government support; or there were to be a significant downgrade of France's government rating.

Key indicators

Exhibit 2
Electricite de France

	2019	2020	2021	2022	2023	2024-26F
(CFO Pre-W/C + Interest) / Interest Expense	5.6x	7.0x	7.5x	-4.5x	8.2x	6x-8x
(CFO Pre-W/C) / Net Debt	19.4%	22.4%	20.3%	-18.7%	47.2%	28%-32%
RCF / Net Debt	18.6%	21.6%	19.5%	-19.6%	46.1%	27%-31%

These ratios do not take into account the fair value of EDF's stake in France's transmission network owner and operator RTE which is included in the company's dedicated assets.
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Sources: Moody's Financial Metrics™ and Moody's Ratings forecasts

Profile

With net installed generation capacity of 122.7 gigawatts (GW) as of 31 December 2023, Electricite de France (EDF) is one of Europe's largest integrated utilities, providing electricity generation, distribution and supply services. The group is organised along the following business lines:

» Generation and supply in France, where it is the dominant power generator and supplier

» Regulated supply in France, which primarily includes electricity distribution through its subsidiary, Enedis

» UK, through EDF Energy Holdings Ltd (EDF Energy, Baa3 stable), which is the country's largest generator operating the UK nuclear fleet

» Italy, where it is the third-largest generator through Edison S.p.A. (Edison, Baa3 stable)

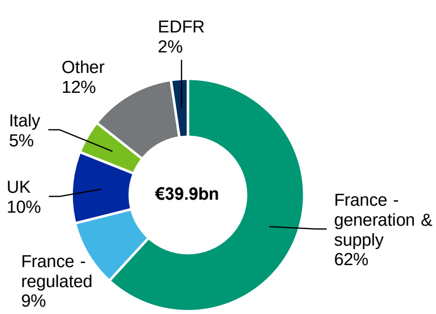
» Other international, which mainly consists of operations in Belgium, where Luminus is the second-largest electricity group

» EDF Renouvelables (EDFR), the group's wholly owned investment vehicle for renewables, excluding hydro

» Other several activities, which include Framatome, EDF Trading Limited (Baa3 stable) and energy services through Dalkia

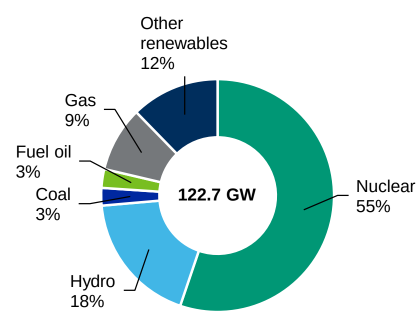
Following renationalisation, which closed in early June 2023, EDF is fully state-owned and delisted.

Exhibit 3
France accounts for 71% of EDF's EBITDA
EBITDA split by business segment in 2023



Sources: Company and Moody's Ratings

Exhibit 4
EDF's installed capacity includes mostly nuclear and hydro
Net consolidated capacity split by technology (2023)



Sources: Company and Moody's Ratings

Detailed credit considerations

After a strong rebound in 2023, we expect credit metrics to remain elevated but to decline over 2024-26, on the back of lower power prices and increasing capital spending

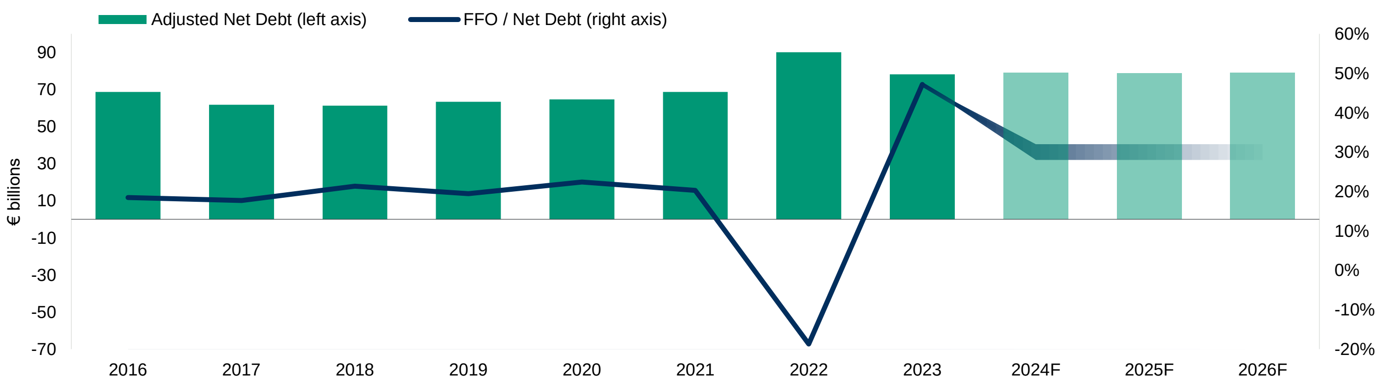
In 2023, EDF reported exceptional performance, achieving €39.9 billion in EBITDA, a significant improvement from a €5 billion EBITDA loss in 2022. The turnaround essentially resulted from the increase in nuclear power generation in France, along with higher achieved prices and the absence of negative regulatory measures introduced in 2022. In 2022, corrosion defects in the safety injection system circuit pipes of several French nuclear power plants had led to production shortfalls and forced outages. In 2023, nuclear production rebounded to 320.4 TWh, with a year-on-year increase of 41.4 TWh.

The 2023 performance also benefited from the absence of regulatory measures such as the 20 TWh increase in the ARENH (Accès régulé à l'électricité nucléaire historique) volume announced by the French government in January 2022. Such an intervention is an example of social risks related to affordability issues that are common to all utilities. The ARENH changes and lower-than-budgeted nuclear output had led to €37.3 billion of costs for EDF in 2022. The operational performances of other businesses also contributed to EDF's strong 2023 results, with the UK registering a good performance because of higher energy prices despite lower nuclear production.

As a result, Moody's adjusted net debt decreased to €78.2 billion in 2023 (after an increase of €21.4 billion in 2022), pushing EDF's Moody's adjusted FFO/net debt up to 47.2% from -18.7% in 2022 and 20.3% in 2021.

Exhibit 5

EDF's 2023 credit metrics recovered strongly after a very weak 2022, but are likely to deteriorate in 2024-26 as EDF faces lower power prices amid increasing capital spending



All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. Periods are financial year-end unless indicated. Moody's forecasts are Moody's opinion and do not represent the views of the issuer.
Source: Moody's Financial Metrics™ and Moody's Ratings forecast

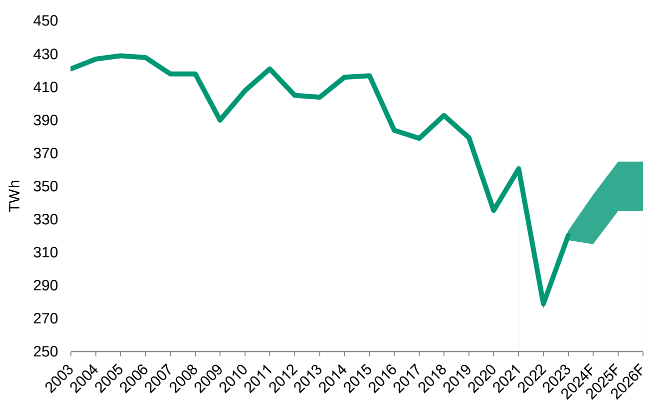
Over 2024-26, we expect EDF's credit metrics to remain strong at 28%-32%, compared with 42.2% in 2023. The decline will be because of power prices decreasing from their historical highs in a context of increasing capital spending. However, this should be balanced by the increase in nuclear production, with nuclear output targets of 315-345 TWh in 2024, 335-365 TWh in 2025, and 335-365 TWh in 2026. These figures do not include the output from Flamanville 3. The increase in nuclear output will largely be driven by the company's plan to improve the existing fleet availability and, to a lesser extent, the likely commissioning of Flamanville 3 in 2024.

Despite EDF's plan to ramp up nuclear production in the coming years, the unexpected defects in the nuclear fleet illustrated the vulnerability of EDF's earnings to potential shortfalls in production, given the prevalence of nuclear in the company's generation mix. Because of the relatively short history of French nuclear assets and associated difficulties in predicting their availability over time, the likelihood of unexpected new defaults requiring immediate fixes has increased. This is particularly relevant in a context where EDF's nuclear output gradually declined over 2012-22 by around 100 TWh, or one-quarter of the early 2010 levels, as Exhibit 6 illustrates, although the size of its fleet remained broadly unchanged at 61.4 GW as of December 2023, excluding the Fessenheim nuclear plant's shutdown completed in 2020 (1.8 GW). This decline in output has resulted from gradually longer planned outages, including for

10-year inspections; staff protection measures during the coronavirus pandemic; regular strikes; detection of corrosion defects; and weather constraints during drought periods and heatwaves, although the related impact on output is limited.

Exhibit 6

Net output of pressurised water reactor fleet in France in TWh

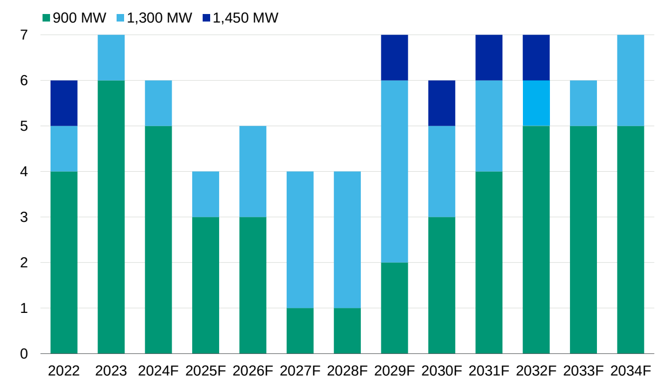


Sources: Company and Moody's Ratings

Exhibit 7

Current high levels of maintenance will weigh on the output

Number of 10-year inspections by reactor type (as of December 2023)



Source: Company

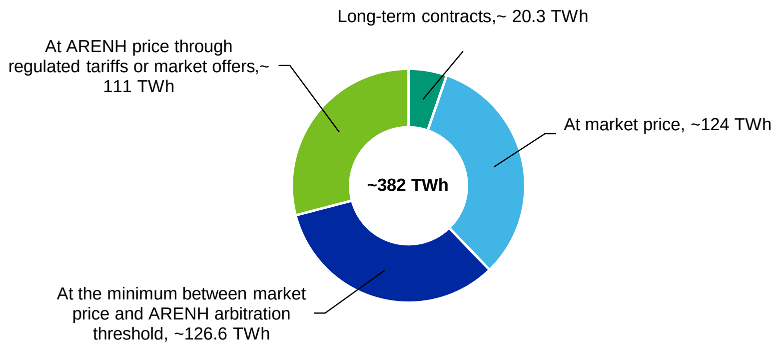
The ARENH mechanism, which has forced EDF to make available 100 TWh of French nuclear output to alternative suppliers per year, will expire at year-end 2025. In November 2023, the French government and EDF reached an agreement to replace the ARENH mechanism. If fully implemented, the new system would allow EDF to generate higher operating cash flow from French nuclear plants than under the ARENH mechanism, if French wholesale power prices remain above the ARENH price level of €42/megawatt-hour. However, the agreement would leave EDF exposed to power price fluctuations and would introduce an asymmetric risk, by implementing a progressive clawback on revenue in case of high prices, without introducing any support during low prices. Such an asymmetric risk is already present under the ARENH mechanism. EDF aims to enter medium- and long-term contracts with customers, which, if successful, would provide a degree of revenue visibility (see Electricite de France: French government proposal leaves EDF exposed to merchant power prices after 2025, published on 28 November 2023).

Fixed-cost generation fleet is exposed to volatile power prices

We estimate that commodity-exposed activities accounted for around 65% of EDF's EBITDA in 2023. Around 124 TWh of EDF's domestic electricity sales were directly exposed to market prices in 2023 (see Exhibit 8), which is 19 TWh lower than in 2022. In addition, power generation in the UK and Italy is fully exposed to wholesale prices. Although EDF typically hedges by selling forward a substantial proportion of its outright power generation two to three years ahead of delivery, the company retains exposure to market prices as hedges roll off. Capacity payments mitigate only a part of EDF's commodity price exposure.

Exhibit 8

Breakdown of electricity sales* in France according to their market exposure in 2023
In TWh



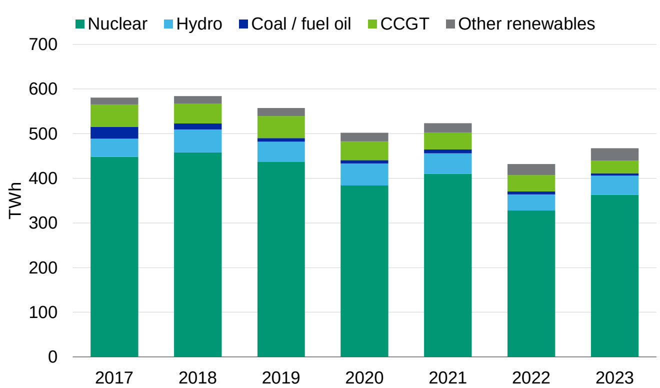
*Sales excluding purchase obligation volumes and volumes under long-term supply contracts.
Source: Company and Moody's Ratings

EDF is particularly exposed to movements in wholesale power prices because its generation fleet is predominantly fixed-cost. In 2023, 93% of its 468 TWh output was generated by nuclear and renewable assets. Because the group's strategy is focused on new nuclear and renewable capacity, aligned with the French national energy policy, we expect this share to further grow over time.

Like other large European markets, including the UK, forward baseload power prices in France have been extremely volatile since 2021. While the low visibility into nuclear output further increased the volatility in and pressure on French power prices compared with those in the closest European electricity markets, market expectations for baseload power prices in France turned lower than for Germany at the end of 2023. This reflected an increasing confidence in EDF's ability to steadily increase French nuclear output, which would reduce France's need to import electricity particularly during high consumption months.

Exhibit 9

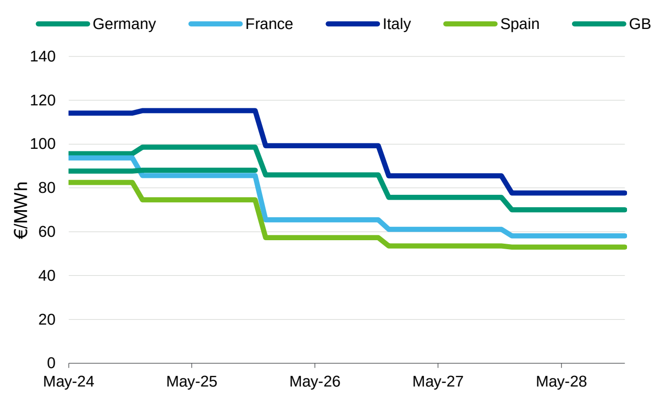
Most of EDF's generation output ...
Output by technology



Sources: Company and Moody's Ratings

Exhibit 10

... is exposed to volatile power prices
One-year forward baseload power price (as of May 2024)



Source: FactSet

Leading electric utility in France in a competitive operating environment

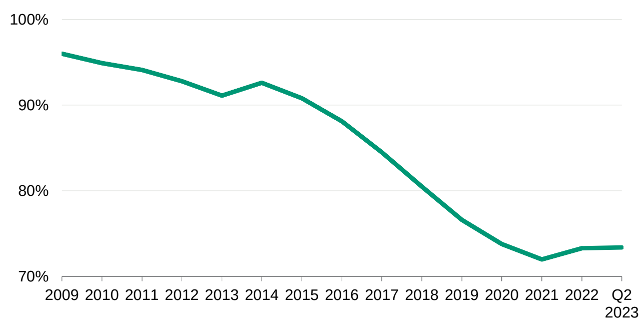
EDF is the leading electricity generator in France, with 86.5 GW of installed capacity as of the end of December 2023. The company's annual domestic generation, which represents on average 70%-75% of the national power output and is mostly generated by nuclear and hydropower plants, historically matched its downstream position.

This balanced market position, combined with the predominantly regulated nature of electricity tariffs until 2015, historically underpinned the predictability of EDF's cash flow. However, growing competition in the supply market resulted in higher churn rates, leaving EDF “long generation”, that is, having an excess of generated power compared with the demand from its customer base.

However, this trend has been reversing from 2022 when rising procurement costs for alternative suppliers encouraged consumers to return to EDF's regulated tariffs.

Exhibit 11

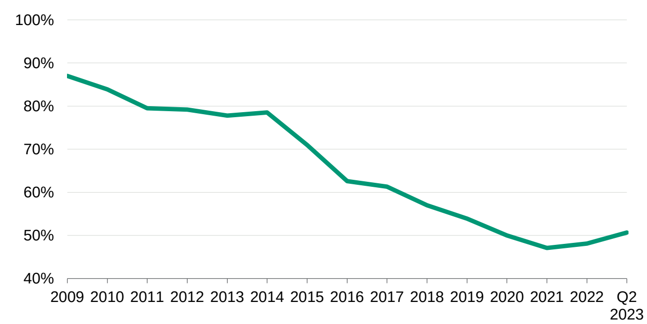
EDF was gradually losing market share in both residential ...
Incumbent share of the residential electricity supply market in France



Source: CRE

Exhibit 12

... and nonresidential power supply markets in France, but the trend has been reversing since Q2 2022
Incumbent share of the nonresidential electricity supply market in France



Source: CRE

Regulated activities and geographical diversification help cash flow stability

EDF's credit profile is supported by its regulated activities in France, which we expect to account for around 25% of the group's EBITDA over 2024-26. These activities include, in addition to domestic electricity distribution through its subsidiary Enedis, regulated generation, and network and supply businesses in the French islands. These activities exclude EDF's 50.1% interest in France's transmission network owner and operator RTE, which is equity-accounted.

Enedis's revenue benefits from a high degree of visibility under a regulatory framework that entered its sixth four-year regulatory period in August 2021 (TURPE 6). Under this framework, Enedis earns a return on regulated equity of 2.3% (nominal, pretax) and a 2.5% margin on its €53.7-billion regulated asset base. Although the return on capital has been stable at 2.5% since TURPE 4, the return on regulated equity decreased to 2.3% from 4% under the TURPE 6 regulatory framework to account for the reduction in the risk-free rate and the corporate tax rate in France.

Exhibit 13

Regulatory framework TURPE 6
A remuneration mechanism based on a guaranteed return

Parameter	Turpe 6 (August 2021-July 2025)
Method	Margin on RAB, return on regulatory equity and allowance for cost of debt, revenue cap with incentives
Length of the regulatory period	4 Years
RAB calculation	Net accounting value of in-use assets
Allowed returns	2.5% margin on RAB, 2.3% return on regulatory equity on top of the 2.5% margin (which means regulated equity has a global 4.8% return)
Incentive regulation	Targets raised, notably quality of service
Annual tariff indexation	Annual tariff indexation includes 0.31% remuneration above inflation.

Source: EDF and CRE

EDF's activities outside France account for roughly a quarter of EBITDA, with a large portion of it generated by nuclear plants in the UK and the growing non-domestic renewables business of the group (15.1 GW of net installed capacity as of the end of December 2023 [excluding hydro], with a further 4.2 GW net capacity under construction), which should provide some support to the group's earnings outside France. Around 86% of EDFR's revenue comes from long-term contracts, with an average remaining life of 15 years.

In 2023, EDF's performance outside France was strong. EDF Energy benefited from the recovery in the performance of retail activities and high power prices in nuclear generation despite lower output. Edison's performance improved on the back of increased hydroelectric production, which was partly offset by a decrease in EDF Trading's EBITDA to €3.2 billion in 2023 from €6.4 billion in 2022, attributed to reduced, albeit still elevated, energy price volatility.

Significant capital spending programme leads to execution risk and negative free cash flow

EDF faces a substantial capital investment programme, which we estimate at €20 billion-€25 billion annually through 2026, with significant and largely non-discretionary spending required to maintain and upgrade its distribution network and nuclear fleet in France. The sole 10-year inspection programme is estimated at €33 billion over 2022-28, reflecting the age of the fleet, which is more than 38 years on average, and EDF's strategy to extend its life span to 50 years; the group's ongoing programme to reduce unplanned outages; and more stringent nuclear safety requirements after the Fukushima incident in 2011. This estimate excludes the costs associated with the repair work in 2023-24 resulting from the corrosion defects.

Other significant projects (excluding the new nuclear reactor construction, discussed below) include the accelerated expansion of renewable capacity mainly through EDFR unveiled in February 2021, comprising the upgraded objective of achieving 100GW of installed gross renewable capacity (including hydropower) by 2030 from around 33.1 GW (net) in 2020, compared with the 50 GW (net) initially stated. We believe the company will remain heavily involved in the deployment of new renewables assets.

Since Q4 2019 and at the request of the French government, EDF has been assessing the feasibility of constructing new EPRs in the country by 2040. The government confirmed in February 2022, ahead of the Flamanville nuclear power plant's commissioning, the plan to build six (potentially 14) new EPRs by 2050, starting in 2027. The first commissioning will likely take place in 2035-37. While still working on updating its assessment, EDF currently estimates construction costs for the first six units at €51.7 billion (in 2020 €), excluding financing costs, supplemented with potentially €4.6 billion for schedule overruns.

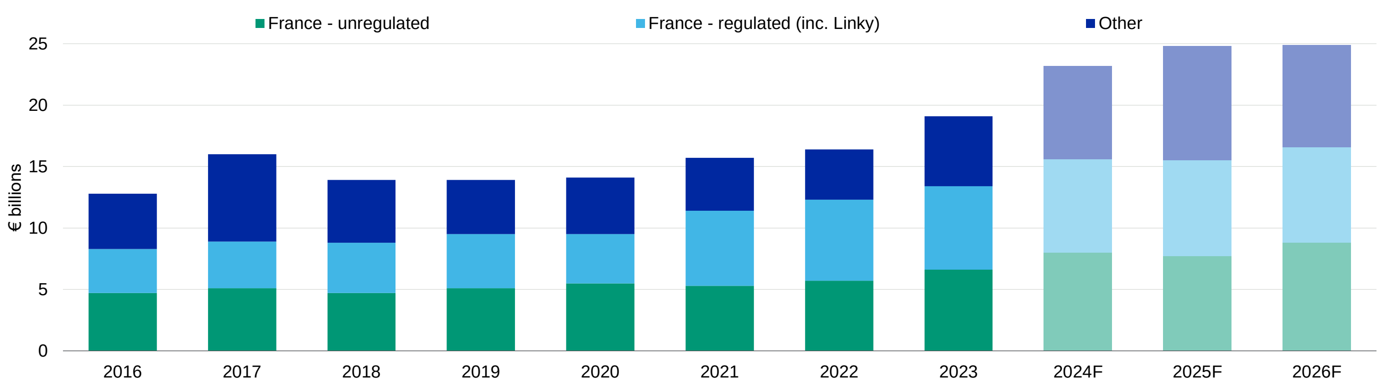
As a result, the government will amend the Programmation pluriannuelle de l'energie (PPE) published in February 2019, which will, however, continue to set out its aim to drive France's planned transformation into a carbon-neutral economy. The new plan may increase targets with regard to offshore wind and solar capacity, alongside the larger nuclear fleet.

Implications for EDF's credit profile will depend on the arrangements, including the support from the French government, for, among other things, exposure to nuclear construction risk, tariff regime, financing structure and financial costs, given the company's constrained financial flexibility.

Exhibit 14

EDF's capital spending is likely to remain high

Net investments, excluding the asset disposal programme



The 2023-25 estimates represent our forward view, not the view of the issuer.

Sources: Company and Moody's Ratings

Ongoing new nuclear projects increase construction risk and cost

In France, EDF began the construction of the 1.6 GW Flamanville 3 nuclear plant in 2007, with commercial operations scheduled for 2012 and an estimated total cost of €3.3 billion. However, there have been a series of cost overruns and delays in the life of the first

EPR project in France. In December 2022, EDF announced a new six-month schedule overrun in Flamanville 3's construction, resulting in €500 million of extra costs. The estimated cost at completion is €13.2 billion (in 2015 prices), excluding interim interest.

In May 2024, EDF loaded the nuclear fuel assemblies into the reactor vessel, and the reactor is now in commissioning phase. EDF expects Flamanville 3 to be fully operational by year end 2024, but with a normalized availability reached only in 2027. This is because the first visit, which is scheduled to take place in 2026 and last for several months, is still being planned with its organisation and specific duration yet to be determined. From 2027, the power plant is likely to generate around 11 TWh annually.

EDF also began construction of the 3.2 GW Hinkley Point C plant (HPC, the UK) in early 2017. HPC will be the fifth plant in the world that will use the EPR technology. The total construction cost of the HPC project was revised upwards for the fourth time in January 2024 to £31 billion-£34 billion (in 2015 prices) from the previous estimate of £25 billion-£26 billion in May 2022; the initial construction cost estimate was £18.1 billion. Meanwhile, commissioning is now likely to occur in 2030 according to EDF's base case from previously in June 2027.

The project is owned 67.7% by EDF, with the remaining 32.3% owned by its partner China General Nuclear Power Corporation (CGN, A2 negative). The total financing needs for the project have exceed the shareholders' contractual commitment, prompting a request for additional voluntary equity from Q3 2023. Since then, HPC's funding has come solely from EDF's contributions through this voluntary equity, placing an incremental financial burden on EDF, while the company continues to look for alternative financing. Cost increases reflect difficult ground conditions, extra costs to implement the completed functional design, and a slowdown in work because of the pandemic and staff protection measures. The increasing cost estimates illustrate the execution risks that EDF faces in constructing the power station. In addition, EDF's balance sheet will have to suffer the financial implications of a very long construction phase, because the costs will have to be debt-funded; the group has entered into a fixed-price contract-for-differences agreement with the UK government and will not be able to recover the higher costs from customers; and the investment will not generate any cash flow until the power plant is operational.

The French government recognises EDF's need for further support

Given the full ownership by the French government, we consider EDF a government-related issuer under our methodology. Accordingly, and based on our expectation of support in case of financial distress, the Baa1 rating factors in three notches of uplift from the company's BCA of ba1.

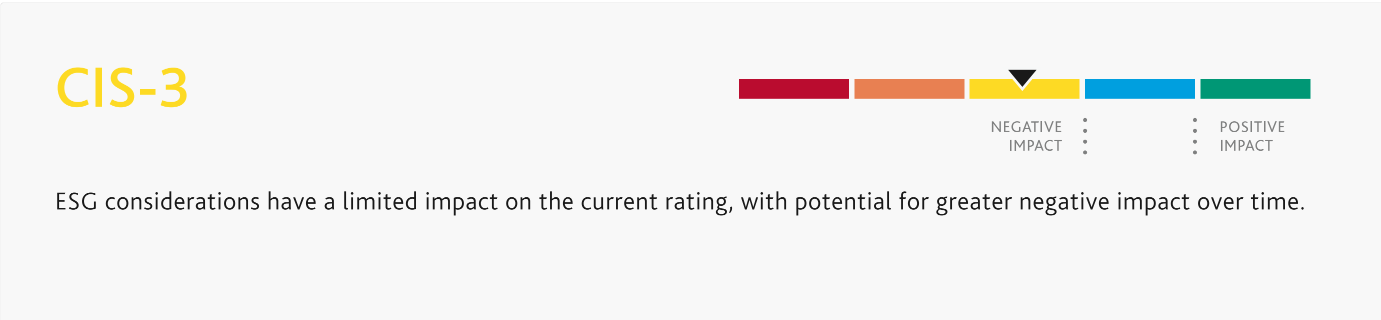
Our government support expectation reflects the strategic importance of EDF to the French government as the owner and operator of France's nuclear power plants; the company's highly unionised and politically influential workforce, as reflected in the numerous strikes conducted in 2023 against the national pension reform; and the French government's track record of supporting strategically important entities, illustrated by its subscription to €3 billion of EDF's capital increase in March 2017 and €3.15 billion in April 2022, and conversion of the Oceane bonds into shares.

Because of the political endorsement of EDF's capital spending programme (notably with respect to the development of renewable and nuclear capacities), and the large scale of that programme, compared with EDF's cash flow generation capacity, we expect the French government to continue to provide financial relief, with the recent renationalisation confirming EDF's importance to France.

ESG considerations

Electricite de France's ESG credit impact score is CIS-3

Exhibit 15
ESG credit impact score



Source: Moody's Ratings

EDF's ESG Credit Impact Score is moderately negative (**CIS-3**), indicating that its ESG attributes are overall considered as having a limited credit impact, with greater potential for a future negative impact over time. This reflects highly negative social risks, following measures endorsed by the government to protect end-customers at the detriment of EDF's economic interests. EDF **CIS-3** also captures a moderately negative exposure to environmental and governance risks.

Exhibit 16
ESG issuer profile scores

Source: Moody's Ratings

Environmental

EDF's **E-3** score reflects moderate exposure to Physical Climate risks associated with the group's French electricity distribution assets, and to Waste and Pollution risks given the material costs associated with nuclear decommissioning and nuclear waste treatment, albeit more than 100% covered by a sizeable dedicated asset portfolio. It also captures the exposure of the group's sizeable nuclear fleet to moderate risks of water management, in the event of restricted access to water induced by regular heat waves over summers. The profile also incorporates a large investment programme to increase the share of power output from renewables (excluding hydro).

Social

EDF's **S-4** score reflects the risks of political intervention because of public concerns over affordability. This was evidenced by the decision of the French government to protect end-customers at the expense of EDF's financial flexibility in an electoral context, which resulted in a €8.1bn impact on 2022 EBITDA. This also includes nuclear exposures and associated risks to public health

Governance

EDF's **G-3** score takes into account neutral to low scores on financial strategy and risk management, management credibility and track record, organizational structure, compliance and reporting, which counterbalance the moderate risk associated with board structure policies and procedures, resulting from having a majority owner. EDF's board has implemented measures to bolster its balance sheet including the €4 billion capital increase in 2016 and scrip dividend over the last six years. At the same time, the company has also acted to support other parts of the nuclear industry to the detriment of its credit quality.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.com. In order to view the latest scores, please click here to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

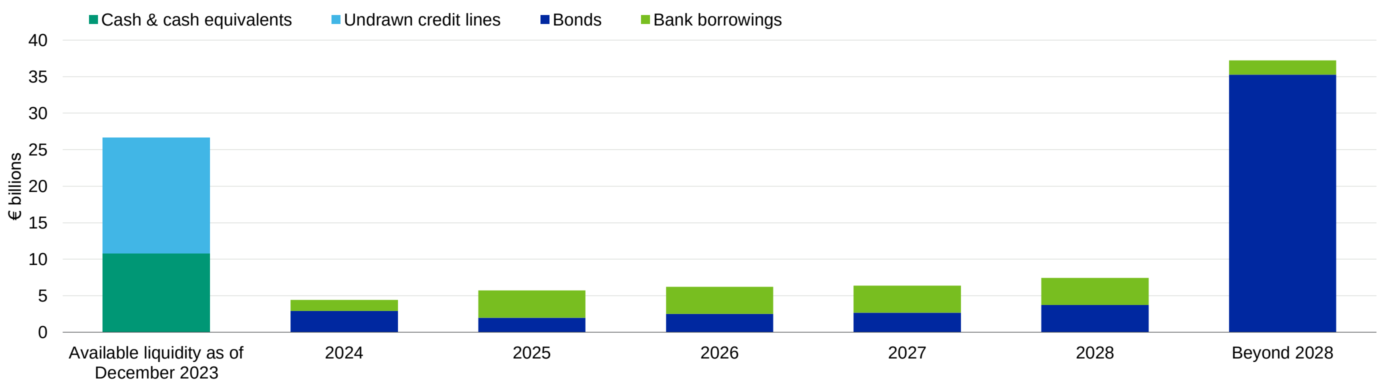
Liquidity analysis

EDF's liquidity is very good, underpinned by large holdings of cash and cash equivalents, and committed bank facilities. As of 31 December 2023, the group had €30.4 billion of cash and cash equivalents and liquid financial assets. In addition, unused committed credit facilities amounted to €15.8 billion, of which €4.8 billion mature within one year. These sources are sufficient to cover the group's debt maturities and capital spending over the next 18 months.

Exhibit 17

EDF has a well-spread debt maturity profile

Debt maturity profile and available liquidity as of December 2023



Sources: EDF and Moody's Ratings

Methodology and scorecard

EDF is rated in accordance with the rating methodologies for Unregulated Utilities and Unregulated Power Companies, and Government-Related Issuers.

The scorecard-indicated outcome is Baa2 based on historical metrics and A3 on a forward-looking basis, which is two and four notches higher respectively than the assigned BCA of ba1. This difference notably reflects risks related to the French nuclear plants availability in a context of an ageing fleet, as well as the prospects of negative free cash flow in a context of rising capital spending, and construction risks associated with the HPC project in the UK, and to a lesser extent Flamanville in France.

Exhibit 18
Rating factors
Electricite de France

Unregulated Utilities and Unregulated Power Companies Industry Grid [1]	FY ending 31, December 2023		Moody's 12-18 Month Forward View [2][3]	
Factor 1 : Scale (10%)	**Measure**	**Score**	**Measure**	**Score**
a) Scale (USD Billion)	Aaa	Aaa	Aaa	Aaa
Factor 2 : Business Profile (40%)				
a) Market Diversification	A	A	A	A
b) Hedging and Integration Impact on Cash Flow Predictability	Baa	Baa	Baa	Baa
c) Market Framework & Positioning	Baa	Baa	Baa	Baa
d) Capital Requirements and Operational Performance	B	B	B	B
e) Business Mix Impact on Cash Flow Predictability	Aa	Aa	Aa	Aa
Factor 3 : Financial Policy (10%)				
a) Financial Policy	Baa	Baa	Baa	Baa
Factor 4 : Leverage and Coverage (40%)				
a) (CFO Pre-W/C + Interest) / Interest (3 Year Avg)	4.3x	Baa	6x-8x	Baa-A
b) (CFO Pre-W/C) / Net Debt (3 Year Avg)	14.3%	Ba	28%-32%	Baa
c) RCF / Net Debt (3 Year Avg)	13.4%	Ba	27%-31%	A
Rating:				
a) Scorecard indicated outcome		Baa2		A3
b) Actual Baseline Credit Assessment				ba1
Government-Related Issuer				**Factor**
a) Baseline Credit Assessment				ba1
b) Government Local Currency Rating				Aa2
c) Default Dependence				High
d) Support				High
e) Final Rating Outcome				Baa1

[1] All ratios are based on adjusted financial data and incorporate our Global Standard Adjustments for Non-Financial Corporations.
[2] As of May 2024.
[3] This represents our forward view, not the view of the issuer, and unless noted in the text, does not incorporate significant acquisitions and divestitures.
Sources: Moody's Ratings and Moody's Financial Metrics™

Appendix

Exhibit 19

Peer comparison

Electricite de France

	Electricite de France Baa1 Stable			ENGIE SA Baa1 Stable			ENEL S.p.A. Baa1 Negative			RWE AG Baa2 Stable			E.ON SE Baa2 Stable		
(in € millions)	FY Dec-21	FY Dec-22	FY Dec-23	FY Dec-21	FY Dec-22	FY Dec-23	FY Dec-20	FY Dec-21	FY Dec-22	FY Dec-20	FY Dec-21	FY Dec-22	FY Dec-20	FY Dec-21	FY Dec-22
Revenue	84,461	143,476	139,715	57,866	93,865	82,565	63,642	81,900	135,653	13,688	24,571	38,366	60,944	77,358	115,660
EBITDA	16,261	(4,246)	36,374	10,981	8,549	17,618	15,388	15,432	17,218	4,605	3,453	5,501	6,703	8,601	8,603
Total Assets	358,713	390,139	365,754	227,537	237,719	195,672	163,453	206,940	219,618	61,578	142,226	138,502	95,385	119,759	134,009
Total Debt	91,145	119,004	108,674	56,509	57,623	64,779	61,807	76,680	93,887	14,529	21,239	25,392	50,931	48,644	44,689
Net Debt	68,687	90,115	78,191	42,791	42,065	48,201	55,901	67,822	82,846	5,536	7,374	4,936	45,265	41,715	34,769
FFO / Net Debt	20.3%	-18.7%	47.2%	20.4%	23.2%	25.6%	21.4%	15.8%	13.4%	68.4%	35.2%	133.3%	9.9%	15.6%	18.7%
RCF / Net Debt	19.5%	-19.6%	46.1%	16.1%	16.9%	17.2%	12.7%	8.2%	7.3%	58.6%	25.1%	114.5%	6.5%	11.9%	14.2%
(FFO + Interest Expense) / Interest Expense	7.5x	-4.5x	8.2x	8.1x	6.3x	5.8x	6.2x	5.3x	5.0x	6.7x	5.0x	6.6x	3.6x	4.5x	4.1x
Debt / Book Capitalization	61.2%	74.0%	65.1%	54.2%	56.8%	62.2%	55.2%	60.8%	65.5%	42.4%	52.6%	44.8%	78.8%	69.8%	64.4%

All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
Source: Moody's Financial Metrics™

Exhibit 20

Moody's-adjusted debt reconciliation

Electricite de France

(in € millions)	2019	2020	2021	2022	2023
As reported total debt	**67,380.0**	**65,591.0**	**69,406.0**	**96,053.0**	**86,647.0**
Pensions	13,440.0	14,270.0	14,059.0	11,102.0	10,674.0
Hybrid Securities	4,604.5	5,645.0	6,132.0	5,861.0	6,004.5
Securitization	1,042.0	792.0	1,456.0	2,470.0	1,764.0
Non-Standard Adjustments	(400.0)	(552.0)	92.0	3,518.0	3,584.0
Moody's-adjusted total debt	**86,066.5**	**85,746.0**	**91,145.0**	**119,004.0**	**108,673.5**

All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. Periods are financial year-end unless indicated.
Source: Moody's Financial Metrics™

Exhibit 21

Moody's-adjusted EBITDA reconciliation

Electricite de France

(in € millions)	2019	2020	2021	2022	2023
As reported EBITDA	**21,896.0**	**18,216.0**	**21,242.0**	**(7,265.0)**	**41,378.0**
Unusual Items - Income Statement	(2,150.0)	(1,253.0)	(2,683.0)	3,272.0	(2,286.0)
Pensions	(321.0)	(232.0)	(225.0)	(548.0)	(355.0)
Securitization	33.5	17.0	25.4	105.6	107.0
Interest Expense - Discounting	(2,230.0)	(3,096.0)	(2,172.0)	0.0	(2,651.0)
Non-Standard Adjustments	93.5	58.9	73.3	189.2	181.1
Moody's-adjusted EBITDA	**17,322.0**	**13,710.9**	**16,260.8**	**(4,246.3)**	**36,374.1**

Reported EBITDA includes other income and expenses.
All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. Periods are financial year-end unless indicated.
Source: Moody's Financial Metrics™

Exhibit 22

Overview on selected historical Moody's-adjusted financial data

Electricite de France

(in € millions)	2019	2020	2021	2022	2023
INCOME STATEMENT					
Revenue	71,347	69,031	84,461	143,476	139,715
EBITDA	17,322	13,711	16,261	(4,246)	36,374
EBIT	7,302	2,757	5,531	(15,325)	25,213
Interest Expense	2,655	2,392	2,134	3,080	5,132
Net income	3,392	(350)	3,007	(14,931)	17,812
BALANCE SHEET					
Net Property Plant and Equipment	153,632	159,231	166,689	171,445	172,437
Total Assets	300,199	302,380	358,713	390,139	365,754
Total Debt	86,067	85,746	91,145	119,004	108,674
Cash & Cash Equivalents	22,621	21,056	22,458	28,889	30,483
Net Debt	63,446	64,690	68,687	90,115	78,191
Total Liabilities	260,137	262,786	315,036	362,003	320,200
CASH FLOW					
Funds from Operations (FFO)	12,314	14,461	13,911	(16,858)	36,876
Cash Flow From Operations (CFO)	13,806	12,960	11,736	(8,669)	30,298
Dividends	508	518	521	782	797
Retained Cash Flow (RCF)	11,806	13,943	13,390	(17,640)	36,079
Capital Expenditures	(16,189)	(15,473)	(17,658)	(18,332)	(21,277)
Free Cash Flow (FCF)	(2,891)	(3,031)	(6,443)	(27,783)	8,224
INTEREST COVERAGE					
(FFO + Interest Expense) / Interest Expense	5.6x	7.0x	7.5x	-4.5x	8.2x
LEVERAGE					
FFO / Debt	14.3%	16.9%	15.3%	-14.2%	33.9%
RCF / Debt	13.7%	16.3%	14.7%	-14.8%	33.2%
Debt / EBITDA	5.0x	6.3x	5.6x	-28.0x	3.0x
Net Debt / EBITDA	3.8x	4.9x	4.4x	-18.0x	2.2x

All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. Periods are financial year-end unless indicated.

Source: Moody's Financial Metrics™

Ratings

Exhibit 23

Category	Moody's Rating
ELECTRICITE DE FRANCE	
Outlook	Stable
Issuer Rating	Baa1
Senior Unsecured	Baa1
Jr Subordinate	Ba2
Commercial Paper	P-2
EDF TRADING LIMITED	
Outlook	Stable
Issuer Rating	Baa3
EDISON S.P.A.	
Outlook	Stable
Issuer Rating	Baa3
EDF ENERGY HOLDINGS LTD	
Outlook	Stable
Issuer Rating -Dom Curr	Baa3

Source: Moody's Ratings

Moody's related publications

Press Releases:

- Moody's affirms EDF's issuer rating; downgrades EDF's BCA to ba1 from baa3; changes the outlook to stable, published on 1 June 2023
- Moody's downgrades EDF's issuer rating to Baa1; negative outlook, published on 21 February 2022
- Moody's reviews EDF's A3 ratings for downgrade, published on 17 January 2022

Issuer Comments:

- Electricite de France: French government proposal leaves EDF exposed to merchant power prices after 2025, published on 28 November 2023
- Electricite de France: Renationalisation would be credit positive, subject to the scale of additional financial support, published on 7 July 2022
- Electricite de France: Further cut in anticipated nuclear output is credit negative, published on 20 May 2022

Credit Opinions:

- Edison S.p.A.: Update to credit analysis, published on 25 May 2023
- EDF Energy Holdings Ltd: Update to credit analysis, published on 4 April 2023
- EDF Trading Limited: Update to credit analysis, published on 5 April 2023

Sector Comments:

- Unregulated Electric and Gas Utilities – Europe: EU electricity market reform proposal credit positive for European unregulated utilities, published on 16 March 2023

Sector In-Depth:

- Europe's electricity markets: Supply-demand imbalance to ease, but prices to remain above historical levels, 5 December 2023

Industry Outlook:

- Unregulated Electric & Gas Utilities – Europe: 2024 Outlook - Stable amid manageable market challenges, 13 November 2023
- Regulated Electric & Gas Networks – Europe: 2024 Outlook - Stable as higher interest rates feed through to returns

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