Research Update:

Nuclear Producer Teollisuuden Voima Oyj Affirmed At 'BB' On Shareholder Support; Outlook Negative

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Rating Action Overview

- The €400 million shareholder loan recently granted to Teollisuuden Voima Oyj (TVO) reduces near-term risk and signals that TVO's owners still support the Olkiluoto 3 (OL3) reactor project, despite the delays it has suffered.
- That said, the project still faces medium- and long-term risks. The existing settlement agreement expires in June 2021, and we lack clarity regarding compensation and penalty mechanisms after this date. The Areva-Siemens consortium (ASC) that manages the project has yet to present a financing plan covering their obligations, which include a two-year guarantee of OL3. Given the project's history of delays and cost overruns, there could also be further delays.
- We are affirming our 'BB' long-term issuer credit rating on TVO and removing it from CreditWatch negative, where it was placed on Sept. 4, 2020.
- The negative outlook indicates that although a new settlement agreement and financing plan are likely to be announced in the next few months, the details are as yet unclear.

Rating Action Rationale

The additional shareholder loan facility signals long-term support from the owners and gives TVO ample liquidity, in our view. The loan commitment, announced on Dec. 16, 2020, offers TVO €400 million in new subordinated shareholder loan agreements and was signed by all TVO's shareholders. During 2020, TVO drew down the full €250 million from its existing shareholder facilities, giving it a significant amount of liquidity, including about €270 million in cash. Combined with its committed credit facilities and the new shareholder loan, it has liquidity of €1.6 billion available to it, which is ample to meet its near-term obligations. In our view, the additional shareholder loan indicates strong support from TVO's owners, even though power prices are about 70% lower than in 2019. TVO sells all electricity generated to its shareholders under a Mankala model. Shareholders are charged incurred costs in proportion with their ownership and receive electricity as compensation.

Despite the new shareholder loan, the lack of clarity after June 2021 remains a concern. The recently granted shareholder loans mitigate the risk that cost overruns could cause TVO to incur additional external debt without being fully compensated by the ASC. The current underlying agreement with ASC, the 2018 Global Settlement Agreement (GSA), stipulates compensation and penalty mechanisms to cover all TVO's project costs from January 2020 to June 2021, but has no effect from July 1, 2021. Therefore, although TVO will be compensated for the capitalized interest costs and other OL3 project costs it accrued from January 2020 until end-June 2021, there is no agreement regulating any compensation thereafter. We understand that if the OL3 plant is not completed by June 2021, compensation from ASC is capped at €400 million under the existing GSA contract. Negotiations for a new GSA are ongoing, but we see an increased risk that talks could end less favorably for TVO if the parties agree that ASC does not have to fully compensate TVO for overrun costs. The shareholder loans are treated as equity for a Mankala company under International Financial Reporting Standards (IFRS), and we exclude the loans from debt in our ratio calculations. This reflects their equity-like features, such as subordination, maturities beyond all other debt, and the possibility to leave interest unpaid.

The sale of some Areva assets has delayed the new agreement and financing plan. We understand a new GSA is being negotiated. We expect that updated terms in such a contract would settle compensation, penalties, and obligations for the remaining construction period and the two-year guarantee period. We also expect Areva to present a plan to meet all its financial obligations until the end of the guarantee period. It is our understanding that the financing plan requires the sale of some Areva assets, which is one of the main reasons why the new agreement and financing plan have not yet been finalized.

The companies in the ACS have joint and several liability for the contractual obligations until the end of the OL3 guarantee period, which limits the risk. The ASC comprises AREVA GmbH (unrated), AREVA NP SAS (unrated), and Siemens AG (A+/Negative/A-1+). Under the 2018 GSA, the ASC is committed to ensuring that funding is reserved to finalize OL3, as well as the guarantee period, which lasts for two years after provisional takeover. A fund mechanism was established, financed by the Areva companies, to cover Areva's share of the costs of finalizing OL3. We believe that the joint liability clause gives TVO solid grounds for negotiation, which should limit the downside risk. Each of Areva and Siemens are responsible for finalizing the OL3 project.

The very slow progress of OL3 remains a key constraint for the rating. Given that ASC, as the supplier, is already 12 years behind schedule, we cannot rule out further delays. In August, TVO announced that it had received updates to the revised schedule for the commissioning of the OL3 European Pressurized Reactor (EPR) plant unit from ASC. The updated schedule set fuel loading to commence in March 2021, and connection to the grid in October. Regular electricity production was scheduled to start in February 2022. The August version of the schedule implied a delay of nine to 11 months from the December 2019 schedule. Despite the dates in the new schedule, ASC's track record of delays creates uncertainty, in our view.

Recent issues related to the existing nuclear power plant, OL2, are not expected to cause a long outage or have a significant financial impact. On Dec. 10, 2020, OL2 suffered from disturbance, and was forced into a cold shut down state. The disturbance did not cause danger to people or the environment. The event was given a categorization on the International Nuclear and Radiological Event Scale (INES) scale of 0, by the Radiation and Nuclear Safety Authority in Finland (STUK), which means a deviation with no significance in terms of nuclear or radiation safety. The event did not have an influence on employees' radiation doses because employees do not normally work in the area that saw increased radiation. Increased radiation levels were not detected in outdoor areas. Prior to restarting the reactor, thorough inspections, maintenance, and repair measures are carried out. These ensure that all systems are functioning correctly. The cause of the fault is also being analyzed to ensure that the event will not reoccur. STUK has granted start-up permission for the OL2 unit at the Olkiluoto nuclear power plant on Dec. 16. The OL2 shutdown did not cause us to revise our view of TVO as a stable nuclear operator. We expect OL2 to be operational within seven to 10 days of the cold shut down that was initiated. Additionally, we do not expect this to have a material financial impact because TVO covers its electricity incurred costs via the Mankala model.

Outlook

The negative outlook indicates that we could lower the 'BB' long-term issuer credit rating within the next 12 months.

In our view, the key risks are the uncertainty surrounding the pending GSA terms, which emerged when it was announced that construction would extend beyond June 2021, and the start of commercial production. The company might not be compensated for the overrun costs in a sufficient and timely manner.

Downside scenario

We could take a negative rating action if:

- TVO and ASC do not agree on terms for a new GSA within the next few months, or if the agreement results in additional costs that are not fully covered by TVO's shareholders.
- Any operational or regulatory issues arise, or more delays occur for any reason, causing uncompensated overrun costs not fully covered by the shareholders and thus leading to additional external debt.
- Areva lacks sufficient liquidity to replenish the trust mechanism, or ASC fails to present a detailed financing plan to honor its obligation until the guarantee period elapses after two years.

Upside scenario

We could revise the negative outlook to stable if the OL3 nuclear power plant project shows significant progress, for example, fuel loading or connection to the grid. That said, this presupposes that TVO has agreed terms with the ASC well before the current settlement expires at the end of June 2021, and that the ASC present a credible financing plan for the remaining obligations toward the OL3 project.

Company Description

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

The company owns and operates two nuclear power plants (OL1 and OL2) that have about 1,780 megawatts (MW) of installed capacity. A third nuclear plant (OL3) with 1,600MW of installed capacity, is under construction by ASC. TVO expects annual generation to almost double when OL3 comes into operation (to 27TWh from 15TWh in 2019). OL1 and OL2 have been operational for about 40 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 60% stake in Posiva Oy, another joint venture with Fortum, which is 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 owns 58.5% and is also a Mankala company that is primarily owned by two major forest product companies, UPM-Kymmene Corp. (BBB/Stable/A-2) and Stora Enso Oyj. Fortum Oyj (BBB/Negative/A-2), the other major shareholder, owns 25.8%. The remaining shares are split between Oy Mankala (8.1%), EPV Energia (6.6%), Kemira Oyj (0.9%), and Loiste Holding (0.1%).

Our Base-Case Scenario

- No additional external debt is raised due to project delays beyond June 2021. We expect no more external debt than assumed in the previous schedule and total cost estimate of €5.5 billion.
- Our revenue and capital expenditure (capex) model assumes that fuel loading starts as scheduled in March 2021 and electricity production starts in February 2022.
- Fuel loading in March 2021, connection to grid in October 2021, and regular electricity production in February 2022.
- TVO's combined nuclear production costs are about €30 per megawatt hour (/MWh) when OL3 becomes operational, increasing from approximately €20/MWh currently, reflecting the depreciation of OL3's capitalized costs and interest.
- No unexpected outages at OL1 and OL2, and the recent outage at OL2 has a marginal financial impact.
- TVO's shareholders continue to fully cover the company's production costs under the Mankala model.
- No dividend payments.
- Milestone payments to ASC from TVO of €52 million in 2021 and €271 million in 2022.
- According to the current GSA, TVO is entitled to a maximum of €400 million. Due to uncertainty of the timing, we don't include it in the current period.

Key Metrics

(Mil. €)	2018a	2019a	2020e	2021f	2022f
EBITDA	70	43	45-55	45-55	250-300
Debt	4,556	4,676	4,900-5,100	5,500-5,700	5,800-6,000
FFO to debt (%)	(0.5)	(1.4)	(1)-(0)	(1)-(0)	3-4

Key Metrics (cont.)

(Mil. €)	2018a	2019a	2020e	2021f	2022f
Debt to EBITDA (x)	65	109	100-105	105-115	15-25

FFO--Funds from operations. a--Actual. e--Estimate. f--Forecast.

Liquidity

We assess TVO's liquidity as adequate, as of Sept. 30, 2020. This is based on liquidity sources exceeding liquidity uses by just above 2x for the next 12 months. However, the company has a short-dated debt-maturity profile of about four years, compared with the asset base's economic life of over 40 years. In addition, the company has no track record of sustainable cash flow generation during the OL3 construction period. Refinancing needs will be particularly high in 2023, when more than €1 billion of debt is due (about 20% of total outstanding debt). This increases the company's exposure to refinancing risk, especially given the recent construction delays.

TVO maintains a €1.3 billion revolving credit facility (RCF) that matures in 2022-2023. Together with the new shareholder loan facility, this should ensure that it can cover its funding needs over the next few years. We expect the RCF to be extended well ahead of maturity.

Principal liquidity sources for the 12 months from Sept. 30, 2020, include:

- Unrestricted cash and cash equivalents of about €120 million;
- Two RCF lines (€1 billion and €200 million undrawn), maturing in February 2023 and May 2022, respectively;
- Shareholder loan commitments of €400 million, maturing in December 2022; and
- In October, TVO drew €100 million on another shareholder loan facility.

Principal liquidity uses for the same period include:

- Debt maturities of about €531 million within the next 12 months and about €349 million for the subsequent 12 months; and
- About €500 million of capex within the next 12 months and about €480 million for the subsequent 12 months.

Debt maturities include:

- 2020: €307 million (as of Sept. 30, 2020)
- 2021: €221 million
- 2022: €528 million
- 2023: €1.2 billion
- After 2023: €2.1 billion

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 | 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: Methodology: Industry Risk, 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: Management And Governance Credit Factors For Corporate

Entities, Nov. 13, 2012

- General Criteria: Principles Of Credit Ratings, Feb. 16, 2011
- General Criteria: Stand-Alone Credit Profiles: One Component Of A Rating, Oct. 1, 2010

Ratings List

Ratings Affirmed; Off Watch

	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%)