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Research Update:

Nuclear Producer Teollisuuden Voima Oyj Downgraded To 'BB' On COVID-19-Related Fuel Loading Delay; Outlook Negative

April 15, 2020

Rating Action Overview

- Teollisuuden Voima Oyj (TVO) has announced a delay to fuel loading at the Olkiluoto 3 (OL3) nuclear plant due to the COVID-19 pandemic.
- The timing and effect on commercial start-up is unclear but we expect this will further increase project costs and postpone deleveraging, increasing the risk that Areva is unable to maintain sufficient funds for related obligations, including the two-year guarantee period.
- In addition there is now very little time until a contractual call-off can be triggered, which in our view adds contract uncertainty, including costs, fees and ultimately TVO's financial leverage.
- We are lowering the long-term issuer credit rating on TVO to 'BB' from 'BB+' and affirming our 'B' short-term rating.
- The negative outlook reflects the risk that TVO's financial flexibility could diminish as a result of weaker counterparties or additional delays that could further increase already-high financial leverage.

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Rating Action Rationale

The recently announced postponement of fuel-loading raises questions about OL3's commercial start-up date. On April 8, 2020, TVO announced the postponement of the expected fuel loading in June 2020. The delay is mainly a consequence of the pandemic's effects on service providers. In addition, there have been significant delays in testing since Dec. 2019. TVO expects the Areva Siemens consortium (ASC) will update the schedule for OL3 when this is more visibility on the spread and effects of COVID-19, but we see the risk the delay could be several months. The project has already been delayed by 11 years. It is our understanding that the additional four-month operational testing period added in Dec. 2019 (see "Teollisuuden Voima Oyj Ratings Placed On Watch Negative On Plant Commissioning Delay," published Dec. 23, 2019, on RatingsDirect) is already used up as a consequence of weak project management from Areva, which underestimated how long testing would take. That said, we understand that the delay does not stem from any technical issues surrounding the nuclear plant construction. Lock-down measures and travel bans to prevent the spread of COVID-19 are affecting progress due to limitations on part deliveries by sub suppliers. This is despite TVO and work related to nuclear power plants being excluded from official COVID-19 restrictions.

There are increasing uncertainties as the call-off date closes in. The settlement agreement signed in 2018 includes a clause stating that, if a provisional takeover is not achieved by June 30, 2021 (the call-off date), TVO has the right to terminate the OL3 contract. Regardless, a delay post the call-off date would increase risk, since it would open the way for further contractual discussions that could lead to a less favorable outcome for the company. TVO will also not be automatically compensated beyond June 2021, but we believe the company is committed to the project. We believe that TVO will be compensated for accrued capitalized interest costs from Jan. 2020 until provisional take-over or June 2021 at the latest. We understand compensation could reach a maximum of €400 million.

The delay increases costs for ASC and could lead to a potential liquidity shortage. We understand a top-up of the trust mechanism is necessary for Areva to meet all its obligations and costs until the end of the guarantee period because of delays. We see an increased risk that Areva might not have timely financial capacity until the end of the plant unit's guarantee period--two years after provisional takeover. In our view, this could potentially lead to a disagreement with involved parties and result in new legal procedures, further delays, and ultimately that TVO will not be fully compensated for the delay. Furthermore, we believe Areva likely will be dependent on asset sales to honor such obligations. The plant contract stipulates, however, that the supplier consortium (ACS) companies have joint and several liability for the contractual obligations.

The company's deleveraging plan is pushed forward and refinance risk increases due to postponed fuel loading . TVO's net debt continues to increase, mainly as a result of capitalized interest. This is because further start-up delays postpone debt repayments and increase the need to finance and refinance loans. We forecast that interest costs will increase and delay deleveraging even further as market conditions for refinancing have changed dramatically in recent weeks as a result of the pandemic. Current electricity prices in Finland, (averaging €23 per megawatt [MW] in 2020) are below the estimated production costs when OL3 is operational, but at this stage we continue to believe that shareholders are likely to remain supportive of the company as they have a long-term view. Moreover, current prices are unusually low compared with historical prices.

Following several delays, we are revising TVO's management and governance score. It is our understanding that OL3's commercial start-up will now be about 12 years behind the original schedule. In our view, this mainly reflects poor project management from the ASC, but also shows that TVO has not managed or been able to meaningfully affect the process. We are therefore changing the management and governance score to fair from satisfactory.

Environmental, social, and governance (ESG) factors relevant to the rating action:

- Health and safety.
- Governance.

Outlook

The negative outlook indicates that we could lower the 'BB' long-term and 'B' short-term issuer credit ratings over the next 12-24 months.

Downside scenario

This could happen if:

- Further delays resulting in cost-overruns for TVO are not fully compensated by ASC.
- Any operational or regulatory issues arise.
- There are continued or worsened effects from COVID-19 restrictions, implying risk of commercial start-up beyond the call-off date of more than a few months.
- Areva fails to replenish the trust mechanism as stipulated in the settlement agreement.
- Uncertainty surrounding the call-off clause is not clarified with a reasonable margin before June 2021.
- TVO's owners indicate a change in support, for example, if shareholder loan facilities are not extended, or if the owners start to question the ownership or Mankala model.

We could potentially downgrade TVO by more than one notch if more than one of the above-stated factors are realized.

Upside scenario

We could revise our outlook to stable if we see a clear path of improvement, including completion of fuel loading within the next six months and that ASC has a clear financing plan to meet all its obligations related to OL3.

Company Description

TVO is a not-for-profit Finnish company created in 1969 that generates electricity in Finland from nuclear power. At year-end 2019, the company produced 17% (15 terawatt-hours [TWh]) of annual Finnish electricity consumption (86 TWh), but expects this to rise to about 30% once OL3 is fully operational. TVO sells all electricity generated to its shareholders according to a cost-price principle where shareholders are charged incurred costs in proportion with their ownership and receive electricity as compensation, also known as the Mankala model.

The company owns and operates two nuclear power plants (OL1 and OL2) with about 1,780MW of installed capacity. A third nuclear plant (OL3) with 1,600MW of installed capacity, is under construction by ASC. TVO expects it to almost double annual generation when operational to 27TWh from 15TWh in 2019. OL1 and OL2 have been operational for about 35 years with a high degree of reliability and load factor of about 95%. TVO's operating license has been renewed until 2038, guaranteeing predictable cash flows until that year.

In addition, TVO has a 45% stake in the 565MW-installed-capacity Meri-Pori coal-fired power plant. The company will relinquish its shares in Meri-Pori in July 2020 to Fortum Oyj. TVO also has a 60% stake in Posiva Oy, another joint venture with Fortum responsible for the final disposal of spent nuclear fuel produced by its owners. Fortum and TVO therefore share the cost of nuclear waste management.

TVO is owned by six shareholders: PVO (57%), which is also a Mankala company, owned primarily by UPM-Kymmene Corp. (BBB/Stable/A-2) and Stora Enso Oyj, two major forest product companies; and Fortum Oyj (28%; BBB/Negative/A-2). The remaining shares are split between Oy Mankala (8%), EPV Energia (6%), Kemira Oyj (1%), and Loiste Holding (0.1%).

Our Base-Case Scenario

- Commercial start-up of OL3 will be further postponed. For now we don't assume a more than six-month delay.
- Revenue and capital expenditure (capex) related to expected delays is reflected in our modeling for revenue and capex.
- Annual maintenance capex on OL1 and OL2 amounting to €60 million-€80 million, and higher than the maintenance capex expected for OL3 once it is operational.
- TVO's combined nuclear production costs are about €30 per MW hour (/MWh) when OL3 becomes operational, increasing from €20/MWh currently, reflecting the start of the depreciation of OL3's capitalized costs and interest.
- TVO's shareholders will continue to fully cover the company's production costs under the Mankala model.
- No unexpected outages at OL1 and OL2.
- No dividend payments.

Based on these assumptions, we arrive at the following S&P Global Ratings-adjusted credit measures over 2020-2021:

	2019a	2020e	2021e
EBITDA	43	74	170
Debt	4,676	4,900-5,000	5,000-5,200
FFO to debt (%)	(1.4)	0-2	1-3
Debt to EBITDA (x)	109	65-70	28-32

FFO--Funds from operations. a--actual. e--Estimate.

Liquidity

We assess TVO's liquidity as of Dec. 31, 2019, as adequate because liquidity sources will exceed liquidity uses by 1.2x for the next 12 months. However, the company has a relatively short-dated debt-maturity profile (about four years) compared with the asset base's economic life of over 40 years. Notably, in 2023, refinancing needs will be high, since more than €1 billion of debt is due, or about 20% of total outstanding debt. This increases the company's exposure to refinancing risk. TVO maintains a €1.3 billion revolving credit facility (RCF) maturing in 2022-2023 to ensure that it is able to cover its funding needs over the next few years.

Principal liquidity sources include:

- Unrestricted cash and cash equivalents of about €147 million.
- Two undrawn RCF lines (€1 billion and €300 million), maturing in Feb. 2023, and May 2022 and, respectively.
- Shareholder loan commitments of €250 million maturing in Dec. 2020 (not included in our calculations because is its less than 12 months to expiry).

Principal liquidity uses include:

- Debt maturities of about €185 million within the next 12 months and about €330 million for the subsequent 12 months.
- About €230 million of capex within the next 12 months and about €270 million for the subsequent 12 months.

Debt maturities include:

- 2020: €229 million
- 2021: €305 million
- 2022: €528 million
- 2023: €1,052 million
- After 2023: €2.1 billion

Issue Ratings - Recovery Analysis

Key analytical factors

- The issue-level and recovery ratings on the senior unsecured €1.3 billion RCF (€300 million facility A and €1.0 billion facility B) and €4.0 billion euro medium-term note program are 'BB' and '4', respectively.
- If TVO issues further debt of sizeable amount, the current recovery rating of '4' could be revised down to '5', as there is currently limited headroom.
- The issue rating is constrained by the large amount of senior unsecured debt.
- Our recovery expectations are in the lower half of the 30%-50% range (rounded estimate: 30%).
- In our default scenario, we assume the default of one of TVO's shareholders, combined with ongoing price pressures in the wholesale market.
- We value the company as a going concern, given its importance to the Finnish electricity market, since it will meet approximately 30% of national electricity requirements once OL3 is on stream.
- We understand that an amendment to Article 4 of the articles of association requires prior written consent of the majority lenders.

Simulated default assumptions

- Year of default: 2023

- Minimum capex (% of sales): 6%
- Emergence EBITDA after recovery adjustments: €339.2 million
- Implied enterprise value multiple: 6x
- Jurisdiction: Finland

Simplified waterfall

- Gross enterprise value at default: €2 billion
- Administrative costs: €102 million (5%)
- Net value available to creditors: €1.9 billion
- Senior unsecured debt claims: €6.3 billion
- --Recovery expectations: 30%-50% (rounded estimate: 30%)

Ratings Score Snapshot

Issuer Credit Rating: BB/Negative/B

Business risk: Strong

- Country risk: Very low
- Industry risk: Moderately high
- Competitive position: Excellent

Financial risk: Highly leveraged

- Cash flow/leverage: Highly leveraged

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

Related Criteria

- General Criteria: Group Rating Methodology, 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
- Criteria | Corporates | General: Recovery Rating Criteria For Speculative-Grade Corporate Issuers, Dec. 7, 2016
- Criteria | Corporates | Recovery: Methodology: Jurisdiction Ranking Assessments, Jan. 20, 2016
- Criteria | Corporates | General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- Criteria | Corporates | General: The Treatment Of Non-Common Equity Financing In Nonfinancial Corporate Entities, April 29, 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
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities, Nov. 13, 2012
- General Criteria: Use Of CreditWatch And Outlooks, Sept. 14, 2009

Ratings List

Downgraded; CreditWatch/Outlook Action; Ratings Affirmed

	To	From
Teollisuuden Voima Oyj		
Issuer Credit Rating	BB/Negative/B	BB+/Watch Neg/B
Senior Unsecured	BB	BB+/Watch Neg
Recovery Rating	4(30%)	4(30%)