FitchRatings

Corporates
Utilities - Non US
Finland

Teollisuuden Voima Oyj (TVO)

TVO's 'BBB-' Long-Term Issuer Default Rating (IDR) reflects the solid investment-grade average credit profile of TVO's shareholders base and Fitch Ratings' expectation of consistent gross and net debt reduction in 2025-2028 (EUR140 million per year on average). At end-2024, gross debt mainly adjusted for the nuclear loan fund was below EUR5.2 billion, down from the EUR5.4 billion peak reached in May 2023.

A faster-than-expected decline in energy market prices and lower electricity production by TVO due to limitations imposed by the transmission system operator (TSO) and operational risk associated with OL2 rotors compress value-creation expectation for shareholders, while TVO continues to offer them baseload production at stable prices. Our expectation of continuous engagement from the shareholder base underpins the Stable Outlook.

Key Rating Drivers

Progressive Debt Reduction: We forecast adjusted gross debt to steadily reduce to EUR4.6 billion by 2029 from EUR5.2 billion at end-2024. This is due to full cost coverage (including OL3) by shareholders from May 2023, including depreciation and financial charges, and limited maintenance investments of around EUR100 million-150million a year. This allows the company to post positive free cash flow (FCF) of around EUR100 million-150million a year with good predictability.

Based on our long-term estimates of cash investments and depreciation to be recovered from the shareholders under Mankala principles, gradual debt reduction is consistent with the remaining average useful life of the assets, which we estimate at around 35 years. If the asset life is extended (up to an additional 20 years) or if asset capacity is expanded (up to an additional 160MW) for OL1 and OL2, we believe the future correspondence between debt and asset life could improve.

Solid Shareholder Credit Quality: TVO is a not-for-profit Finnish nuclear generator, producing at-cost electricity (including capital costs) for its five shareholders. Its largest shareholder (58.5%) is Pohjolan Voima Oyj, a not-for-profit electricity generator owned by a consortium of Finnish industrials (mainly pulp and paper companies UPM-Kymmene Oyj (through its 100 subsidiary UPM Energy Oy) and Stora Enso Oyj (BBB-/Stable)) and utilities. Its second-largest shareholder (with 25.8%) is Fortum Power & Heat Oy, a 100% subsidiary of Fortum Oyj (BBB/Stable).

Weak Operational Record: Electricity produced in 2024 was 23.2TWh, an almost 6% reduction compared with our estimates due to longer than expected outages, several turbine failures and grid limitations imposed by the TSO. OL2 has just restarted its operation at full capacity, which was previously limited at 80% as a precautionary measure due to the limited availability of spare parts. We expect increased output at more than 10.5 TWh for OL3 and at around 14TWh for the combined OL1/OL2 unit, driving estimated production costs, including capital costs, of between EUR39-41/MWh for 2025-2029.

Ratings

Long-Term IDR	BBB-
Short-Term IDR	F3
Senior Unsecured Debt - Long-Term Rating	BBB-
Outlook	
Long-Term Foreign-Currency IDR	Stable

Click here for the full list of ratings

ESG and Climate

Highest ESG Relevance Scores

Environmental	3
Social	3
Governance	3
2035 Climate Vulnerability Signal:	35

Applicable Criteria

Corporates Recovery Ratings and Instrument Ratings Criteria (August 2024)

Sector Navigators – Addendum to the Corporate Rating Criteria (December 2024)

Corporate Rating Criteria (December 2024)

Related Research

Investment-Grade EMEA Generation Companies – Relative Credit Analysis (July 2024)

Global Corporates Macro and Sector Forecasts

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Nil to Limited Value Creation Prospects: Renewables penetration in the Nordic energy markets is leading to lower and more volatile energy prices, with 2024 recording a record high number of hours with negative prices (724h) and above EUR200/MWh (178h). The current forwards prices for Finland are broadly aligned with TVO's production costs, eroding value creation for shareholders. Actual prices will be impacted by various dynamics both on the demand and supply, directly influencing the future value creation (or destruction) for shareholders. However, we believe that the predictability of TVO's generation and price applied brings an increasing benefit for the shareholders.

Solid Mankala Principles: TVO has no direct exposure to wholesale electricity prices or volumes, as its shareholders are at-cost off-takers of the electricity produced. If a shareholder fails to cover annual fixed costs and variable costs in proportion to their off-take, TVO would cut the supply and sell the electricity to another shareholder or at the Nord Pool exchange. The shareholders have solid creditworthiness and a long record of regular off-taking. Also, due to no imports from Russia and the commissioning of OL3, TVO's electricity production is essential for Finland's security of supply.

Peer Analysis

As TVO is a not-for-profit company Fitch views traditional leverage or coverage ratios as less relevant for the ratings than for utilities operating on a fully commercial basis. These ratios are weak compared with European utilities focused on electricity generation such as Fortum Oyj, RWE AG (BBB+/Stable), Orsted A/S (BBB/Stable) or Statkraft AS (A-/Negative).

Fitch rates Finnish electricity generation companies operating under the Mankala principle using the same analytical framework of utilities operating in a commercial environment according to its Corporate Rating Criteria and the key peer comparators described in its Global Electricity Generation: Ratings Navigator Companion.

However, we place more emphasis on links with the shareholders and the value creation for them due to Mankala companies' specific features, such as the not-for-profit business model. We consider company-specific traits – such as asset base and concentration, market position, strategic importance, and the legal and regulatory framework – in the same way for typical electricity utilities. We also assess the consistency between the cash flow received from the shareholders, the outstanding debt and the residual life of the asset base.

Rating Sensitivities

Factors that Could Individually or Collectively Lead to Positive Rating Action/Upgrade

- Solid record of OL3 operations together with a satisfactory medium- to long-term power price environment sustaining value creation for TVO shareholders, progressive debt reduction that is consistent with the remaining average useful life of the assets, combined with unchanged credit quality or support from shareholders

Factors that Could, Individually or Collectively, Lead to Negative Rating Action/Downgrade

- Significant technical issues leading to additional costs for TVO, if not covered by shareholders
- TVO's production costs significantly exceeding Finnish area prices on a sustained basis, leading to value destruction for TVO shareholders
- Evidence of weaker credit quality or support from shareholders or structural changes in the Mankala principle undermining the strength of shareholder support
- Adverse regulatory or fiscal changes
- Deterioration in operating performance, safety issues and significantly reduced liquidity reserves

Liquidity and Debt Structure

Cash and cash equivalents at end-2024 were EUR313 million. TVO also had committed undrawn credit facilities of EUR1 billion maturing in 2027. Available liquidity is sufficient to meet TVO's operating needs, capex and debt repayments of under EUR0.1 billion in 2025.

As OL3 commenced production in 2023 and shareholders started to fully cover costs (including interest costs and asset depreciation), we expect total debt to gradually decline.

ESG Considerations

The highest level of ESG credit relevance is a score of '3', unless otherwise disclosed in this section. A score of '3' means ESG issues are credit neutral or have only a minimal credit impact on the entity, either due to their nature or the way in which they are being managed by the entity. Fitch's ESG Relevance Scores are not inputs in the rating process; they are an observation on the relevance and materiality of ESG factors in the rating decision. For more information on Fitch's ESG Relevance Scores, visit https://www.fitchratings.com/topics/esg/products#esg-relevance-scores.

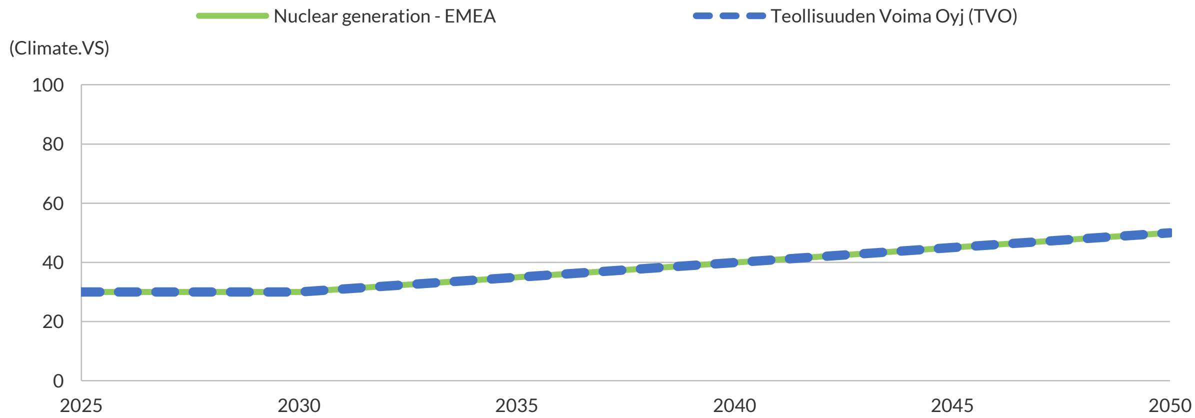
Climate Vulnerability Considerations

Fitch uses Climate Vulnerability Signals (Climate.VS) as a screening tool to identify sectors and Fitch-rated issuers that are potentially most exposed to credit-relevant climate transition risks and, therefore, require additional consideration of these risks in rating reviews. Climate.VS range from 0 (lowest risk) to 100 (highest risk). For more information on Climate.VS, see Fitch's Corporate Rating Criteria. For more detailed, sector-specific information on how Fitch perceives climate-related transition risks, see Climate Vulnerability Signals for Non-Financial Corporate Sectors.

The FY24 revenue-weighted Climate.VS for 2035 is 35 out of 100, suggesting low exposure to climate-related risks in that year.

Climate.VS Evolution

As of Dec 31, 2024



Source: Fitch Ratings

Key Assumptions

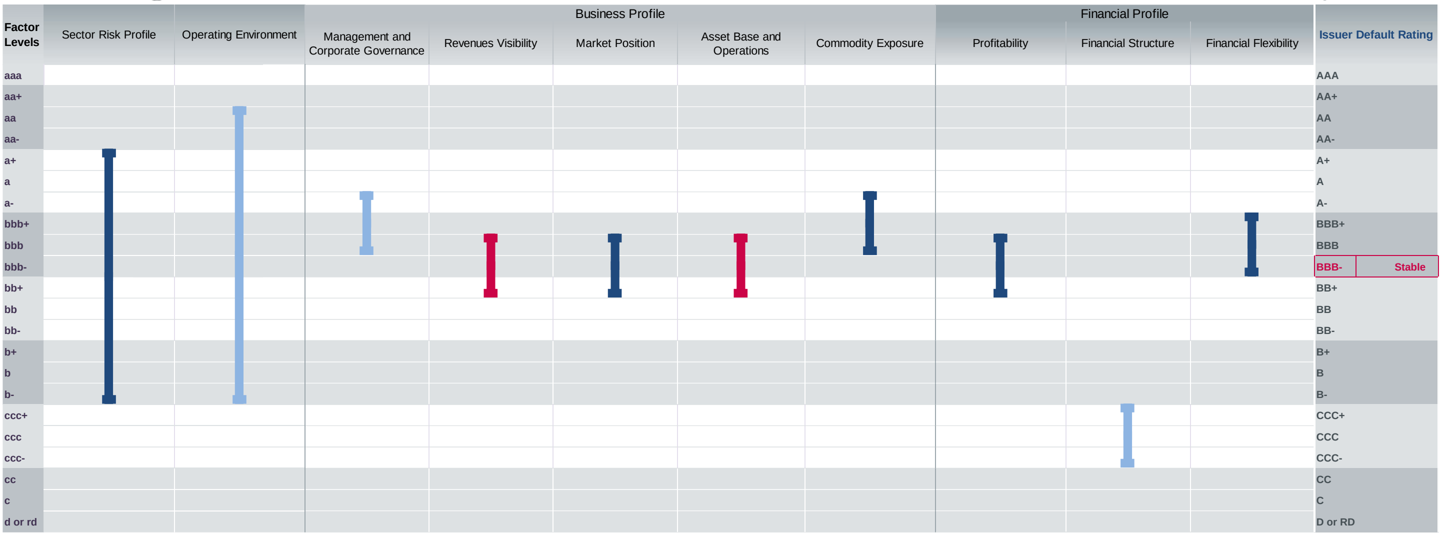
Fitch's Key Assumptions Within Our Rating Case for the Issuer:

- Fitch calculates projected EBITDA and credit ratios in a profit-making scenario, assuming that TVO is able to sell its electricity output at market prices instead of at cost. This measures the incentive for shareholders to maintain their at-cost off-takes, as well as the dividend that would be paid in a profit-making scenario
- Average production cost of TVO about EUR39/MWh
- Finnish area prices averaging around EUR38/MWh in 2025-2029

Ratings Navigator

FitchRatings **Teollisuuden Voima Oyj (TVO)** ESG Relevance:

Corporates Ratings Navigator
Global Electricity Generation



Bar Chart Legend:	
Vertical Bars = Range of Rating Factor	Bar Arrows = Rating Factor Outlook
Bar Colors = Relative Importance	⇧ Positive
Higher Importance	⇩ Negative
Average Importance	⇳ Evolving
Lower Importance	□ Stable

FitchRatings

Teollisuuden Voima Oyj (TVO)

Corporates Ratings Navigator
Global Electricity Generation

Operating Environment

aa+	Economic Environment	aa	Very strong combination of countries where economic value is created and where assets are located.
aa	Financial Access	aa	Very strong combination of issuer specific funding characteristics and of the strength of the relevant local financial market.
	Systemic Governance	aa	Systemic governance (eg rule of law, corruption; government effectiveness) of the issuer's country of incorporation consistent with 'aa'.
b-			
ccc+			

Management and Corporate Governance

a	Management Strategy	bbb	Strategy may include opportunistic elements but soundly implemented.
a-	Governance Structure	a	Experienced board exercising effective check and balances. Ownership can be concentrated among several shareholders.
bbb+	Group Structure	a	Group structure shows some complexity but mitigated by transparent reporting.
bbb	Financial Transparency	bbb	Good quality reporting without significant failing. Consistent with the average of listed companies in major exchanges.
bbb-			

Revenues Visibility

bbb+	Contracted Position	bb	Moderate visibility under PPAs or incentives with short to medium (3 years) term residual life, with manageable merchant risk. 50% to 80% contracted or incentivised.
bbb	Contract Renewal Risk	bbb	Likely re-contracting prospects with similar to potentially moderately worse contractual terms.
bbb-	System / Capacity Payments		n.a.
bb+	Degree of Supply Integration	b	Minimal supply integration. Significant long or short generation position.
bb	Resource Predictability	a	Highly stable and predictable capacity factor.

Market Position

bbb+	Supply/Demand Dynamics	bb	Lower certainty outlook for prices. Potential price volatility from bulky capacity/demand expansion in system.
bbb	Competitive Position	bbb	Efficient generation with recurrent merit dispatch.
bbb-	Relative Size and Scale	bbb	Large scale operations with diverse generation asset base or company supplies more than 20% of electricity to the systems where it operates or strong competitive position in a localized market.
bb+			
bb			

Asset Base and Operations

bbb+	Asset Quality and Diversity	bbb	Good single asset quality or partial diversification by geography and/or generation source.
bbb	Exposure to Environmental Regulations	bbb	Limited or manageable exposure to environmental regulations. Balanced generation between clean and thermal sources; medium carbon exposure.
bbb-	Capital and Technological Intensity of Capex	bbb	Moderate reinvestments requirements in established technologies.
bb+			
bb			

Commodity Exposure

a	Counterparty Risk	bbb	Diversified, medium counterparty risk or weighted average credit quality of actual and potential off-takers is in line with 'BBB' rating. Single 'BBB' rated off-taker under well-structured PPA.
a-	Costs Pass-Through and Supply Mix	a	Complete pass-through of commodity costs to off-taker or end user. Extremely low cost and flexible/certain supply.
bbb+	Hedging Strategy		n.a.
bbb			
bbb-			

Profitability

bbb+	Free Cash Flow	bbb	Structurally neutral to slightly negative FCF across the investment cycle.
bbb	Cash Flow Predictability	bbb	Stability and predictability cash flow in line with peers.
bbb-			
bb+			
bb			

Financial Structure

b-	EBITDA Leverage	ccc	>7.3x
ccc+	FFO Leverage	ccc	>7.5x
ccc	FFO Net Leverage	ccc	>7.0x
ccc-			
cc			

Financial Flexibility

a-	Financial Discipline	a	Clear commitment to maintain a conservative policy with only modest deviations allowed.
bbb+	Liquidity		Very comfortable liquidity. No need to use external funding, except for already committed facilities, in the next 12 months even under a severe stress scenario. Well-spread debt maturity schedule. Diversified sources of funding
bbb	FFO Interest Coverage		All/most funding sources subject to material execution risk
bbb-	DSCR		n.a.
bb+	FX Exposure	aa	No material FX mismatch.

Credit-Relevant ESG Derivation

Overall ESG

Teollisuuden Voima Oyj (TVO) has 13 ESG potential rating drivers

- Emissions from operations
- Fuel use to generate energy and serve load
- Water used by hydro plants or by other generation plants, also effluent management
- Impact of waste from operations
- Plants' and networks' exposure to extreme weather
- Product affordability and access

Showing top 6 issues

key driver	0	issues	5
driver	0	issues	4
potential driver	13	issues	3
not a rating driver	1	issues	2
	0	issues	1

How to Read This Page: The left column shows the three-notch band assessment for the overall Factor, illustrated by a bar. The right column breaks down the Factor into Sub-Factors, with a description appropriate for each Sub-Factor and its corresponding category.

FitchRatings

Teollisuuden Voima Oyj (TVO)

Corporates Ratings Navigator
Global Electricity Generation

Credit-Relevant ESG Derivation

Teollisuuden Voima Oyj (TVO) has 13 ESG potential rating drivers

- Teollisuuden Voima Oyj (TVO) has exposure to emissions regulatory risk but this has very low impact on the rating.
- Teollisuuden Voima Oyj (TVO) has exposure to energy productivity risk but this has very low impact on the rating.
- Teollisuuden Voima Oyj (TVO) has exposure to water management risk but this has very low impact on the rating.
- Teollisuuden Voima Oyj (TVO) has exposure to waste & impact management risk but this has very low impact on the rating.
- Teollisuuden Voima Oyj (TVO) has exposure to extreme weather events but this has very low impact on the rating.
- Teollisuuden Voima Oyj (TVO) has exposure to access/affordability risk but this has very low impact on the rating.

Showing top 6 issues

			ESG Relevance to Credit Rating
key driver	0	issues	5
driver	0	issues	4
potential driver	13	issues	3
not a rating driver	1	issues	2
	0	issues	1

Environmental (E) Relevance Scores

General Issues	E Score	Sector-Specific Issues	Reference
GHG Emissions & Air Quality	3	Emissions from operations	Asset Base and Operations
Energy Management	3	Fuel use to generate energy and serve load	Asset Base and Operations; Commodity Exposure; Profitability
Water & Wastewater Management	3	Water used by hydro plants or by other generation plants, also effluent management	Asset Base and Operations; Profitability
Waste & Hazardous Materials Management; Ecological Impacts	3	Impact of waste from operations	Asset Base and Operations; Profitability
Exposure to Environmental Impacts	3	Plants' and networks' exposure to extreme weather	Asset Base and Operations; Profitability

E Relevance: 5, 4, 3, 2, 1

Social (S) Relevance Scores

General Issues	S Score	Sector-Specific Issues	Reference
Human Rights, Community Relations, Access & Affordability	3	Product affordability and access	Asset Base and Operations; Revenues Visibility; Profitability
Customer Welfare - Fair Messaging, Privacy & Data Security	3	Quality and safety of products and services; data security	Asset Base and Operations
Labor Relations & Practices	3	Impact of labor negotiations and employee (dis)satisfaction	Asset Base and Operations; Profitability
Employee Wellbeing	2	Worker safety and accident prevention	Asset Base and Operations
Exposure to Social Impacts	3	Social resistance to major projects that leads to delays and cost increases	Asset Base and Operations; Revenues Visibility; Profitability; Financial Structure

S Relevance: 5, 4, 3, 2, 1

How to Read This Page
ESG relevance scores range from 1 to 5 based on a 15-level color gradation. Red (5) is most relevant to the credit rating and green (1) is least relevant.
The Environmental (E), Social (S) and Governance (G) tables break out the ESG general issues and the sector-specific issues that are most relevant to each industry group. Relevance scores are assigned to each sector-specific issue, signaling the credit-relevance of the sector-specific issues to the issuer's overall credit rating. The Criteria Reference column highlights the factor(s) within which the corresponding ESG issues are captured in Fitch's credit analysis. The vertical color bars are visualizations of the frequency of occurrence of the highest constituent relevance scores. They do not represent an aggregate of the relevance scores or aggregate ESG credit relevance.
The Credit-Relevant ESG Derivation table's far right column is a visualization of the frequency of occurrence of the highest ESG relevance scores across the combined E, S and G categories. The three columns to the left of ESG Relevance to Credit Rating summarize rating relevance and impact to credit from ESG issues. The box on the far left identifies any ESG Relevance Sub-factor issues that are drivers or potential drivers of the issuer's credit rating (corresponding with scores of 3, 4 or 5) and provides a brief explanation for the relevance score. All scores of '4' and '5' are assumed to reflect a negative impact unless indicated with a '+' sign for positive impact.
Classification of ESG issues has been developed from Fitch's sector ratings criteria. The General Issues and Sector-Specific Issues draw on the classification standards published by the United Nations Principles for Responsible Investing (PRI), the Sustainability Accounting Standards Board (SASB), and the World Bank.

Governance (G) Relevance Scores

General Issues	G Score	Sector-Specific Issues	Reference
Management Strategy	3	Strategy development and implementation	Management and Corporate Governance; Financial Structure
Governance Structure	3	Board independence and effectiveness; ownership concentration	Management and Corporate Governance
Group Structure	3	Complexity, transparency and related-party transactions	Management and Corporate Governance; Commodity Exposure
Financial Transparency	3	Quality and timing of financial disclosure	Management and Corporate Governance

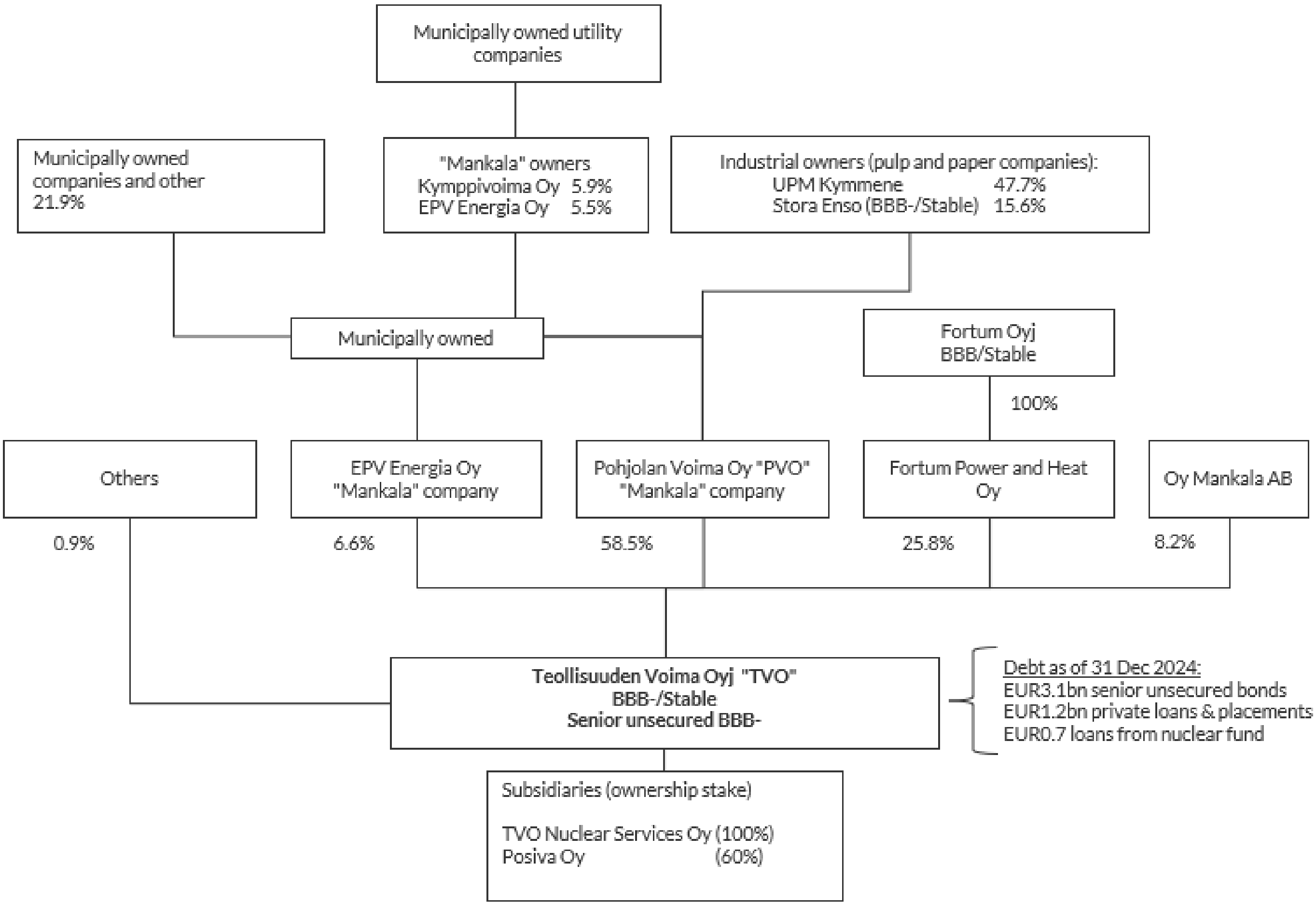
G Relevance: 5, 4, 3, 2, 1

CREDIT-RELEVANT ESG SCALE

How relevant are E, S and G issues to the overall credit rating?

5	Highly relevant, a key rating driver that has a significant impact on the rating on an individual basis. Equivalent to "higher" relative importance within Navigator.
4	Relevant to rating, not a key rating driver but has an impact on the rating in combination with other factors. Equivalent to "moderate" relative importance within Navigator.
3	Minimally relevant to rating, either very low impact or actively managed in a way that results in no impact on the entity rating. Equivalent to "lower" relative importance within Navigator.
2	Irrelevant to the entity rating but relevant to the sector.
1	Irrelevant to the entity rating and irrelevant to the sector.

Simplified Group Structure Diagram



Source: Fitch Ratings, Fitch Solutions, Teollisuuden Voima Oyj (TVO), as of April 2025

SOLICITATION & PARTICIPATION STATUS

For information on the solicitation status of the ratings included within this report, please refer to the solicitation status shown in the relevant entity's summary page of the Fitch Ratings website.

For information on the participation status in the rating process of an issuer listed in this report, please refer to the most recent rating action commentary for the relevant issuer, available on the Fitch Ratings website.