

## JCR Downgraded TVO's Rating to AA-, Outlook Stable

Japan Credit Rating Agency, Ltd. (JCR) announces the following credit rating.

### *Rationale*

- (1) Teollisuuden Voima Oyj (TVO, Industrial Power Company Corporation) is a Finnish electricity generation company that operates two nuclear power stations (Olkiluoto 1 and 2, both 880MW) and sells the generated power to its shareholders at cost. TVO's rating is supported by (a) its business model called "Mankala", unique to joint-venture power generators in Finland, (b) the important role it fulfills as the nation's principal energy supplier, providing 18% of the total electricity consumption in Jan-Sep 2014, (c) long-standing solid and stable track records of operating nuclear power stations since 1979 and (d) low generation cost. TVO's Articles of Association obligate its shareholders to pay, in proportion to capital contribution ratio regardless of the receipt of power, the fixed cost for operating the power plants including the payment of TVO's financial obligations. Should a shareholder miss payments, TVO would be able to recover the cost by selling the suspended power in the market as the current generation cost is much lower than the prevailing market prices. Since 2005, TVO has been building Olkiluoto 3 (OL3, 1,600MW), a new nuclear power plant that adopted a European Pressurized Reactor, EPR. OL3's expected commercial operation date, originally scheduled in 2009, has been postponed several times. Its construction is making progress and TVO announced in September 2014 that its operation would start "in late 2018 according to the supplier". The delay has pushed up the construction cost significantly, and arbitration is proceeding with the turn-key-contractors regarding who should bear the additional cost. Once OL3 starts operation, the company's average power generation cost will inevitably rise in light of the current claimed amount even if TVO wins the arbitration. The decline in TVO's relative price competitiveness amid the subdued outlook of Nord Pool electricity prices may not only weaken the shareholder's economic incentive but also make it more difficult for TVO to fully recover the generation cost by selling in the market in case of specific shareholders' non-payment. With such future development coming into sight, JCR has downgraded TVO's rating by one notch. The outlook of the rating is stable. Despite the decline in relative price competitiveness, should the current forward prices hold, the chances may still seem remote that TVO's power generation cost would exceed the market prices continuously and for long unless it suffers a complete loss in the arbitration. Also, the shareholders' strong commitment to TVO remains solid as demonstrated in their representation in the company's board and the timely provision of shareholders' subordinated loans. JCR will continue to closely monitor the prospect of TVO's power generation cost based on the progress of construction of and the arbitration over OL3, as well as the electricity market prices, and reflect them in the rating as needed.
- (2) TVO is a private nuclear power generation company jointly established in 1969 and is currently owned by six domestic shareholders including top two electricity companies in Finland. The company's total asset was EUR6.7 billion at the end of 2013 and the annual turnover was EUR366 million in 2013. The shareholders are (i) Pohjolan Voima Oy, the largest private electricity company in Finland, holding 58.5% of TVO; (ii) Fortum Power and Heat Oy, a subsidiary of the state-run Fortum Oyj, 25.8%; (iii) Oy Mankala Ab, a hydropower company owned by the city of Helsinki, 8.1%; (iv) EPV Energia Oy, electricity supplier for municipally-owned companies and cities, 6.6%; (v) Kemira Oyj, a water chemistry company, 1.0%; and (vi) Karhu Voima Oy, a power distribution company, 0.1%. TVO's board members represent the major shareholders. The company's power generation totaled 11.2TWh in Jan-Sep 2014, accounting for 18% of the total domestic consumption in Finland. It has been operating two BWR nuclear power plants (880MW each) in Olkiluoto, Finland, since 1979 and 1982, and possesses 45% of the shares of Meri-Pori coal condensing power plant (565MW) and 60% of the shares of Posiva Oy, a company that undertakes final disposal of spent nuclear fuel. In addition, TVO is constructing the third nuclear power station (EPR, 1,600MW). The company is also making preparations for building the fourth nuclear power plant in the future, for which it obtained the in-principle approval from the Finnish parliament in 2010 and is currently assessing the bidding proposals. The application deadline for construction license to the government will be due in June 2015, which the Finnish government decided not to extend further in September 2014.

- (3) TVO is run on the so-called "Mankala" principle, a business model unique to joint-venture power generators in Finland. Specifically, in accordance with the Articles of Association, the shareholders retain the right to receive, based on each shareholding ratio, the generated power at cost price. Meanwhile, they are obligated to pay monthly to TVO (a) the fixed cost by the 24<sup>th</sup> of each previous month regardless of the receipt of power (e.g., cost of operation, maintenance and administration, taxes except for those related to power production volume, insurance, financial obligation, depreciation, cost for nuclear waste management) and (b) the variable cost by the due date (normally in each following month) in proportion to the volume they receive (e.g., fuel, taxes related to power production volume). In case a shareholder missed any such payment deadline, TVO would be entitled to immediately suspend the power delivery to such shareholder and sell it to other shareholders or the market at a market price. The company has run the nuclear power stations in a stable and safe manner for more than 35 years. The annual load factor of the existing nuclear power plants has constantly stayed extremely high at above 90%, registering 94.5% for Olkiluoto 1 and 97.4% for Olkiluoto 2 in 2014. Despite the decline in the electricity prices at Nord Pool, the integrated electricity market in Nordic countries, from EUR38/MWh in 2013 to EUR 29/MWh in Jan-Sep 2014 for the entire Nord Pool system and from EUR41/MWh to EUR36/MWh for the Finland region, the charge of the power generated by the existing two nuclear power plants at around EUR20/MWh in Jan-Sep 2014 stood much lower than those prices. The market prices remain higher in Finland than the entire system due to the capacity limitation in international transmission lines.
- (4) Operating under the Mankala model where the construction cost is capitalized during the construction period and recovered during the operational period by delivering the power to the shareholders at cost, TVO always registers zero net profit for its power generation business as approved by the Finnish tax authorities. The company is continuously investing in the two existing nuclear power stations so as to maintain 40 years of remaining technical life-time. Also, it has been undertaking the construction of the third nuclear power plant since 2005. For a company that has two 880MW nuclear power stations, financial burden of investing in a new 1,600MW nuclear power plant would certainly be hefty. Under the financial policy to maintain the equity ratio at above 25%, TVO is procuring funds through a mixture of bank loans, corporate bonds and subordinated shareholder loans. At the end of 2013, its equity ratio stood at 29%. To address the mounting liquidity risks associated with refinancing needs amid the soaring financial obligations, TVO keeps adhering to the rules that (a) no more than 25% of outstanding financial obligations will mature during the next rolling 12-month period and (b) more than 120% of financing needs for the next rolling 12-month will be constantly secured by long-term committed credit lines such as syndicated credit facility. At the end of September 2014, the total of undrawn syndicated credit facility and cash equivalents stood at EUR1.6 billion, way higher than the annual aggregate of maturing debt and investment needs.

Satoshi Nakagawa, Senior Analyst  
Haruna Saeki, Analyst

### Rating

Issuer: Teollisuuden Voima Oyj (TVO)

<Rating Change>

	Rating	Outlook
FC (Foreign Currency Long-Term Issuer Rating)	AA- (from AA)	Stable (from Negative)

Rating Assignment Date: January 19, 2015

The criteria used for identifying matters which serve as assumptions for the assessment of the credit status, and the criteria used for setting of grades indicating the results of the assessments of the credit status are published as "Types of Credit Ratings and Definitions of Rating Symbols" (January 6, 2014) in Rating Policies on JCR's website (<http://www.jcr.co.jp/english/>).

Outline of methodology for determination of the credit rating is shown as "JCR's Rating Methodology" (November 7, 2014) and "Electric Power" (July 13, 2011) in Rating Policies on JCR's website (<http://www.jcr.co.jp/english/>).



## Japan Credit Rating Agency, Ltd.

Jiji Press Building, 5-15-8 Ginza, Chuo-ku, Tokyo 104-0061, Japan  
Tel. +81 3 3544 7013, Fax. +81 3 3544 7026

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