

## JCR Affirmed AA Rating on Teollisuuden Voima Oyj

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

### *Rationale*

The rating is supported primarily by (a) its strategic importance in Finland that holds nuclear power at the center of its energy and environment policies, (b) its minimized business risk on so-called "Mankala" principle, a cooperative business model widely accepted in Finland and (c) its excellent records of nuclear power plant (NPP) management and cost competitiveness which underpin such business grounds.

Outlook of the rating is stable. Since 2011 Finland's electricity consumption has been on the fall, especially in the industry sector, reflecting sluggish economic conditions across Europe. The market price has not bottomed out yet. JCR sees no reason, however, to doubt TVO's strong operational bases and business prospect as long as its electricity maintains price competitiveness against the market, and the market is adequately large and efficient as the Nord Pool is. Finnish public opinion about NPP dropped once after Fukushima accident but turned around supportive again. There is no change in the government's nuclear policies and plant construction plans.

### **(1) Continued high level of nuclear operation and capacity enhancement**

In 2011 the domestic electricity consumption fell by 3.6% to 84.4 TWh from 87.5 TWh of the previous year, due to the sluggish demand especially in the industry sector. The domestic electricity production decreased more than proportionately, by 8.4% from 77.0 TWh to 70.6 TWh, as the dropped market price at the Nord Pool induced switching from coal-fired generation to purchase at the market. Under the circumstances TVO, holding the Finland's two NPPs (Olkiluoto 1 and 2 (OL 1 and OL 2)) out of four in operation and the fifth (Olkiluoto 3 (OL 3)) which is under construction, maintains their high capacity-factor operation and competitive price. The electricity demand in Finland and Northern Europe is expected to keep increasing in the medium to long term. So is the preference to carbon free energy sources. The Finnish government issued a Decision in Principle for the nation's sixth and seventh NPP construction plans in July 2010 and TVO obtained one – Olkiluoto 4 (OL 4), and now proceeds to bidding and engineering phase for its construction license to be applied in 2015.

The overdue construction of OL 3 is reportedly further delayed up until 2016. The impact of OL 3 investment on TVO's deliverable electricity price after its operation would have been hence rising. Such risk is, however, largely mitigated by its turn-key contract holding the supplier responsible for the delay.

### **(2) Solid operational bases on an unique business model in Finland**

TVO is established in 1969 as a privately held non-profit NPP operator in Finland. As a base-load electricity producer TVO satisfies about 17% of the country's electricity consumption as of 2011. It supplies electricity exclusively to its shareholders at generation cost. Its shareholder base is very stable, registering the country's largest privately owned power company PVO (58.5%), followed by Fortum Power and Heat Oy (25.8% shares), which itself is 51% state-owned and the largest power company in Finland, Kemira Oyj, a water chemistry firm, and municipality-owned electricity generation and transmission companies and a major distribution company (6 in total). TVO's articles of association entitle its shareholders to receive electricity supply at generation cost in proportion to their shareholdings while obliging them to underwrite the supply and compensate annual fixed costs in proportion to their stakes and variable costs in proportion to the volume of electricity purchased. Moreover, the articles set a deadline for payment of the fixed cost one month ahead of actual electricity delivery. Electricity supply could be immediately suspended, should a shareholder fail to pay by the due date. Surplus electricity that might ensue can be sold to other shareholders or in the wholesale electricity market, Nord Pool. Nord Pool has depth and breadth which is great enough for such sale to be executed as necessary. Therefore, there is little chance in which a client does not take its quota or does not pay, as long as TVO's electricity price is consistently below the market, as it is, making its collection risk extremely low.

In Finland, where the number of small power companies count as many as 120, nearly a half of the power supply is carried out in this way, the nation's unique cooperative business model called "Mankala". Mankala enables a large-scale business with enormous capital needs and technical impediments such as nuclear power generation to be collectively carried out and contributes to a

stable and cost-effective supply of electricity for the community. It is hence well-established economically and socially in Finland. Its benefit extends from tax saving at the power company which posts no profit to its shareholder clients as their power purchase at sub-market price is regarded as an internal deal and therefore exempt from the fair trading regulations and resultant extra profit is from ordinary taxation. As TVO has shareholders which also are Mankala enterprises, the number of its stakeholders including indirect ones counts as many as around 60, of which composition includes the largest power company Fortum (26%), industrial companies 44% and municipalities 30%, forming a steadfast interest group on TVO's reliable and economic electricity supply and which in turn collectively supports TVO's credit standing. In theory, although unthinkable at the moment, there is a possibility in which the Mankala for some reason turned out in the future to be unsustainable or it ceased to give TVO a competitive advantage in the electricity production, thus causing a downward pressure on the rating.

### **(3) Superior NPP management records and cost competitiveness underpin its presence in Finland's national economy and policy**

TVO's facilities comprise two NPP, OL1 and OL2 with capacity of 880 MW each. In addition, it holds the right to take 45% of the electricity generated by a coal-fired plant (Meri-Pori, with a capacity of 565 MW) owned by Fortum, in order to adjust its generation volume. After the completion of OL3 with a capacity of 1,600 MW, TVO's facilities will have a 27%-28% share in the country's power generation capacity. The combined capacity factor at its existing two nuclear plants have been staying above 95% since 1999, one of the highest by international standards, thanks to a state-of-art NPP management including efficient annual outages. TVO has been constantly modernizing the two nuclear plants under its policy to keep them in operation anytime for the next 40 years. As a result, their capacity has been increased by 30% from 660 MW at their start-up to the current levels.

TVO's average nuclear electricity generation cost is about EUR 19.84/MWh as of 2011, significantly lower than the market prices on the Nord Pool (EUR 49.3/MWh as of 2011). While Finland has limited natural resources, its electricity demand is high due to the presence of energy-intensive industries and huge heating needs during winter. Electricity consumption per capita in Finland is one of the greatest among developed nations, and the country is a constant importer of electricity. The Finnish government plans to reduce the import dependence, whereas the supply-demand gap itself in the Nordic region is likely to tighten in the medium to long term. Also with a rising interest in clean energy without greenhouse gas emission, the public opinion about nuclear power which once dropped under the impact of Fukushima accident is restored. There is no change in Finland's energy and environment policy centering on nuclear power. OL4 as one of the nation's two new reactor building projects reinforces TVO's indispensable presence in the national economy and policy.

A potential increase in the levelized production cost of OL3 due to the delay in construction is expected as of September 2012 to be EUR 4-6/MWh, which lets the competitiveness of TVO's electricity price largely intact. However, as the contractor AREVA-Siemens consortium has filed its claims, which now amounts to EUR 1.9 billion, for arbitration at the International Chamber of Commerce (ICC) since 2008, while TVO also filed its counter claims of EUR 1.8 billion against the damage caused by the delay, JCR will closely watch further development of the arbitration.

The safety checkup mandated under the EU "stress tests" has been carried out up to detailed investigations by peers on each plant unit. It recommended several points of technical improvement on the one hand but confirmed Olkiluoto's relative strength in seismic and flood risk itself as well as good compliance in plant design and operational practices on the other. As precaution against certain exceptional natural conditions and simultaneous malfunctions in the security systems TVO has implemented extra security measures such as augmentation of its emergency power supply systems.

### **(4) Prudent financial management and sound position**

The local tax authority allows TVO to transfer otherwise taxable income to the depreciation reserves so as to adjust the net profit to zero on a stand-alone basis. On consolidated basis it posted a small EUR 5.7 million profit in 2011 after EUR 37.3 million in 2010 and three times minor losses consecutively until a year earlier. The amount of interest bearing liabilities, excluding loan from the Finnish State Nuclear Waste Management Fund (VYR) which is lent on to the shareholders, is approximately EUR 3.2 billion as of June 2012. Its equity ratio stands at 27.7% as of June 2012 (30.4% in 2011). The amount of debt is expected to grow further in connection with OL 3 investment but TVO will maintain its equity ratio at no less than 25% as its long-term commitment and is able to obtain additional capital by its shareholders, if necessary. TVO has untapped subordinated loan commitment of shareholders amounting EUR 530 million, out of which EUR 300 million earmarked for OL 3 and remaining EUR 230 million for bidding and engineering phase of OL4 project. They are expected to be replaced eventually by class shares for each plant unit. EUR 500 million bonds of 7

years were issued in the first quarter out of its Euro Medium Term Note Program, which was updated afterward in June 2012 with an increased amount of EUR 3 billion. Furthermore, a 10-year EUR 30 million private placement was issued in May. Its liquidity position is good, with cash and cash equivalent amounting to approximately EUR 245.1 million, undrawn amount of credit lines at banks amounting to EUR 1.5 billion and a CP program with a limit of EUR 1.0 billion, out of which EUR 750 million is untapped. As a rule TVO does not need too much liquidity since its full operating cost is compensated by its shareholders monthly. There were three private placements issued during the second half of 2012, namely another 10-year EUR 100 million in August, 20-year EUR 20 million in October and 15-year 75 million in December.

Shingo Muraoka, Chief Analyst  
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### Rating

Issuer: Teollisuuden Voima Oyj

<Affirmation>

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

Rating Assignment Date: February 14, 2013

Outline of methodology for determination of the credit rating is shown as "JCR's Rating Methodology" (August 28, 2012) and "Electric Power" (July 13, 2011) in Rating Policies on JCR's website (<http://www.jcr.co.jp/english/>).

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