CREDIT OPINION
29 May 2024

New Issue

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RATINGS

Teollisuuden Voima Oyj

Domicile	Finland
Long Term Rating	Baa3
Type	LT Issuer Rating - Dom Curr
Outlook	Stable

Please see the ratings section at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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Teollisuuden Voima Oyj

Update to credit analysis

Summary

Teollisuuden Voima Oyj's (TVO, Baa3 stable) credit quality is supported by the start of commercial operations at its Olkiluoto 3 (OL3) nuclear power plant from 1 May 2023; the continuing strong operational and safety performance of the company's other nuclear power plants, Olkiluoto 1 and Olkiluoto 2 (OL1 and OL2), which have fairly low and thus competitive costs of production; TVO's status as a Mankala company; the solid weighted average credit quality of TVO's major shareholders and the track record of shareholder support, in particular during the construction of OL3.

Conversely, TVO's credit quality is constrained by its exposure to a single technology and single-site risk; the short track record of regular electricity production at OL3; the company's high leverage with outstanding debt of around €5.4 billion as of the end of December 2023; and an increase in its average cost of production following the commissioning of the new plant and some cost pressure.

Our assessment of TVO takes into account its not-for-profit business model, in particular its ability to fully pass through its costs to shareholders under the Mankala principle. The value ascribed to the business model is, however, limited by the shareholder obligations being several and not joint.

Credit strengths

» Large power generator in Finland, with a strong operational track record

» Full pass-through of costs under the Mankala principle

» Low costs of production for the OL1 and OL2 units

» Solid credit quality of the shareholders and track record of shareholder support

Credit challenges

» Exposure to a single technology and single-site risk

» Commissioning of OL3 has resulted in a significant increase in production costs

» High debt levels with only gradual leverage reduction prospects

» Shareholder obligations are several and not joint

» Value creation for shareholders could be challenged by weaker power markets

Rating outlook

The stable rating outlook reflects our expectation of continued successful operation of TVO's three nuclear plants, with no major unplanned outages, supporting a stable, but slow, path of leverage reduction. It further takes into account that TVO is entitled to recover its fixed costs from shareholders regardless of the actual output produced at its plant units under its Articles of Association. The stable outlook does not anticipate any re-leveraging of TVO's balance sheet.

Factors that could lead to an upgrade

An upgrade is not likely in the short to medium term. Upward rating pressure could arise if OL3 builds a track record of successful operations and TVO's leverage declines from current levels on a sustained basis. Upward rating pressure would also require OL1 and OL2 to maintain their strong operational performance; TVO's production cost to remain competitive compared with wholesale power markets; and the maintenance of or improvement in the credit quality of TVO's shareholders and continued confidence in the Mankala model.

Factors that could lead to a downgrade

Downward rating pressure could develop if there is significant deterioration in the operational performance or competitiveness of TVO's nuclear fleet, there are concerns about the company's ability to pass on its costs to its shareholders, or both. Downward rating pressure could also build if the credit quality of TVO's shareholders decline.

Key indicators

Exhibit 1

Teollisuuden Voima Oyj

	2019	2020	2021	2022	2023	Moody's 12-18 month forward view
(CFO Pre-W/C) / Debt	-1.4%	-0.8%	-0.9%	-1.1%	3.4%	3.6% - 4.6%
RCF / Debt	-1.5%	-0.8%	-0.9%	-1.1%	3.4%	3.6% - 4.6%
(FFO + Interest Expense) / Interest Expense	0.4x	0.6x	0.5x	0.4x	2.1x	2.1x - 2.7x

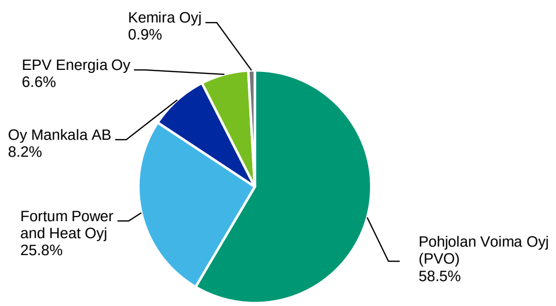
All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
Periods are financial year-end unless indicated.
Moody's forecasts are Moody's opinion and do not represent the views of the issuer.
Sources: Moody's Financial Metrics and Moody's Ratings forecasts

Profile

Teollisuuden Voima Oyj (TVO) owns and operates three nuclear power units — OL1, OL2 and OL3 — with a total capacity of 3.4 gigawatts (GW). Commercial operations of the new OL3 plant started on 1 May 2023. TVO operates according to the Mankala principle, meaning that it supplies all of the electricity that it generates to shareholders at a cost price.

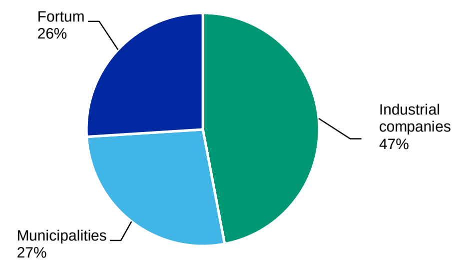
TVO's largest shareholder is Pohjolan Voima Oyj (PVO), which supplies electricity and heat at cost to 23 industrial, energy and municipal shareholders. Some of its major off-takers are pulp and paper industry companies — UPM-Kymmene (Baa1 stable) and Stora Enso Oyj (Baa3 stable) holding 47.7% and 15.6% of PVO's shares, respectively. TVO's second-largest shareholder is Fortum Power and Heat Oyj, a fully owned subsidiary of Fortum Oyj (Baa2 stable), the majority Finnish state-owned company and a large energy group. The remaining shareholders are a group of other not-for-profit and industrial companies.

Exhibit 2
TVO's shareholder breakdown by entity (2023)



Sources: TVO and Moody's Ratings

Exhibit 3
TVO's underlying shareholder breakdown by sector (2023)



Sources: TVO and Moody's Ratings

Detailed credit considerations

OL3 generated electricity without major unexpected shutdowns in 2023, but annual maintenance is longer than expected

OL3 started commercial operations on 1 May 2023, signalling the end of the extended construction period and a substantial improvement in TVO's credit profile. In 2023, the reactor generated 10.4 terawatt hours (TWh) of electricity and had a load factor of 75.2%. The OL3 reactor had to halt electricity production for slightly more than two days in November 2023 because of a failed temperature measurement in the generator cooling system. However, on balance, OL3 performed in line with or better than the company's expectation during the year.

On 2 March 2024, TVO started the annual outage of the OL3 reactor. Although the shutdown was initially scheduled to last for 37 days, servicing of the reactor took significantly longer than initially expected and OL3 was only operational again on 16 May after 74 days. Since this was the first scheduled shutdown, the maintenance was always going to take longer than the regular maintenance activities of OL1 and OL2 because of the high number of components and activities that were scheduled to take place (roughly 1,900 work activities for OL3 compared with less than 1,000 for the scheduled maintenance of OL2). In addition, during the inspection, TVO discovered the presence of foreign materials in the fuel pool. The root cause of this has not yet been discovered, but no such materials were found in the reactor itself, allowing for the reactor to restart operations again.

At this time, it is unclear how long future scheduled maintenance activities will last. However, in its initial years of operations, maintenance could take longer than expected and lead to a decrease in electricity output from the reactor. In any event, TVO would continue to invoice its costs under the Mankala principle — including interest payments and debt amortisations — to its shareholders.

TVO embarked on the construction of OL3, a 1.6 GW European Pressurised Reactor (EPR), in 2003. The company entered a fixed-price turnkey contract with a consortium formed by Areva, a company wholly owned by the French state, and Siemens AG (Aa3 stable). The construction cost was estimated at €3.2 billion and the plant was scheduled to start commercial operations in April 2009. However, the construction was subject to significant delays and cost overruns, and regular electricity commenced more than 13 years behind the original schedule.

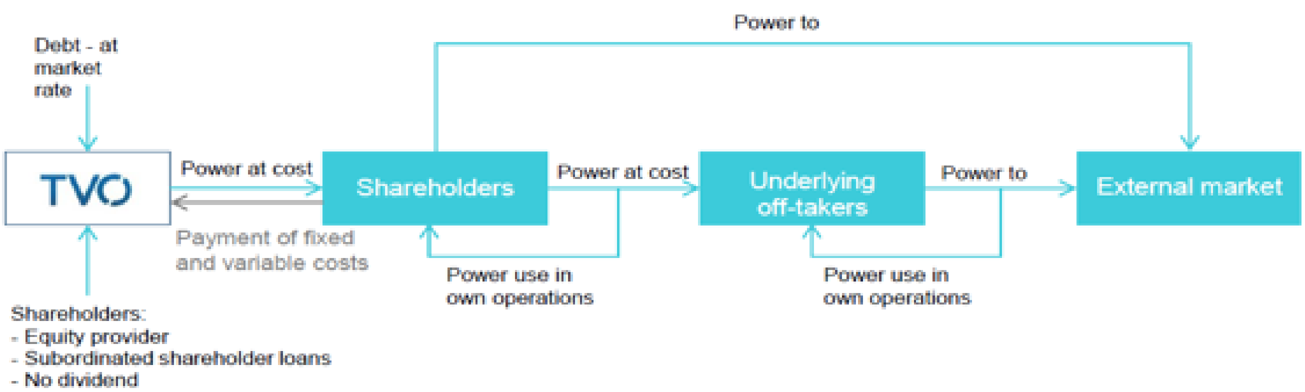
The list of difficulties that OL3 faced in the construction phase is long, although not unique to OL3 as other EPR power plants — Flamanville 3 in France and Taishan 1 and 2 in China — have also encountered severe delays and are, or were, above the initial budget. Before the commissioning of OL3, Taishan units 1 and 2 were the only EPRs in commercial operation globally. Unit 1 was commissioned in December 2018, while unit 2 started electricity production in September 2019. Taishan unit 1 was later taken off the grid in July 2021 for unexpected repair work. Although the details are scarce and no direct parallels can be made to OL3, the unexpected extended outage of Taishan 1 illustrates the complexity and overall high business risk linked to the construction of new nuclear plants.

The massive escalation in costs and multiple revisions to the schedule resulted in a dispute between TVO and the supplier consortium, which ended in arbitration proceedings under the rules of the International Chamber of Commerce. The arbitration, which was initiated in December 2008, and a later restructuring of Areva's operations were factors that further contributed to the delay in the construction of OL3. In this regard, the global settlement agreement between TVO and the supplier consortium companies — ArevaNP, ArevaGmbH and Siemens, as well as ArevaSA — signed in March 2018 was a positive development. Although most costs related to the delay were borne by the consortium, TVO's share of the costs related to OL3 amounted to around €5.8 billion.

Full cost pass-through under the Mankala principle

TVO operates according to the Mankala principle, meaning that it supplies all of the electricity that it generates to shareholders at a cost price. This principle is not enshrined in law but it is solely defined in the company's Articles of Association, which state that each shareholder is obliged to pay all annual fixed costs of TVO's production in proportion to the number of shares held and variable costs per the quantity of electricity consumed. Fixed costs, which include annual payments related to interest expense and debt principal instalments, account for about 80% of the total costs.

Exhibit 4
TVO's Mankala model provides for a pass-through of costs to shareholders



Source: TVO

Because of the full pass-through of costs, TVO is not exposed to wholesale markets or competition, but it is instead dependent on the ability and willingness of its shareholders to cover their share. Nevertheless, TVO needs to remain operationally efficient and cost competitive for its business model to be viable over the long term. Lower capacity factors, for example, would increase production costs, which could erode the competitiveness of TVO's nuclear fleet.

There is no precedent of any payment delays from shareholders. In the event a shareholder does not make its payment, TVO has the right to cut off that shareholder's supply of electricity and sell the output to other shareholders or third parties at a market price. Although wholesale power prices remain above its production cost, TVO will be able to recover its costs by selling electricity in the open market, should that become necessary.

Annual production costs

The division of costs between fixed and variable is determined in the Articles of Association.

- Fixed costs include normal operating, maintenance and administrative expenses, insurance costs, interest and principal payments due under credit facilities, and depreciation and waste management expenses.
- Variable costs are determined according to the amount of electricity actually supplied.

Fixed costs are paid monthly in advance and variable costs monthly in arrears.

Solid credit quality of shareholders and track record of support

Taking into account our view of TVO's major ultimate shareholders and the significant presence of Finnish municipalities, we estimate that the average credit quality of TVO's shareholders is in the Baa range. The Mankala model is credit supportive; however, the value is limited by the shareholder obligations being several and not joint, and the overall ownership structure being very fragmented.

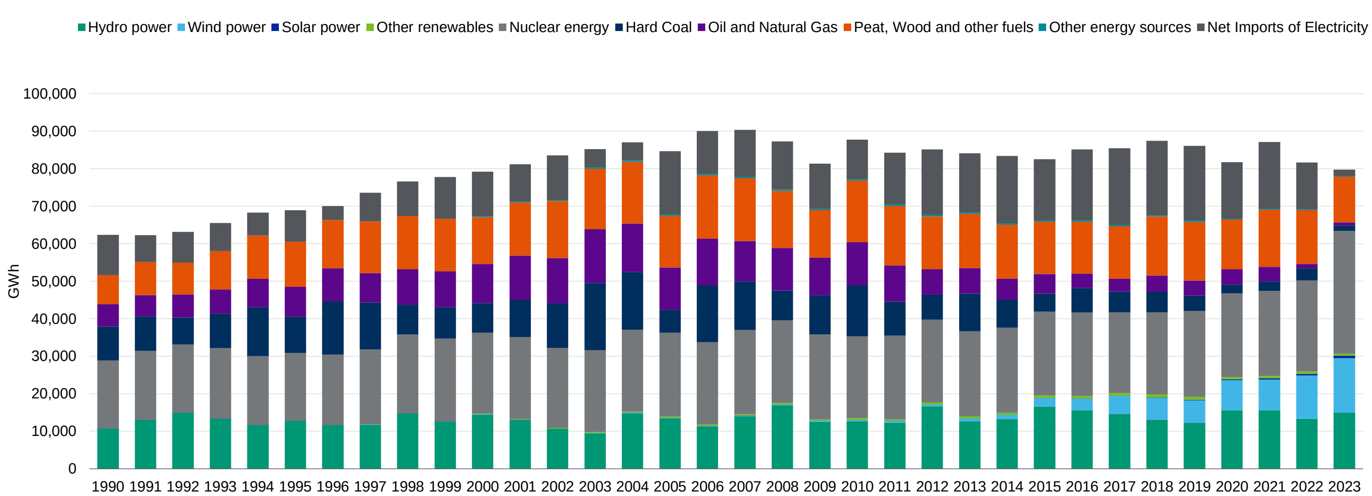
The shareholders' track record of providing financial support to TVO, in particular via shareholder loans, is strong. As of the end of December 2023, the total amount of shareholder loans was €929 million (which we consider as debt under our adjusted credit metrics).

TVO is a large power generator in Finland, although it is exposed to a single technology and single-site risk

During 2023, TVO's output amounted to 24.67 TWh of electricity. As such, TVO accounted for 31% of all electricity produced in Finland and is likely to remain a systemically important power generator in the country for the foreseeable future. Finland has historically been a net importer of electricity, and the commissioning of OL3 will partly address the significant capacity shortfall. In 2023, the net import of electricity was at a record low at 2.2% and Finland saw the second-lowest electricity prices in Europe.

TVO's strategic importance to Finland is supportive of the company's credit quality. Exposure to a single technology (nuclear) and a single site (Olkiluoto) is, however, credit negative.

Exhibit 5
Finland's supply of electricity by energy source



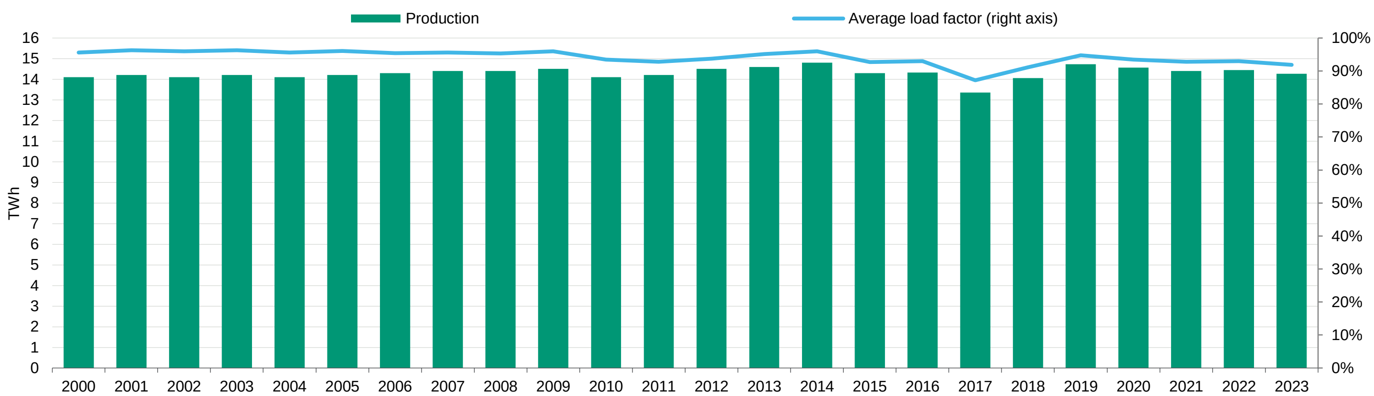
Sources: Statistics Finland and Moody's Ratings

OL1 and OL2 have an excellent track record of operational performance

OL1 and OL2 are boiling water reactors (BWRs) commissioned in 1978 and 1980, respectively. Pressurised water reactors are the most common type of power plant reactors in commercial use, accounting for more than 60% of the total, and BWRs are the second most common, accounting for around one in five in use worldwide. Both OL1 and OL2 have benefited from ongoing development work, which have increased their output to 890 megawatt (MW) from the original 660 MW. Both plants have also been modernised and modified to improve safety, and in September 2018, their operating licences were extended until 2038. In October 2023, TVO announced that it had started the preparation of an environmental impact assessment related to the potential extension of the operating licence for the two reactors by 10 or 20 years. TVO could also request an extension of the power output by approximately another 80 MW, bringing the total output to around 970 MW.

TVO has an excellent track record in operating OL1 and OL2, with a capacity factor typically above 95% in recent years. Reduced load factors generally occur because of annual outages. In 2023, the two power plants had a combined load factor of around 92%, with total output reaching 14.3 TWh. This performance was significantly stronger than the average for the industry, which sees load factors of around 80%.

Exhibit 6
OL1 and OL2 have maintained consistently high load factors



Sources: TVO and Moody's Ratings

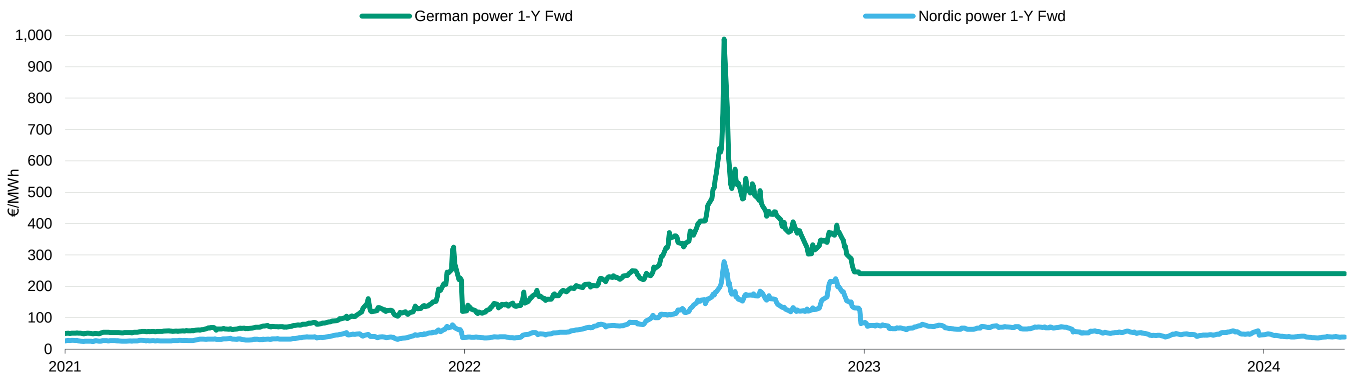
We expect OL1 and OL2 to continue to record strong operational performance, although load factors may decrease slightly over time because of the plants' age. Availability in any given year will be further affected by scheduled maintenance and other work. The normal duration of a maintenance outage, according to TVO, is two to three weeks, and modernisation and renovation projects have been implemented during maintenance outages at intervals of around five years.

TVO's costs of production are competitive but value creation for shareholders could be hurt by weaker power markets

OL1 and OL2 have relatively low costs of production, amounting to around €20/megawatt hour (MWh). This is more expensive than hydro in the Nordics but still significantly below the costs of thermal generation and subsidised renewables. Production costs for OL3 are significantly higher, and TVO has revised upward the overall cost estimates of production for the three Olkiluoto plants to around €35/MWh-€40/MWh (in real terms) based on a total production estimate of around 25,000 gigawatt hour (GWh)-26700 GWh per year. The increase in production costs (from around €35/MWh previously) reflects a combination of increased interest rate environment, higher inflation and lower-than-initially-projected projection volumes. For example, the price of uranium and its enrichment has increased as supply from Russia has increasingly been withdrawn from international markets.

Despite the increase, TVO's overall production cost is competitive in the current market. Current one-year forwards in the Nordics are around €44/MWh, but Finnish power prices have historically been higher, reflecting congestion at cross-border interconnections in the region and the country's power capacity shortfall.

Exhibit 7
Nordic power prices trade at a substantial discount against Germany



Sources: FactSet and Moody's Ratings

Power prices in Europe have significantly declined since they peaked in the summer of 2022 amid increased gas prices after Russia's invasion of Ukraine. Although Finnish power prices were particularly low on average in 2023, they exhibit a higher degree of volatility than other Nordic markets. This is partially driven by Finland's increasing wind capacity as well as an overall tight market in general. We expect volatility to continue to be present in the Finnish market. There could also be some downward pressure in 2025 with the scheduled commissioning of a new interconnector between Sweden and Finland. Among others, the new interconnector would allow for electricity from the northern part of Sweden to be sold in the Finnish market. The north of Sweden is particularly rich in hydro resources, and bottlenecks in transmission capacity to the south have led to electricity prices in this region being substantially lower.

Nonetheless, we expect TVO's nuclear power plants to remain cost competitive. Production costs are, however, sensitive to factors including load factors and interest rates. A 10% reduction in the capacity factor would increase production costs by €2.2/MWh, whereas a 1% increase in interest rates would raise the average production cost by €1.6/MWh. At the same time, power prices are volatile and there is uncertainty around the evolution of power markets over the medium to long term. Increased production costs or diminished wholesale power prices — if the scenario were to persist for a longer period of time — would hurt the value creation potential for shareholders and could test TVO's Mankala-based model.

Costs related to nuclear waste are borne by the power producer

TVO bears full legal and financial responsibility for the management and disposal of nuclear waste produced by the Olkiluoto nuclear power plant units. The future cost of containing the nuclear waste and maintaining the storage facilities over time is to be paid for the Finnish State Nuclear Waste Management Fund to which the nuclear power producers in Finland make annual contributions. The contributions to the fund are calculated on the basis of estimates of the future cost of the management of such nuclear waste. As of the end of March 2024, TVO's liability to the fund was €1.9 billion, with targeted funding for 2024 amounting to €1.5 billion.

With regard to the final disposal of radioactive fuel, TVO has established a joint venture with Fortum Power and Heat Oy — Posiva Oy — which will dispose of high-level nuclear waste from their respective plants. Spent nuclear fuel will be packed into copper canisters and stored around 420 meters below ground at the Onkala site, which is located near TVO's nuclear reactors. The construction of the underground site commenced in 2016 and TVO expects to conduct a final test phase as of year-end 2024 before final disposal at the site is likely to start in the middle of this decade.

TVO has significant debt and leverage reduction will be gradual

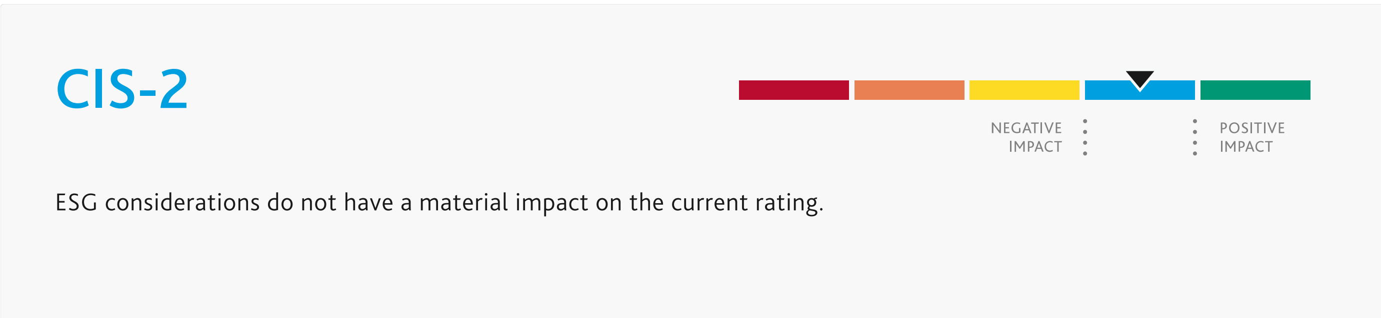
TVO's financial metrics are less indicative of the company's strength because of the not-for-profit business model. Up until 1 May 2023, when commercial operations started, the company's funds from operations (FFO) metric was negative because all the costs associated with the construction of OL3 were capitalised and will only be recovered through production charges now that the plant has become operational.

TVO's debt burden is, however, very high in absolute and relative terms. As of the end of December 2023, TVO's financial debt (excluding shareholder loans and loans from the Nuclear Waste Fund) amounted to around €4.5 billion. With OL3 now commissioned, we expect TVO to embark on a steady path of leverage reduction. However, its capital structure will remain highly leveraged for the foreseeable future, with debt decreasing by an estimated €150 million per year in tandem with the depreciation of TVO's assets.

ESG considerations

Teollisuuden Voima Oyj's ESG credit impact score is CIS-2

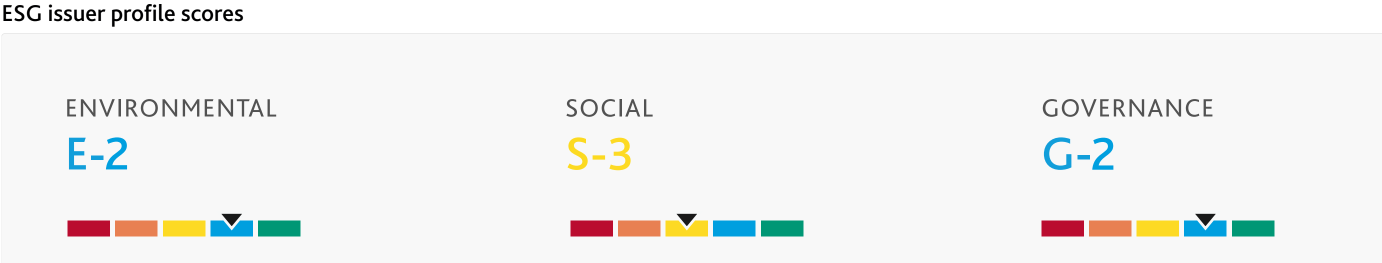
Exhibit 8
ESG credit impact score



Source: Moody's Ratings

TVO's ESG Credit Impact Score of **CIS-2** indicates that ESG considerations are not material to the rating, mainly reflecting the company's low exposure to environmental and governmental considerations. TVO' is a Mankala company, which – as per its articles of associations – allows it to pass on all of its costs to its ultimate shareholders. These include interest and debt amortisations, but also costs related to nuclear waste treatment. The particular status of the company therefore mitigates a number of risk factors typically present within the unregulated utilities universe as the risks are largely passed on to its shareholders.

Exhibit 9
ESG issuer profile scores



Source: Moody's Ratings

Environmental

TVO's **E-2** score mainly reflects the company's limited carbon footprint through its carbon free nuclear generation. Whilst its nuclear production – which represent all of the company's operations – has exposure to Waste and Pollution risks given the costs associated with nuclear decommissioning and nuclear waste treatment, these costs are being passed on to its shareholders that ultimately bear the risks associated with these risks. However, TVO would still have an unlimited liability for damage caused to third parties in Finland in the case of a nuclear incident.

Social

TVO's **S-3** score reflects exposure to demographic and societal trends, whereby it could come under come under public scrutiny as a utility with nuclear generation and in the face of affordability concerns. Whereas volatility in electricity prices does not affect TVO itself given that its sells its output at cost price, a prolonged period of lower prices below its cost price of production could eventually threaten the viability of the structure for its shareholders.

Governance

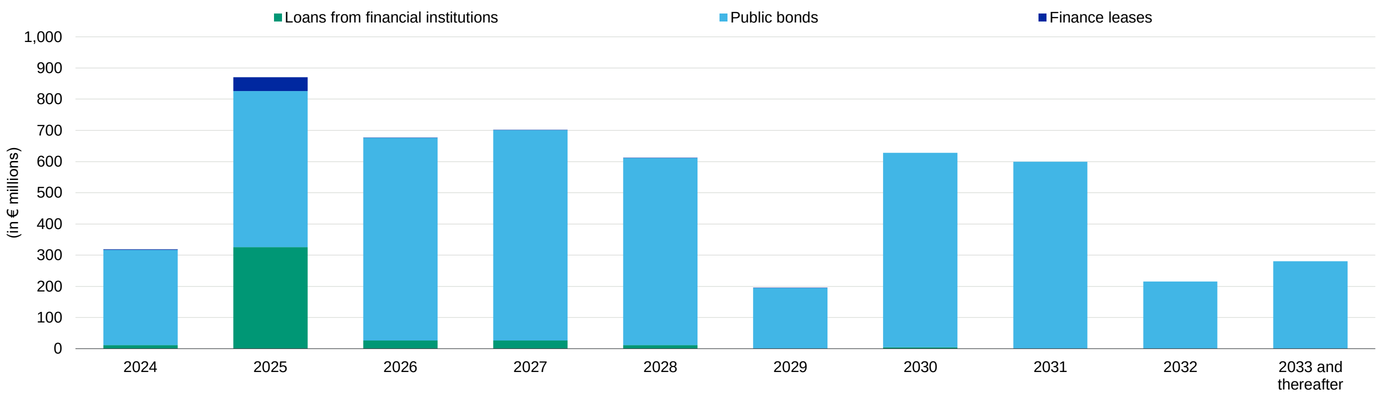
TVO's **G-2** score reflects its low exposure to governance risks. Whereas its capital structure is leveraged with only modest deleveraging prospects in the short to medium term, the risk exposure is, however, mitigated through its organizational structure as a Mankala company whereby all of its fixed costs, which include debt and interest payments, can be passed on to its shareholders as per the legal structure's articles of associations.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.com. In order to view the latest scores, please click here to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

Liquidity analysis

TVO's liquidity is good. As of the end of March 2024, the company had cash balances of €205 million. Further liquidity buffer is provided by access to an undrawn €1 billion committed revolving credit facility maturing in June 2027 (from June 2026 to June 2027, the size of the RCF is downsized to approximately €890 million). This is enough to cover TVO's short-term debt, with €966 million of debt coming due over the next 12 months. However, TVO has substantial refinancing needs every year over 2024-28. We expect TVO to refinance its upcoming debt maturities in a timely manner.

Exhibit 10
TVO faced sizeable debt maturities as of 23 May 2024



In May 2024, TVO issued a €600 million green bond maturing in May 2031 (included above) and announced a tender offer for the €500 million bond due in February 2025.
Sources: TVO and Moody's Ratings

TVO's bank debt includes one financial covenant — a minimum equity ratio of 25%. As of the end of March 2024, this ratio was 31.0%.

Methodology and scorecard

TVO is considered an unregulated power company under our rating methodology for Unregulated Utilities and Unregulated Power Companies.

The scorecard-indicated outcome of Ba2 is constrained by the company's weak financial metrics. The assigned rating further takes into account TVO's not-for-profit business model, which is not fully captured by the scorecard.

Exhibit 11

Rating factors

Teollisuuden Voima Oyj

Unregulated Utilities and Unregulated Power Companies Industry Scorecard	Current FY Dec-23		Moody's 12-18 month forward view	
Factor 1 : Scale (10%)	**Measure**	**Score**	**Measure**	**Score**
a) Scale ($ billions)	Baa	Baa	Baa	Baa
Factor 2 : Business Profile (35%)				
a) Market Diversification	Ba	Ba	Ba	Ba
b) Hedging and Integration Impact on Cash Flow Predictability	Aaa	Aaa	Aaa	Aaa
c) Market Framework & Positioning	Ba	Ba	Ba	Ba
d) Capital Requirements and Operational Performance	Aa	Aa	Aa	Aa
Factor 3 : Financial Policy (15%)				
a) Financial Policy	Baa	Baa	Baa	Baa
Factor 4 : Leverage and Coverage (40%)				
a) (CFO Pre-W/C + Interest) / Interest (3 Year Avg)	1.2x	B	2.1x - 2.7x	B
b) (CFO Pre-W/C) / Debt (3 Year Avg)	0.5%	Caa	3.6% - 4.6%	Caa
c) RCF / Debt (3 Year Avg)	0.5%	Caa	3.6% - 4.6%	B
Rating:				
a) Scorecard-Indicated Outcome		Ba2		Ba2
b) Actual Rating Assigned				Baa3

All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
Moody's forecasts are Moody's opinion and do not represent the views of the issuer.
Sources: Moody's Financial Metrics™ and Moody's Ratings forecasts

Appendix

Exhibit 12

Peer comparison

Teollisuuden Voima Oyj

	Teollisuuden Voima Oyj Baa3 Stable			VERBUND AG A3 Positive			Statkraft AS A3 Stable			Fortum Oyj Baa2 Stable		
(in EUR million)	FYE Dec-21	FYE Dec-22	FYE Dec-23	FYE Dec-21	FYE Dec-22	FYE Dec-23	FYE Dec-21	FYE Dec-22	FYE Dec-23	FYE Dec-21	FYE Dec-22	FYE Dec-23
Revenue	299	358	876	4,777	10,346	10,450	8,329	15,761	9,000	6,422	7,774	6,711
EBITDA	46	23	487	1,616	3,178	4,647	3,183	6,515	4,716	2,226	3,277	2,212
Total Assets	8,572	9,074	9,197	17,276	19,150	19,477	31,025	32,443	28,308	150,742	24,836	19,885
Total Debt	6,322	6,665	6,561	3,423	3,939	2,554	4,469	4,031	5,269	19,866	8,995	7,083
Net Debt	6,149	6,312	6,273	3,105	3,530	1,590	782	(1,544)	1,319	12,574	5,324	2,900
FFO / Debt	-0.9%	-1.1%	3.4%	59.6%	41.5%	63.6%	29.2%	72.5%	42.3%	7.7%	19.1%	22.4%
RCF / Debt	-0.9%	-1.1%	3.4%	50.2%	29.3%	2.8%	20.8%	47.7%	12.0%	2.6%	7.6%	10.9%
(FFO + Interest Expense) / Interest Expense	0.5x	0.4x	2.1x	44.9x	21.0x	15.6x	18.7x	23.2x	12.6x	8.8x	7.8x	6.5x
Debt / Book Capitalization	85.8%	84.8%	83.6%	33.1%	30.0%	16.9%	27.0%	22.2%	26.0%	57.8%	53.3%	44.3%

All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
LTM = Last 12 months.
Source: Moody's Financial Metrics™

Exhibit 13

Moody's-adjusted debt reconciliation

Teollisuuden Voima Oyj

(in € millions)	2019	2020	2021	2022	2023
As reported debt	**4,913.4**	**4,955.9**	**5,034.1**	**5,441.3**	**5,377.2**
Hybrid Securities	0.0	929.3	929.3	929.3	929.3
Non-Standard Adjustments	(597.5)	(716.4)	358.2	294.7	254.1
Moody's-adjusted debt	**4,316.0**	**5,168.8**	**6,321.6**	**6,665.3**	**6,560.6**

All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
Periods are financial year-end unless indicated.
Source: Moody's Financial Metrics™

Exhibit 14

Moody's-adjusted EBITDA reconciliation

Teollisuuden Voima Oyj

(in € millions)	2019	2020	2021	2022	2023
As reported EBITDA	**135.3**	**85.3**	**65.6**	**79.9**	**531.2**
Unusual Items - Income Statement	(0.0)	0.0	0.0	0.0	0.0
Interest Expense - Discounting	0.0	(36.3)	(37.7)	(77.2)	(57.6)
Non-Standard Adjustments	0.0	0.0	17.8	20.8	13.7
Moody's-adjusted EBITDA	**135.3**	**49.0**	**45.7**	**23.5**	**487.3**

All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
Periods are financial year-end unless indicated.
Source: Moody's Financial Metrics™

Exhibit 15

Overview on selected historical Moody's-adjusted financial data

Teollisuuden Voima Oyj

(in € millions)	2019	2020	2021	2022	2023
INCOME STATEMENT					
Revenue	254	275	299	358	876
EBITDA	135	49	46	23	487
EBIT	90	4	2	(24)	309
Interest Expense	108	93	116	128	212
Net income	(18)	(90)	(114)	(151)	96
BALANCE SHEET					
Net Property Plant and Equipment	5,558	5,579	6,088	6,266	6,326
Total Assets	7,217	7,379	8,572	9,074	9,197
Total Debt	4,316	5,169	6,322	6,665	6,561
Cash & Cash Equivalents	238	161	172	353	288
Net Debt	4,078	5,007	6,149	6,312	6,273
Total Liabilities	5,504	6,351	7,529	7,883	7,906
CASH FLOW					
Funds from Operations (FFO)	(61)	(42)	(60)	(71)	226
Cash Flow From Operations (CFO)	(18)	(35)	(65)	(9)	367
Dividends	5	0	0	0	0
Retained Cash Flow (RCF)	(66)	(42)	(60)	(71)	226
Capital Expenditures	(292)	(191)	(228)	(331)	(247)
Free Cash Flow (FCF)	(315)	(226)	(293)	(340)	120
INTEREST COVERAGE					
(FFO + Interest Expense) / Interest Expense	0.4x	0.6x	0.5x	0.4x	2.1x
LEVERAGE					
FFO / Debt	-1.4%	-0.8%	-0.9%	-1.1%	3.4%
RCF / Debt	-1.5%	-0.8%	-0.9%	-1.1%	3.4%
Debt / EBITDA	31.9x	105.5x	138.4x	283.8x	13.5x
Net Debt / EBITDA	30.5x	102.2x	134.7x	268.7x	12.9x

All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
Periods are financial year-end unless indicated.
Source: Moody's Financial Metrics™

Ratings

Exhibit 16

Category	Moody's Rating
TEOLLISUUDEN VOIMA OYJ	
Outlook	Stable
Issuer Rating -Dom Curr	Baa3
Senior Unsecured MTN -Dom Curr	(P)Baa3

Source: Moody's Ratings

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CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454