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Electricite de France S.A.

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This report does not constitute a rating action.

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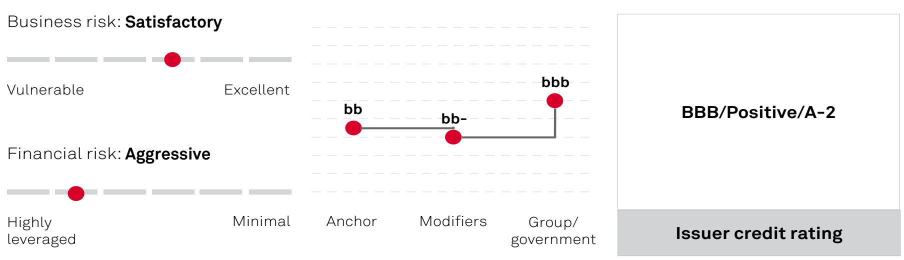
Ratings Score Snapshot



Credit Highlights

Overview

Key strengths	Key risks
World's largest vertically integrated utility outside China, with a dominant position in France and strong positions in the U.K. and Italy. EDF's nearly entirely low-carbon generation mix requires limited greening investments, and nearly none outside Italy.	EDF's eight nuclear newbuilds, which are currently under construction in France and the U.K., expose the company to delays and cost overruns, partly mitigated in France by prospects for low-cost state financing and revenue protection.
Strong support from the French government (EDF's sole owner) is expected to continue, as EDF plays a pivotal role in being France's sole power generator and distribution grid operator during the country's energy transition and its expected part in upcoming renewal of the country's nuclear fleet.	Free operating cash flow are set to turn increasingly negative due to declining wholesale market prices for electricity and a considerable and inflexible nuclear investment program in the existing fleet and in newbuilds.
Proven flexibility on dividends and robust access to debt and hybrid capital markets.	Merchant exposure to volatile power prices and regulatory and fiscal measures cap the upside on nuclear generation.
Over 20% of EDF's EBITDA contribution comes from strongly regulated domestic earnings in Europe's largest power distribution network.	The French government's 2025 decision to burden EDF with most of the financing of program to renew France's nuclear-fuel recycling assets could further add to financial pressure.

Nuclear investments continue to weigh on Electricite de France S.A.'s (EDF) stand-alone credit profile (SACP) due to capital expenditure (capex) overrun risks for newbuilds, ongoing investments in legacy fleet, and emerging downstream commitments. EDF is committed to build eight nuclear newbuilds, two at Hinkley Point C (HPC) in the U.K. (72.6% EDF-owned on Dec. 31, 2024) and six in France. Massive cost overruns and delays have been common across European Pressurized Reactors (EPR) built to date, including EDF's three EPRs. As it has since late 2023, we expect EDF to solely finance about €4 billion-€5 billion per annum (bnpa) capex at HPC (2024: €6.1 billion), and we estimate the total overnight cost will significantly exceed €15 million per megawatt (MW) in today's value.

Additionally, EDF is set to build the six EPR2s under France's Nouveau Nucléaire France (NNF) program, these are first-of-a-kind reactors (see also ESG section). We expect that by 2026 the 10 gigawatt (GW) NNF program will have reached several milestones, any re-costing up will have been announced, together with the finalization of the government support package, its approval by the EU Commission, and a Final Investment Decision (FID). Our rating does not factor in extending the NNF to eight more reactors. Beyond the current eight domestic and U.K. newbuilds, unexpected credit-negative developments since mid-2024 have included:

- The State's March 2025 decision to assign EDF the role of principal financier for the first phase of the broad renewal of France's nuclear back-end fuel-recycling facilities via Orano's Aval du Futur program (AdF). EDF is its key customer; amounts have not yet been outlined publicly. Our previous base case did not include a need to significantly upgrade these facilities;
- Prospects for sustained spending beyond 2028 on the Grand Carénage program (GC), which aims to enhance the safety and lifespan of EDF's existing nuclear fleet; and
- The €8.7 billion increase in consolidated gross nuclear asset-retirement obligations in 2024 (and €3 billion increase in our adjustment for debt) to €72.3 billion, mitigated by Autorité de sûreté nucléaire et de radioprotection's July 1, 2025 generic approval of EDF's request for extending to fifty years the life of its twenty 1,300-MW reactors. Additionally, in May 2025 Andra raised by 4%-50% (depending on tax assumptions) its 2015 estimate of investment needs for Cigéo, France's nuclear-fuel end-storage program.

This is in the context of added long-term downward pressure on wholesale prices in France (and at large in Europe), notably from 2027 on, versus our previous base case.

By contrast credit-supportive developments since mid-2024 have included:

- Wholesale prices may prove more stable in 2025, and potentially 2026, than we expected;
- At HPC EDF has not announced further re-costing and delay post its major January 2024 announcement;
- In line with our expectations, EDF has, in our view, very effectively limited risks to its credit quality stemming from the two potential U.K.-based Sizewell C reactors, beyond risks related to its EPC role. On July 8, 2025, EDF announced its stake would be 12.5% into the (now equity-consolidated) project company; and
- On March 17, 2025, the State clarified somewhat its NNF support framework.

EDF recently published a hefty €77 billion net-investment estimate for 2025-2027, and revised upwards GC spend by €3.1 billion to €36.1 billion for 2022-2028. We now expect consolidated capex to soon exceed €25 billion annually. We see very little flexibility in a major portion, some €20 billion, of annual capex, namely those on nuclear and on distribution networks (about €6 billion), somewhat mitigated by the latter's enhancement of grid resilience –

a key policy objective along France's energy transition – and EDF's credit-enhancing revenues. EDF has Europe's largest Regulated Asset Base (RAB) and it is entirely in electricity, which we see as more credit-supportive than gas.

EDF's 2025-2026 cash generation will reflect sustained output and realized power prices before moderating from 2027 as market prices sink. From January 2026 EDF could somewhat benefit from supportive market prices and its massive domestic nuclear generation. Until end-2025 only about one-third of it is exposed to wholesale market prices, under the Accès Régulé à l'Électricité Nucléaire Historique (ARENH) regime (regulated access to Historical Nuclear Power), and the rest is capped at a very low level. In late 2023, the French government largely clarified its proposal for the successor regime in what we see as a supportive way. Under that scheme, EDF would deploy an autonomous commercial offer, strike long-term sales contracts with large industrial customers, and receive market prices for its entire current capacity, subject to a 50% tax take above €78.8/Megawatt-hour (MWh) and 90% above €110/MWh (both in 2022 terms). The aim is to achieve about €70/MWh overall, part of which contributing to the NNF financing. Our base case retains this framework, which in 2025 was put into law. From 2028, across Europe we expect wholesale power prices to reduce, by about a third to around €50/MWh in the case of France.

Upside to the 'bb-' SACP's reflects cashflow support from strong current performance, steady regulated operations and a proactive refinancing policy, mitigated by capex pressure on credit metrics. Over 2023-2024, EBITDA aggregated to €73 billion, a record for both EDF historically and for OECD-based utilities globally. Performance was supported by sustained market prices and a steeper-than-expected generation recovery from the 2022 trough (negative €12 billion EBITDA) far exceeded our expectations and allowed EDF to reduce adjusted debt by over €7 billion despite a €13.1 billion increase in gross asset-retirement obligations. Over 2025-2027 we expect EBITDA of around €26 billion-28 billion, broadly covering capex but not taxes, interests and dividends. Our base case assumes no M&A and dividends (beyond the €2 billion one-off in 2025), somewhat lower Asset-retirement Obligations (ARO) on life extensions, hybrids outstanding not falling significantly below €10 billion, moderate taxes and limited dividends. Yet, after significant positive discretionary cash flow in 2023 and 2024, a €2 billion-€3 billion gap is opening between annual funds from operations (FFO) and capex, which in 2027 could widen further, eroding EDF's credit metrics buffer within the 20%-30% band consistent with current ratings.

We continue to view the likelihood of extraordinary French government support to EDF as very high. This is based on the company's very strong link with its sole owner, and very important role for France's energy policy as the company leading the highly strategic NNF project over the next couple of decades. We think EDF's credit quality matters especially during the construction period, which necessitates self-financing massive capex beyond State lending to EDF. There is a broad-based consensus for France to commit to a strong nuclear contribution to its power supply mix for the long term, as a support to the security of energy supply and a low-carbon, small-footprint source of energy that the current grid can more easily accommodate than a full-renewable mix.

State support has been repeatedly demonstrated by the French government actions on nationalization and equity increases. Our ratings on EDF factor in our expectation of strong policy continuity through the various elections, including the 2027 presidential one. Mitigating this, since our June 2024 outlook revision to positive on EDF, we have assigned a negative outlook to France's sovereign rating (after the May 2024 downgrade to 'AA-')mainly reflecting fiscal pressures; the Upper House was dissolved and the new one is more fragmented than before, complicating policymaking; and the State decided EDF would pay a €2 billion dividend in 2025, which we expect to be a one-off.

Outlook

The positive outlook reflects:

• Our expectations of domestic nuclear generation within 350-360 terawatt-hours (TWh) supporting leverage below 4X and 20%-30% FFO to debt

• Annual negative DCF in the low single-digit euro billion over 2025-2026, with subsequent downside risk to the high single-digit range

• Our expectations of the French government support package financing over half of NNF capex at 0% during construction, and protective risk-sharing arrangements

Downside scenario

Barring a change in our views on extraordinary government support, a downgrade would be driven by a significant stand-alone credit quality leading the SACP to 'b+'. This likely would reflect more severe industrial challenges at the domestic nuclear fleet than current rating can withstand, or a significant negative deviation from our base case for DCF and leverage.

Upside scenario

Barring a change in our views on extraordinary government support, upgrade potential hinges on sufficient visibility on nuclear newbuild execution, net of government support, so that we would view operating, reputation, and financial risks as consistent with an upgrade. We also would expect negative DCF to be contained to the low single-digit euro bnpa area. Finally, we will monitor the legacy fleet's pricing and fiscal regime.

Our Base-Case Scenario

Assumptions

- Domestic nuclear output of 350-360 terawatt-hours per annum (TWhpa) through 2025-2027, including Flamanville-3 (FLA-3).
- Annual hydro output of at least 40TWh (back to usual volumes, and some 10TWh lower than 2024's 11-year record.
- Domestic wholesale power prices of about €62-65/MWh through 2026-2027, and Great-Britain prices slightly higher. Realized 2026-2027 domestic nuclear prices consistent with the November 2023 agreement with the State at around $€_{2022}$70/MWh.
- A working-capital resource of about €2 billion-€3 billion annually over 2025-2026.
- Cash dividends of about €1 billion annually (limited to hybrid coupons and dividends to minority interests) in addition to €2 billion one-off one in 2025. No new equity issuance nor repurchases.
- Net annual capex growing towards €26 billion-€27 billion by 2027, including 100% of those on HPC and domestic nuclear newbuilds.

- Financing of Orano's Aval du Futur back-end investment program assumed to mainly take place in the 2030s and to imply moderate amounts for EDF.
- No significant acquisitions and disposals. Upfront payments from customers under CAPN would be adjusted as debt.
- Broadly stable deficits on unfunded nuclear obligations, including related to Cigéo, and employee obligations relative to end-2024 levels, absent life extensions.

Key Metrics

Electricite de France S.A--Key Metrics

	--Fiscal year ended Dec. 31--				
(Bil. €)	**2023a**	**2024a**	**2025e**	**2026f**	**2027f**
EBITDA	43.7	31.6	26-28	26-28	25-27
Funds from operations (FFO)	36.4	24.2	21-22	21-22	20-21
Operating cash flow	29.4	26.7	25-26	24-25	20-21
Capital expenditure	20.2	23.5	24-25	26-27	26-27
Discretionary cash flow	8.4	2.3	-3.0	-2.0	-6.0
Debt (adjusted)	87.5	89.5	89-91	90-92	95-97
FFO to debt (%)	41.6	27.0	23-25	23-25	21-23
Debt to EBITDA (x)	2.0	2.8	3.0-3.5	3.0-3.5	3.5-4.0

All figures adjusted by S&P Global Ratings. a--Actual. e--Estimate. f--Forecast.

Company Description

EDF is an integrated power company with major operations across generation, distribution, supply, and trading, fully owned by the French central government since June 2023. It is France's dominant electricity operator and has strong positions in the U.K. through EDF Energy, and in Italy through 97.45%-owned Edison, making it the world's largest electricity player outside China with 2024 net installed capacity of 124.64 GW, and global power generation of 539.3 TWh, 75% of which is nuclear and more than 11% in hydro.

Overall, about 93% and nearly all generation outside Italy is low-carbon; EDF is the world's largest low-carbon generator. In Europe, EDF's low-carbon generation is about 5x of the second largest, Vattenfall.

Absent significant outages, French operations contribute almost nine-tenths to EDF's generation and supply EBITDA, equivalent to c. three-fifths of the company's consolidated EBITDA. EDF Renewables, with global net installed capacity of 16.3GW (on Dec. 31, 2024; two-third is wind), of which three-quarters are outside France, typically contributes about 5% of EBITDA, slightly less than Dalkia (energy services and heating and cooling networks) and EDF's other activities. These include gas activities and EDF Trading, which provide market optimization and risk management services via wholesale energy market operations.

EDF owns and manages France's low-medium voltage public distribution network primarily through fully owned Enedis, with a regulated asset base including Linky of €63 billion (on Jan. 1, 2025), Europe's largest.

French regulated activities typically account for about 20%-25% of consolidated EBITDA. Our analysis mirrors EDF's accounting treatment at equity of 50.1%-owned Réseau de Transport d'électricité (RTE; France's monopoly high-voltage transmission power grid, Europe's largest; A/Stable/A-1) as it doesn't control it.

Peer Comparison

Electricite de France S.A.--Peer Comparisons

	Electricite de France S.A.	Enel SpA	Iberdrola S.A.	Engie S.A.	Fortum Oyj
Foreign currency issuer credit rating	BBB/Positive/A-2	BBB/Stable/A-2	BBB+/Stable/A-2	BBB+/Stable/A-2	BBB+/Stable/A-2
Local currency issuer credit rating	BBB/Positive/A-2	BBB/Stable/A-2	BBB+/Stable/A-2	BBB+/Stable/A-2	BBB+/Stable/A-2
Period	Annual	Annual	Annual	Annual	Annual
Period ending	2024-12-31	2024-12-31	2024-12-31	2024-12-31	2024-12-31
Mil.	EUR	EUR	EUR	EUR	EUR
Revenue	118,690	76,446	44,739	73,812	5,800
EBITDA	31,555	20,623	14,043	15,045	1,619
Funds from operations (FFO)	24,203	13,106	10,021	11,926	1,198
Interest	3,534	4,060	3,139	2,836	264
Cash interest paid	3,968	3,605	2,358	2,089	225
Operating cash flow (OCF)	26,693	12,409	9,957	12,252	1,392
Capital expenditure	23,464	9,028	9,316	9,049	472
Free operating cash flow (FOCF)	3,229	3,381	641	3,203	920
Discretionary cash flow (DCF)	2,268	(2,184)	(3,863)	(981)	(112)
Cash and short-term investments	25,159	8,022	4,154	16,928	4,136
Gross available cash	25,159	8,022	4,249	17,930	4,136
Debt	89,481	69,730	57,320	51,423	711
Equity	68,861	46,046	56,526	39,116	9,154
EBITDA margin (%)	26.6	27.0	31.4	20.4	27.9
Return on capital (%)	13.7	12.0	9.1	10.7	14.5
EBITDA interest coverage (x)	8.9	5.1	4.5	5.3	6.1
FFO cash interest coverage (x)	7.1	4.6	5.3	6.7	6.3
Debt/EBITDA (x)	2.8	3.4	4.1	3.4	0.4
FFO/debt (%)	27.0	18.8	17.5	23.2	168.4
OCF/debt (%)	29.8	17.8	17.4	23.8	195.7
FOCF/debt (%)	3.6	4.8	1.1	6.2	129.4
DCF/debt (%)	2.5	(3.1)	(6.7)	(1.9)	(15.7)

Business Risk

Our assessment of EDF's business risk profile as satisfactory balances:

- An impressive asset portfolio: dominant domestic distribution grid that gives EDF strong regulatory advantage as Europe's largest operator; a near-fully C02 emissions-free domestic generation mix; the world's largest generation capacity outside China; the world's largest nuclear generation capacity; Europe's third-largest hydro generation; the third-largest wind and solar capacity among European utilities; with
- High level of uncertainty on the nuclear generation and investment: domestic fleet availability, exposure to newbuilds, €4 billion-5 billion ongoing annual domestic capex needs until at least 2028 and remaining financing uncertainties for NNF and AdF.

EDF benefits from its one-fifth share of regulated activities. EDF is the leader in France in terms of power generation, distribution, and supply, and it has solid positions in the U.K. Belgian and Italian power generation markets. As the ARENH regulation in place since 2011 has set a very low €42/MWh price cap but lapses at end 2025, we view positively the visibility the successor regime should provide, although on a fully unfloored merchant basis in a market where low or negative wholesale prices are ever more frequent. Low marginal costs for EDF's nuclear, hydro and offshore-wind assets position them well in the merit order.

We expect regulated networks will contribute one-fifth to consolidated EBITDA under a supportive regulatory framework, primarily through Enedis' position as France's key power distribution network. We expect power DSO capex of at least €6 billion per year for many years (2024: €5.35 billion, up by 10% after 11% in 2023) will benefit future earnings under the supportive Tarif d'Utilisation des Réseaux Publics d'Électricité (TURPE) 7 regulatory tariff that comes into force in August 2025 as well as from the exceptional 7.7% TURPE 6 tariff increase in February 2025. This may help Enedis' average annual duration of low-voltage outages recover to below the 62-minute target, failed in 2023 and 2024.

The dominance of nuclear power generation in EDF's business profile comes with opportunities as well as heavy risks.

EDF's legacy nuclear fleet generates strong free cash flows absent unplanned outages but also bears significant technology concentration, life-extension repair, outage risks. This is in addition to very long lead times, illustrated by the end-2024 carrying value (for HPC and FLA-3) above €51 billion, if adjusted for impairments.

In France, generation depends both on reactor availability and the increasing need for modulation (sometimes by 15GW through the same day) given flat consumption, increasing renewables generation and congestion on export routes. Overall, we expect sustainable nuclear output of 350-360 TWhpa. While a clear recovery from the 279Twh 2022 trough, this level stands below the 2015-2019 390 TWh average, which will be challenging to reach again. This reflects notably aging, as 90% of domestic capacity, even including the latest commissioning FLA-3, is over 40 years old. In the U.K., by 2030 all but one reactor is set to close.

France's nuclear safety regulation does not set a fixed limit for operations but may approve 10-year extensions. In 2023 the first reactor received its final authorization to operate up to 50 years, i.e. up to around 2030. We expect EDF's continued investments will prolong the life of its existing fleet – including the 900MW commissioned over 1979-1985 (27GW or c. 45% of current capacity incl. FLA-3) until about 2040 or possibly beyond. Positively, on July 1, 2025, Autorité de

Sûreté Nucléaire et de Radioprotection announced provided generic approval for extending EDF's 20 1,300-MW reactors' life to 50 years from 40, the age that next year the oldest of them reaches.

Financial risks related to nuclear operations can be illustrated by their predominant contribution to the €25 billion impairments and non-recurring charges EDF expensed over 2021-2024. They differ notably between domestic and UK operations in that most of the latter are covered by a claim from EDF on the government and relate mostly to dismantling as opposed to spent fuel management. This last item increased by a hefty 28% in 2024 or domestic operations and represents now 32% of total gross domestic obligations (€17.4 billion, or €31.6 billion (59%) in addition to end storage of waste vs 19% in the UK), as driven by France's recycling policy.

Also, while contributing to France's resolute policy of energy sovereignty and nuclear recycling, we see significant financial risks in terms of fuel procurement, related to both recycling and end storage. In March 2025, the State announced EDF would be the principal financier of France's nuclear recycling program via Orano's (BBB-/positive) Aval du Futur program, as its key customer; amounts, timing and EDF's embedded remuneration have not been outlined publicly; our base case includes none for the immediate future.

Finally, regarding nuclear-fuel end storage, in May 2025 France's Andra (Agence nationale pour la gestion des déchets radioactifs) announced a cost increase for France's Cigéo program: to €$_{2012}$26.1 billion-€37.5 billion from the 2016 €25 billion basis for provisioning by EDF, Orano and the Centre d'Etudes Atomiques (CEA; all amounts are undiscounted and in 2011 economic conditions). In our rough estimate, this corresponds to a 4%-50% (depending on tax assumptions) increase to €33 billion- €47 billion in 2025 monies, undiscounted and across all of France's nuclear civil and military entities; at end-2024 EDF had provisioned €9.5 billion for its share of its discounted Cigéo needs after €0.8 billion increase in 2024.

The risks and achievements of French and U.K. nuclear newbuilds remain key credit considerations.EDF's EPR projects include, in increasing order of risk to our rating:

- 100%-owned 1.65 GW FLA-3 in France, connected to the grid in December 2024.
- Two potential reactors at the U.K.-based SZC (3.3GW capacity; 16.23%-owned at year-end 2024, consolidated at equity). EDF's involvement will be operational, as the main contractor, removing most balance-sheet risk as owner, especially given the UK government's strong support package.
- Two EPRs under construction at HPC in the U.K. (3.3GW capacity; 72.6%-owned at year-end 2024), with near-term capex exceeding €4 bnpa for EDF. We see 2033 as the earliest possible first full year of production of both units, including ramp-up time; at that point their EBITDA contribution could approach €4 bnpa, over 80% of which would accrue to EDF.
- Six 100%-owned first-of-a-kind EPR2 reactors being built in France, for commissioning from 2038 (NNF program, 10GW capacity).

Repeated and heavy cost overruns and delays have hit all European EPR newbuilds to date. In the case of HPC, they triggered €13.4 billion in aggregate impairments by end-2024 despite a Contract for Difference (CfD) exceeding €2,024,150/MWh. Overruns and delays highlight considerable operating and contingency risks related to nuclear newbuilds and make us cautious on their future economics and financial impact since supply-chain tensions and project-management issues may be far from resolved.

For example, while the FLA-3 EPR eventually achieved grid connection last December and is ramping up towards 60% of capacity, after producing 14TWh extensive planned repair works it will halt generation for over 250 days in 2026-2027, pushing first full-year production and earnings generation to 2027 or 2028. This suggests lingering risks beyond the c.€202,510 billion/GW overnight cost we estimate (spending of €2.25 billion was expensed over 2021-2024).

We estimate HPC's overnight costs by commissioning to approach €60 billion (about €203018 billion/GW). This excludes financing costs incurred over two decades to first full-year production (see article 'Is Europe Ready for a Nuclear Renaissance?', Dec. 9, 2024).

The NNF includes a first phase of six EPR2s and a potential second phase with eight more. While currently flat domestic consumption, record exports in 2024 (a quarter of EDF's domestic nuclear production), prospects for extending the lives of the 900MW fleet beyond 60 years and decreasing expected prices don't seem to call for significant new capacity, we recognize that - absent life extensions - by about 2040 EDF could face a cliff in nuclear capacity, as 15.3GW were commissioned during 1979-1981 and another 13.5GW by 1985.

We expect the most significant NNF-related capex will emerge from 2027, post a 2026 FID, though by FID EDF might have spent over €5 billion (€2.5 billion at end-2024). We will monitor any re-costing up from the latest (unofficial) estimate of €202,067 billion, which corresponds to some €202,578 billion or about half the HPC budget per MW. A key credit driver will be the specific amount, timing, and nature of government support for the NNF funding and remuneration. In March 2025, the State announced it will lend EDF--at a subsidized rate during construction, potentially 0% as approved by the EU for a Czech newbuild--at least half of construction capex and provide a long-term CfD at up to €100/MWh (in 2024 monies) on all NNF production. This support program remains subject to rating-relevant clarifications, including on risk-sharing arrangements, and EU state aid approval.

Hydro and the largely contracted and growing wind and solar portfolio slightly enhance EDF's positioning. While we see the credit mostly driven by nuclear and regulated operations, EDF also is Europe's third-largest hydro generator. We see hydro as beneficial to credit quality given low marginal costs and (for dam-based capacity) fast-dispatch capability. However, renewal risks exist on EDF's domestic 75-year concessions: for over a decade 36 representing over one-sixth of capacity (3.65GW) have been subject to proceedings from the EU (including two formal warnings issued in 2015 and 2019), which are yet unresolved; further EDF concessions might fall under the same process by end 2025.

EDF has the third largest wind and solar net installed capacity among European utilities, at 16.7GW at end-2024. EDF aims to annually commission 8GW gross of new renewable capacity on average over 2024-2035, an ambitious but achievable target. EDF's solar and onshore wind growth is mostly outside France.

Renewables, not just hydro energy, will increasingly contribute to EDF's earnings, including through long-term contracted revenues. This is despite increasing capex costs, administrative hurdles and local opposition in many European countries, which has slowed new capacity deployment. We understand earnings stability benefits from long-term contracting; EDF doesn't disclose project-finance debt incurred.

Financial Risk

Our key credit metrics will erode from 2027 as increasing capex absorb all EBITDA. Our assessment of EDF's financial risk profile balances its high absolute and relative adjusted debt levels and upward profile with credit-supportive features. These include ongoing access to senior and hybrid markets at competitive rates up to now, limited acquisitions, and a track record of the parent company receiving equity and paying limited dividends, if any. We use our standard volatility table.Over 2025-2027 we expect EBITDA of around €26 billion-€28 billion, broadly covering capex but not taxes, interests and dividends. Our base case assumes no M&A and dividends (beyond the €2 billion one-off in 2025), somewhat lower ARO on life extensions, hybrids outstanding not falling significantly below €10 billion, moderate taxes and limited dividends. Yet, after significant positive discretionary cash flow in 2023 and 2024, a €2 billion-3 billion gap is opening between annual FFO and capex, which in 2027 could widen further, eroding EDF's credit metrics buffer within the 20%-30% band consistent with current ratings.

Risks to credit metrics focus on nuclear newbuilds and legacy asset-retirement obligations (see ESG section), as illustrated by the latter's €13 billion gross increase over 2023-2024. Risks around projections revolve mostly around wholesale prices for electricity and nuclear capex levels. We adjust EDF's debt for €26.5 billion of employee and (mostly nuclear-linked) asset-retirement obligations, the latter of which have in recent years proved to significantly and unexpectedly increase. We do not numerically adjust for deferred income, which stood at €3.14 billion at year-end 2024 and comprised advances to EDF under long-term power supply contracts and partner advances received as nuclear plant financing and associated long-term contracts. We would expect to factor in, quantitatively or qualitatively, upfront customer payments on new nuclear production sharing contracts (CAPN).

Debt maturities

As of Dec. 31, 2024:

- 2025: €12.9 billion.
- 2026-2029: €23.3 billion.
- Thereafter: €45.5 billion.

Electricite de France S.A.--Financial Summary

Period ending	Dec-31-2019	Dec-31-2020	Dec-31-2021	Dec-31-2022	Dec-31-2023	Dec-31-2024
Reporting period	2019a	2020a	2021a	2022a	2023a	2024a
Display currency (mil.)	EUR	EUR	EUR	EUR	EUR	EUR
Revenues	71,317	69,031	84,461	143,476	139,715	118,690
EBITDA	16,716	16,274	17,124	(11,807)	43,746	31,555
Funds from operations (FFO)	13,699	13,342	13,081	(15,332)	36,380	24,203
Interest expense	695	2,146	(621)	3,051	6,963	3,534
Cash interest paid	2,096	1,950	1,768	2,243	3,671	3,968
Operating cash flow (OCF)	12,819	12,186	11,150	(9,199)	29,377	26,693
Capital expenditure	15,969	15,428	17,045	17,861	20,199	23,464
Free operating cash flow (FOCF)	(3,151)	(3,243)	(5,896)	(27,060)	9,178	3,229

Electricite de France S.A.--Financial Summary

Discretionary cash flow (DCF)	(3,083)	(3,259)	(6,419)	(27,842)	8,381	2,268
Cash and short-term investments	22,621	21,056	22,458	28,889	30,483	25,159
Gross available cash	22,378	20,872	22,203	28,889	30,483	25,159
Debt	72,074	75,850	78,605	97,082	87,491	89,481
Common equity	51,186	49,581	55,857	40,751	58,115	68,861
Adjusted ratios						
EBITDA margin (%)	23.4	23.6	20.3	(8.2)	31.3	26.6
Return on capital (%)	6.3	4.5	5.0	(17.5)	24.0	13.7
EBITDA interest coverage (x)	24.0	7.6	(27.6)	(3.9)	6.3	8.9
FFO cash interest coverage (x)	7.5	7.8	8.4	(5.8)	10.9	7.1
Debt/EBITDA (x)	4.3	4.7	4.6	(8.2)	2.0	2.8
FFO/debt (%)	19.0	17.6	16.6	(15.8)	41.6	27.0
OCF/debt (%)	17.8	16.1	14.2	(9.5)	33.6	29.8
FOCF/debt (%)	(4.4)	(4.3)	(7.5)	(27.9)	10.5	3.6
DCF/debt (%)	(4.3)	(4.3)	(8.2)	(28.7)	9.6	2.5

Reconciliation Of Electricite de France S.A. Reported Amounts With S&P Global Adjusted Amounts (Mil. EUR)

	Debt	Shareholder Equity	Revenue	EBITDA	Operating income	Interest expense	S&PGR adjusted EBITDA	Operating cash flow	Dividends	Capital expenditure
Financial year	Dec-31-2024									
Company reported amounts	77,381	62,855	118,690	31,689	18,327	2,683	31,555	27,858	1,252	24,779
Cash taxes paid	-	-	-	-	-	-	(3,384)	-	-	-
Cash interest paid	-	-	-	-	-	-	(2,362)	-	-	-
Trade receivables securitizations	1,323	-	-	-	-	-	-	441	-	-
Lease liabilities	4,421	-	-	-	-	-	-	-	-	-
Intermediate hybrids (equity)	5,024	(5,024)	-	-	-	291	(291)	(291)	(291)	-
Postretirement benefit obligations/ deferred compensation	13,332	-	-	107	107	559	-	-	-	-
Accessible cash and liquid investments	(25,159)	-	-	-	-	-	-	-	-	-
Capitalized interest	-	-	-	-	-	1,315	(1,315)	(1,315)	-	(1,315)
Dividends from equity investments	-	-	-	582	-	-	-	-	-	-

Reconciliation Of Electricite de France S.A. Reported Amounts With S&P Global Adjusted Amounts (Mil. EUR)

	Debt	Shareholder Equity	Revenue	EBITDA	Operating income	Interest expense	S&PGR adjusted EBITDA	Operating cash flow	Dividends	Capital expenditure
Asset-retirement obligations	13,159	-	-	-	-	(1,314)	-	-	-	-
Nonoperating income (expense)	-	-	-	-	884	-	-	-	-	-
Noncontrolling/ minority interest	-	11,029	-	-	-	-	-	-	-	-
EBITDA: other income/ (expense)	-	-	-	(715)	(715)	-	-	-	-	-
EBITDA: other	-	-	-	(108)	(108)	-	-	-	-	-
D&A: Impairment charges/ (reversals)	-	-	-	-	1,835	-	-	-	-	-
EBIT: other	-	-	-	-	443	-	-	-	-	-
Total adjustments	12,100	6,006	-	(134)	2,446	851	(7,352)	(1,165)	(291)	(1,315)
S&P Global Ratings adjusted	**Debt**	**Equity**	**Revenue**	**EBITDA**	**EBIT**	**Interest expense**	**Funds from Operations**	**Operating cash flow**	**Dividends**	**Capital expenditure**
	89,481	68,861	118,690	31,555	20,773	3,534	24,203	26,693	961	23,464

Liquidity

We regard EDF's liquidity as adequate. Our assessment balances the company's strong cash and committed-line positions supporting a 1.2x coverage of uses by sources, it's very proactive refinancing, solid relationships with banks, and track record of ample access to capital including as a strategic entity for the French government, with inflexible capex and significant debt maturities.

Principal liquidity sources

Principal liquidity sources for the 12 months from Dec. 31, 2024:

- Cash and cash equivalents of some €25.5 billion;
- Our estimate of about €10.5 billion availability under committed credit lines maturing more than one year out; and
- Estimated cash operating cash flow around €25 billion.

Principal liquidity uses

Principal liquidity uses over the same period include:

- Debt maturities nearing €11 billion;
- Capex of about €25 billion; and
- Dividends approaching €3 billion, including on hybrids and to minority interests.

Environmental, Social, And Governance

ESG factors are a moderately negative consideration in our credit rating analysis of EDF. In our view, EDF's governance mostly flags risks related to the uncertainties regarding its ability to proactively identify, manage, and resolve for the existing aging nuclear fleet and for the very heavy newbuild programs.

Regarding existing reactors, we consider the ups and downs of availability as reflective of the inherent complexity of managing aging nuclear generation assets.

Regarding newbuild nuclear reactor projects in France and the U.K., which are key to France's low-carbon strategy, we also factor in inherent risks of cost overruns and delays, significantly mitigated to date only in the case of SZC. Each of them stands among Europe's very largest industrial projects across sectors. HPC and FLA-3 are over a decade late on original planning and we see risks for overnight construction costs on new reactors to approach or exceed (as HPC will) €12 million-€15 million per MW of capacity in 2025 money, even excluding capital remuneration and dismantlement liabilities.

- On HPC, over 2022-2024, EDF announced both some £10 billion of additional capex in current monies, most of which it will fully bear, and a delay of about three years to 2029-2030 in its commissioning base case. In addition to several €bn of additional carrying cost, this delay shortens by at least 18 months HPC's protective 35-year contract for difference with the U.K. government. EDF wrote off about €13 billion on its U.K. assets, principally HPC, over 2022-2024.
- Despite first grid connection in December 2024, we expect FLA-3's first full-year contribution in 2027 or 2028, given the planned prolonged outage necessary in 2026 to repair the vessel head. EDF has not impaired FLA-3, which for accounting purposes is part of the cash-generating unit that includes the entire domestic fleet.

Environmental aspects also relate to EDF's exposure to nuclear fuel recycling and end storage. We adjust EDF's debt for net asset retirement obligations by €13.2 billion at year-end 2024, almost all nuclear (plant dismantling and fuel recycling and end storage). Total gross provisions related to nuclear power generation increased by about €13.1 billion over 2023-2024 to €72.3 billion; they represented €5.5 billion of the €7.7 billion non-recurring charges EDF expensed over 2023-2024 (newbuilds contributed €0.8 billion and Italian operations €1.1 billion). In addition, most of EDF's 16.6 billion 2022-2024 impairments were nuclear-related. The total adds to some €22 billion of negative profit and loss items.

Environmental considerations primarily reflect the company's prominent low-carbon operations, enabling France to post one of Europe's lowest-carbon energy-sector footprint. With the world's largest nuclear generation fleet and well-over 90% of global production decarbonated, EDF's carbon intensity is minimal, and its scope 1 emissions mostly derive from French islands, Edison, and Dalkia.

However, environmental and social risks related to the future long-term storage of nuclear waste offset EDF's low carbon footprint.

Half of EDF's €4.4 billion 2023 non-recurring charges were due to a new fuel recycling contract with Orano whereas the €8.7 billion 2024 increase was broadly equally split between domestic and UK operations.

Regarding Cigéo, our base case includes no hike in EDF ARO beyond the €1.3 billion recorded over 2023-2024 and the €9.51 billion end-2024 provision. Andra's scope excludes the fuel to be burnt in NNF reactors. First delivery of spent fuel to site has been pushed back to 2040-2050 from the 2031 date envisaged until recently.

In addition, we factor into our assessment the French government's support of EDF's strategic role in the French energy transition, its public mission embedded in its power network activities, and its social role as a major employer in France. Yet we also see as a great social challenge the negative track record of project management and third-party reports pointing to a loss of technical skills and quality within the French nuclear industry, both for EDF and throughout the supply chain. We believe these challenges remain to be fully addressed. Another potential risk comes from deliveries of enriched uranium and reprocessed uranium from Rosatom subsidiaries.

Hybrid ratings, issuance capacity and refinancing

We include a degree of support to our hybrid rating. In the case of junior subordinated debt ratings, we include a fraction of the four-notch uplift we assign to the senior debt to reflect extraordinary government support. The significant losses in 2022 did not prompt EDF to consider that junior hybrid debtholders absorb losses. For hybrids, we remove all but one of the four notches of uplift we assign to the senior debt ratings. Given EDF's considerable debt and equity, the company has significant capacity to raise hybrids outstanding (€10.0 billion reported at year-end 2024), while remaining within our typical 15% guidance. We do not expect EDF's total stack of hybrids outstanding to decrease significantly below €10 billion.

Government Influence

Our view of a very high likelihood of extraordinary government support in case of stress leads a four-notch Issuer Credit Rating uplift over EDF's SACP. This likelihood derives from our view of EDF's very strong link with France's Central Government and of its very important role for the country's energy policies. Our SACP includes all ongoing interactions, credit-supportive and -negative, between the company and its owner.

EDF's nuclear generation will remain crucial for France's power mix over the coming decades. Especially since Europe's 2021-2022 gas and power price crisis and Russia's invasion of Ukraine, we view state aid as less of an issue for energy-market systemic utilities. This is because the EU will focus on three goals over the next few years, security of supply, affordability, and accelerating the energy transition. France firmly believes nuclear is key to achieve these goals and has assigned EDF the primary role in achieving these objectives.

In our view, constraints about state aid to key energy suppliers have somewhat eased in the context of the EU's energy transition plan and continuing tightness on power markets. Since EDF generates about three times more power than any other utility in Europe, we believe the company is key when it comes to providing energy security for the European power platform, including to promote grid stability. This eases constraints on French government support to EDF. Given nuclear phase-outs by France's neighbors, for at least a decade EDF's nuclear capacity will represent some two-thirds of Europe's and about 10x of the next-largest company's nuclear capacity. Across technologies, EDF generates one-sixth of the EU's power.

Through its domestic nuclear fleet, EDF is central to France's energy goals since the energy transition fosters electricity demand and the expansion of renewables is slow. The French government expects EDF, whose nuclear fleet generates about 70% of France's electricity, will start commissioning six to 14 new EPR reactors from 2038. We believe this will support EDF's creditworthiness and continuity of operations, especially since the company is constructing these extremely complex projects with very long lead times. EDF's importance to the French energy sector also adds to the government's incentives to protect the creditworthiness of a company that is primarily operating legacy assets.

Issue Ratings--Subordination Risk Analysis

Capital structure

EDF has limited debt at subsidiaries or secured debt across the group, relative to its overall gross consolidated debt.

Analytical conclusions

We do not notch down EDF's senior unsecured debt as the holding company issues most of the company's debt.

Rating Component Scores

Foreign currency issuer credit rating	**BBB/Positive/A-2**
Local currency issuer credit rating	**BBB/Positive/A-2**
Business risk	**Satisfactory**
Country risk	Low
Industry risk	Intermediate
Competitive position	Satisfactory
Financial risk	**Aggressive**
Cash flow/leverage	Aggressive
Anchor	**bb**
Diversification/portfolio effect	Neutral (no impact)
Capital structure	Neutral (no impact)
Financial policy	Neutral (no impact)
Liquidity	Adequate (no impact)
Management and governance	Moderately Negative (no impact)
Comparable rating analysis	Negative (-1 notch)
Stand-alone credit profile	**bb-**

Related Criteria

- General Criteria: Hybrid Capital: Methodology And Assumptions, Feb. 10, 2025
- Criteria | Corporates | General: Methodology: Management And Governance Credit Factors For Corporate Entities, Jan. 7, 2024
- Criteria | Corporates | General: Corporate Methodology, Jan. 7, 2024
- General Criteria: Environmental, Social, And Governance Principles In Credit Ratings, Oct. 10, 2021

- General Criteria: Group Rating Methodology, July 1, 2019
- Criteria | Corporates | General: Corporate Methodology: Ratios And Adjustments, April 1, 2019
- Criteria | Corporates | General: Reflecting Subordination Risk In Corporate Issue Ratings, March 28, 2018
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- General Criteria: Rating Government-Related Entities: Methodology And Assumptions, March 25, 2015
- Criteria | Corporates | General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- General Criteria: Principles Of Credit Ratings, Feb. 16, 2011

Related Research

- Greening Up Without Blackouts: Boosting European Power Grids' Resilience May Dent Credit Quality, July 2, 2025
- One Outlook Revision To Negative On French Utilities After Sovereign Outlook Action, March 6, 2025
- For A Resilient Global Infrastructure Sector, The Immediate Impact From Tariffs Will Be Limited, May 14, 2025
- Industry Credit Outlook: EMEA Utilities, Jan. 13, 2023
- Is Europe Ready for a Nuclear Renaissance? , Dec. 9, 2024
- ESG Credit Brief: Power Generators, Dec. 4, 2024
- ESG Credit Brief: Networks, Dec. 4, 2024
- Some European Power Markets Will Suffer As Renewables Put Pressure On Prices, Sept. 12, 2024
- The Energy Transition, Geopolitics, And Cannibalization Are Shaping Europe's Power Prices, Sept. 12, 2024
- Utilities Power Handbook 2024: Western European Regulated Power, Sept. 10, 2024
- Power Sector Update Shows European Offshore Wind Is Racing Ahead, Sept. 10, 2024
- European Electricity Producers' Credit Quality And Revenue-Support Contracts: It's Complicated, July 10, 2024
- Europe's Power Producers Continue Their Balancing Act As Electricity Prices Stay Low, July 10, 2024

Ratings Detail (as of July 10, 2025)*	
Electricite de France S.A.	
Issuer Credit Rating	BBB/Positive/A-2

Ratings Detail (as of July 10, 2025)*	
Commercial Paper	A-2
Junior Subordinated	B+
Senior Unsecured	BBB
Short-Term Debt	A-2
Issuer Credit Ratings History	
05-Jun-2024	BBB/Positive/A-2
14-Dec-2022	BBB/Stable/A-2
24-May-2022	BBB/Watch Neg/A-2
21-Feb-2022	BBB/Negative/A-2
17-Jan-2022	BBB+/Watch Neg/A-2
Related Entities	
Coentreprise de Transport d'Electricite	
Issuer Credit Rating	A-/Negative/--
Senior Unsecured	BBB+
EDF Energy Customers Ltd.	
Issuer Credit Rating	BB-/Positive/NR
EDF Energy Ltd.	
Issuer Credit Rating	BB-/Positive/B
Edison SpA	
Issuer Credit Rating	BBB/Positive/A-2
RTE Reseau de Transport d Electricite	
Issuer Credit Rating	A/Negative/A-1
Commercial Paper	
Local Currency	A-1
Senior Unsecured	A

*Unless otherwise noted, all ratings in this report are global scale ratings. S&P Global Ratings' credit ratings on the global scale are comparable across countries. S&P Global Ratings' credit ratings on a national scale are relative to obligors or obligations within that specific country. Issue and debt ratings could include debt guaranteed by another entity, and rated debt that an entity guarantees.