Teollisuuden Voima Oyj (TVO)

Rating Type	Rating	Outlook	Last Rating Action
Long-Term IDR	BBB-	Stable	Affirmed 23 September 2019
Short-Term IDR	F3		Affirmed 23 September 2019
Click here for full list of ratings			

Financial Summary[a]

(EURm)	Dec 2015	Dec 2016	Dec 2017	Dec 2018
Gross Revenue	276	343	321	350
Operating EBITDAR Margin (%)	20.4	10.2	15.5	12.5
FFO Margin (%)	-3.4	-13.6	-14.0	-15.6
FFO Fixed Charge Coverage (x)	0.8	0.5	0.5	0.5
FFO Adjusted Leverage (x)	50.7	92.3	77.5	86.6

[a] TVO as a not-for-profit company sells electricity to its shareholders at cost. Hence, financial figures do not reflect the underlying profitability of the business
Source: Fitch Ratings, Fitch Solutions

The ratings reflect the approaching completion of the Olkiluoto 3 (OL3) nuclear power plant and improvement in the power price environment since 2017. Fitch Ratings expects positive value creation for Teollisuuden Voima Oyj's (TVO) shareholders when OL3 becomes operational in 2020.

The ratings also incorporate demonstrated strong support from TVO's shareholders, shown through arrangements for fixed- and variable-cost coverage as well as committed shareholder loans covering part of the OL3 funding. The financial impact of the six-month delay of the commissioning of OL3 announced in July 2019 and the additional six-week delay announced in November 2019 is offset by the settlement agreement between TVO and OL3 plant supplier consortium – Areva NP, Areva GmbH and Siemens AG (A/Stable) and Areva SA (fully owned by the French state) – signed in March 2018.

Key Rating Drivers

OL3 Construction in Final Phases: The construction of the 1,600 MW OL3 nuclear power plant nears commissioning as an additional milestone – TVO being granted an operating license for OL3 – was achieved in 2019. Final steps include fuel loading and provisional takeover, which according to the latest schedule, are estimated to take place in March and September 2020, respectively. The project has experienced a roughly 10-year delay and substantial cost overruns resulting in total project costs increasing to EUR5.5 billion from the original budget of EUR3.4 billion.

Cash Flows to Improve: The delay has been negative for TVO's cash flows as the company has to service debt related to OL3 without cost pass-through to shareholders in the construction phase. Cash flows will improve after OL3 completion when TVO's full cost coverage, including interest costs and depreciation, by shareholders starts. As capex returns to maintenance levels, this should allow TVO to start deleveraging.

OL3 Settlement Reduces Risks: We expect the settlement agreement signed in March 2018 to fully offset the negative financial impact on TVO arising from the OL3 delays in the past 12 months. The agreement states that TVO would receive compensation of EUR450 million from the supplier consortium, and that the latter was entitled to an incentive payment of up to EUR150 million upon timely completion of the OL3 project (this is no longer achievable). The settlement further includes a penalty mechanism, under which the supplier consortium pays additional penalties (capped at EUR400 million) to TVO in case of further delays beyond 2019.

The settlement agreement also reduces several uncertainties during the final stages of OL3 construction, such as the supplier consortium having sufficient funds to complete the project.

Improved Power Prices and Shareholder Value: Value creation for TVO's shareholders, which is one of the key rating considerations, improved in 2018 as the Nordic power prices recovered rapidly. Power prices have somewhat declined during first three quarters of 2019 from last year's levels, but we estimate prices to remain supportive in the next few years at around EUR33-34/MWh for Nord Pool and slightly higher for the Finland area. This compares with TVO's current production cost of around EUR20/MWh. TVO estimates the production cost will increase to around EUR30/MWh when OL3 comes online.

Not-for-Profit Nuclear Generator: The ratings reflect TVO's position as a not-for-profit Finnish nuclear generator, producing at-cost electricity for the company's six shareholders. TVO's largest shareholder (with 57.1%) is Pohjolan Voima Oyj (PVO), a not-for-profit electricity generator owned by a consortium of Finnish industrials (mainly pulp and paper companies UPM-Kymmene Oyj and Stora Enso Oyj (BBB-/Stable)) and utilities. Its second-largest shareholder (with 27.6%) is Fortum Power & Heat Oy, a 100% owned subsidiary of Fortum Oyj (BBB/Rating Watch Negative).

Strong Shareholder Support: TVO's IDR benefits from demonstrated strong support from the company's shareholders, evidenced through arrangements for fixed- and variable-cost coverage and shareholder loans partly covering funding. The shareholders have provided shareholder loan commitments, with the last being in December 2017, which have helped support the equity ratio at above the covenant level of 25%. Currently, TVO has undrawn shareholder loan commitments totalling EUR250 million that support its liquidity. In assessing the shareholder support, we take into account the stability and overall creditworthiness of the shareholder base.

No Merchant, Volume Risk: TVO has no direct exposure to wholesale electricity prices or volumes, as its shareholders are at-cost off-takers of the electricity produced. Shareholders have an incentive to keep costs low and to off-take their proportion of the energy due to the large fixed costs they have to cover, according to TVO's articles of association. If a shareholder fails to cover annual fixed costs (80% of total costs paid one month in advance, which also includes debt instalments falling due annually) and variable costs (around 20% of 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.

Low Political Risk: Finland's regulatory environment supports the construction of nuclear power plants, given the country's concerns over supply security (TVO is a key generator of base-load electricity in Finland – its nuclear plant output corresponds to roughly 16% of the country's annual electricity consumption), the need for reasonably priced electricity for its energy-intensive industries, and stringent EU CO_2 emission requirements driving the phase-out of thermal plants. After OL3 starts its commercial generation, planned for September 2020, TVO's electricity will cover about 30% of demand. The government approved an operating licence for OL3 in March, which runs to 2038.

Rating Derivation Relative to Peers

As TVO is a not-for-profit company, Fitch considers traditional leverage or coverage ratios, which are weak compared with those of other European utilities, such as Fortum Oyj or Statkraft AS (BBB+/Stable), as less relevant for the ratings than for utilities operating on a fully commercial basis. In 2018, TVO's funds from operations (FFO) after cash interest paid was negative and FFO interest cover was below 1x as interest expense related to OL3 debt in the construction phase is not covered by shareholders but is capitalised instead.

TVO's rating is supported by demonstrated strong support from shareholders and overall creditworthiness of the shareholder base.

Compared with many other European utilities, TVO's ratings are constrained by asset concentration risk, as almost all electricity production is from a single nuclear power plant. This is mitigated by TVO's solid operational and safety record as TVO's nuclear power units are some of the most efficient in the world, with an outstanding safety record partly due to strict Finnish safety standards.

Navigator Peer Comparison

Issuer		Business profile						Financial profile		
	IDR/Outlook	Operating Environment	Management and Corporate Governance	Position and Cash Flow Profile	Regulation	Market Trends and Risks	Asset Base and Operations	Profitability and Cash Flow	Financial Structure	Financial Flexibility
Fortum Oyj	BBB/RWN	aa-	a-	bbb-	a	bbb	bbb+	bbb	bbb	bbb+
Statkraft AS	BBB+/Sta	aa	a-	bbb-	a-	bbb	a-	bbb-	bbb	bbb+
Teollisuuden Voima Oyj (TVO)	BBB-/Sta	aa	bbb+	bb+	a-	bbb	bbb	bb+	ccc	bbb

Source: Fitch Ratings.

Importance: Higher / Moderate / Lower

Issuer		Business profile						Financial profile		
Name	IDR/Outlook	Operating Environment	Management and Corporate Governance	Position and Cash Flow Profile	Regulation	Market Trends and Risks	Asset Base and Operations	Profitability and Cash Flow	Financial Structure	Financial Flexibility
Fortum Oyj	BBB/RWN	5.0	2.0	-1.0	3.0	0.0	1.0	0.0	0.0	1.0
Statkraft AS	BBB+/Sta	5.0	1.0	-2.0	1.0	-1.0	1.0	-2.0	-1.0	0.0
Teollisuuden Voima Oyj (TVO)	BBB-/Sta	7.0	2.0	-1.0	3.0	1.0	1.0	-1.0	-8.0	1.0

Source: Fitch Ratings.

Worse positioned than IDR / In line with IDR / Better positioned than IDR

Rating Sensitivities

Developments That May, Individually or Collectively, Lead to Positive Rating Action

– Structural long-term improvement in power price environment leading to enhanced value creation at TVO for its shareholders.

– Significantly higher equity funding.

Developments That May, Individually or Collectively, Lead to Negative Rating Action

– TVO's production costs significantly exceeding Finnish area prices on a sustained basis when OL3 is completed, leading to value destruction at TVO for its shareholders.

– Evidence of reduced support from shareholders or structural changes in the Mankala principle (please see brief description of the principle below) undermining the strength of shareholder support.

– Substantial OL3 delays leading to additional costs exceeding the EUR400 million penalty cap agreed in a settlement with the consortium companies.

– Adverse regulatory or fiscal changes.

– Deterioration in operating performance, safety issues and significantly reduced liquidity reserves.

Liquidity and Debt Structure

Adequate Liquidity: Cash and cash equivalents as at end-September 2019 amounted to EUR202.5 million. Committed undrawn credit facilities amounted to EUR1,300 million, resulting in sufficient total liquidity to cover for 2019-2020 debt repayments of EUR530 million. In addition, TVO has committed and undrawn shareholder loans of EUR250 million allocated to OL3 project costs, if needed. Its overall liquidity is considered adequate. After OL3 comes online and shareholders start to cover full costs (including interest costs and asset depreciation), total debt is projected to start declining gradually.

In September 2019, TVO issued EUR650 million bonds with a coupon of 1.125% due in 2026. Around EUR350 million of the proceeds were used to partially repay the EUR500 million bond maturing in March 2021.

Liquidity and Debt Maturity Scenario with No Refinancing

Available Liquidity (EURm)	2019F	2020F
Beginning Cash Balance	221	-272
Rating Case FCF after Acquisitions and Divestitures	-531	-320
EUR650 million new bond issuance in Sep 19	**650**	
EUR100 million new loan drawdown in Mar 19	**100**	
SEK1000 million (EUR93 million) new bond issuance in Oct 19	**93**	
Total Available Liquidity (A)	**533**	**-593**
Liquidity Uses		
Debt Maturities	-459	-257
EUR346 million early 2021 bond repayment	**-346**	
Total Liquidity Uses (B)	**-805**	**-257**
Liquidity Calculation		
Ending Cash Balance (A+B)	-272	-850
Revolver Availability[a]	1,300	1,300
Ending Liquidity	**1,028**	**450**
Liquidity Score	**2.2**	**2.7**

[a] Does not include EUR250 million of committed shareholder loans
Source: Fitch Ratings, Fitch Solutions, TVO

Scheduled Debt Maturities	Original
Statement Date	**31 December 2018**
2019	459
2020	257
2021	737
2022	814
2023	532
Thereafter	1,991
Total	**4,791**

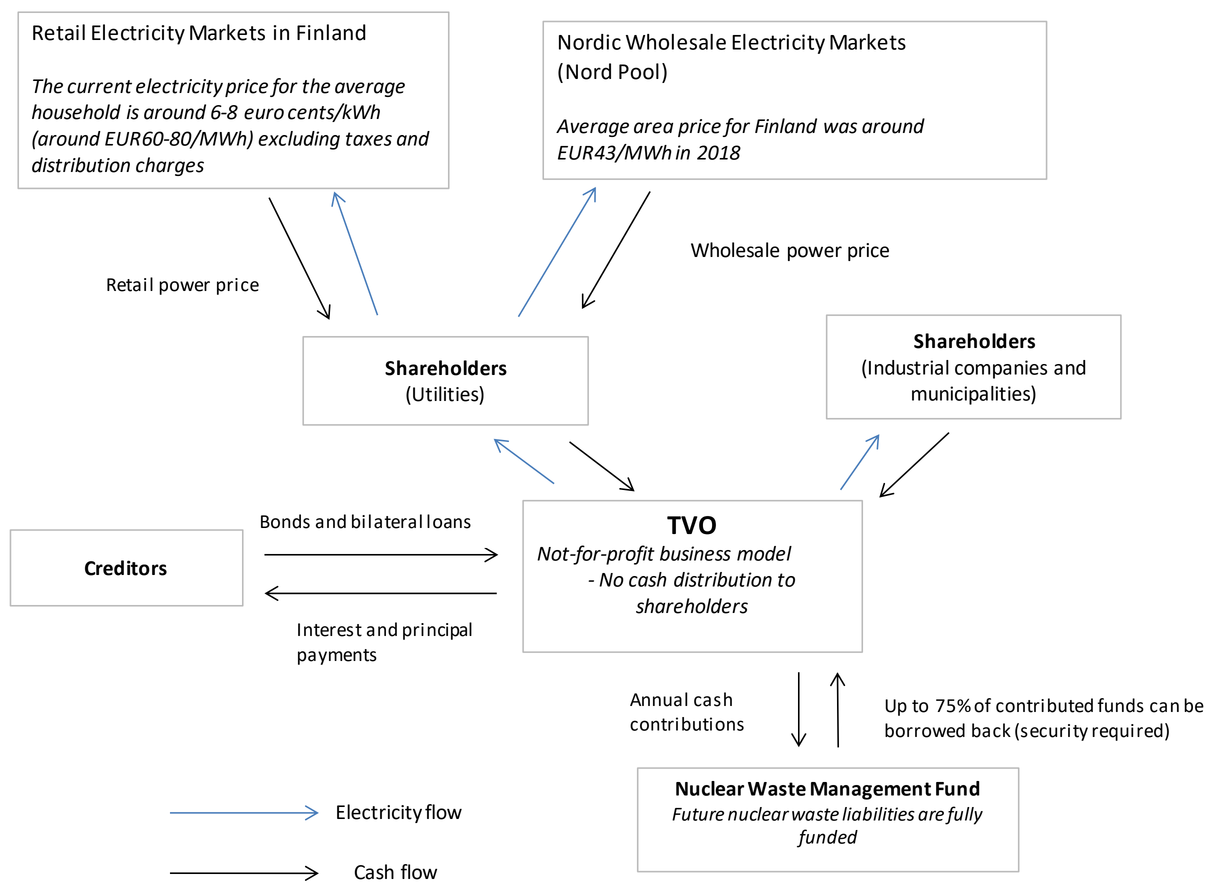
Source: Fitch Ratings, Fitch Solutions, TVO

TVO's Operating Model and Fitch's Rating Approach

Mankala Model in Power Generation

TVO is a not-for-profit power generator (genco) producing electricity for its shareholders at cost, an operating model known as Mankala in Finland. The shareholders of Mankala companies typically are municipal utilities and industrial companies. The majority of Finnish gencos operate according to the Mankala principle. The arrangement whereby a Mankala company sells power to its shareholders at cost differs from a traditional power off-take agreement. The shareholders' responsibility to honour their commitments, including debt service, is stipulated in the articles of association of a Mankala company. It is difficult to estimate the strength of shareholder support in any possible insolvency. Therefore, Fitch views the Mankala principle as being less-supportive than debt guarantees or well-documented power off-take agreements. In Fitch's view, the strength of the Mankala principle lies in its strong record of continuous support from shareholders even when electricity market prices are low. There have been no non-payment events of interest or debt repayments in any of the Mankala companies since the inception of the principle in the 1960s.

Mankala Operating Principle (At-Cost Electricity for Shareholders)



Source: Fitch Ratings, Nord Pool, Finnish Energy Authority

Fitch's Rating Approach

We rate Finnish electricity gencos operating under the Mankala principle using the same analytical framework as for utilities operating in a commercial environment – the corporate rating methodology and the key peer comparator elements described in the report *EMEA Utilities: Ratings Navigator Companion*. However, given Mankala companies' specific features, such as the not-for-profit business model, we place more emphasis on the links with the shareholders and the value creation for them. Given Mankala companies' cash-flow profiles, debt and liquidity management plays a crucial role in determining the ratings. We consider company-specific traits, such as asset base and concentration, market position, strategic importance, legal and regulatory framework in the same way as typical electricity utilities.

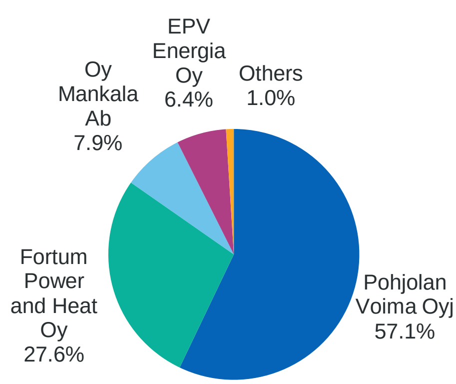
Shareholder Support

Fitch analyses the parent and subsidiary relationship of Mankala companies using concepts in its *Parent and Subsidiary Rating Linkage Criteria*. The links between the shareholders and the Mankala company are usually strong due to tangible support from the shareholders. In assessing the shareholder support, we take into account the stability and overall creditworthiness of the shareholder base, as well as the record of timely payments for cost coverage and electricity off-take in the past. The credit quality of the shareholder base is of higher importance in a low-price electricity environment, when the genco would have low profitability on a standalone basis.

Given the typically large shareholder base of a Mankala company, it is cumbersome for us to assess the credit quality of the shareholder base by analysing each shareholder, and as a result, Fitch considers overall creditworthiness by grouping the shareholders into sectors.

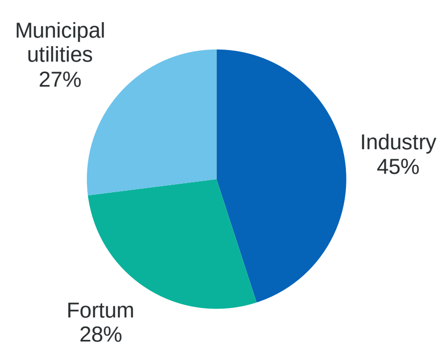
TVO has six direct shareholders, including PVO Oyj as its largest shareholder (with 57.1%) and 60 underlying power off-takers (industry 45%, municipalities 27% and Fortum 28%). Shareholders support TVO through equity injections, shareholder loans and through coverage of fixed and variable costs. The shareholder structure has been very stable since TVO's inception, with virtually no shareholder changes over the past 20 years and no electricity being sold on the external market. Under existing circumstances, Fitch believes TVO's risk of not finding new shareholders is low. To date, TVO has never experienced a defaulting or late-paying shareholder.

TVO's Ownership Structure



Source: Fitch Ratings, TVO

TVO's Underlying Owners by Sector



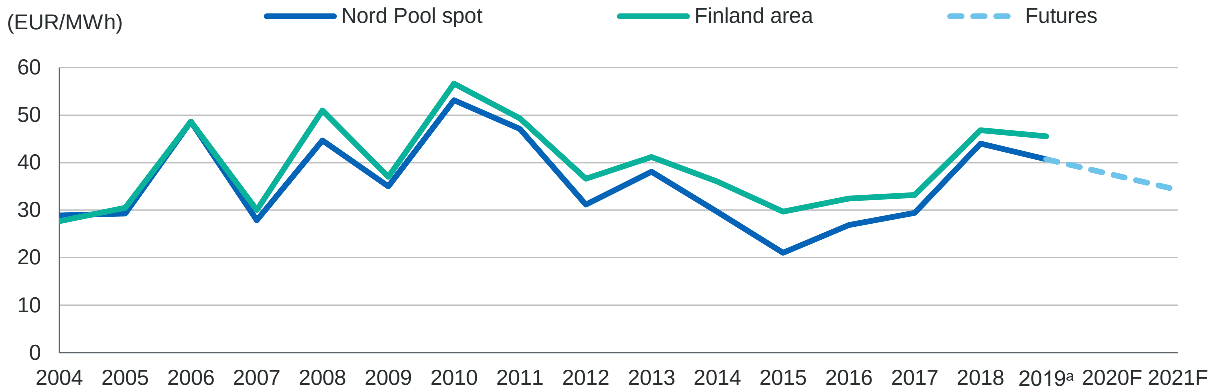
Source: Fitch Ratings, TVO

Value Creation for Shareholders and Cost Competitiveness

The Mankala company's value creation for shareholders and cost competitiveness plays a central role in our analysis as the shareholders are more likely to support the company in the long term if they can purchase electricity at a lower cost than the market price. The generator's asset base and operational performance are factors influencing cost competitiveness. Another important factor for value creation, in addition to the cost competitiveness against wholesale electricity market prices, is the long-term predictability and stability of production costs, especially for industrial off-takers.

Wholesale electricity prices have largely recovered from low levels in 2015-2016. During 2018, power prices increased as a result of a cold and dry year; despite a slight decline, the average Finnish area power price has remained supportive at EUR44/MWh during first three quarters of 2019. Nord Pool futures indicate Finnish area power prices of EUR33-34/MWh for 2021-2022. This compares with estimated production costs of close to EUR30/MWh for TVO after commissioning of OL3 (versus EUR20/MWh currently for OL1 and OL2 only) and thus we believe value creation for TVO's shareholders has improved.

Nord Pool Spot Price and Finland Area Price
As of 12 Nov 2019



[a] Average of last twelve months as at October 2019
Source: Fitch Ratings, Nord Pool, Nasdaq OMX

TVO Power Plants

Power plant (fuel)	Capacity (MW)	Commercial operation
Olkiluoto 1 (nuclear)	890	1979
Olkiluoto 2 (nuclear)	890	1982
Olkiluoto 3 (nuclear)	1,600	2020 (est.)
Meri-Pori (coal)	254[a]	1994

[a] 254MW stake in 565MW coal condensing plant, representing TVO's 45% stake
Source: Fitch Ratings, TVO

Key Assumptions

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

– Fitch calculates projected EBITDA and credit ratios hypothetically in a profit-making scenario, assuming that TVO is able to sell its electricity output at market prices instead of at-cost prices. This measures the incentive for shareholders to maintain their at-cost off-takes, as well as the theoretical dividend that would instead be paid in a profit-making scenario.

– OL3 fully operational from July 2020 and the financial impact of the recently announced six-week delay offset by the settlement agreement.

– Average production costs of TVO to increase to around EUR30/MWh in the first few years of OL3 operations, from around EUR20/MWh in 2018 (with OL1 and OL2 only).

– Finnish area prices of around EUR35-EUR37/MWh in 2021-2023.

Financial Data

	Historical				
(EURm)	**Dec 2014**	**Dec 2015**	**Dec 2016**	**Dec 2017**	**Dec 2018**
Summary Income Statement					
Gross Revenue	327	276	343	321	350
Revenue Growth (%)	-10.6	-15.7	24.6	-6.6	9.2
Operating EBITDA (Before Income from Associates)	78	56	35	50	43
Operating EBITDA Margin (%)	23.8	20.3	10.1	15.5	12.3
Operating EBITDAR	78	56	35	50	44
Operating EBITDAR Margin (%)	23.9	20.4	10.2	15.5	12.5
Operating EBIT	20	-1	-20	-5	-12
Operating EBIT Margin (%)	6.1	-0.2	-5.9	-1.5	-3.5
Gross Interest Expense	-16	-10	-6	-3	-3
Pretax Income (Including Associate Income/Loss)	-1	5	-11	-9	-18
Summary Balance Sheet					
Readily Available Cash and Equivalents	113	191	452	140	221
Total Debt with Equity Credit	4,411	4,663	5,132	4,541	4,783
Total Adjusted Debt with Equity Credit	4,414	4,666	5,134	4,543	4,788
Net Debt	4,298	4,473	4,680	4,401	4,562
Summary Cash Flow Statement					
Operating EBITDA	78	56	35	50	43
Cash Interest Paid	-178	-111	-110	-109	-113
Cash Tax	0	0	0	0	0
Dividends Received Less Dividends Paid to Minorities (Inflow/(Out)flow)	1	1	0	0	0
Other Items Before FFO	-14	35	21	9	12
Funds Flow from Operations	-106	-10	-47	-45	-55
FFO Margin (%)	-32.3	-3.4	-13.6	-14.0	-15.6
Change in Working Capital	-45	-13	47	-30	-7
Cash Flow from Operations (Fitch Defined)	-150	-23	0	-75	-62
Total Non-Operating/Non-Recurring Cash Flow	0	0	0	0	0
Capital Expenditure	-176	-153	-236	-183	-511
Capital Intensity (Capex/Revenue) (%)	53.9	55.6	68.8	56.9	145.9
Common Dividends	-4	-4	-4	-4	-4
Free Cash Flow	-331	-180	-241	-261	-577
Net Acquisitions and Divestitures	0	28	0	1	0
Other Investing and Financing Cash Flow Items	28	-243	-183	572	317
Net Debt Proceeds	171	362	616	-583	247
Net Equity Proceeds	100	40	0	100	94
Total Change in Cash	-31	7	192	-172	81
Calculations for Forecast Publication					
Capex, Dividends, Acquisitions and Other Items Before FCF	-180	-129	-241	-186	-516
Free Cash Flow After Acquisitions and Divestitures	-330	-152	-241	-261	-577

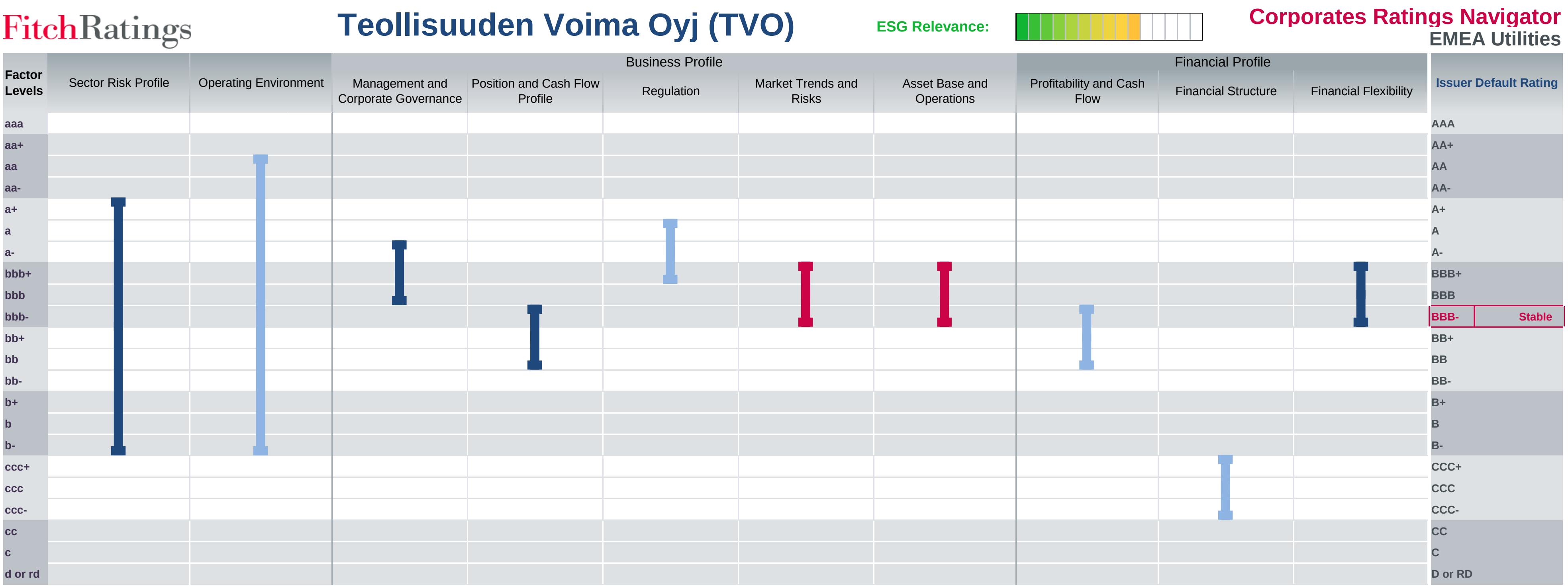
Free Cash Flow Margin (After Net Acquisitions) (%)	-100.9	-55.1	-70.1	-81.2	-164.8
Coverage Ratios					
FFO Interest Coverage (x)	0.4	0.8	0.5	0.5	0.5
FFO Fixed-Charge Coverage (x)	0.4	0.8	0.5	0.5	0.5
Operating EBITDAR/Interest Paid + Rents (x)	0.4	0.5	0.3	0.5	0.4
Operating EBITDA/Interest Paid (x)	0.4	0.5	0.3	0.5	0.4
Leverage Ratios					
Total Adjusted Debt/Operating EBITDAR (x)	55.8	81.3	146.7	91.2	109.6
Total Adjusted Net Debt/Operating EBITDAR (x)	54.4	78.0	133.8	88.4	104.5
Total Debt with Equity Credit/Operating EBITDA (x)	56.0	81.7	147.9	91.6	111.0
FFO Adjusted Leverage (x)	67.9	50.7	92.3	77.5	86.6
FFO Adjusted Net Leverage (x)	66.2	48.6	84.2	75.1	82.6

Source: Fitch Ratings, Fitch Solutions

How to Interpret the Forecast Presented

The forecast presented is based on Fitch Ratings’ internally produced, conservative rating case forecast. It does not represent the forecast of the rated issuer. The forecast set out above is only one component used by Fitch Ratings to assign a rating or determine a rating outlook, and the information in the forecast reflects material but not exhaustive elements of Fitch Ratings’ rating assumptions for the issuer’s financial performance. As such, it cannot be used to establish a rating, and it should not be relied on for that purpose. Fitch Ratings’ forecasts are constructed using a proprietary internal forecasting tool, which employs Fitch Ratings’ own assumptions on operating and financial performance that may not reflect the assumptions that you would make. Fitch Ratings’ own definitions of financial terms such as EBITDA, debt or free cash flow may differ from your own such definitions. Fitch Ratings may be granted access, from time to time, to confidential information on certain elements of the issuer’s forward planning. Certain elements of such information may be omitted from this forecast, even where they are included in Fitch Ratings’ own internal deliberations, where Fitch Ratings, at its sole discretion, considers the data may be potentially sensitive in a commercial, legal or regulatory context. The forecast (as with the entirety of this report) is produced strictly subject to the disclaimers set out at the end of this report. Fitch Ratings may update the forecast in future reports but assumes no responsibility to do so. Original financial statement data for historical periods is processed by Fitch Solutions on behalf of Fitch Ratings. Key financial adjustments and all financial forecasts credited to Fitch Ratings are generated by rating agency staff.

Ratings Navigator



FitchRatings

Teollisuuden Voima Oyj (TVO)

Corporates Ratings Navigator
EMEA Utilities

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 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 checks and balances. Ownership can be concentrated among several shareholders.
bbb+	Group Structure	a	Group structure has some complexity but mitigated by transparent reporting.
bbb	Financial Transparency	bbb	Good-quality reporting without significant failings. Consistent with the average of listed companies in major exchanges.
bbb-			

Position and Cash Flow Profile

bbb	Market Presence and Integration	bb	Medium-sized player in one market. Minimal integration (typically limited to generation and supply).
bbb-	Earnings from Regulated Network Assets	b	Minimal EBITDA comes from high-quality regulated networks or quasi-regulated assets.
bb+	Quasi-Regulated Earnings	a	Over 20% of EBITDA comes from quasi-regulated assets in markets or from long-term contracted sales with creditworthy counterparties.
bb			
bb-			

Regulation

a+	Regulatory Framework and Policy Risk	a	Transparent frameworks with strong track record and multi-year predictable tariffs set by independent regulators; little political risk.
a	Cost Recovery and Risk Exposure		n.a.
a-			
bbb+			
bbb			

Market Trends and Risks

a-	Fundamental Market Trends	bbb	Markets with emerging structural challenges.
bbb+	Generation and Supply Positioning	bb	Weak position in the merit order; limited hedging. Own generation not in balance with marginal position in supply and services.
bbb	Customer Base and Counterparty Risk	bbb	Economy of area served provides structurally stable background; medium counterparty risk; fair collection rates for supply operations.
bbb-			
bb+			

Asset Base and Operations

a-	Asset Quality	a	High asset quality likely to benefit opex and capex requirements compared with peers.
bbb+	Asset Diversity	b	No meaningful diversification by geography, generation source, supplied product.
bbb	Carbon Exposure	a	Energy production mostly from clean sources and low carbon exposure (< 300gCO2/kWh).
bbb-			
bb+			

Profitability and Cash Flow

bbb	Free Cashflow	bb	Structurally negative FCF across the investment cycle.
bbb-	Volatility of Profitability	bbb	Stability and predictability of profits in line with utility peers.
bb+			
bb			
bb-			

Financial Structure

b-	Lease Adjusted FFO Gross Leverage	ccc	>9.0x
ccc+	Lease Adjusted FFO Net Leverage	ccc	>8.0x
ccc			
ccc-			
cc			

Financial Flexibility

a-	Financial Discipline	a	Clear commitment to maintain a conservative policy with only modest deviations allowed.
bbb+	Liquidity	a	Very comfortable liquidity. Well-spread debt maturity schedule. Diversified sources of funding.
bbb	FFO Fixed Charge Cover	ccc	Below 1.25x. All/most funding sources subject to material execution risk.
bbb-	FX Exposure	a	Profitability potentially exposed to FX but efficient hedging. Debt and cash flows well matched.
bb+			

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.

Credit-Relevant ESG Derivation

Teollisuuden Voima Oyj (TVO) has 1 ESG rating driver and 11 ESG potential rating drivers

- \+ Social resistance to major projects that leads to delays and cost increases
- Emissions from operations
- Fuel use to generate energy
- Impact of waste from operations
- Plants' and networks' exposure to extreme weather
- Product affordability and access

Showing top 6 issues

			Overall ESG
key driver	0	issues	5
driver	1	issues	4
potential driver	11	issues	3
not a rating driver	2	issues	2
	0	issues	1

For further details on Credit-Relevant ESG scoring, see page 3.

FitchRatings

Teollisuuden Voima Oyj (TVO)

Corporates Ratings Navigator
EMEA Utilities

Credit-Relevant ESG Derivation

Teollisuuden Voima Oyj (TVO) has 1 ESG rating driver and 11 ESG potential rating drivers

- + Teollisuuden Voima Oyj (TVO) has exposure to social resistance which, in combination with other factors, impacts the rating.
- 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 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

			Overall ESG Scale
key driver	0	issues	5
driver	1	issues	4
potential driver	11	issues	3
not a rating driver	2	issues	2
	0	issues	1

Environmental (E)

General Issues	E Score	Sector-Specific Issues	Reference	E Scale
GHG Emissions & Air Quality	3	Emissions from operations	Asset Base and Operations; Profitability and Cash Flow	5
Energy Management	3	Fuel use to generate energy	Asset Base and Operations; Market Trends and Risks; Profitability and Cash Flow	4
Water & Wastewater Management	2	Water used by hydro plants or by other generation plants; effluent management	Asset Base and Operations; Market Trends and Risks; Profitability and Cash Flow	3
Waste & Hazardous Materials Management; Ecological Impacts	3	Impact of waste from operations	Asset Base and Operations; Profitability and Cash Flow	2
Exposure to Environmental Impacts	3	Plants' and networks' exposure to extreme weather	Asset Base and Operations; Profitability and Cash Flow	1

How to Read This Page
ESG scores range from 1 to 5 based on a 15-level color gradation. Red (5) is most relevant and green (1) is least relevant.

The Environmental (E), Social (S) and Governance (G) tables break out the individual components of the scale. The left-hand box shows the aggregate E, S, or G score. General Issues are relevant across all markets with Sector-Specific Issues unique to a particular industry group. Scores are assigned to each sector-specific issue. These scores signify the credit-relevance of the sector-specific issues to the issuing entity's overall credit rating. The Reference box highlights the factor(s) within which the corresponding ESG issues are captured in Fitch's credit analysis.

The Credit-Relevant ESG Derivation table shows the overall ESG score. This score signifies the credit relevance of combined E, S and G issues to the entity's credit rating. The three columns to the left of the overall ESG score summarize the issuing entity's sub-component ESG scores. The box on the far left identifies the [number of] general ESG issues that are drivers or potential drivers of the issuing entity's credit rating (corresponding with scores of 3, 4 or 5) and provides a brief explanation for the score.

Classification of ESG issues has been developed from Fitch's sector and sub-sector ratings criteria and the General Issues and the Sector-Specific Issues have been informed with SASB's Materiality Map.

Social (S)

General Issues	S Score	Sector-Specific Issues	Reference	S Scale
Human Rights, Community Relations, Access & Affordability	3	Product affordability and access	Profitability and Cash Flow; Regulation	5
Customer Welfare - Fair Messaging, Privacy & Data Security	3	Quality and safety of products and services; data security	Profitability and Cash Flow	4
Labor Relations & Practices	3	Impact of labor negotiations and employee (dis)satisfaction	Profitability and Cash Flow; Financial Structure; Financial Flexibility	3
Employee Wellbeing	2	Worker safety and accident prevention	Profitability and Cash Flow; Financial Structure; Financial Flexibility	2
Exposure to Social Impacts	4	Social resistance to major projects that leads to delays and cost increases	Asset Base and Operations; Profitability and Cash Flow	1

Governance (G)

General Issues	G Score	Sector-Specific Issues	Reference	G Scale
Management Strategy	3	Strategy development and implementation	Management and Corporate Governance	5
Governance Structure	3	Board independence and effectiveness; ownership concentration	Management and Corporate Governance	4
Group Structure	3	Complexity, transparency and related-party transactions	Management and Corporate Governance	3
Financial Transparency	3	Quality and timing of financial disclosure	Management and Corporate Governance	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

Please refer to the Mankala Operating Principle diagram on page 5.

Peer Financial Summary

	TVO BBB-/Stable	Fortum Oyj BBB/Rating Watch Negative	Statkraft AS BBB+/Stable
Asset concentration	High	Low	Low
Vertical integration	None	Low	Low
Generation mix, Nuclear/renewables[a]/fossil fuels (%)	99/0/1	30/29/41	0/87/13
2018 power generation (TWh)	14	75	62

[a] Including hydro
Source: Fitch Ratings, Fitch Solutions

Reconciliation of Key Financial Metrics

(EUR Millions, As reported)	31 Dec 2018
Income Statement Summary	
Operating EBITDA	43
+ Recurring Dividends Paid to Non-controlling Interest	0
+ Recurring Dividends Received from Associates	0
+ Additional Analyst Adjustment for Recurring I/S Minorities and Associates	0
= Operating EBITDA After Associates and Minorities (k)	**43**
+ Operating Lease Expense Treated as Capitalised (h)	**1**
= Operating EBITDAR after Associates and Minorities (j)	**44**
Debt & Cash Summary	
Total Debt with Equity Credit (l)	**4,783**
+ Lease-Equivalent Debt	5
+ Other Off-Balance-Sheet Debt	0
= Total Adjusted Debt with Equity Credit (a)	**4,788**
Readily Available Cash [Fitch-Defined]	221
+ Readily Available Marketable Securities [Fitch-Defined]	0
= Readily Available Cash & Equivalents (o)	**221**
Total Adjusted Net Debt (b)	**4,567**
Cash-Flow Summary	
Preferred Dividends (Paid) (f)	**0**
Interest Received	4
+ Interest (Paid) (d)	**-113**
= Net Finance Charge (e)	**-109**
Funds From Operations [FFO] (c)	**-55**
+ Change in Working Capital [Fitch-Defined]	-7
= Cash Flow from Operations [CFO] (n)	**-62**
Capital Expenditures (m)	**-511**
Multiple applied to Capitalised Leases	**8.0**
Gross Leverage	
Total Adjusted Debt / Op. EBITDAR* [x] (a/j)	**109.6**
FFO Adjusted Gross Leverage [x] (a/(c-e+h-f))	**86.6**
Total Adjusted Debt/(FFO - Net Finance Charge + Capitalised Leases - Pref. Div. Paid)	
Total Debt With Equity Credit / Op. EBITDA* [x] (l/k)	**111.0**
Net Leverage	
Total Adjusted Net Debt / Op. EBITDAR* [x] (b/j)	**104.5**
FFO Adjusted Net Leverage [x] (b/(c-e+h-f))	**82.6**
Total Adjusted Net Debt/(FFO - Net Finance Charge + Capitalised Leases - Pref. Div. Paid)	
Total Net Debt / (CFO - Capex) [x] ((l-o)/(n+m))	**-8.0**
Coverage	
Op. EBITDAR / (Interest Paid + Lease Expense)* [x] (j/-d+h)	**0.4**
Op. EBITDA / Interest Paid* [x] (k/(-d))	**0.4**
FFO Fixed Charge Cover [x] ((c+e+h-f)/(-d+h-f))	**0.5**
(FFO + Net Finance Charge + Capit. Leases - Pref. Div Paid) / (Gross Int. Paid + Capit. Leases - Pref. Div. Paid)	
FFO Gross Interest Coverage [x] ((c+e-f)/(-d-f))	**0.5**
(FFO + Net Finance Charge - Pref. Div Paid) / (Gross Int. Paid - Pref. Div. Paid)	

* EBITDA/R after Dividends to Associates and Minorities
Source: Fitch Ratings, Fitch Solutions, TVO

Fitch Adjustment Reconciliation

	Reported Values 31 Dec 18	Sum of Fitch Adjustments	- CORP - other	CORP - Lease Treatment	Other Adjustment	Adjusted Values
Income Statement Summary						
Revenue	350	0				350
Operating EBITDAR	43	1		1		44
Operating EBITDAR after Associates and Minorities	43	1		1		44
Operating Lease Expense	0	1		1	-0	1
Operating EBITDA	43	0				43
Operating EBITDA after Associates and Minorities	43	0				43
Operating EBIT	-12	0				-12
Debt & Cash Summary						
Total Debt With Equity Credit	4,776	7	7			4,783
Total Adjusted Debt With Equity Credit	4,776	12	7	5		4,788
Lease-Equivalent Debt	0	5		5		5
Other Off-Balance Sheet Debt	0	0				0
Readily Available Cash & Equivalents	221	0				221
Not Readily Available Cash & Equivalents	0	0				0
Cash-Flow Summary						
Preferred Dividends (Paid)	0	0				0
Interest Received	4	0				4
Interest (Paid)	-4	-110	-110			-113
Funds From Operations [FFO]	55	-110	-110			-55
Change in Working Capital [Fitch-Defined]	-7	0				-7
Cash Flow from Operations [CFO]	48	-110	-110			-62
Non-Operating/Non-Recurring Cash Flow	0	0				0
Capital (Expenditures)	-621	110	110		0	-511
Common Dividends (Paid)	-4	0				-4
Free Cash Flow [FCF]	-577	0				-577
Gross Leverage						
Total Adjusted Debt / Op. EBITDAR* [x]	110.8					109.6
FFO Adjusted Leverage [x]	87.3					86.6
Total Debt With Equity Credit / Op. EBITDA* [x]	110.8					111.0
Net Leverage						
Total Adjusted Net Debt / Op. EBITDAR* [x]	105.7					104.5
FFO Adjusted Net Leverage [x]	83.3					82.6
Total Net Debt / (CFO - Capex) [x]	-7.9					-8.0
Coverage						
Op. EBITDAR / (Interest Paid + Lease Expense)* [x]	12.0					0.4
Op. EBITDA / Interest Paid* [x]	12.0					0.4
FFO Fixed Charge Coverage [x]	15.2					0.5
FFO Interest Coverage [x]	15.2					0.5

*EBITDA/R after Dividends to Associates and Minorities

Source: Fitch Ratings, Fitch Solutions, TVO

Related Research & Applicable Criteria

Fitch Affirms Teollisuuden Voima Oyj at 'BBB-'; Outlook Stable (September 2019)
Corporate Rating Criteria (February 2019)
Corporates Notching and Recovery Ratings Criteria (October 2019)
Parent and Subsidiary Rating Linkage (September 2019)
Short-Term Ratings Criteria (May 2019)
Sector Navigators (March 2018)

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