13024

Teollisuuden Voima Oyj (TVO)

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Long-term Rating	A+
Outlook*	Stable
Short-term Rating	-

*Long-term Rating refers to Foreign Currency Long-term Issuer Rating in principle.

1. Overview

Teollisuuden Voima Oyj (TVO, Industrial Power Corporation) is a Finland-based private nuclear power generation company. It was established in 1969 through joint investment by Finnish electricity and industrial companies. TVO's current shareholders consist of six electricity and industrial companies in Finland, to whom TVO supplies produced electricity at cost. Its largest shareholder is Pohjolan Voima Oyj (PVO), the country's largest private electricity company that holds a 58.5% stake, followed by Fortum Power and Heat Oy, a subsidiary of the state-run Fortum Oyj, which holds a 25.8% stake. TVO's board members are nominated by the shareholders.

TVO owns and operates two nuclear power plant units in Olkiluoto, OL1 and OL2, which started operation in 1979 and 1982, respectively. Both are based the boiling water reactor (BWR). Their combined generation capacity is 1,780MW, the largest in the country. Operating licenses of these units expired at the end of 2018, but an extension of 20 years was approved by the government in September 2018. In Olkiluoto, TVO's third unit OL3, the first European Pressurized Water Reactor (EPR) in Europe with a generation capacity of 1,600MW has been under construction since 2005. The plant supplier consortium formed by Areva and Siemens is constructing the unit under a fixed-price turn-key contract. The start of OL3's commercial operation, initially scheduled for 2009, has been put off time and time again. Most recently, TVO announced in December 2019 that it was further delayed to March 2021 from July 2020. Once OL3 starts operation, TVO's nuclear power generation capacity will almost double, while its market share in terms of domestic electricity consumption will rise to around 30% from the current 15% level. TVO has also been constructing a disposal facility for spent nuclear fuel through Posiva Oy, a joint venture with Fortum and 60% owned by TVO. TVO assumes an important role in the power industry of Finland, which positions nuclear power as the core of its energy policy.

Apart from nuclear power, TVO also has a 45% share in the Meri-Pori coal-fired power plant owned and operated by Fortum Power and Heat Oy, operating 257MW out of its 565MW capacity. This plant, positioned as a peak power source, has hardly been in operation. According to the agreement signed in June 2018 by TVO and its shareholders concerning ownership of shares entitling to a share of Meri-Pori power plant's production capacity, TVO will relinquish its share in Meri-Pori in full in the beginning of July 2020. Fortum has already acquired TVO's shareholders' shares of the production capacity of the Meri-Pori power plant and has been entitled to use TVO's share of the capacity at the beginning of 2019.

2. Business Environment and Risks

(1) Operational Environment and Business Risk

TVO runs its business under the so-called "Mankala" ("at cost" in Finnish) principle, a business model unique to joint-venture power generators in Finland. Under the Mankala model, power and industrial companies jointly invest in power production with produced power sold at cost price to shareholders. It has been developed by energy-intensive industries like paper and pulp as a means to secure a stable supply of electricity at low prices. Behind the long-lasting existence of this unique business model in Finland is the fact that stable supply of electricity has been an extremely important issue amid the continuous dependence on imports for about 20% of domestic electricity supply. PVO, TVO's shareholder, also operates under the Mankala principle, with its shareholders mainly consisting of major Finnish paper and pulp companies, energy companies and local public entities.

TVO issues a series of shares attached to its generation units, and the shareholders retain the right to receive the generated power at cost price, in proportion to their shareholding in each series. Meanwhile, they are obligated to pay TVO's variable cost (e.g., fuel and other costs related to power production volume) and fixed cost (e.g., installments and interest payments on the loans of the company falling due annually, cost of operation, maintenance and administration, taxes except for those related to power production volume, insurance premium, depreciation cost and cost of nuclear waste management). While they pay variable costs in proportion to the volume of electricity they receive, they pay fixed costs based on each shareholding ratio regardless of whether they receive power or not. In case a shareholder should fail to pay by due date, TVO would be entitled to immediately suspend power delivery to the shareholder and sell it to other shareholders or in the market at market prices. There has been no single case where shareholders failed to pay. Moreover, non-payment by a shareholder would have a limited impact on TVO's repayment ability because it can recover the cost by selling the suspended power in the market as long as the market prices are lower than its generation cost. JCR views that such system significantly reduces TVO's investment recovery risks and its financial risks. As the price of electricity produced by TVO is relatively low as compared with the market prices, the shareholders seem to have little incentive not to receive power from or pay the fixed costs to TVO. JCR holds that the shareholders' commitments to TVO remain solid and are based on a long-term perspective, as demonstrated by their representation in the company's board and timely provision of subordinated loans. Despite the delay of the OL3 project, the shareholders have shown their support for the company as demonstrated by the fact that they made additional loan commitment of EUR150 million in December 2017.

Given that JCR's assessment of TVO's rating leans on the containment of risks rendered by the Mankala model, a key point is whether the electricity generated by the company is competitive vis-a-vis market prices. This is because a lower margin in relation to the market prices could reduce TVO's capacity to absorb possible cost overruns or weaken the shareholder's economic incentive to receive electricity from TVO due to a lower value they can gain by doing so. In this regard, the delay of the completion of the OL3 project has been a big concern as it leads to higher construction cost, which in turn will be passed on to the production cost once OL3 starts operation.

However, JCR holds that a settlement agreement reached in March 2018 concerning the arbitration proceeding with the Areva-Siemens consortium has reduced the risk of TVO's financial burden significantly increasing due to a further delay of the project. While the EUR450 million TVO received in compensation was far from sufficient enough to the increased construction cost, the agreement requires that Areva sources necessary additional technical and human resources and that Areva secures adequate funds for the completion of the OL3 EPR project. Construction costs arising after the conclusion of the agreement are to be covered by the fund that was set up with the contribution from Areva. The agreement also included an undertaking that, Areva-Siemens consortium will pay penalties for the delay in case OL3 was not completed by the end of 2019. Based on the current schedule for completion, TVO is already entitled to receive the penalty. Its amount depends on the timing of completion, with the maximum amount being at EUR 400 million if the project is delayed until June 2021. Also, it was reaffirmed that Areva and Siemens are jointly and severally liable for the execution of the project contract. JCR holds that this agreement works as an incentive for Areva to complete the OL3 project without significant delays.

TVO's power generation cost has for years been staying below the electricity prices at Nord Pool, the integrated electricity market in Nordic countries. Structurally, Nord Pool seems to be in a condition where demand-supply balance tends to ease due to increasing generation from renewable energy sources. However, actual demand-supply balance is affected by the volume of hydro and wind power production which are subject to weather conditions. This leads to high volatility of electricity prices. In 2018, the Nord Pool Finnish area price surged to EUR47/MWh from EUR33/MWh in 2017 due to lower hydro power production in Norway and Sweden as well as the rise of the CO2 emission allowance price following the revision of the EU-ETS. The price fell modestly in 2019 but still stayed high at EUR44/MWh. Meanwhile, the average charge of the power generated by TVO operating at cost price hovered at around EUR20/MWh, improving its price competitiveness. Once OL3 comes into operation, TVO's average production cost may go up close to EUR30/MWh as depreciation of the OL3 construction cost (5.5 billion euros) will start. Yet, it is not envisaged that the market prices in Finland will fall significantly below TVO's production cost in the near future given the fact that Finland, a net importer of electricity, cannot import cheaper electricity from abroad above a certain amount due to the limited capacity of cross-border transmission lines. Moreover, TVO's production cost is less volatile as compared with the market prices, which JCR sees as an additional value for TVO's shareholders who put priority on stable power supply.

In the medium-term, there are several factors that may add to the levels and volatility of market prices in the Nordic region. These include the shutdown of some nuclear power plants in Sweden and the construction of an electricity interconnector between Norway and the UK (due to come on stream in 2022). In the longer term, a new transmission line between Finland and Sweden is being constructed with target commissioning in 2025, and a construction of a new nuclear power plant (Fennovoima's Hanhikivi 1) is planned in Finland. JCR will monitor how these will affect the demand-supply balance and electricity prices in Finland.

TVO has a long track record of operating nuclear power plants stably and safely. The average load factor of OL1 & OL2 has long stayed high at around 90%. In Finland, a political consensus has been built on maintaining nuclear power at the center of the energy mix in the medium to long term from the viewpoint of ensuring stable electricity supply. Moreover, the country has formulated and implemented the plans for a final disposal of spent nuclear fuels at an early stage by global standards as evidenced by the parliamentary decision in 2001 to build such facility (Onkalo) and the start of the construction work in 2004. Against this backdrop, the public support for nuclear power has stayed high, and the level of support has not changed even after the accident at the Fukushima Daiichi Nuclear Power Plant in 2011. JCR considers that TVO maintains its important position as the country's main operator of nuclear power generation.

(2) ESG Factors

When assessing industry risks of the power industry, JCR draws attention to the global movement of de-carbonization from the viewpoint of ESG factors. In particular, headwinds toward coal-fired power generation could be a risk for companies that owns or operates coal-fired power plants. However, it is difficult to recognize such movement as a factor that could materialize with high degree of certainty and could have a certain degree of impact on a company's cash flow or financial ground in a horizon of 3 years or so. This is because it cannot be easily foresee how long it will take for such risks to materialize in the form of, for example, a reduction of economic efficiency due to costs higher environmental requirements. For this reason, JCR does not reflect such factor into each company's rating or rating outlook at the moment. Having said that, it is expected that risks related to the coal-fired power will continue to increase. In this situation, it is becoming more and more vital for companies to make efforts to ease potential impacts that could arise when risks materialize. Such efforts include a shift of power sources to LNG or renewable energy and an establishment of technologies to contain greenhouse gas emission.

TVO sources most of its electricity generation from nuclear power, which is low-carbon energy. It holds shares in a coal-fired power plant, but this plant is only activated to accommodate peak demand and so electricity sourced from this plant accounts for only a small proportion of the company's total generation. Meanwhile, political support for nuclear power generation in Finland is high. Against this background, nuclear is expected to play a key role in the country together with renewable energy, as the country makes its way towards a carbon-neutral society.

3. Financial Conditions

Based on the Mankala model, TVO capitalizes the construction cost of a power plant on its balance sheet and recovers it by delivering power to its shareholders at cost after the start-up of the plant. The company does not aim to make profit and basically reports no net profit from its power generation business as approved by the Finnish tax authorities. The company's interest-bearing debt has been growing in keeping with the delay of the OL3 project, making its financial indices such as the net debt/EBITDA ratio and equity ratio weaker as compared to those of major profit-oriented power companies in Europe. Once OL3 comes into operation, its debts are projected to start decreasing as it will begin recovering the construction costs of the unit.

Under its policy to keep the equity ratio higher than 25%, TVO has been procuring funds through a mix of bank loans, corporate bonds and shareholders' subordinated loans. As of the end of 2019, the company had undrawn credit facilities amounting to 1.3 billion euros, subordinated shareholder loan commitment totaling 250 million euros, as well as the 4 billion euros Euro Medium-term Note Program and the 1 billion euros domestic Commercial Paper program. For the management of liquidity risks, the company holds the policy of maintaining the maturities and refinancing of the long-term financial obligations in the next calendar year to less than 25% of the outstanding long-term financial obligations. The company also keeps committed credit lines with a minimum duration of 12 months for an amount sufficient enough to cover its funding needs for the following 12 months.

4. Conclusion and Rating Outlook

The rating on TVO's rating is supported by the "Mankala" model, a business model unique to joint-venture power generators in Finland, as well as the important role TVO assumes as a power company that provides nearly 20% of the country's total electricity consumption and its good track records of operating nuclear power plants. The prospective start of commercial operation of OL3 has been further postponed since JCR's last rating review on TVO, and is now scheduled for March 2021. However, the settlement agreement reached in March 2018 between TVO and Areva-Siemens consortium, OL3's turn-key-contractors, for the arbitration proceeding concerning the delay of the project obliged the supplier consortium to secure adequate necessary financial, technical and human resources to complete the project. JCR therefore holds that, even if the completion of the OL3 project is further delayed, the risk of TVO's financial burden further increasing and its production cost significantly rising from the current estimate is low. Based on the agreement, TVO is also entitled to receive a penalty of maximum EUR400 million if the supplier consortium fails to complete the OL3 project by the end of 2019. Taking these into consideration, JCR has affirmed TVO's rating with Stable outlook. Taking these into consideration, JCR affirmed TVO's rating with Stable outlook in December 2019.

The rating could come under downward pressure if the price competitiveness of the power generated by TVO in relation to the market prices should deteriorate or if JCR views that the shareholders' support for TVO has weakened.

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Consolidated Financial Summary

(millions of euros)

	2015/12	2016/12	2017/12	2018/12	2019/12
Turnover	381.8	365.3	345.7	377.0	285.6
Operating profit/loss	47.3	1.0	19.9	14.7	-2.4
Operating profit/Turnover (%)	12.40	0.28	5.76	3.89	-0.85
Profit/loss for the financial year attributable to equity holders of the company	4.6	-10.5	-9.4	-18.2	87.2
Return on total capital employed (%)	0.96	0.22	0.42	0.37	0.12
EBITDA	184.2	72.0	86.5	83.0	54.6
Interest coverage ratio (x)	1.07	0.57	0.75	0.59	-0.12
Interest-bearing liabilitie (Note 1)	3,654.4	4,178.9	3,922.7	4,141.0	4,370.2
Interest-bearing liabilities (net)	3,534.1	3,866.7	3,782.4	3,919.8	4,132.4
Equity	1612.0	1589.3	1666.7	1745.3	1819.4
Equity ratio (%)	21.6	20.0	22.7	22.8	22.9
Equity ratio (%) (Note 2)	29.4	26.6	28.9	28.9	28.9
Interest-bearing liabilities/EBITDA	19.83	58.03	45.33	49.89	80.04
Net intetest-bearing liabilities/EBITDA	19.18	53.69	43.71	47.22	75.69
Interest-bearing liabilities/equity (x)	2.27	2.63	2.35	2.37	2.40
Interest-bearing liabilities (net)/equity (x)	2.19	2.43	2.27	2.25	2.27

* International Financial Reporting Standards

(Notes)
1 Interest-bearing liabilities excluding loan from the Finnish State Nuclear Waste Management Fund (VYR)
2 Equity ratio as calculated by the Company. Equity ratio = (equity + loans from equity holders of the company)/(balance sheet total - provision related to nuclear waste management - loan from VYR) x 100

Ratings

(millions of euros、%)

	Rating	Outlook*	Amount	Rate (%)	Issue Date	Maturity Date	Release
Foreign Currency Long-term Issuer Rating	A+	Stable	-	-	-	-	2019.12.24

History of Long-term Issuer Rating

(Foreign Currency Long-term Issuer Rating or its equivalent)

Date	Rating	Outlook*	Issuer
1988.04.15	AA		Teollisuuden Voima Oyj (TVO)
2005.12.19	AA	Stable	Teollisuuden Voima Oyj (TVO)
2014.03.28	AA	Negative	Teollisuuden Voima Oyj (TVO)
2015.01.21	AA-	Stable	Teollisuuden Voima Oyj (TVO)
2018.02.06	A+	Stable	Teollisuuden Voima Oyj (TVO)

*Outlook for Foreign Currency long-term issuer rating, or direction in case of Credit Monitor

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