Research Update:

Teollisuuden Voima Oyj Ratings Placed On Watch Negative On Plant Commissioning Delay

December 23, 2019

(***Editor's Note:*** *We corrected this article on Jan. 17, 2020, because we had misstated the year of default in the Simulated default assumptions of the Recovery Analysis.)*

PRIMARY CREDIT ANALYST

Daniel Annas
Stockholm
+46 (8) 4405925
daniel.annas
@spglobal.com

SECONDARY CONTACT

Elena Anankina, CFA
Moscow
(7) 495-783-4130
elena.anankina
@spglobal.com

Rating Action Overview

- On Dec. 19, Teollisuuden Voima Oyj (TVO) announced that the commissioning of the OL3 plant will be delayed until March 2021, 6-7 months beyond the previous schedule and over 11 years behind the original plan; the penalty settlement is also delayed, increasing TVO's year-end 2020 debt due to accrued interest.
- We believe that the additional delay increases the need to top up the trust mechanism by Areva-Siemens consortium (ASC) to finalize OL3 and maintain sufficient funds for the two-year guarantee period.
- We are placing our 'BB+' long-term and 'B' short-term issuer credit ratings on TVO on CreditWatch negative.
- The CreditWatch reflects the possibility of a downgrade if the top-up of ASC's trust mechanism doesn't protect TVO from further delays or cost escalations, or the company experiences further issues with meeting operational and regulatory milestones.

Rating Action Rationale

The recently announced updated schedule for completing OL3 means another seven-month delay. According to ASC, the delay relates to the pushing forward in fuel loading, because of slow progression of system tests, and delivery failures of equipment and components from the plant supplier. We understand that this follows numerous delays, leading to maintenance of already installed components. The updated schedule also include a four-month operational testing period that was not incorporated previously. We understand this is a sort of cushion that has not been included previously. In line with the current schedule and if all operational and regulatory processes are progressing as announced, the key milestones will be as follows:

- Fuel loading in June 2020
- Connection to grid in November 2020

- Provisional takeover in March 2021

This delay increases costs for ASC and could lead to a potential shortage liquidity. Before this delay, it was our understanding that ASC had set aside sufficient funds to complete the OL3 project through a trust mechanism on which TVO has complete visibility. We understand a top-up of the fund is necessary to meet all obligations and costs until the end of the guarantee period because of the delay. In our view, if ASC fails to replenish the trust mechanism in accordance with the settlement agreement, it would indicate that the consortium might not have sufficient financial capacity until the end of the plant unit's guarantee period, which means two years after provisional takeover. We acknowledge that ASC has fulfilled its obligation in accordance to the settlement agreement to pay TVO €122 million.

The company intends to finalize OL3, although the "call-off date" is closing in. The settlement agreement signed in 2018 include a clause stating that if provisional takeover is not achieved by June 30, 2021 (the call-off date), TVO has the right to terminate the OL3 contract. However, we understand that TVO is committed to the project.

The company's deleverage plan is pushed forward as OL3 commission date is postponed. TVO has increased its net debt (S&P Global Ratings-adjusted) to about €4.6 billion by year-end 2018. We expect debt to increase to about €5.3 billion in 2021, before OL3 is operation, at which point the company will start its deleverage path. This results in TVO starting its deleveraging 6-7 months later then our previous base-case scenario.

CreditWatch

The CreditWatch placement reflects the potential for a downgrade if the company does not obtain sufficient funding to finalize the construction via ASC's top-up mechanism, or construction faces further delays or operational issues.

The recently announced updated schedule increase ASC's need to top up the trust mechanism. We see an inherent risk of higher capitalized interest for TVO and that the company might not be sufficiently and timely compensated for by penalty payments by the time the project is completed, although, TVO could from penalties deduct final milestone payment.

We could downgrade TVO, if ASC fails to replenish the trust mechanism as stipulated in the settlement agreement, and we could potentially downgrade by more than one notch if AFC fails to replenish the trust mechanism timely and (or otherwise secure the funding of the project) if new operational or regulatory issues arise. However, our base-case scenario stipulates no major operational or regulatory issues.

If ASC replenishes the trust mechanism to cover all remaining costs in accordance to the settlement agreement, and if operational and regulatory progress smoothly, we are likely to affirm the 'BB+' rating.

We aim to resolve the CreditWatch within the next three months, depending on ASC's replenishment of the trust mechanism and if construction progresses without any additional operational or regulatory delays.

Company Description

TVO is a not-for-profit Finnish company created in 1969 that generates electricity in Finland from nuclear power. At year-end 2018, the company had produced 16.5% (14 terawatt-hours [TWh]) of annual Finnish electricity consumption (85.5 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. We believe that because TVO's costs at existing nuclear plants are well below current electricity prices in Finland, shareholders are likely to continue supporting the company.

The company owns and operates two nuclear power plants (OL1 and OL2) with about 1,780 megawatts (MW) installed capacity. A third nuclear plant (OL3) with 1,600 MW installed capacity, is under construction by the Areva-Siemens consortium; TVO expects it to double annual generation over the next two years (to 27 TWh in 2021 from 14 TWh in 2018; see chart). OL1 and OL2 have been operational for about 35 years with a high degree of reliability and load factor at 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 565 MW installed capacity Meri-Pori coal-fired power plant. The company will sell its shares in the plant July 2020 to Fortum. As well, TVO 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 Oyj(BBB/Stable/A-2) and Stora Enso Oyj, two major forest product companies; and Fortum Oyj (28%; BBB/Watch Neg/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

We make the following assumptions in our base-case scenario for 2019-2021:

- OL3 starting operations in March 2021 without material cost overruns. Cost overruns are mainly represented by higher interest payments and are covered by penalty payments from the supplier consortium
- Continuation of high load factor for OL1 and OL2 at above 90%, leading to about 14 TWh of generation annually. We forecast lower load factor for the two first operational years for OL3, at about 85%
- TVO's combined nuclear production cost at about €30/MWh when OL3 enters operation, increasing from about €20/MWh, reflecting the start of the depreciation of OL3's capitalized costs and interest
- The company's shareholders continuing to fully cover production costs (including interest expenses) for OL1, OL2, and OL3, which we expect will remain competitive in the near term
- Undrawn shareholder loan facility of €250 million showing the shareholder's support in TVO
- No dividend payments over the forecast period

Based on these assumptions, we arrive at the following S&P Global Ratings-adjusted credit measures over 2019-2021:

	2018a	2019e	2020e	2021e
EBITDA	70	50-55	70-80	320-340
EBITDA margin (%)	20	17-19	24-26	40-50
Debt	4,556	5,000-5,100	5,400-5,500	5,300-5,400
FFO/debt (%)	1	0.5-1.0	0.1-0.5	4-6
Debt/EBITDA (x)	65	97-100	70-80	15-18

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

Liquidity

We assess TVO's liquidity as of Sept. 30, 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. 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 €200 million
- The €122 payment from ASC before the end of 2019
- Two undrawn RCF lines (€1 billion and €300 million), maturing respectively in May 2022 and February 2023, respectively
- €250 million shareholder loan commitments maturing in December 2020

Principal liquidity uses include:

- Debt maturities of about €500 million within the next 12 months and more than €200 million for the subsequent 12 months
- €10 million working capital
- About €450 million capital expenditures within the next 12 months and about €200 million for the subsequent 12 months

Debt maturities include the following:

- 2020: €279 million
- 2021: €305 million
- 2022: €928 million
- 2023: €546 million
- After 2023: €2.03 billion

Environmental, Social, And Governance

The major governance risks relate to TVO's oversight and ability to manage risks and avoid cost overruns at OL3. Any further delays could change our view on the company's management and governance assessment, currently at satisfactory.

Compared with other electricity generation companies, TVO faces unique challenges and advantages of nuclear power generation, which leads to a minimal carbon footprint compared to fossil fuels but results in unique environmental and social risks related to the long-term storage of nuclear waste and low-probability, high-impact risks. Our assessment of TVO's profitability and business risks factors in the company's annual contributions to the state nuclear waste management fund, and its payments for the annual operation and construction costs of the nuclear waste management facilities. Cost of waste management continues to be subject to a degree of uncertainty because of the material storage time.

Social and governance factors are important to our assessment of TVO's competitive positions as well as shareholder support. We note post-Fukushima tightening of nuclear regulations globally, and the fact that the Finnish regulator has not approved any new nuclear power plants in the country since then. According to surveys from 2018, about 50% of the Finnish population accept nuclear power, and only about 15% are negative.

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.
- 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 produce approximately 30% of the total electricity requirement once OL3 is on stream.
- We understand that an amendment to the Articles 4 of the articles of association requires prior written consent of the majority lenders.

Simulated default assumptions

- Year of default: 2022
- Minimum capex (% of sales): 6%
- Emergence EBITDA after recovery adjustments: €301 million
- Implied enterprise value multiple: 6x

- Jurisdiction: Finland

Simplified waterfall

- Gross enterprise value at default: €1.8 billion
- Administrative costs: €145 million (5%)
- Net value available to creditors: €1.7 billion
- Senior unsecured debt claims: €5.7 billion
- --Recovery expectations: 30%-50% (rounded estimate: 30%)

Ratings Score Snapshot

Issuer Credit Rating: BB+/Watch Neg/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: Satisfactory (no impact)
- Comparable rating analysis: Positive (+1 notch)

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

CreditWatch Action; Recovery Rating Unchanged

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

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.

Copyright © 2020 by Standard & Poor's Financial Services LLC. All rights reserved.

No content (including ratings, credit-related analyses and data, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of Standard & Poor's Financial Services LLC or its affiliates (collectively, S&P). The Content shall not be used for any unlawful or unauthorized purposes. S&P and any third-party providers, as well as their directors, officers, shareholders, employees or agents (collectively S&P Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Parties are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, for the results obtained from the use of the Content, or for the security or maintenance of any data input by the user. The Content is provided on an "as is" basis. S&P PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related and other analyses, including ratings, and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. S&P's opinions, analyses and rating acknowledgment decisions (described below) are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P does not act as a fiduciary or an investment advisor except where registered as such. While S&P has obtained information from sources it believes to be reliable, S&P does not perform an audit and undertakes no duty of due diligence or independent verification of any information it receives. Rating-related publications may be published for a variety of reasons that are not necessarily dependent on action by rating committees, including, but not limited to, the publication of a periodic update on a credit rating and related analyses.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P reserves the right to assign, withdraw or suspend such acknowledgment at any time and in its sole discretion. S&P Parties disclaim any duty whatsoever arising out of the assignment, withdrawal or suspension of an acknowledgment as well as any liability for any damage alleged to have been suffered on account thereof.

S&P keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P may have information that is not available to other S&P business units. S&P has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

S&P may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P reserves the right to disseminate its opinions and analyses. S&P's public ratings and analyses are made available on its Web sites, www.standardandpoors.com (free of charge), and www.ratingsdirect.com (subscription), and may be distributed through other means, including via S&P publications and third-party redistributors. Additional information about our ratings fees is available at www.standardandpoors.com/usratingsfees.

STANDARD & POOR'S, S&P and RATINGSDIRECT are registered trademarks of Standard & Poor's Financial Services LLC.