



WELL-BEING WITH  
NUCLEAR ELECTRICITY



# Interim Report

January-September 2017

## Teollisuuden Voima Oyj's Interim Report January 1–September 30, 2017

Teollisuuden Voima's (TVO) electricity generation at Olkiluoto 1 and Olkiluoto 2 plant units continued safely and reliably through the first three quarters of 2017. At Olkiluoto 3 EPR, the installation works and process system tests continued. The cold functional testing of the plant unit was completed in early July. The excavation works of Posiva's final disposal facility proceeded.

### Operating environment

Electricity consumption in Finland in January–August was at the same level as in the corresponding period of the previous year.

The Government's bill to Parliament for amending the Nuclear Energy Act was issued in August. The act is to enter into force as from the beginning of 2018. Changes will be made to meet the requirements of the directives adopted under the EURATOM framework. In preparation for the Act, some change requirements related to national legislation, e.g. to decommissioning of nuclear facilities and nuclear waste management, have been examined. During the consultation phase in the spring, the draft proposal included changes to the safety arrangements, but they are no longer in the Government's proposal.

A set of legislative measures on energy, so called "Clean Energy for all Europeans" package published by the European Commission in November 2016 is currently being dealt with by the European Parliament and Council. From the nuclear industry's perspective, the most relevant legislative proposals of the Clean Energy package are energy efficiency directive, renewable energy directive, electricity directive, and regulation on the governance of the Energy Union. The legislative process is estimated to last until summer 2018.

### Financial performance

TVO operates on a cost-price principle (Mankala principle). TVO's goal is not to make profit or pay dividends. The shareholders are charged incurred costs on the price of electricity and thus in principle the profit/loss for the period under review is zero, unless specific circumstances dictate otherwise. The shareholders pay variable costs based on the volumes of energy supplied and fixed costs in proportion to their ownership, regardless of whether they have made any use of their share of the output or not. Because of the Company's operating principle, key indicators based on financial performance will not be presented.

The consolidated turnover for the period under review January 1–September 30, 2017 was EUR 240.3 (January 1–September 30, 2016: EUR 252.4 million). The amount of electricity delivered to shareholders was 9,818.4 (10,774.1) GWh. The lower delivery volume to shareholders was mainly due to prolonged maintenance and refurbishment work at Olkiluoto 2 plant unit and lower delivery volume of Meri-Pori coal-fired power plant compared to the previous year.

The consolidated profit/loss was EUR -3.2 (-9.6) million.

## Financing and liquidity

TVO's financial situation has developed as planned.

TVO's liabilities (non-current and current) at the end of the period under review, excluding the loan from the Finnish State Nuclear Waste Management Fund relented to shareholders, totaled EUR 4,495.0 (December 31, 2016: 4,521.8) million, of which EUR 579.3 (479.3) million were subordinated shareholder loans. During the period under review, TVO raised a total of EUR 100.0 (300.0) million in non-current liabilities. Repayments during the period under review amounted to EUR 175.9 (287.9) million.

In February 2016, TVO signed a new syndicated revolving credit facility of EUR 1.3 billion. The facility consists of two tranches: EUR 1,000 million 5-year tranche and EUR 300 million 3-year tranche. Both tranches included two one-year extension options, and in January 2017, both of them were extended by one year. In March, TVO signed bilateral revolving credit facilities totaling EUR 200 million and in April, bilateral credit facilities totaling EUR 80 million. Both syndicated and bilateral facilities are undrawn. In August, TVO raised EUR 100.0 million of subordinated shareholder loans. Shareholder loan commitments worth EUR 200.0 million are still undrawn.

In January, Japan Credit Rating Agency (JCR) affirmed TVO's long term rating at AA- and assessed the outlook as stable. In May, Fitch Ratings downgraded TVO's long term issuer rating from BBB to BBB-. The outlook Fitch Ratings assessed as stable. In addition, TVO has Standard & Poor's (S&P) credit rating BB+. TVO's outlook S&P has assessed as stable.

The OL3 EPR project's share of financing costs has been capitalized in the balance sheet.

TVO uses its right to borrow funds back from the Finnish State Nuclear Waste Management Fund within the framework of legal regulations. On June 30, 2017 the amount of the loan was EUR 655.5 (December 31, 2016: 1,027.1) million and it has been relented to the Company's A-series shareholders. On March 31, 2017 loan from the Finnish State Nuclear Waste Management Fund was decreased by EUR 371.5 (March 31, 2016: increase 18.0) million.

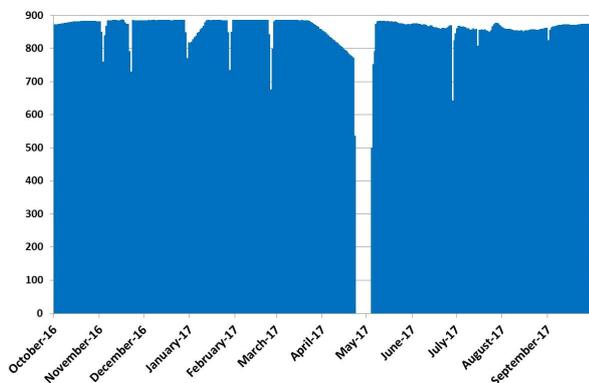
## Nuclear power

### Olkiluoto 1 and Olkiluoto 2

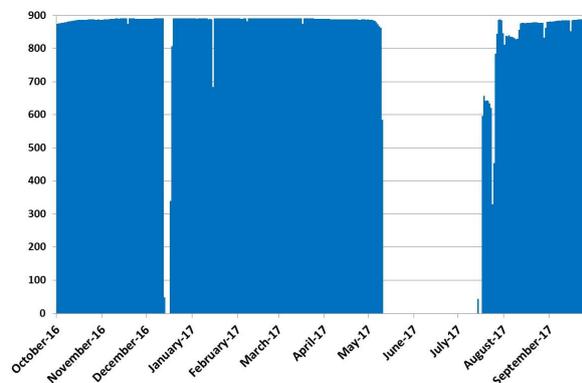
The electricity production of the Olkiluoto power plant units Olkiluoto 1 (OL1) and Olkiluoto 2 (OL2) during the period under review was 9,719 (10,550) GWh. The total load factor was 84.5 (91.4) %.

The plant units operated safely and reliably during the period under review. OL1's net production was 5,430 (5,112) GWh and the load factor 94.5 (88.6) %. OL2's net production was 4,289 (5,438) GWh and the load factor 74.5 (94.2) %.

Olkiluoto 1  
Average electrical power MW  
October 1, 2016–September 30, 2017



Olkiluoto 2  
Average electrical power MW  
October 1, 2016–September 30, 2017



On January 26, 2017 TVO filed with the Ministry of Economic Affairs and Employment an application for the renewal of the operating license of OL1 and OL2. The renewal of the operating license is applied for from the Government until the end of 2038. The 20-year operating license currently in force must be renewed by the end of 2018.

#### Annual outages

The 2017 annual outages of the Olkiluoto nuclear power plant were started on April 26 with a refueling outage at OL1. In addition to refueling, the OL1 outage also included annually recurring maintenance work. The outage lasted more than 10 days.

At OL2, the annual outage commenced on May 10 and was completed on July 14. The OL2 outage was prolonged due to large and complex maintenance and refurbishment work and took more than 64 days.

The major works carried out during the OL2 maintenance outage included replacement of the recirculation pumps and their frequency converters, renewal of the neutron flux calibration system, repair work of the reactor pressure vessel nozzles as well as preparation work for installing a new, ac-independent high and low pressure water supply system for reactor cooling, and modernization of the heating system contributing to residual heat removal. In addition, the turbine condenser was renewed and the high pressure feed water preheaters were replaced. Modifications for pumping the condensate forward were also made.

In addition to TVO's own personnel, up to 1,100 contractor employees took part in the 2017 annual outage works.

The refueling and maintenance outages carried out at the plant units on alternating years are designed to ensure that a good level of operability and production is maintained at the Olkiluoto nuclear power plant at all times.

## Olkiluoto 3 EPR

Olkiluoto 3 EPR (OL3 EPR), currently under construction, was procured as a fixed-price turnkey project from a consortium (Supplier) formed by AREVA GmbH, AREVA NP SAS and Siemens AG. As stipulated in the plant contract, the consortium companies have joint and several liability for the contractual obligations.

According to the schedule updated by the Supplier in September 2014, regular electricity production in the unit was to commence at the end of 2018. TVO received information on the Supplier's schedule rebaseline review for the OL3 EPR project completion after the reporting period in October 2017. According to the information the start of regular electricity production at the OL3 EPR will take place in May 2019. The Supplier's schedule review for the project completion had reached a phase where the Supplier confirmed the main milestones. According to the Supplier, the first connection to the grid takes place in December 2018, and the start of regular electricity production will take place in May 2019. According to the Supplier's plant ramp-up program the unit will produce 2–4 TWh of electricity, at varying power levels, during the period of time between the first connection to the grid and the start of regular electricity production.

In 2016, AREVA Group announced a restructuring of its business. The restructuring involves a transfer of the operations of AREVA NP to a company called NEW NP, the majority owner of which is going to be EDF. The transaction is aimed to be completed by the end of 2017, and thereafter more than half of the shares of New NP would be transferred to EDF. OL3 EPR project and the means required to complete the project, as well as certain other liabilities will remain within AREVA NP and AREVA GmbH, within the scope of AREVA SA. In January 2017, the EU Commission made a decision on the state aid, and in May 2017, the Commission accepted the merger. In September 2017, TVO filed an appeal to the General Court of the European Union of the Commission decision on French state aid to the AREVA Group. TVO requires that the restructuring of the French nuclear industry will not compromise the completion of the OL3 EPR project within the Supplier's schedule and that all liabilities of the plant contract are respected.

Most of the construction works for the plant unit have been completed. The installation of the electrical systems, the instrumentation and control system (I&C), and mechanical systems is still in progress. Simulator training for the operating personnel commenced in February 2017. In June, the cold functional testing to ensure the integrity of the primary circuit started, and it was completed in early July.

The first phase of the commissioning of the turbine plant is completed. Some of the systems and components will be kept in operation; the rest has been preserved by the Supplier in accordance with a separate plan. In January 2017, de-preservation was started at the turbine plant.

The workforce at the site at the end of the period under review was about 2,600 persons. Occupational safety at the site remained at a good level.

The pending disputes concerning the plant unit are described in the paragraph 'Pending Court Cases and Disputes'.

All realized costs of the OL3 EPR project that can be recognized in the cost of the asset have been entered as property, plant and equipment in the Group balance sheet.

## Nuclear fuel

During the period under review, nuclear fuel purchases amounted to EUR 46.4 (42.4) million and the amount consumed to EUR 38.3 (40.2) million.

The nuclear fuel and uranium stock carrying value on September 30, 2017 was EUR 239.1 (December 31, 2016: 231.0) million.

## Nuclear waste management

Under the Finnish Nuclear Energy Act, the Company is responsible for the measures related to nuclear waste management and the related costs.

The liabilities in the consolidated financial statement show a provision related to nuclear waste management liability of EUR 973.0 (December 31, 2016: 954.6) million, calculated according to the international IFRS accounting principles. A corresponding amount, under assets, represents the Company's share in the Finnish State Nuclear Waste Management Fund.

In order to cover the costs of nuclear waste management, TVO makes contributions to the Finnish State Nuclear Waste Management Fund. In December 2016, MEAE set TVO's liability for nuclear waste management at EUR 1,450.1 (1,369.4) million to the end of 2016 and the Company's funding target for 2017 at EUR 1,428.4 (1,369.4) million.

In March 2017, the Finnish State Nuclear Management Fund confirmed TVO's nuclear waste management fee for 2016 at EUR 49.1 (11.4) million, which was paid into the Fund on March 31, 2017 (March 31, 2016). The nuclear waste management fee for 2017 will be confirmed in March 2018.

## Final disposal of spent nuclear fuel

Posiva Oy is in charge of executing in Olkiluoto the final disposal of the spent nuclear fuel generated by its owners, TVO at its power plant in Olkiluoto and Fortum at its power plant in Loviisa.

The excavation works to prepare the ground for the encapsulation plant that were started in October 2016 are completed. The second phase of construction work in the ventilation building has also been completed, as well as fire compartmentation of the access ramp. During the summer, the reinforcement work of the personnel shaft was commenced with tests of work method.

The excavation work of the final disposal facility itself was launched in December 2016 and is progressing with excavations of the vehicle access tunnels leading to the final disposal facility. The excavation of the first shaft connections of the canister shaft have been completed. The injection work of the canister shaft in the final disposal facility is ongoing. The first excavation works of the final disposal facility are estimated to take two and a half years.

At the end of March, Posiva's owners submitted the Nuclear Waste Management Annual Report for 2016 to the Ministry of Economic Affairs and Employment (MEAE).

## Coal power

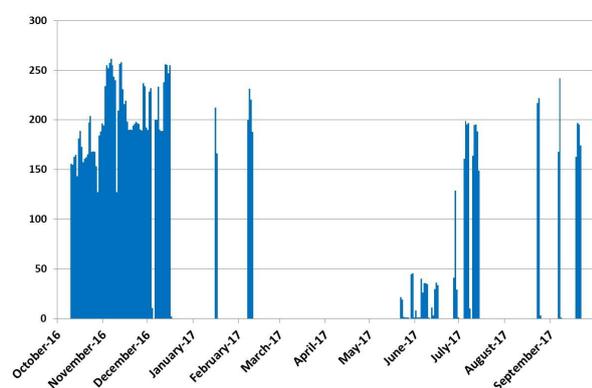
### Meri-Pori

The amount of electricity produced by TVO's share at the Meri-Pori coal-fired power plant on January 1–September 30, 2017 was 122.1 (242.2) GWh requiring 43.6 (86.6) thousand tons of coal and 107.9 (207.1) thousand tons of carbon dioxide emission rights.

### TVO's share of Meri-Pori's production

Average electrical power MW

October 1, 2016–September 30, 2017



## Acquisitions of tangible and intangible assets and shares

Investments during the period under review were EUR 225.3 (199.8) million. Investments of the parent company were EUR 223.0 (196.2) million, of which EUR 160.4 (157.7) million were allocated to the OL3 project.

At present, several plant modifications are planned and implemented in Olkiluoto to prepare the OL1 and OL2 plant units for the renewal of the operating license in 2018.

Carbon dioxide emission rights have been relinquished to the Energy Market authority worth EUR 2.7 (1.2) million. During the period under review, emission rights were acquired worth EUR 0.5 (1.1) million. The Company's need for carbon dioxide emission rights for the period under review are covered by acquired emission rights.

## Pending court cases and disputes

In 2012, TVO submitted a claim and defence in the International Chamber of Commerce (ICC) arbitration proceedings concerning the delay and the ensuing costs incurred at the Olkiluoto 3 EPR project. In July 2015, TVO updated its quantification estimate of its costs and losses to amount to approximately EUR 2.6 billion until December 2018, which, according to the schedule submitted by the OL3 Supplier in September 2014, was the estimated start of regular electricity production of OL3.

The proceedings were initiated in December 2008 by the OL3 Supplier. The Supplier's monetary claim, as last updated in April 2017, is now approximately EUR 3.59 billion in total. The sum is based on the Supplier's updated analysis of events that occurred through September 2014, with certain claims quantified to December 31, 2014. The sum includes penalty interest (calculated to June 30, 2017) and payments allegedly delayed by TVO under the plant contract amounting to a combined total of approximately EUR 1.58 billion, as well as approximately EUR 132 million in alleged loss of profit.

In November 2016, the ICC Tribunal made a final and binding partial award. In the partial award, the ICC Tribunal addressed the early period of the project (time schedule, licensing and licensability, and system design). This comprised many of the facts and matters that TVO relies upon in its main claims against the Supplier, as well as certain key matters that the Supplier relies upon in its claims against TVO. In doing so, the partial award finally resolved the great majority of these facts and matters in favour of TVO, and conversely rejected the great majority of the Supplier's contentions in this regard. The partial award did not take a position on the claimed monetary amounts.

The ICC Tribunal made another final and binding partial award in July 2017. This partial award addresses the preparation, submittal, review, and approval of design and licensing documents on the project. This comprises the key facts and matters that the supplier relies upon in its main claims against TVO, as well as certain matters that TVO relies upon in its claims against the Supplier. In doing so, the partial award has finally resolved the great majority of these facts and matters in favour of TVO. Conversely, it has also rejected the great majority of the Supplier's contentions in this regard. Although the partial award did not take a position on the claimed monetary amounts, it has conclusively rejected the analytical method used by the Supplier to support its principal monetary claims against TVO.

The arbitration proceeding is still going on with at least one partial award to come before the final award where the Tribunal will declare liabilities to pay compensation.

TVO considers its claims to be well-founded and has considered and found the claims of the Supplier to be without merit. The November 2016 partial award and the July 2017 partial award provide further material confirmation of this position, and reinforce TVO's view that the balance of the claims is in TVO's favour.

On September 29, 2016, TVO summoned Areva in an urgent interim proceeding before the President of the Commercial Court of Nanterre in order to obtain information about the restructuring of French nuclear industry and the potential consequences on the performance of the OL3 contract. Discussions between the parties enabled TVO to withdraw from this action on May 18, 2017. The continuation of discussions is expected to favour completion of the OL3 EPR project and the start-up of the plant.

In January 2017, the EU Commission made a decision on the French state aid to the AREVA Group. In September 2017, TVO filed an appeal to the General Court of the European Union of the Commission decision. TVO requires that the restructuring of the French nuclear industry will not compromise the completion of the OL3 EPR project within the Supplier's current schedule and that all liabilities of the plant contract are respected.

The Supplier consortium companies (AREVA GmbH, AREVA NP SAS and Siemens AG) are jointly and severally liable for the plant contract obligations.

TVO has not recorded any receivables or provisions on the basis of claims presented in the arbitration proceedings.

## Personnel

The total number of personnel in the Group at the end of the period under review was 794 (December 31, 2016: 747, September 30, 2016: 744). The number of permanent employees in the Group at the end of the period under review was 779 (December 31, 2016: 721, September 30, 2016: 720).

As the operational phase of OL3 EPR is approaching, the Engineering & Expert Services and Electricity Production organizations will be strengthened with dozens of technical experts and professionals. During the first part of the year, personnel training to support the Olkiluoto integration has been significantly increased, and the number of completed training days doubled compared to the corresponding period of the previous year.

The *Hyvinvointi ja tulokselliset tekijät 2020* (“*Wellbeing and profitability factors 2020*”) program developing the workplace culture was continued with the second stage development program focusing on measures related to the work of every individual, the immediate work community and the whole Group.

The simulator training for OL3 operating personnel and shift supervisors commenced in February with normal operation training and continued in June with operation training in disruption situations. OL3 plant knowledge training is given to the personnel in different ways in cooperation with the Supplier.

The collective agreements for different groups of personnel in the energy industry are in force in accordance with the so called framework agreement of labor confederations until January 31, 2018.

In June the Board of Directors appointed two new members to the Management Group: Pekka Frantti responsible for ensuring the financial interests and conditions of OL3 and Jaana Isotalo responsible for HR, training, and communications. The appointments entered into force as of August 1, 2017.

## Annual general meeting

TVO's Annual General Meeting on March 31, 2017 approved the financial statements for 2016, confirmed the consolidated income statement and balance sheet, and discharged the members of the Board of Directors and the President and CEO from liability.

Eight Board members were re-elected. Two new members, Esa Kaikkonen and Anders Renvall, were elected to the Board. At its organization meeting, the Board elected Lauri Virkkunen as

Chairman and Matti Ruotsala as Deputy Chairman. The Board also chose from among its members the members and chairmen of the Board Committees.

## Auditing

The Interim Report is unaudited.

## Risks and uncertainty factors in the near future

The major risks and uncertainty factors in TVO's operations have been presented in the 2016 Report of the Board of Directors.

During the period under review, no remarkable new risks connected with the Company's operation have arisen.

## Assessment of year-end developments

Electricity production is expected to continue as in previous years. The prerequisites for nuclear power production at Olkiluoto are good. Nuclear fuel availability is guaranteed by long-term agreements.

Realization of the OL3 EPR nuclear power plant project and preparing the plant unit for production will be continued. Testing of the process systems continue, and the next important milestone is the hot functional testing scheduled for the fall. TVO will continue to support the Supplier to complete the project.

The Meri-Pori coal-fired power plant capacity will be used in accordance with the former principles. Fortum's share of the Meri-Pori power plant has been accepted into the reserve capacity, and TVO is examining the use of its own share in the future.

The ongoing HVACE works in the Posiva ventilation building are estimated to be completed by the end of 2017. The reinforcement work of the personnel shaft is planned to be completed during early 2018.

## Events after the period under review

After the end of the interim report period in October 2017, TVO received information on the Supplier's schedule rebaseline review for the OL3 EPR project completion. According to the information the start of regular electricity production at the OL3 EPR will take place in May 2019. More information in the paragraph 'Olkiluoto 3 EPR'.

In October 2017, Standard & Poor's placed TVO's long-term corporate credit rating on CreditWatch Negative.

October 20, 2017

Teollisuuden Voima Oyj  
Board of Directors

## KEY FIGURES OF TVO GROUP

<b>TVO GROUP (IFRS) (M€)</b>	<b>1.1. - 30.9.2017</b>	<b>1.1. - 30.9.2016</b>	<b>1.1. - 31.12.2016</b>
Turnover	240	252	343
Profit/loss for the period	-3	-10	-11
Investments <sup>1)</sup>	225	200	265
Equity	1 674	1 573	1 589
Subordinated shareholder loans (hybrid equity) (included in the former) <sup>3)</sup>	579	479	479
Non-current and current interest-bearing liabilities (excluding loan from VYR) <sup>2)</sup>	4 014	3 757	4 179
Loan from VYR <sup>2)</sup>	656	1 027	1 027
Provision related to nuclear waste management	973	962	955
Balance sheet total	7 505	7 511	7 952
Equity ratio % <sup>4)</sup>	28,5	28,5	26,6
Average number of personnel	800	771	765

<sup>1)</sup> Acquisitions of property, plant and equipment, intangible assets and shares are based on gross investments.

<sup>2)</sup> The Finnish State Nuclear Waste Management Fund (VYR)

<sup>3)</sup> Subordinated loans

<sup>4)</sup> Equity ratio % = 100 x  $\frac{\text{equity}}{\text{balance sheet total} - \text{provision related to nuclear waste management} - \text{loan from the Finnish State Nuclear Waste Management Fund}}$

## KEY FIGURES OF TEOLLISUUDEN VOIMA OYJ

TEOLLISUUDEN VOIMA OYJ (FAS) (M€)	1.1. - 30.9.2017	1.1. - 30.9.2016	1.1. - 31.12.2016
Parent company's interim financial statement has been made in accordance with the Finnish Accounting Standards (FAS).			
Turnover	237	250	340
Profit/loss before appropriations	1	-3	3
Fuel costs	41	47	69
Nuclear waste management costs	49	59	73
Capital expenditure (depreciation and financial income and expenses)	38	38	52
Investments <sup>1)</sup>	223	196	262
Equity	858	858	858
Appropriations	184	176	183
Non-current and current interest-bearing liabilities (excluding loan from VYR and shareholder loans) <sup>2)</sup>	3 916	3 601	4 043
Loans from equity holders of the company <sup>3)</sup>	579	479	479
Loan from VYR <sup>2)</sup>	656	1 027	1 027
Balance sheet total	6 381	6 334	6 793
Equity ratio % <sup>4)</sup>	28,3	28,5	26,4
Average number of personnel	799	770	764

<sup>1)</sup> Acquisitions of tangible and intangible assets and shares are based on gross investments.

<sup>2)</sup> The Finnish State Nuclear Waste Management Fund (VYR)

<sup>3)</sup> Subordinated loans

<sup>4)</sup> Equity ratio % = 100 x 
$$\frac{\text{equity + appropriations + loans from equity holders of the company}}{\text{balance sheet total - loan from the Finnish State Nuclear Waste Management Fund}}$$

## ELECTRICITY DELIVERED TO EQUITY HOLDERS OF THE COMPANY (GWh)

	1.1. - 30.9.2017	1.1. - 30.9.2016	1.1. - 31.12.2016
Nuclear power	9 696	10 532	14 323
Coal-fired power	122	242	563
Total	9 818	10 774	14 886

TVO GROUP

**CONSOLIDATED FINANCIAL STATEMENT IN BRIEF AND NOTES****CONSOLIDATED INCOME STATEMENT**

<b>EUR 1 000</b>	<b>1.1. - 30.9.2017</b>	<b>1.1. - 30.9.2016</b>	<b>1.1. - 31.12.2016</b>
<b>Turnover</b>	<b>240 272</b>	<b>252 421</b>	<b>343 398</b>
Work performed for own purposes	9 267	7 130	10 718
Other income	8 314	8 213	11 155
Materials and services	-73 113	-110 662	-158 329
Personnel expenses	-44 054	-43 032	-59 507
Depreciation and impairment charges	-40 970	-40 266	-54 807
Other expenses	-72 819	-72 534	-91 608
<b>Operating profit/loss</b>	<b>26 897</b>	<b>1 270</b>	<b>1 020</b>
Finance income	9 408	11 303	16 189
Finance expenses	-40 032	-24 356	-30 042
Total finance income and expenses	-30 624	-13 053	-13 853
Share of the profit/loss of joint ventures	563	2 136	2 301
<b>Profit/loss before income tax</b>	<b>-3 164</b>	<b>-9 647</b>	<b>-10 532</b>
Income taxes	0	-1	-1
<b>Profit/loss for the period</b>	<b>-3 164</b>	<b>-9 648</b>	<b>-10 533</b>

**Profit/loss for the period attributable to:**

Equity holders of the company	-3 164	-9 648	-10 533
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**CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME**

<b>EUR 1 000</b>	<b>1.1. - 30.9.2017</b>	<b>1.1. - 30.9.2016</b>	<b>1.1. - 31.12.2016</b>
Profit/loss for the period	-3 164	-9 648	-10 533
Other comprehensive items			
Items that may be reclassified to profit or loss in subsequent periods:			
Changes in fair values of the available-for-sale investments	465	-385	-371
Cash flow hedges	-9 890	-25 996	-7 490
Total other comprehensive profit/loss items for the period	-9 425	-26 381	-7 861
<b>Total comprehensive profit/loss for the period</b>	<b>-12 589</b>	<b>-36 029</b>	<b>-18 394</b>

**Total comprehensive profit/loss for the period attributable to:**

Equity holders of the company	-12 589	-36 029	-18 394
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## TVO GROUP

**CONSOLIDATED STATEMENT OF FINANCIAL POSITION**

<b>EUR 1 000</b>	<b>30.9.2017</b>	<b>30.9.2016</b>	<b>31.12.2016</b>
<b>Assets</b>			
<b>Non-current assets</b>			
Property, plant and equipment	5 215 029	5 002 350	5 040 266
Intangible assets	4 809	6 473	7 758
Loans and other receivables	658 775	1 030 464	1 030 307
Investments in joint ventures	3 875	3 147	3 312
Investments in shares	1 934	1 934	1 934
Derivative financial instruments	42 170	91 922	95 795
Share in the Finnish State Nuclear Waste Management Fund	972 968	961 907	954 631
<b>Total non-current assets</b>	<b>6 899 560</b>	<b>7 098 197</b>	<b>7 134 003</b>
<b>Current assets</b>			
Inventories	255 770	247 707	249 424
Trade and other receivables	41 574	29 486	46 553
Derivative financial instruments	15 520	7 414	9 998
Fund units	100 479	0	200 014
Cash and cash equivalents	192 191	128 620	312 236
<b>Total current assets</b>	<b>605 534</b>	<b>413 227</b>	<b>818 225</b>
<b>Total assets</b>	<b>7 505 094</b>	<b>7 511 424</b>	<b>7 952 228</b>
<b>Equity and liabilities</b>			
<b>Capital and reserves attributable to equity holders of the company</b>			
Share capital	606 193	606 193	606 193
Share premium reserve and statutory reserve	242 383	242 383	242 383
Fair value and other reserves	-4 705	-13 800	4 720
Subordinated shareholder loans (hybrid equity)	579 300	479 300	479 300
Retained earnings	250 646	258 552	256 656
<b>Total equity</b>	<b>1 673 817</b>	<b>1 572 628</b>	<b>1 589 252</b>
<b>Liabilities</b>			
<b>Non-current liabilities</b>			
Provision related to nuclear waste management	972 968	961 907	954 631
Loan from the Finnish State Nuclear Waste Management Fund	655 518	1 027 050	1 027 050
Bonds	2 531 467	2 473 581	2 749 544
Other financial liabilities	974 185	737 925	1 053 700
Derivative financial instruments	24 624	79 649	58 547
<b>Total non-current liabilities</b>	<b>5 158 762</b>	<b>5 280 112</b>	<b>5 843 472</b>
<b>Current liabilities</b>			
Current financial liabilities	449 473	461 001	309 394
Derivative financial instruments	34 148	4 866	7 742
Advance payments received	41 611	44 458	41 609
Trade payables	21 444	28 540	17 005
Other current liabilities	125 839	119 819	143 754
<b>Total current liabilities</b>	<b>672 515</b>	<b>658 684</b>	<b>519 504</b>
<b>Total liabilities</b>	<b>5 831 277</b>	<b>5 938 796</b>	<b>6 362 976</b>
<b>Total equity and liabilities</b>	<b>7 505 094</b>	<b>7 511 424</b>	<b>7 952 228</b>

## TVO GROUP

**CONSOLIDATED STATEMENT OF CHANGES IN EQUITY**

<b>EUR 1 000</b>	<b>Share capital</b>	<b>Share premium reserve and statutory reserve</b>	<b>Fair value and other reserves</b>	<b>Subordinated shareholder loans (hybrid equity)</b>	<b>Retained earnings</b>	<b>Attributable to equity holders of the company</b>	<b>Total equity</b>
<b>Equity 1.1.2017</b>	<b>606 193</b>	<b>242 383</b>	<b>4 720</b>	<b>479 300</b>	<b>256 656</b>	<b>1 589 252</b>	<b>1 589 252</b>
Profit/loss for the period	0	0	0	0	-3 164	-3 164	-3 164
Other comprehensive items:							
Changes in fair values of the available-for-sale investments	0	0	465	0	0	465	465
Cash flow hedges	0	0	-9 890	0	0	-9 890	-9 890
Subordinated shareholder loans (hybrid equity)	0	0	0	100 000	0	100 000	100 000
Interest paid of subordinated shareholder loans (hybrid equity)	0	0	0	0	-2 846	-2 846	-2 846
<b>Equity 30.9.2017</b>	<b>606 193</b>	<b>242 383</b>	<b>-4 705</b>	<b>579 300</b>	<b>250 646</b>	<b>1 673 817</b>	<b>1 673 817</b>

<b>EUR 1 000</b>	<b>Share capital</b>	<b>Share premium reserve and statutory reserve</b>	<b>Fair value and other reserves</b>	<b>Subordinated shareholder loans (hybrid equity)</b>	<b>Retained earnings</b>	<b>Attributable to equity holders of the company</b>	<b>Total equity</b>
<b>Equity 1.1.2016</b>	<b>606 193</b>	<b>242 383</b>	<b>12 581</b>	<b>479 300</b>	<b>271 542</b>	<b>1 611 999</b>	<b>1 611 999</b>
Profit/loss for the period	0	0	0	0	-9 648	-9 648	-9 648
Other comprehensive items:							
Changes in fair values of the available-for-sale investments	0	0	-385	0	0	-385	-385
Cash flow hedges	0	0	-25 996	0	0	-25 996	-25 996
Subordinated shareholder loans (hybrid equity)	0	0	0	0	0	0	0
Interest paid of subordinated shareholder loans (hybrid equity)	0	0	0	0	-3 342	-3 342	-3 342
<b>Equity 30.9.2016</b>	<b>606 193</b>	<b>242 383</b>	<b>-13 800</b>	<b>479 300</b>	<b>258 552</b>	<b>1 572 628</b>	<b>1 572 628</b>

## TVO GROUP

**CONSOLIDATED STATEMENT OF CASH FLOWS**

<b>EUR 1 000</b>	<b>30.9.2017</b>	<b>30.9.2016</b>	<b>31.12.2016</b>
<b>Operating activities</b>			
Profit/loss for the period	-3 164	-9 648	-10 533
Adjustments:			
Income tax expenses	0	1	1
Finance income and expenses	30 624	13 053	13 853
Depreciation and impairment charges	40 970	40 266	54 807
Share of the profit/loss of joint ventures	-563	-2 136	-2 301
Other non-cash flow income and expenses	-28 246	-6 764	-408
Sales profit/loss of property, plant and equipment and shares	-255	0	-101
Change in working capital:			
Increase (-) or decrease (+) in non-interest-bearing receivables	3 254	-2 643	-18 435
Increase (-) or decrease (+) in inventories	-5 402	3 558	996
Increase (+) or decrease (-) in short-term non-interest-bearing liabilities	-15 074	62 964	63 974
Interest paid and other finance expenses	-1 433	-3 309	-2 724
Interest received	5 727	8 170	8 183
Taxes paid	0	-2	-1
<b>Cash flow from operating activities</b>	<b>26 438</b>	<b>103 510</b>	<b>107 311</b>
<b>Investing activities</b>			
Acquisition of property, plant and equipment	-216 376	-283 217	-343 479
Proceeds from sale of property, plant and equipment	2	0	203
Acquisition of intangible assets	-104	-364	-376
Acquisition of shares	-6	-2	-6
Proceeds from sale of shares	486	0	0
Loan receivables granted	371 532	-18 000	-18 135
Repayments of loans granted	0	0	276
<b>Cash flow from investing activities</b>	<b>155 534</b>	<b>-301 583</b>	<b>-361 517</b>
<b>Financing activities</b>			
Withdrawals of subordinated shareholder loans (hybrid equity)	100 000	0	0
Withdrawals of long-term loans	100 000	318 000	993 000
Repayment of long-term loans	-549 165	-289 645	-376 915
Investments in fund units	100 000	100 000	-100 000
Interest paid of subordinated shareholder loans (hybrid equity)	-1 904	-2 374	-4 448
Increase (-) or decrease (+) in interest-bearing receivables	0	0	13
Increase (+) or decrease (-) in current financial liabilities	-50 948	80 476	-65 444
<b>Cash flow from financing activities</b>	<b>-302 017</b>	<b>206 457</b>	<b>446 206</b>
<b>Change in cash and cash equivalents</b>	<b>-120 045</b>	<b>8 384</b>	<b>192 000</b>
Cash and cash equivalents at the beginning of period	312 236	120 236	120 236
<b>Cash and cash equivalents at the end of period</b>	<b>192 191</b>	<b>128 620</b>	<b>312 236</b>

TVO GROUP

## **NOTES TO THE INTERIM REPORT**

### **ACCOUNTING POLICIES**

The interim financial statements have been prepared in accordance with IAS 34 Interim Financial Reporting -standard. The accounting policies adopted are consistent with those of the Group's annual financial statements for the year ended on 31 December 2016. Additionally the changes according to the revised IAS/IFRS standards have been adopted.

### **MANAGEMENT'S CRITICAL ACCOUNTING ESTIMATES AND ASSUMPTIONS**

The preparation of Interim Report requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, income and expenses. The actual results may differ from these estimates. Significant assumptions made by the management in applying Group's accounting policies and crucial uncertainties were the same as the ones applied to the annual financial statements as for the year ended on 31 December 2016.

### **COMPARABILITY OF THE INCOME STATEMENT**

When comparing the consolidated income statement for the period under review to the consolidated income statement for 1.1.-30.9.2016 it has to be taken into account that the total cost estimate based on a new nuclear waste management technical plan and schedule was updated in June 2016. Updated cost estimate decreased the provision related to the nuclear waste management and finance expenses and increased the amount of materials and services. The overall effect on profit for the period was negative because the amount of the share in the Finnish State Nuclear Waste Management Fund and the provision related to nuclear waste management are equal and the difference is entered as an adjustment to materials and services. Moreover, the costs for spent fuel disposal are expensed during the operating time of the plant, based on fuel usage, and the impact of any changes to the plan and schedules will be recognized immediately in the income statement based on fuel used by the end of each accounting period. The negative profit impact of the updates and changes was mainly non-recurring. See note Assets and provisions related to nuclear waste management obligation.

## TVO GROUP

**SEGMENT REPORTING****Segment structure in TVO**

The Group has two reportable segments; nuclear power and coal power.

The electricity of the nuclear power segment is produced at two nuclear power plant units, Olkiluoto 1 and Olkiluoto 2 (OL1 and OL2). A new unit, Olkiluoto 3 (OL3), is under construction at Olkiluoto. The subsidiary of TVO, TVO Nuclear Services Oy (TVONS), of which operation is related to nuclear power, is also included in the nuclear power segment.

The electricity of coal-fired power segment is produced by TVO share at the Meri-Pori coal-fired power plant.

**Segment calculation principles**

TVO Group discloses in the segment information; turnover, profit/loss for the period and assets, which the chief operation decision maker follows.

The chief operation decision maker follows reporting according to Finnish Accounting Standards (FAS). Adjustments made under IFRS accounting policies are reported in group level.

**TURNOVER BY SEGMENTS**

<b>EUR 1 000</b>	<b>30.9.2017</b>	<b>30.9.2016</b>	<b>31.12.2016</b>
Nuclear power	229 851	235 800	315 076
Coal-fired power	10 421	16 621	28 322
<b>Total</b>	<b>240 272</b>	<b>252 421</b>	<b>343 398</b>

**PROFIT/LOSS FOR THE PERIOD BY SEGMENTS**

<b>EUR 1 000</b>	<b>30.9.2017</b>	<b>30.9.2016</b>	<b>31.12.2016</b>
Nuclear power	3 970	-1 908	5 927
Coal-fired power	-2 727	-1 334	-2 435
Profit/loss before appropriations (FAS)	1 243	-3 242	3 492
The impact of the nuclear waste management obligation	-6 049	-9 103	-17 143
The impact of financial instruments	169	0	-2
Other IFRS adjustments	910	561	819
Share of the profit/loss of joint ventures	563	2 136	2 301
<b>Total (IFRS)</b>	<b>-3 164</b>	<b>-9 648</b>	<b>-10 533</b>

**ASSETS BY SEGMENTS**

<b>EUR 1 000</b>	<b>30.9.2017</b>	<b>30.9.2016</b>	<b>31.12.2016</b>
Nuclear power	6 373 872	6 311 629	6 769 274
Coal-fired power	8 125	22 909	24 240
Total (FAS)	6 381 997	6 334 538	6 793 514
The impact of the nuclear waste management obligation	1 062 664	1 065 692	1 050 376
The impact of financial instruments	20 033	67 603	66 204
The impact of finance leases	55 750	57 459	56 577
Other IFRS adjustments	-18 214	-16 004	-16 744
Share of the profit/loss of joint ventures	2 864	2 136	2 301
<b>Total (IFRS)</b>	<b>7 505 094</b>	<b>7 511 424</b>	<b>7 952 228</b>

## TVO GROUP

**CHANGES IN PROPERTY, PLANT AND EQUIPMENT**

<b>EUR 1 000</b>	<b>30.9.2017</b>	<b>30.9.2016</b>	<b>31.12.2016</b>
<b>Opening net book amount</b>	<b>5 040 266</b>	<b>4 852 768</b>	<b>4 852 768</b>
Increase	224 607	198 330	262 336
Decrease	-9 969	-9 391	-26 671
Depreciation and impairment charges	-40 029	-39 357	-53 586
Accumulated depreciation from deduction	154	0	5 419
<b>Closing net book amount</b>	<b>5 215 029</b>	<b>5 002 350</b>	<b>5 040 266</b>

**CHANGES IN INTANGIBLE ASSETS**

<b>EUR 1 000</b>	<b>30.9.2017</b>	<b>30.9.2016</b>	<b>31.12.2016</b>
<b>Opening net book amount</b>	<b>7 758</b>	<b>7 128</b>	<b>7 128</b>
Increase	653	1 441	3 038
Decrease	-2 662	-1 187	-2 412
Depreciation and impairment charges	-940	-909	-1 221
Accumulated depreciation from deduction	0	0	1 225
<b>Closing net book amount</b>	<b>4 809</b>	<b>6 473</b>	<b>7 758</b>

## TVO GROUP

## FINANCIAL RISK MANAGEMENT

The objectives of financial risk management and finance policy are the same as those applied to the annual financial statement for the year ended 31 December 2016.

## DERIVATIVE FINANCIAL INSTRUMENTS

Nominal values of the derivative financial instruments \*

<b>EUR 1 000</b>	<b>30.9.2017</b>	<b>30.9.2016</b>	<b>31.12.2016</b>
Interest rate swaps	2 449 518	2 379 518	2 449 518
Forward foreign exchange contracts and swaps <sup>1)</sup>	145 877	145 988	150 467
Cross-currency swaps	696 181	856 898	856 911
<b>Total</b>	<b>3 291 576</b>	<b>3 382 404</b>	<b>3 456 897</b>

<sup>1)</sup> Forward contracts are mainly used for hedging fuel purchases against currency risk. The opposite forward contracts, which have been acquired to adjust these hedging amounts are netted in the table with each other, whereby the nominal describes the protected position.

Fair values of the derivative financial instruments *	30.9.2017			30.9.2016			31.12.2016		
	Positive	Negative	Total	Positive	Negative	Total	Positive	Negative	Total
<b>EUR 1 000</b>									
Interest rate swaps									
Cash flow hedges		-18 423	-18 423		-38 602	-38 602		-26 821	-26 821
Fair value hedges	21 563	-1 604	19 959	41 021	-7 075	33 946	29 490	-2 277	27 213
Non-hedges									
Forward foreign exchange contracts and swaps									
Cash flow hedges	13 987	-2 314	11 673	23 941	-171	23 770	32 508	-1 108	31 401
Non-hedges	857	-231	626	0	0	0	0	0	0
Cross-currency swaps									
Non-hedges	21 283	-36 200	-14 917	34 374	-38 666	-4 293	43 795	-36 085	7 710
<b>Total</b>	<b>57 690</b>	<b>-58 772</b>	<b>-1 082</b>	<b>99 336</b>	<b>-84 515</b>	<b>14 821</b>	<b>105 793</b>	<b>-66 289</b>	<b>39 503</b>

\* Cross-currency swaps related to Private Placements included.

## TVO GROUP DEBT STRUCTURE 30.9.2017

<b>EUR 1 000</b>	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Loans from financial institutes	29 206	94 413	44 413	244 413	410 213	30 413	30 413	0	0	0	883 483
Public bonds	53 763	228 519	558 267	131 955	500 000	153 000	500 000	20 000	500 000	163 000	2 808 504
Loans from other sources	0	88 446	0	79 114	0	56 117	0	0	0	0	223 677
Finance lease liabilities	0	1 718	1 726	1 735	1 744	1 753	1 761	1 770	43 544	0	55 751
Commercial papers	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>82 970</b>	<b>413 096</b>	<b>604 406</b>	<b>457 216</b>	<b>911 957</b>	<b>241 282</b>	<b>532 174</b>	<b>21 770</b>	<b>543 544</b>	<b>163 000</b>	<b>3 971 414</b>

## TVO GROUP

**MATURITY OF TVO GROUP'S CREDIT COMMITMENTS 30.9.2017**

<b>EUR 1 000</b>	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Syndicated revolving credit facility				300 000		1 000 000					1 300 000
Bilateral revolving credit facility				280 000							280 000
Bilateral bank loan			100 000								100 000
<b>Total</b>	<b>0</b>	<b>0</b>	<b>100 000</b>	<b>580 000</b>	<b>0</b>	<b>1 000 000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1 680 000</b>

Both syndicated and bilateral facilities are undrawn.

In addition, the Group has subordinated shareholder loan (hybrid equity) commitments totaling EUR 200 million.

The average interest rate risk on loans and derivatives on 30 September 2017 was 2.14 % (31 December 2016: 2.23%).

On 30 September 2017, TVO had cash equivalents amounting to EUR 192 million and fund unit investments EUR 100 million (31 December 2016: cash equivalents EUR 512 million and fund unit investments EUR 200 million).

Cash and cash equivalents consist of cash on hand, demand deposits and other current, liquid investments. Fund units consist of fund unit investments that are valued at fair value.

TVO Group

## DISCLOSURE OF FAIR VALUE MEASUREMENTS BY THE LEVEL OF FAIR VALUE MEASUREMENT HIERARCHY

EUR 1 000	30.9.2017			31.12.2016		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
<b>Financial assets at fair value</b>						
Derivative financial instruments at fair value through profit or loss		22 140			43 795	
Derivative financial instruments designated as cash flow hedges		13 987			32 508	
Derivative financial instruments designated as fair value hedges		21 563			29 490	
Available-for-sale investments						
Investments in listed companies	0			0		
Investments in other stocks and shares			0			0
<b>Total</b>	<b>0</b>	<b>57 690</b>	<b>0</b>	<b>0</b>	<b>105 793</b>	<b>0</b>
<b>Financial liabilities at fair value</b>						
Derivative financial instruments at fair value through profit or loss		36 431			36 085	
Derivative financial instruments designated as cash flow hedges		20 737			27 928	
Derivative financial instruments designated as fair value hedges		1 604			2 277	
<b>Total</b>	<b>0</b>	<b>58 772</b>	<b>0</b>	<b>0</b>	<b>66 289</b>	<b>0</b>

On 30 September 2017, TVO has also unquoted shares worth EUR 1,934 (2016:1,934) thousand that are measured at acquisition cost because their fair value cannot be reliably determined.

### Fair value estimation

The derivative financial instruments are initially recognized at fair value on the date a derivative contract is entered into and are subsequently measured at fair value. The fair values are determined using a variety of methods and financial valuation techniques, and assumptions are based on market quotations at the balance sheet date (Level 2). The fair value of the interest rate swaps is the present value of the estimated future cash flows. The forward contracts are measured using the market quotes at the closing date.

## BOOK VALUES OF FINANCIAL ASSETS AND LIABILITIES BY CATEGORIES

EUR 1 000	30.9.2017			31.12.2016		
	Financial liabilities measured at amortized cost	Book Value	Fair value	Financial liabilities measured at amortized cost	Book Value	Fair value
Non-current liabilities						
Other financial liabilities*	3 505 652	3 505 652	3 637 011	3 803 244	3 803 244	3 897 776

\*Bonds and EUR-fixed loans included

For other financial assets and liabilities than the ones presented in the table, the book value corresponds to their fair value.

## TVO GROUP

**ASSETS AND PROVISION RELATED TO NUCLEAR WASTE MANAGEMENT OBLIGATION**

The balance sheet contains assets and liabilities concerning the nuclear waste management obligation

<b>EUR 1 000</b>	<b>30.9.2017</b>	<b>30.9.2016</b>	<b>31.12.2016</b>
The carrying value of TVO's share in the Finnish State Nuclear Waste Management Fund (non-current assets)	972 968	961 907	954 631
Provision related to nuclear waste management (non-current liabilities)	972 968	961 907	954 631

**TVO's legal liability as stated in the Nuclear Energy Act and the Company's share in the Finnish State Nuclear Waste Management Fund**

<b>EUR 1 000</b>	<b>30.9.2017</b>	<b>30.9.2016</b>	<b>31.12.2016</b>
Liability for nuclear waste management according to the Nuclear Energy Act	1 450 100	1 369 400	1 450 100
Funding target obligation	1 428 400	1 369 400	1 428 400
TVO's share in the Finnish State Nuclear Waste Management Fund	1 428 400	1 369 400	1 379 700
Difference between the liability and TVO's share of the fund	21 700	0	70 400

The costs of decommissioning of the power plant and disposal of spent fuel are covered by the provision related to the nuclear waste management obligation. Cost estimates are updated annually and the technical plans and total cost estimates every third year.

When comparing the consolidated income statement for the period under review to the consolidated income statement for 1.1.-30.9.2016 it has to be taken into account that the total cost estimate based on a new nuclear waste management technical plan and schedule was updated in June 2016. The updated cost estimate in June 2016 decreased the provision related to the nuclear waste management and finance expenses and increased the amount of materials and services. The provision on balance sheet compared to the value at the end of the previous year was decreased by EUR 23.3 million. The effect of revised cost estimate to the consolidated income statement compared to the previous estimate were EUR 28.1 million increase in materials and services and EUR 24.0 million decrease in finance expenses.

The overall effect on profit for the period in June 2016 was negative because the amount of the share in the Finnish State Nuclear Waste Management Fund and the provision related to nuclear waste management are equal and the difference is entered as an adjustment to materials and services.

Moreover, the costs for spent fuel disposal are expensed during the operating time of the plant, based on fuel usage, and the impact of any changes to the plan and schedules will be recognized immediately in the income statement based on fuel used by the end of each accounting period.

TVO contributes funds to the Finnish State Nuclear Waste Management Fund to cover future obligations based on the legal liability calculated according to the Nuclear Energy Act. The difference between the funding obligation target decided by the Ministry of Economic Affairs and Employment (MEAE) and TVO's actual share of the Finnish State Nuclear Waste Management Fund is paid in Q1 each year. TVO's share in the Finnish State Nuclear Waste Management Fund on September 30, 2017 is EUR 1,428.4 million. The carrying amount in the balance sheet is EUR 973.0 million. The difference is due to the fact that IFRIC 5 limits the carrying amount of TVO's interest in the Finnish State Nuclear Waste Management Fund to the amount of the related liability since TVO does not have control over the Finnish State Nuclear Waste Management Fund.

The Ministry of Economic Affairs and Employment (MEAE) has adopted the procedure mentioned in the Nuclear Energy Act (section 40, subsection 3) and specified in the Government Decision 1339/1996 for a temporary reduction of the funding target when confirming Teollisuuden Voima Oyj's funding target obligation for 2017.

TVO has issued the State the shareholders' guarantees as security to cover the unexpected events as determined in the Nuclear Energy Act. The guarantees are presented in the note Obligations and other commitments.

TVO GROUP

**OBLIGATIONS AND OTHER COMMITMENTS****Pledged promissory notes and financial guarantees**

<b>EUR 1 000</b>	<b>30.9.2017</b>	<b>30.9.2016</b>	<b>31.12.2016</b>
Pledged promissory notes to the Finnish State Nuclear Waste Management Fund	655 518	1 027 050	1 027 050
Guarantees given by shareholders related to the nuclear waste management obligation	187 500	144 530	144 530

**Investment commitments**

Agreement-based commitments regarding the acquisition of property, plant and equipment:

<b>EUR 1 000</b>	<b>30.9.2017</b>	<b>30.9.2016</b>	<b>31.12.2016</b>
OL1 and OL2	104 000	139 000	129 000
OL3	711 000	696 000	735 000
<b>Total</b>	<b>815 000</b>	<b>835 000</b>	<b>864 000</b>

**Pending Court Cases and Disputes**

Pending Court Cases and Disputes are to be found on page 7.