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Research Update:

Finnish Nuclear Producer Teollisuuden Voima Oyj (TVO) Ratings Placed On Watch Negative On Lower Financial Flexibility

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Overview

- The start of regular electricity production of Olkiluoto 3 (OL3) EPR project has been delayed by five months to May 2019, slightly increasing project costs and postponing further the start of Finnish nuclear producer Teollisuuden Voima Oyj's (TVO's) deleveraging path.
- At the same time, TVO's key counterparty Areva SA faces higher risk of a liquidity squeeze due to potential material litigation payments related to OL3, and one of the key shareholders Fortum Oyj's credit quality is under pressure.
- We are therefore placing our 'BB+' long-term rating on TVO on CreditWatch with negative implications and affirming our 'B' short-term rating.
- The CreditWatch placement reflects the risk that TVO's financial flexibility could diminish as a result of weaker counterparties or additional delays that could further increase TVO's high financial leverage.

Rating Action

On Oct. 17, 2017, S&P Global Ratings placed its 'BB+' long-term corporate credit ratings on Finland-based nuclear power producer Teollisuuden Voima Oyj (TVO) on CreditWatch with negative implications and affirmed its 'B' short-term corporate rating.

We also placed on CreditWatch negative our 'BB+' issue rating on TVO's €1.3 million revolving credit facility (RCF) and €4.0 billion euro medium-term note program. The recovery rating is unchanged at '4', indicating our expectation of average (30%-50%; rounded estimate 30%) recovery in the event of payment default.

Rationale

The CreditWatch placement follows TVO's announcement that its Olkiluoto 3 (OL3) European pressurized reactor project is facing a delay of five months, which, in our view, slightly increases project costs and postpones further the start of the company's deleveraging path. According to the new schedule, the plant will enter into full operation in May 2019 instead of December 2018, as the plant supplier is now expecting longer preparation works before fuel loading. We expect such a delay to have a marginal effect on TVO's leverage, mainly reflecting five months of additional project management costs and interest, which are partially offset by potentially lower financing costs on the back of new refinancing.

We note that the series of delays to OL3 construction, which was originally planned to come on-stream in 2009, have significantly increased the company's financial leverage as construction costs have been capitalized and will start to be depreciated when OL3 comes into operation. We expect the increased EBITDA at that point to reduce the company's leverage to about 15x-18x adjusted debt to EBITDA. We reflect in our rating the high amount of debt accumulated (about €4 billion as of June 2017 excluding the €656 million loan received from the Finnish State Nuclear Waste Management Fund, which is on-lent to TVO's shareholders) and its lengthy deleveraging path.

While we understand that the re-profile of completion works is not driven by Areva's liquidity concerns, it coincides with the weakening credit quality of two key company's counterparties: Areva SA and Fortum Oyj. In our view, TVO could see some implications from the liquidity squeeze faced by its supplier Areva SA, reflecting the increased risk of material litigation payments related to the arbitration process with TVO. Although we expect OL3 to be completed, there are some uncertainties that the supplier will have the liquidity necessary to pay the settlement amount, should the final arbitration pronunciation rule in favor of TVO.

Any further increase in TVO's production costs could also test the shareholders' continuing support. Given its non-profit nature, TVO relies on its shareholders to repay financial debt and annual fixed costs, in line with its Article of Association. We think that any material delay would further increase TVO's production cost, reducing the economic value for its shareholders; declined market prices over the past four years have reduced TVO's cushion against any increased cost overruns. Fortum Oyj, which has a 25.8% direct stake in TVO, faces its own credit quality challenge linked to the acquisition of German energy company Uniper.

Our rating on TVO remains underpinned by its Mankala model, which largely insulates the company from competition and market risk. This stems from the company's ability to sell electricity produced to its shareholders "at cost". TVO's owners--comprising major Finnish industries, utilities, and municipalities--are responsible, in line with TVO's articles of association, for TVO's annual fixed costs (about 80%-85% of total costs), in proportion to their shares and irrespective of whether or not they have used their share of electricity. Annual fixed costs include interest and loan instalments and depreciation. We also consider TVO as playing an important role in the Finnish electricity market as it generates about 20% of total electricity produced in Finland. We expect this share to increase to 30% when OL3 comes into operation. Finally, its existing plants have a strong operational track record, with a capacity utilization rate above 90%, despite outages.

We acknowledge that TVO's financial metrics are substantially weaker than those of profit-maximizing companies due to its non-profit nature. Therefore, TVO has a relatively short-dated debt-maturity profile--about four years--compared with the economic lifetime of its asset base of over 40 years. This increases the company's exposure to refinancing risk. However, TVO maintains €1.3 billion of RCFs, maturing in 2019-2021, to ensure that it is able to cover funding needs over the next few years and additional €380 million committed lines signed in 2016 and 2017. Although TVO should be able to charge its shareholders for instalments and interest payments on loans falling due annually--in accordance with its loan agreements--its debt does not benefit from any guarantees.

Assumptions

- TVO's production cost slightly lower than €30/megawatt hour (mwh) when OL3 comes into operation, increasing from currently €20/mwh, reflecting the start of depreciation of OL3 capitalized costs and interest.
- Remaining capital expenditure (capex) to complete OL3 (including capitalized interest) slightly higher than €1 billion over 2017-2019, reflecting milestone payments to the supplier.
- Annual maintenance capex on OL1 and OL2 amounting to about €50 million-€80 million, higher than expected maintenance capex on OL3 once it is in operation.
- TVO's shareholders will continue to fully cover the company's production costs (including interest expenses) for existing plants OL1 and OL2, which we expect will remain competitive in the near term.
- No unexpected outages at OL1 and OL2.
- No further cost overruns in the completion of OL3.
- No impact on TVO's cash flow as a result of arbitration with Areva.
- Use of €300 million of shareholder loan commitments for OL3.

Based on these assumptions, we arrive at the following credit measures:

- Debt to EBITDA of about 15x-17x from 2020 onward; and
- Funds from operations interest coverage of 2.1x-2.6x from 2020.

Liquidity

We assess TVO's liquidity as adequate. We estimate that sources of liquidity for the 12 months to June 30, 2018 will exceed uses of liquidity by more than 1.2x, supported by €1.68 billion of undrawn RCF and committed liquidity facilities. We believe the company would likely be able to absorb high-impact, low-probability events with limited need for refinancing and has sound relationships with banks. Furthermore, we anticipate shareholder loan commitments will be sufficient to meet the equity-to-debt covenant.

We estimate that TVO's principal liquidity sources during the 12 months to June 30, 2018 will comprise:

- About €209 million in unrestricted cash and equivalents as of June 30, 2017;
- Access to: an undrawn €1.3 billion RCF, of which €300 million matures in 2019 and €1 billion in February 2021; €280 million bilateral revolving credit facilities signed in 2017, maturing in 2020; and to a €100 million undrawn term-loan signed with the European Investment Bank to be

withdrawn by 2019 at the latest.
- Shareholder loan commitments totalling €300 million over 2017-2019, related to OL3, out of which we expect at least €100 million to be withdrawn by December 2017.

We estimate that TVO's principal liquidity uses during the same period will comprise:
- About €150 million of debt repayment over the next 12 months; and
- Expected capex of about €400 million, mainly reflecting some OL3 completion milestone, slightly revised after capex rescheduling.

Covenant Analysis

The company's loan documentation includes one financial covenant, which stipulates an equity-to-assets ratio of 25%. In calculating the ratio, TVO excludes the loans it receives from the Finnish State Nuclear Waste Management Fund, whose proceeds are lent to the shareholders, and provisions related to nuclear waste management. Shareholder loans are included in equity. As of June 30, 2017, the equity-to-assets ratio was about 27.4%.

CreditWatch

The CreditWatch placement reflects our view that we are likely to downgrade TVO if we perceive that its financial flexibility has diminished as a result of:
- Weaker counterparties that lead us to question the supplier's ability to deliver the project, or the shareholders' financial capacity; or
- Additional project delays or unexpected increases in the cost of completion of OL3 that could further increase TVO's financial leverage or indicate a weakening cost advantage, if this were not mitigated by extended shareholder support.

We anticipate that we could lower the long-term rating by one notch. We aim to review the CreditWatch within the next three months, once there is more visibility on: 1) Areva's liquidity and arbitration process; 2) the financial position of its shareholder Fortum Oyj and the extent of overall shareholder support for the OL3 project; and 3) the adherence to the timetable for completion works.

Ratings Score Snapshot

Corporate Credit Rating: BB+/Watch Neg/B

Business risk: Strong
- Country risk: Low
- Industry risk: Moderately high
- Competitive position: Excellent

Financial risk: Highly leveraged

- Cash flow/Leverage: Highly leverage

Anchor: bb

Modifiers

- Diversification/Portfolio effect: Neutral (no impact)
- Capital structure: Neutral (no impact)
- Liquidity: Adequate (no impact)
- Financial policy: Neutral (no impact)
- Management and governance: Satisfactory (no impact)
- Comparable rating analysis: Positive (+1 notch)

Issue Ratings

Recovery analysis

Key analytical factors

- The issue 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.
- The issue rating is constrained by the large senior unsecured debt amount. Our recovery expectations are in the lower half of the 30%-50% range (rounded estimate 30%).
- In our simulated default scenario, we assume the default of one of its shareholders combined with ongoing price pressures in the wholesale market.
- We value TVO as a going concern, given its importance to the Finnish electricity market since it will produce approximately 30% of the total electricity requirement once OL3 is on stream.
- We understand that the event of default includes a change in ownership impacted by 10% of existing shareholders and amendment to the Article 4 of articles of association without the prior consent of the majority lenders.

Simulated default assumptions

- Year of default: 2020
- Minimum capex (% of sales): 6%
- Cyclicality adjustment: 10% (standard sector assumption for unregulated power)
- Operational adjustment: +35% (this reflects that the minimum capex is much higher than 6% of sales, given the high capital intensity of the business. This also reflects our forward looking valuation for this company).
- Emergence EBITDA after recovery adjustments: €326 million
- Implied enterprise value multiple: 6.0x
- Jurisdiction: Finland

Simplified waterfall

- Gross enterprise value at default: €1,954 million
- Administrative costs: €98 million
- Net value available to creditors: €1,856 million

- Senior unsecured debt claims: €6,145 million*
- Recovery expectations: 30%-50% (rounded estimate: 30%)

*All debt amounts include six months' prepetition interest.

Related Criteria

- 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
- Criteria - Corporates - General: Corporate Methodology: Ratios And Adjustments, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Group Rating Methodology, Nov. 19, 2013
- Criteria - Corporates - General: Corporate Methodology, Nov. 19, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities And Insurers, Nov. 13, 2012
- General Criteria: Use Of CreditWatch And Outlooks, Sept. 14, 2009

Ratings List

Ratings Placed On CreditWatch; Short-Term Rating Affirmed

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

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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. Complete ratings information is available to subscribers of RatingsDirect at www.capitaliq.com. All ratings affected by this rating action can be found on the 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.