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Research Update:

Nuclear Producer Teollisuuden Voima Oyj Outlook Revised To Positive; 'BB' Rating Affirmed On Fuel Loading Completion

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Rating Action Overview

- After several delays, this week Teollisuuden Voima Oyj (TVO) received permission for fuel loading of its nuclear reactor, which we believe is a key milestone for the project as regulatory approval reduces completion risk.
- In our view, beginning fuel loading is a significant sign of progress on the reactor project, as it increases the likelihood that OL3 will be connected to the grid and start producing in October this year, with regular electricity production to start in first-quarter 2022.
- We revised the outlook on TVO to positive from negative and affirmed 'BB' long-term issuer credit rating.
- The positive outlook indicates that the reactor project OL3 has completed its final construction phase, received permission for fuel loading including regulatory approvals, and that we expect full operations will begin in 2022, which should allow the company to make progress on its deleverage plans. We expect that a new settlement agreement and financing plan will be announced before summer.

Rating Action Rationale

The fuel loading permit signals that a major milestone is reached and that deleveraging could begin in 2022 when regular electricity is produced. On March 26, TVO received a fuel loading permit from the Finnish Radiation and Nuclear Safety Authority (STUK). Despite the 12-year construction delay, the final settlement agreement and ultimately how much of the overrun cost TVO will have to finance and how much will be covered by the Areve-Siemens Consortium (ASC) is still uncertain. That said, we believe that fuel loading is a significantly positive milestone for the OL3 nuclear project and we expect that the remaining schedule will not result in any delays, as several tests have already been undertaken for the plant to receive the fuel loading permit. The next step is now to connect OL3 to the electricity grid, which is expected in October this year and should allow commercial electricity production to begin in February 2022. We understand that the Finnish TSO Fingrid (AA-/A-1+'/Stable) has made all the preparations for the connection. As soon as OL3 is connected to the grid, it will enter operations, although with a low capacity in the beginning (producing about 1-3 terawatt hours [TWh]), and then enter regular production in February 2022.

We expect that TVO will start to deleverage as soon as OL3 is fully operational. Based on TVO's articles of association, the owners must cover all annual costs regardless of the market price of electricity, as they are charged incurred costs in proportion with their ownership and receive electricity as compensation. This also includes annual interest on interest-bearing debt, as well as depreciation. These have increased because of the 12-year construction delay, although the ASC has partly compensated this. TVO therefore continues to be protected from any competition and price risks. Since all annual costs are covered in the price model, including interest, the company can begin to deleverage because we expect that funds from operations (FFO) will cover capital expenditure (capex) when it's in full operation.

The recent €400 million shareholder loan facility shows long-term support from its owners and gives TVO ample liquidity. 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 share class B 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 €1.7 billion available, which is ample to meet its near-term obligations. A construction price of around €5.7 billion has mainly been paid, and remaining costs before the plant regularly produces electricity consist of about €320 million in milestone payments and about €450 million in general costs related to the project. Most over-run costs therefore need to be covered by ASC, which has joint and several liability for contractual obligations. That said, TVO must service its interest costs in 2020 of about €85 million, and about €80 million-€100 million per year over the next few years. We assume TVO will cover these costs with additional debt, not operational cash flows, until OL3 enters regular commercial production.

It is our understanding that no additional external debt was 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 €5.7 billion, as well as external debt of about €4.7 billion. Upcoming funding needs will be covered by shareholder loans or other shareholder injections. 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.

Final compensation and penalties on the project are unclear and remain a concern, and may need to partly be covered by TVO. The current underlying agreement with ASC, the 2018 Global Settlement Agreement (GSA), stipulates compensation and penalty mechanisms to cover all of TVO's project costs from January 2020 to June 2021, but not after 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. Capitalized interest costs totaled about €85 million during 2020. Furthermore, we understand that compensation from ASC is capped at €400 million under the existing GSA contract, and might not be sufficient beyond July 2021. 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.

Areva's sale of financial assets decreases liquidity pressure--at least temporarily--to cover additional construction cost overruns. Areva is still responsible a trust mechanism, which needs to be capitalized to meet all its obligations to finalize the project. Areva divested 4% of its 40% ownership in Orano S.A., or about €200 million, to be injected in the trust. The sale improves Areva's liquidity and we view this as a strong commitment from Areva and the French state to find a solution to finance the remaining costs for the OL3 reactor project. We still believe, however, that additional 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 the delays. Despite recent sales, we see continued risk that Areva might not have timely financial capacity until the end of the plant unit's guarantee period--two years after provisional takeover, while some items have a guarantee period longer than two years--as it still needs to sell a material stake in Orano. In our view, this could lead to a disagreement with the 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 depend on asset sales to honor its obligations. The plant contract stipulates that the supplier consortium (ACS) companies have joint and several liability for the contractual obligations.

The companies in the ACS have joint and several liability for the contractual obligations until the end of the OL3 guarantee period, which limits risks. 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, while some items have guarantee periods extending beyond two years. 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 downside risk. Areva and Siemens are each responsible for finalizing the OL3 project.

Outlook

The positive outlook indicates that we could raise the 'BB' long-term issuer credit rating within the next 12 months. In our view, the initiation of fuel loading is a major step for completing OL3 and starting regular electricity production in the beginning of 2022. This allows TVO to commence its deleveraging plan, and because it has no market risk due to the Mankala model features, TVO is insulated from electricity prices. We therefore expect that TVO could start to deleverage as soon as OL3 is fully operational.

Upside scenario

We could raise the rating on the company if:

- The risk of completing the OL3 nuclear plant dissipates and the plant starts regular electricity generation with no operational issues;
- We expect TVO to start on its lengthy deleveraging path;
- It has a solid operational track record; and
- There's continuous support from shareholders.

Downside scenario

We could take a negative rating action or revise the positive outlook to stable if:

- TVO and ASC do not agree on terms for a new GSA within the next few months, or if the agreement results in material 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 cost overruns not fully covered by the shareholders and thus leading to no more external debt than assumed in the previous schedule at a total estimated cost of €5.7 billion, and external debt of about €4.7 billion.
- 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, which would be a breach of contract and could imply that Areva lacks liquidity to finalize the project.

Company Description

TVO is a not-for-profit Finnish company created in 1969 that generates electricity in Finland from nuclear power. At end-2020, the company produced 22% (15 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 1,600 MW of installed capacity, is under construction by ASC. TVO expects annual generation to almost double when OL3 comes into operation (to 27 TWh from 15 TWh in 2020). OL1 and OL2 have been operational for about 40 years, with significant reliability and a 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 Power and Heat, which is 100% owned by 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

Assumptions

- No additional external debt 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 €5.7 billion.
- Our revenue and capex model assumes that OL3 is connected to the grid in October 2021 and

commercial electricity production starts in February 2022.

- Capex of about €500 million-€550 million annually in 2021 and 2022. Capex includes milestone payments to ASC from TVO of about €325 million over the coming 24 months.
- According to the current GSA, TVO is entitled to €400 million maximum latest at the end of June 2021, but we assume this will be postponed until February 2022 or when OL3 is ready for regular electricity production.
- 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.

Key metrics

TVO will start to deleverage in 2022 due to planned regular electricity production starting in February 2022. This will result in increased cash flows and positive discretionary cash flows allowing for debt reduction. We expect that FFO to debt and debt to EBITDA will start improving beyond 2022 and reach FFO to debt of about 2%-6% by end of 2022, and debt to EBITDA below 20x for the same period. We consider this as highly leveraged.

Liquidity

We assess TVO's liquidity as adequate as of Dec. 31, 2020, based on liquidity sources exceeding liquidity uses by just above 1.6x 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 heightened in 2023 and 2024, when over €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 billion revolving credit facility (RCF) that matures in 2024. Together with the new €400 million 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:

- Unrestricted cash and cash equivalents of about €160 million;
- Two RCF lines (€1 billion), maturing in June 2024;
- Shareholder loan commitments of €400 million maturing in December 2022

Principal liquidity uses:

- Debt maturities of about €427 million within the next 12 months and about €532 million for the subsequent 12 months; and

- About €555 million of capex within the next 12 months and about €455 million for the subsequent 12 months.

Debt maturities include:

- 2021: €427 million
- 2022: €532 million
- 2023: €1.2 billion
- After 2023: €2.1 billion

Ratings Score Snapshot

Issuer credit rating: BB/Positive/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
- 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: 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; Outlook Action

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