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Electricite de France S.A.

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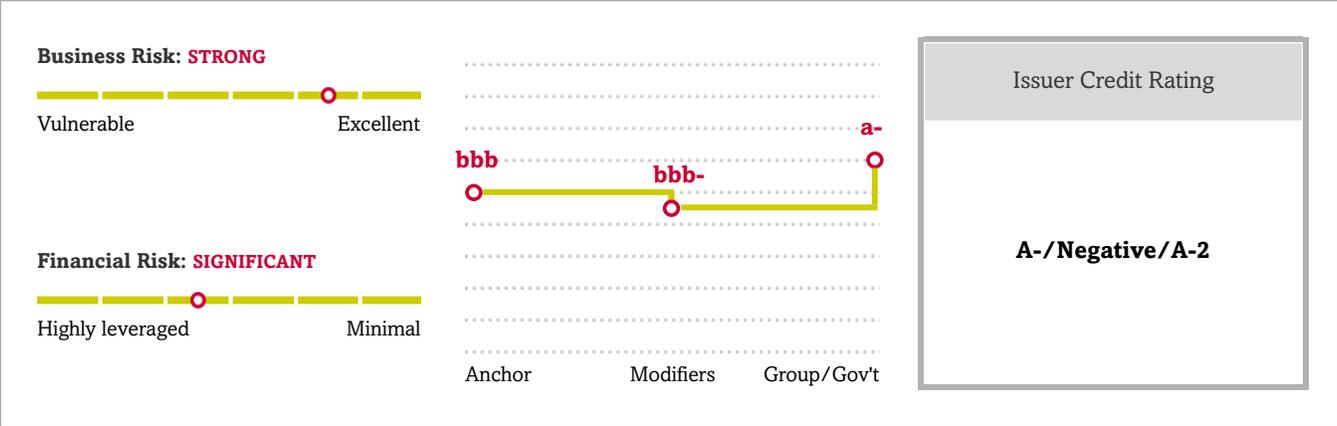
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Electricite de France S.A.



Credit Highlights

Overview	
Key Strengths	Key Risks
One of the largest vertically integrated utilities in the world, with dominant positions in France and strong positions in the U.K. and Italy.	Significant exposure to volatile European merchant power activities, and a baseload consisting of mainly nuclear and hydro generation portfolio, combined with power supply competition.
Relatively high contribution from domestic regulated earnings (30% of 2019 EBITDA), notably through the full ownership of the French power distribution network.	Existing nuclear assets are exposed to unfavorable ARENH remuneration framework, which is currently being revised.
Strong support from the French government (owning 84%) as the main power generator and grid operator in France.	Execution risks and negative track record associated with capital-intensive nuclear new build projects.
Substantial cash balances and excellent access to capital markets.	Relatively high adjusted financial leverage with debt to EBITDA increasing to above 4.5x in 2021, with substantial pensions and nuclear liabilities.
Some financial flexibility provided by a combination of scrip dividend (from majority owner) and asset disposals.	A sizable investment program combined with very long and complex construction phases, resulting in high negative free operating cash flows (FOCF) after dividends.

EDF had limited financial headroom ahead of the COVID-19 pandemic because of power price exposure and high capex.

Financial leverage is high in light of the group's exposure to a drop in wholesale power prices in a context of ARENH asymmetry. EDF's adjusted financial leverage was around 4.3x at the end of 2019, comprising significant pension deficit and nuclear liabilities for asset dismantling and nuclear waste management. We believe this leverage is particularly high given the group's exposure to merchant power activities (about 57% of 2019 EBITDA for generation and supply) and the sensitivity of credit metrics to power prices.

In addition, EDF's sizable capital expenditure (capex) puts pressure on cash flows, which will result in increasing debt in coming years. The plans include very high maintenance and upgrade expenditures on the existing French nuclear fleet and construction of nuclear power plants in France and the U.K. This comes on top of ambitious investments in renewables and sizable investments in networks, leading to about €15 billion of spending each year. We believe this investment plan has very low flexibility, and we anticipate that these high investments will translate into large negative

FOCF in 2020 of €2 billion-€3 billion, improving in 2021 on the back of lower working capital swings.

Lower power consumption coupled with lower power prices will reduce earnings growth over 2020-2021, while we are monitoring for other operating impact of the COVID-19 pandemic.

EDF's earnings will be impacted in 2020 by lower nuclear output and in 2021 by less favourable power prices in France and in the U.K.

At the end of March 2020, the group adjusted its 2020 guidance to the bottom end of the initial EBITDA guidance of €17.5 billion-€18 billion, with the main hit coming from lower nuclear production due to delayed scheduled maintenance, while earnings should be supported by hedges over its unregulated production (at about €46/MWh). From 2021, we anticipate earnings to suffer from lower power prices, driven by continued low gas and CO2 prices.

The COVID-19 pandemic and extended lock-down in France may cause extended outages on EDF's existing fleet, delaying scheduled necessary maintenance. In addition, the current situation could bring additional operational disruption in the form of further delays in commissioning of EPR FLA-3, which has now been granted start-up extension to 2024. While EDF official guidance remains for a commissioning date of early 2023, the group has extra flexibility to bring this new nuclear project into service (17 years vs 13 years previously).

We expect the group to suffer delayed collection on its supply business, particularly from its smaller and vulnerable client base. This will translate into increased working capital. We expect the financial drain to be manageable with some recovery in 2021. At this stage, we do not factor a significant increase in default rates that could result in a material increase in bad debt provisions.

We see sharp upward pressure on economic debt with an increasing asset retirement obligation and pension deficits.

Increasing asset retirement obligation and pension deficits may also affect EDF's economic debt, as actuarial assumptions are likely to continue increasing liabilities, while dedicated and planned assets might underperform amidst disruptions in the financial markets in 2020.

In 2020, the group's nuclear provisions could increase materially as a result of a lower discount rate (-10 basis points [bps] real rate decrease in France corresponding to roughly €900 million increase of French nuclear provisions), and of the mechanic impact of the discount unwinding (roughly €2 billion provisions increase at the group's level, annually). At the same time, we see additional risks in any underperformance of dedicated assets because of the significant decline in the stock markets over the past few weeks.

As for pension liabilities, we also see the current deficit widening for 2020, on the back of reduced fund performance (compared to a high level in 2019, marked by significant higher contribution from the equity portion), resulting in an increase of about €2 billion in 2020.

These deficits, combined with lower earnings, could further pressure EDF's adjusted credit metrics, with a greater impact on 2020 economic debt (roughly €8 billion as per our revised assumptions), and with leverage spiking to close to 5x in 2021 as a result of lower expected EBITDA. Should dedicated assets' and pension funds' performance were to be equal to zero in 2020, leverage will only increase to 4.5x in 2021 (see Key Credit Metrics table). Credit metrics should however be restored from 2022 in our base case, on the back of more favourable power prices (above ARENH's

level), supporting EDF's generation and supply earnings.

A potential change of nuclear regulation in France is a crucial element of our rating on EDF.

We see a positive signal from public consultation, launched by the government and closed mid-March 2020, on new regulation for France's existing nuclear fleet. The introduction of a price corridor for a large part of the nuclear output, ultimately aiming at covering the total costs of French nuclear production and providing a fair remuneration of these assets, is a change in market design that could support the rating. Timing of implementation and setting of the floor price will be key factors when assessing EDF's degree of support for the proposed regulation. We believe the COVID-19 pandemic will most likely delay advances on this structural regulatory reform for EDF, as both the French State and the European Commission are dealing with priorities of addressing the economic and social consequences of the pandemic. Furthermore, we understand any proposal of group reorganization, as requested by the French state, would be linked to progress on the regulation and would most likely be delayed beyond first-semester 2020, as the latest guidance pre-crisis.

Increasing the floor price to a sustainable economic level is also politically sensitive as it raises affordability issues on consumer's electricity bills, especially in a context of lower power prices--two-year forwards at about €40/MWh as opposed to about €48/MWh when the public consultation was launched.

We see this affordability issue, in context of a looming recession, and of wholesale power prices currently below the ARENH price as a potential hurdle to significantly increasing the floor price above €42/MWh. As for sensitivity analysis, we estimate setting the floor price at €50/MWh-€60/MWh could increase electricity bills by 5%-10%, after an increase of 7.7% in 2019. At the same time, we recognize that the current crisis highlights EDF's strategic role as a major contributor to the security of power supply in France. This could be a further catalyst to a favourable change in market design for the group.

In any case, we would consider a late implementation in mid-2025 detrimental to EDF's cash flows, when the existing pricing mechanism, ARENH, legally ends (see "The Energy Transition: Is The Proposed Regulation For France's Existing Nuclear Assets Favorable For EDF's Credit Quality?", published Jan. 28, 2020).

The COVID-19 pandemic reinforces EDF's mission of public service, and the high likelihood of support from the French State, if needed.

EDF's highly strategic role as producer, distributor (through its concession Enedis), and supplier of electricity, and as provider of an essential public service, has been reinforced by the COVID-19 pandemic and its disruptive, restrictive measures. What's more, EDF is at the core of the government's national energy policy Programmation pluriannuelle de l'énergie (PPE). The recently released new energy roadmap over 2019-2028 highlights both France's pro-nuclear stance and nuclear power's key place in the French energy mix for the next decade. PPE also sets ambitious targets to significantly increase the share of renewables in the generation mix, spurred by a push for new solar and wind capacity (see "France's New Energy Plan: Implications For The Power Market And EDF's Credit Quality," published Dec. 5, 2018).

Amidst concerns of a looming recession post pandemic, the French state, in its willingness to suppress dividend distribution of French companies on behalf of 2019 earnings, including EDF, proves credit supportive for the group.

We understand that the French state is working on a decree that creates strong disincentives for 2020 dividend payments. Among others, EDF will only benefit from state fiscal benefits such as tax and payroll charges deferral if it doesn't pay any dividends for fiscal year 2020.

This comes on top of the government's decision in February 2019 to elect for scrip for the balance of its 2018 dividends as well as those in fiscal years 2019 and 2020. These cash flow protective measures confirm a supportive stance from the French government and aids our assessment of a high likelihood of extraordinary government support for EDF, if needed. This, which was also shown in 2017 in the form of a capital increase and scrip dividends, enhances EDF's credit quality.

Outlook: Negative

The negative outlook on EDF reflects our view of increased operational risks materialized through significant cost deviations and commissioning delays at new nuclear projects, namely FLA-3 and HPC. It also reflects tight financial headroom in context of the COVID-19 pandemic, lower wholesale power prices, and yet-to-be-assessed operational disruptions.

We expect an upward debt trajectory over 2020-2021 due to negative discretionary cash flows and increasing nuclear and pension liabilities. We anticipate that the group's S&P Global Ratings-adjusted funds from operations (FFO) to debt will lower to about 17-18%, and debt to EBITDA will reach over 4.5x, with forecasted lower nuclear output and wholesale power prices over 2020-2021, before restoring to about 19% and 4.5x respectively in 2022.

Downside scenario

We could consider a negative rating action if we see no clear progress toward positively changing regulation for EDF's existing French nuclear fleet, or on changes in market design. This would result in the persistent and high structural exposure of the group's cash flows to market volatility, given its still-material investment phase.

Rating pressure would also stem from FFO to debt falling below 17%, and debt to EBITDA failing to stay below 4.5x, levels we do not deem commensurate with our 'A-' rating. This could notably arise from further deviations in nuclear operations, a material upward revaluation of EDF's nuclear provisions, or a sharp deteriorating price environment, although with a lag of two-to-three years due to hedges in place.

Upside scenario

A stable outlook depends heavily on the group's reorganization, as well as the nature and effective implementation of EU-backed regulation, allowing EDF to better cover the economic cost of its existing French nuclear fleet. Additionally, we would view favorably the implementation of remedy measures designed to reinstate financial flexibility.

Our Base-Case Scenario

Assumptions	Key Metrics																																											
<p>Our base-case scenario is under constant revision as we continue to assess the impact of current economic conditions and the evolution of commodity prices.</p> <ul style="list-style-type: none"> Power prices of €40/MWh in 2020 (versus €45/MWh in our previous forecasts) and in 2021 (versus €48/MWh previously). In the U.K., stable in 2020 and 2021 at £45/MWh (versus £50/MWh previously). Decline in demand of electricity (-5% to -6% year-on-year for 2020) and delayed scheduled maintenance translating as lower output for 2020 (between 420TWh and 430TWh). Pressure on EBITDA in French supply activities because of increased competition and loss of market share. No dividend payment for fiscal year 2019 and a payout ratio of 45%-50% subsequently, with the French state electing scrip dividends for the entire fiscal year 2020 dividends. Asset disposals of about €2 billion delayed to 2021-2022. Net investments of about €14.8 billion in 2020 (down 15% from our previous forecasts) postponed to 2021, including capex linked to new nuclear build Hinkley Point C in the U.K. and deployment of smart meters Linky in France. An increase in nuclear obligations in 2020 of about €5 billion to reflect the expected lowering of the discount rate by 0.1%, actuarial effect and lower performance of dedicated assets. We expect this upward trend to continue in the lower-rate environment. An increase in pension liabilities on reduced fund performance (roughly +€2 billion). 	<table border="1"> <thead> <tr> <th style="border-bottom: 1px solid black;">(Bil. €)</th> <th style="border-bottom: 1px solid black;">2019A</th> <th style="border-bottom: 1px solid black;">2020E</th> <th style="border-bottom: 1px solid black;">2021E</th> <th style="border-bottom: 1px solid black;">2022E</th> </tr> </thead> <tbody> <tr> <td style="border-bottom: 1px solid black;">EBITDA*</td> <td style="border-bottom: 1px solid black;">16.7</td> <td style="border-bottom: 1px solid black;">17.5-18.0</td> <td style="border-bottom: 1px solid black;">17.1-17.6</td> <td style="border-bottom: 1px solid black;">19.2-19.7</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Capex*</td> <td style="border-bottom: 1px solid black;">16.7</td> <td style="border-bottom: 1px solid black;">14.5-15.0</td> <td style="border-bottom: 1px solid black;">14.5-15.0</td> <td style="border-bottom: 1px solid black;">14.2-14.7</td> </tr> <tr> <td style="border-bottom: 1px solid black;">FOCF*</td> <td style="border-bottom: 1px solid black;">(3.4)</td> <td style="border-bottom: 1px solid black;">(1.9)-(1.4)</td> <td style="border-bottom: 1px solid black;">(1.2)-(0.7)</td> <td style="border-bottom: 1px solid black;">(0.2)-0.3</td> </tr> <tr> <td style="border-bottom: 1px solid black;">DCF*</td> <td style="border-bottom: 1px solid black;">(3.6)</td> <td style="border-bottom: 1px solid black;">(3.0)-(2.5)</td> <td style="border-bottom: 1px solid black;">(2.3)-(1.8)</td> <td style="border-bottom: 1px solid black;">(1.0)-(0.5)</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Debt*/**</td> <td style="border-bottom: 1px solid black;">72</td> <td style="border-bottom: 1px solid black;">76.0-80.0</td> <td style="border-bottom: 1px solid black;">78.0-83.0</td> <td style="border-bottom: 1px solid black;">80.0-85.0</td> </tr> <tr> <td style="border-bottom: 1px solid black;">FFO/debt (%)*</td> <td style="border-bottom: 1px solid black;">19.0</td> <td style="border-bottom: 1px solid black;">18.7-19.7</td> <td style="border-bottom: 1px solid black;">17.5-18.5</td> <td style="border-bottom: 1px solid black;">19.0-20.0</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Debt/EBITDA (x)*/**</td> <td style="border-bottom: 1px solid black;">4.3</td> <td style="border-bottom: 1px solid black;">4.3-4.5</td> <td style="border-bottom: 1px solid black;">4.5-4.8</td> <td style="border-bottom: 1px solid black;">4.1-4.4</td> </tr> </tbody> </table>				(Bil. €)	2019A	2020E	2021E	2022E	EBITDA*	16.7	17.5-18.0	17.1-17.6	19.2-19.7	Capex*	16.7	14.5-15.0	14.5-15.0	14.2-14.7	FOCF*	(3.4)	(1.9)-(1.4)	(1.2)-(0.7)	(0.2)-0.3	DCF*	(3.6)	(3.0)-(2.5)	(2.3)-(1.8)	(1.0)-(0.5)	Debt*/**	72	76.0-80.0	78.0-83.0	80.0-85.0	FFO/debt (%)*	19.0	18.7-19.7	17.5-18.5	19.0-20.0	Debt/EBITDA (x)*/**	4.3	4.3-4.5	4.5-4.8	4.1-4.4
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	<p>*S&P Global Ratings-adjusted. A--Actual. E--Estimate. Capex--Capital expenditure. FOCF--Free operating cash flow. DCF--Discretionary cash flow. FFO--Funds from operations. §DCF is calculated before asset disposals. **Debt and Debt/EBITDA are shown accordingly : lower bound is reflecting 0% performance of both dedicated assets and pension funds in 2020 ; higher bound reflecting -10% and -7% respectively year-on-year in 2020.</p>																																											

Base-case projections

Based on these assumptions, we arrive at the following S&P Global Ratings-adjusted credit measures:

- Reported EBITDA rising to about €17.3 billion in 2020, lower than EDF's guidance (€17.5 billion-€18.0 billion) on the back of lower nuclear output (prolonged outages related to COVID-19) and no pick-up in 2021, with progressive maturing of hedges in place (higher level than current forwards) for its generation earnings.
- FFO-to-debt calculation remaining above 17% and debt to EBITDA increasing above 4.5x progressively over 2020-2021 before improving in 2022.
- Debt trending up on the back of continuous negative discretionary cash flows combined with expected increase in asset retirement obligations. Planned asset disposals are postponed to 2021 and scrip dividends (elected by the French government) only partly mitigate the cash outflows over the period.

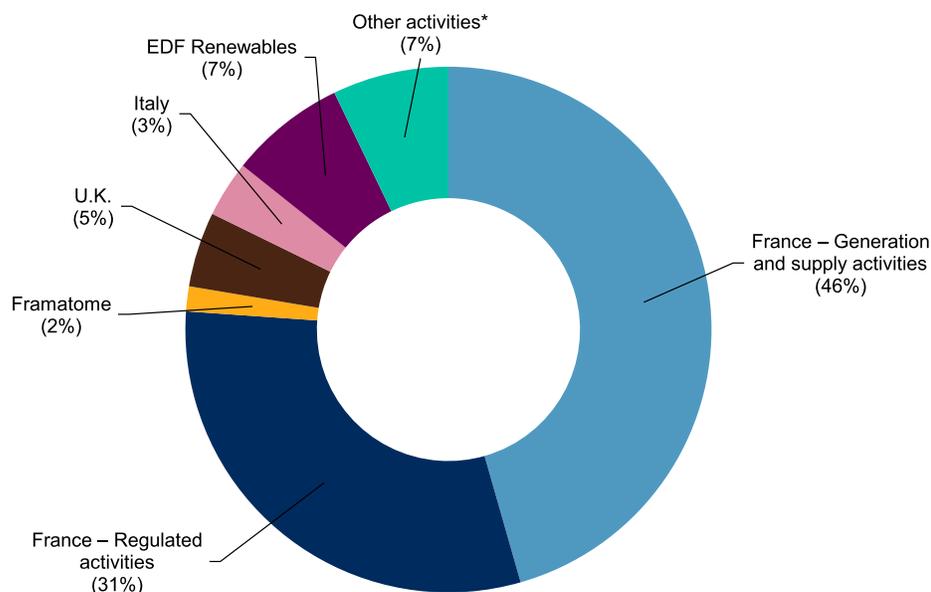
Company Description

EDF is an integrated energy company operating in a wide range of electricity-related businesses: generation, distribution, supply, and energy trading. It is France's dominant electricity operator and has strong positions in the U.K. through EDF Energy, and in Italy through fully-owned Edison, making it the world's leading electricity player. The company also manages the low- and medium-voltage public distribution network in France through its subsidiary Enedis, with a regulated asset base of about €52.2 billion at year-end 2019. French regulated activities accounted for 30% of 2019 EBITDA (versus 32% in 2018; see chart 1).

With worldwide installed capacity of 122 gigawatts (GW) as of Dec. 31, 2019, and global energy generation of 558TWh, EDF has the largest generating capacity of all the major European utilities. The EDF group supplies electricity, gas, and associated services to almost 40 million customer accounts worldwide (of which more than two-thirds are in France). It has a significant proportion of nuclear and hydroelectric power in its generation mix, which represented respectively 78% and 8% of electricity output in 2019. Notably, EDF operates 57 nuclear reactors in France and 15 in the U.K., with a total capacity of 73 GW. French generation and supply activities accounted for 46% of 2019 EBITDA (versus 41% in 2018) while the U.K. and Italy accounted for 5% and 3.5% respectively (versus 5% each in 2018, difference comes mainly from the sale of Edison's E&P business; chart 1).

EDF Renewables, which develops French and international new renewables activities (total net installed capacity of 9.6 GW; mostly wind) represents 7% of 2019 EBITDA. The other activities segment represents 7% of EBITDA. It includes Dalkia, which focuses on energy services as well as heating and cooling networks (2% of 2019 EBITDA); and EDF Trading, which provides market, optimization, and risk management services via wholesale energy market operations.

At year-end 2019, EDF reported revenue of €71 billion, EBITDA of €16.7 billion, and adjusted financial debt of €72 billion. The group is listed on Euronext, with a market capitalization of €22 billion as of March 30, 2020 (versus €28 billion in November 2019). The French government is the main shareholder with 83.6% of EDF shares as of Dec. 31, 2019.

Chart 1**EDF 2019 EBITDA By Segment**

*Other international, Dalkia, EDF Trading, and other. Source: Company data.

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Business Risk: Strong

Our assessment of EDF's business risk profile as strong reflects that it is one of the world's largest integrated utilities, as well as its position as the dominant player in France in generation, distribution, and supply, and its leading positions in the U.K. and Italian power generation markets. Our assessment also reflects the sizable share of regulated networks in the portfolio (30% of EBITDA) and a contracted renewables portfolio that still contributes a relatively small share of earnings.

Mitigating these strengths is the increasing share of revenue from unregulated activities following the partial liberalization of the French energy market as well as EDF's higher exposure to volatile power prices and the predominance of largely fixed-cost nuclear and hydro operations. Together, they are about 70% of the group's annual output--up to 80% under normal hydro conditions. The group's heavy reliance on nuclear operations is also a constraint as it implies a more significant technology concentration than peers and significant construction risk.

About 70% of EDF's EBITDA is derived from its power generation activities, which are largely merchant. As such, EDF's earnings are highly exposed to the volatility of power prices. This merchant exposure, combined with the high fixed cost nature of its nuclear power generation fleet, could exert pressure on the group's profitability in context of

persistently low power prices. According to a 2014 report by the French national authority Cour des Comptes, the cash cost of EDF's nuclear fleet (operating cost and maintenance capex) was about €35/MWh, with the full economic cost estimated at about €60/MWh.

Material cost and delay overruns for HPC and FLA-3 highlight increased operating risks related to new nuclear buildings. On Sept. 25, 2019, the group announced higher estimated completion costs on HPC in the U.K., now estimated at £21.5 billion-£22.5 billion. This comes on top of €1.5 billion of cost overruns on the Flamanville (FLA-3) evolutionary power reactor (EPR), which has been postponed by three years following the French nuclear safety authority's (ASN's) June decision to require repairs on eight faulty welds, with the total budget rising to €12.4 billion. Although the incidents are not related, we believe that execution risks in new nuclear projects and operating issues at existing reactors will heighten pressure on the group's credit quality, translating to increasing capex, an upward debt trajectory, and reduced financial flexibility.

More details on our Business Risk Profile (see our Full Analysis on EDF, Dec 12, 2019).

Financial Risk: Significant

Economic debt trending up on the back of negative cash flows and an increase in already significant non-financial liabilities.

Our assessment of EDF's financial risk profile is underpinned by its high adjusted debt, trending up from about €72 billion in 2019 to above €85 billion in 2022, despite the credit supportive measures in the form of scrip dividends consented to by the French government (for a combined effect of about €1.5 billion) and asset disposals (€2 billion-€3 billion over 2019-2020 potentially delayed over 2022). This is the result of an increase in nuclear/pension provisions in a lower-for-longer rate environment, combined with sizable negative cash flow.

We benchmark EDF's credit metrics, notably our adjusted FFO-to-debt and debt-to-EBITDA ratios, against our medial volatility table. We use this approach because EDF derives more than one-third of its earnings from France's supportive regulated activities. Our adjusted credit metrics for EDF are particularly affected by the relative weight of EDF's nonfinancial obligations. Pensions and asset-retirement obligations (mostly linked to the nuclear segment) represented respectively €15 billion and €9.6 billion out of €72 billion of adjusted debt, while operating leases of about €4.5 billion provide the remainder of our debt adjustments.

Sizable investment plan leads to negative cash flows.

EDF's investment plan includes very high maintenance and upgrade expenditure on the existing nuclear fleet and construction of nuclear power plants in France. This comes on top of ambitious investments in renewables and sizable investments in networks leading to about €15 billion in spending each year. We believe this investment plan has very low flexibility.

We anticipate that these high investments will translate into sizable negative FOCF of €2.5 billion-€3 billion over 2020.

We believe that the ongoing complex new nuclear builds contribute to the group's deeply negative FOCF and that associated cost overruns exacerbate the debt trajectory. The cash flow contribution from these assets is also still some

way off and we remain uncertain as to their value creation potential if there are further woes during construction.

Liquidity: Strong

We continue to assess EDF's liquidity as strong given the ample and diversified liquidity sources that the group has. We project that its liquidity sources will exceed uses by more than 1.5x over the next 12-24 months. Our assessment is further supported by EDF's consistently substantial cash balances, solid relationships with banks, and ample and proven access to capital markets, even under dire conditions.

Principal Liquidity Sources	Principal Liquidity Uses
<p>Principal liquidity sources as of Jan. 1, 2020:</p> <ul style="list-style-type: none"> • About €22.8 billion cash and highly liquid marketable securities; • €9.1 billion in available committed credit lines, out of which €0.8 billion maturing in 2020 and €1.6 billion in 2021; • Estimated FFO of about €14.6 billion in the next 12 months; and • Proceeds of asset disposals of about €560 million-€600 million (related to Edison's E&P activities already agreed upon). 	<p>Principal liquidity uses as of Jan. 1, 2020:</p> <ul style="list-style-type: none"> • Short-term debt of about €4.2 billion; commercial papers of about €2 billion; • Long-term debt of about €5.0 billion; • Estimated capex of about €14.85 billion; and • Cash dividends of about €870 million, including €540 million dividends on hybrids and about €340 million dividends to minorities.

Debt maturities

- Debt maturities are well staggered: about €3.8 billion in 2020, and about €3.4 billion in 2021.

Environmental, Social, And Governance

EDF's main environmental, social, and governance risk is governance. We score this as fair and weaker than peers. EDF's governance risk mostly relates to the oversight of its board and the group's questionable ability to manage risks and avoid cost overruns at multibillion EPR new-build nuclear projects. The group has embarked on two new EPRs of about £21.5 billion-£22.5 billion in the U.K. (Hinkley Point C) for which it has announced cost revisions of about £3.4 billion-£4.4 billion. Additionally, cost overruns for its first-in-kind EPR in France, FLA-3, currently amount to €9.5 billion with a €1.5 billion cost inflation announced in October 2019, following the ASN's decision to require repairs to the eight welds inside the containment building. Positively, we highlight the supportive financial stance of the French government (see following section).

With one of the world's largest nuclear generation fleets (73GW capacity and 76% of output) EDF's carbon footprint is markedly advantageous. Profound structural changes are needed, however, to eventually reposition the economics of EDF's French nuclear fleet. We see positive signals: the necessity for sustainable remuneration for baseload energy has been recognized, as has a potential departure from the ARENH's pricing mechanism. This zero carbon emission advantage with potential favorable regulation is offset, however, by environmental and social risks relating to the future long-term storage of nuclear waste. We capture EDF's large end-of-cycle liabilities (€50 billion), of both decommissioning and nuclear waste storage, in our asset retirement obligation debt adjustment (net of dedicated assets), but the amount continues to be subject to an upward trajectory. The ambitious strategic goals of renewables capacity embedded in the Cap 2030 and Solar Plan (30GW capacity by 2035) support EDF's focus on diversifying its energy mix and concentrating on low-carbon sources. Overall, the environmental score of EDF is in line with the industry.

Social factors are important to our assessment of EDF's standing vis-à-vis the French state. We believe there is still support for the nuclear industry in France, given its economic and social stakes. France's updated energy policy, defined by the PPE proposals over 2019-2028, has the key objective of reducing the share of nuclear in the power mix to 50% by 2035 (from 75% today). This would require EDF to start decommissioning its plants as per the currently approved 50-year life, partly from 2027, progressively until 2035. At the same time, it could require sizable investments in renewables. This strategy will not alleviate pressure on the group's free cash flow from sizable investments planned over an extended period.

Government Influence

Our assessment of a high likelihood of extraordinary government support for EDF, if needed, is underpinned by the French government's historical support to EDF, specifically the €4 billion capital increase in 2017, as well as the scrip dividends agreed for 2017, which were reiterated at the end of February 2019, for the remaining 2018, 2019, and 2020 full exercises. The government's involvement in EDF's strategy and financial health is another key aspect in our assessment. We currently see a strong alignment of interests between EDF's management and the French government regarding a potential structural reform of nuclear remuneration in France and a new remuneration framework that would not be harmful to EDF's financial viability. Finally, we believe the COVID-19 pandemic will stress further the

vital role of EDF in the French power market as the biggest electricity producer and supplier. We factor the likelihood of government support into our rating on EDF by including a three-notch uplift from EDF's 'bbb-' stand-alone credit profile (SACP).

We base our assessment of the high likelihood of support on EDF's important role for France and very strong link with the French government. We would likely revise our assessment down if we did not see effective and timely implementation of the remedy measures for EDF.

Group Influence

We assess EDF's unsupported group credit profile at 'bbb-', based on the consolidated cash flows and debt at the ultimate holding company, EDF S.A. We view the group's U.K. subsidiaries, EDF Energy PLC and EDF Energy Customers PLC, as core entities because of their significant contribution to the group's earnings, deep integration, and focus on the group's strategic plan.

Our assessment of Edison as highly strategic to EDF reflects that Italy is a key market for EDF and Edison will act as a core platform to develop that market. Edison is fully integrated into the group, and depends on EDF strategically, managerially, and financially. Under its current SACP of 'bbb-', Edison currently does not benefit from any rating upside from its parent, but its final rating is also not capped by EDF's SACP.

EDF also owns a 50.1% stake in RTE, the French transmission grid operator. We consider that EDF has no control of RTE, although it can influence dividends, and therefore RTE's rating is delinked from EDF and equity accounted in its accounts.

Issue Ratings - Subordination Risk Analysis

Capital structure

At year-end 2019, EDF's capital structure consisted of about €67 billion of senior unsecured debt and about €9.2 billion of hybrid securities unsecured debt issued by EDF and its financing subsidiaries. The group also has debt of about €11 billion at subsidiaries.

Analytical conclusions

As a result, we do not see any material structural subordination risk on the senior unsecured debt instruments issued by the group and rate them 'A-', in line with the issuer credit rating on EDF.

In our analysis, we do not expect the French state to provide extraordinary support on the hybrid instruments. We therefore rate them 'BB', two notches below our analysis of EDF's 'bbb-' SACP, reflecting the subordinated nature of these instruments and the optionality to defer the coupon. If we revised our assessment of the SACP (down or up), we would not expect to change our approach related to the notching differential, nor our approach to assessing the hybrid's equity content. This is because the issuer credit rating would remain investment grade, all else being equal.

Ratings Score Snapshot

Issuer Credit Rating

A-/Negative/A-2

Business risk: Strong

- **Country risk:** Low
- **Industry risk:** Intermediate
- **Competitive position:** Strong

Financial risk: Significant

- **Cash flow/leverage:** Significant

Anchor: bbb

Modifiers

- **Diversification/portfolio effect:** Neutral (no impact)
- **Capital structure:** Neutral (no impact)
- **Financial policy:** Neutral (no impact)
- **Liquidity:** Strong (no impact)
- **Management and governance:** Fair (no impact)
- **Comparable rating analysis:** Negative (-1 notch)

Stand-alone credit profile : bbb-

- **Group credit profile:** a-
- **Entity status within group:** Core
- **Related government rating:** AA
- **Likelihood of government support:** High (+3 notches from SACP)

Related Research

- COVID-19: Coronavirus-Related Public Rating Actions On Corporations And Sovereigns To Date, April 2, 2020
- Economic Research: The Escalating Coronavirus Shock Is Pushing 2020 Global Growth Toward Zero, March 30, 2020
- EMEA Utilities Should Withstand COVID-19 Better Than Most Sectors, March 24, 2020
- Credit FAQ The Energy Transition: Is The Proposed Regulation For France's Existing Nuclear Assets Favorable For EDF's Credit Quality? Jan. 28, 2020
- Electricite de France S.A., Full Analysis, Dec. 12, 2019
- The Energy Transition: Different Nuclear Energy Policies, Diverging Global Credit Trends, Nov. 11, 2019

- The Energy Transition: Nuclear Dead And Alive, Nov. 11, 2019

Related Criteria

- General Criteria: Group Rating Methodology, July 1, 2019
- Guidance | General Criteria: Group Rating Methodology, July 1, 2019
- Criteria | Corporates | General: Corporate Methodology: Ratios And Adjustments, April 1, 2019
- Guidance | 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 And Assumptions: Assigning Equity Content To Hybrid Capital Instruments Issued By Corporate Entities And Other Issuers Not Subject To Prudential Regulation, Jan. 16, 2018
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- General Criteria: Guarantee Criteria, Oct. 21, 2016
- 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
- Criteria | Corporates | Industrials: Key Credit Factors For The Unregulated Power And Gas Industry, March 28, 2014
- Criteria | Corporates | Utilities: Key Credit Factors For The Regulated Utilities Industry, Nov. 19, 2013
- Criteria | Corporates | General: Corporate Methodology, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities, Nov. 13, 2012
- General Criteria: Criteria Clarification On Hybrid Capital Step-Ups, Call Options, And Replacement Provisions, Oct. 22, 2012
- General Criteria: Stand-Alone Credit Profiles: One Component Of A Rating, Oct. 1, 2010
- General Criteria: Use Of CreditWatch And Outlooks, Sept. 14, 2009
- Criteria | Insurance | General: Hybrid Capital Handbook: September 2008 Edition, Sept. 15, 2008

Business And Financial Risk Matrix

Business Risk Profile	Financial Risk Profile					
	Minimal	Modest	Intermediate	Significant	Aggressive	Highly leveraged
Excellent	aaa/aa+	aa	a+/a	a-	bbb	bbb-/bb+
Strong	aa/aa-	a+/a	a-/bbb+	bbb	bb+	bb
Satisfactory	a/a-	bbb+	bbb/bbb-	bbb-/bb+	bb	b+
Fair	bbb/bbb-	bbb-	bb+	bb	bb-	b
Weak	bb+	bb+	bb	bb-	b+	b/b-
Vulnerable	bb-	bb-	bb-/b+	b+	b	b-

Ratings Detail (As Of April 3, 2020)*

Electricite de France S.A.

Issuer Credit Rating	A-/Negative/A-2
Commercial Paper	A-2
Junior Subordinated	BB
Senior Unsecured	A-
Short-Term Debt	A-2

Issuer Credit Ratings History

10-Oct-2019	A-/Negative/A-2
25-Feb-2019	A-/Stable/A-2
20-Nov-2017	A-/Negative/A-2
21-Sep-2016	A-/Stable/A-2
13-May-2016	A/Negative/A-1
26-Feb-2016	A+/Watch Neg/A-1
07-May-2015	A+/Negative/A-1

Related Entities

Coentreprise de Transport d'Electricite

Issuer Credit Rating	A-/Stable/--
Senior Unsecured	BBB+

EDF Energy Customers Ltd

Issuer Credit Rating	BBB-/Negative/NR
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EDF Energy Limited

Issuer Credit Rating	BBB-/Negative/A-3
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Edison SpA

Issuer Credit Rating	BBB-/Stable/A-3
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RTE Reseau de Transport d Electricite

Issuer Credit Rating	A/Stable/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.

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