Research Update:

Electricite de France Downgraded To 'BBB' From 'BBB+' On Strong Debt Increase In 2022-2023; Outlook Negative

February 21, 2022

Rating Action Overview

- On Feb. 18, 2022, French integrated power utility Electricité de France S.A. (EDF) guided for a sharp EBITDA deterioration in 2022, which we estimate at €5 billion-€7 billion. This results from the projected low nuclear output for 2022, on corrosion (or suspicion of) defects identified on 11 reactors currently, and the regulatory measures announced by the government on Jan. 13 to limit price increases for EDF's customers.
- EDF further revised down its 2023 nuclear output by about 40 terawatt-hours (TWh) to reflect the delays in maintenance and 10-year inspections combined with extensive control on the entire fleet for similar defects.
- The group announced a series of financial measures to mitigate the 2022 massive loss, but we are still projecting debt to increase by more than €15 billion over 2022-2023.
- We therefore lowered our long-term issuer credit and issue rating on EDF to 'BBB' from 'BBB+' and our long-term rating on EDF's U.K. subsidiaries, Energy PLC and EDF Energy Customers Ltd., to 'BB' from 'BB+'. We also lowered our junior subordinated debt rating to 'B+' from 'BB+'.
- The negative outlook reflects the persistent risks to nuclear availability due to pending operational issues.

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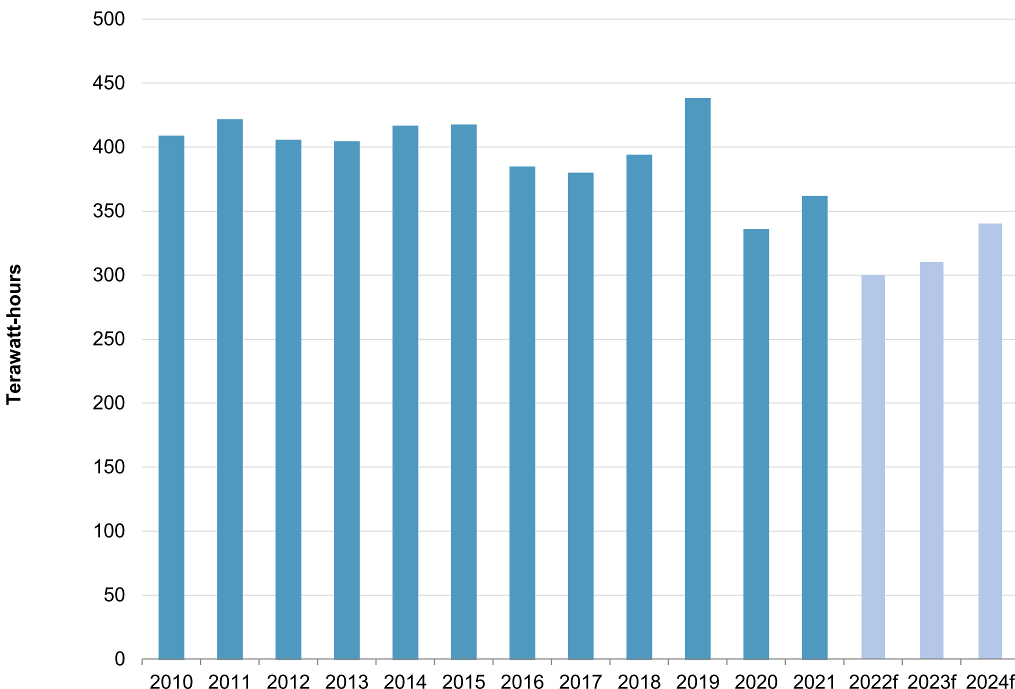
Rating Action Rationale

The downgrade reflects the prolonged operational weakness of the group's French nuclear fleet and negative regulatory measures for 2022. Following the announcement of corrosion defects in several nuclear reactors and its initial revision of the French nuclear output for 2022 to 300-330 TWh, the group further revised down its production output further for 2022 and 2023, at 295-305 TWh in 2022 and 300-330 TWh in 2023 (from 340-370 TWh previously). These massive cuts in production forecasts reflect large maintenance schedule needs being postponed to 2023 following unplanned outages, and the large number of 10-year lifetime extension inspections due to happen

over the two years. The fleet's lower availability also stems from the ongoing control program on the fleet to identify and repair the pipes potentially affected by the stress corrosion phenomenon.

Chart 1

Nuclear Output In France Is Below Historical Levels



Source: Company disclosures, S&P Global Ratings. f--Forecast.
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In parallel, the French government announced on Jan. 13 its plans to increase the ARENH volumes EDF delivers to other suppliers in 2022 by 20 TWh to 120 TWh. The extra volume is set at a fixed price of €46.2/MWh (compared with €42/MWh on the existing 100 TWh) and will have to be delivered over April-December 2022. This is negative regulatory interference for EDF, which will have to purchase significant volumes of electricity on the market, in a very volatile and materially high power price environment, while selling at a much lower contracted price. The government also announced that the regulated customer yearly tariff increase for February 2022 will be capped at 4%, with any additional increase postponed to at least February 2023. This could mean €1.0 billion-€1.5 billion of additional costs for EDF in 2022, to be recovered in 2023 or 2024. In our base-case scenario, we consider that these measures will not be rolled over in 2023 since the state committed to maintain the ARENH allocation at 100 TWh. We believe that the risks of further negative political intervention cannot be ruled out if regulated tariffs remain under inflationary pressure and affordability constraints continue to be pressing. Any new measure to contain price pressure could further undermine EDF's credit quality.

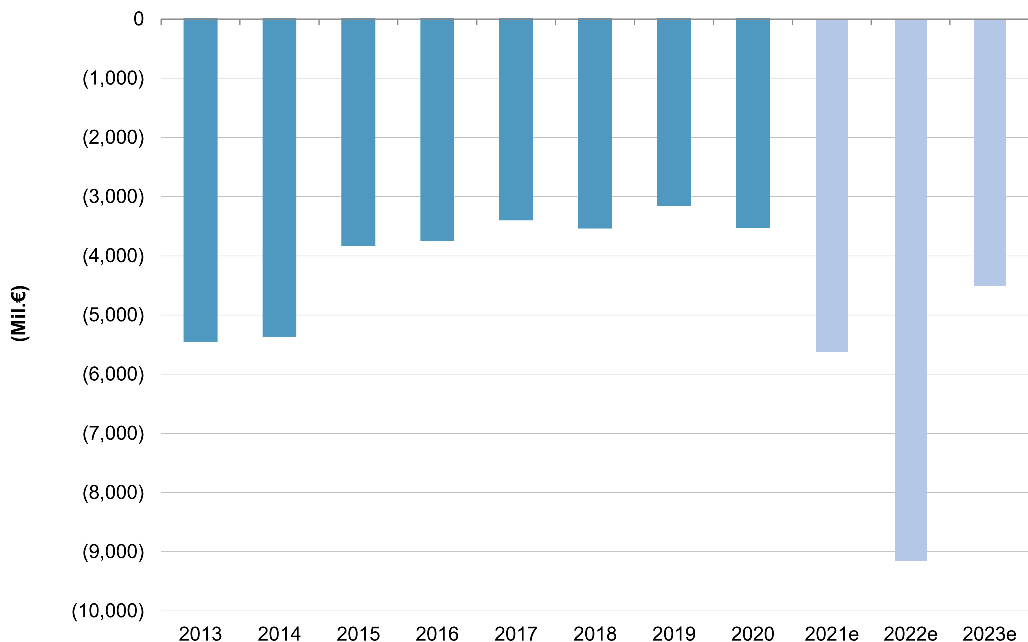
Timely remedy measures will not offset the sharp earnings contraction and the sizable negative discretionary cash flows over 2022-2023. On Feb. 18, the group and state have unveiled measures to mitigate the earnings deterioration on balance sheet.

- EDF will launch a new rights issue with preferential subscription rights for 510 million new shares for about €2.5 billion. The French government committed to contribute to the capital increase up to its percentage of the share. We understand this financial market transaction will be implemented in April before the presidential elections, and will be backed by banks underwriting the minority portion of the equity increase, eliminating risks of state aid hurdle and ensuring swift execution. In addition, the state announced opting for scrip dividends for financial years 2022 and 2023 on top of its previous commitment for 2021, thus preserving cash, especially in 2023.
- Separately, EDF announced a €3 billion disposal program of noncore assets over 2022 and 2024.

Despite being timely, and the utility enacting different levers, we believe this plan will not be enough to offset the magnitude of earnings loss. We assess that the combined lower fleet availability and regulatory measures will sharply contract the group's EBITDA in 2022 to €5 billion-€7 billion, compared to our expectations of €18 billion before the announcements. The further 40 TWh outage guided for 2023 will dent earnings by an additional €3 billion to €16 billion in 2023, with the impact being less than in 2022 since the group still has significant volumes not covered by hedging contracts for next year. We anticipate a significant increase in S&P Global Ratings-adjusted debt, of about €17 billion to more than €90 billion by end-2023, reflecting the cumulative negative free cash flow in 2022 and 2023, including the capital injection and other cash savings measures. The large negative discretionary cash flow stems from an inflexible investment program, that we estimate at about €17 billion per year for the period. We are not including any new EPR-2 projects financing in our assessment.

Chart 2

EDF's Historical And Projected Discretionary Cash Flow*
2013-2023 reported



*Discretionary cash flow before acquisitions and disposals. e--Estimate. Source: S&P Global Ratings.
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Credit metrics and EDF's financial policy are no longer commensurate with 'BBB+' rating. We expect the group's credit metrics will deteriorate markedly in 2022 before recovering in 2023, absent any exceptional regulatory measures, with a forecast net adjusted debt to EBITDA just below 5.0x. We are raising our requirements of credit ratios for EDF because we now benchmark them with the standard volatility table, compared to medial previously, to reflect the increased volatility of the group's unregulated operations. For a 'BBB' rating, we would expect the group's financial leverage to move to 4.0x-5.0x. This is consistent with EDF's reiterated financial policy of maintaining total economic debt (close to our adjusted debt definition) of 4.5x-5.0x.

Risks persist as long as the extent of the operational issues are unclear. There are currently 11 reactors under close scrutiny or offline to allow for the inspection or the correction of the corrosion defects, and we cannot rule out more unexpected outages affecting 2022 and 2023 output. In addition, French nuclear regulator ASN has not provided clearance on the repair program, and full visibility on the potential financial impact of these repairs--that EDF guides as being moderate for the time being--needs to be obtained. We also believe that the announced measures (capital increase and disposals), while material, may be insufficient to totally bridge the gap and restore metrics by 2023 if not accompanied with improvements in other organic and operational actions, notably on costs and investments, and other financial remedy measures.

On the positives, the swift decision-making around a timely capital increase confirms in our view the high likelihood of support from the French state. In light of these exceptional circumstances, the French government is lining up financial support to EDF. These measures, designed to support the utility balance sheet, come after the negative intervention from the state through exceptional regulatory measures, whose financial impact is greater than the size of the capital increase. Nevertheless, the likelihood of state support remains intact in our view, with a clear commitment to ensure EDF is adequately financed. This is further supported by the reiteration of EDF's crucial role in the energy transition, by President Emmanuel Macron, who unveiled on Feb. 10 a nuclear renaissance plan. The president notably commented on the path to net zero for France, including the building of 6 new nuclear reactors (EPR2 design) by 2035, with construction expected to start by 2028, and the study of further eight potential reactors for 2050. The plan also envisions life extension for existing reactors subject to regulatory approval, a departure from the legally binding Plan Pluri-Annuel de l'Energie, which planned for about 12 reactors to close by 2035. While these announcements cannot be considered as a firm commitment ahead of presidential elections, nuclear is likely to remain very central to France's energy policy and no other leading political candidate is strongly opposed to nuclear energy. The high likelihood of support continues to enhance EDF's credit quality, as it provides three notches of uplift to the utility's stand-alone credit profile.

We continue to assess EDF's hybrid securities as having intermediate equity content. We rate these hybrids 'B+', 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 would benefit from exceptional government support. The two notches include one for subordination and one for coupon deferral risk, which is our standard approach for investment-grade issuers (those rated 'BBB-' or above). Furthermore, EDF's hybrids reached €12 billion and represented about 10% of its total capitalization as of end 2021. We note that the relatively high cash interest outlay attached to those hybrids, which we estimate at about €600 million per year (based on 2021 hybrid stock)further constrains the group's cash flows.

Outlook

The negative outlook on EDF reflects lingering uncertainty on the extent of operational issues related to the corrosion defects and the absence of public validation by ASN on a comprehensive diagnosis and associated repair program and schedule.

The outlook points to our view that, given projected low nuclear availability in France in 2022 and 2023, EDF's production might not recover sustainably from 2024 and that the group might not fully capture the positive pricing environment due to further potential negative political interference. Although not part of our base-case scenario, this cannot be discarded given the strong affordability constraints on final customers' energy bill that could arise from continuing high power prices.

The outlook further reflects sizable negative free cash flow over the coming two years resulting in inflationary debt trajectory. This is partly offset by the positive effects from the timely rollout of the plan set by the French government and EDF to contain debt increases.

Downside scenario

We could consider a negative rating action if the group's operational issues prove systemic to the

French nuclear fleet questioning the group's ability to significantly restore its output by 2024. We would also foresee rating downside over the next two years if the group could not restore financial leverage sustainably below 5.0x. This could happen if we see persistent and unexpected operational issues on EDF's French nuclear fleet, which could delay the recovery of the group's operating performance after the sharp EBITDA deterioration expected for 2022. This could also stem also from a delay in the implementation of financial measures to support the group's balance sheet. A suspension or any delay in the execution of the announced €2.5 billion capital increase would trigger a re-assessment of the likelihood of support from the French state.

Other risk factors include potential delays or costs overruns from the group's complex nuclear EPR projects, namely FLA-3 and HPC, leading to an unexpected deterioration of the group's financial performance and the continuation of price containment measures beyond those announced in early 2022.

Upside scenario

We could revise the outlook to stable if we gain greater visibility on EDF's industrial performance and see favorable regulatory clearance on the corrosion issues. This revision would happen if we anticipate a higher likelihood of substantial EBITDA growth in 2024 on a sustained larger nuclear output in France, new projects coming online (specifically FLA-3), much higher power prices, and the group's ability to effectively capture these higher prices without any further negative political interference.

We could also revise the outlook to stable if progress was made on regulatory developments supporting EDF's nuclear base generation in France and if we see tangible signs of a re-regulation happening well ahead of the legal termination of the ARENH mechanism, planned for end-2025.

Any outlook revision to stable would be conditional on the group's adjusted debt to EBITDA stabilizing well below 5x, together with a more sustainable long-term debt trajectory with positive discretionary cash flow.

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 group also manages the low- and medium-voltage public distribution network in France through its subsidiary Enedis, with a regulated asset base (RAB) of about €53.7 billion at year-end 2021 (excluding Linky's €2.7 billion RAB). French regulated activities accounted for 33% of 2021 EBITDA versus 32% in 2020.

With worldwide net installed capacity of 123 gigawatts (GW) as of Dec. 31, 2021, and global energy generation of 524 TWh, EDF has the largest generating capacity of all the major European utilities. The EDF group supplies electricity, gas, and associated services to about 38.5 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 (76% and 10% of electricity output, respectively, in 2021). Notably, EDF operates 56 nuclear reactors in France and eight in the U.K., with a total capacity of 69 GW. French generation and supply activities accounted for 41% of 2021 EBITDA--compared to 46% in 2020--while the U.K. and Italy accounted for 0% and 6%, respectively.

EDF Renewables, which develops French and international new renewables activities--total net

installed capacity of 12 GW, mostly wind--represents 5% of 2021 EBITDA. Other activities segment represents 12% of EBITDA. This includes Dalkia, which focuses on energy services as well as heating and cooling networks (2% of 2021 EBITDA); and EDF Trading, which provides market, optimization, and risk management services via wholesale energy market operations.

At end-2021, EDF reported revenue of €84.5 billion, EBITDA of €18.0 billion, and net financial debt of €43.0 billion. The group is listed on Euronext, with a market capitalization of €26 billion as of February 2022. The French government is the main shareholder, with 83.68% of EDF shares as of Dec. 31, 2021.

Our Base-Case Scenario

Assumptions

- French nuclear output of 300 TWh, 310 TWh, and 340 TWh for 2022, 2023, and 2024, respectively.
- Realized power prices of about €45 per megawatt-hour (/MWh) in 2021 and 2022 (unaffected by current conditions due to hedges), rising to about €52/MWh in 2023-2024. In the U.K., realized power prices of about £50/MWh in 2022 and £45/MWh in 2023 and 2024.
- Positive working capital inflow in 2022 of about €4 billion from CSPE overcollection, returned in 2023 for a similar amount.
- Cash dividends of about €900 million (limited to hybrid coupons and dividends to minority interests) as the French state opted for scrip dividends for financial years 2021-2023.
- Asset disposals of about €3 billion over 2022-2024.
- Net investment of about €17 billion over 2022-2024.
- An increase in unfunded nuclear obligations in 2022 of about €2 billion to reflect lower discount rates and lower expected performance of dedicated assets year over year (compared with a strong 2021).
- An increase in pension liabilities in 2022 of €1.0 billion-€1.5 billion to reflect lower discount rates and lower performance year over year of fund assets.

Key metrics

Electricite de France S.A. -- Key Metrics

(Bil. €)	2019a	2020a	2021a	2022e	2023e
EBITDA*	16.7	16.3	18	5-7	18.7-19.2
Capital expenditure*	16.7	15.4	15.7	17	17
Free operating cash flow*	(3.4)	(3.2)	(4.0)	(11)-(12)	(6)-(7)
Discretionary cash flow§	(3.6)	(3.3)	(5.5)	(9)	(7)-(8)
Debt*	72	76	74	84-85	91-92
Funds from operations/debt (%)*	19	17.5	15.5-16.5	5-6	17-18

Electricite de France S.A. -- Key Metrics (cont.)

(Bil. €)	2019a	2020a	2021a	2022e	2023e
Debt/EBITDA (x)*	4.3	4.7	4.5-4.9	13-14	5

*S&P Global Ratings-adjusted. §Calculated before asset disposals. a--Actual. e--Estimate.

Liquidity

We revised our assessment of EDF's liquidity to adequate from strong given the group's stretched liquidity sources compared with its significant debt maturities for 2022 because of the expected significant cash flow reduction. We forecast that liquidity sources will exceed uses by more than 1.2x over the 12 months from Jan. 1, 2022. However, EDF's liquidity position is supported by its consistently substantial cash balances, solid relationships with banks, and track record of ample access to capital.

We expect the following principal liquidity sources for the 12 months from Jan. 1, 2022:

- Cash and cash equivalents of €22.7 billion.
- €10.9 billion in available committed credit lines maturing beyond Dec. 31, 2023.
- Estimated cash funds from operations of €1 billion-€2 billion.

For the same period, we expect principal liquidity uses will include:

- Debt maturities of about €11.9 billion.
- Estimated capex of about €17.0 billion.
- Cash dividends of about €900 million, including dividends on hybrids and dividends to minority interests.

Environmental, Social, And Governance

ESG credit indicators: E-3, S-3, G-4

Governance factors are a negative consideration in our credit rating analysis of EDF, while environmental and social factors are moderately negative considerations. EDF's governance, which we assess as fair, mostly flags risks related to the oversight of its board and uncertainties regarding the group's ability to proactively identify, manage and resolve risks on the group's existing ageing nuclear fleet. We consider the track record to be relatively poor, with a number of unplanned outages due to quality issues. This was exacerbated by the announcements in 2022. We also factor in inherent risks of cost overruns and delays at multibillion euro new-build nuclear EPR projects in France and the U.K.

Environmental considerations primarily reflect the group's prominent nuclear operations. With one of the world's largest nuclear generation fleets--72 GW net capacity and 77% of output in 2020--EDF's carbon footprint is markedly advantageous. However, environmental and social risks relating to the future long-term storage of nuclear waste offset EDF's low carbon footprint (total end-of-cycle liabilities of €62 billion and net asset retirement obligations of €10.6 billion at

end-2020). We also factor into our assessment the 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. This was recently reiterated by the French president and government as part of the recent announcements on the country's nuclear strategy, which aims to give EDF the primary role in delivering new nuclear capacity. But 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 difficult to address and rapidly resolve. In particular, we believe that the lack of significant engineering curriculum path and decades of uncertainty on the future of nuclear might mean not enough staff to deliver on these nuclear ambitions.

Ratings Score Snapshot

Issuer Credit Rating: BBB/Negative/A-2

Business risk: Satisfactory

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

Financial risk: Aggressive

- Cash flow/leverage: Aggressive (standard volatility table)

Anchor: bb

Modifiers

- Diversification/portfolio effect: Neutral (no impact)
- Capital structure: Neutral (no impact)
- Financial policy: Neutral (no impact)
- Liquidity: Adequate (no impact)
- Management and governance: Fair (no impact)
- Comparable rating analysis: Neutral (no impact)

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: Environmental, Social, And Governance Principles In Credit Ratings, Oct. 10, 2021
- General Criteria: Hybrid Capital: Methodology And Assumptions, July 1, 2019
- 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
- Criteria | Corporates | Industrials: Key Credit Factors For The Unregulated Power And Gas Industry, March 28, 2014
- Criteria | Corporates | General: Corporate Methodology, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- Criteria | Corporates | Utilities: Key Credit Factors For The Regulated Utilities Industry, 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: Principles Of Credit Ratings, Feb. 16, 2011

Related Research

- ESG Credit Indicator Report Card: Power Generators, Nov. 18, 2021
- Electricite de France S.A., June 30, 2021
- The Energy Price Crisis: Examining The Impact On U.K. Suppliers, Sept 30, 2021

Ratings List

Downgraded; Outlook Action

	To	From
Electricite de France S.A.		
Issuer Credit Rating	BBB/Negative/A-2	BBB+/Watch Neg/A-2
Senior Unsecured	BBB	BBB+/Watch Neg

Junior Subordinated	B+	BB-/Watch Neg
EDF Energy Customers Ltd.		
Issuer Credit Rating	BB/Negative/NR	BB+/Watch Neg/NR
EDF Energy Ltd.		
Issuer Credit Rating	BB/Negative/B	BB+/Watch Neg/B
Ratings Affirmed		
Electricite de France S.A.		
Commercial Paper	A-2	

Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria. Please see Ratings Criteria at www.standardandpoors.com for further information. A description of each of S&P Global Ratings' rating categories is contained in "S&P Global Ratings Definitions" at https://www.standardandpoors.com/en_US/web/guest/article/-/view/sourceId/504352 Complete ratings information is available to subscribers of RatingsDirect at www.capitaliq.com. All ratings affected by this rating action can be found on S&P Global Ratings' public website at www.standardandpoors.com. Use the Ratings search box located in the left column. Alternatively, call one of the following S&P Global Ratings numbers: Client Support Europe (44) 20-7176-7176; London Press Office (44) 20-7176-3605; Paris (33) 1-4420-6708; Frankfurt (49) 69-33-999-225; Stockholm (46) 8-440-5914; or Moscow 7 (495) 783-4009.

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