Research Update:

French Utility EDF Downgraded To 'BBB+' On Prolonged Operational Weakness, Lower Output Due To COVID-19; Outlook Stable

June 22, 2020

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Rating Action Overview

- Electricite de France S.A. (EDF) has sharply revised its French nuclear output for 2020-2022 because of more COVID-19-related outages and a shift in maintenance work schedules over the next two years.
- The prolonged lower nuclear availability reflects greater operational weakness, which will contribute to a significant decline in profitability (EBITDA €5 billion-€6 billion lower in 2020-2022 than pre-pandemic; but some upside if the recovery is stronger than expected). Hence, we are revising down our business risk assessment to satisfactory from strong.
- We expect the group to work on extensive financial remedies, but still anticipate debt and asset retirement obligation (ARO)-related liabilities will increase substantially in 2020.
- We are lowering our long-term rating on EDF to 'BBB+' from 'A-'.
- We are lowering our long-term rating on EDF's U.K. subsidiaries, EDF Energy PLC and EDF Energy Customers PLC, to 'BB+' from 'BBB-'
- We are lowering our long-term issuer and senior unsecured bond ratings to 'BBB+' from 'A-' and our junior subordinated debt rating to 'BB-' from 'BB'.
- Our stable outlook reflects our view that the group, supported by the French government, will start implementing an action plan to protect its balance sheet. This should allow the group to progressively restore adjusted debt to EBITDA to about 5.0x by 2022.

Rating Action Rationale

Our downgrade of EDF signals heightened structural and operational risks to its nuclear operations, in our view, exacerbated by the COVID-19 pandemic. This results in lower cash flow predictability and contributes to the group's deeply negative free operating cash flow (FOCF). We expect this, together with swings in its large AROs and post-retirement benefits (PRB), to increase the group's adjusted debt above €80 billion by year-end 2020 compared with €72 billion at year-end 2019. We also revised our assessment of EDF's business risk profile to satisfactory from strong due to longer outages and delayed maintenance schedules on its historic nuclear fleet, combined with ongoing complex new nuclear builds.

Significantly lower nuclear output over 2020-2022, coupled with lower power prices, will further dent earnings and cash flows over 2020-2022. The COVID-19 pandemic will significantly hurt EDF's earnings in the short and medium term by depressing nuclear output over 2020-2022, with historically low guidance of 300 terawatt hours (TWh) in 2020, and ranging from 330-360 TWh each year in 2021-2022. This compares with EDF's previous production estimates of 375-390 TWh in 2020 and with its historical level of about 400 TWh in previous years. As per the company's statements, the key reasons behind its sharp revision of nuclear production over the next three years include:

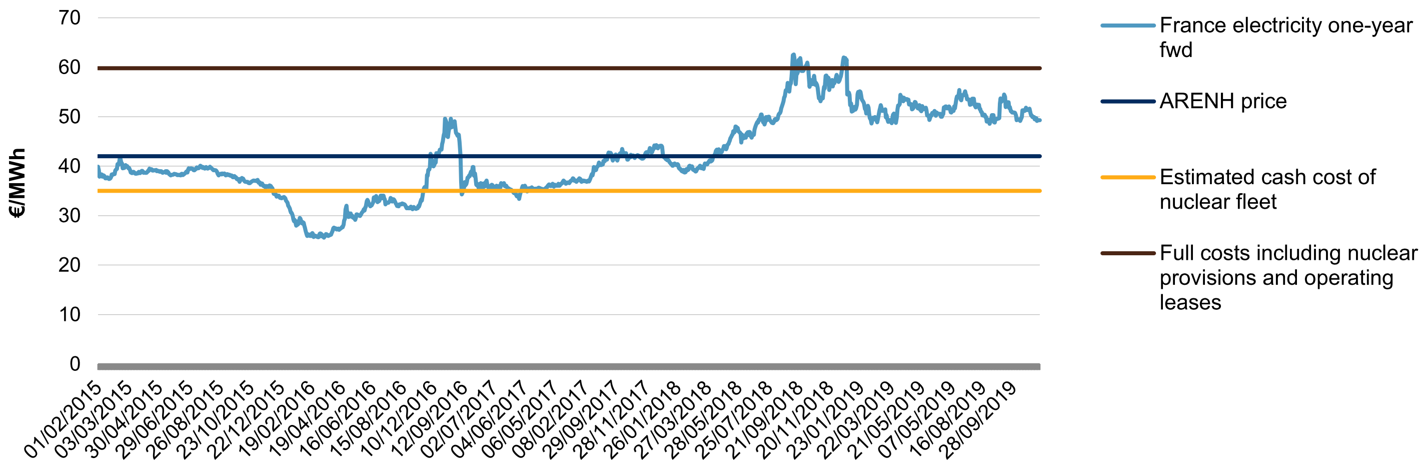
- A delayed maintenance schedule as a result of lockdown measures, with cascading effects over 2020;
- Phasing nuclear production to prioritize availability of reactors during the peak winter 2020/2021 season; and
- An expected decrease in power consumption for 2020 (up to negative 20% at the peak of the lockdown, stabilizing to about negative 7% in early June versus normalized levels).

The lower-than-expected availability of nuclear reactors highlights, in our view, the complex sequencing of upgrade and maintenance schedules across the entire nuclear generation fleet. Operational disruptions, together with increased unforeseen outages of its nuclear fleet in recent years, make EDF's business model less resilient than other integrated utilities, in our view. In addition to less availability of reactors in the coming years, EDF's earnings will suffer from lower power prices in France and the U.K. compared with pre-COVID-19 levels, which will affect our projections for 2021 and 2022 (we assume about a €42-€44 per megawatt hour [/MWh] realized price). Overall, we now anticipate that lower volumes combined with lower power prices could lower EBITDA generation by about €3 billion in 2020, €1 billion in 2021, and €1.5 billion in 2022 compared with our pre-pandemic earnings forecasts. This means we now expect adjusted EBITDA to be in the €15 billion-17 billion range over the coming three years.

EDF has greater exposure to merchant prices than other large European integrated utilities. EDF is much more exposed to volatile power prices than its main peers, like Enel or Iberdrola, given its significant generation capacity comprising sizable nuclear and hydro assets. These assets are well positioned in the merit order, given their low marginal cost. Yet they have unregulated outright production, mostly fixed costs, and ultimately are highly sensitive to the volatile power markets (see chart 1). Moreover, the group is exposed to a drop in wholesale prices in the context of the ARENH (regulated access to incumbent nuclear electricity) regulated price asymmetry. Nevertheless, EDF's business risk profile remains supported by its significant size as one of the largest integrated utilities in the world, its position as the dominant player in France in energy generation, distribution, and supply, and leading positions in the U.K. and Italian power generation markets. The substantial share of regulated networks in the portfolio (30% of 2019 EBITDA) and a portfolio of contracted renewables that still contributes a relatively small share of earnings also enhances EDF's operating model.

Chart 1

France Electricity One-Year Forward, ARENH Price, And Cash Cost Of Nuclear Fleet



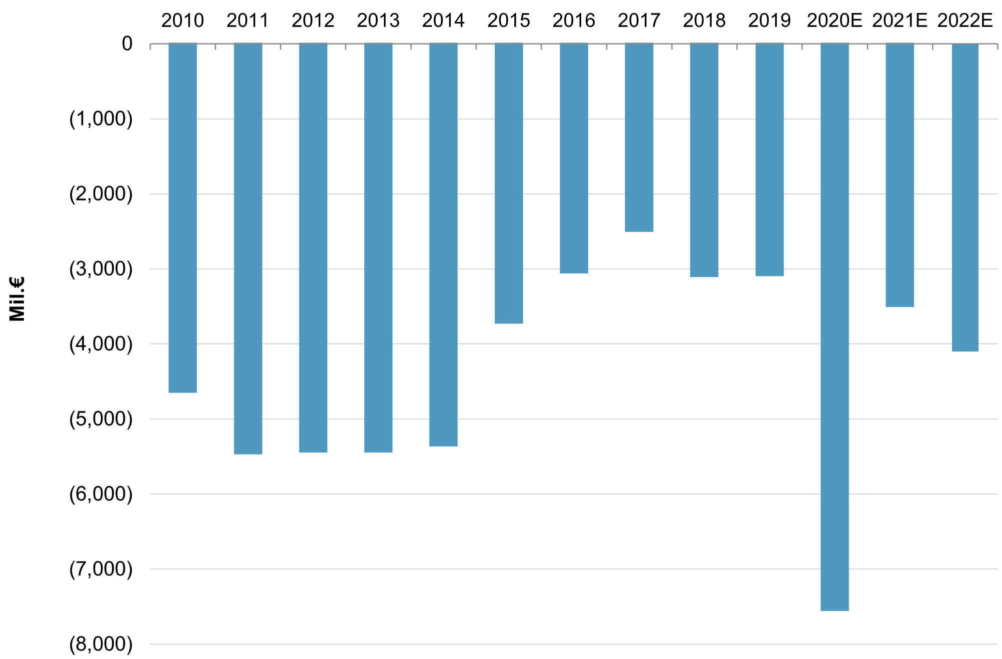
ARENH--Regulated Access to Incumbent Nuclear Electricity. MWh--Megawatt hour.

Cost overruns and delays for Flamanville (FLA-3) and Hinkley Point C (HPC) remain another important factor, with the impact of COVID-19 still uncertain. Continued execution risks in EDF's new nuclear-build reactor projects, as demonstrated by 2019 setbacks, are also part of our assessment of the group's satisfactory rather than strong business risk profile. While not incorporated in our financial base case, we believe that social-distancing measures represent a risk for further delays in commissioning FLA-3 (an extension was granted up until 2024, with fuel loading still scheduled for year-end 2022) and HPC. In 2019, the group announced €1.5 billion of cost overruns on the FLA-3 evolutionary power reactor (EPR), which has been postponed 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. An independent audit report on FLA-3--mandated by the finance minister, prepared by Jean-Martin Folz, and released in October 2019--highlighted key flaws in the project's management. These include poor governance, lack of coordination with ASN and all stakeholders in the supply chain, and lack of sufficient coordination between EDF and Framatome (ex-Areva). EDF launched in return its Excell plan, dedicated to the whole French nuclear industry, with further steps to be taken by year-end 2020.

We expect EDF's management to try to offset lower earnings and commit to bringing debt levels down after the spike this year. EDF's adjusted financial leverage was about 4.3x at year-end 2019, comprising a significant pension deficit (€15 billion) and nuclear liabilities for asset dismantling and nuclear waste management (€9.6 billion). We estimate strong pressure on earnings and cash flows related to the pandemic may push leverage close to 5.5x in 2020, with adjusted financial debt estimated at about €80 billion-€82 billion, up from €72 billion at year-end 2019. EDF's sizable capital expenditure (capex) plan has little flexibility. It includes 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. While we anticipate some short-term relief (about €1.5 billion could be postponed from 2020 to 2021-2022) and capex optimization, these high investments will continue putting pressure on cash flows in combination with depressed EBITDA. We also expect the group to suffer delayed collections in its supply business, particularly from its smaller and vulnerable client base, and CSPE collection, translating to a significant drain on working capital in 2020 (our estimate is about €2 billion-€2.5 billion) that will be partly recovered in 2021. Furthermore, we believe upward pressure on nonfinancial liabilities will affect EDF's debt over 2020-2022. In 2020, the group's nuclear provisions could increase materially as a result of a lower discount rate (a 10-basis-point [bps] real rate decrease in France, corresponding to a roughly €900 million increase of French nuclear provisions) and the mechanical impact of the discount unwinding (a roughly €2 billion increase in provisions at the group 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 since the beginning of the year (a 5% decline year over year in our base case). As for pension liabilities, we also see the current deficit widening for 2020 (we estimate by about €2 billion), on the back of reduced fund performance (compared to a high level in 2019, marked by a significantly higher contribution from the equity portion). As a result, we expect FOCF before disposals to remain significantly negative in the coming three years, at about €3.5 billion-€4.0 billion per year in 2021-2022. We do not expect EDF to pay any material dividends over this period, given thin or negative net income (see chart 2). We understand that the group intends to decide upon and implement measures to curb its debt trajectory and help improve its credit metrics over 2021 and 2022. In our base case, we assume that EDF's management will successfully implement a series of measures to contain its debt trajectory, most likely based on organic levers and additional balance sheet support.

Chart 2

EDF Historical And Projected Discretionary Cash Flows*



*Discretionary cash flow before acquisitions and disposals. E--Estimate. Source: S&P Global Ratings.

We continue to assess EDF's hybrid securities as having intermediate equity content. We rate these hybrids 'BB-', two notches below the 'bb+' stand-alone credit profile rather than the supported credit rating. This is because we believe that there is low likelihood that they could benefit from exceptional support from the French government. The two notches include one notch for subordination and one notch for coupon deferral risk, which is our standard approach for investment-grade issuers (those rated 'BBB-' or above). Furthermore, we note that EDF's total outstanding hybrids currently represent less than 10% of its total capitalization.

Outlook

The stable outlook reflects our expectation that the group will implement extensive financial measures to counter earnings declines and reduce debt after a forecast peak by year-end 2020. This should allow the company to progressively restore adjusted debt to EBITDA to about 5.0x by 2022.

We also consider that the French government should continue actively supporting a potential change in nuclear regulation, even if the approval process (involving EU competition authorities) and timing of implementing any reorganization remains difficult to predict, potentially going beyond 2022.

Downside scenario

We could see pressure on the rating if the group's credit metrics deteriorated such that adjusted debt to EBITDA was materially above 5.0x and funds from operations (FFO) to debt fell below 14% for a prolonged period. This could happen if EDF faced additional cost overruns and timing on nuclear new builds was significantly delayed, be it at FLA-3 or HPC.

This could also be prompted by persistent low availability of the existing nuclear fleet because of unplanned outages and operating issues. We would also consider lowering the rating on EDF if a change in market design was not implemented over the medium term, leaving the group's FOCF in very negative territory.

Upside scenario

Rating upside is remote at this stage. It would be contingent on significant debt reduction in 2021-2022, and stronger-than-expected operational or price recovery in 2022, leading to more sustainable neutral to positive FOCF. This would allow credit metrics to improve so that debt to EBITDA fell below 4.5x, trending toward 4.0x, on a consistent basis and FFO to debt was comfortably above 17%.

Company Description

Focus on nuclear operations

EDF is one of the largest integrated utilities in the world and the dominant player in France in energy generation, distribution, and supply. It also has leading positions in the U.K. and Italian power generation markets.

EDF relies heavily on capital-intensive nuclear operations, which implies technology concentration. This heavy reliance on an ageing fleet exposes the group's power generation to more frequent planned and potential unexpected outages and ultimately to lack of predictability in the availability of its nuclear output.

Planned outages related to the execution of the Grand Carénage program--dedicated to extending the lifetime of its reactors--will remain material for an extended period, as 10-year inspections by ASN were peaking at six to seven reactors pre-pandemic over 2021-2024. On top of these schedules, EDF has accumulated evidence in recent years of extended unplanned outages, signaling an increase in technical issues, coupled with stringent safety requirements for nuclear activities. ASN's 2016-2017 investigation related to concerns about segregation in the French nuclear fleet's steam generators weighed heavily on EDF's power output in 2017 (below 380 TWh), affecting 18 French reactors and forcing shut down for several weeks or months. ASN said in October 2019 that irregularities in Framatome's steam generator manufacturing process do not require any immediate reactor shutdowns (with 19 steam generators and six reactors being affected). While the outcome was positive, the technical deviations will have to be fixed during the upcoming review (potentially lengthening the maintenance outage) and the case highlights the magnitude of operational risk facing EDF.

The ageing U.K. nuclear fleet also experienced prolonged unplanned outages (Hunterston B and

Dungeness for over one year since the beginning of 2019). We also understand EDF is working on a decommissioning plan of its oldest U.K. advanced gas-cooled reactor power plants (still to be validated by the British Nuclear Decommissioning Authority), which prompted an upward revision of costs for the defueling phase (increasing the provision by €1.9 billion in 2019).

Furthermore, in 2019 EDF's fleet experienced three significant incidents of level 2 out of 7 on the International Nuclear and Radiological Event Scale. ASN's president Bernard Doroszcuk commented on EDF's overall positive 2019 operational record, highlighting two points of attention: "challenge of maintaining engineering capacity" and a "lowering of rigor level in plants" management. We see these as long-term structural challenges for the company, which will take significant time to resolve.

There's also uncertainty surrounding political support for nuclear power plants in Europe: while they are low-carbon power sources and therefore fit well with the French government's environmental targets, the European Commission currently does not include nuclear as an option for carbon-free energy sources for the future. We do not believe it directly compromises the existing fleet, but nevertheless see that as a potential hurdle to maintaining a solid and sustainable nuclear supply chain for the coming decade.

Our Base-Case Scenario

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.

- Realized power prices of about €45/MWh in 2020 (unaffected by the pandemic due to hedges) and €42-€44/MWh in 2021-2022 (versus €48/MWh pre-pandemic). In the U.K., realized power prices of about £50/Mwh in 2020 and £45/MWh in 2021-2022 (versus £50/MWh pre-pandemic).
- Decline in electricity demand (down 5%-6% year on year for 2020) and delayed scheduled maintenance, translating t lower output for 2020 (about 300 TWh), 2021 (340 TWh), and 2022 (350 TWh).
- Pressure on EBITDA in French supply activities because of increased competition and loss of market share.
- Negative working capital in 2020 of about €2.8 billion, partly recovered in 2021.
- No dividend payment for fiscal 2019 and a payout ratio of 45%-50% subsequently, with the French government electing scrip dividends for all fiscal 2020 dividends.
- Asset disposals of about €2 billion delayed to 2021-2022.
- Net investments of about €14.3 billion in 2020 (down 3% from our previous forecasts) with part postponed to 2021, including capex linked to new nuclear build HPC in the U.K. and deployment of smart meters Linky in France.
- An increase in unfunded nuclear obligations in 2020 of about €4.5 billion to reflect the expected lowering of the discount rate by 0.1%, actuarial effects, 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 (up roughly €1.5 billion).

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

- Reported EBITDA of below €15 billion in 2020 and progressively rising to €16 billion-€17 billion in 2021-2022.

- Debt to EBITDA reaching 5.6x in 2020 and decreasing to about 5.0x by 2022.
- FFO to debt falling to below 15% and progressively recovering at above 17% in 2022.

Liquidity

We assess EDF's liquidity as strong and we project that its liquidity sources will exceed uses by about 1.5x over the next 12 months and 1.3x for the subsequent 12 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 as of March 31, 2020, include:

- About €28.8 billion cash and highly liquid marketable securities;
- €9.1 billion in available committed credit lines, out of which €1.25 billion is maturing in 2021 and €3.0 billion in 2022;
- Estimated FFO of about €10.8 billion in the next 12 months; and
- Asset disposal proceeds of about €300 million (related to Edison's exploration and production activities).

Principal liquidity uses as of March 31, 2020, include:

- Short-term debt of about €7 billion, including commercial papers of about €6.5 billion;
- Long-term debt of about €5.0 billion;
- Estimated working capital outflow of about €1.7 billion;
- Estimated capex of about €14.7 billion; and
- Cash dividends of about €840 million, including €540 million dividends on hybrids and about €300 million dividends to minorities.

Debt maturities are well staggered with about €3.8 billion in 2020 and about €3.4 billion in 2021.

Ratings Score Snapshot

Issuer Credit Rating: BBB+/Stable/A-2

Business risk: Satisfactory

- Country risk: Low
- Industry risk: Intermediate
- Competitive position: Satisfactory

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: bb+

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

Related Criteria

- General Criteria: Group Rating Methodology, July 1, 2019
- General Criteria: Hybrid Capital: Methodology And Assumptions, July 1, 2019
- Criteria | Corporates | General: Corporate Methodology: Ratios And Adjustments, April 1, 2019
- 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
- Criteria | Corporates | Industrials: Key Credit Factors For The Unregulated Power And Gas Industry, March 28, 2014
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- Criteria | Corporates | General: Corporate Methodology, Nov. 19, 2013
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- Criteria | Corporates | Utilities: Key Credit Factors For The Regulated Utilities Industry, Nov. 19, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities, Nov. 13, 2012
- General Criteria: Use Of CreditWatch And Outlooks, Sept. 14, 2009

Related Research

- COVID-19- And Oil Price-Related Public Rating Actions On Corporations, Sovereigns, And Project Finance To Date, June 18, 2020

- The Energy Transition And What It Means For European Power Prices And Producers: Midyear 2020 Update, June 8, 2020
- ENGIE SA Rating Lowered To 'BBB+' On Less-Resilient Business Amid Looming Recession; Outlook Stable, April 24, 2020
- Europe Braces For A Deeper Recession In 2020, April 20, 2020
- Recent Rating Reviews On EMEA Utilities Reflect The Sector's Strength Against COVID-19 Shock, April 7, 2020
- Electricite de France S.A., April 3, 2020
- EMEA Utilities Should Withstand COVID-19 Better Than Most Sectors, March 24, 2020

Ratings List

Downgraded; Outlook Action

	To	From
Electricite de France S.A.		
Issuer Credit Rating	BBB+/Stable/A-2	A-/Watch Neg/A-2
EDF Energy Customers Ltd		
Issuer Credit Rating	BB+/Stable/NR	BBB-/Watch Neg/NR
EDF Energy Limited		
Issuer Credit Rating	BB+/Stable/B	BBB-/Watch Neg/A-3
Electricite de France S.A.		
Senior Unsecured	BBB+	A-/Watch Neg
Junior Subordinated	BB-	BB/Watch Neg
Ratings Affirmed		
Electricite de France S.A.		
Commercial Paper	A-2	A-2