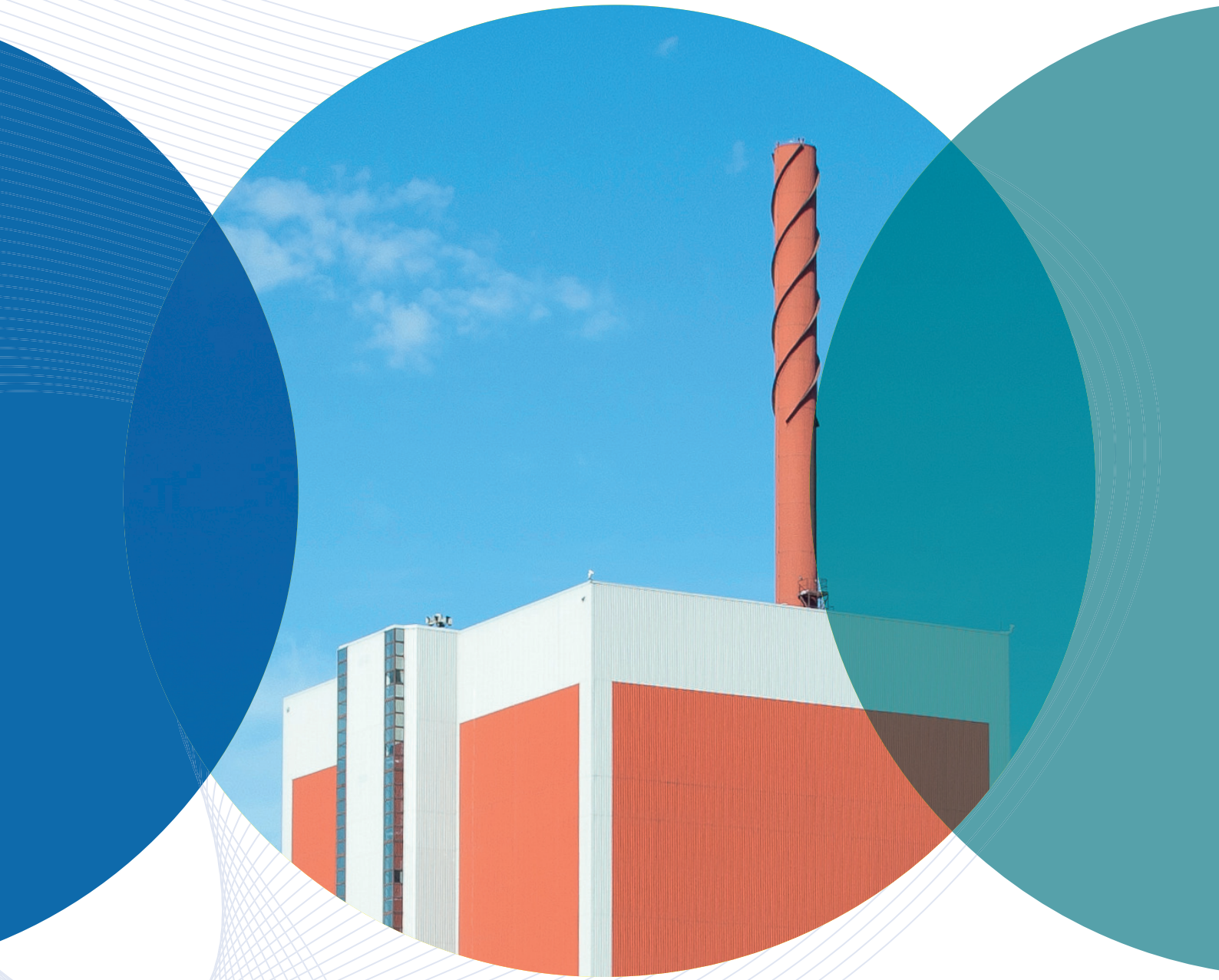
TVO

WELL-BEING WITH
NUCLEAR ELECTRICITY



Annual Report 2013

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Review by the CEO

2013 was a busy year for TVO people. The annual production output of the Olkiluoto nuclear power plant reached a record high. Work progressed in the Olkiluoto 3 site, and the Olkiluoto 4 project proceeded to an analysis of received tenders and negotiations with potential plant suppliers. We also expanded our internal development project targeted at strategic management, leadership competencies and the efficiency of operations.

A good production year

We can now enjoy the fruits of the determined work done to improve the technology, safety and lifecycle management of our nuclear power plant. Our success is proven by the fact that despite some unplanned outages, we reached the highest annual output of our history at 14.63 TWh of electricity, and an excellent availability, 95.1%. A good history does not, however, guarantee future success; the close monitoring of the condition of the plant units and their timely development are targets of continuous development.

Work at the Olkiluoto 3 construction site has progressed to an advanced state, but there is still plenty of work to do. Our challenges are increased by the inability of the plant supplier to provide us with a reliable schedule for the completion of the project. The plant unit will be technologically advanced, and its safety features in particular will set an example to all industrial production. We continue to do everything in our power and give our support to the supplier of the turnkey plant delivery to launch the production operation of OL3 as efficiently as possible, with no further delay.

Winds of change in the energy industry

The position of nuclear power in the electricity market is challenging. The market situation favors renewable energy sources that receive government subsidies, as well as cheap fossil fuels such as coal.

The Intergovernmental Panel on Climate Change (IPCC) published new alarming research results on the progress of climate change. The energy sector causes nearly 80% of all greenhouse gas emissions, which means that decisions that have an impact on the field are very significant for the mitigation of climate change. The lifecycle emissions of nuclear power are at the same low level as those of hydropower, wind power or solar power. The steady production of nuclear power is the only plausible path to a low-carbon future.

Nuclear power meets the conditions of sustainable development; therefore, it has an important role in Finland's energy and climate strategy and clean energy program, and capacity increases are justified. Nuclear power investments are large and their repayment periods long. The planned service life of the new plant unit is 60 years. It is important that no short-sighted political decisions are made that would disturb the stability and predictability of the operating environment or the efficiency of the markets.

Responsibility builds trust

Production of nuclear energy is always based on the people's trust and political decision-making. We build trust through open responsibility. The core of our operations consists of safe and economical production and nuclear waste management operations, energizing leadership and competent personnel, and transparent and proactive interaction and communications.

We listen to the worries of the general public through many channels, and regularly measure the development of the acceptability of nuclear power and the stakeholder groups' opinions of our operations. According to an attitude Energy survey carried out in 2013, 56% of the respondents felt that Finland's experiences of nuclear power are positive, and a clear majority of people believe that nuclear power has an important role in reducing climate emissions and improving Finland's competitive advantages.

Competitive advantage through improved leadership and procedures

The two central principles of our operations, the uncompromising safety culture and continuous improvement, apply not only to the technical reliability of the plant but also to leadership and the way in which our working community functions. Our internal development project progressed in 2013, and an increasing number of TVO people participated in strategic planning and the development of operations.

According to our revised mission launched in 2013, our objective is to produce safe, economical and climate-friendly nuclear power to our shareholders. Through our shareholders, Finnish industrial companies and energy utilities, we create well-being all over Finland.

In 2013, we again produced approximately one-sixth of all the electricity consumed in Finland. We are an important operator in society, and we must ensure that we possess the resources and functions required by our mission also in the future, and that our work is always guided by a unified, efficiency-oriented leadership and operating culture. While carrying out the OL3 project and developing the existing plant units, we also continue the development of leadership, competencies, responsibility and efficiency in 2014. Our objective is to maintain the safety and top availability of the Olkiluoto nuclear power plant in a cost-efficient way that helps us satisfy our shareholders' needs.

Jarmo Tanhua
President and CEO

TVO: an overview

Teollisuuden Voima Oyj (TVO) contributes to the maintenance of sustainable development and the well-being of Finnish people by providing shareholders with cost price electricity produced in a safe, economical, and climate-friendly manner at the Olkiluoto nuclear power plant in Eurajoki.

Established in 1969, TVO is a limited liability company that provides electricity for its owners at cost price. TVO operates two nuclear power plant units in Olkiluoto, Eurajoki, since 35 years. Olkiluoto 1 and 2 were built to satisfy the increasing need for electricity of Finnish energy-intensive industries. During the past decades, TVO has developed from an industrial resource to a base load producer that benefits the entire society. The two Olkiluoto plant units currently produce approximately one sixth of Finland's total electricity output. Approximately half of the electricity produced by TVO is spent by the industry. The other half is used at homes, in service production and in agriculture via power utilities.

After their early years, OL1 and OL2, which were commissioned in 1978 and 1980 respectively, have remained among the most reliable nuclear power plant units in the world. On Olkiluoto Island, TVO has all the competence, structures, functions, and waste management required for the safe production and construction of nuclear electricity. TVO's nuclear power expertise and operating experience attract worldwide interest.

During their 35 years of operation, the Olkiluoto plant units have produced a total of 424 billion kWh of climate-friendly electricity. Every year, the nuclear power produced at Olkiluoto helps prevent approximately 12 million tonnes of carbon dioxide emissions in Finland compared to producing the same amount of electricity using coal. The saved amount corresponds to the total annual CO2 emissions of all road traffic in Finland.

The Olkiluoto site also features a 1 MW wind power plant, as well as a 100 MW gas turbine reserve power plant built as a joint project of Fingrid Oyj and TVO. TVO's share of the power produced by the Meri-Pori coal-fired power plant is 45%. In addition to Olkiluoto, TVO has offices in Helsinki, Brussels, and Rauma and Pori.

Through its direct owners, TVO's nuclear electricity brings well-being to 135 municipalities. These municipalities are shareholders in more than 50 energy companies that serve as a route for distributing electricity from Olkiluoto throughout Finland.

Group structure

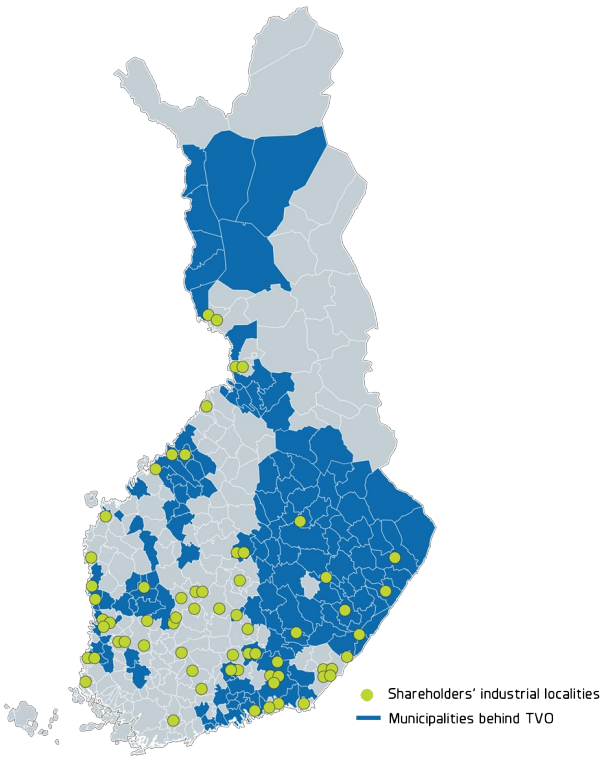
TVO's majority shareholder is Pohjolan Voima Oy with its share of 58.5% of the TVO stock. Teollisuuden Voima Oyj is a joint venture of Pohjolan Voima and several other companies.

TVO Nuclear Services Oy (TVONS) is a subsidiary fully owned by TVO. Integration of TVO's fully owned subsidiaries Olkiluodon Vesi Oy and Perusvoima Oy to the mother company was entered into the trade register on December 31, 2013. TVO and Fortum also have a joint venture, Posiva Oy, of which TVO owns 60%.

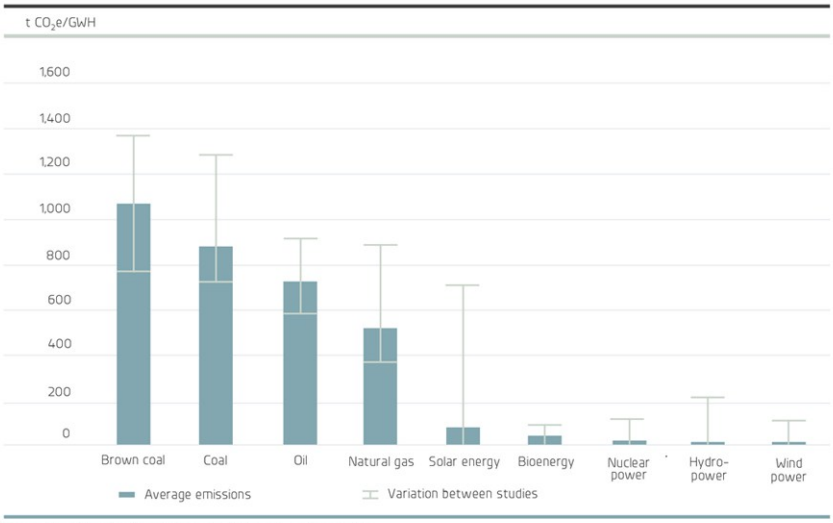
Further information: TVO in brief, TVO's history timeline, Company information and TVO's location.

TVO'S SHAREHOLDERS AND THEIR HOLDINGS, DECEMBER 31, 2013

	A Series	B Series	C Series	Total
EPV Energia Oy	6.5	6.6	6.5	6.5
Fortum Power and Heat Oy	26.6	25.0	26.6	25.8
Karhu Voima Oy	0.1	0.1	0.1	0.1
Kemira Oyj	1.9	–	1.9	1.0
Oy Mankala Ab	8.1	8.1	8.1	8.1
Pohjolan Voima Oy	56.8	60.2	56.8	58.5
	100%	100%	100%	100%



LIFECYCLE GREENHOUSE GAS EMISSIONS



Source: World Nuclear Association, compilation of various studies

OLKILUOTO NUCLEAR POWER PLANT'S ENVIRONMENTAL BALANCE SHEET 2013 (2012)

Emissions into the air		Allowed annual emissions
Noble gases (TBq)	0.22 (Kr-87 equivalent) (1,21)	(9.420)
Iodine (TBq)	0.0000907 (I-131 equivalent) (0,000017)	(0.103)
Aerosols (TBq)	0.000020 (0,000016)	
Carbon-14 (TBq)	0.80 (0,88)	
Tritium (TBq)	0.62 (0,36)	
CO_2 (t)	483 (384)	
NOx (t)	0.63 (0,52)	
SOx (t)	0.0017 (0,001)	
Particles (t)	0.44 (0,36)	

URANIUM FUEL (t)	36.8 (37.6)
Intermediate agents:	
- Oils (m³)	303 (238)
- NaClO (15 %) (m³)	62.6 (67)
- Other chemicals (t)	139.3 (115)
- Ion exchange resins (t)	10.1 (10.8)
- Water treatment chemicals (t)	108.3 (94)
Raw water (tap and process water) (m³)	274,549 (211,312)
Cooling water (million m³)	2,288 (2,267)

ELECTRICITY (TWh)	14,6 (14,5)		
Municipal waste	OL1 and OL2	OL3*	Total
- Recyclable waste (t)	586 (539)	1,231 (1 571)	1,817 (2,110)
- Landfill waste (t)	101 (108)	210 (296)	311 (404)
- Hazardous waste (t)	137 (109)	103 (73)	240 (182)

*construction phase

Radioactive waste	
- Low level waste (m³)	0 (172)
- Intermediate level waste (m³)	42 (20)
- Spent nuclear fuel (t)	35.7 (35.8)

Emissions into the water		Allowed annual emissions
Cooling water (million m³)	2,288 (2,267)	
Thermal load to the sea (TWh)	27.1 (26.8)	
Fission and activation products (TBq)	0.00009 (0.002)	(0.296)
Tritium (TBq)	1.46 (1.31)	(18.3)
Phosphorus (kg)	10 (31)	
Nitrogen (kg)	4,380 (5,475)	
BOD_{7ATU} (kg)	548 (985)	

Strategic objectives

TVO's strategy is based on its mission, vision and business model, and the key indicators that steer the company's operations. TVO's values and Code of Conduct, together with an uncompromising safety culture, create a solid basis for responsible day-to-day operations.

TVO is aware of its responsibility in creating social well-being through the generation of climate-friendly, safe, and reasonably priced electricity. TVO creates well-being, employment, and income by producing cost-price electricity for its shareholders, Finnish industry and energy companies with 135 municipalities behind them. The Olkiluoto power plant provides Finland with competitively priced and stable domestic nuclear power, produced in a responsible, efficient and environmentally friendly manner.

TVO believes in voluntary corporate social responsibility that supports the company's business operations and is based on its values and targets as well as legislation and stakeholder expectations. TVO's corporate social responsibility policy and its practical implementation form the core of the company's social responsibility effort. Corporate social responsibility is at the core of TVO's strategy and is an integral part of day-to-day operations. As a value behind the work of every TVO employee, it means uncompromising quality, adherence to strict safety requirements, and compliance with the rules and regulations that have been agreed and are in force. TVO's personnel are committed to an uncompromising safety culture, valued by us all.

The President and CEO, with the approval of the Management Group, is responsible for the strategic objectives and planning of TVO's corporate social responsibility. In the Management Group, the Senior Vice President responsible for corporate relations and the Corporate Social Responsibility Manager present issues related to the development, monitoring and reporting of corporate social responsibility. In the development and implementation of corporate social responsibility, the management of TVO is assisted by the Corporate Social Responsibility Group, which was reappointed in May 2013. The group acts as an expert, advisor, and information forwarder in matters concerning corporate social responsibility. The group monitors and develops the company's corporate social responsibility policy and other related matters and reports and communicates these to the management, personnel, and stakeholders. The President and CEO appoints the members, chairperson, and secretary to the group. The members of the group hold various positions within the organization. The Corporate Social Responsibility Group, and the corporate social responsibility development group that acts within it, convened six times during the latter part of 2013.

During the year under review, the focus was on listening to the views of stakeholders through an extensive stakeholder survey. The survey was one of the prerequisites for updating TVO's responsibility materiality assessment. Social responsibility was discussed at the same time in accordance with the company's new strategy. It will still be based on stable, economic and safe production of electricity, safe nuclear waste management, and uncompromising safety culture with attention to energizing leadership, competent personnel, consideration of the climate and environment throughout the lifecycle, and transparent and proactive interaction and communications. In the final part of the year, focal themes of corporate social responsibility were derived from the company's new mission and strategic vision goals. These building blocks of responsibility were compiled into a responsibility program to comply with TVO's strategy. The program summarizes the responsible actions inherent to the planning and practical aspects of the operations of various units, and includes the goals, measures and indicators that concern TVO's impact on society and on the Group itself. The responsibility program was fine-tuned by the Corporate Social Responsibility Group during the fall, approved by the Management Group in December, and adopted at the beginning of 2014.

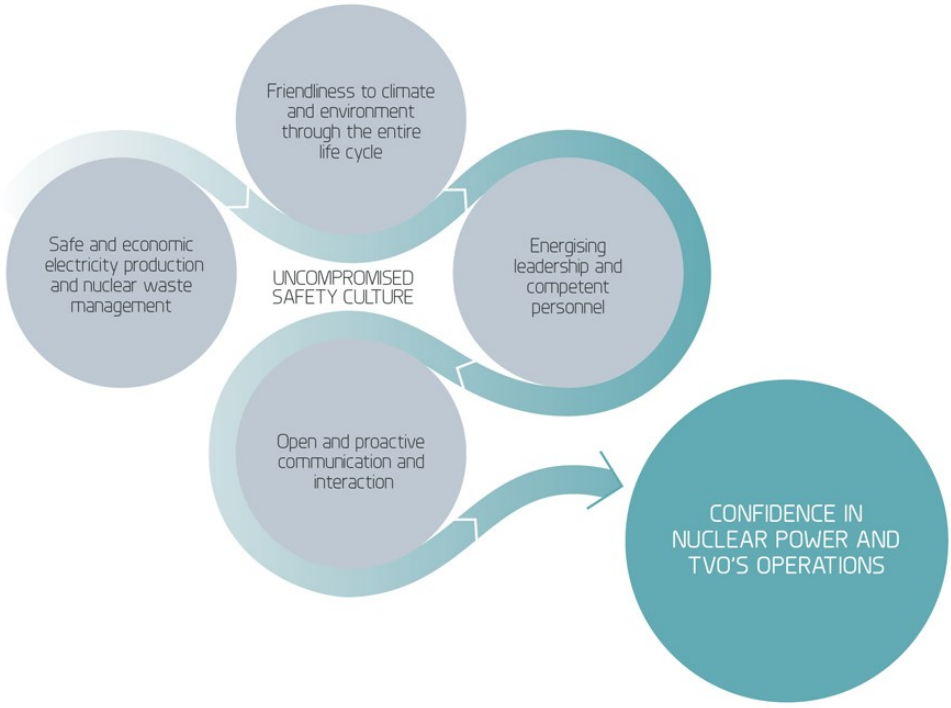
Management, planning, and development projects continued

Projects focusing on the management, planning and development of operations continued in 2013. They aim at developing the company's strategy and business model as well as the definition, follow-up and measurement of human resource management objectives. 2013 was the year for preparing new vision objectives, business model and scorecards with indicators, all based on the new strategy. These will be followed up in accordance with the annual management schedule.

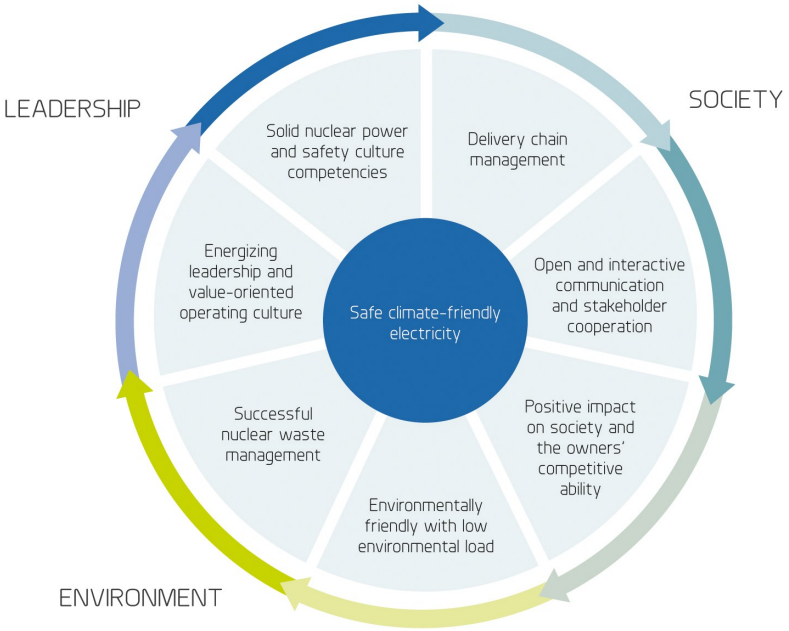
The resource planning project aims to create shared practices for the entire company and to increase efficiency and savings through unified procedures. Shared procedures are also expected to help build a clear and fair management system. TVO people from various branches of the organization have participated in the process.

The many development measures implemented based on the company-wide personnel survey also supported the objectives of the resource planning development project. Various working groups consisting, in varying setups, of the whole personnel, supervisors, personnel representatives, new TVO employees, or the Management Group, participated in the development of improvements.

Further information: Operating culture, corporate social responsibility, principles and management, responsibility management.



RESPONSIBILITY PROGRAM



ANNUAL MANAGEMENT SCHEDULE

Main events

Fall 2013 marked the 35th anniversary of the production start-up of the Olkiluoto nuclear power plant. Olkiluoto 1 (OL1) was synchronized to the Finnish national grid on September 2, 1978. After the first years of operation, the load factor of OL1 and Olkiluoto 2 (OL2), which was commissioned in 1980, has remained constantly at a high international level. On November 1, 2013, OL2 achieved the milestone of 200 terawatt hours (billion kilowatt-hours) in commercial production.

Thanks to the modernization and safety investments, the net electrical output of the plant units has increased from 660 MW to 880 MW, and the safety and energy efficiency of the production have considerably improved. The principle is to keep the plant units as good as new at all times.

The Olkiluoto NPP achieved in 2013 the highest ever production result in its history, 14.63 TWh of electricity, despite a few unplanned outages. For OL1, the production volume in 2013 was the highest ever, 7.47 TWh. The combined load factor of the plant units was 95.1 per cent. Together with the share of the Meri-Pori coal-fired power plant TVO's production was 15.36 TWh. The electricity produced in Olkiluoto accounted for about 17 per cent of all electricity consumed in Finland.

The annual outages of the plant units were executed on May 12–June 14, 2013.

The civil construction works of the Olkiluoto 3 (OL3) plant unit are mainly completed, and the major components of the reactor plant have been installed. Planning, documentation and licensing of the reactor plant automation are not yet completed.

Based on the progress reports received from the AREVA-Siemens-Consortium (Supplier), who is constructing the plant unit as a fixed-price turnkey project, TVO announced in February 2013 that the Company will prepare for the possibility that the start of the regular electricity production of the OL3 plant unit may be postponed until year 2016. After the reporting period, in February 2014, TVO announced that it had not received the requested overall schedule update for the OL3 project from the Supplier. Therefore TVO does not provide an estimate of the start-up time of the plant unit at the moment. TVO has required the Supplier, who is in charge of the project schedule, to update the overall schedule and to provide a clarification of the measures needed to ensure proper progress to complete the plant unit. Information about the start-up date of electricity production of the OL3 plant unit is pending the finalization of the Supplier's schedule clarification.

The Supplier updated in October its claim to the ICC arbitration proceedings concerning the delay of the project. The updated quantification until the end of June 2011 is in total EUR 2.7 billion. TVO has considered and found the earlier claim by the Supplier to be without merit, scrutinizes the updated claim and will respond to it in due course.

In December, the Supplier informed that it is planning to focus efforts on the OL3 site on urgent design tasks that are the most critical to the project. At the same time, the Supplier also informed that it is planning to reduce the number of subcontractors and work staff at the construction site.

TVO received in January bids related to the new Olkiluoto 4 (OL4) NPP to be constructed in Olkiluoto. Bids were received from all the plant supplier candidates involved in the bidding process. Engineering with the potential plant suppliers to clarify licensability and constructability of the plant alternatives continued. According to the decision-in-principle, the construction license application must be submitted to the Government by mid-2015.

TVO signed in May an agreement with Wärtsilä Finland Oy for the delivery of emergency diesel generators and associated auxiliary systems to Olkiluoto. The replacement project of the emergency diesel generators is the largest individual plant modification project ever realized in Olkiluoto. The total investment of the replacement project is more than EUR 100 million. The project is estimated to continue until 2020.

The Board of Directors of TVO proposed in February to the Company's B-series shareholders a new EUR 300 million shareholder loan commitment. By means of the proposed shareholder loan, the Company will prepare to maintain a sufficient level of equity for the OL3 project and cope with possible additional delays and costs in finalizing the project. In June, all the Company's B-series shareholders undersigned the loan agreement in accordance with the proposal made by the Board of Directors.

Fitch Ratings (Fitch) downgraded in May TVO's long-term issuer default rating (IDR) and senior unsecured rating from BBB+ to BBB and short-term rating from F2 to F3. The outlook Fitch assessed as being stable.

Operating environment

At the end of 2013, a total of 438 nuclear power plant units were in operation in 30 different countries. These covered approximately 12% of the global electricity demand. A total of 71 new reactors are currently under construction.

In the next few years, new nuclear power plant projects are expected[1)] to be launched in Europe and in China, India, South Korea, the United States and Russia, among others. The global nuclear power capacity is estimated to grow from the current 400 GW to 580 GW by 2035.

Nearly 28% of all electricity consumed within the European Union is generated at nuclear power plants; there are 131 reactors operational in 15[2)] member states, with a combined total capacity of 132 GW. Four[3)] reactors are currently under construction in the European Union: one in Finland, one in France and two in Slovakia. Many countries also plan extending the service life of existing nuclear power plants.

Based on the outcome of the nuclear safety assessments recently carried out in the EU, the Commission has proposed a review of the Nuclear Safety Directive. The proposal is currently being discussed by the Council and the European Parliament. At the same time, national action plans following the stress tests are being implemented by member states. The European Commission organized a nuclear liability consultation in fall 2013 with the purpose of preparing for the harmonization of nuclear liability arrangements within the EU.

The revised regulatory guides on nuclear safety compiled by the Finnish Radiation and Nuclear Safety Authority (STUK) came into effect in December 2013. The new regulations will be applied to new nuclear facilities with no modifications. Separate decisions will be given on the necessary modification of the regulations for existing plant units as well as those under construction.

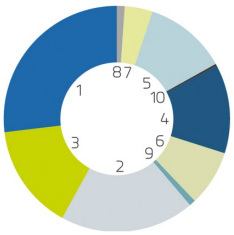
Nuclear power – a key element in Finnish energy policy

In December, the Finnish Parliament approved the updated energy and climate strategy prepared by the Government headed by Prime Minister Jyrki Katainen. The strategy includes a clean energy program which aims to reduce greenhouse emissions, create jobs, decrease the volume of imported energy and accelerate the development and utilization of domestic clean energy technology. Investments in nuclear power play a key role in the work towards these objectives.

The new power plant tax act was ratified by the Finnish Parliament in December. The act will enter into force at the time prescribed by a government decree. The new law enables the annual collection of an approximate total of EUR 50 million in taxes from nuclear power, hydropower and wind power plants that have been commissioned before 2004. More than one fifth of this sum would be paid by nuclear power plants starting from 2014. The law is subject to the approval of the European Commission.

ELECTRICITY SUPPLY BY ENERGY SOURCE 2013

TOTAL 83,9 TWH

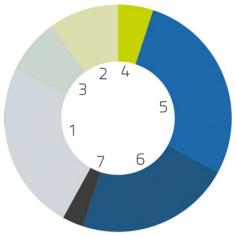


1 Nuclear energy 27.1%
2 Net import 18.7%
3 Hydropower 15.2%
4 Biomass 12.8%
5 Coal 11.8%
6 Natural gas 8.1%
7 Peat 4%
8 Waste 1.1%
9 Wind 0.9%
10 Oil 0.3%

Source: Finnish Energy Industries

TOTAL ELECTRICITY CONSUMPTION IN FINLAND 2013

TOTAL 83,9 TWH



Industries 47%
1 Forest industry 24%
2 Metal industry 10%
3 Chemical industry 8%
4 Other industries 5%

Other consumption 50%
5 Housing and agriculture 28%
6 Services and construction 22%

7 Losses 3%

Source: Finnish Energy Industries

Minor decrease in total Finnish energy consumption

In 2013, the consumption of electricity in Finland totaled 83.9 TWh. Compared to the previous year, consumption decreased by 1.5%. The share of imported electricity remained high at one fifth of total consumption. The share of domestic hydropower decreased and that of coal increased. The production of nuclear energy amounted to 22.7 TWh, which accounted for 27% of consumption.

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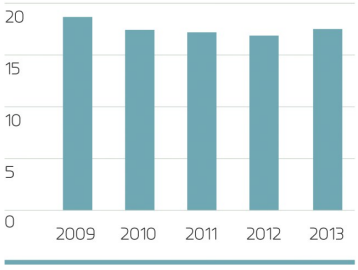
1) IEA World Energy Outlook 2013
2) 15th is Croatia which owns half of the Krsko NPP located in Slovenia
3) Finland 1, France 1, and Slovakia 2

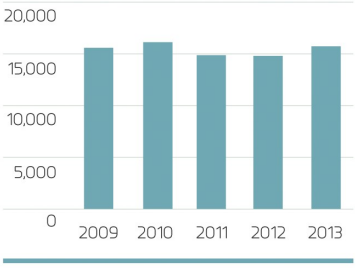
TVO'S DELIVERY SHARE OF THE ELECTRICITY USED IN FINLAND

%



ELECTRICITY DELIVERED TO SHAREHOLDERS

GWH



Corporate Social Responsibility Report 2013

Responsible Leadership

TVO believes in voluntary corporate social responsibility that supports business operations and is based on TVO's values, targets, and corporate social responsibility policy as well as legislation and stakeholder expectations.

The Responsible leadership theme of the Corporate Social Responsibility 2013 report includes a review by the CEO, a description of the operating environment, strategic objectives, a description of good corporate governance, risk management, and the corporate management system, as well as an account of company-level policies and the company's code of conduct.

Review by the CEO

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Jarmo Tanhua
President and CEO

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At the end of 2013, a total of 438 nuclear power plant units were in operation in 30 different countries. These covered approximately 12% of the global electricity demand. A total of 71 new reactors are currently under construction. In the next few years, new nuclear power plant projects are expected[1)] to be launched in Europe and in China, India, South Korea, the United States and Russia, among others. The global nuclear power capacity is estimated to grow from the current 400 GW to 580 GW by 2035.

Nearly 28% of all electricity consumed within the European Union is generated at nuclear power plants; there are 131 reactors operational in 15[2)] member states, with a combined total capacity of 132 GW. Four[3)] reactors are currently under construction in the European Union: one in Finland, one in France and two in Slovakia. Many countries also plan extending the service life of existing nuclear power plants.

Based on the outcome of the nuclear safety assessments recently carried out in the EU, the Commission has proposed a review of the Nuclear Safety Directive. The proposal is currently being discussed by the Council and the European Parliament. At the same time, national action plans following the stress tests are being implemented by member states.

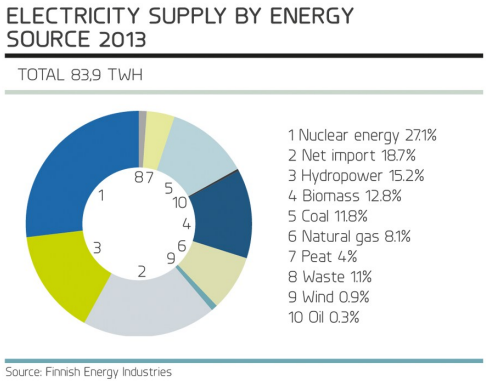
The European Commission organized a nuclear liability consultation in fall 2013 with the purpose of preparing for the harmonization of nuclear liability arrangements within the EU.

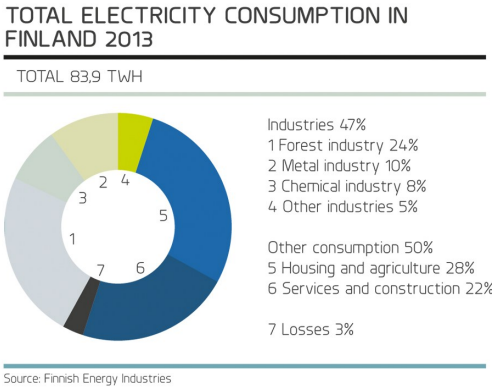
The revised regulatory guides on nuclear safety compiled by the Finnish Radiation and Nuclear Safety Authority (STUK) came into effect in December 2013. The new regulations will be applied to new nuclear facilities with no modifications. Separate decisions will be given on the necessary modification of the regulations for existing plant units as well as those under construction.

Nuclear power – a key element in Finnish energy policy

In December, the Finnish Parliament approved the updated energy and climate strategy prepared by the Government headed by Prime Minister Jyrki Katainen. The strategy includes a clean energy program which aims to reduce greenhouse emissions, create jobs, decrease the volume of imported energy and accelerate the development and utilization of domestic clean energy technology. Investments in nuclear power play a key role in the work towards these objectives.

The new power plant tax act was ratified by the Finnish Parliament in December. The act will enter into force at the time prescribed by a government decree. The new law enables the annual collection of an approximate total of EUR 50 million in taxes from nuclear power, hydropower and wind power plants that have been commissioned before 2004. More than one fifth of this sum would be paid by nuclear power plants starting from 2014. The law is subject to the approval of the European Commission.





Minor decrease in total Finnish energy consumption

In 2013, the consumption of electricity in Finland totaled 83.9 TWh. Compared to the previous year, consumption decreased by 1.5%. The share of imported electricity remained high at one fifth of total consumption. The share of domestic hydropower decreased and that of coal increased. The production of nuclear energy amounted to 22.7 TWh, which accounted for 27% of consumption.

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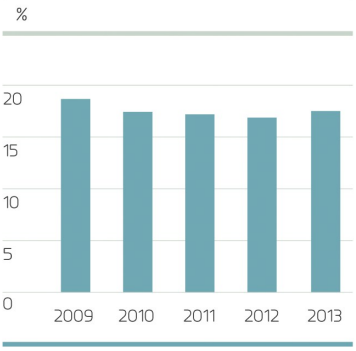
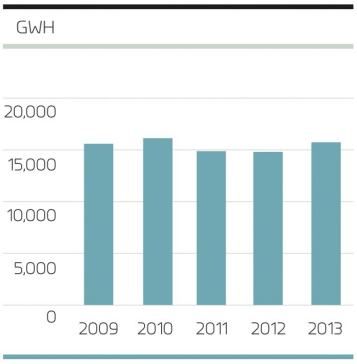
1) IEA World Energy Outlook 2013
2) 15th is Croatia which owns half of the Krsko NPP located in Slovenia
3) Finland 1, France 1, and Slovakia

TVO'S DELIVERY SHARE OF THE ELECTRICITY USED IN FINLAND



ELECTRICITY DELIVERED TO SHAREHOLDERS



Strategic objectives

TVO's strategy is based on its mission, vision and business model, and the key indicators that steer the company's operations. TVO's values and Code of Conduct, together with an uncompromising safety culture, create a solid basis for responsible day-to-day operations.

TVO is aware of its responsibility in creating social well-being through the generation of climate-friendly, safe, and reasonably priced electricity. TVO creates well-being, employment, and income by producing cost-price electricity for its shareholders, Finnish industry and energy companies with 135 municipalities behind them. The Olkiluoto power plant provides Finland with competitively priced and stable domestic nuclear power, produced in a responsible, efficient and environmentally friendly manner.

TVO believes in voluntary corporate social responsibility that supports the company's business operations and is based on its values and targets as well as legislation and stakeholder expectations. TVO's corporate social responsibility policy and its practical implementation form the core of the company's social responsibility effort. Corporate social responsibility is at the core of TVO's strategy and is an integral part of day-to-day operations. As a value behind the work of every TVO employee, it means uncompromising quality, adherence to strict safety requirements, and compliance with the rules and regulations that have been agreed and are in force. TVO's personnel are committed to an uncompromising safety culture, valued by us all.

The President and CEO, with the approval of the Management Group, is responsible for the strategic objectives and planning of TVO's corporate social responsibility. In the Management Group, the Senior Vice President responsible for corporate relations and the Corporate Social Responsibility Manager present issues related to the development, monitoring and reporting of corporate social responsibility. In the development and implementation of corporate social responsibility, the management of TVO is assisted by the Corporate Social Responsibility Group, which was reappointed in May 2013. The group acts as an expert, advisor, and information forwarder in matters concerning corporate social responsibility. The group monitors and develops the company's corporate social responsibility policy and other related matters and reports and communicates these to the management, personnel, and stakeholders.

The President and CEO appoints the members, chairperson, and secretary to the group. The members of the group hold various positions within the organization. The Corporate Social Responsibility Group, and the corporate social responsibility development group that acts within it, convened six times during the latter part of 2013.

During the year under review, the focus was on listening to the views of stakeholders through an extensive stakeholder survey. The survey was one of the prerequisites for updating TVO's responsibility materiality assessment. Social responsibility was discussed at the same time in accordance with the company's new strategy. It will still be based on stable, economic and safe production of electricity, safe nuclear waste management, and uncompromising safety culture with attention to energizing leadership, competent personnel, consideration of the climate and environment throughout the lifecycle, and transparent and proactive interaction and communications. In the final part of the year, focal themes of corporate social responsibility were derived from the company's new mission and strategic vision goals. These building blocks of responsibility were compiled into a responsibility program to comply with TVO's strategy. The program summarizes the responsible actions inherent to the planning and practical aspects of the operations of various units, and includes the goals, measures and indicators that concern TVO's impact on society and on the Group itself. The responsibility program was fine-tuned by the Corporate Social Responsibility Group during the fall, approved by the Management Group in December, and adopted at the beginning of 2014.

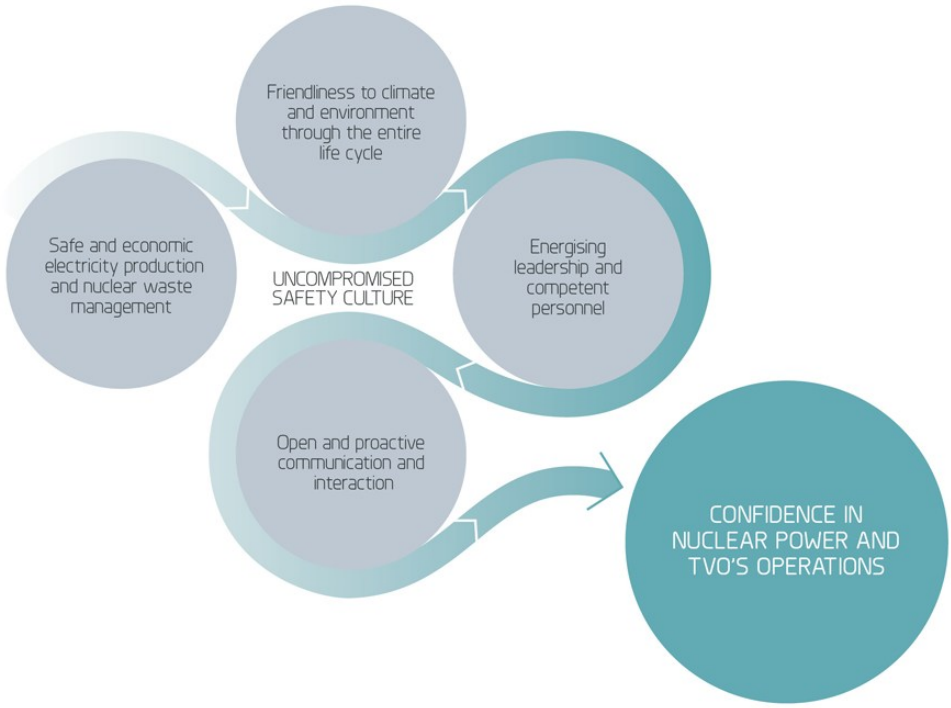
Management, planning, and development projects continued

Projects focusing on the management, planning and development of operations continued in 2013. They aim at developing the company's strategy and business model as well as the definition, follow-up and measurement of human resource management objectives. 2013 was the year for preparing new vision objectives, business model and scorecards with indicators, all based on the new strategy. These will be followed up in accordance with the annual management schedule.

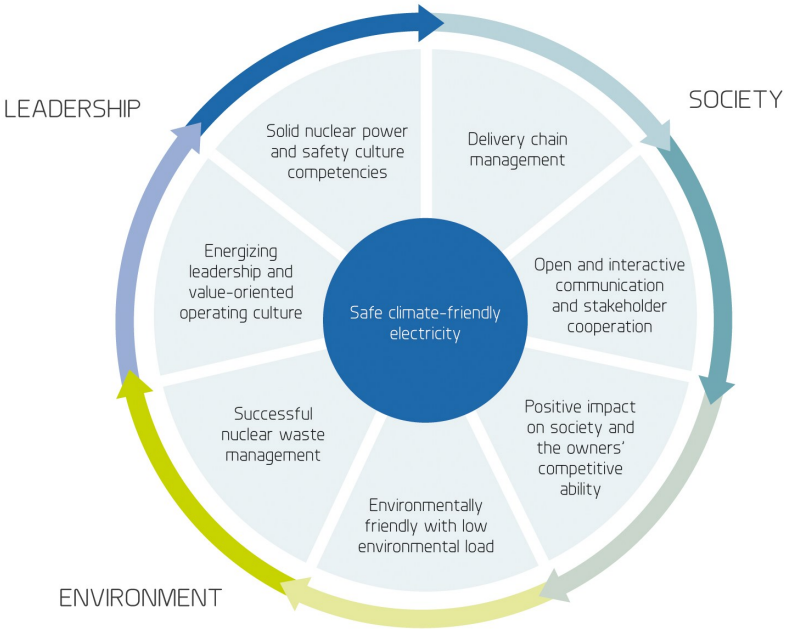
The resource planning project aims to create shared practices for the entire company and to increase efficiency and savings through unified procedures. Shared procedures are also expected to help build a clear and fair management system. TVO people from various branches of the organization have participated in the process.
The many development measures implemented based on the company-wide personnel survey also supported the objectives of the resource planning development project. Various working groups consisting, in varying setups, of the whole personnel, supervisors, personnel representatives, new TVO employees, or the Management Group, participated in the development of improvements.

Further information: Operating culture, corporate social responsibility, principles and management, responsibility management.

Corporate social responsibility at TVO



RESPONSIBILITY PROGRAM



ANNUAL MANAGEMENT SCHEDULE

Good corporate governance

TVO adheres to valid legislation, its own Articles of Association, and the principles of good corporate governance in all its operations. Situations where there is a conflict of interests are processed according to legal requirements. According to the TVO Code of Conduct, TVO employees must disqualify themselves in cases of conflict of interest. TVO's company-level policies define central aspects of social responsibility.

Further information: Administration and management, Board of Directors, Management Group and Organization.

Risk management

Risk management is an important part of the planning and operations of TVO Group. Risk management is carried out in accordance with the risk management principles, approved by the Board of Directors, which define the purpose and objectives of risk management.

TVO's risk management is developed in accordance with the principle of continuous improvement. The Risk Management Group, which operates under the Management Group, prepares an annual assessment of the risk management and identifies improvement targets. Practical risk management is carried out by the various units of the company.

Identification of risks is based on TVO's business objectives. Unified practices are applied to the assessment of risks. In addition to financial impacts, consequences are assessed based on their impact on safety, production operations and reputation.

In 2013, TVO adopted a risk management information system. The adoption of the information system, together with other development measures, aimed to unify risk assessments and risk reporting throughout the Group, and to allow a more efficient handling of risks. In connection with the information system launch, training was organized to introduce key personnel to risk management methods and procedures. In 2014, the emphasis of risk management development will be in building a more efficient follow-up system for the preparation and recovery measures required by identified risks.

Management system

TVO's mission, vision, strategic objectives, business model, values, Code of Conduct and company-level policies give direction to all of its operations. TVO uses an activity based management system that supports the adherence to plans. The system provides the procedures for ensuring safe, competitive, high-quality, and environmentally sound electricity production.

Operations are developed according to the principles of continuous improvement. The management process aims at practical strategic and operative steering that ensures the realization of both short and long-term goals as well as the energetic, motivated and efficient operation of the organization. A strategy that is sensitive to the customers' needs and changes in the company's operating environment guides the preparation of visions, strategies, plans and objectives of the business and support operations. The procedures described within the activity based management system direct the work of all TVO employees and partners working at Olkiluoto.

The system covers production operations at the Olkiluoto nuclear power plant, the maintenance and development of production capacity, the construction of additional production capacity, as well as the steering and resourcing operations of these. The system meets the requirements of international quality management, environmental and health and safety standards, and has been certified by DNV Certification OY/AB. The general part of the activity based management system also acts as the licensee's quality management system approved by STUK. The implementation, effectiveness and efficiency of the system are regularly monitored by internal audits and management reviews.

TVO's activity based management system meets the requirements of the following procedures and standards, among others:

- Quality management system ISO 9001:2008, YVL 1.4 Management systems for nuclear facilities
- Environmental management system ISO 14001:2004, EMAS Regulation 1221/2009
- Energy efficiency system
- Occupational health and safety management system OHSAS 18001:2007.

Company-level policies

TVO's company-level policies define all the central aspects of social responsibility. Company-level policies include: Nuclear safety and quality policy (nuclear safety, radiation protection, nuclear non-proliferation control, and quality) Corporate social responsibility policy (environment, procurement, personnel, occupational health and safety, and communication) Production policy (operation and maintenance of the plant and increasing its production capacity) Corporate safety policy (production and operating safety, personnel and facility security, rescue and emergency operations, and information security).

Company-level policies

Code of conduct

TVO operates in a responsible, transparent, and proactive manner, and continuously improves its operations. TVO's Code of Conduct complies with the OECD Guidelines for Multinational Enterprises 2011, and is based on TVO's values. The Code of Conduct concerns the company's management and administration, personnel, subcontractors, and suppliers regardless of their position and location. The Code of Conduct defines TVO's general principles concerning practical operations and social responsibility. It also aims to ensure that all TVO employees see eye to eye on our basic ethical principles and proper business practices. The purpose is to create a unified way of working in accordance with a shared framework of responsibility and ethics.

The Code of Conduct was adopted on February 1, 2013, with the distribution of a brochure on the subject to the entire personnel. Approximately a dozen Code of Conduct training events were organized for the staff and subcontractors, and all new employees were introduced to the content of the Code and given a copy of the text during their induction training. The training will be repeated for all employees every three years. In the fall, an internal personnel survey was carried out concerning the Code of Conduct. The response rate for the survey was 40%. The overall outcome was that the creation of a unified Code of Conduct was considered a good thing. The survey revealed development targets related to the working atmosphere, such as equality and respect between fellow employees. These have been incorporated into the 2014 action plans.

TVO's subcontractors were informed of the Code of Conduct by adding the document to contracts signed with subcontractors and partners. Training of subcontractors and the personnel will continue in 2014. An online training course on the Code of Conduct is being prepared together with Posiva Oy, and will begin to be used by the personnel of TVO Group in early 2014.

Code of conduct

Safety

The safe operation of the Olkiluoto nuclear power plant is based on high-quality power plant engineering, the principle of continuous improvement, highly capable and conscientious employees, and independent external supervision. TVO's personnel are committed to a high standard of safety culture.

The Safety theme of the Corporate Social Responsibility 2013 report includes a description of TVO's safety culture and its development, a report on special events, and an account of research and development operations.

Safety culture

Safety at the core of operations

The Nuclear Energy Act requires that the use of nuclear energy must be safe; it shall not cause injury to people or damage to the environment or property. The safe operation of the Olkiluoto nuclear power plant is based on safe power plant engineering, highly capable and conscientious employees, and independent external supervision. Safety is a factor shared by the entire nuclear power industry.

Safety is a special area of focus for nuclear power plants because the uranium fuel becomes highly radioactive during the power production process, and continues to generate heat even after being removed from the reactor. Spent nuclear fuel is cooled in water-filled pools, as water also acts as an efficient radiation shield. The Olkiluoto power plant has abundant water reserves to ensure the cooling of both the fuel in the reactor and the spent fuel. The plant also has multiple power supply back-up systems for cooling water circulation systems.

CASE

The largest individual plant modification ever in Olkiluoto

Read more

Nuclear safety and safe power plant engineering

Nuclear safety is developed by analyzing risks and by making provisions for them. Nuclear safety is always based on the valid and constant laws of physics.

Nuclear power plants observe defense-in-depth safety principles and deploy multiple release barriers. The diverse and redundant safety systems reduce the probability of accidents.

The Olkiluoto nuclear power plant has four-fold safety systems. If one system fails, the next one takes over. An operator error or even several equipment failures cannot cause a serious accident.

TVO has implemented modifications at Olkiluoto to improve the safety of the plant throughout its operating life. New improvements will also be designed and implemented in the future.

Competent and responsible personnel

TVO's entire personnel are committed to an uncompromising safety culture. All factors that affect the nuclear power plant's safety receive attention in proportion with their significance and are given priority in decision making. The principle of continuous improvement is present in all day-to-day work.

TVO uses the STAR approach to everyday safety. The STAR approach means that employees should always first Stop and Think, and only then Act, and finally Review whether everything went as it should have. TVO encourages employees to report errors and observations, and aims to maintain a low threshold for such reporting.

Safety culture-related instructions to TVO employees:

- make sure you are fit to work
- make no compromises with procedures and instructions
- make sure that you and others use safe working practices and work in safe conditions
- stop and think before you act, and review the consequences of your actions
- report all problems and deficiencies without delay
- maintain an atmosphere where reporting can be done freely and without blame
- question practices and develop operations in the spirit of continuous development.

Various atmosphere surveys and self-evaluations are carried out at TVO to examine the state of the safety culture. Based on these, the state of the TVO safety culture is good. It must, however, be continuously monitored and developed. In 2013, TVO carried out a safety culture self-assessment including a review of documentation and a survey filled in by the entire personnel. The assessment is repeated every three years. TVO's safety culture was found to be at a good level. TVO's strengths included the emphasis laid on the strategic importance of safety, highlighting safety as a primary concern in both internal and external communications, long-term planning, and the continuous development of the plant units and attention to any minor deficiencies. These ensure the good overall state of the plant. To maintain a high standard of safety culture in accordance with the continuous improvement principle, the self-assessment team has issued some recommendations mostly related to organizational learning and the development of operations.

Development

Safety – shared by the entire nuclear power industry

TVO's operations are subject to a license and supervision by the authorities. The Finnish Radiation and Nuclear Safety Authority (STUK) supervises nuclear and radiation safety.

TVO is not alone in thinking about safety issues. Other nuclear power companies, organizations, research institutes, and public authorities are looking for ways to develop the safety of nuclear power and safety culture at nuclear power plants. For example, the World Association of Nuclear Operators (WANO) issues proposals and recommendations related to safety.

In 2011, several surveys were conducted to analyze the power plant's preparedness for extreme natural phenomena and other external threats. The work included both national surveys and participation in EU "stress tests". In spring 2012, the ENSREG expert group that compiled the final report for the nuclear power plant safety reviews stated that no safety defects or previously unidentified development needs that would call for improvements were detected at Olkiluoto. The Olkiluoto nuclear power plant received praise for its multiple power supply back-ups and the severe accident management system that can prevent any major releases in the very unlikely case of a severe accident. Surveys have been continued based on further requirements set by STUK. The most important plant modifications currently being planned concern the cooling of the reactor without any of the normal electrical or sea water systems. In 2013, TVO has continued preliminary surveys, planning and implementation of plant modifications. TVO provides STUK with progress reports every six months. Plans are also regularly discussed within the TVO safety group.

CASE

The largest individual plant modification ever in Olkiluoto

Read more

Update of official safety regulations was completed in 2013, and STUK published most of the regulations at the end of the year. TVO will now carry out a suitability analysis for its plant units to examine how well the units meet the new requirements.

Over the years, TVO has carried out continuous modernization and safety improvements at its plants. In 2013, the most important of these included the improvements made to electrical systems , better preparation for oil leaks, and the launch of the replacement of emergency diesel generators.

TVO will replace the emergency diesel generators (linkki http://www.tvo.fi/news/58) as part of an ongoing major modernization project. The emergency diesel generators ensure the power supply of the plant in the possible but unlikely loss of power situation. The new emergency diesel generators have both seawater and air cooling systems. The preparation of the emergency diesel replacement project began in the early 2000s, and the project is the most extensive single plant modification project to ever have been carried out at Olkiluoto. TVO acquires the emergency diesel generators from Wärtsilä Finland Oy. The agreement on the delivery of emergency diesel generators and their auxiliary systems to the Olkiluoto nuclear power plant was signed in May 2013. The replacement project will begin in 2016 and has been estimated to continue to 2020.

Special events

Reporting of special events

The events that take place at a nuclear power plant are classified on the international INES scale according to their degree of severity. The INES scale has seven categories of severity. Category 4–7 events are classified as accidents, category 1–3 events as incidents or anomalies with a negative effect on safety, and category 0 events as deviations with no significance for safety.

TVO reported four events in 2013. All of these were rated at severity level 0 on the INES scale (a deviation with no safety significance). One event that occurred in 2012 and was rated at level 0 on the INES scale was reported in 2013.

TVO processes all operational events that take place at the Olkiluoto nuclear power plant, and carries out the necessary corrective measures. TVO also follows the events at other nuclear power plants around the world. Operations are developed based on the observations made of these events.

TVO has reported all INES events on its web site in the News section.

When investigating the causes behind the events that took place during the latest annual outages, TVO has identified various factors related to working methods and communications, among other things. Changes will be made to further develop the procedures based on the assessment of these factors. The matters will be discussed, implemented and followed up within the quality management information system. The Human Performance team develops, monitors and implements HU tools.

TVO submits separate case-specific reports to STUK for all special events and operating transients.

Research and development

TVO's R&D operations focus on supporting the acquisition and renewal of nuclear power plants' construction and operating licenses through the production of high-quality technical information, and on validating data and calculations for the needs and use of the plant units.

Modernization and changes at the plant units as well as following and using new technology also create research needs. In 2013, measures based on safety assessments have been carried out at the plant. These measures have also resulted in the creation of new research areas. Changes made to national regulations (YEL, VNA and YVL guides) have been taken into account in the definition of research projects. The storage, handling and final disposal of waste are another important research area. The development of safe disposal of spent nuclear fuel is by far the most important objective of TVO's research work until 2020. The work is carried out by Posiva Oy.

The total costs of TVO's research and development operations were EUR 37.7 (44.7) million. The figure includes nuclear waste management research and development costs, of which Posiva's share was EUR 31.5 (38.2) million. In addition to these, approximately 12 man-years were spent at TVO on various internal R&D projects.

TVO is the biggest payer of national public research programs on nuclear power plant safety (SAFIR2014) and nuclear waste management (KYT2014). In 2013, TVO paid a total of EUR 4.6 (4.6) in research fund-related contributions to the Finnish State Nuclear Waste Management Fund. TVO also participated in the steering and monitoring of the programs through the work of 26 experts.

Primary areas of focus for research in 2013 included the OL1 and OL2 lifecycle management and modernization projects. For lifecycle management, an extensive integrated information system has been adopted to combine strength calculation, process simulations and the operating history of plant structures. The development of the system began in TVO in the 1990s; currently, the development work focuses on the integration of the calculation systems. Research of the I&C technology focuses on the solutions required for the modernization of OL1 and OL2 and the construction of OL3. Primary research targets include the adoption and licensing of digital I&C technology.

Fuel research helps ensure continuing safety; the research aims at safe reactor operation, good fuel economy and safe final disposal of spent fuel. Fuel research is TVO's most important area of international research cooperation, which requires special competence, available testing reactors and fuel hot cell studies. The best option to obtain all of these is international

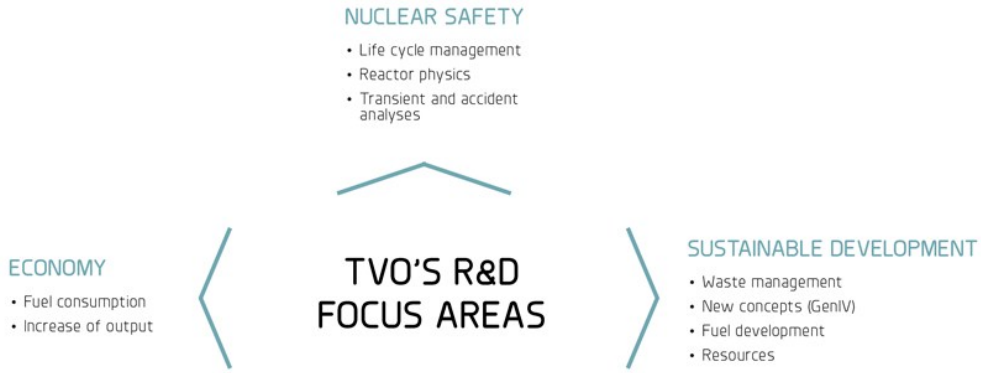
cooperation. Research further specifies and validates the safe use of the fuel and accident safety margins with a higher burnup. The behavior of fuel in storage and after final disposal is another important field of study. TVO also participates in Euratom's FIRST Nuclides project which focuses on the behavior of actual spent UO2 fuels in a groundwater environment. The project is carried out in cooperation with European research institutes, power companies and organizations responsible for the development of final disposal of spent nuclear fuel.

TVO also actively participates in the operations and research projects of more extensive international cooperation networks. TVO joined the new European NUGENIA association after it was established in fall 2012. The purpose of the association is to steer and carry out European research and development in the field of fission energy, focusing on existing reactors, that is, GenII and GenIII nuclear power plants. The association is based on the Nulife, Sarnet and Eniq networks that received funding from Euratom. TVO follows programs coordinated by OECD/NEA, primarily through the technological and safety research projects of universities and research facilities.

TVO also supports the research work to develop new research infrastructure. New experimental technology is being built into the Jules Horowitz material testing reactor which can be used for reactor materials and fuels research required by modern nuclear facilities, supporting the development of new reactor types within the next decades.

During the year, TVO has sent representatives to participate in the national nuclear energy strategy working group coordinated by the Ministry of Employment and the Economy. The work will be completed in 2014. The working group's objective is to prepare a strategy for nuclear power research until 2030. The strategy comprises of six fields from safety research to innovation and service business.

Further information: Objectives of TVO's research and development, Research and development and Research areas.



Uranium from bedrock to bedrock

The safe use of uranium fuel is ensured at all stages of the power production chain, from the responsible procurement of uranium to the safe final disposal of spent fuel.

The Uranium from bedrock to bedrock theme of the Corporate Social Responsibility 2013 report includes the following sections: procurement of uranium; production of electricity at Olkiluoto 1 and Olkiluoto 2; progress of the Olkiluoto 3 and Olkiluoto 4 projects; nuclear waste management, Finnish State Nuclear Waste Management Fund and final disposal of spent nuclear fuel.

Procurement of uranium

From responsible partners only

CASE

Olympic Dam uranium mine in Australia

Read more

Uranium is an element widely present in nature – approximately 40 times more common than silver. Nearly half of all uranium is produced using conventional mining techniques in underground mines and open pits, while roughly the same quantity is produced by in situ leaching. The rest, approximately 7%, is produced as a by-product of other mining operations. These operations cover approximately 85% of the uranium requirement of the world's nuclear power plants. The remaining 15% is obtained from various inventories and the reprocessing of spent fuel.

The largest producers of uranium (based on the statistics of 2012) are Kazakhstan, Canada, Australia, Niger, and Namibia. Together, these countries are responsible for approximately three quarters of the world's total production volume. Uranium is usually produced by large international companies with operations in several countries. The eight largest companies cover approximately 85% of all production, with ten mines producing more than half of all uranium.

Environmental protection and monitoring of mining operations, as well as occupational and radiation safety requirements, are defined on the basis of the legislation and regulations valid in the country where the operations take place. The requirements set for the operations are further specified by licenses concerning the construction, operation, and environmental practices of the facilities. Proper practices require that the original licensing process of a production facility also pays attention to decommissioning operations. Funds for waste management, the closure of the mine and the ore enrichment plant, and landscaping should be gathered during production operations.

Certification of quality, environmental, and occupational health and safety management systems is widely applied; large operators in particular have certified the management systems of their production facilities. Responsible companies follow the same standards and the principles of safety and social responsibility in all their locations, which in turn promotes the development of legislation and procedures of new mining countries.

TVO's supplier evaluation method

TVO applies a diversified nuclear fuel procurement chain, which means that separate contracts are concluded for the different stages of procurement, usually with several suppliers for each stage. Procurement operations are based on long-term contracts with leading suppliers.

TVO employs a supplier evaluation method and only procures uranium and nuclear fuel refining services from suppliers who have passed the evaluation process. A systematic evaluation process precedes the closure of each supply contract. In addition to the requirements set for the products, the process also considers the reliability and responsibility of the supplier.

TVO's supplier evaluation also includes active monitoring and evaluations at fixed intervals. Remote monitoring from Finland and excursions to production sites both provide TVO with an opportunity to examine suppliers' practices and, when necessary, to demand that changes are made to them. The purpose of supplier evaluation is to ensure that suppliers pay appropriate attention to environmental issues, the well-being of personnel, and quality management. Special issues concerning mines are also considered, such as the impact of operations on local people.

OLKILUOTO NUCLEAR POWER PLANT'S ENVIRONMENTAL BALANCE SHEET 2013 (2012)

Emissions into the air		Allowed annual emissions
Noble gases (TBq)	0.22 (Kr-87 equivalent) (1,21)	(9.420)
Iodine (TBq)	0.0000907 (I-131 equivalent) (0,000017)	(0.103)
Aerosols (TBq)	0.000020 (0,000016)	
Carbon-14 (TBq)	0.80 (0,88)	
Tritium (TBq)	0.62 (0,36)	
CO_2 (t)	483 (384)	
NOx (t)	0.63 (0,52)	
SOx (t)	0.0017 (0,001)	
Particles (t)	0.44 (0,36)	

URANIUM FUEL (t)	36.8 (37.6)
Intermediate agents:	
- Oils (m³)	303 (238)
- NaClO (15 %) (m³)	62.6 (67)
- Other chemicals (t)	139.3 (115)
- Ion exchange resins (t)	10.1 (10.8)
- Water treatment chemicals (t)	108.3 (94)
Raw water (tap and process water) (m³)	274,549 (211,312)
Cooling water (million m³)	2,288 (2,267)

ELECTRICITY (TWh)	14,6 (14,5)		
Municipal waste	OL1 and OL2	OL3*	Total
- Recyclable waste (t)	586 (539)	1,231 (1 571)	1,817 (2,110)
- Landfill waste (t)	101 (108)	210 (296)	311 (404)
- Hazardous waste (t)	137 (109)	103 (73)	240 (182)

*construction phase

Radioactive waste	
- Low level waste (m³)	0 (172)
- Intermediate level waste (m³)	42 (20)
- Spent nuclear fuel (t)	35.7 (35.8)

Emissions into the water		Allowed annual emissions
Cooling water (million m³)	2,288 (2,267)	
Thermal load to the sea (TWh)	27.1 (26.8)	
Fission and activation products (TBq)	0.00009 (0.002)	(0.296)
Tritium (TBq)	1.46 (1.31)	(18.3)
Phosphorus (kg)	10 (31)	
Nitrogen (kg)	4,380 (5,475)	
BOD_{7ATU} (kg)	548 (985)	

Nuclear power plant OL1 and OL2

TVO produces electricity at Olkiluoto, Eurajoki, with two plant units, Olkiluoto 1 and 2. Olkiluoto 1 was connected to the national grid on September 2, 1978. Since that date, for more than 35 years, safe, economical and environmentally benign base load energy has been produced in Olkiluoto for the needs of Finnish society. After their first few years of operation, Olkiluoto 1 and Olkiluoto 2, commissioned in 1980, have been continuously among the most reliable nuclear power plant units.

The competent expert staff of TVO is the number one success factor behind the stable long-term power production. TVO has a strong safety-oriented operating culture based on committed personnel who build their competencies in the spirit of continuous improvement.

On 1 November 2013, Olkiluoto 2 achieved the milestone of 200 TWh in commercial production. The 200 TWh produced by OL 2 would cover the entire Finnish consumption of electricity for more than two years.

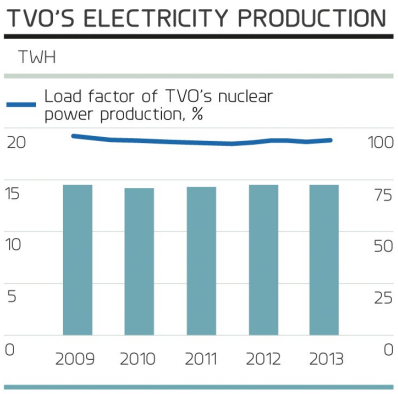
CASE

Energy efficiency: More with less

Read more

Plant units operated safely for the entire year

In 2013, the combined power output of OL1 and OL2 was 14,633 (14,450) GWh. The combined load factor of the plant units was 95.1% (93.7%). Olkiluoto accounted for approximately 17% of all the electricity produced in Finland.



The net output of OL1 was 7,470 (6,973) GWh and load factor 97.1% (90.4%). The net output of OL2 was 7,163 (7,477) GWh and load factor 93.1% (96.9%).

A generator cooling circuit transient caused a break in production operation from September 9 to 15 at OL2. Generation of electricity was interrupted when the generator protection system tripped the turbine. The plant unit's protection systems operated as designed, and steam generation of the reactor was brought to a controlled stop. The generator failure and the resulting turbine trip did not compromise nuclear safety. OL1 operated reliably throughout the year, excepting one short production break that occurred at the beginning of December.

Safety and energy efficiency

Over the decades, the OL1 and OL2 plant units have been systematically developed. The basic idea is to maintain the plant units as good as new. Latest technological solutions that improve the availability, productivity and safety of the plant units are implemented continuously. Both plant units now have a rated net electrical output of 880 MW, while the original output was 660 MW.

In addition to the production output, the modernization has also improved the energy efficiency of the plant units, which means benefits for the environment. TVO is a party to the Energy Efficiency Agreement and complies with the related energy production action plan that aims at the implementation of energy efficiency improvement measures as well as improving the efficiency of primary energy usage and the overall efficiency of energy production. TVO's energy efficiency objective based on the Energy Efficiency Agreement is to save 340 GWh in 2008–2016. The efficiency plan will be valid until the end of the agreement period. TVO already achieved its objective, savings of 340 GWh of electricity, by the end of 2011. The saved amount corresponds to the annual consumption of approximately 18,000 houses with electrical heating systems.

Annual outage with refueling and maintenance

The Olkiluoto nuclear power plant is constantly kept in an excellent condition by alternating refueling and maintenance outages. The annual outages that take place every spring at Olkiluoto usually begin with a refueling outage where part of the uranium fuel is replaced and the necessary repairs and maintenance operations are carried out, together with any preparatory work for the following year’s maintenance outage. The refueling outage usually takes about one week.

The annual maintenance operations then continue with the maintenance outage of the other plant unit where major maintenance and modification work is carried out in addition to refueling. The maintenance outage usually takes two to three weeks. Extensive modernization and reconditioning operations have been carried out during the maintenance outages at approximately five-year intervals.

The 2013 annual outages of the Olkiluoto nuclear power plant took place from May 12 to June 14. OL1 underwent an eight-day refueling outage, and OL2 a maintenance outage of approximately 18 days.

The main focus of the OL2 outage was on replacement of low-voltage switchgear and work on the reactor. Two subsystems got new low-voltage switchgear and transformers that meet the requirements of the latest regulations, the relevant standards and future plant modifications. Replacement of switchgear is part of the systematic long-term development of the plant units. Other important work included the repair of a generator stator, refueling, containment testing and replacement of two main sea-water pumps.

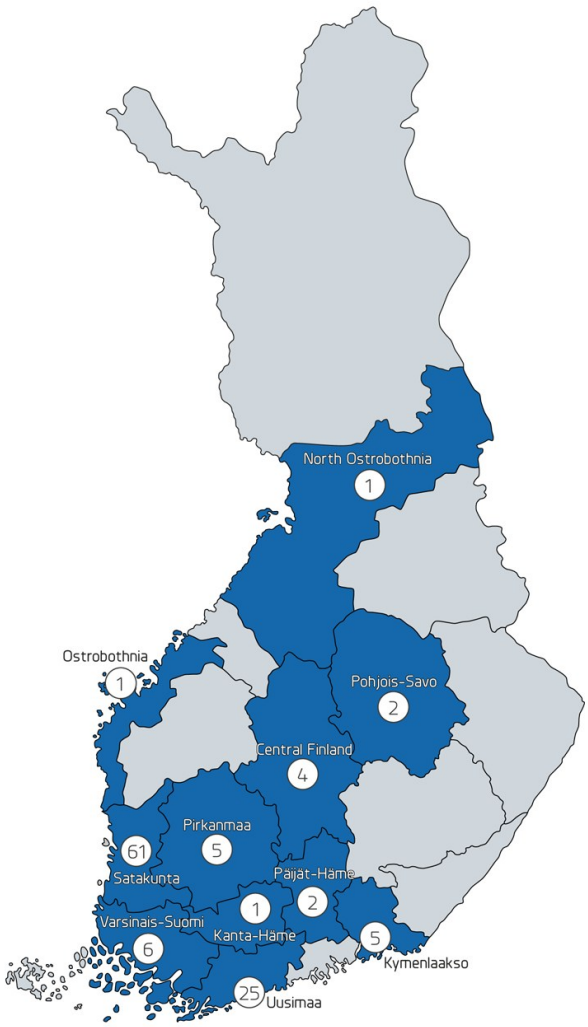
At OL1, refueling was followed by replacement of two main sea-water pumps and annual maintenance, testing and repair work.

Approximately 1,000 subcontractor employees, 900 of which were Finnish, participated in the annual outages in addition to TVO's own personnel.

Further information: Nuclear power plant, Olkiluoto 1 and Olkiluoto 2

COMPANIES PARTICIPATING IN ANNUAL OUTAGES

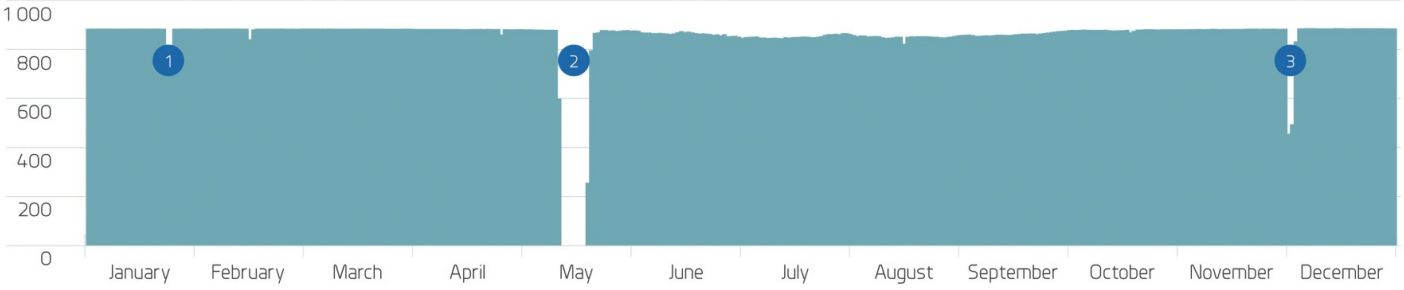
2013



PRODUCTION IN 2013

OL1

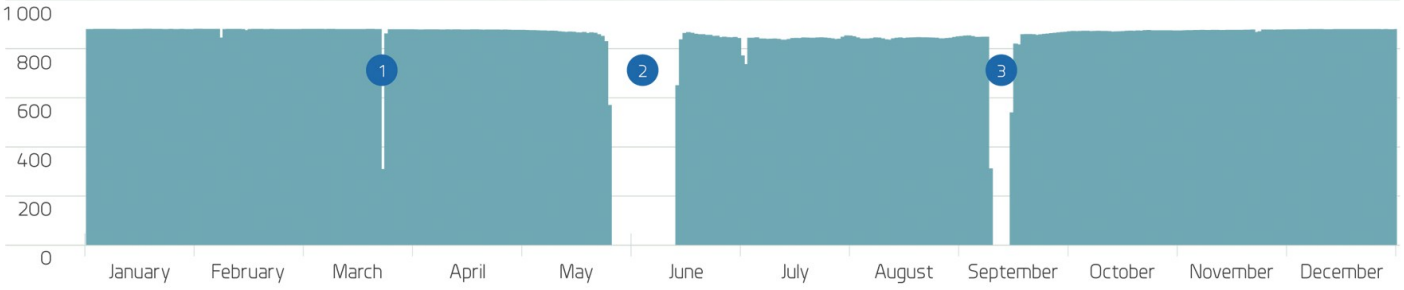
AVERAGE OUTPUT MW



1. Shutdown of the reactor coolant pumps after the control valve of the high-pressure turbine closed spontaneously. Power limitation due to the replacement of the rubbing-face seals of the feedwater pumps.
2. Refueling outage
3. Load drop due to a failure of the over-voltage protection of the exciter rotor.

OL2

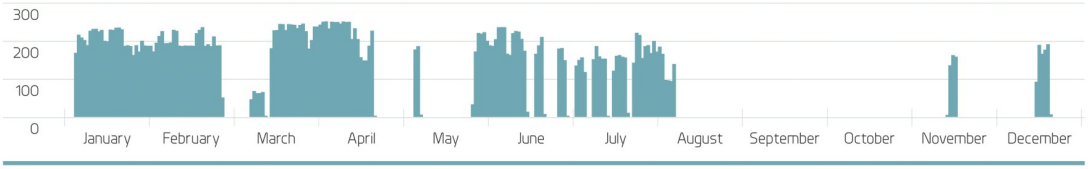
AVERAGE OUTPUT MW



1. Reactor shutdown to the hot shutdown state due to the inspection and replacement of the flexible connectors between the generator and the exciter.
2. Maintenance outage
3. Turbine tripped by the earth fault protection of the generator stator.

TVO'S SHARE OF MERI-PORI'S PRODUCTION

AVERAGE OUTPUT MW



Olkiluoto 3

TVO is currently building a third plant unit, OL3, at Olkiluoto. The OL3 construction site is a major international project. In 2013, the average number of staff for the OL3 site was 2,790. At the end of the year, approximately 2,000 people were working at the site. An uncompromising safety culture is a basic requirement at the site, and occupational safety indicators remained at a good level.

The construction of the plant unit has progressed to an advanced state. In December 2013, the plant supplier announced that it would focus its effort on the design tasks that are the most urgent and critical for the project. At the same time, the plant supplier told about its plans to reduce the number of subcontractors and workers at the OL3 site. TVO has required that the plant supplier provide an updated overall schedule and an account of the measures to be carried out to ensure the appropriate progress of the project. After the end of the period under review, in February 2014, TVO announced that it has not received from the plant supplier the requested update of the overall schedule for the OL3 project.

CASE

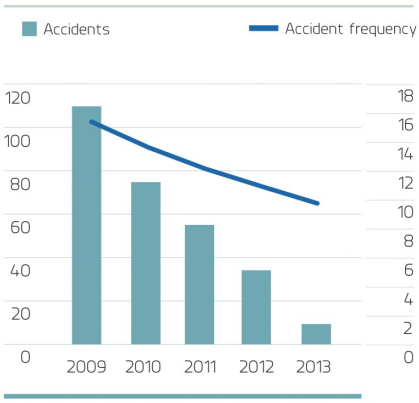
Reactor pressure vessel closure head installed at OL3

Read more

TVO allows no exceptions from legal obligations in its own operations, and requires the same from all companies with operations at Olkiluoto. TVO requires the plant supplier and subcontractors to observe, among other things, the laws and regulations governing taxation and working hours, as well as union contracts. TVO has worked systematically to eradicate the gray economy and to promote the related legislation.

Compliance is continuously monitored. There are several alternative channels available at the site for reporting any deficiencies or for expressing concerns to TVO. TVO will report any suspected failures to observe regulations to the plant supplier and require the plant supplier to investigate the situation and take the necessary action for improving it. TVO will also report suspected infringements to public authorities, when necessary. Authorities can be granted permanent access permits to the OL3 site to facilitate and streamline unannounced inspections.

ACCIDENTS AND ACCIDENT FREQUENCY AT THE OL3 SITE



TVO is involved in a cooperation team established at the initiative of the Employment and Economic Development Office of Rauma, with the representatives of various authorities processing current issues related to the OL3 project and discussing possible methods of advancing official procedures. The team includes representatives from the Ministry of Employment and the Economy, the Regional State Administrative Agency, the Finnish Centre for Pensions, tax administration, the police, the local parish, STUK, TVO, and the plant supplier AREVA-Siemens consortium. Representatives of trade unions are also regularly invited to participate.

Further information: Olkiluoto 3

Olkiluoto 4

Olkiluoto 4 at the bidding and engineering phase

On July 1, 2010, the Finnish Parliament confirmed a favorable decision-in-principle by the Government concerning the construction of the new OL4 unit. Preparations for the OL4 project advanced in late 2011 to the bidding and engineering phase when TVO's general meeting of shareholders decided to initiate the phase.

All the current owners of TVO (EPV Energia Oy, Fortum Power and Heat Oy, Karhu Voima Oy, Kemira Oyj, Oy Mankala Ab, and Pohjolan Voima Oy) are committed to the financing of the bidding and engineering phase of the project pro-rata to their holdings. Dozens of industrial and energy companies are found behind the owner companies, meaning that the cost price electricity from the new plant unit will benefit Finnish families, the service sector, and industries on a wide scale. The objective of the bidding and engineering phase is to ensure that the OL4 plant alternatives are able to obtain the necessary licenses and be built in Finland. This phase also includes a competitive bidding process where a safe plant unit, fulfilling all the latest requirements, will be selected.

In 2013, TVO continued to investigate the licensing potential and suitability of the power plant alternatives together with the potential plant suppliers. As part of the procurement process aiming at the selection of the plant alternative, TVO received offers for the new plant unit in January 2013. Assessment of updated offers and preparation of the following phases of the project is currently in progress.

Further information: Olkiluoto 4

Nuclear waste management

Low and intermediate level waste, also called operating waste, accumulates during the operation and maintenance of the nuclear power plant. Some of the nuclear power plant structures become radioactive during the operation of the plant and need to be finally disposed of when the plant has been decommissioned. Nuclear power plants use uranium fuel which becomes high level radioactive waste during operation and requires final disposal at a repository. Before final disposal, spent nuclear fuel is kept in the interim storage facility for spent nuclear fuel.

CASE

Increase in capasity for interim storage of spent fuel

Read more

Responsibility for nuclear waste management lies with the nuclear power companies that must carry out the necessary nuclear waste management measures for their own waste at their own cost. According to the Finnish Nuclear Energy Act, nuclear waste generated in Finland must be treated, stored, and finally disposed of in Finland, and the import of nuclear waste into Finland is prohibited.

TVO also takes care of the operating waste and the power plant decommissioning waste. The waste is finally disposed of in the repository for operating and decommissioning waste, also called the VLJ repository, located at Olkiluoto. The VLJ repository also receives the small radioactive waste created by Finnish healthcare, industries, and research institutions.

TVO also manages the interim storage for spent nuclear fuel. Expansion of the Olkiluoto interim storage for spent nuclear fuel was launched in fall 2010, and construction work has proceeded as planned. The interim storage is expanded in accordance with TVO's plans for the interim storage of spent fuel elements from both the existing OL1 and OL2 plant units and the OL3 plant unit currently under construction. The plan is to officially commission the expansion in 2014. The extension doubles the available fuel pool capacity.

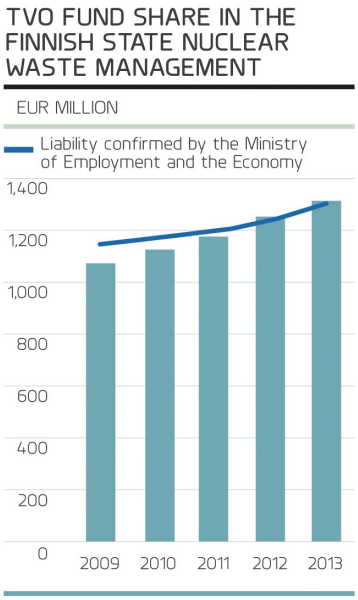
Advance collection of waste management funds

Financial investments into final disposal are already being made. The cost of final disposal is collected from the owners of TVO in the price of nuclear electricity.

In Finland, nuclear power companies bear the costs of nuclear waste management, and the funds for that purpose are collected into the State Nuclear Waste Management Fund. Each year, the Ministry of Employment and the Economy determines the share of each nuclear power company in the State Nuclear Waste Management Fund as well as the waste management fee to be paid to the fund. Each nuclear power company’s share of liabilities in the fund is decreased by the investments it has made in final disposal.

The annual fee payable to the fund is determined on the basis of the amount of disposable nuclear waste accumulated less the effect of actions taken for nuclear waste management. The fee is also increased or decreased on the basis of how well the fund succeeds in its investments: if the interest income is higher than expected, the fee is correspondingly reduced. The objective is to accumulate enough assets in the fund so that it allows for the final disposal of accumulated nuclear fuel to be carried out.

Further information: Nuclear waste management, Operating waste and Interim storage for spent nuclear fuel.



Final disposal

Final disposal of spent nuclear fuel

Spent nuclear fuel must be managed to avoid any risk to people or organic nature. A responsible producer of nuclear electricity will look after the fuel all the way, from bedrock to bedrock. TVO and Fortum have established a company, Posiva Oy, to handle the final disposal of the owner companies' spent nuclear fuel. The spent nuclear fuel from nuclear power plants will be packed in copper canisters and placed in the Olkiluoto bedrock at an approximate depth of 400 meters. Final disposal has been researched and tested for more than 30 years.

Final disposal of spent nuclear fuel is based on the multiple barriers principle. Barriers ensure that nuclear waste does not come into contact with people or organic nature. One deficient barrier, a predictable geological change, or other similar factor will not compromise effective isolation. Barriers include the solid state of the fuel, the final disposal canister, the bentonite clay buffer, the tunnel filling material, and the surrounding bedrock.

The spent fuel will be packed into canisters in the encapsulation plant. After encapsulation, the canisters are transported to the underground disposal facility by an elevator.

Before final disposal, the spent fuel is kept in an interim storage facility at TVO's Olkiluoto power plant. From the power plant, the fuel will be transported to the encapsulation plant of the final disposal facility in special containers. Spent fuel from TVO's and Fortum's power plants in Finland will be placed in the Olkiluoto repository.

CASE

ONKALO exhibiton soon to open at Olkiluoto

Read more

Plenty of time has been reserved for the preparation and practical execution of final disposal. Thorough preparations and careful implementation ensure the safety of the final disposal. The disposal of spent fuel is scheduled to begin in the 2020s; it will continue for nearly 100 years.

The actual tunnel section of ONKALO was completed in 2012, and technical facilities and systems have been added to the facility in 2013. An international tunnel closure testing program coordinated by Posiva and partially financed by the EU has been launched at the depth of 420 meters. Eight countries are involved in the program.

In September, the Ministry of Employment and the Economy organized a public hearing and discussion event on the Posiva construction license application, which Posiva had submitted to the Ministry of Employment and the Economy at the end of 2012. The Ministry of Employment and the Economy has received all the stakeholder group statements it has requested concerning the construction license application.

In 2013, Posiva has made preparations to begin the construction of a final disposal and encapsulation facility at the beginning of 2015. The work has included the preparation of a detailed project and system plans and recruitment of project personnel. The final disposal concept has also been developed further, the license application complemented with additional materials required by STUK, and demonstration measures to confirm the ability to begin final disposal in the first half of the 2020s launched.

Further information: Final disposal, Nuclear waste management, From the reactor to final disposal and Final disposal responsibilities and Posiva.

Environment in brief

Nuclear power is climate-friendly energy, which makes TVO an important contributor to the mitigation of climate change and advocate of sustainable development The level of our environmental management is already high, and we aim for the continual improvement of operations and a high level of environmental protection. Nuclear power generates no greenhouse gas or particle emissions. The most significant environmental impact of the Olkiluoto nuclear power plant is the warming up of the sea water near the plant.

The Environment theme of the Corporate Social Responsibility 2013 report describes TVO's continuous work for the good of the environment.

Continuous work for the benefit of the environment

TVO's environmental management system is EMAS registered and certified according to the international ISO 14001 standard. The purpose of the system is to improve continuously the company's operations and the level of environmental protection. TVO's corporate social responsibility is based on the principles of sustainable development. TVO recognizes the environmental aspects of its operations, strives to minimize the adverse impact of its operations at all stages of the electricity production chain, and ensures that nuclear fuel is used in a safe manner from raw material acquisition to final disposal. TVO also requires other companies and our partners operating in the power plant area to take a responsible attitude towards environmental matters consistent with our policies and operating principles.

CASE

Art from filters

Read more

In 2013, the operations at the Olkiluoto nuclear power plant complied with TVO's corporate social responsibility policy, environmental permits and environmental management system, and remained at the good level of previous years. TVO's management confirms the targets for major environmental and energy aspects. An environmental team, compiled of experts from various fields, regularly monitors the achievement of objectives and defines corrective measures to improve the progress when necessary. In 2012, TVO set a total of fifteen targets for the development of environmental and energy issues. All of these targets were reached wholly or in part.

The most significant environmental impact of the Olkiluoto nuclear power plant is the warming up of the sea water near the plant. Continuous management and potential utilization of the thermal load contained in the cooling water is a long-term objective for TVO. During the year under review, the temperature of cooling water remained within the limits required by the environmental permit. The environmental impact of the construction of the Olkiluoto 3 plant unit has been minimized through measures such as the sorting and recycling of waste.

The lifecycle carbon emissions of the nuclear electricity produced at Olkiluoto correspond to those of hydropower and wind power. The radioactive emissions into the air and water from the nuclear power plant are very low, mainly below one percent of the maximum permissible limits. During the year under review, radioactive emissions into the water were the lowest of the entire operating life of the nuclear power plant. No accidents causing environmental damage occurred at the power plant.

TVO is committed to the Energy Efficiency Agreement of trades and industries. Energy efficiency measures are integrated into TVO's usual operations, such as the modification process and personnel development. During the year under review, TVO participated in the Energy Saving Week. During the week, personnel were provided with information on the potential of energy efficiency at home, energy certificates of houses, and energy efficiency at the plant units.

A waste sorting campaign day was also included in the Energy Saving Week, with information of correct sorting of waste provided to personnel. TVO also encouraged its personnel to participate in WWF's Earth Hour campaign.

Environmental surveys of the Olkiluoto island were launched as early as in the 1970s, and the state of the environment is continuously monitored. A biodiversity survey of the island was carried out in 2013 to define the state of the environment and the range of species present, and to allow a detailed analysis of the environmental impact of the operations. Important observations included the changes that occur in the environment of the island due to new infrastructure and the construction effort, the abundance and diversity of birds in places, and the increase of the nature conservation areas on the island. The habitat types found in the area are mostly low-nutrient with few species, which keeps the impact of forestry and construction work minor.

The personnel are informed of environmental matters in induction training, which all new employees at the Olkiluoto nuclear power plant participate in. TVO also provides training on waste sorting and energy efficiency, for example, and organizes campaign weeks on current environmental matters.

Please read more about environmental impacts and environmental researh from TVO's Environmental Report.

OLKILUOTO NUCLEAR POWER PLANT'S ENVIRONMENTAL BALANCE SHEET 2013 (2012)

Emissions into the air

		Allowed annual emissions
Noble gases (TBq)	0.22 (Kr-87 equivalent) (1,21)	(9.420)
Iodine (TBq)	0.0000907 (I-131 equivalent) (0,000017)	(0.103)
Aerosols (TBq)	0.000020 (0,000016)	
Carbon-14 (TBq)	0.80 (0,88)	
Tritium (TBq)	0.62 (0,36)	
CO_2 (t)	483 (384)	
NOx (t)	0.63 (0,52)	
SOx (t)	0.0017 (0,001)	
Particles (t)	0.44 (0,36)	

URANIUM FUEL (t) 36.8 (37.6)

Intermediate agents:	
- Oils (m³)	303 (238)
- NaClO (15 %) (m³)	62.6 (67)
- Other chemicals (t)	139.3 (115)
- Ion exchange resins (t)	10.1 (10.8)
- Water treatment chemicals (t)	108.3 (94)
Raw water (tap and process water) (m³)	274,549 (211,312)
Cooling water (million m³)	2,288 (2,267)

ELECTRICITY (TWh) 14,6 (14,5)

Municipal waste	OL1 and OL2	OL3*	Total
- Recyclable waste (t)	586 (539)	1,231 (1 571)	1,817 (2,110)
- Landfill waste (t)	101 (108)	210 (296)	311 (404)
- Hazardous waste (t)	137 (109)	103 (73)	240 (182)

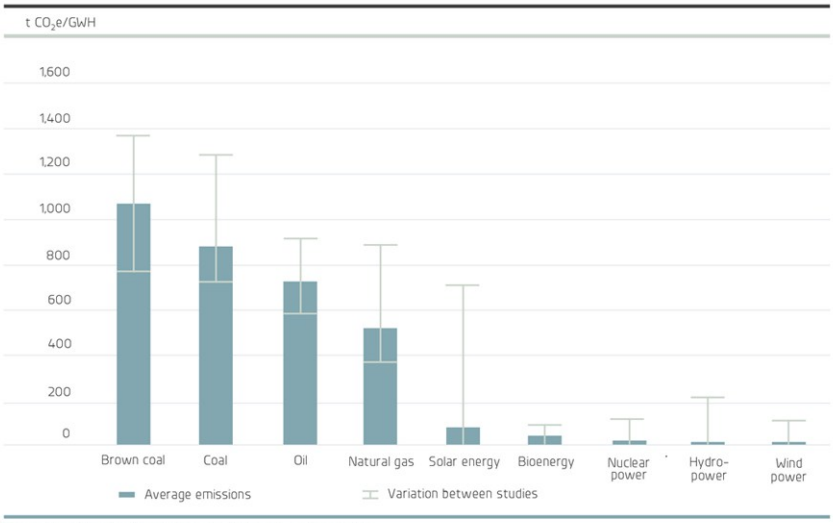
*construction phase

Radioactive waste	
- Low level waste (m³)	0 (172)
- Intermediate level waste (m³)	42 (20)
- Spent nuclear fuel (t)	35.7 (35.8)

Emissions into the water

		Allowed annual emissions
Cooling water (million m³)	2,288 (2,267)	
Thermal load to the sea (TWh)	27.1 (26.8)	
Fission and activation products (TBq)	0.00009 (0.002)	(0.296)
Tritium (TBq)	1.46 (1.31)	(18.3)
Phosphorus (kg)	10 (31)	
Nitrogen (kg)	4,380 (5,475)	
BOD_{7ATU} (kg)	548 (985)	

LIFECYCLE GREENHOUSE GAS EMISSIONS



Source: World Nuclear Association, compilation of various studies

TVO and Society

TVO supports Finnish well-being through the safe and economical production of climate-friendly electricity. Competent and motivated personnel are a prerequisite for the safe operation of a nuclear power plant. TVO supports open interaction in the immediate region, Finnish society, and within the international nuclear energy sector.

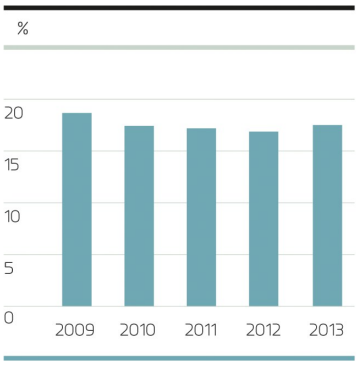
The TVO and society theme of the Corporate Social Responsibility 2013 report includes an overview of TVO and information on the funding and financial basis of operations, personnel, occupational and radiation safety, communications, stakeholder cooperation, sponsorship operations, and the many aspects of TVO's social participation.

TVO: an overview

Teollisuuden Voima Oyj (TVO) contributes to the maintenance of sustainable development and the well-being of Finnish people by providing shareholders with cost price electricity produced in a safe, economical, and climate-friendly manner at the Olkiluoto nuclear power plant in Eurajoki.

Established in 1969, TVO is a limited liability company that provides electricity for its owners at cost price. TVO operates two nuclear power plant units in Olkiluoto, Eurajoki, since 35 years. Olkiluoto 1 and 2 were built to satisfy the increasing need for electricity of Finnish energy-intensive industries. During the past decades, TVO has developed from an industrial resource to a base load producer that benefits the entire society. The two Olkiluoto plant units currently produce approximately one sixth of Finland's total electricity output. Approximately half of the electricity produced by TVO is spent by the industry. The other half is used at homes, in service production and in agriculture via power utilities.

TVO'S DELIVERY SHARE OF THE ELECTRICITY USED IN FINLAND



After their early years, OL1 and OL2, which were commissioned in 1978 and 1980 respectively, have remained among the most reliable nuclear power plant units in the world. On Olkiluoto Island, TVO has all the competence, structures, functions, and waste management required for the safe production and construction of nuclear electricity. TVO's nuclear power expertise and operating experience attract worldwide interest.

During their 35 years of operation, the Olkiluoto plant units have produced a total of 424 billion kWh of climate-friendly electricity. Every year, the nuclear power produced at Olkiluoto helps prevent approximately 12 million tonnes of carbon dioxide emissions in Finland compared to producing the same amount of electricity using coal. The saved amount corresponds to the total annual CO2 emissions of all road traffic in Finland.

The Olkiluoto site also features a 1 MW wind power plant, as well as a 100 MW gas turbine reserve power plant built as a joint project of Fingrid Oyj and TVO. TVO's share of the power produced by the Meri-Pori coal-fired power plant is 45%. In addition to Olkiluoto, TVO has offices in Helsinki, Brussels, and Rauma and Pori.

Through its direct owners, TVO's nuclear electricity brings well-being to 135 municipalities. These municipalities are shareholders in more than 50 energy companies that serve as a route for distributing electricity from Olkiluoto throughout Finland.

The impact of global megatrends on the energy industry

GLOBAL CHALLENGES FOR THE ENERGY INDUSTRY

Population increase and economic growth usually also increase the demand for energy. The energy sector plays an important role in ensuring that growth is sustainable. TVO aims to respond to global challenges with a strategy based on an uncompromising safety culture and solid nuclear energy expertise.

As the wealth of the population has increased and energy-efficiency improved, electricity's share of total energy consumption has kept climbing. Electricity can help advance the efficient utilization of natural resources and sustainable economic development. Scarce natural resources, increasing environmental problems and rising fuel prices strengthen electricity's share of total energy consumption. When other energy sources are replaced with electricity, the overall energy requirement decreases, as electricity can be used more efficiently.

Emissions can also be reduced when electricity is produced with no CO_2 emissions using nuclear power, for example. Climate change poses a challenge for which the energy industry must help find solutions. The available natural resources and energy sources must be utilized to maximum benefit, and new low-emission technology that saves energy must be developed and adopted. Nuclear power will help us achieve a low-carbon future, which requires the reduction of greenhouse gas emissions by 80–90% before 2050.

Group structure

TVO's majority shareholder is Pohjolan Voima Oy with its share of 58.5% of the TVO stock. Teollisuuden Voima Oyj is a joint venture of Pohjolan Voima and several other companies.

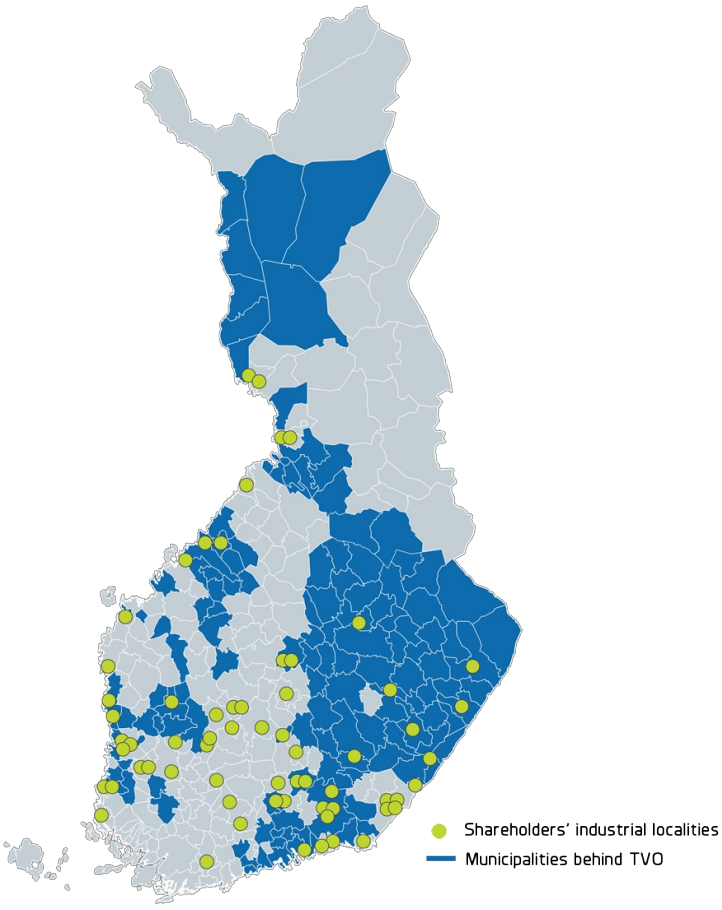
TVO Nuclear Services Oy (TVONS) is a subsidiary fully owned by TVO. Integration of TVO's fully owned subsidiaries Olkiluodon Vesi Oy and Perusvoima Oy to the mother company was entered into the trade register on December 31, 2013. TVO and Fortum also have a joint venture, Posiva Oy, of which TVO owns 60%.

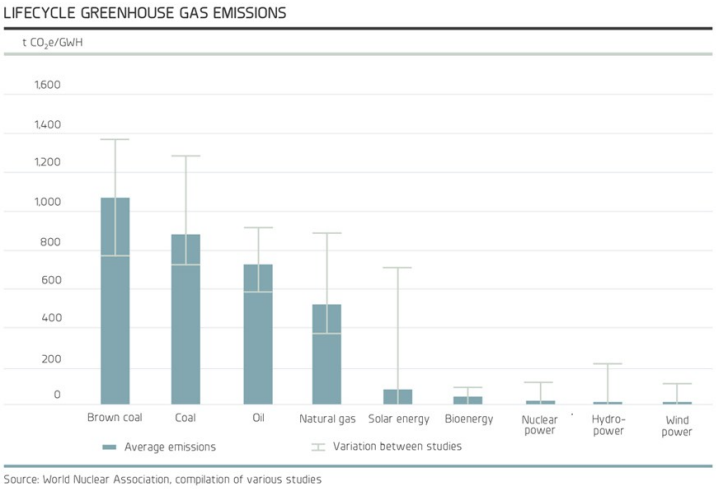
Further information: TVO in brief, TVO's history timeline, Company information and TVO's location.

TVO'S SHAREHOLDERS AND THEIR HOLDINGS, DECEMBER 31, 2013

	A Series	B Series	C Series	Total
EPV Energia Oy	6.5	6.6	6.5	6.5
Fortum Power and Heat Oy	26.6	25.0	26.6	25.8
Karhu Voima Oy	0.1	0.1	0.1	0.1
Kemira Oyj	1.9	–	1.9	1.0
Oy Mankala Ab	8.1	8.1	8.1	8.1
Pohjolan Voima Oy	56.8	60.2	56.8	58.5
	100%	100%	100%	100%

TVO is owned by Finnish industrial operators, energy sector companies, and municipalities





Source: World Nuclear Association, compilation of various studies

Financing

TVO's financing situation has developed as planned, and an efficient mix of financing sources has been used. The role of the capital market as a source of financing has increased further. All the credit ratings agencies with importance for capital market financing estimate TVO's future as stable.

Proper financing ensures TVO's solvency in all circumstances. TVO's basic principle is to raise about three quarters of the funding required for investments from the financial markets, with about one quarter coming from the owners. TVO prefers long-term financing arrangements. Financing is always sought for the company, not for individual projects.

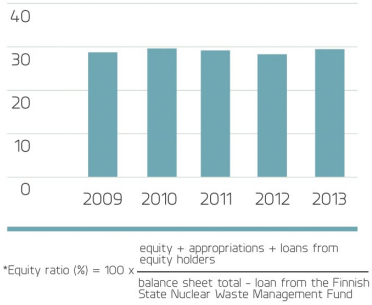
TVO is in the middle of major investments; their financing arrangements require strong trust. While major projects, OL3 and OL4, are in progress, it is important to maintain the trust of investors. From the point of view of investors, the good electricity production capacity of OL1 and OL2 is very valuable. These plant units have already been generating electricity for more than 35 years with high load factors, and the original investments have been amortized.

TVO's owners are very committed to the company and trust its operations. The solid trust was reflected in the approval of the shareholder loan commitment in 2013. In February 2013, TVO decided to propose its B series shareholders a new shareholder loan amounting to EUR 300 million to allow TVO to prepare better for potential additional delays and costs pertaining to the completion of the OL3 project. In June in the same year, all the owners of B series shares signed a shareholder loan agreement in accordance with the proposal of the Board.

Further information: Investor information.

EQUITY RATIO

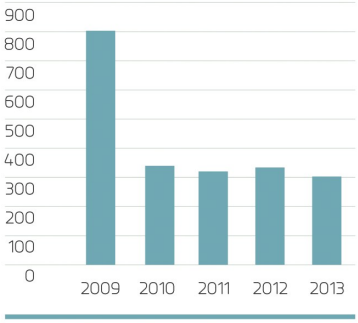
PERCENT*



*Equity ratio (%) = 100 x equity + appropriations + loans from equity holders / balance sheet total - loan from the Finnish State Nuclear Waste Management Fund

INVESTMENTS

EUR MILLION



Economic aspects

TVO creates well-being, employment and income by producing cost-price electricity for its shareholders. The company has a significant impact on the economy of the municipalities in the immediate region, and it directly or indirectly touches the everyday life of thousands of people all over Finland.

TVO's operations are based on the production of electricity to shareholders at cost price. Owners cover all of TVO's operating costs and, in return, receive electricity pro-rata to their ownership. TVO's owners consume the power themselves or sell it on to third parties. The cost price model allows electricity companies and electricity users of different sizes to participate in major investments, such as those required for nuclear power, and reap the benefits of large-scale production. TVO's owners include 135 municipalities, which means that stable costs and predictability, the benefits of cost-price electricity, are felt all over Finland.

The financial performance of companies is compared using various indicators. Due to the cost price operating principle, TVO cannot be analyzed using conventional financial indicators, as they were created for comparing companies that aim to make a profit. Important indicators to TVO and the owners include the amount of electricity produced and the load factors of the plant units.

In 2013, TVO's plant units operated safely and achieved their best production output, 14.6 TWh. The net output of OL1 was 7.5 (7.0) TWh and load factor 97.1% (90.4%). The net output of OL2 was 7.2 (7.5) GWh and load factor 93.1% (96.9%). The combined load factor of the plant units was 95.1%. OL1 underwent an eight-day refueling outage, and OL2 a maintenance outage of approximately 18 days.

TVO makes investments to improve the availability, productivity and safety of its nuclear power plant. Modernizations have brought the net electrical output of OL1 and OL2 from 660 MW to 880 MW, 1,760 MW combined, and significantly improved the safety and efficiency of production operations. TVO aims to maintain the plant units as good as new.

As a part of the major modernization project currently in progress, TVO will replace the emergency diesel generators. The project is the most extensive single plant modification project to have been carried out in Olkiluoto. The total investment in the diesel generator replacement amounts to more than EUR 100 million. TVO acquires the emergency diesel generators from Wärtsilä Finland Oy. The agreement on the delivery of emergency diesel generators and their auxiliary systems to the Olkiluoto nuclear power plant was signed in May 2013. The replacement project will begin in 2016 and has been estimated to continue to 2020.

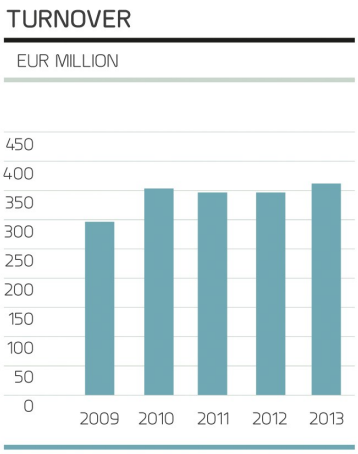
Electricity at a stable price

The price of electricity charged from TVO's owners remains stable when operations follow plans and both costs and production figures are in line with the budget. TVO produces a steady supply of electricity and maintains its future production capacity.

The operations were according to plan in 2013; the production of electricity, turnover, and the production cost of electricity were all in line with the targets set. A stable and predictable price for electricity is important to our owners.

In 2013, TVO's turnover was EUR 362.8 (347.1)million. Of the turnover, EUR 40.4 (29.8) million was accumulated from the electricity produced at the Meri-Pori coal-fired power plant. TVO's share of the Meri-Pori power plant's production capacity is 45%.

In fall 2013, 35 years had passed since TVO launched production operations in Olkiluoto. OL1 and OL2 produce electricity at a competitive price, and the plant units are continuously maintained and improved. In 2013, OL2 achieved the milestone of 200 TWh of electricity produced in commercial operation.



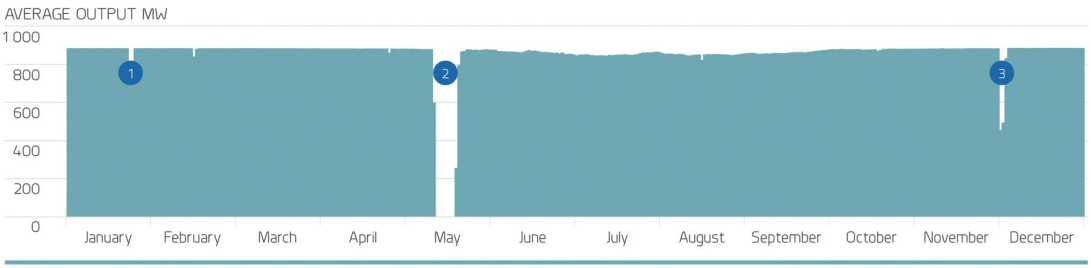
CASE

35 years of clean electricity production

Read more

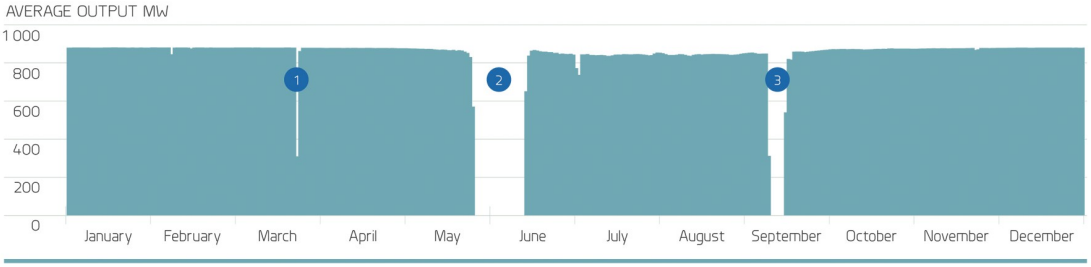
PRODUCTION IN 2013

OL1



1. Shutdown of the reactor coolant pumps after the control valve of the high-pressure turbine closed spontaneously. Power limitation due to the replacement of the rubbing-face seals of the feedwater pumps.
2. Refueling outage
3. Load drop due to a failure of the over-voltage protection of the exciter rotor.

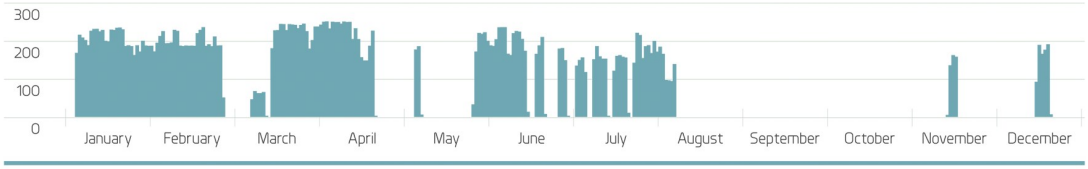
OL2



1. Reactor shutdown to the hot shutdown state due to the inspection and replacement of the flexible connectors between the generator and the exciter.
2. Maintenance outage
3. Turbine tripped by the earth fault protection of the generator stator.

TVO'S SHARE OF MERI-PORI'S PRODUCTION

AVERAGE OUTPUT MW



Well-being and employment

TVO procures products and services from both local and international operators.

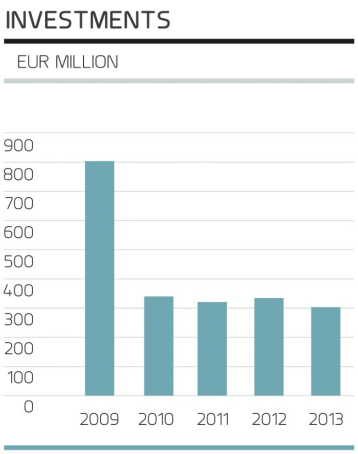
TVO and the OL3 construction site are important sources of employment and economic prosperity in the region, both directly and indirectly. The purchases of products and services also provide employment and income to local people. In addition, TVO pays real estate tax to the Municipality of Eurajoki.

In 2013, TVO worked with approximately 1,000 Finnish material or service supplier, of which 300 were located in the Satakunta region. During the year under review, the OL3 site employed an average of 2,790 people who conveyed the positive financial impact on the entire region.

The value of nuclear fuel procurement amounted to EUR 56.5 (67.5) million in 2013. Nuclear fuel worth EUR 48.2 (46.1) million was consumed in the electricity production process. TVO only procures uranium and processing services related to the fuel supply chain from responsible suppliers it has specifically approved.

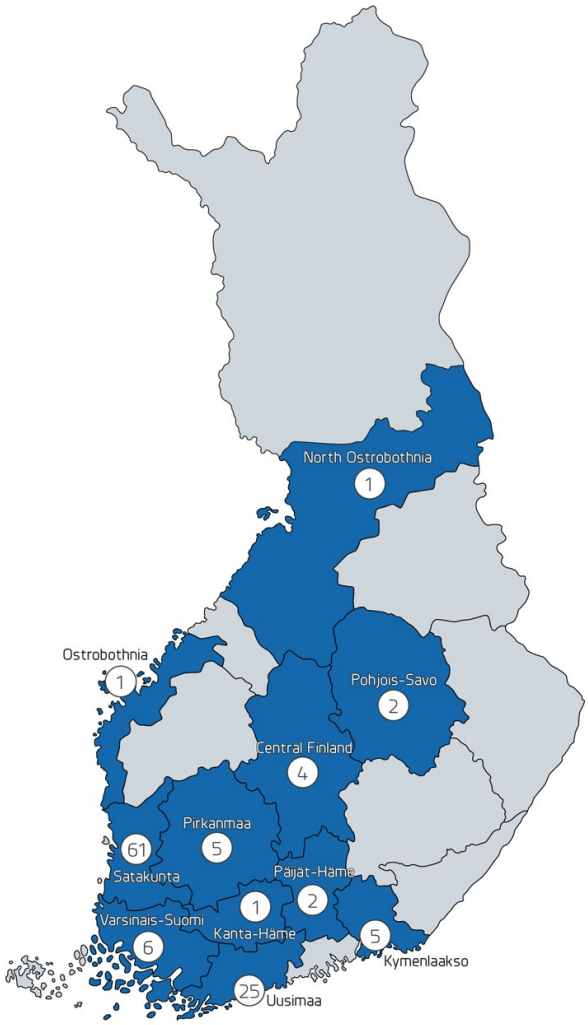
In compliance with the Nuclear Energy Act, TVO pays nuclear waste management fees to cover future costs of nuclear waste management. In 2013, the Finnish State Nuclear Waste Management Fund confirmed TVO's fees for 2012 to be EUR 43.1 (34.1) million. The fee for 2013 will be confirmed in 2014. During the past year, TVO's total costs for nuclear waste management amounted to EUR 89.3 (76.9) million.

TVO's investments in 2013 amounted to EUR 302.5 (336.9) million, of which the OL3 project accounted for EUR 260.8 (274.0) million.



COMPANIES PARTICIPATING IN ANNUAL OUTAGES

2013



Social responsibility indicators

	2013	2012	2011	2010	2009
Personnel, permanent, Dec 31	762	772	738	714	717
- Men	589	599	569	560	567
- Women	173	173	169	154	150
Personnel, fixed-term, Dec 31	90	91	75	84	80
- Men	49	48	38	36	32
- Women	41	43	37	48	48
Personnel living in (%) 1)					
- Eurajoki	18	18	18	19	20
- Rauma	55	55	56	57	57
- Pori	11	11	11	10	9
- other	16	16	15	14	14
New TVO employees 1)	25	71	73	29	31
- Men	18	62	47	21	21
- Women	7	9	26	8	10
Summer workers	175	166	173	168	186
- Men	112	115	117	106	116
- Women	63	51	56	62	70

1) Data reported only on the permanent personnel.

Economic impact

In the reporting of its economic responsibility, TVO uses the applicable indicators of the Global Reporting Initiative (GRI). The social responsibility report includes some figures that are gathered as a part of the closing of accounts but that are not included in the actual annual report and accounts. The following figure is a description of TVO's economic impact (M€) on major stakeholders. The data was derived from TVO's income statement and balance sheet. The legend does not include all impacts.

TVO's economic impact

A description of TVO's economic impact (M€) to major stakeholder groups.

Production of added value

Shareholders

363 (347) M€

TVO produces electricity to its shareholders at cost price. In 2013, TVO shareholders paid a total of EUR 363 (347) million for the electricity. TVO supplied 15,331 GWh of electricity, approximately one-sixth of the total amount of electricity consumed in Finland.

The electricity is distributed all over Finland via a chain of ownership which consists of TVO's principal owner Pohjolan Voima as well as the Finnish companies and power utilities of 135 municipalities, which own Pohjolan Voima and receive the produced electricity.

About half of the electricity produced by TVO is used in industry by industrial companies owned by TVO's shareholders in various localities. The other half is consumed by households, agriculture, and the service sector.

Distribution of added value

Suppliers and subcontractors

199 (194) M€

About 1,000 external workers participated in the annual outages, 900 of them Finnish. Subcontractors from three other countries also participated in the effort.

Long-term partners include: Securitas Oy, in charge of security; Sodexo Oy, in charge of the personnel canteen; and RTK-Palvelu Oy, responsible for cleaning and sanitation services. These companies employ over 300 people at Olkiluoto. In all, TVO regularly provided work for an approximate total of 700 subcontractors and consultants.

Personnel

52 (50) M€

At the end of the year, TVO employed 852 (863) people, 821 (837) in Olkiluoto and 31 (26) in Helsinki.

Of the total personnel, 56% (55%) are from Rauma, 18% (18%) from Eurajoki, and 11% (11%) from Pori.

The share of female employees was 23% (22%).

In 2013, TVO hired 25 (71) new employees, and 24 (21) employees retired.

An average of 2,790 people worked at the OL3 site during the year. In addition, the subcontract work for the project provides employment both in Finland and abroad.

Investments and financiers

312 (350) M€

Financiers

At the end of the year, TVO's current and non-current liabilities amounted to EUR 3,427 (3,197) million. The company raised a total of EUR 362 (775) million in non-current liabilities while repayments amounted to EUR 176 (241) million.

At the end of the year, TVO had undrawn credit commitments as well as cash and cash equivalents totaling EUR 2,220 (2,164) million. Of this, subordinated shareholder loan commitments by the owners accounted for a total of EUR 720 million, of which EUR 220 million is intended for financing the bidding and engineering phase of the OL4 project and EUR 500 million for the financing needs of the OL3 project.

All credit rating organizations consider TVO's outlook to be stable.

Investments

Modernization work, such as the replacement of low-voltage switchgear, was carried out during the OL1 annual outage, together with work on the reactor. TVO also signed an agreement on the purchase of new emergency diesel generators and their auxiliary systems for the Olkiluoto nuclear power plant.

In 2013, investments in the OL3 project amounted to EUR 261 (274) million. Most of the construction work for the new plant unit has been completed, and the main components are in place. Design, documentation and licensing of the reactor island automation systems are still in progress.

Preparation of the OL4 nuclear power plant project continued with an investigation of the licensing potential and suitability of the power plant alternatives together with the potential plant suppliers.

R&D costs totaled EUR 38 (45) million. R&D on nuclear waste management accounted for most of this.

State and municipality

74 (58) M€

TVO paid the municipality of Eurajoki EUR 13 (12) million in real estate tax.

TVO paid EUR 43 million in nuclear waste management fees to the State Nuclear Waste Management Fund to cover future costs of nuclear waste management.

The figures in the diagram were derived from TVO's income statement and balance sheet. The legend does not include all impacts.

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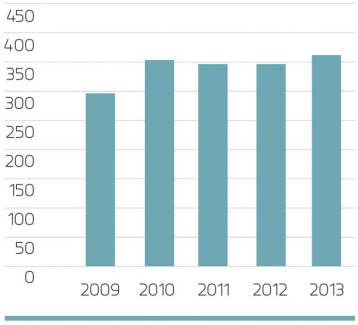
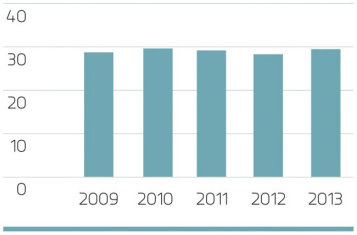
TURNOVER

EUR MILLION



EQUITY RATIO

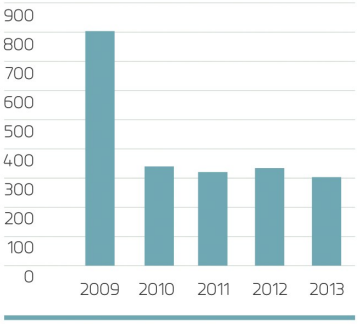
PERCENT*



*Equity ratio (%) = 100 x $\frac{\text{equity + appropriations + loans from equity holders}}{\text{balance sheet total - loan from the Finnish State Nuclear Waste Management Fund}}$

INVESTMENTS

EUR MILLION



Personnel

TVO is a hub of Finnish nuclear power expertise with top-quality results produced by skilled, professional, experienced and motivated personnel. TVO possesses expertise on the entire lifecycle of a nuclear power plant from design and procurement of a plant unit to the final disposal of spent nuclear fuel. Olkiluoto is a competence center with all the resources and operations required by safe and economical production of nuclear power, and a shared operating culture to steer all operations.

The personnel are committed to the responsible performance of their duties in accordance with the agreed procedures that have been set out in the Code of Conduct approved by the Board of Directors. The Code of Conduct defines TVO's general principles concerning practical operations and social responsibility. The purpose of the Code is to create a unified way of working in accordance with a shared framework of responsibility and ethics.

Personnel figures

At the end of the year, TVO employed 852 (863) people. Most of the personnel works at Olkiluoto, with approximately 30 employees based in Helsinki. The average age of the personnel in 2013 was 43.7 (43.6) years.

CASE

Summer job season is over

Read more

The average number of employees during the year was 890 (879). In 2013, 25 (71) new employees were hired. At the end of the year, 22.7% (22.4%) of the permanent workforce were female. The Board of Directors had 10 (10) members, one (1) of them a woman. The Management Group had 13 (13) members, two (2) of them women. The Management Group has 3 (3) personnel representatives.

During the year, 65 (53) people changed their jobs within the company. A total of 36 (36) permanent employees left the company, 24 (21) of them due to retirement. Nine per cent of the permanent staff spent time on parental leave during the year. Return to work after parental leave has been at a good level, and nearly 100 per cent were working one year after the end of parental leave. Low staff turnover and long employment relationships form the basis of TVO's competencies and professionalism. When the recruitment of new employees in recent years is taken into account, the average duration of employment relationships was 14 (14) years.

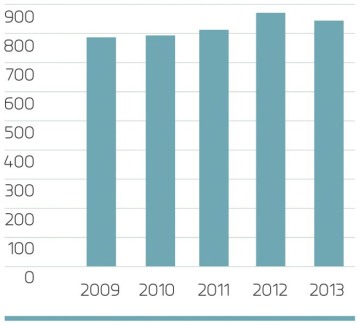
In 2013, TVO employed 175 (166) summer trainees. TVO participated for the first time in the responsible summer job campaign of the Finnish Children and Youth Foundation. The purpose of the campaign is to develop summer employment and the ability of 16–25-year-olds to find their path in the world of work. For TVO, participation in the campaign meant the incorporation of its principles into the work of summer trainees. The responsible summer job campaign has five principles, three of which brought changes to TVO's practices. Open communication was developed to improve the applicant experience, fairness and equal treatment. Success of the summer training period was followed up with feedback discussions, which particularly focused on the successful application process, appropriate induction training, and pleasant working community.

In 2013, TVO spent EUR 62.9 (61.2) million on personnel expenses, of which wages and salaries accounted for EUR 51.7 (50.3) million, pension costs EUR 8.3 (8.1) million and other statutory employer’s contributions EUR 3.0 (2.8) million.

TVO observes the collective labor agreements for the energy sector, valid until January 31, 2017, in accordance with the employment and growth agreement between central labor organizations. The energy sector's agreed salary systems for technical and industrial officers and employees are based on the job requirement categories and support an equal salary policy. As a rule, TVO's employment benefits apply to the entire personnel, excluding very short employment contracts.

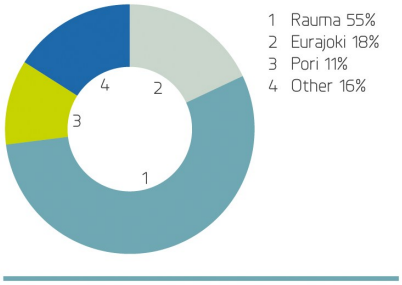
TVO'S PERSONNEL

NUMBER OF EMPLOYEES



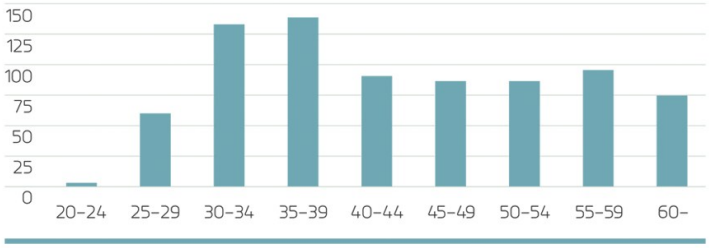
PLACE OF DOMICILE, PERSONNEL

2013



TVO'S PERSONNEL BY AGE GROUP

YEAR 2013



Social responsibility indicators

Personnel structure	2013	2012	2011	2010	2009
Personnel, permanent, Dec 31	762	772	738	714	717
- Men	589	599	569	560	567
- Women	173	173	169	154	150
Personnel, fixed-term, Dec 31	90	91	75	84	80
- Men	49	48	38	36	32
- Women	41	43	37	48	48
Average age of personnel 1)	43,7	43,6	44,0	44,7	44,6
- Men	44,3	44,1	44,8	45,3	45,1
- Women	41,7	41,7	41,4	42,8	42,7
Personnel living in (%) 1)					
- Eurajoki	18	18	18	19	20
- Rauma	55	55	56	57	57
- Pori	11	11	11	10	9
- other	16	16	15	14	14
New TVO employees 1)	25	71	73	29	31
- Men	18	62	47	21	21
- Women	7	9	26	8	10
Average age of new TVO employees 1)	34,3	34	34	34	34
- Men 2)	34,9				
- Women 2)	27,7				
Incoming turnover (%) 1)	3,3	9,2	9,9	4,1	4,3
Outgoing turnover (%) 1)	4,7	4,6	6,6	4,5	3,2
Number of retirees 1)	24	21	29	18	13
Average age of retirees1)	63,5	64	63	63	64
Summer workers	175	166	173	168	186
- Men	112	115	117	106	116
- Women	63	51	56	62	70

1) Data only reported for permanent employees.

2) Data reported from year 2013.

Occupational well-being

TVO wishes to maintain its personnel's continuing ability to work through attention to occupational well-being. Extensive personnel and safety culture surveys are carried out every three years among the entire personnel.

Development measures that were found necessary in the 2012 personnel survey have been planned and carried out in 2013. Commitment to the company's values and objectives, cooperation between units and among supervisors and their teams, and the implementation of changes were considered to be at a good level. Targets for development included the high level of bureaucracy, efficiency of the decision-making processes, the personnel's ability to participate in decisions, equal treatment, and rewarding. During the year under review, these development measures have been implemented in the units where they have been found necessary but also on the corporate level by the Management Group, in supervisor workshops, with employee representatives and occupational safety representatives and with TVO employees who joined the company during the year.

The occupational well-being of TVO's employees receives attention in many ways. Well-being is promoted by an extensive occupational health care program and the supplementary insurance policy, among other things.

Flexible hours have been in use for more than 20 years, allowing employees to better balance their work with their free time. With flexible work arrangements, employees are able to arrange their daily and weekly working hours according to their needs. Other systems promoting occupational well-being at TVO include the internal sabbatical system applied since the early 1990s, job alternation leaves, and part-time working arrangements.

TVO promotes diverse club activities. The clubs provide an opportunity for recreation through exercise, culture, and other activities. The personnel also have access to vacation destinations for spending their free time.

Opportunities for maintaining skills and competencies also form an important part of occupational well-being. The personnel's training and development needs are reviewed every year in the result and development discussions.

Competence development

Competent and motivated personnel form the basis of the safe operation of a nuclear power plant. TVO continuously organizes training in order to maintain the professional skills and competence of its personnel. Internal training is available in fields such as plant technology, nuclear power, and plant operation. A high level of competence is achieved through practices such as training programs for specific tasks, job rotation, on the job training and familiarization.

A task-specific or personal training plan is created for each TVO employee. In 2013 TVO's employees received a total of 8,592 (8,636) days of training, which means on average 9.7 (9.8) days per each employee. Annual training program is prepared with attention to task-specific training plan and other detected training needs. The implementation of the annual training program is monitored, and in 2013, it was found to follow the plan for the most part.

To improve supervisor skills, training and Topical Subject Days on various themes are arranged for supervisors. Basic supervisor training was organized for 11 new supervisors, and the third instance of the company's own supervisor training program, the TVO/Posiva Forerunner, continued with 15

supervisors participating in it. The Supervisor Forum was launched to support the work of supervisors'. The forum offers supervisors with current information, background information, examples of the application of instructions, links, and other helpful materials.

The operating personnel of the power plants receive extensive training throughout their career. In 2013, operators of OL1 and OL2 participated in operator training events and advanced simulator courses in the spring and in the fall as required by their refresher training program. The training of new operators who started in the position in 2011 and 2012 proceeded according to plan with basic simulator training and basic training period.

In 2013, operators of OL3 participated in operator training events in the spring and in the fall as required by their refresher training program. Additional simulator training was organized for operators between September 16 and November 22, 2013. The same opportunity was used to give TVO's trainers training and practice in the use and maintenance of the OL3 simulator. The rest of the time, OL3 operators have worked in commissioning duties and the trainers in the planning of training.

All employees working at the Olkiluoto nuclear power plant must complete induction training every three years. The general part of the training is intended for everyone working in the Olkiluoto area, while the radiation protection part is only intended for those working in the controlled area. In 2013, 2,918 people completed the general part of induction training, and 851 completed the radiation protection part (reported on January 16, 2014). Both parts of the training were organized in Finnish and in English.

TVO aims to develop competence development by also acknowledging it's future needs as an employer of new nuclear energy experts. TVO has engaged in varied cooperation with schools and students. During the year, studies in nuclear technology were available at the Satakunta University of Applied Sciences, among others. In recent years, TVO has ordered an average of 15–20 thesis or diploma projects per year.

Social responsibility indicators

Competence	2013	2012	2011	2010	2009
Average lenght of service (years) 1)	14	14	15	15	15
Training days per person	9,7	9,8	13,1	8,9	10,6 4)
Training days in total	8592	8636	11137	7482	8835 4)
Trainind days					
- senior salaried employees	4450	4549	6095	3952	4176 4)
- technical salaried employees	2766	2443	3596	2242	3103 4)
- industrial salaried employees	226	230	291	276	261 4)
- workers	732	1015	778	655	883 4)
- fixed-term employees + others	418	399	377	356	406 4)
Site entry training courses - common part 2)	158	152	174	275	261
- participants 2)	1479	1939	2471	1412	1337
Site entry training courses - common part 3)	101	100	104	117	149
- participants	1439	2170	2543	3020	2660
Site entry training courses - radiation part 2)	60	87	76	-	-
- participants	851	1088	1210	1343	1117
Occupation Safety Card training courses	14	9	21	28	54
- person given the Card	334	133	243	329	775

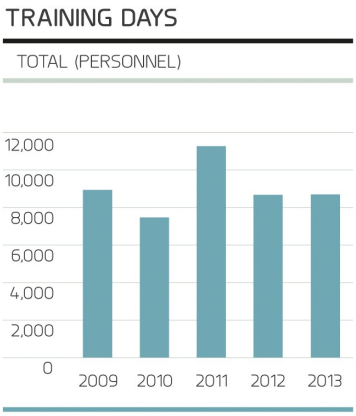
1) Data reported only on the permanent personnel.
2) In Finnish
3) In English
4) Mistake on year 2009 training numbers were discovered year 2011, when numbers have been corrected.

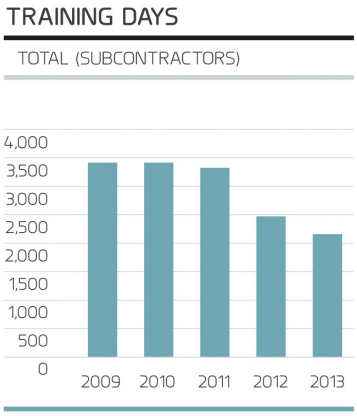
Internal training days of TVO employees

	2013	2012	2011	2010	2009
Technical science	113	39	75	85	52
Nuclear technology	914	1571	1704	1064	1143
Plant technology	738	857	1937	1195	1879
Operation of NPP	2359	1962	2680	2009	1810
Maintenance of NPP	512	582	505	421	433
Protection / security	1283	1033	965	946	1338
Management and finance	145	248	123	172	204
Information technology	245	322	480	140	130
Co-operating and communication	504	151	456	306	215
Other issues	977	946	1353	628	854
In Total	**7790**	**7711**	**10278**	**6966**	**8058**

Participation in training in relation to duration of employment

	under 2 years	2-5 years	5-10 years	10-15 years	15-20 years	over 20 years
Technical science	45	55	52	16	1	19
Nuclear technology	170	295	281	42	25	69
Plant technology	455	49	68	30	12	70
Operation of NPP	671	194	681	161	101	623
Maintenance of NPP	79	131	175	26	13	122
Protection / security	130	155	325	88	35	335
Management and finance	25	23	26	6	2	23
Information technology	36	38	96	25	7	51
Co-operating and communication	46	83	178	119	25	100
Other issues	78	97	153	50	16	101
In Total	**1735**	**1120**	**2035**	**563**	**237**	**1513**





Occupational safety

Occupational health and safety operations are guided by an occupational health and safety system compliant with the requirements of the OHSAS 18001 certificate.

Systematic occupational safety operations are a basic prerequisite of the zero accidents approach. The operations include periodic risk assessments and analyses, implementation of corrective measures to reduce risks, performance of safety rounds of various degrees, and the continuous monitoring and development of operations. Safety observations, in which everyone working in Olkiluoto participates, are an important indicator of proactive occupational safety work. In 2013, 589 (546) safety observations were made. Based on the observations, 642 corrective measures were recorded into the observation and corrective measure tracking system.

Focus areas of occupational safety in 2013 included the maintenance of occupational safety indicators that serve the organization, attention to safety during design, development of work guidance and induction training, improvement of cooperation between the various occupational safety organizations active in Olkiluoto, and certification of a shared occupational health and safety system for the existing plant units and the OL3 site.
Since 2008, TVO has been in the process of implementing a Human performance (HU) program that aims to manage human errors and strongly supports occupational safety. The HU tools in use include kick-off and closing meetings, confirmation of other team members' work independently or through pair work, and clear communication. Training on the HU tools has been developed, and three training videos have been produced on the subject. Practical use of the tools has been monitoring with internal audits and field observation. Human error-based events during annual maintenance have been reported in a memorandum which examined the role that human factors had in the event.

Occupational safety operations are coordinated by an occupational safety organization that includes an occupational health and safety manager, two occupational health and safety engineers, and one protection specialist. In addition, the OL3 site has a dedicated occupational safety team with four members. The occupational safety teams of the existing plant units and the OL3 project work closely together. The personnel have elected occupational safety representatives from among themselves as follows: an occupational health and safety representative and two deputies, seven occupational health and safety delegates, and the occupational health and safety representative of the officials, also with two deputies. Meetings with the occupational health and safety representatives are regular, and during annual outages, safety rounds are conducted together with them at the plant units every other day.

During the course of the year, 4 (5) accidents leading to a TVO employee being absent from work occurred. The accident frequency was 2.9 (3.6) accidents per one million working hours. The accidents led to 12 (56) days of absence. Three commuting accidents resulting in absence took place during the year. All accidents that led to absences have been investigated and corrective measures have been defined for them to prevent similar situations from occurring.

A total of 5 (9) accidents resulting in absence occurred to TVO's contractors in Olkiluoto, the accident frequency being 5.2 (8.2) accidents per one million working hours. The number of absence days of TVO's contractors resulting from these accidents was 137 (96). The figures for the Areva-Siemens consortium are not included in this number.

The combined accident frequency in Olkiluoto was 4.1. This figure includes TVO personnel, Posiva personnel and all contractors active in Olkiluoto, excepting the OL3 site which is reported by the Areva-Siemens consortium.

At the OL3 site, contractors had 15 (33) accidents resulting in absence during the year, the accident frequency being 3.2 (4.0) accidents. The total number of absence days accumulated of all accidents that occurred at the OL3 site was 71 (250). The total accident frequency for 2008–2013 was 9.4.

Social responsibility indicators

Well-being at work	2013	2012	2011	2010	2009
Absences due to illness (%)	3,3	3,4	3,4	3,4	3,5
- Men 3)	3,3				
- Women 3)	3,4				
Absences due to illness, hours per person	64	64	63	65	60
Employees who had no sick days during the year 1)	189	224	232	214	185
- Men 3)	150				
- Women 3)	39				
Accidents of TVO personnel					
Absences, more than one day	4	5	4	2	2
- Men 3)	4				
- Women 3)	0				
Absences due to occupational accidents (days)	12	56	63	16	23
- Men 3)	12				
- Women 3)	0				
Occupational accidents per one million working hours	2,9	3,6	3,0	1,5	1,5
- Men 3)	2,9				
- Women 3)	0				
Zero accidents, no absence	8	5	11	5	4
- Men 3)	6				
- Women 3)	2				
Accidents on the way home or to work	3	2	5	3	1
- Men 3)	1				
- Women 3)	2				
Near misses 2)	589	546	557	384	359
Accidents of TVO sub-contractors					
- Absences, more than one day	5	9	12	11	11
Accidents at OL3					
-Absences, more than one day	15	33	56	75	105
Personnel maximum radiation dose (mSv)	8,07	9,04	9,25	9,1	9,9
Collective radiation dose (manmSv)	649	717	964	900	1186
Annual outage radiation dose (manmSv)	556	568	796	768	990

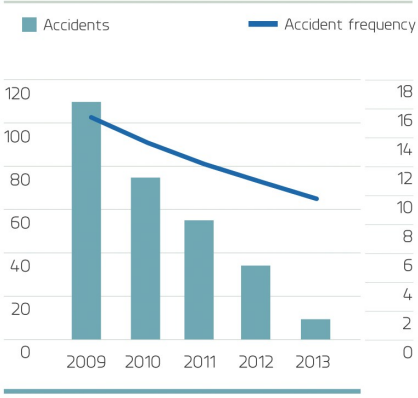
1) Data only reported for permanent employees.
2) Includes reported near misses.
3) Data reported from year 2013.
4) The maximum allowed annual dose for radiation workers is 50 mSv/year, or 100 mSv during five consecutive years.

Accidents occuring before January 1, 2014 have been included.

ACCIDENTS AND SAFETY OBSERVATIONS

*per million working hour

ACCIDENTS AND ACCIDENT FREQUENCY AT THE OL3 SITE



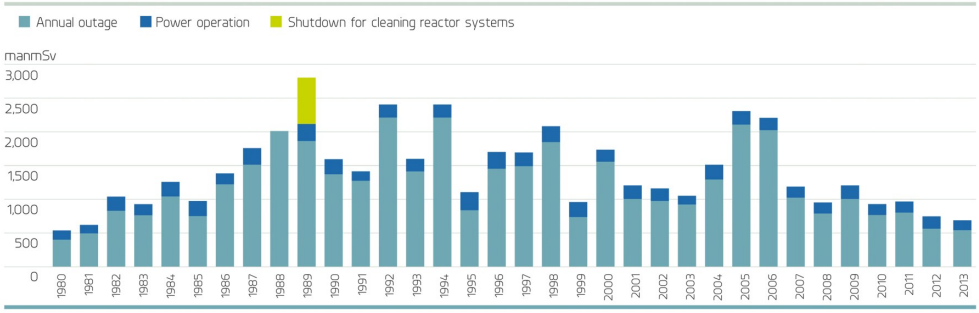
Radiation safety

The radiation exposure of employees at Olkiluoto has been low, remaining clearly below the dose limits specified by the authorities. In 2013, the total dose of employees working in conditions where radiation is present was 649 man-mSv, which is the lowest annual dose since the plant units' first years of operation. A total dose of 556 man-mSv accumulated during the power plant's annual outage, which was also a new record low. The annual dose was approximately 9.5% lower than that of the previous year.

The combined radiation dose of TVO's own personnel was 170 man-mSv, and that of external personnel was 479 man-mSv. The highest individual annual dose incurred at Olkiluoto nuclear power plant was 8.1 mSv. The number of personnel under dose monitoring was 2,645, with recorded doses accumulated for 819 employees. The maximum allowed annual dose for radiation workers is 50 mSv, or a total of 100 mSv during five consecutive years.

RADIATION DOSE AT THE OLKILUOTO NUCLEAR POWER PLANT

ANNUAL RADIATION DOSES AT OL1 AND OL2



Interaction with society

Communications build a sense of togetherness

TVO communicates its operations in an open and neutral manner, without delay and based on facts. TVO aims for open and active interaction with all levels of society, including decision-makers, opinion leaders and the general public. The objective is to build mutual trust among stakeholders and to support open and constructive interaction in the immediate region, in Finnish society, and within the international nuclear energy sector.

TVO listens to and observes the issues raised by stakeholder groups, and wishes to be an active participant in public discussion, bringing out various themes. According to surveys carried out in 2013, the most important matter of concern is the safety of nuclear power production and the final disposal of nuclear fuel.

From the point of view of communications, the general public is the most important stakeholder group. Extension of interaction to new stakeholder groups continued in 2013. Participation in various events all over Finland was also more frequent. It is considered particularly important that TVO meets people and provides everyone an opportunity to discuss nuclear power and the production of electricity. In 2013, TVO participated in six fairs and public events, such as the Farmari agricultural exhibition in Seinäjoki, the Kotka Maritime Festival, and seven student events at various educational institutes in Helsinki, Rauma, Turku, Tampere, Vaasa, Oulu and Lappeenranta.

Acceptability of nuclear power

TVO monitors the general acceptability of nuclear power with annual opinion polls and surveys.

The general acceptability of nuclear power has been falling for several years now. Women in particular have negative or skeptical views towards nuclear power. At the same time, acceptance of nuclear power has increased among groups that are particularly worried about climate change. The number of those without an opinion has decreased, which is a sign of improving nuclear power knowledge among the public. (Finnish Energy Industries, TNS Gallup 5/2013)

The results of a survey concerning the energy attitudes of Finns were reported during 2013. Similar surveys have been carried out for 30 years already to chart the opinions and attitudes of the public. In the latest survey, performed late in 2013, 33% of the respondents supported the increase of nuclear power capacity, while 29% were against it. The current nuclear power capacity was considered appropriate by 29%, and 8% expressed no opinion. The portion of those wishing to reduce nuclear power capacity had decreased since the previous year. The survey was conducted by IRO Research Oy at the request of Finnish Energy Industries.

A total of 1,078 respondents were interviewed. The margin of error for the survey was +3.2%. TVO is a member of Finnish Energy Industries.Matters with particular importance to TVO's stakeholders were established in a survey conducted by Pohjoisranta Burson-Marsteller Oy. The survey was directed at decision-makers, people with influence, public officials, experts, the media, non-governmental organizations, and TVO personnel and owners. The data was collected with a web questionnaire in September 2013, and it was complemented by telephone interviews. The owner survey was carried out in October. The response rate was 36%, which is typical for surveys of this type. According to the responses, TVO is generally seen as a responsible company. Attention to safety is the most important aspect of responsibility. Other important areas include securing production operations and the continuous development of operations. Awareness of TVO's operations has also increased, and the company's reputation remains excellent. Non-governmental organizations are the stakeholder group that is most critical towards TVO's operations.

Transparency

Transparency of communications

TVO supports an interactive and transparent corporate culture. The company communicates its operations and their impact on its stakeholders openly, honestly, and without delay, in compliance with legislation and the obligation to provide information. TVO engages in open, objective, and interactive cooperation with its stakeholder groups.

The company participates in the public energy production discourse in which many different values are expressed. TVO also respects the views and values of those who have a negative attitude towards nuclear power and TVO's operations.

TVO cooperates with political decision-makers and the government to develop and execute energy legislation and guidelines. TVO's interaction with stakeholder groups is always guided by a high code of conduct, thus strengthening trust in the operations of TVO and the stakeholder group, and does not jeopardize the reputation or objectivity of either party. TVO does not provide any support for political activity.

Cooperation with stakeholder groups

Discourse with stakeholder groups helps TVO to develop. The most important stakeholder groups are the personnel, owners, authorities, neighbors and neighboring municipalities, decision-makers, financiers, subcontractors and suppliers, the media, and the general public. TVO uses regular interaction and surveys to gather information on the expectations that stakeholders set for TVO, and to respond to those expectations with all available methods. TVO puts great emphasis on an equal interaction with all stakeholder groups.

TVO considers the views of its stakeholders in all its plans and decisions that may have an important impact on the local community or Finnish society.

In 2013, the following methods and channels were used in stakeholder communications, among others:

- 11 bulletins
- 61pieces of web site news
- 4 press conferences
- 3 stakeholder events
- 3 Ytimekäs stakeholder publications
- 3 Uutisia Olkiluodosta magazines targeted at the population of the region
- 3 What’s On magazines targeted at the OL3 site personnel
- 6 electronic newsletters
- participation in six fairs and public events and seven student events.

In 2013, matters such as nuclear safety, competitiveness, the OL3 project, final disposal of spent nuclear fuel, and the competitive bidding for OL4 were discussed with stakeholder groups.

Cooperation

Cooperation in the neighboring region

The population and local communities in the vicinity of Olkiluoto belong to the immediate region of the nuclear power plant as defined by TVO. The immediate region covers Eurajoki, Rauma, Nakkila, Eura, Luvia and Pori. The economic, social, and environmental impacts of the operations primarily concern the municipalities and population of the immediate region.

On the other hand, the entire country can be considered to be within the immediate region of TVO, as the cost price electricity of TVO benefits the whole country through the municipally owned power utilities included in TVO's shareholders. TVO produces approximately 17% of all electricity consumed in Finland. Through its minor and major shareholders, electricity from Olkiluoto keeps machines, services and domestic appliances going all over Finland.

TVO aims to be a good and active neighbor. This means open dialog and listening to its neighbors. The company organizes various events and meetings to maintain interaction with the residents of neighboring areas.
TVO publishes the Uutisia Olkiluodosta (News from Olkiluoto) magazine for the people living in the immediate region, and organizes regular interaction in various forums. These forums include the municipal cooperation committee and the regional Olkiluoto committee. TVO maintains close interaction with Eurajoki in the municipality's own cooperation team. TVO also participates in the operations of the Vuojoki Foundation and the Vuojoki cooperation group.

The Olkiluoto regional cooperation committee was established in 2010 to promote regional interests during the processing of the decision-in-principle for OL4. The committee now aims to promote cooperation between Olkiluoto and the immediate region. The committee consists of key representatives of TVO and Posiva, the municipalities and towns of Eurajoki, Pori, and Rauma, the Satakunta and Rauma Chambers of Commerce, local entrepreneur associations, Prizztech Oy, the Regional Council of Satakunta, the Centre for Economic Development, Transport and the Environment, and the educational institutions in the region. In 2013, the committee convened once, and one of the three subcommittees convened a couple of times.

The municipal cooperation committee was established in the 1970s upon the initiative of TVO. The committee is a forum for interaction and the exchange of information, providing local municipal decision-makers with first-hand information. In addition to representatives of TVO and Posiva, the committee includes representatives appointed by the municipalities and towns of Eurajoki, Rauma, Nakkila, Eura, and Luvia. In 2013, the committee convened three times.

In addition to these groups, TVO carried out informal discussions with the residents of the region at market place events organized in Eurajoki in June and in Rauma in July. Lively discussion on matters concerning TVO and nuclear power took place at these events. The Eurajoki event was attended by about 250 people, while the event in Rauma attracted about 600 people.

In addition to these events, TVO conducts cooperation with the Eurajoki comprehensive school, organizing thematic events and the Energy in Western Finland theme weeks together with other west-coast power plants. TVO supports the schools in the immediate region when they visit other power plants on the west coast. Similarly, Olkiluoto receives visits from other schools in the west coast region.

TVO's strongest positive impact on the immediate community is related to economic well-being and activity in the area, achieved through employment. TVO creates significant economic well-being through the payment of real estate tax to the municipality of Eurajoki, but also through the indirect effect of taxes paid by TVO's employees to the municipalities in the

area. TVO's most significant negative measurable effect on the region is the increase in the temperature of the sea in the vicinity of the power plant. The increase in the temperature of seawater is regularly monitored and measured, together with the impact of the increased temperature on the sea bed.

Visits

Visits to Olkiluoto

The views of stakeholder groups regarding TVO's corporate social responsibility issues are best obtained from the continuous flow of visitors to Olkiluoto. A visit to the Visitor Center and the Olkiluoto nuclear power plant is the best and most effective way for stakeholders to learn about nuclear power.

The Olkiluoto Visitor Center is open from October to April from Monday to Friday between 10 a.m. and 6 p.m. and on Saturday and Sunday between 12 noon and 6 p.m. From May to September, the Visitor Center is open daily from 10 a.m. to 8 p.m. The Visitor Center is open to all visitors with no advance booking needed. The Electricity from Uranium science exhibition at the Visitor Center provides information about the production of nuclear electricity and covers the entire life cycle of the uranium fuel from responsible mining to safe final disposal.

Groups with advance reservations may receive a guided tour of TVO's operations, complete with a bus tour of the Olkiluoto power plant area and a visit to the operating waste repository. A new ONKALO exhibition was completed in the VLJ repository in December. The exhibition provides visitors with information about the final disposal of spent nuclear fuel.

CASE

Science journalists find Olkiluoto interesting

Read more

In 2013, a total of 13,631 people visited the Visitor Center for a guided tour; 5,737 of these viewed the exhibition independently. The number of visitor groups was 523. The most frequent visitor groups were from schools, but many associations, companies, and student groups also visited Olkiluoto. May and June as well as September and October were the busiest periods, while January was the quietest. In July 2013, the summer Wednesday campaign attracted up to two busloads of visitors per day.

During the year, nearly 450 foreign experts and 197 reporters, 117 of them from Finland and 80 from other countries, visited TVO and the Visitor Center.

The kilometer-long observation path located in the environs of the Olkiluoto Visitor Center was opened in June. The route has information boards on the special characteristics of nature in Olkiluoto and the environmental research and surveys conducted in the area. The observation path is open in the summer only; at other times, it can be accessed as a virtual representation on the TVO web site.

Science and technology camps

In 2013, TVO continued its science and technology camp tradition by organizing four camps for elementary school children with a focus on experiments. These camps have been organized since 2003. Each camp lasted from Monday to Friday and was attended by 22 children, a total of 88 during the summer. At the camp, the children get to learn about natural sciences and technology on their own terms.

Sponsorship activities

TVO supports sports, cultural endeavors, and activities for the public good. TVO's sponsorship principles are built on the company's values, and the supported activities must be in line with the company's strategy and operating principles.

When selecting partners and sponsorships, the emphasis is on offering opportunities for recreational activities to the local people, children and young people in particular.

TVO does not support political activities, because even small financial support for political parties or their representatives might compromise the notion of neutrality in decision-making.

The most important sponsorship targets in 2013 were the following:

- The Finnish national men's ice hockey team and young ice hockey players (until June 30, 2013)
- The Rauman Lukko ice hockey team (the hockey league team and junior operations)
- Pallo-Iirot (football team, junior operations and children's clubs)
- Rauma Golf
- Fera ry (Fera, ladies' Finnish baseball team – Lukko, girls' baseball team)
- The operations of the Vuojoki Mansion and cultural events in Eurajoki
- The Rauma Festivo chamber music festival
- Pori Jazz festival
- The ladies' Finnish baseball series (until September 30, 2013)
- The CO_2-report website focusing on climate change and energy
- Selected sports, cultural endeavors and associations in the immediate region of the power plant.

In addition to sponsorship, TVO makes annual donations to organizations, communities and student groups who work for the public good. In 2013, support was also given to the support organization of the new children's hospital to be built in Finland.

Decisions concerning the sponsorships and donations are made by TVO's Corporate Relations together with the company's management.

Memberships

An active operator in various organizations and communities

TVO is an active participant in both the national and international nuclear power community and in various organizations and communities of the nuclear energy sector.

TVO's most significant international memberships are those in FORATOM, the trade association for the nuclear energy industry in Europe, and in WANO, World Association of Nuclear Operators, which is a nuclear power producers' association that focuses on nuclear safety. TVO has been a signatory to the ICC Business Charter for Sustainable Development since the 1990s.

CASE

On a mission to gain WANO experience

Read more

TVO is a member of the following organizations: Eurelectric, Foratom, European Atomic Forum, Nordiska Sällskapet för Strålskydd, World Association of Nuclear Operators, World Nuclear Association, Finnish Energy Industries, Finnish Business & Society ry (FiBS) , Finnish Air Pollution Prevention Society, The Finnish branch of the International Chamber of Commerce, Lounais-Suomen Vesiensuojeluyhdistys ry, Finnish Nuclear Society, and the Finnish Quality Association.

TVO's branch office in Brussels manages connections with interest groups within the EU. The various institutions of the European Union form the core of these interest groups: the European Commission, the European Parliament, and the Council of Europe, as well as the organizations and partners within TVO's field of operations.

Contents of the report

TVO's Corporate Social Responsibility Report 2013 describes TVO's responsible leadership and how social responsibility is incorporated in the company's responsible everyday operations. The 2013 report is the company's thirteenth corporate social responsibility report, and it will only be published online.

The Contents of the report section of the Corporate Social Responsibility 2013 report describes the extent and basis of reporting, materiality assessment and GRI comparisons. The section also includes a glossary, the certification report, and a list of the corporate social responsibility contact persons.

Reporting

The objective of TVO's corporate social responsibility effort is to promote Finnish well-being by providing climate-friendly and reasonably priced electricity in a safe and reliable manner. TVO has been generating electricity at Olkiluoto for more than 35 years. TVO has reported its responsible management of the environment starting from 1996, and corporate social responsibility issues since 2001.

The 2013 report is the company's thirteenth corporate social responsibility report, and it will only be published online. The report describes TVO's major success factors and how social responsibility is incorporated in the company's responsible everyday operations.

The content of the report has been designed to reflect the social responsibility themes and issues considered interesting by TVO's stakeholder groups and important by TVO's employees. These aspects are described in TVO's social responsibility materiality matrix that is still current and valid in 2013.

The content of the corporate social responsibility report has been organized under five themes. The themes are the following: responsible leadership, safety, uranium from bedrock to bedrock, environment, and TVO and society. We use the themes to present issues that interest our stakeholder groups and to report the determined social responsibility effort carried out at Olkiluoto in 2013. Further information on responsibility and TVO’s operations in 2013 is available in other annual reports published by the company and available on the website.

TVO publishes its Corporate Social Responsibility Report in Finnish and in English. DNV Certification Oy/Ab, an independent and impartial accredited certification body, has certified and verified that our Corporate Social Responsibility Report meets the requirements set out in the Global Reporting Initiative (GRI) G3.1 guidelines. For the certification report, see below. Financial reports have been audited by PricewaterhouseCoopers Oy, a firm of Authorized Public Accountants, while our environmental report was audited by DNV Certification Oy/Ab.

The reports for 2014 will be published on the website in spring 2015.

Materiality assessment

Materiality assessment is a tool for identifying and defining the matters that have an impact on the actualization of the company's corporate social responsibility and the communication of social responsibility issues. TVO's materiality assessment includes discussions and studies by the company’s management, personnel, and external stakeholder groups.

TVO’s stakeholder groups

TVO's most important stakeholder groups are the following:

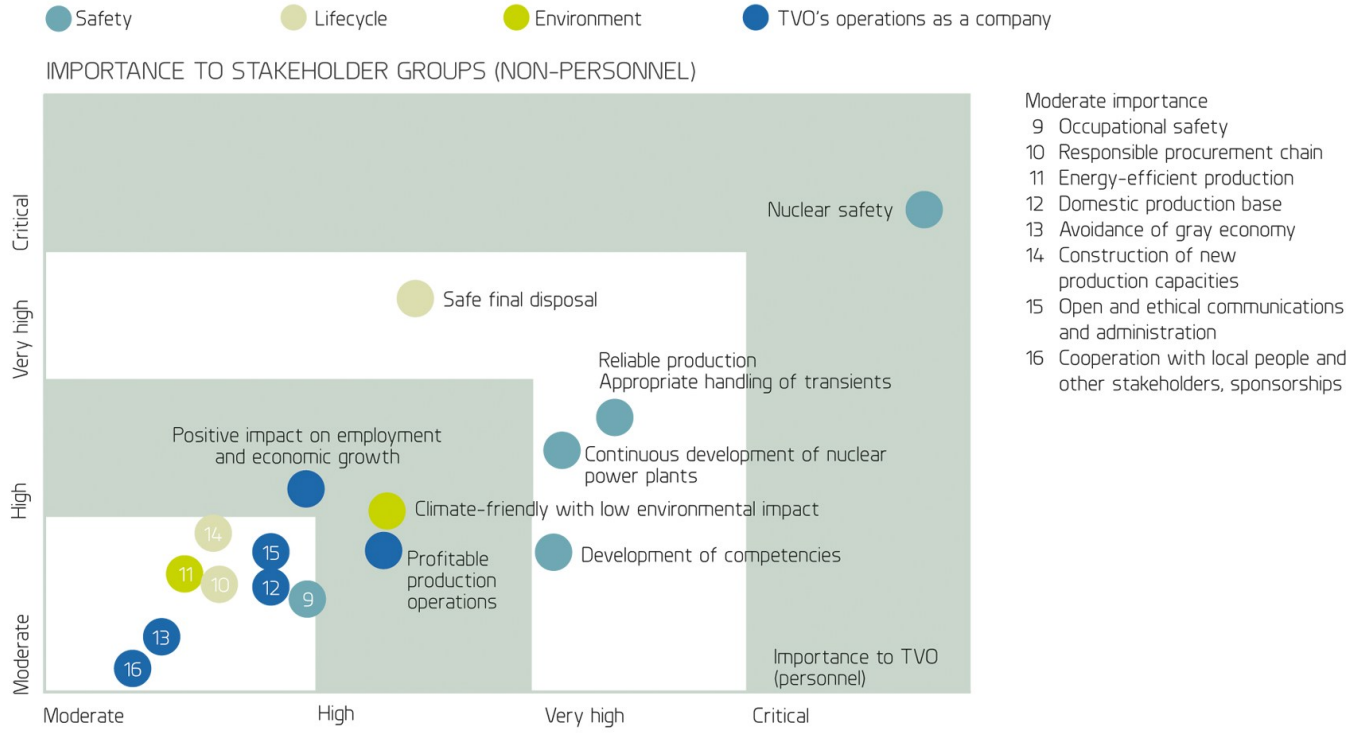
- personnel
- owners
- public authorities
- local community
- decision-makers
- investors
- subcontractors and suppliers
- the media
- various organizations
- general public

TVO's materiality assessment was updated and completed during the year under review with two surveys to reveal the themes that stakeholder groups regard as important.

Data for the materiality assessment was received from an energy attitude survey and a web survey targeted at owners, decision-makers, public officials, the media, opinion leaders, experts, NGOs, and the personnel, as well as complementary thematic interviews. In addition to these, comments and queries received from visitors to Olkiluoto were taken into account in the assessment. The assessment resulted in the creation of a materiality matrix that indicates the company's stakeholder groups' views of important corporate social responsibility issues, actualization of social responsibility, and targets for development in the area of social responsibility.

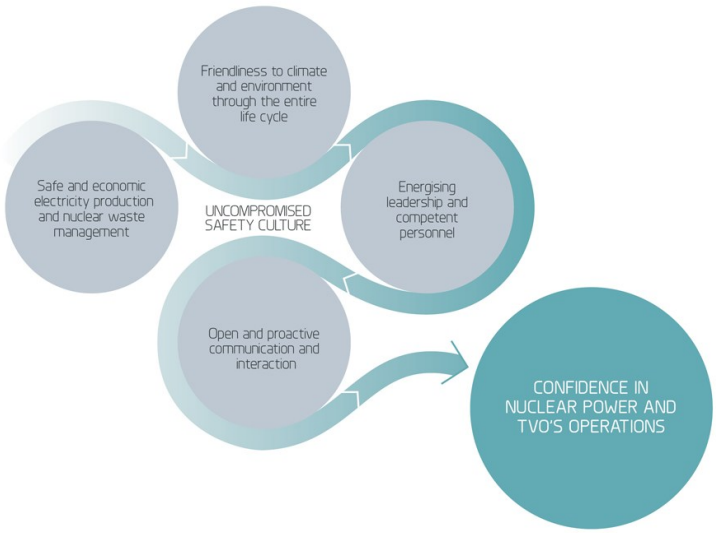
TVO's concept of corporate social responsibility was also updated together with the materiality assessment. TVO's view of the concept is based on clean and stable electricity produced for the shareholders, with attention to all the stages of the life cycle from responsible mining to safe final disposal of spent fuel. TVO's personnel are committed to an uncompromising safety culture, valued by us all. TVO supports open and constructive interaction in the immediate region, Finnish society, and within the international nuclear energy sector. Operations in Olkiluoto benefit both the local community and the whole country. TVO creates Finnish well-being.

MATERIALITY MATRIX



Moderate importance
9 Occupational safety
10 Responsible procurement chain
11 Energy-efficient production
12 Domestic production base
13 Avoidance of gray economy
14 Construction of new production capacities
15 Open and ethical communications and administration
16 Cooperation with local people and other stakeholders, sponsorships

Corporate social responsibility at TVO



Scope and basis

TVO's corporate social responsibility reporting is based on TVO's values – responsibility, continuous improvement, proactiveness and transparency – mission, vision objectives, and the responsibility issues raised by stakeholder groups and TVO's employees.

Open interaction is an essential part of responsible business operations. Environmental responsibility is a central theme in TVO's corporate social responsibility reporting. In addition to assuming responsibility for the environment, TVO wishes to discuss actively matters with stakeholder groups, raising various themes for discussion. According to surveys, stakeholders place great emphasis on themes such as nuclear safety and the final disposal of spent nuclear fuel.

The Corporate Social Responsibility 2013 report forms a close-knit entity with TVO's other annually published reports and the company's website. The report is complemented by the Report of the Board of Directors and Financial Statement 2013, prepared in accordance with the IFRS standard. Most conventional financial indicators fail to display a true picture of TVO's operations, because TVO is a non-profit company that aims to produce electricity steadily and securely for its owners at cost price. TVO's Corporate Governance Statement describes its management systems and the duties of its administrative bodies. The environmental responsibility information is based on a certified environmental management system and TVO's Environmental Report 2013, prepared in compliance with the EMAS regulation. Most of this information is based on the content of reports to the authorities. The occupational safety information concerning the personnel has been obtained from the occupational health and safety management system. Other information has been obtained from personnel information accumulated during company operations.

Principles and guidelines

TVO's corporate social responsibility report has been prepared according to the Global Reporting Initiative (GRI) G3 guideline. This report applies version 3.1 of the GRI G3 guideline. In other respects, the report's coverage, scope, and measurement methods are the same as last year. In case of changes to previously reported information, they are indicated separately in conjunction with the tables in question.

The report contains a comparison to the GRI 3.1 recommendations, as well as TVO's own assessment of the reporting level. In the opinion of TVO, the Corporate Social Responsibility 2013 report meets the requirements of the GRI G3 guideline, and the company is of the opinion that it applies level B+ of the guideline. According to a verified assessment of report content relative to GRI's G3 guideline by an independent third party, the report applies level B+.

The report covers the operations of the parent company, Teollisuuden Voima Oyj. TVO also reports some accident and training information on TVO's subcontractors. The report also discusses the production output of the Meri-Pori coal-fired power plant and the research into the final disposal of spent nuclear fuel, conducted by the joint venture company Posiva Oy.

In the reporting of its economic responsibility, TVO uses the applicable indicators of the Global Reporting Initiative (GRI). The corporate social responsibility report includes some figures that are gathered as a part of the closing of accounts but that are not included in the actual annual report and accounts. An independent greenhouse gas verifier has verified the amount of carbon dioxide emissions.

Verified corporate social responsibility report

DNV Certification Oy/Ab, an independent and impartial accredited certification body, has certified and verified in February 2014 that the corporate social responsibility report meets the requirements set out in the Global Reporting Initiative (GRI) G3.1 guidelines. For the certification report, see below.

Our financial reports were audited by PricewaterhouseCoopers Oy, a firm of Authorized Public Accountants, while our environmental report prepared in accordance with the EMAS regulation was audited by DNV Certification Oy/Ab. The Report of the Board of Directors and Financial Statement 2013, Corporate Governance Statement 2013, and Environmental Report 2013 are available on the TVO website in Finnish and in English.

The report is published on the company's website in Finnish and in English. The texts and diagrams of the report will not be updated after certification. The links to further information found at the end of some texts, pointing to other sections of the TVO website, may be updated during the year.

The report for 2012 was published at the beginning of May 2013, and the report for 2013 will be published in March 2014.

The corporate social responsibility report for 2014 will be published in spring 2015.

Comparison to the GRI

GRI provides companies with a procedure for reporting corporate social responsibility to the extent best suited for the company. Reporting levels range from C to A+. TVO assesses its corporate social responsibility reporting to apply level B+. This assessment has been verified by an independent third party, DNV Certification Oy/Ab, in accordance with level B+. TVO reports all key indicators or explains why a certain indicator has not been reported. GRI's calculation principles have not been thoroughly applied for all indicators.

See the GRI Index table

Glossary

A

Activation product: A radioactive nuclide created by neutron radiation in the reactor.

Activity: The number of spontaneous nuclear disintegrations occurring in a given quantity of radioactive material within a certain time. The unit of radioactivity, the becquerel (Bq), equals one disintegration per second.

Aerosols: A gaseous medium containing solid or liquid particles. In the case of emissions or releases from a nuclear power plant, these particles may be radioactive.

ALARA (As Low As Reasonably Achievable): An internationally used principle regulating the amount of radiation doses at nuclear power plants.

Alpha-active element: A radioactive element that emits an alpha particle upon decomposing. An alpha particle consists of two protons and two neutrons.

AVI: Regional State Administrative Agency

B

Background radiation: Radiation emanating from natural sources, such as radon from the soil, radiation from space, and radioactive materials in the human body.

Becquerel (Bq): The unit expressing the activity of a radioactive substance. 1 Bq is equal to one spontaneous nuclear

disintegration in the substance per second.

Beta-emitting substance: Radioactive material that emits negatively charged particles (electrons).

BOD_{7ATU}: The biological oxygen demand in wastewater.

BWR, Boiling water reactor: A light-water reactor in which water used as the coolant boils as it passes through the reactor core. The steam generated rotates the turbines.

C

Capacity factor: The figure depicting the production at a power plant; for example, for one year. The capacity factor is the energy produced in a year by a power plant as a percentage of the energy it would have produced had it been operating at full capacity for the entire year.

Carbon-14: Carbon-14 is a long-lived, naturally occurring, beta-emitting radioisotope created by cosmic rays in the Earth's atmosphere. It is also formed in a nuclear reactor when the oxygen in the coolant is activated. Carbon-14 then enters the atmosphere bound to carbon dioxide.

CO_2: Carbon dioxide

Consortium: A temporary merger of companies, formed for a particular business venture.

Controlled area: The area that contains or may contain radioactive materials; separated from other plant facilities. The doors to the controlled area are locked.

Control rod: A rod holding material that absorbs neutrons. It regulates the number of neutrons in the reactor core and thus the power of the reactor. A power plant reactor has a large number of control rods.

Conversion: The chemical transformation of one substance into another substance. In nuclear technology, conversion usually refers to the conversion of uranium oxide (U3O8) into uranium hexafluoride (UF6) for enrichment purposes, and the conversion of uranium hexafluoride into uranium dioxide (UO2) for the fuel manufacturing process.

D

Decibel, dB: Noise is measured by a decibel scale expressing sound intensity.

Dose rate: A dose of radiation per time unit (e.g. mSv/h) expressing the amount of radiation a person is exposed to within a certain period of time.

DNV: An abbreviation of Det Norske Veritas. Det Norske Veritas acts as an independent third party in various inspection/assessment tasks. DNV's central fields of operation include services relating to the classification of ships and the certification of management systems.

E

EIA, Environmental Impact Assessment procedure: The Environmental Impact Assessment (EIA) procedure is a procedure related to the granting of an environmental permit. It must be performed in the planning phase of a project if the project causes, or may cause, significant environmental impacts.

ELY center: Center for Economic Development, Transport and the Environment.

EMAS: Eco-Management and Audit Scheme.

Emission right: EU-wide carbon dioxide emission rights trading began in 2005. For the entire EU area, annual carbon dioxide quotas were specified for industry and energy plants emitting carbon dioxide. The target is to allocate cost-efficiently emission reduction measures to where their implementation is the most inexpensive. Plants that successfully and cost-efficiently reduce their emissions to a lower level than their quota allows may sell their spare emission rights in emissions trading. The plants for which the reduction of emissions is costly can purchase emission rights from the market.

Environmental policy: The overall intentions and direction of an organisation relating to its environmental performance as formally expressed by top management including compliance with all applicable legal requirements relating to the environment and also a commitment to continuous improvement of environmental performance. It provides a framework for action and for the setting of environmental objectives and targets.

Environmental performance: The measurable results of an organisation's management of its environmental aspects.

Environmental aspect: An element of an organisation's activities, products or services that has or can have an impact on the environment. Significant environmental aspect' means an environmental aspect that has or can have a significant environmental impact.

Environmental impact: Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services.

Environmental programme: A description of the measures, responsibilities and means taken or envisaged to achieve environmental objectives and targets and the deadlines for achieving the environmental objectives and targets.

Environmental objective: An overall environmental goal, arising from the environmental policy, that an organisation sets itself to achieve, and which is quantified where practicable.

Environmental target: A detailed performance requirement, arising from the environmental objectives, applicableto an organisation or parts thereof, and that needs to be setand met in order to achieve those objectives.

Euratom: A unit of the EU Commission that supervises nuclear material.

F

Fission: The splitting of one heavy atomic nucleus into two or more intermediate-mass nuclei, releasing neutrons and a considerable amount of energy in the process.

Fission products: The medium-heavy nuclei produced in nuclear fission. They are usually radioactive.

Fuel assembly: An element formed by fuel rods.

Fuel rod: A slender metal tube holding fuel pellets. The fuel inside the tube is generally uranium oxide compressed into pellets.

G

Gamma radiation: Electromagnetic radiation emitted during alpha and beta decay.

Gigawatt, GW: A unit of power. One gigawatt is one million kilowatts.

Gigawatt hour, GWh: A unit of electrical energy. One gigawatt hour equals one million kilowatt hours.

GRI (Global Reporting Initiative): Reporting guidelines for social responsibility that were approved by a meeting of the UN in Johannesburg in 2002. The reporting covers a company's financial, human, and environmental responsibility.

H

Half-life: The time it takes for the activity of a radioactive isotope to be reduced by half.

I

IAEA: International Atomic Energy Agency.

INES (International Nuclear Event Scale): A seven-level scale used internationally to depict the seriousness of accidents and incidents at nuclear power plants. The lower levels (1-3) depict incidents that have weakened plant safety and the upper levels (4-7) accidents that could cause emissions into the environment that require protective measures against radiation.

Iodine: From the point of view of radiation safety, the most important isotope of iodine among fission products is iodine-131, which has a half-life of eight days.

Ion exchange resins: Substances used to remove impurities from water.

ISO 9001 standard: International standard for quality management systems.

ISO 14001 standard: A standard for the management of environmental matters that is widely used in various parts of the world.

Isotope: Atoms of the same element differing from each other in the number of neutrons in their nucleus. Almost all natural elements occur as more than one isotope.

K

KAJ Store: Storage facility for intermediate-level waste.

KPA: Interim storage for spent fuel.

M

ManSievert, manSv: The unit used to indicate the collective radiation dose received by a certain number of people.

MTT: MTT Agrifood Research Finland.

Megawatt, MW: A unit of power. One megawatt equals 1,000 kilowatts, or one million watts.

MWth: Thermal power produced in a nuclear power plant.

N

Natura area: Protected areas selected on the basis of EU-wide nature conservation goals. In Natura areas, nature conservation is
implemented so that the normal use of the area is limited as little as possible.

Noble gas: The name for certain gases rarely found in the atmosphere. The noble gases are helium (He), neon (Ne) argon (Ar), krypton (Kr), xenon (Xe), and radon (Rn).

Nuclide: A type of atom or nucleus with a specific number of protons and neutrons.

O

ONKALO: ONKALO is the name of the underground bedrock research facility for the final disposal facility for spent nuclear fuel.

ORC (Organic Rankine Cycle): Rankine cycle process using a suitable organic fluid as circulation medium.

Occupational accident: An accident that occurs at work or on the way home from work or vice versa and which causes an absence of at least one day.

P

Power delivered to the owners (GWh): Electricity produced - (internal consumption at the plant + consumption in the plant area).

PRA: Probabilistic Risk Assessment.

PWR, Pressurized water reactor: A light-water reactor with such a high reactor pressure that water used as the coolant does not boil in the reactor. The hot water is conducted from the reactor to a steam generator in which the water in the secondary circuit evaporates and the steam is led to rotate the turbine.

R

Radiation: Electromagnetic waves or particle radiation consisting of the smallest particles of matter.
Radioactive operating waste: Waste such as plastic, paper, and cloth generated during maintenance work at the power plant. The volume can be reduced by baling.

S

SAHARA (Safety As High As Reasonably Achievable): An internationally used principle emphasizing safety at a nuclear power plant.

Screenings: The organic matter which accumulates on the screening plant's fine screen and traveling basket filters in cooling
water intake. The screenings mainly consist of debris, algae, mussels, and fish carried with cooling water.

Sievert (Sv): A radiation dose unit indicating the biological effects of radiation. As it is a very large unit, millisieverts (1 mSv = 0.001 Sv) and microsieverts (1 µSv = 0.001 mSv) are more commonly used.

STUK: Finnish Radiation and Nuclear Safety Authority. STUK is the authority that regulates the Finnish nuclear energy sector.

T

TEM: The Finnish Ministry of Employment and the Economy.

Transuranium element: An element with an atomic number greater than that of uranium (92). Transuranium elements are not found in nature, but are created from uranium for example in nuclear reactors under the influence of neutron radiation.

Tritium: Tritium is a hydrogen isotope with a nucleus consisting of one proton and two neutrons. The nucleus is called tritium.

Tukes: The Finnish Safety and Chemicals Agency.

TW, terawatt: A unit of power. One terawatt equals one billion kilowatts.

TWh, terawatt-hour: A unit of energy. One terawatt-hour equals one billion kilowatt hours.

U

Uranium: An element with the chemical symbol U. Uranium comprises 0.0004% of the Earth's crust. All uranium isotopes are radioactive. Natural uranium is mostly in the form of isotope U-238, which has a half-life of 4.5 billion years. Only 0.72% of natural uranium is in the form of isotope U-235, which can be used as a nuclear fuel.

V

VLJ repository: A repository for low and intermediate-level radioactive waste.

VTT: Technical Research Centre of Finland.

W

WANO: The World Association of Nuclear Operators.

Y

YVL guide: Nuclear power plant guide.

Verification statement

DNV Certification OY/AB has verified the 2013 Social Responsibility Report of Teollisuuden Voima (TVO).

SCOPE

The verification concerns TVO's 2013 Social Responsibility Report, which describes TVO's social, financial and environmental protection responsibilities and measures. The verification also covers, in a separate statement, TVO's EU EMAS report, which describes TVO's environmental system. Simultaneously, DNV Certification OY/AB again performed a certification assessment based on ISO 14001 and OHSAS 18001 and regular assessment's ISO 9001 standards. The results of the audit also provide reliable information for verifying the Social Responsibility Report.

PricewaterhouseCoopers has audited the financial responsibility key figures included in TVO's 2013 Annual Report. The correspondence of the key figures has been spot-checked, however they have not been verified separately in the present project.

METHODOLOGY

The verification is based on the requirements set out in the GRI reporting instructions and DNV Verification Protocol for Sustainability Reporting.

The verification was performed at TVO's Olkiluoto office through interviews with people in charge, auditing of operating methods and location, and by spot-checking the information (and the origin of the information) included in the report from relevant TVO documentation and sources. TVO's Social Responsibility Report 2013 is available in electronic format on the company's annual reporting website in the Responsibility section (www.tvo.fi/annualreport2013). Verified material is not updated without express permission from the verifier. Other material on the website was not included in the verification.

OBSERVATIONS, SUMMARY

- The verification ensures that the content of the report and quality requirements of the previously mentioned instructions are met. Examples include the information's relevance, clarity, comparability, accuracy, topicality, reliability and sustainable development.
- Based on the observations made during the verification, it can be stated that the aforementioned requirements have been met.
- The 2013 Social Responsibility Report includes an extensive correlation table that indicates how well the GRI requirements were met.
- Based on the verification, the scope of TVO's 2013 Social Responsibility Report meets the requirements for such a report and, taking into account the nature of the verification, the information presented in the report is reliable and meets level B+ of the GRI G3 instruction requirements.
- The Report is a clear example of TVO's highly responsible attitude towards nuclear safety and TVO's willingness to continuously improve its operations.

Mustasaari, 10 March 2013
DNV Certification OY/AB
EMAS-accredited certifier FIN-V-002

Seija Meriluoto
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Environmental Report 2013

Environmental Report 2013

TVO´s environmental report 2013 is a yearly review according to EMAS decree.

TVO publishes the environmental report in Finnish and in English. The figures from year 2012 are presented in brackets. Information in the "further information" - is not part of the EMAS review.

All the information in the report is verified by an accredited and independent third party DNV cerfitication OY/AB. The verification report is in section Verification report.

Information of year 2014 will be updated in this webpage in the spring 2015.

Environmental management

Environmental responsibility is a part of TVO's management system, and the company has committed itself to the principles of sustainable development in its policy. The operations are directed with the help of an environmental management system which is EMAS registered and certified according to the international ISO 14001 standard, in which also Energy efficiency system is included. The management system is used for continual improvement and raising the level of environmental protection. The goal of the management system is continuous improvement and increasing the level of environmental protection.

TVO has identified the environmental aspects of its operations and assessed seven of them as important. The importance of the environmental and energy aspects are evaluated based on the legal requirements and permits. Also the severity, probability and magnitude of the aspects are taken into account. The stake-holders and our own impact possibilities affect the evaluation.

The adverse impact involved in the environmental aspects is minimized at all stages of the electricity production chain, and the safe use of nuclear fuel is ensured from raw material acquisition to final disposal. Four long-term objectives have been defined for important environmental aspects, and the company's management confirms specific targets for these objectives each year. An environmental team of experts from various organizational units monitors the status of the targets approximately every two months. Other subjects discussed at the team's meetings include potential environmental non-conformances and observations, as well as topical official matters and other environmental issues. The team acts as an expert, advisor, and information forwarding party in environmental matters.

The feasibility of the environmental management system is assessed semi-annually in the management review. If necessary, corrective actions are defined in order to reach targets. TVO maintains a file of the statutory and other requirements pertaining to the operations and systematically monitors them for changes. Fulfillment of the requirements is evaluated during management reviews. Our operations are regularly assessed both within our organization and by external assessors.

The company level policies and TVO´s code of conduct are the guidelines for responsible environmental actions also for all companies in the power-plant area.

Significant environmental and energy aspects and associated long-term objectives and targets for 2014

Sicnificant environmental aspects	Objectives	Targets 2014
1. The thermal load on the sea caused by the cooling water	1. Management of environmental load	1. Management of the thermal load of cooling water and research into the utilization of the heat 2. Increasing temprature measurements in near by sea area 3. Developing environmeltal risk management
2 .Land use 3. Spent nuclear fuel produced during operations	2. Improvement of material and energy efficiency and sustainable land use	4. Development of energy efficiency activities and system 5. Long term planning of land use 6. Recognition of biodiversity 7. Keeping the amount of landfill waste below 12% of the total amount of waste 8. Decreasing the amount of medium-level waste 9. Reduction of the environmental impact and costs resulting from the personnel's working methods
4. Selecting the product and service suppliers 5. Storage and handling of hazardous or harmful substances	3. Suppliers' environmental responsibility	10. Acquisition of information from suppliers concerning their environmental management
6. Significant radioactive emissions into the environment during an accident situation 7. Radioactive emissions into the atmosphere in an exceptional situation	4. Isolation of radioactivity originating from the power plant from the natural environment	11. Ensuring the purity of the process 12. Keeping radioactive emissions into the atmosphere clearly below the limits set by the authorities 13. Keeping radioactive emissions into water clearly below the limits set by the authorities 14. Prevention of the increase of nuclear safety risk

The targets set for 2014 are based on the targets of the previous year, with new actions added to reach the targets according to the principle of continuous improvement. Long-term work will continue e.g. with the management of radioactive emissions and the thermal load of cooling water. New targets include the temperature measurements in the nearby sea area and decreasing the amount of medium level waste. Training related to energy efficiency and the safe use of chemicals will be increased in 2014. Training is used to increase the personnel's understanding of the significance of environmental issues and, consequently, to decrease the environmental impact and risks of the operations.

Careful investigation of environmental deviations and anticipation

No event or significant environmental non-conformance resulting in an environmental impact took place at the Olkiluoto nuclear power plant in 2013. A total of 13 (9) minor environmental observations or minor non-conformances including for instance to the marking of chemicals or waste containers took place. The number of minor incidents and non-conformances at the OL3 construction site was 29 (26). Even small environmental events are considered. All reported safety observations are monitored, and corrective measures are implemented in order to prevent any damage. All significant environmental non-conformances and events are reported to the environmental authority.

Active stakeholder communications

The Olkiluoto Visitors' Center receives about 15,000 visitors each year. Visitors are told about TVO's operations, and their questions are answered. Each year, TVO also introduces its operations at various events and fairs and organizes public meetings at the marketplaces of nearby towns where people can come and discuss with TVO's representatives. The public can also send feedback and questions via the TVO website. TVO replies to all inquiries made with contact details attached.

The company's initiative operations also support stakeholder involvement in TVO's environmental management. A total of 332 initiatives were made in 2013, and 113 initiatives received recognition. Some of the recognized initiatives had been submitted in previous years. Some of the initiatives directly or indirectly reduce the environmental impact of the operations or increase energy efficiency.

Good environmental results

In 2013, operations at the Olkiluoto nuclear power plant complied with the environmental policy, the conditions of the environmental permits and the environmental management system.

The purpose of the yearly targets is to minimize the adverse impacts in all stages of electricity production. In order to achieve the targets, procedures, responsibilities and timetables are set. According to continuous improvement the implementation of the targets are monitored regularly.

Alltogether 15 targets we set for the year 2013, of which all were achieved fully or partially.

Realization of targets set for environmental objectives in 2013

Target met as planned | Target met partially | Target not met

Objective: management of environmental load

Target 1. Management of the thermal load of cooling water and research into the utilization of the heat

The target was met as planned. The temperature of cooling water remained within the limits required by the environmental permit throughout the year. Separate studies were not planned for 2013.

Target 2. Development of the sanitary waste water treatment plant

The target was partially met. Some improvements, such as the replacement of the sludge mixer, were made in 2013.
Larger investments will be made when increasing the capacity becomes a current issue.

Target 3. Development of environmental risk management

The target was met as planned. Environmental risks are managed and handled as a comprehensive unit.

Objective: Improvement of material and energy efficiency and sustainable land use

Target 1. Development of energy efficiency activities and system

The target was met as planned. Energy efficiency is considered when choosing materials and working methods for modification and repair work.
The energy efficiency improvement plan, which is updated every year, includes information on actions and savings already achieved, as well as actions to be implemented in the future. In total, 11 proposals for action were made concerning energy efficiency in 2013, the most significant of these most likely being the suggestion of extending district heating at Olkiluoto. Participation in the Energy Saving Week and WWF's Earth Hour campaign were included in the year's program.

Target 2. Land use planning

The target was met. The land use team discusses the situation and combined effects of projects in the planning, decision-making and implementation stages.
The land use team includes representatives from the area planning departments of the different functions operating at Olkiluoto island, as well as the Quality and Environment Office. The team convened as scheduled during 2013.

Target 3. Recognition of biodiversity

The target was met as planned. A Power from Nature -Olkiluoto observation trail providing information on the environment was opened to the public on June 8, 2013.
Field work for a biodiversity survey of the environment of the Olkiluoto island was carried out during the spring and summer. The official report was completed at the end of December.

Target 4. Keeping the amount of landfill waste below 12% of the total amount of waste

The target was partially reached. During 2013, the amount of landfill waste was 13, so the situation has improved from the previous year.
A theme day dedicated to the sorting of waste was arranged during Energy Saving Week in 2013. On the day, information was provided on waste components and sorting.

Target 5. Reduction of environmental impacts and costs resulting from the personnel's working methods

The target was reached. In 2013, a total of six video conferencing equipment sets were renewed at Olkiluoto and at the Töölönkatu office in Helsinki.
This has enabled a reduction in travel and the holding of meetings through remote access. The environmental manual was revised and published before the 2013 annual maintenance outages. The new environmental and waste sorting manual has been printed in both Finnish and English, and it is handed out to everyone who starts working on Olkiluoto island.

Target 6. Reduction of the consumption of process water (max. 37,000 m3 per year)

The target was reached. At the same time, the amount of chemicals needed for preparing the process water decreased.

Target 7. Development of the recycling of wood waste

The target was met. The processing of waste wood produced by construction activities following the priority order specified in the Waste Act was implemented according to the target. 18% of wood was recycled, and the rest was used to produce energy.

Objective: Suppliers' environmental responsibility

Target 1. Acquisition of information concerning suppliers' environmental management

The target was partially met. Four environmental inspection rounds were implemented during 2013. During the rounds, the focus was on the management of chemical, waste, fire safety and environmental issues. TVO actively evaluates uranium mines and the nuclear fuel refining chain. In October, TVO carried out an audit according to the supplier evaluation procedure described in the activity based management system at BHP Billiton's Olympic Dam mine in Australia.

Objective: Isolation of radioactivity originating from the power plant from the organic environment

Target 1. Ensuring the purity of the process

The target was met. The loose part workgroup convened three times in 2013. Protective equipment was renewed, and loose part planning was included as an obligatory part in the work planning process. Also the loose part planning was included to the work planning process as a mandatory part.

Target 2. Keeping radioactive emissions into the air clearly below the limits set by the authorities

The target was met. The total noble gas emissions of the plant amounted to 0.002% of the limit value set by the authorities (target value: < 0.04%).

Target 3. Keeping radioactive discharges into water clearly below the limits set by the authorities

The target was met. Radioactive emissions into water (fission and activation products) amounted to 0.03% of the limit value set by the authorities (target value: < 0.3%). In 2013, the amount of emissions into water was the lowest during the entire production time.

Target 4. Prevention of the increase of nuclear safety risk

The target was met. The target is to prevent the level of nuclear safety risk from increasing. Risks are actively identified and measured for their likelihood and consequences by means of up-to-date Probabilistic Risk Assessment (PRA). The identified risks are mitigated according to the Safety As High As Reasonably Achievable (SAHARA) principle. The risk of core damage and radioactive emissions into the environment is very small, and the variation of the risk remained within the normal range of variation in 2013. TVO is involved in the further improvement of the plant units' ability to cope with extreme weather phenomena that occur concurrently with a power supply failure. Some of the plant modifications related to the improvements have proceeded to the detailed planning phase, and some will be launched in the near future.

Environmental impacts

The environmental impact of electricity production through nuclear power is not harmful to people or the environment under normal conditions.

The most important environmental impact of the Olkiluoto nuclear power plant is the warming of seawater in the vicinity of the plant. A long term goal is to control and find possible usages for the cooling water. During the year 2013 the temperature of the cooling water remained within the requirements set in environmental permit.

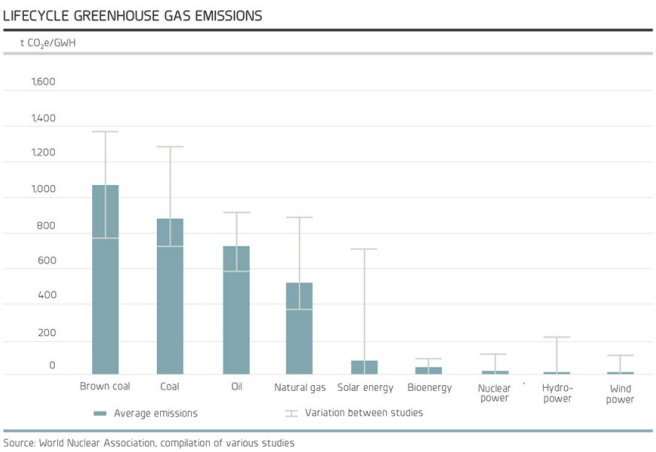
Nuclear power is climate-friendly energy, which makes TVO an important contributor the the mitigations of climate change and advocate of sustainable development. TVO is a party to the Energy Efficiency Agreement and complies with the related energy energyproduction action plan that aims at the implementation of energy efficiency improvement measures as well as improving the efficiency of primary energy usage and overall efficiency of energy production.

The radioactive emissions from the Olkiluoto nuclear power plant into the air and water were extremely minor, mainly less than one percent of the limits set by authorities. The radioactive water emissions in 2013 were the lowest during the operating time.

The environmental impacts of Olkiluoto 3 construction site have been minimized for example by improving recycling and sorting of the wastes. The recycling of wood waste was increased by a pilot project where about 20 % of the material was used for construction material according to the priority order specified in the Waste Act. The remaining wood material was crushed and used for energy production.

Nuclear power is spearheading the prevention of climate change

According to IPCC (Intergovernmental Panel on Climate Change), the carbon dioxide emissions of base load energy generated with nuclear power are comparable to the carbon dioxide emissions of renewable energy sources, such as wind or solar power, over their lifecycle. Increasingly, climate and energy researchers are voicing their support for nuclear power – the requirements of increasing energy consumption can only be met with the reasonably priced and reliably produced nuclear power. For instance, Ken Caldeira, a researcher from the Carnegie Institution, and climate researchers Kerry Emanuel from MIT (Massachusetts Institute of Technology), James Hansen from Columbia University and Tom Wigley from NCAR (the National Center for Atmospheric Research) are of the opinion that the world's energy consumption is rapidly growing, and the growth must continue because of the needs of developing countries.



Environmental balance sheet

OLKILUOTO NUCLEAR POWER PLANT'S ENVIRONMENTAL BALANCE SHEET 2013 (2012)

Emissions into the air

		Allowed annual emissions
Noble gases (TBq)	0.22 (Kr-87 equivalent) (1,21)	(9.420)
Iodine (TBq)	0.0000907 (I-131 equivalent) (0,000017)	(0.103)
Aerosols (TBq)	0.000020 (0,000016)	
Carbon-14 (TBq)	0.80 (0,88)	
Tritium (TBq)	0.62 (0,36)	
CO_2 (t)	483 (384)	
NOx (t)	0.63 (0,52)	
SOx (t)	0.0017 (0,001)	
Particles (t)	0.44 (0,36)	

URANIUM FUEL (t) 36.8 (37.6)

Intermediate agents:	
- Oils (m³)	303 (238)
- NaClO (15 %) (m³)	62.6 (67)
- Other chemicals (t)	139.3 (115)
- Ion exchange resins (t)	10.1 (10.8)
- Water treatment chemicals (t)	108.3 (94)
Raw water (tap and process water) (m³)	274,549 (211,312)
Cooling water (million m³)	2,288 (2,267)

ELECTRICITY (TWh) 14,6 (14,5)

Municipal waste	OL1 and OL2	OL3*	Total
- Recyclable waste (t)	586 (539)	1,231 (1 571)	1,817 (2,110)
- Landfill waste (t)	101 (108)	210 (296)	311 (404)
- Hazardous waste (t)	137 (109)	103 (73)	240 (182)

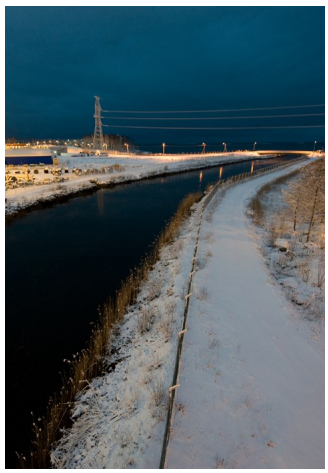
*construction phase

Radioactive waste	
- Low level waste (m³)	0 (172)
- Intermediate level waste (m³)	42 (20)
- Spent nuclear fuel (t)	35.7 (35.8)

Emissions into the water

		Allowed annual emissions
Cooling water (million m³)	2,288 (2,267)	
Thermal load to the sea (TWh)	27.1 (26.8)	
Fission and activation products (TBq)	0.00009 (0.002)	(0.296)
Tritium (TBq)	1.46 (1.31)	(18.3)
Phosphorus (kg)	10 (31)	
Nitrogen (kg)	4,380 (5,475)	
BOD_{7ATU} (kg)	548 (985)	

Cooling water the most significant environmental aspect



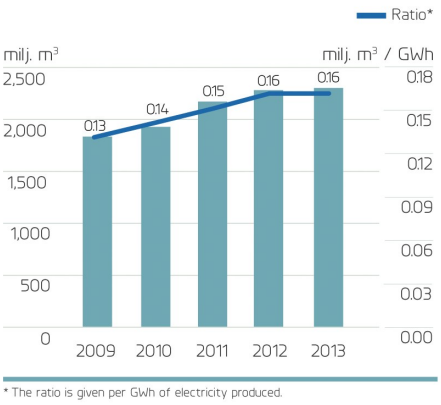
In total, approximately 76 m^3 of seawater per second is used for cooling at the OL1 and OL2 plant units. In 2013, the amount of seawater used for cooling was 2,288 (2,267) million m^3 , and the heat conveyed into the sea was 27.1 (26.8) TWh. In fact, the cooling water's thermal load on the environment is the most significant environmental aspect of the operations. Seawater temperature is monitored as required by the environmental permit. One of the permit regulations is that the seawater temperature must not exceed the target value of 30°C (measured as a weekly average) at a distance of 500 meters from the cooling water discharge channel. The target value was not exceeded in 2013.

As the cooling water passes through a plant unit, its temperature increases by approximately 10°C, after which it is mixed with seawater. The cooling water does not come into direct contact with the power plant's process water. Throughout the operation of the power plant, TVO has monitored and surveyed the impact of cooling water. The cooling water spreads in the surface layer of an extensive sea area, where some of the heat is transferred into the air. Depending on the weather conditions, an increase in temperature can be observed up to an approximate distance of three to five kilometers from the cooling water discharge location. The cooling water also causes changes in the ice conditions as the cooling water discharge area remains unfrozen throughout the winter. The size of the unfrozen and weak ice area varies from three to twenty square kilometers, depending on the winter weather. Residents of nearby areas are warned of the unfrozen area through newspaper announcements and thin ice warning boards. The warm cooling water extends the growth period in the unfrozen sea area and increases its overall biological production. Other biological effects caused by the cooling water are minor.

The impact of the operations on the Natura area of the Rauma archipelago, located in the sea area off Olkiluoto, has also been investigated during the Natura assessment procedure concerning the OL4 project. Based on the assessment, the combined impact of warm cooling water discharged from the four plant units would not result in a significant harmful impact on the protection sites in the Natura area of the Rauma archipelago.

WATER USAGE

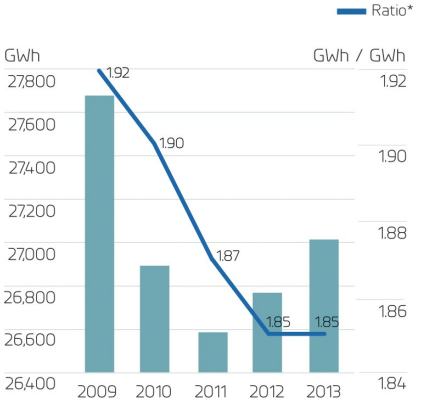
COOLING WATER



* The ratio is given per GWh of electricity produced.

EMISSIONS

THERMAL LOAD ON THE SEA



* The ratio is given per GWh of electricity produced.
The scale of the graph does not begin at zero.

Cooling water (milj. m^3) [1]	2013	2012	2011	2010	2009
OL1	1 170	1 096	1 151	877	923
OL2	1 118	1 171	1 093	906	903
Total	2 288	2 267	2 243	1783	1 827

1) The permit regulation for the amount of cooling water is 3.800 milj. m3/yr (total aggregate amount for the OL1, OL2, and OL3 units). The figures from year 2011-2012 are revised.

Thermal load on the sea(GWh) [2]	2013	2012	2011	2010	2009
OL1	13 872	12 993	13 635	13 183	14 006
OL2	13 208	13 778	12 954	13 716	13 694
Total	27 080	26 771	26 589	26 899	27 700

2) The permit regulation for the thermal load: 205 000 TJ/yr (total value for the OL1, OL2 and OL3 units)

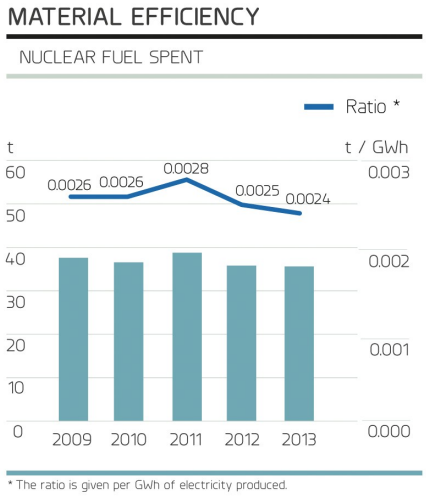
Raw materials and material efficiency

Uranium fuel

The safe use of uranium fuel is ensured at all stages of the power production chain, from the responsible procurement of uranium to the safe final disposal of spent fuel. The power plant units OL1 and OL2 use all together approximately 40 tons of low-enriched uranium.

TVO applies a diversified nuclear fuel procurement chain, which means that separate contracts are concluded for the different stages of procurement, usually with several suppliers for each stage. Procurement operations are based on long-term contracts with leading suppliers. TVO employs a supplier evaluation method and only procures uranium and nuclear fuel refining services from suppliers who have passed the evaluation process.

Further information: Procurement of uranium



Material efficiency is continuously developed

With the help of advanced reactor-physical design and continuous fuel technology development work, the fuel efficiency of reactors has improved since the beginning of operation (within about 35 years) by approximately 30%, and during the past ten years, by approximately 5%. This means that proportionally less natural uranium and enrichment work is required for energy production.

In the production of uranium, as in all mining production, methods requiring less energy and smaller land areas have been sought. The energy consumption of isotopic enrichment plants has dramatically fallen as the traditional gaseous diffusion technology (with an energy consumption of 2,000–3,000 kWh/SWU) has been replaced with modern centrifuge plants (with an energy consumption of 50–60 kWh/SWU). Today, all TVO's suppliers use centrifuge technology. TVO constantly works towards decreasing the footprint of the fuel chain.

TVO operates in a material-efficient manner, minimizing the environmental load. This was realized, for instance, by donating buildings and lockers from the old accommodation village from the years of building OL1 and OL2 to various recipients and unused water filters as educational material to the Academy of Fine Arts of the University of the Arts in Helsinki. These measures decrease the amount of waste taken to the landfill site and implement the priority order specified in the Waste Act. Remainder concrete and soil material has been used in excavation works in Olkiluoto.

Intermediate agents of production

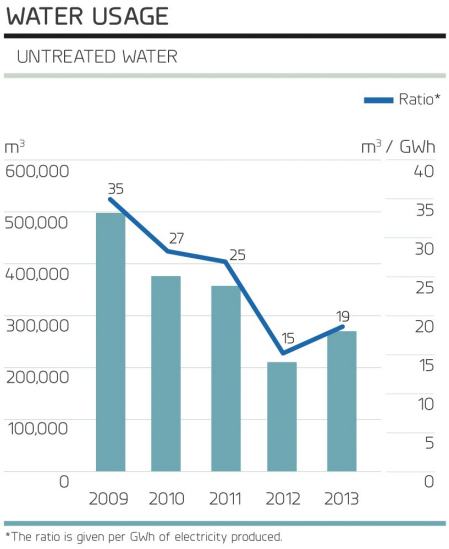
The intermediate agents are the fuel used in emergency diesel generators, auxiliary boilers and vehicles and sodium hypochlorite used for preventing algae growth in cooling water channel. Also the chemicals used for process water purification ion exchange resins and solvents, bitumen and nitrogen are reported as intermediate agents.

Intermediate agents	2013	2012	2011	2010	2009
Oils (m3) 1)	303,0	238,0	269,7	268,6	267,4
NaClO (15 %) (m3)	62,6	67,1	86,2	67,6	37,0
Ion exchange resins (t)	10,1	10,8	19,1	16,2	14,3
Other chemicals (t)	139,3	114,6	204,1	137,6	133

1) Since year 2010 the used oil amount is changed to represent also the fuel used by TVO subcontractors.

Recycling reduces fresh water consumption

In addition to seawater used as cooling water, the Olkiluoto power plant makes use of fresh water, used as tap and process water. The process water that boils in the reactor must not contain any salts, impurities, or particles that could damage the reactor internals. Olkiluoto has all the necessary plants for water treatment: a water treatment plant, a demineralization plant, a laboratory, and a waste water treatment plant. The tap and process water are treated at the water treatment plant. Ion exchange and reverse osmosis methods are used to purify the water used in the power plant process. Process water is continuously recycled and purified. During annual outages, the fuel pool water is stored in storage pools for redeployment. In total, recycling of water reduces the need for clean process water and the amount of process waste water discharged from the plant by approximately 30,000 m^3 each year. During the year under review 274,549 (211,312) m^3 of fresh water was taken from the River Eurajoki.



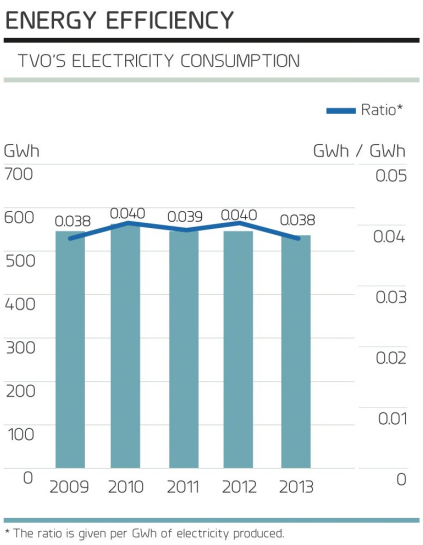
Raw water treatment	2013	2012	2011	2010	2009
Amount of water (m3) 1)	274 549	211 312	357 659	378 470	500 669
Water treatment chemicals (t) 2)	74,0	52,3	63,3	65	69,2

1) Surface water pumpud from the River Eurajoki to the Korvensuo storage pool.

2) Chemicals used for the treatment of raw water (H_2SO_4, NaClO (10 %), NaOH, chemical precipitation agents).

Production and energy efficiency

In 2013, TVO's plant units operated safely and achieved their best production output, 14.63 (14.45) TWh regardless of few unplanned shutdowns. The net output of OL1 was 7.47 (6.97) which was the highest in operation history. The combined capacity factor of the plant units was 95.1 (93.7)% . Olkiluoto site also features a 1 MW wind power plant. Olkiluoto accounted for approximately 17% of all the electricity produced in Finland.



Production

OL1	2013	2012	2011	2010	2009
Net production (GWh)	7 470	6 973	7 290	6 977	7 296
The plant unit's own electricity consumption (GWh)	273	256	268	258	266
Capacity factor (%)	97,1	90,4	94,8	91,8	97,0
Efficiency (net) (%)	35,0	34,9	34,8	34,6	34,2

OL2	2013	2012	2011	2010	2009
Net production (GWh)	7 163	7 477	6 914	7 167	7 156
The plant unit's own electricity consumption (GWh)	258	271	250	258	256
Capacity factor (%)	93,1	96,9	90,9	95,2	95,1
Efficiency (net) (%)	35,2	35,2	34,8	34,3	34,4

Wind power plant	2013	2012	2011	2010	2009
Net production (GWh)	1,0	1,5	1,9	1,1	1,5
Capacity factor (%)	12	17	22	13	17
Electricity production capacity (	1	1	1	1	1

The improvement of energy efficiency is a part of our daily operations

TVO has a long history in systematically implementing various energy-saving measures and assessing and surveying the effects and feasibility of various measures. TVO signed the energy conservation agreement drafted between the government and the energy sector as early as in 1998. In compliance with the agreement, investments have been made in the improvement of the plant units' energy efficiency. In 2008, TVO joined the industries' energy efficiency system, established in 2007 as a part of the action plan for electricity production. According to this system and the action plan, measures promoting energy efficiency have been extended to also cover operations outside the power plant units. The energy efficiency system

has been integrated into the certified environmental system, and TVO implements energy efficiency measures as part of its regular operations, such as the modification process.

TVO carried out an energy review of its facilities that was used as a basis for the energy efficiency improvement plan for 2011–2016. TVO is extending the district heating network in its area, enabling the utilization of waste heat from the plant units for district heating. One of the planned energy-efficiency improvement measures at the plant units involves the replacement of 4,500 lighting fixtures. Other measures affecting energy efficiency have included the demolition of the old accommodation village, the replacement of direct electric heating with air source heat pumps at separate sites, and adding meters to locations significant for energy efficiency during modifications and repairs.

Emissions to air

With regard to the management of radioactive substances, TVO always strives to keep any emissions well below both the emission limits set by the authorities and our own target limits, which are more stringent than the official limits.

Radioactive emissions to air

As in previous years, the radioactive emissions from the Olkiluoto nuclear power plant into the air and water were extremely minor, and we managed to keep the emissions below both the limit values specified by the authorities and the stringent emission limits that we set ourselves. Our noble gas emissions into the atmosphere amounted to 0.002% (0.01%) and iodine emissions to 0.09% (0.02%) of the allowed limit value specified by the authorities.

Radioactive emissions to the air	2013	2012	2011	2010	2009
Noble gas TBq (Kr-87 equivalent) 1)	0,217	1,21	1,24	0,58	0
% of allowed amount	0,0023	0,01	0,007	0,0033	0
Iodine TBq (I-131) 1)	0,0000907	0,000017	0,000002	0,000094	0,0000001
% of allowed amount	0,088	0,02	0,0015	0,0082	0,00009
Aerosols TBq	0,00002	0,000016	0,000011	0,000012	0,000059
Tritium TBq	0,62	0,36	0,24	0,27	0,32
Carbon-14 TBq	0,80	0,88	0,81	0,71	0,78

1) Permit regulation for radioactive emissions into the air: Noble gases 17 700 TBq (Kr-87 equivalent), Iodine 0,114 TBq (I-131)

Carbon dioxide emissions

TVO participates to the national climate action by producing emission free base load power. Olkiluoto nuclear power plant is a part of the European Union Emission Trade System where the purpose of the system is to monitor and reduce industrial greenhouse gas emissions. The sources of the certified CO_2 emissions are the back-up heating boilers and emergency diesel generators, which are used in case of possible, but highly unlikely situation of power loss. To ensure the safe function of the diesels, they are tested according to the operational license regulations and thus no emission reductions are possible. Renewal of the OL1 and OL2 emergency diesel generators will decrease the fine particle emission.

Verified CO_2 emissions of the Olkiluoto power palnt (t)	2013	2012	2011	2010	2009
OL1/OL2 back-up heating boilers (8 MW + 12 MW)	1	1	1	32	2
OL1/OL2 emergency diesels (8 x 1,8 MW)	478	383	455	424	483
OL3 emergency diesels (4 x 6,4 MW, 2 x 2,5 MW, 1 x 1,3 MW)	4,5				
Total	483	384	456	456	485

Emissions to water and soil

In year 2013, the emissions of radioactive fission and activation products into water were the lowest in operation history.

Radioactive emissions to water

The emissions of radioactive fission and activation products into water amounted to 0.03% (0.07%) and tritium emissions to 8.0% (7.1%) of the limit value specified by the authorities.

Radioactive emissions to water	2013	2012	2011	2010	2009
Fission and activation products TBq 1)	0,00009	0,0002	0,0001	0,0002	0,0002
% of allowed amount	0,03	0,07	0,05	0,08	0,07
Tritium TBq 1)	1,46	1,31	1,31	1,50	1,85
% of allowed amount	8,0	7,1	7,2	8,2	10,1

1) Permit regulation for radioactive emissions to water: Tritium 18,3 TBq, other beta-active nuclides 0,298 TBq

Sanitary waste water

Sanitary waste water is processed at the Olkiluoto waste water treatment plant. The treated water is discharged into the sea. In 2013, the amount of treated sanitary waste water was 84,025 (111,565) m^3. The phosphorus load discharged into the sea was 10 kg (31 kg), the nitrogen load was 4,380 kg (5,475 kg) and the biological oxygen demand (BOD7ATU) was 548 kg (980 kg). The nutrient load to sea water has decreased significantly. The sanitary waste water is treated in accordance with the permit regulations concerning treatment efficiency and emissions into water, as well as statutory requirements. The emissions from the sanitary waste water treatment plant were a fraction of the nutrient load of the River Eurajoki running to the north of Olkiluoto, totaling 13,000 kg of phosphorus and 402,000kg of nitrogen. The measurements ensuring the water quality are carried out by a third party.

Sanitary waste water treatment	2013	2012	2011	2010	2009
Amount of water (m^3)	84 025	111 565	139 251	154 503	157 383
Concentration (mg/l) 1)					
BOD_{7ATU}	6,7	8,9	7,4	16,0	9,3
Phosphorus	0,12	0,28	0,14	0,16	0,10
Treatment efficiency average (%) 1)					
BOD_{7ATU}	97	96	96	96	97
Phosphorus	99	97	98	99	99
Load on sea area (kg)					
Phosphorus	10	31	19	25	15
Nitrogen	4 380	5 475	6 935	8 800	8 400
BOD_{7ATU}	548	985	1 022	2 500	1 500
Water treatment chemicals (t) 2)	34,3	41,6	44,7	54,5	56,1

1) The permit regulation for the sanitary waste water: The maximum BOD_{7ATU} value of waste water discharged into the seas is 15 mg O_2/l and the maximum phosphorus concentration is 0,7 mg P/l. The minimum treating efficiency for the $BOD_{7\ ATU}$ value and phosphorus is 90 %. All values are calculated as annual averages.

2) Chemicals used for the treatment of sanitary waste water

Emissions to soil

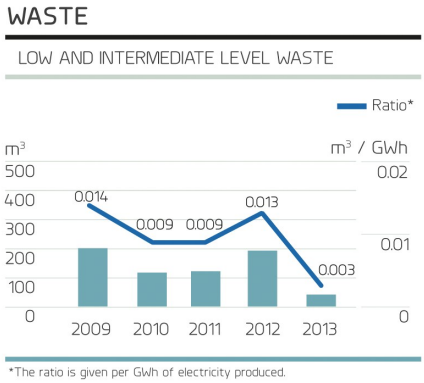
No events leading to the contamination of the soil occurred in 2013.

Waste management

TVO is committed to reducing the amount of waste, and to improve reusage. Radioactive waste is isolated from the natural environment until its radioactivity has decreased to a harmless level.

Radioactive waste

The waste produced at the power plant is classified as waste exempted from control, low and intermediate level operating waste, high level waste (spent fuel), and decommissioning waste according to its level of radioactivity.



Waste exempted from control contains such a small amount of radioactive substances that the waste can be returned to utilization or disposed of at the landfill site in Olkiluoto. Waste is produced during the operation and maintenance of the power plant. The amount of maintenance waste exempted from control was 24 (20) metric tons. In addition, approximately 32 (50) metric tons of metal was released for recycling and 6 (7) m^3 of hazardous waste was delivered for further processing.

The protective gear used in operating and maintaining the power plant, equipment removed from the process, and the insulating materials are low level waste. They are packed tightly and placed in the repository for operating waste (VLJ repository) located at an approximate depth of 100 meters in the plant area. No low level waste was disposed in the VLJ repository in year 2013 (172 m^3 of low level waste was disposed to VLJ repository in 2012).

The ion exchange resins used for cleaning the power plant's process water are classified as intermediate level waste. They are blended with bitumen and placed in the VLJ repository. The amount of intermediate level waste disposed of in the VLJ repository totaled 42 (20) m^3 in 2013. The total amount of high level radioactive waste (spent fuel) produced during the year under review was 35.7 (35.8) metric tons. It is placed in interim storage at Olkiluoto until it can be disposed of in the Olkiluoto bedrock. It is estimated that final disposal can begin in 2020´s. Decommissioning waste is waste created in conjunction with disassembly after power plant decommissioning. Decommissioning waste is also disposed of at Olkiluoto.

	2013	2012	2011	2010	2009
Operating waste cleared after monitoring (t)	62	78	130	266	66

Waste disposed of in the VLJ repository	2013	2012	2011	2010	2009
Low-level (m3)	0	172	132	117	163
Intermediate level (m3)	42	20	0	10	36

Amount of spent fuel in the OL1 and OL2 storage polls and interim storage, cumulative	2013	2012	2011	2010	2009
Number of assemblies	8 096	7 884	7 668	7 434	7 210
Assemblies (t)	1 362,3	1 327,3	1 291,8	1 253,4	1 216,9

Municipal waste

TVO is committed to reducing the amount of waste, and everyone working at Olkiluoto are required to do the same. All waste generated at Olkiluoto is sorted and processed. Sorted waste is forwarded to recycling. Ordinary municipal waste is sorted into nine different groups, and only waste that is unsuitable for utilization is taken to the landfill. All hazardous waste is gathered to the hazardous waste storage facility. From there, the waste is taken to an appropriate processing facility for further processing.

The share of waste utilized for recycling or energy in the total amount of waste was 77% (78%), the share of landfill waste was 13% (15%) and the share of hazardous waste was 10% (7%). Most of the hazardous waste consists of batteries and electrical waste.The total amount of waste was 2,368 (2,696) metric tons.

Ordinary municipal and hazardous waste (t)

OL1 and OL2	2013	2012	2011	2010	2009
Landfill, total amount	101	108	183	270	531
TVO's own landfill 1)	41	78	138	176	335
Paper and cardboard	69	81	117	121	107
Energywaste	77	96	144	206	326
Biowaste	51	62	83	95	99
Wood	170	88	177	146	206
Metal	157	102	212	176	220
Cable refuse	14	17	34	20	40
Glass	4	8	9	19	14
Crushed brick and concrete	25	21	37	22	182
Screening 2)	19	42	26	59	
Hazardous waste	137	109	48	56	60

1) The maximum value allowed by the permit regulation is 1 000 t/yr (total aggregate amount for the OL1, OL2 and OL3 units)

2) The collection of screenings from the sea began in 2010 in accordance with the environmental permit

Ordinary municipal and hazardous waste (t)

OL3	2013	2012	2011	2010	2009
Landfill, total amount	210	296	405	928	1 601
TVO's own landfill 1)	170	225	284	777	560
Paper and cardboard	47	61	73	67	74
Energywaste	297	376	431	451	1 459
Biowaste	43	34	48	26	24
Wood	429	613	1 629	3 115	5 310
Metal	369	335	1 815	2 959	3 645
Cable refuse	12	37	31	8	8
Glass	0	0	0	0	0
Crushed brick and concrete	12	114	107	1 913	376
Clable drums	21				
Hazardous waste	103	73	149	79	71

1) The maximum value allowed by the permit regulation is 1 000 t/yr (total aggregate amount for the OL1, OL2 and OL3 units)

Environmental research

Environmental research has been conducted on Olkiluoto island since the 1970s, years before electricity production was started. The early baseline studies created a basis for the environmental monitoring programs aimed at facilitating environmental radiation monitoring and determination of the impact on waters.

Around 300 samples are taken from the environment of Olkiluoto each year and analyzed in compliance with an environmental radiation monitoring program approved by the Radiation and Nuclear Safety Authority STUK. There are also several radioactivity monitors in the immediate vicinity of the plant. They continuously measure radiation and are connected to STUK's automatic network for monitoring external radiation. Forty to fifty water samples are taken from the sea surrounding Olkiluoto each year. These samples are subjected to more than a hundred different water quality analyses. Furthermore, the condition of fish stocks is monitored by, for instance, surveying professional fishermen. The state of aquatic plants is monitored by means of transect line diving every six years.

Extensive environmental impact assessment procedures were carried out for the new OL3 and OL4 plant unit projects. The final disposal of spent nuclear fuel has been studied since the 1980s, and it has also been evaluated with environmental impact assessment procedures.

Biodiversity survey

In 2013, a biodiversity survey was carried out in the area of Olkiluoto island. During the survey, vegetation and biotopes, nature conservation areas, endangered and noteworthy species, nesting birds and mammals were studied.

BIODIVERSITY

Surface area of the constructed area: 165 hectares.

Olkiluoto island is total 900 ha in surface area.

Forest area has decreased on the island, giving way to infrastructure, but the island also includes four nature conservation areas that increase biodiversity. The biotopes found in Olkiluoto are, to a large extent, naturally barren and include few species, which diminishes the impact of forestry and construction. In some areas in Olkiluoto and the surrounding region, the avifauna is rich in species and numbers, even though the most representative bird areas are centered in the least processed areas. The bird species in the land areas are numerous but common. The constructed areas offer some noteworthy bird species possibilities for nesting.

The observations and recommendations arising out of the survey will be taken into account, for instance, in the land use team's planning work, protecting biodiversity in the area. During 2014, TVO will participate in the Master Class biodiversity

training program arranged by Finnish Business Society (FiBS), the leading corporate responsibility network in Finland. The program's goal is to increase companies' awareness of the significance of biodiversity in corporate business and to support the development and improvement of companies' own environmental responsibility.

OLGIS geographical information system

Geographic information of the Olkiluoto island is gathered centrally in an ArcGIS-based OLGIS geographic information database. The information is obtained from TVO and Posiva, and the material stored on the OLGIS server is available to both companies. The geographic information server stores information concerning the location of various buildings, roads, cables, boreholes, environmental monitoring areas, parking lots, etc. The system also enables retrieving property information for different cables and other infrastructure components. This information can include, for instance, cable installation depths, lamp post heights or the identification number of a water pipe. Thus it can be used as a tool for planning and implementing maintenance work.

The OLGIS server also includes remote survey material from Posiva and TVO, such as high-resolution aerial photographs and laser scanning material. They can be used as map templates, upon which various observation points or cables can be inserted. The shared geographic information server of TVO and Posiva also acts as a portal for geographic information exchange between the companies, enabling both of them to better take each other's work and structures into account when planning their own work and thus improving the cooperation between the companies.

Cooperation with authorities

Our operations are subject to a license, and they are supervised by the authorities. The Finnish Radiation and Nuclear Safety Authority (STUK) supervises nuclear and radiation safety.

The competent environmental permit authority is the Southern Finland Regional State Administrative Agency, and the supervising authority is the Southwest Finland Centre for Economic Development, Transport and the Environment. Other authorities involved in the management of the environmental concerns include the environmental department of the municipality of Eurajoki (where the facility is located) and the Ministry of Employment and the Economy, which acts as the liaison authority in the EIA Procedure.

Radiation monitoring samples taken from the Olkiluoto environment are submitted to STUK for analysis. An annual report is prepared on the amount of waste and emissions caused by the operations and submitted to several regional and national authorities. Environmental investments and environmental protection activity costs are reported annually to Statistics Finland. After verification, the annual carbon dioxide emissions of emergency diesels and back-up heating boilers are reported to the Energy Market Authority (currently Energy Authority). Tukes acts as the supervising authority for the industrial processing and storage of hazardous chemicals.

No special events resulting in environmental impact

No nuclear or radiation safety-related special events or operating disruptions resulting in an environmental impact took place at the Olkiluoto power plant in 2013. In case of special events and operating disruptions, separate case-specific reports are submitted to STUK.

The events taking place at a nuclear power plant are classified on the international INES scale according to their degree of severity. The INES scale has seven categories of severity. Category 4–7 events are classified as accidents, category 1–3 events as incidents or anomalies with a negative effect on safety, and category 0 events as deviations with no significance to safety. The most severe events ever to occur at Finnish nuclear power plants have been classified as INES category 2 events. During the operating history of the Olkiluoto nuclear power plant, there have been a total of three INES 2 events.

In 2013, four special reports were prepared on the operations. All of these were rated at severity level 0 on the INES scale (a deviation with no safety significance). One event that occurred in 2012 and was rated at level 0 on the INES scale was reported in 2013. All operational events taking place at the Olkiluoto nuclear power plant are processed, and events taking place at other nuclear power plants around the world are also continuously monitored. We develop our operations based on the observations made.

Our operations are regulated by various permits

In addition to the nuclear energy and radiation laws, the operations are regulated by the requirements set out in environmental legislation. Operating the Olkiluoto power plant is subject to a license according to the Environmental Protection Act, and cooling water intake is subject to a license according to the Water Act.

The permit regulations control the amount of the power plant's cooling water and the amount of heat contained in it. The regulations also specify the target value for the temperature of the sea area, taking into account the thermal load. The permit regulations also apply to matters such as waste water treatment efficiency, processing of waste, operations in case of disruptions and exceptional situations, and monitoring and reporting. The Olkiluoto nuclear power plant landfill has its own environmental permit. Permits referred to in the Chemicals Act have been granted for the processing and storage of hazardous chemicals. Tukes performed a periodic inspection at TVO's nuclear power plant in 2013.

The 8 MW and 12 MW back-up heating boilers of the Olkiluoto nuclear power plant, as well as the 15 emergency diesel generators of OL1, OL2 and OL3, are included in the Emissions Trade System. In compliance with the Finnish Emissions Trading Act, TVO submits an annual verified emissions report and a verifier's statement to the emissions trading authority. An emissions permit for the period 2013–2020 was approved in 2013. In 2013, the decision was made to renew the emergency diesel generators at OL1 and OL2. This will be the largest individual plant modification in the history of Olkiluoto.

Compliance with environmental regulation

TVO constantly monitors statutory and other requirements pertaining to the operations. The persons responsible for the different sectors are responsible for ensuring that TVO's organizations receive sufficient, up-to-date information on statutory requirements and their impact on TVO's operations. The fulfillment of the requirements is regularly assessed during internal audits and management reviews.

Nuclear waste management

Low and intermediate level waste, also called operating waste, accumulates during the operation and maintenance of the nuclear power plant. Some of the nuclear power plant structures become radioactive during the operation of the plant and need to be finally disposed of when the plant has been decommissioned. Nuclear power plants use uranium fuel which becomes high level radioactive waste during operation and requires final disposal at a repository. Before final disposal, spent nuclear fuel is kept in the interim storage facility for spent nuclear fuel.

TVO also takes care of the operating waste and the power plant decommissioning waste. The waste is finally disposed of in the repository for operating and decommissioning waste, also called the VLJ repository, located at Olkiluoto. The VLJ repository also receives the small radioactive waste created by Finnish healthcare, industries, and research institutions.

Responsibility for nuclear waste management lies with the nuclear power companies that must carry out the necessary nuclear waste management measures for their own waste at their own cost. According to the Finnish Nuclear Energy Act, nuclear waste generated in Finland must be treated, stored, and finally disposed of in Finland, and the import of nuclear waste into Finland is prohibited.

Further information: Nuclear waste management, Operating waste and Interim storage for spent nuclear fuel.

Emas table

REQUIREMENT	REPORT PAGE
A clear and unambiguous description of the organization registering under EMAS and a summary of its activities, products, and services, and its relationship to any parent organizations as appropriate.	TVO: an overview
The environmental policy and a brief description of the environmental management system of the organization.	Company-level policies Environmental management
A description of all the significant direct and indirect environmental aspects which result in significant environmental impacts of the organization and an explanation of the nature of the impacts as related to these aspects.	Environmental impacts
A description of the environmental objectives and targets in relation to the significant environmental aspects and impacts.	Environmental management Environmental program 2013
A summary of the data available on the performance of the organization against its environmental objectives and targets with respect to its significant environmental impacts. Reporting shall be on the core indicators and on other relevant existing environmental performance indicators.	Environmental management Environmental program 2013 Environmental impacts Emas table Cooling water Raw materials and material efficiency Production and energy efficiency Emissions to air Emissions to water Waste management Environmental research
Other factors regarding environmental performance including performance against legal provisions with respect to their significant environmental impacts.	Environmental management Cooperation with authorities Cooling water Emissions to air Emissions to water Waste management
A reference to the applicable legal requirements related to the environment.	Cooperation with authorities
The name and accreditation number of the environmental verifier and the date of validation.	Confirmation of compliance

Our power plant at Olkiluoto has been EMAS (Eco-Management and Audit Scheme) registered with code FI-000039 (NACE code D35.1.1).

The registration is valid until June 30, 2015.

Confirmation of compliance

CONFIRMATION OF COMPLIANCE

DNV Certification OY/AB has, as an accredited certifier (FIN-V-0002), reviewed the internal procedures observed at Teollisuuden Voima Oyj's Olkiluoto power plant and the resulting data and documentation. Based on this review, DNV Certification OY/AB states that the environmental policy, the management program, the environmental system, audit procedures, and the environmental statement including the indicators fulfill the requirements of Decree (EC) No. 1221/2009.

Scope and methodology of certification

The EMAS report was certified at the Olkiluoto location of Teollisuuden Voima during 24–28 February 2014.
The certification was performed with the ISO 14001 certification auditing by processing the requirements for both systems, and compliance with them.

The scope of the report and the accuracy of the information contained therein were verified at this time by means of a written report and practical inspections. Key personnel at the plant were interviewed, and the information contained in the report was compared with information found in reviewed source material.

The 2013 environmental report has the same structure as the 2012 report and continues along the same lines as previous reports, which means that the content and environmental indicators can easily be compared year by year. However, in the 2013 report, environmental indicators are next to the text describing them, and not as a one page of indicators like before. The report provides a clear and accurate image of Teollisuuden Voima Oyj's operations and their impact on the environment. The environmental system is implemented by taking the goals into account, and the implementation of the system is monitored by the environment team and management reviews. The environmental report (and related environmental review and environmental indicators) which describe the impact of the system meet the EMAS 1221/2009 requirements.

The dedicated level of Teollisuuden Voima's commitment to a high standard of safety, quality and environment protection, and continuous development is shown in the 2013 Environment Report.

Mustasaari, 10 March 2014
DNV Certification OY/AB
EMAS-accredited certifier
FIN-V-0002

Seija Meriluoto
Lead Auditor

Further information

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Please visit the TVO website for a lot more additional information about TVO, environmental matter, and nuclear power.

Corporate Governance Statement 2013

General

In accordance with the Company's Articles of Association, Teollisuuden Voima Oyj (TVO) engages in the construction and acquisition of power plants and power transmission equipment and generation, transmission and delivery of electricity to the shareholders under the terms and conditions laid down in the Articles of Association.

Under the Articles of Association, TVO supplies electricity to its shareholders at cost (Mankala principle), which means that it delivers the electricity it has produced or procured to its shareholders in proportion to their shareholdings in each series. Each of the shareholders of each series bears their share of the variable and fixed annual costs as specified in detail in the Articles of Association. The shareholders have concluded a mutual shareholders' agreement, which contains more detailed regulations on corporate governance.

Because TVO is a non-listed public company applying the cost price principle, it observes the Corporate Governance Code for listed companies where applicable.[1)] However, TVO is not obligated to observe the Corporate Governance Code nor therefore the Comply or Explain principle. According to the Securities Markets Act (14.12.2012/746), the issuer of a security subject to public trading must provide a corporate governance statement in its annual report or separately.

[1)] The Corporate Governance Code was issued on June 15, 2010, replacing the Corporate Governance Code for Listed Companies issued in October 2008. The Code has been prepared in accordance with the so-called Comply or Explain principle, which means that the company shall comply with all recommendations of the Code. However, a listed company may depart from an individual recommendation if it accounts for such a departure and provides an explanation for it. The Finnish Corporate Governance Code came into effect on October 1, 2010 and is available at www.cgfinland.fi.

Shareholders' meeting

The Shareholders' Meeting is the highest decision-making body in the Company. It decides on matters falling within its sphere of competence under the Finnish Companies Act and Articles of Association, such as adoption of the financial statements, the use of the profit shown on the adopted balance sheet and discharging the Board of Directors and the President and CEO from liability. The Shareholders' Meeting also elects the Members of the Board, elects the Auditor and decides on the remuneration of the Members of the Board as defined in the Articles of Association.

The Annual General Meeting is held at the latest in May. The shareholders are invited to the Annual General Meeting no earlier than four weeks and no later than ten days before the meeting.

The Annual General Meeting is attended by the President and CEO, the Chairman of the Board of Directors, a sufficient number of members of the Board and the Auditor. As a rule, anyone running for membership of the Board of Directors for the first time is required to attend the Shareholders' Meeting deciding on his/her election, unless his/her presence is prevented for a weighty reason.

Annual General Meeting in 2013

TVO's Annual General Meeting was held on March 22, 2013. The meeting adopted the Company's Financial Statements for 2012, discharged the members of the Board and President and CEO from liability and elected members of the Board.

Board of Directors

Under the Articles of Association, TVO's Board of Directors consists of a minimum of 7 and a maximum of 10 members. The term of office of a Board member starts from the close of the Shareholders' Meeting at which the election takes place and ends at the close of the Shareholders' Meeting at which the new election takes place. According to the Articles of Association, a shareholder who owns more than 20 percent and less than 50 percent of all the Company´s shares has the right to appoint three members to the Board of Directors. The Board of Directors elects a Chairman and a Deputy Chairman from among its members. The Board convenes when summoned by the Chairman or, where the Chairman is prevented from doing so, by the Deputy Chairman. More than half of the members of the Board present at a meeting constitute a quorum.

The Board's responsibilities and authority cover all matters related to the Company's administration that, according to legislation or the Articles of Association, are not handled by the Shareholders' Meeting.

The Board of Directors is responsible for the administration and proper organization of the operations of the Company and for appropriate arrangement of the control of the Company's accounts and financials, and:

- appoints the President and CEO
- appoints other management of the Company
- ensures that the management system functions properly
- approves the Company's strategic goals and operating guidelines
- confirms the annual action plan and the budget, and supervises their implementation
- approves the principles applied to risk management
- approves the annual schedule for Internal Audit
- adopts the Report of the Board of Directors and the annual Financial Statements
- adopts interim reports
- decides on major matters related to financing and collateral
- approves major investments
- summons the Annual General Meeting
- decides on informing the shareholders
- decides on the principles of the remuneration and commitment system
- approves the charters of the committees and the regulations for the committees and steering groups assisting the management
- deals with other matters on the agenda that are submitted by the Chairman or Deputy Chairman or a member of the Board or the President and CEO
- compiles an annual assessment of its own performance.

The Board of Directors promotes the interests of the Company and all its shareholders. The members of the Board do not represent those parties who proposed them as members or any other parties.

The Board of Directors in 2013

At the 2013 Annual General Meeting the following persons were elected as members to the Board of Directors:

Hannu Anttila (born 1955)
Jukka Hakkila (born 1960)
Tapio Korpeinen (born 1963)
Pekka Manninen (born 1954)
Markus Rauramo (born 1968)
Matti Ruotsala (born 1956)
Juha Taavila (born 1956)
Tiina Tuomela (born 1966)
Lauri Virkkunen (born 1956)
Rami Vuola (born 1968)

Harri Pynnä (born in 1956) was a member of the Board until the end of the AGM which held the member election mentioned above.

At its organization meeting held on the same day as the AGM, the Board elected Lauri Virkkunen as Chairman and Matti Ruotsala as Deputy Chairman. The Board also chose the members and chairmen of the Board Committees.

During 2013, the Board of Directors convened 16 times. The average attendance rate at the meetings was 95 percent.

The members of the Board do not own Company shares.

The members are paid monthly remuneration and a fee for each meeting they attend.

Board committees

To ensure that the issues within the responsibility of the Board of Directors are handled as efficiently as possible, the Company has set up an Audit and Finance Committee, an OL3 Committee, a Nuclear Safety Committee, and a Nomination and Remuneration Committee, each assisting and reporting to the Board of Directors and consisting of at least three members of the Board. The Board of Directors chooses the members of the committees from among its members, appoints their respective chairmen, and approves their charters.

In addition to the duties laid down in their respective charters, each committee also deals with other matters which are related to their respective fields and passed on to them by the Board of Directors, committee members, the President and CEO or other management.

The members are paid a fee for each meeting they attend.

Audit and Finance Committee

In accordance with its charter, the Audit and Finance Committee:

- deals with the planning and implementation of the Company's funding and the risk management related to financing
- deals with matters related to financing, particularly the Company's Financial Strategy and Policy, action plans related to financing, financing agreements, and authorization for their implementation
- deals with the internal accounting for the series of shares, the annual budget and electricity charges, and issues related to the long-term budget and the balance sheet
- deals with the annual financial statements and the corporate governance statement
- monitors the reporting process related to the annual financial statements
- monitors the efficiency of the internal audit and risk management
- monitors the auditing process.

The Chairman of the Audit and Finance Committee in 2013 was Tiina Tuomela and the other members were Hannu Anttila and Jukka Hakkila. The Audit and Finance Committee convened 7 times in 2013. The average attendance rate at the meetings was 91 percent.

OL3 Committee

In accordance with its charter, the OL3 Committee manages and supervises the implementation of the OL3 project and submits significant issues related to the project for decision, and, in particular, monitors, manages, and supervises:

- fulfillment of the OL3 plant delivery agreement
- progress of the construction, manufacture of the main components and installation and implementation of OL3, compliance of the delivery of the plant unit with the agreement, the launch of the unit's commercial use, and fulfillment of guarantee commitments
- claim and arbitration proceedings.

The Chairman of the OL3 Committee in 2013 was Tapio Korpeinen and the other members were Pekka Manninen, Matti Ruotsala, Juha Taavila and Lauri Virkkunen. The committee convened 17 times in 2013. The attendance rate at the meetings was 99 percent.

Nuclear Safety Committee

In accordance with its charter, the Nuclear Safety Committee:

- monitors key issues related to nuclear safety and corporate safety culture
- deals with the technical implementation of nuclear waste management
- deals with the costs of nuclear waste management
- deals with significant matters requiring decisions by Posiva Oy's Board of Directors and, where necessary, advises the Company's representatives in Posiva Oy's Board of Directors.

The Chairman of the Nuclear Safety Committee in 2013 was Rami Vuola and the other members were Harri Pynnä (until

March 22, 2013) and Juha Taavila. Markus Rauramo was member of the Committee as from March 22. The committee convened 2 times in 2013, and the attendance rate at the meetings was 83 percent.

Nomination and Remuneration Committee

In accordance with its charter, the Nomination and Remuneration Committee:

- deals with proposals to be submitted to the Annual General Meeting regarding the remuneration of members of the Board of Directors
- deals with matters related to the appointment of the President and CEO and other management
- in line with the Board's policies, decides on the remuneration of the President and CEO and other management
- in line with the Board's policies, decides on the Company's commitment and remuneration systems.

In accordance with the charter of the Nomination and Remuneration Committee, the Chairman of the Board of Directors acts as its chairman. Accordingly, the Chairman of the committee until March 22, 2013 was Matti Ruotsala and as from March 22, 2013 Lauri Virkkunen. Tapio Korpeinen was a member of the committee. The committee convened 3 times during the year. The attendance rate at the meetings was 100 percent.

Steering groups assisting the management

The Board of Directors may set up steering groups to assist the management and to handle, without any authority or liability under company law, special issues related to their fields. Such committees or steering groups consist of members and experts appointed by the Board of Directors.

The Board of Directors also lays down regulations for the steering groups assisting the management.

President and CEO

The President and CEO deals with the Company's day-to-day management in accordance with the Finnish Companies Act and the instructions and orders issued by the Board of Directors, ensures that the Company's accounting practices comply with the law, and that the financial administration and management is reliably organized. The President and CEO gives the Board and its members all the information necessary for the Board to perform its duties.

The President and CEO is Jarmo Tanhua (born 1965).

The President and CEO does not own any shares in the Company.

Management Group

The Management Group assists the President and CEO in the management of the Company's operations. The minutes of its meetings, together with the minutes of the meetings of the Executive Management Group, form the President and CEO's list of decisions. The members of the Management Group, who all report to the President and CEO, are appointed by the Board of Directors.

The Management Group consists of:

Jarmo Tanhua, President and CEO, Chairman
Sami Jakonen, Senior Vice President, Engineering
Mikko Kosonen, Senior Vice President, Production
Anna Lehtiranta, Senior Vice President, Corporate Relations
Esa Mannola, Senior Vice President, Nuclear Safety
Janne Mokka, Senior Vice President, OL4 Project
Lauri Piekkari, Senior Vice President, Treasury
Risto Siilos, Senior Vice President, Corporate Resources, Deputy CEO
Jouni Silvennoinen, Senior Vice President, OL3 Project
Anja Ussa, Senior Vice President, Finance, Secretary

and
personnel representative and his/her deputy in accordance with the Act on Personnel Representation in the Administration of Undertakings:

Reijo Sjöblom, Purchasing Engineer, Personnel Representative
Aimo Autio, Welder, 1. Deputy Personnel Representative
Rainer Karlsson, Foreman, 2. Deputy Personnel Representative

For specific issues, the President and CEO can, if necessary, invite other persons to attend meetings of the Management Group.

The Management Group deals with matters related to the Senior Vice Presidents' areas of responsibility to a necessary extent to ensure fluent communication between the President and CEO and the Senior Vice Presidents and between the Senior Vice Presidents themselves. The Management Group also deals with essential matters related to the Company's operations and requiring a decision of the President and CEO. These include matters related to the members' areas of responsibility, matters submitted by the personnel representatives, strategy and action plans as well as operating guidelines.

Executive Management Group

The Executive Management Group assists the President and CEO in the planning and management of the Company's operations, provides a communication forum for the management and helps to clarify decision-making responsibilities between the different parties. The Executive Management Group deals with matters specified in the Organization Manual effective at the time.

The Executive Management consists of the same persons as the Management Group (except for the personnel representatives) as well as the President and CEO of Posiva Oy.

Auditor

In accordance with the Articles of Association, the Company has one Auditor, which has to be an audit firm certified by the Central Chamber of Commerce. An Auditor's term of office ends at the end of the Annual General Meeting following its election.

The Auditor is responsible for auditing the Company's accounting records for the financial year, the annual financial statements, the report of the Board of Directors and administration. The Auditor for the parent company must also audit the consolidated financial statement. The Board of Directors and the President and CEO are given a report on the audit of the consolidated accounts.

The Annual General Meeting held on March 22, 2013 elected PricewaterhouseCoopers Oy, Authorized Public Accountants as the Company's auditor, with Jouko Malinen, Authorized Public Accountant, acting as the principal auditor.

Remuneration

The Nomination and Remuneration Committee under the Board of Directors approves the Company's commitment and remuneration systems. All permanent and long-term temporary employees are included in the employee bonus system. Some of the personnel have deposited their bonuses in the Teollisuuden Voima Personnel Fund.

Insider administration

As a bond issuer, TVO maintains an insider register on persons who work for the company on the basis of an employment contract or other contract and, either regularly or irregularly, receive insider information directly or indirectly related to the issuer. The Senior Vice President, Treasury is responsible for the maintenance of the insider register.

Disclosure policy for investors

The Company has adopted a Disclosure Policy for Investors. TVO has a duty to disclose information on a regular and continuous basis.

Stock exchange releases issued by TVO are approved by the Company's President and CEO, the Chairman of the Board or persons authorized by them.

Internal control and risk management of the financial reporting process

The Board of Directors and management are responsible for organizing the Company's internal control and for ensuring that it is adequate. The purpose of internal control is to ensure that TVO's operations are carried out on an efficient and cost-effective basis, that the information supplied is reliable and that all relevant regulations and operating principles are followed. Company documents, Code of Conduct and values, policies, guidelines and manuals provide a basis for TVO's corporate governance and internal control.

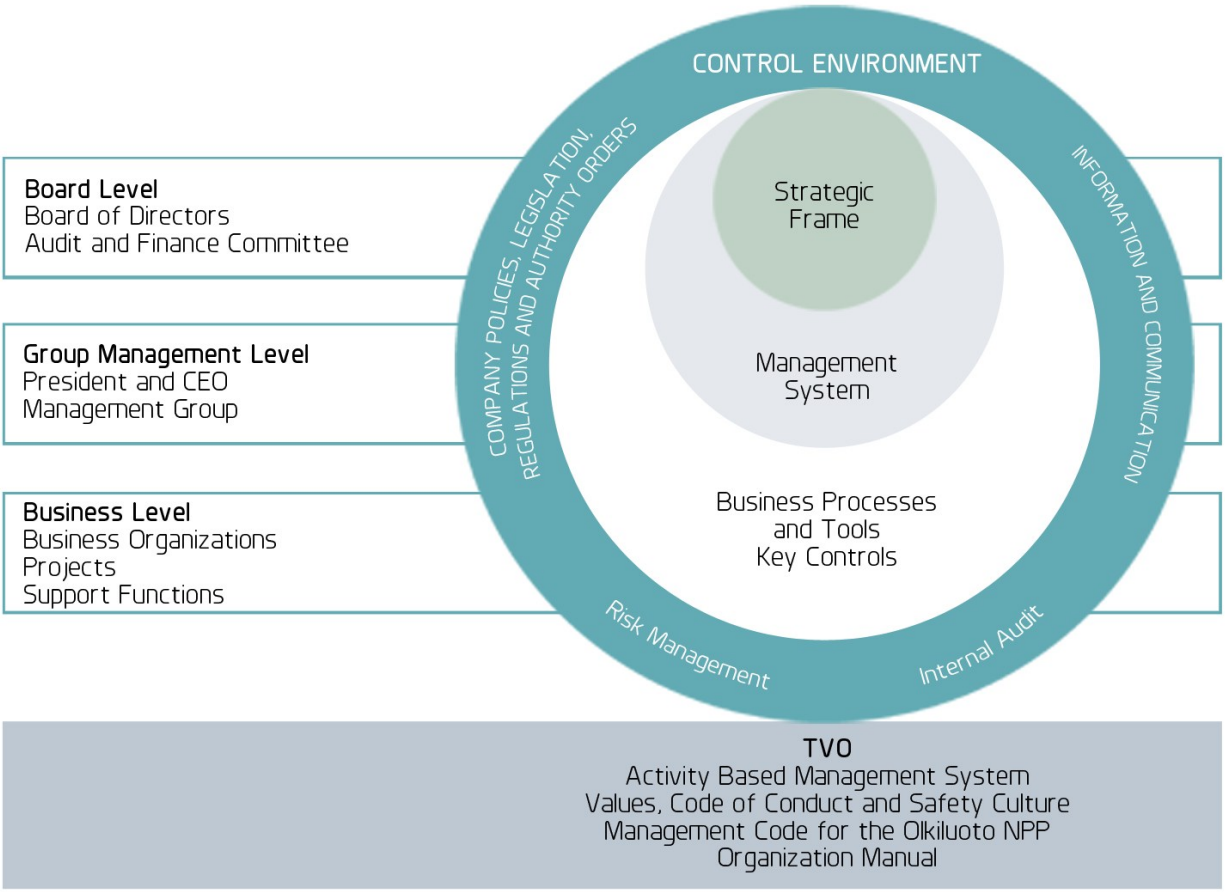
The goal of internal control is to ensure with adequate certainty that:

- The Company's operations are effective and in line with its strategy and mission
- The Company's goals and objectives are achieved
- The Company's financial and operational control and reporting is reliable and correct
- The Company's operations are in accordance with legislation.

TVO's internal control consists of:

- Financial control and management reporting
- Risk management
- Internal audit
- Auditing of the activity based management system.

TVO's internal control environment



Financial control and reporting

The aim of internal control connected with the financial reporting process is to ensure the reliability of financial reporting and that the financial statements are prepared in accordance with legislation. Operative and financial reporting supported by IT systems enables efficient management and control of the Company's business operations. Open communication enables the efficiency of internal control.

Reliable financial reporting must be based on appropriate control of financial administration and accounting processes. Supervision of the financial reporting process is within the responsibility of the Audit and Finance Committee. TVO's Finance department is in charge of the financial planning and reporting processes of the Group, its subsidiaries and joint venture. The main processes of financial reporting have been described and their control activities defined. Development of the processes and control activities is a continuous activity.

In the TVO Group's consolidated financial statements the International Financial Reporting Standards (IFRS) are followed, while in the parent company's separate financial statements the Finnish Accounting Standards (FAS) are followed. The purpose of the parent company's internal accounting is to produce financial information for the shareholders by segment and by share series. The accounting system by segment and share series is based on the Finnish accounting practice, and the related accounting principles have been approved by the Board of Directors. Also the Company's Financial Policy is approved by the Board of Directors.

Public financial reporting comprises interim reports and annual financial statements. The public financial reporting is prepared according to the same methods as the monthly internal reporting.

The aim of TVO's strategic planning is to ensure that the Company's operations support implementation of the Company's vision, strategy and long-term planning and goals, and that budgeting is consistent with the strategic plans. The Finance department gives instructions on the budgeting process, and a consistent system for budgeting, forecasting and follow-up is used.

The status of the annual goals is monitored through monthly reporting to the management and Board of Directors. The Finance department must inform the management of any deviations in the results from the plans and analyze the reasons for such deviations as well as prepare results forecasts.

The performance management measures related to the management and control of the operations, measures of the main processes and realization of the Company's objectives are monitored in accordance with approved schedules.

Risk management

Risk management at TVO is based on the principle of comprehensive risk management, and forms an important part of the Company's supervision and control system. The purpose of risk management is to support the achievement of TVO's goals, to prevent risks from materializing, and to reduce the probability of risks and their possible effects. The overall process of risk management is described in more detail in the Report of the Board of Directors.

Identification of risks related to the financial reporting process is part of the risk management process.

Internal auditing

The principles guiding TVO's internal auditing are set out in the Company guidelines. Internal Auditing reports to the President and CEO and supports the management in the development of good corporate governance, risk management, and internal control systems, as well as their efficacy and adequacy.

Annual internal audits are based on audit plans dealt with by the Audit and Finance Committee. The annual internal audit plan content is coordinated with the audits conducted by the Auditor and the internal audits of the Quality and Environment function. A summary of the internal audit is regularly reviewed in the Audit and Finance Committee and reported annually to the Board of Directors.

The President and CEO receives a separate report on each audit immediately after they have been conducted. An annual summary lists the targets, dates, and contents of the audits, any observations made and irregularities detected, and suggestions for further measures.

The observations and irregularities are reported to the Management Group or the Executive Management Group, who then decides on the monitoring of the irregularities and appoints a person to deal with each observation or irregularity.

Auditing of the activity based management system

Internal audits consist of assessments of compliance with operating instructions with regard to records, measures and the continuity and efficiency of operations.

Any irregularities detected during internal audits are reported and dealt with individually on a continuous basis and together twice a year at management reviews.

Control activities

The purpose of control activities is to ensure that legislation, internal policies, and the Company's values are complied with at all levels of the organization. Appropriate control measures are defined for key business operations and reporting processes.

TVO Code of Conduct, approved by the Board of Directors, is based on TVO's values and it aligns TVO's principles of responsible business, thus strengthening confidence between the Company and the surrounding society. The Company's ethical principles were replaced by the Code of Conduct in 2013.

Internal audits are carried out in accordance with a plan approved by the Board of Directors. The management ensures that the observations made and any irregularities detected by Internal Auditing are noted and remedied, where necessary.

The main principles and instructions on financial reporting have been laid down in the Company's Administration Manual and Accounting Manual, and provide the basis for financial reporting within the Group. TVO's Finance department is responsible for the correctness and consistency of external and internal financial reporting and for compliance with the segment and series of shares' accounting principles as approved by the Board of Directors. The Finance department is responsible for developing the reporting process, maintaining related instructions, and determining the control activities and measures

related to financial reporting processes. Each control measure has a responsible person and they are part of monthly, quarterly, and annual reporting. Control measures include reconciliations, analytical review, and approval procedures which are used to ensure the correctness of financial reporting.

Follow-up of control activities

The efficiency of internal control is monitored both through routine tasks and through separate assessments, such as internal audits and audits of quality issues, environmental issues, and occupational safety.

The correctness and efficiency of internal control are assessed by the Audit and Finance Committee under the Board of Directors.

Board of Directors of Teollisuuden Voima Oyj in 2013

Lauri Johannes Virkkunen, b. 1965
M.Sc. (Econ.), M.Sc. (Eng.)
President and CEO, Pohjolan Voima Oy

Primary work experience
In the present position since 2010
President and director positions in Vattenfall AB, Vattenfall Oy, Vattenfall Verkko Oy and Tampella Power Oy

Member of the Board since
2010, Chairman since March 22, 2013

Key positions of trust
Chairman of the Board of Oy Alholmens Kraft Ab
Chairman or Member of the Board of several PVO Group companies

Veli Matti Ruotsala, b. 1956
M.Sc. (Eng.)
Executive Vice President, Power Division, Fortum Corporation

Primary work experience
In the present position since 2009
President of Generation, Fortum Power and Heat Oy since 2007
Managing director, director and manager positions in Oy Valtra Ab, AGCO Corporation and Konecranes Oyj

Member of the Board since
2008, Deputy Chairman since March 22, 2013

Key positions of trust
Chairman of the Board of Kemijoki Oy and PKC Group Oyj
Member of the Board of Halton Group Ltd and Componenta Oyj

Hannu Ilmari Anttila, b. 1955
M.Sc. (Econ.)
Executive Vice President, Strategy, Metsä Group

Primary work experience
In the present position since 2006
President and CEO and director positions in M-real Corporation, Metsä Tissue Corporation and Oy Metsä-Botnia Ab

Member of the Board since
2007

Key positions of trust
Member of the Board of Metsä Tissue Corporation, Metsä Fibre Oy and Pohjolan Voima Oy
Member of the Supervisory Board of Tapiola Life Insurance Company

Jukka Eljas Hakkila, b. 1960
LL.M.
Executive Vice President, Group General Counsel, Kemira Oyj

Primary work experience
In the present position since 2005
Director and manager positions in Elcoteq Network Corporation, Finnish Export Credit Ltd. and Sampo Bank in New York

Member of the Board since
2009

Key positions of trust
Member of the Board of Pohjolan Voima Oy
Member of the Board of some Kemira Group companies

Tapio Juhani Korpeinen, b. 1963
M.Sc. (Tech.), MBA
Chief Financial Officer and Executive Vice President, UPM Energy

Primary work experience
In the present position since 2013
President, Energy and Pulp Business Group at UPM-Kymmene Corporation since 2008
Strategy and corporate arrangement tasks in UPM-Kymmene Corporation since 2005
Management consulting in Jaakko Pöyry Oy

Member of the Board since
2008

Key positions of trust
Chairman of the Board of Pohjolan Voima Oy
Vice Chairman of the Board of Kemijoki Oy
Member of the Supervisory Board of Varma Mutual Pension Insurance Company

Pekka Kalevi Manninen, b. 1954
M.Sc. (Eng.)
CEO, Helsingin Energia

Primary work experience
In the present position since 2012
Director positions in Helsingin Energia since 1999

Member of the Board since
2012

Key positions of trust
Member of the Executive Board of Finnish Energy Industries
Member of the Board of the Energy Forum of Finland/FinnWEC
Member of the Board of EPV Energia Oy, Voimapiha Oy, Kemijoki Oy and Suomen Hyötytuuli Oy
Chairman of the Board of Suomen Merituuli Oy
Chairman or Member of the Board of several Helen Group companies

Markus Heikki Erdem Rauramo, b. 1968
M.Sc. (Econ. and Pol. Hist.)
Chief Financial Officer and Member of the Management Team, Fortum Corporation

Primary work experience
In the present position since 2012
CFO and Member of the Management team of Stora Enso Oyj in 2008–2012
Several financial and strategic tasks in Stora Enso Oyj in Helsinki, London and Brussels in 1993–2008

Member of the Board since
2013

Key positions of trust
Member of the Board of Wärtsilä Oyj and Oy Proselectum AB
Member of the Supervisory Board of Kemijoki Oy
Chairman of the Board of several Fortum Corporation companies

Juha Kalevi Taavila, b. 1956
Master of Science (Eng.)
Senior Vice President, Operations Northern Europe, Stora Enso Wood Products Oy Ltd

Primary work experience
In the present position since 2013
Director and manager positions in Stora Enso Oyj and Enso-Gutzeit Oy in Finland and Germany since 1985

Member of the Board since
2012

Key positions of trust
Chairman of the Board of Paperinkeräys Oy

Tiina Marjukka Tuomela, b. 1966
M.Sc. (Eng.), MBA
Vice President, Finance, Power Division, Fortum Corporation

Primary work experience
In the present position since 2009
Director and manager positions in Fortum Corporation and Imatran Voima Oy

Member of the Board since
2010

Key positions of trust
Member of the Board of Raskone Oy
Member of the Board of several Fortum Corporation companies

Rami Antero Vuola, b. 1968
M.Sc. (Eng.)
President and CEO, EPV Energia Oy

Primary work experience
In the present position since 2003
Director and manager positions in TXU Nordic Energy Oy, Fingrid System Oy and Suomen Kantaverkko Oyj

Member of the Board since
2003

Key positions of trust
Chairman or Deputy Chairman of the Board of several EPV Corporation companies
Member of the Board of Pohjolan Voima Oy and Vaskiluodon Voima Oy

Management Group of Teollisuuden Voima Oyj in 2013

Chairman

Jarmo Kalevi Tanhua, b. 1965
M.Sc. (Eng.)
President and CEO, Teollisuuden Voima Oyj

Primary work experience
Director and manager positions and project tasks in Teollisuuden Voima Oy since 1990

President and CEO since
July 1, 2008

Key positions of trust
Chairman of the Board of Posiva Oy
Member of the Board of Länsi-Suomen Osuuspankki

Members

Sami Jakonen
Senior Vice President, Engineering

Mikko Kosonen
Senior Vice President, Production

Anna Lehtiranta
Senior Vice President, Corporate Relations

Esa Mannola
Senior Vice President, Nuclear Safety

Janne Mokka
Senior Vice President, OL4 Project

Lauri Piekkari
Senior Vice President, Treasury

Risto Siilos
Senior Vice President,
Corporate Resources
Deputy CEO

Jouni Silvennoinen
Senior Vice President,
OL3 Project

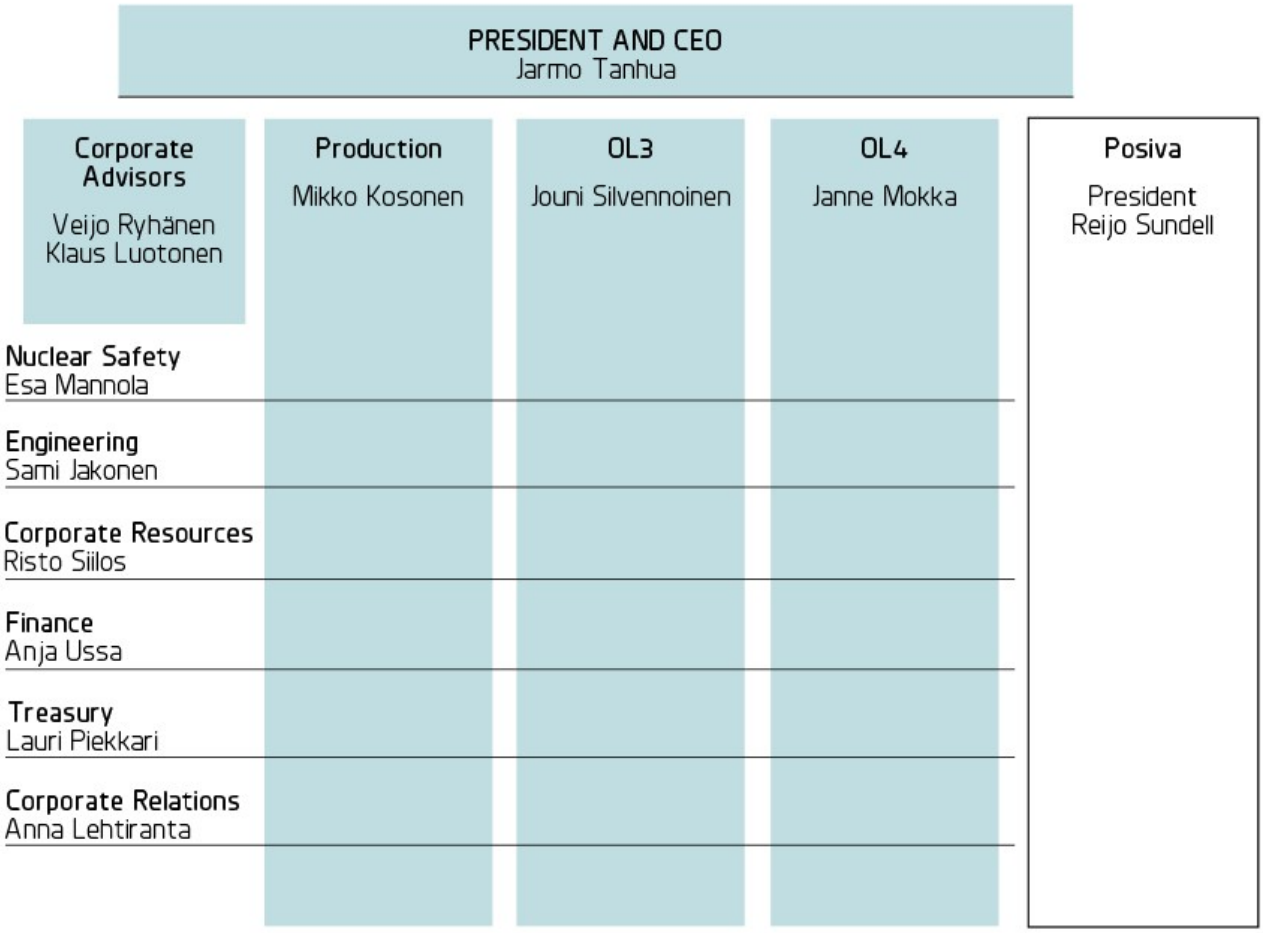
Anja Ussa
Senior Vice President,
Finance
Secretary of the Management Group

Reijo Sjöblom
Purchasing Engineer
Personnel Representative

Aimo Autio
Welder
1. Deputy Personnel Representative

Rainer Karlsson
Foreman
2. Deputy Personnel Representative

TVO's basic organization on December 31, 2013



Report of the Board of Directors 2013

Operating environment

At the end of 2013, a total of 438 nuclear power plant (NPP) units were in operation in 30 different countries throughout the world. They produced an estimated 12 per cent of all electricity consumed in the world. In addition, 71 new reactors are under construction. It is expected that in the next few years, new NPP projects will be initiated, besides in Europe, in China, India, South Korea, USA, and Russia, among others. By 2035, the world's total capacity of nuclear power is expected[1)] to increase from the current 400 gigawatts (GW) to the level of 580 GW.

Nearly 28 per cent of all electricity in the European Union is generated in nuclear power plants. A total of 131 reactors are in operation in 15[2)] different Member States. The total capacity of the plants is 132 GW. Currently there are four[3)] reactors under construction in the EU. An extension of the operation lifetime of existing plants is also being planned in many countries.

Following the safety assessments made in the EU, the EU Commission has proposed a revised nuclear safety directive which is currently under discussion in the European Council and Parliament. At the same time, the national action plans following the safety assessments are under implementation in the Member States. The EU Commission launched in the fall a public consultation on the possible harmonization of national liability regimes for nuclear damages.

In December, the new regulatory guides on nuclear safety (YVL Guides) compiled by the Radiation and Nuclear Safety Authority in Finland (STUK) came into effect. The new Guides will be applied as they stand to all new nuclear power plant units. Later it will be decided how the new requirements are to be applied to existing plant units and those now under construction.

Nuclear power plays an important role in Finland's energy policy

The Finnish Parliament approved in December the Energy and Climate Strategy update of Prime Minister Katainen's government. The target of the Strategy's so called Clean Energy Program is to reduce greenhouse gas emissions, create jobs, reduce energy imports, and accelerate development and use of domestic clean energy technology. New nuclear power plays an important role in achieving the objectives set.

A new act on power plant tax was approved by Parliament in December. The act will come into force by government decree. According to the act, the amount of tax to be collected from nuclear, hydro, and wind power plants taken in use prior to the year 2004 will be EUR 50 million per year in total. More than fifth of the tax amount would be imposed on nuclear power as of the beginning of 2014. The law will not enter into force until it has been confirmed by the European Commission.

A small decrease in Finland's electricity consumption

The total consumption of electricity in Finland in 2013 was 83.9 terawatt hours (TWh). The consumption decreased by 1.5 per cent compared to the previous year. The share of net electricity imports was high as in the previous year, one-fifth of the total consumption. The share of domestic hydropower decreased, the use of coal increased. The amount of nuclear power generated in 2013 was 22.7 TWh, which accounted for 27 per cent of the electricity procured.

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1) IEA World Energy Outlook 2013
2) 15th is Croatia which owns half of the Krsko NPP located in Slovenia
3) Finland 1, France 1, and Slovakia 2

Main events

Fall 2013 marked the 35th anniversary of the production start-up of the Olkiluoto nuclear power plant. Olkiluoto 1 (OL1) was synchronized to the Finnish national grid on September 2, 1978. After the first years of operation, the load factor of OL1 and Olkiluoto 2 (OL2), which was commissioned in 1980, has remained constantly at a high international level. On November 1, 2013, OL2 achieved the milestone of 200 terawatt hours (billion kilowatt-hours) in commercial production. Thanks to the modernization and safety investments, the net electrical output of the plant units has increased from 660 MW to 880 MW, and the safety and energy efficiency of the production have considerably improved. The principle is to keep the plant units as good as new at all times.

The Olkiluoto NPP achieved in 2013 the highest ever production result in its history, 14.63 TWh of electricity, despite a few unplanned outages. For OL1, the production volume in 2013 was the highest ever, 7.47 TWh. The combined load factor of the plant units was 95.1 per cent. Together with the share of the Meri-Pori coal-fired power plant TVO's production was 15.36 TWh. The electricity produced in Olkiluoto accounted for about 17 per cent of all electricity consumed in Finland.

The annual outages of the plant units were executed on May 12–June 14, 2013.

The civil construction works of the Olkiluoto 3 (OL3) plant unit are mainly completed, and the major components of the reactor plant have been installed. Planning, documentation and licensing of the reactor plant automation are not yet completed.

Based on the progress reports received from the AREVA-Siemens-Consortium (Supplier), who is constructing the plant unit as a fixed-price turnkey project, TVO announced in February 2013 that the Company will prepare for the possibility that the start of the regular electricity production of the OL3 plant unit may be postponed until year 2016. After the reporting period, in February 2014, TVO announced that it had not received the requested overall schedule update for the OL3 project from the Supplier. Therefore TVO does not provide an estimate of the start-up time of the plant unit at the moment. TVO has required the Supplier, who is in charge of the project schedule, to update the overall schedule and to provide a clarification of the measures needed to ensure proper progress to complete the plant unit. Information about the start-up date of electricity production of the OL3 plant unit is pending the finalization of the Supplier's schedule clarification.

The Supplier updated in October its claim to the ICC arbitration proceedings concerning the delay of the project. The updated quantification until the end of June 2011 is in total EUR 2.7 billion. TVO has considered and found the earlier claim by the Supplier to be without merit, scrutinizes the updated claim and will respond to it in due course.

In December, the Supplier informed that it is planning to focus efforts on the OL3 site on urgent design tasks that are the most critical to the project. At the same time, the Supplier also informed that it is planning to reduce the number of subcontractors and work staff at the construction site.

TVO received in January bids related to the new Olkiluoto 4 (OL4) NPP to be constructed in Olkiluoto. Bids were received from all the plant supplier candidates involved in the bidding process. Engineering with the potential plant suppliers to clarify licensability and constructability of the plant alternatives continued. According to the decision-in-principle, the construction license application must be submitted to the Government by mid-2015.

TVO signed in May an agreement with Wärtsilä Finland Oy for the delivery of emergency diesel generators and associated auxiliary systems to Olkiluoto. The replacement project of the emergency diesel generators is the largest individual plant modification project ever realized in Olkiluoto. The total investment of the replacement project is more than EUR 100 million. The project is estimated to continue until 2020.

The Board of Directors of TVO proposed in February to the Company's B-series shareholders a new EUR 300 million

shareholder loan commitment. By means of the proposed shareholder loan, the Company will prepare to maintain a sufficient level of equity for the OL3 project and cope with possible additional delays and costs in finalizing the project. In June, all the Company's B-series shareholders undersigned the loan agreement in accordance with the proposal made by the Board of Directors.

Fitch Ratings (Fitch) downgraded in May TVO's long-term issuer default rating (IDR) and senior unsecured rating from BBB+ to BBB and short-term rating from F2 to F3. The outlook Fitch assessed as being stable.

Financial performance

TVO operates on a cost-price principle (Mankala principle). TVO's goal is not to make profit or pay dividends. Due to the Company's operating principle, key indicators based on financial performance will not be presented. The shareholders are charged incurred costs in the price of electricity and thus in principle the profit/loss for the financial year is zero. 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.

The consolidated turnover for 2013 was EUR 365.9 (352.2) million. The amount of electricity delivered to the shareholders was 15,331 (14,853) GWh.

The consolidated profit/loss was EUR 30.5 (-1.8) million. An updated cost estimate based on a new nuclear waste management technical plan and schedule and the changes of the provision regarding nuclear waste management obligation have an effect on the profit/loss for the period under review. The positive profit impact of the updates and changes is mainly non-recurring. (See Notes 24: Assets and provision related to nuclear waste management obligation.)

Financing and liquidity

TVO's financial situation has developed as planned.

TVO's liabilities (non-current and current) at the end of the year, excluding the loan from the Finnish State Nuclear Waste Management Fund relent to shareholders, totaled EUR 3,426.6 (December 31, 2012: 3,196.9) million, of which EUR 339.3 (229.3) million were subordinated shareholder loans. During 2013, TVO raised a total of EUR 361.5 (775.0) million in non-current liabilities, of which EUR 110.0 (50.0) million were subordinated shareholder loans. Repayments during the period under review amounted to EUR 175.8 (241.2) million.

In March 2011, TVO signed a EUR 1.5 billion five-year syndicated credit facility with two one-year extension options. In March 2013, the facility was extended again by one year with EUR 1.45 billion. At the year end, TVO had undrawn credit facilities and cash and cash equivalents amounting to EUR 2,362 (2,164) million. From that amount EUR 720 million were subordinated shareholder loan commitments of which EUR 500 million is allocated to the financing needs of the OL3 project and EUR 220 million to the financing of the bidding and engineering phase of the OL4 project.

The Board of Directors of TVO made a decision in February to propose to the Company's B-series shareholders a new EUR 300 million shareholder loan commitment. By means of the proposed shareholder loan, the Company will prepare to maintain a sufficient level of equity for the OL3 project and cope with possible additional delays and costs in finalizing the project. In June, all the Company's B-series shareholders undersigned the loan agreement in accordance with the proposal made by the Board of Directors.

The OL3 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 December 31, 2013, the amount of the loan was EUR 931.7 (December 31, 2012: 881.7) million and it has been relent to the Company's A-series shareholders. On April 2, 2013 loan from the Finnish State Nuclear Waste Management Fund was increased by EUR 50.0 million (April 2, 2012: EUR 39.2 million).

In February 2013, Japan Credit Rating Agency (JCR) kept its AA rating for TVO. In May, Fitch Ratings' downgraded TVO's long-term issuer default rating (IDR) and senior unsecured rating from BBB+ to BBB and short-term rating from F2 to F3. Standard & Poor's Rating Services held its BBB long-term and A-2 short-term corporate credit ratings for TVO. The outlook was assessed as being stable by all the agencies.

In June, TVO updated the Euro Medium Term Note Program (EMTN) and raised the size of the program from EUR 3 billion to EUR 3.5 billion. Under the EMTN Program, the Company has issued during the second quarter of the year a EUR 23 million private placement and during the third quarter of the year in the Swedish market SEK 1,125 million and SEK 875 million bonds.

In June, the Company raised a EUR 100 million shareholder loan for the OL3 project and a EUR 10 million shareholder loan for the bidding and engineering phase of the OL4 project.

Share capital

TVO's share capital on December 31, 2013 was EUR 606.2 (606.2) million.

The Company has 1,394,283,730 (1,394,283,730) shares, of which 680,000,000 belong to the A series, 680,000,000 to the B series and 34,283,730 to the C series. The A series shares entitle to electricity generated at the OL1 and OL2 units and the B series shares to the electricity generated at the OL3 unit. The C series owners have right to acquire electricity generated by TVO's share of the Meri-Pori coal-fired power plant.

Administrative principles

Because TVO is an unlisted public company applying the cost-price principle, it observes the Corporate Governance Code for listed companies where applicable. TVO is not obligated to observe the Corporate Governance Code nor therefore the Comply or Explain principle. According to the Securities Market Act (14.12.2012/746), the issuer of a security subject to public trading must provide a Corporate Governance Statement in its Annual Report or separately. TVO has given a separate Corporate Governance Statement which is published on its website, www.tvo.fi at the same time with this Report of the Board of Directors.

Administrative bodies

TVO's administrative bodies and their functions in 2013 have been described in a separate Corporate Governance Statement to be found on the Company's website.

Regulatory environment

The purpose of the nuclear energy legislation is to ensure that the use of nuclear energy is conducted in a manner that benefits the common good of society. The main rules of the use of nuclear energy, monitoring the use, and nuclear safety, are included in the Finnish Nuclear Energy Act and the Nuclear Energy Decree as well as lower level statutes issued pursuant to them, such as the Radiation and Nuclear Safety Authority's YVL (NPP) guidelines. Other regulations pertaining to the exploitation of nuclear energy are to be found in the Radiation Act.

New regulatory guides on nuclear safety (YVL Guides) came into effect at the beginning of December. The new regulations are stricter than the previous ones and are meant to improve the safety of nuclear facilities in Finland. The new Guides will be applied as they stand to all new nuclear power plant units. Later it will be decided how the new requirements are to be applied to existing nuclear power plant units and those now under construction, such as OL3. Along with new YVL Guides, also the Nuclear Energy Degree and government decrees were revised and renewed. The changes to the Nuclear Energy Decree and government decrees came also into effect at the end of 2013.

In addition, the Nuclear Liability Act concerns the liability the operator of a nuclear plant has in the event of a nuclear accident. A temporary amendment to the Nuclear Liability Act came into force as of the beginning of 2012. According to the temporary amendment, the plant operator's liability for a nuclear incident in Finland is unlimited but limited to a maximum amount of 600 million Special Drawing Rights (SDR), corresponding to EUR 700 million, for nuclear damage outside of Finland. The operator has to have insurance up to a minimum of 600 million SDR.

The use of nuclear energy is subject to license. Applications are made to the Government for a decision-in-principle, construction license and operating license. The Radiation and Nuclear Safety Authority Finland (STUK) is responsible for monitoring the safety of nuclear energy use. STUK is also responsible for monitoring safety and emergency arrangements and nuclear material.

Risk management, major risks and uncertainties

Risk management

Risk management is a systematic approach which aims to support the fulfillment of TVO´s strategy and business objectives as well as to ensure the existence of TVO´s operational preconditions. Risk management is executed based on the company's policies and corporate governance.

Risk management is supervised by the Board of Directors of the Company, which endorses the principles on which it is based. The CEO, with the help of the Company's Management Board, is in charge of the risk management according to TVO's objectives and strategy. Under the Management Group there is a risk management group that is in charge of ensuring adequate risk treatment in the company.

The organization units are responsible for risk identification, analyzing and risk treatment. Risk identification is carried out as part of TVO´s strategic and operational planning and follow-up as well as part of project management.

TVO has launched a company-wide risk management process which the Company's organization units comply with. By operating in accordance with the risk management process TVO ensures that all risks facing the Company are systematically identified and each risk is treated according to its significance. The objective of the risk treatment process is either to prevent the risk from materializing or to reduce its likelihood or consequence.

TVO reduces risks connected with safety and production by keeping the plant units in good condition. Safe and reliable production is ensured by efficient life-cycle management of the plant units and high-quality planning and implementation of the annual outages. TVO has started to prepare for the upcoming operating license renewal of OL1 and OL2 in 2018 by launching a preliminary planning process of plant modifications and safety adjustments.

Indemnity and property risks are covered with insurances. The aim of insurance management is to keep the scope, cover and cost of insurance in an acceptable level. TVO is a member of European nuclear insurance associations. Statutory liability insurance is in force for nuclear liability.

Fuel for the production of electricity, uranium and coal, is bought on the global market. Risks connected with nuclear fuel have been reduced by making purchases from a variety of suppliers and by concluding long-term contracts.

At OL3, risk management during the construction stage is primarily a question of overseeing and guiding the work of the Supplier according to the terms of the turnkey contract. Property damage risks and possible delays caused by them are covered by insurances.

TVO's financing and financial risk management is dealt with centrally by the Company's Treasury department, in accordance with the financing policy adopted by the Board of Directors. The financing risks of TVO's business include liquidity and market and credit risks. By diversifying sources of finance, and with long-term credit commitments and liquid funds, financing risks can be reduced. The financial position has been strengthened by issuing long term private placements and bonds. TVO has reduced market risks by making use of interest rate and currency derivatives. According to the Company's financing policy the loans denominated in foreign currencies will be hedged to the euro until the maturity date by using derivatives. Financial risk management and fuel price risks are dealt with in the notes to the consolidated financial statements, note 27 (Financial Risk Management).

Major risks and uncertainties

TVO's major risks are related to the schedule of the OL3 project. Based on the progress reports received from the Supplier, TVO announced in February 2013 that the Company will prepare for the possibility that the start of the regular electricity production of the OL3 plant unit may be postponed until year 2016. Originally the electricity production was scheduled to start at the end of April 2009.

After the reporting period, in February 2014, TVO announced that it had not received the requested overall schedule update for the OL3 project from the Supplier. Therefore TVO does not provide an estimate of the start-up time of the plant unit at the moment. TVO has required the Supplier, who is in charge of the project schedule, to update the overall schedule and to provide a clarification of the measures needed to ensure proper progress to complete the plant unit. Information about the start-up date of electricity production of the OL3 plant unit is pending the finalization of the Supplier's schedule clarification.

The delay causes additional costs and losses, for which the Company has claimed compensation from the turnkey supplier of the OL3 plant.

There are no major risks or uncertainties concerning electricity production at OL1, OL2 or the Meri-Pori coal-fired power plant.

Pending court cases and disputes

TVO submitted in 2012 a claim and defense in the International Chamber of Commerce (ICC) arbitration proceedings concerning the delay and the ensuing costs incurred at the Olkiluoto 3 project. The quantification estimate of TVO's costs and losses was approximately EUR 1.8 billion which included TVO's actual claim and an estimated part until August 2014.

The proceedings were initiated in December 2008 by the OL3 Supplier. The monetary claim the Supplier updated in 2013 is in total approximately EUR 2.7 billion. The updated quantification is until the end of June 2011, and the sum includes approximately EUR 70 million of payments delayed by TVO under the plant contract as well as approximately EUR 700 million of penalty interest and approximately EUR 120 million of alleged loss of profit. TVO has considered and found the earlier claim by the Supplier to be without merit, scrutinizes the updated claim and will respond to it in due course.

The arbitration proceedings may continue for several years, and the claimed amounts may be updated.

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

Nuclear power

TVO owns and operates two nuclear power plant units, Olkiluoto 1 (OL1) and Olkiluoto 2 (OL2), and is building a new plant unit, Olkiluoto 3 (OL3) at Olkiluoto in Eurajoki, Finland. The Finnish Parliament ratified in 2010 the Government's favorable decision-in-principle concerning the construction of the Olkiluoto 4 (OL4) nuclear power plant unit.

Olkiluoto 1 and Olkiluoto 2

The electricity production of the Olkiluoto power plant units, OL1 and OL2, during 2013 was 14,633 (14,450) GWh. The total load factor was 95.1 (93.7) per cent.

The plant units operated safely. OL1's net production was 7,470 (6,973) GWh and the load factor 97.1 (90.4) per cent. OL2's net production was 7,163 (7,477) GWh and the load factor 93.1 (96.9) per cent.

OL2 encountered a production shutdown on September 9–15 caused by a failure in the cooling circuit of the generator. The plant unit was disconnected from the national grid, when the protection system of the generator tripped and initiated a turbine scram. The protection systems of the plant unit operated as planned, and steam generation in the reactor was stopped in a controlled manner. The generator failure and the resulting turbine scram did not risk nuclear safety. OL1 operated reliably throughout the year except for a short production stop in the beginning of December.

Annual outages

The annual outages of 2013 at the Olkiluoto nuclear power plant were carried out in May 12–June 14. OL1 had a refueling outage which took less than eight days, and OL2 underwent a maintenance outage which lasted more than 18 days.

The main maintenance activities during the outage at OL2 included replacement of the low-voltage switchgears, as well as work on the reactor. Modern low voltage switchgears and transformers, which meet the latest regulations and standards as

well as future plant modification needs, were installed in two subsystems of the plant. The replacement of the switchgears is part of the systematic long-term development of the plant units. Other significant activities carried out were repair of the generator stator, refueling, leak-tightness test of the containment and replacement of two seawater pumps. Up to 800 external employees were involved in the OL2 outage, in addition to TVO's own personnel.

In the outage at OL1, apart from refueling, two main seawater pumps were replaced, and annual maintenance activities, tests and fault repairs were carried out.

Olkiluoto 3

OL3, currently under construction, was commissioned as a fixed-price turnkey project from the Consortium (referred to as the Supplier) formed by AREVA GmbH, AREVA NP SAS and Siemens AG. Originally commercial electricity production was scheduled to start at the end of April 2009. The completion of the project, however, has been delayed. The Supplier's installation works and plant automation system engineering at the plant unit have not progressed according to the Supplier's schedules.

Based on the progress reports received from the Supplier, TVO announced in February 2013 that the Company will prepare for the possibility that the start of the regular electricity production of the OL3 plant unit may be postponed until year 2016. After the reporting period, in February 2014, TVO announced that it had not received the requested overall schedule update for the OL3 project from the Supplier. Therefore TVO does not provide an estimate of the start-up time of the plant unit at the moment. TVO has required the Supplier, who is in charge of the project schedule, to update the overall schedule and to provide a clarification of the measures needed to ensure proper progress to complete the plant unit. Information about the start-up date of electricity production of the OL3 plant unit is pending the finalization of the Supplier's schedule clarification.

The civil construction works of the plant unit have been mainly completed. Cladding works of the buildings' exterior walls continue.

The major components of the reactor plant, such as reactor pressure vessel, pressurizer and four steam generators have been installed, and the primary coolant circuit pipeline has been welded. Pipeline welding works and pressure tests continue. Commissioning of the power distribution in the reactor plant is ongoing. Planning, documentation and licensing of the reactor plant automation are not yet completed.

The first phase of the commissioning of the turbine plant is ongoing.

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

The workforce at the site at the end of the year was about 2,000. The Supplier informed in December that it is planning to focus efforts on the OL3 site on urgent design tasks that are the most critical to the project. At the same time, the Supplier also informed that it is planning to reduce the number of subcontractors and work staff at the construction site.

The occupational safety at the site remained at good level.

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

Olkiluoto 4

On July 1, 2010, Parliament approved the favorable decision-in-principle made by the Government on May 6, 2010 regarding TVO's application to construct a fourth nuclear power plant unit (OL4) in Olkiluoto.

TVO continued preparations for the OL4 nuclear power plant project. Engineering with the potential plant suppliers to clarify licensability and constructability of the plant alternatives proceeded, as did also the procurement process aiming at the plant selection. The evaluation of updated bids related to the new NPP and preparation of the next phases of the project are ongoing.

All the realized costs of the OL4 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

In 2013, the nuclear fuel purchases amounted to EUR 56.5 (67.4) million and the amount consumed to EUR 48.2 (46.1) million.

The nuclear fuel and uranium stock carrying value on December 31, 2013 was EUR 207.9 (December 31, 2012: 199.7) 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. Posiva Oy, jointly owned by TVO and Fortum Power and Heat Oy, is responsible for taking care of the final disposal of TVO's spent nuclear fuel.

As the actual tunnel part of the underground rock characterization facility ONKALO was completed in 2012, ONKALO has been equipped with technical facilities and systems during 2013. Concrete structures for the emergency shelter and rest room facilities, a pool for collecting leak water, permanent ventilation and electrical systems as well as testing area for ONKALO's floor coating have been built at a depth of 437 meters, among other things. During 2013, also the injections of one of the two ventilation shafts and personnel hoist equipment shaft were completed, and raise boring of the shafts were started at the end of the year. Reinforcement and equipping of the hoist equipment shaft for installing the hoist can be started next.

In the final disposal demonstration facilities at a depth of 420 meters, an international technology development project of eight countries for testing plugging and sealing systems for final disposal tunnels has been started. The project, partly funded by the EU, is coordinated by Posiva. Besides coordination, Posiva will construct two 25-meter-long tunnels in ONKALO, of which excavation works have been completed. One of the tunnels will be sealed with a massive concrete plug of the type which will be used also in the actual final disposal, and the other tunnel will be equipped with measuring devices needed in the test.

Preparations to start the second construction phase of the above-ground hoist equipment building have been made by completing the excavation works necessary for the construction. The actual construction will start in early 2014.

The Ministry of Employment and the Economy (MEE) organized in September 2013 a public debate and hearing concerning Posiva's construction license application, which Posiva had submitted to the MEE at the end of 2012. The MEE has received all stakeholders' opinions requested, to which Posiva will respond during 2014.

During 2013, Posiva has prepared for starting construction of the final repository and encapsulation plant in early 2015 by making detailed project and system planning as well as by recruiting project staff. Moreover, the final disposal concept has been further developed, the construction license application has been supplemented by additional clarifications required by STUK, and demonstration actions to prove that Posiva is capable of starting the final disposal in 2022 have been initiated.

The spent fuel produced by the NPP units of TVO and Fortum in Finland will be disposed of in the Olkiluoto final disposal facility.

The expansion of the interim storage facility for spent nuclear fuel in Olkiluoto has proceeded according to plan. With the expansion TVO will double the capacity of the existing fuel pools. The expansion project is based on TVO's plans to provide interim storage facilities for the spent fuel elements of both the existing plant units, OL1 and OL2, and OL3 under construction. The expansion is scheduled to be taken into use in 2014.

The liabilities, in the consolidated financial statement, show a provision related to nuclear waste management liability of EUR 897.9 (December 31, 2012: 857.6) 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 2013, the MEE set TVO's liability for nuclear waste management at EUR 1,317.8 (1,242.3) million to the end of 2013 and the Company's funding target for 2014 at EUR 1,310.4 (1,242.3) million.

In March 2013, the Finnish State Nuclear Management Fund confirmed TVO's nuclear waste management fee for 2012 at EUR 43.1 (34.1) million, which was paid into the Fund on April 2, 2013 (April 2, 2012). The nuclear waste management fee for 2013 will be confirmed in March 2014.

A total of 6,118 (5,965) m3 of low- and medium-level radioactive waste has accumulated from the OL1 and OL2 plant units during their operation. During 2013, the amount of waste increased by 153 m3. In 2012, the total amount of waste decreased by 795 m^3, which was due to a demolition project of decommissioned reheaters implemented in Studsvik, Sweden. The waste is disposed of in the final repository for low- and medium-level waste (VLJ repository) in Olkiluoto.

The total amount of spent nuclear fuel by the end of the year was 1,362 (1,327) tons, of which 36 (36) tons accumulated in 2013. The spent fuel is stored in the fuel pools of the plant units and in an interim storage facility (the KPA storage facility) at Olkiluoto.

Coal power

TVO has a 45 per cent holding in the Meripori coal-fired power plant owned and operated by Fortum Power and Heat Oy. The Meripori power plant is located on the Tahkoluoto island in Pori, Finland.

Meri-Pori

The amount of electricity produced by TVO's share at the Meri-Pori coal-fired power plant was 725.4 (477.4) GWh requiring 254.4 (168.7) thousand tons of coal and 592.0 (399.8) thousand tons of carbon dioxide emission rights.

The Meri-Pori power plant was shut down for turbine inspection on August 5, 2013. In the inspection, a damage requiring repair was detected in the turbine. The annual outage of the plant and repair of the turbine were started. The turbine repair and maintenance were completed on November 6, 2013. Test run of the turbine and new pulverized coal burners was conducted in November 7–13, 2013.

Research and development

Research and development costs were EUR 20.8 (24.1) million, most of which was used for R&D activities related to nuclear waste management.

TVO is a major financier of Finnish public sector research programs for reactor safety and nuclear waste management. In 2013, TVO's contribution to the Finnish State Nuclear Waste Management Fund, which finances such programs, amounted to EUR 4.6 (4.6) million.

Acquisitions of tangible and intangible assets and shares

Investments during 2013 were EUR 335.1 (337.3) million. Investments of the parent company were EUR 302.5 (336.9) million, of which EUR 260.8 (274.2) million was allocated to the OL3 project.

TVO signed in May 2013 an agreement with Wärtsilä Finland Oy for the delivery of emergency diesel generators and associated auxiliary systems to Olkiluoto. A total of nine generators will be delivered, and TVO is in charge of the construction work required for the project as well as for the connection of the diesel generators to TVO's other systems. The replacement project of the emergency diesel generators is the largest individual plant modification project ever realized in Olkiluoto. The total investment of the replacement project is more than EUR 100 million. The project is estimated to continue until 2020. The replacement of the generators will be carried out as far as possible during normal power operation at OL1 and OL2 plant units.

Carbon dioxide emission rights acquired for the Company's share of the Meri-Pori coal-fired power plant have been relinquished to the Energy Market Authority worth of EUR 0.9 (6.7) million. In 2013, emission rights for the Company's share of the Meri-Pori coal-fired power plant were acquired worth 2.7 (0.9) million. The Company's need for carbon dioxide emission rights for the period under review was covered by acquired emission rights.

Safety and environmental issues

The Olkiluoto nuclear power plant units operated safely during the year. No incidents with a major impact on nuclear safety occurred. In 2013, four special reports were prepared for the Radiation and Nuclear Safety Authority (STUK). A total of five events were classified on the international INES scale (0–7) at level 0 (No safety significance).

TVO's operations were in accordance with the Company's environmental policy, environmental permits, and environmental management system. Its environmental management system, which also covers the construction phase of the OL3 unit, complies with the international ISO 14001 Standard and is EMAS registered.

The environmental impacts of the Olkiluoto nuclear power plant were minor. As in previous years, radioactive emissions into the atmosphere and water were extremely low, and significantly lower than the limits set by the authorities.

The operations were developed considering the requirements of the environmental permit and according to environmental management system. TVO has identified 7 significant environmental aspects related to the Company's activities. For each these aspects, 4 long-term goals have been set. In order to achieve these goals, continuing or a few years-long objectives are set. A total of 15 targets were set for the year 2013, and all of them were reached wholly or in part. Within the year, no significant environmental deviation occurred. Overall, 13 minor environmental observations or minor deviations were detected during the operating cycle. Those were related to chemicals or waste management. At the OL3 construction site, 29 environmental observations were recorded.

TVO has a certified occupational health and safety system compliant with the OHSAS 18001 Standard, in which also the activities at the OL3 construction site are included. The systems of OL1 and OL2 operating and OL3 construction phase were integrated in 2013. The occupational safety goal on the whole Olkiluoto island is zero accidents and common working methods. As in earlier years, actions to reach the zero-accident goal were continued, and the systems integration will provide a basis for common working methods.

More detailed information on the environmental issues and indicators as well as occupational safety indicators for 2013 will be reported in the Corporate Social Responsibility Report and Environmental Report which will be published on TVO's website www.tvo.fi. The contents of the reports will be verified by an outside body.

Group personnel and training

Group personnel

At the year-end, the total number of personnel in the Group was 857 (868), and the average during the year was 894 (884). The year-end total number of personnel in the Company was 852 (863), and the average during the year was 890 (879). The year-end total for permanent personnel was 762 (772).

TVO recruited 25 (71) employees in 2013. During the year, 65 (53) employees changed jobs and 36 (36) permanent employees left the Company, including 24 (21) who retired.

The collective agreements for different groups of personnel in the energy industry will be in force in accordance with the so called framework agreement of labor confederations until January 1, 2017.

Training

As in previous years, basic and supplementary training for TVO personnel was carried out in accordance with the training program for the year. The personnel was trained a total of 8,401 (8,636) days, on average of 9.4 (9.8) days per each TVO employee.

In accordance with their refresher training program, the OL1 and OL2 operators took part in operation training and advanced simulation training in spring and fall 2013. Training, basic simulation course and basic training period, of the new operators who started they work in 2011 and 2012, progressed according to plan.

The OL3 operators participated, in accordance with their refresher training program, in operation training in spring and fall 2013. Additionally, a simulation exercise was organized for the operators. At the same time, also TVO's trainers were trained and familiarized for the use and maintenance of the OL3 simulator. At other times, the OL3 operators worked in commissioning tasks and trainers in training planning tasks.

Induction training is required from all those working at the Olkiluoto nuclear power plant area. The general training is meant for all persons working at the Olkiluoto site and the radiation protection training for those who work inside the controlled area. During 2013, a total of 2,918 persons took part in the general training and 851 in the radiation protection training (registered by January 16, 2014). Both trainings were given in Finnish and English.

Mote detailed information on human resource and competence development matters and their indicators for 2013 will be reported in the Corporate Social Responsibility Report on TVO's website, www.tvo.fi. The contents of the report will be verified by an outside body.

Subsidiaries and joint ventures

TVO Nuclear Services Oy (TVONS) is a wholly-owned subsidiary of TVO. TVONS provides its customers with expertise and services related to high-level nuclear safety, cost-effective operations, and nuclear waste management. The special expertise of TVO personnel is at TVONS customers' disposal.

Merger of TVO's wholly-owned subsidiaries, Olkiluodon Vesi Oy and Perusvoima Oy, with TVO was registered in the Trade Register on December 31, 2013. The merger agreement signed by the companies and merger announcement to the creditors of the subsidiaries were registered in the Trade Register in August. The objective of the merger was to simplify the corporate structure. Olkiluodon Vesi has been responsible for the raw water supply for TVO's and Posiva Oy's operations at Olkiluoto. Perusvoima did not have activities during 2013.

Posiva Oy, jointly owned by TVO and Fortum, is responsible for research into and implementing the final disposal of its shareholders' spent nuclear fuel. TVO owns 60 per cent of Posiva. Posiva continued construction and equipment of the underground research facility for final disposal according to plan.

Major events after the end of the year

TVO announced in February 2014 that it had not received the requested overall schedule update for the OL3 project from the Supplier. Therefore TVO does not provide an estimate of the start-up time of the plant unit at the moment. TVO has required the Supplier, who is in charge of the project schedule, to update the overall schedule and to provide a clarification of the measures needed to ensure proper progress to complete the plant unit. Information about the start-up date of electricity production of the OL3 plant unit is pending the finalization of the Supplier's schedule clarification.

Prospects for the future

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.

In accordance with the new safety guidelines under preparation, TVO continues planning of the required systems changes.

Based on the current estimate, the changes will not have major impact on TVO's capital expenditure program.

Realization of the OL3 nuclear power plant project and preparing the plant unit for production use will be continued.

Preparations for the OL4 nuclear power plant project will proceed. Clarification of the licensability and constructability of the plant alternatives as well as procurement process aiming at the plant selection will continue.

The Meri-Pori coal-fired power plant capacity will be used in accordance with the former principles.

Posiva Oy will continue the construction, equipping and investigations of the underground research facility at Olkiluoto. Construction of the above-ground hoist equipment building and the site is progressing. During the processing of the construction license application for the disposal facility for spent nuclear fuel, Posiva is preparing to start the construction projects of the encapsulation plant and final repository immediately after the construction license has been granted.

Proposals to the Annual General Meeting

Teollisuuden Voima Oyj's distributable equity as of December 31, 2013 amounted to EUR 9,360,000. The Board of Directors proposes to the Annual General Meeting that no dividend shall be paid.

Key figures of TVO Group

TVO GROUP (IFRS) (M€)	2013	2012	2011	2010	2009
Turnover	**366**	352	352	363	305
Profit/loss for the financial year	**31**	-2	6	37	-41
Research expenses	**21**	24	25	22	21
Investments	**335**	337	316	393	845
Equity	**1 462**	1 310	1 083	1 006	866
Subordinated shareholder loans (hybrid equity) (included in the former) 2) 4)	**339**	229	0	0	0
Non-current and current interest-bearing liabilities (excluding loan from VYR) 1)	**3 221**	3 166	2 847	2 621	2 463
Loans from equity holders of the company 2) 4)	**0**	0	179	179	179
Loan from VYR	**932**	882	843	802	751
Provision related to nuclear waste management	**898**	858	832	806	633
Balance sheet total	**6 700**	6 397	5 939	5 589	5 069
Equity ratio, % 3)	**30,0**	28,1	29,6	29,8	28,4
Average number of personnel	**894**	884	853	842	835

1) The Finnish State Nuclear Waste Management Fund (VYR)
2) Subordinated loans

3) Equity ratio % = 100 x $\frac{\text{equity + loans from equity holders of the company}}{\text{balance sheet total - provision related to nuclear waste management - loan from the Finnish State Nuclear Waste Management Fund}}$

4) During the accounting period 2012, the terms of the loans of the equity holders of the Company have been changed and the loans are included in equity according to IFRS standards.

CONSOLIDATED ADJUSTED PROFIT/LOSS FOR THE FINANCIAL YEAR (M€)	2013	2012	2011	2010	2009
Profit/loss for the financial year (IFRS)	**31**	-2	6	37	-41
The impact of the nuclear waste management obligation 1) (profit -/loss +)	**-29**	4	3	-30	3
The impact of financial instruments 2) (profit -/loss +)	**-1**	-1	-1	0	14
Profit/loss before appropriations	**1**	1	8	7	-24
Adjusted profit/loss for the financial year	**1**	1	8	7	-24

1) Includes profit/loss effects from nuclear waste management according to IFRS standard.
2) Includes effects from financial derivatives hedging future cash-flows where hedge accounting is not applied according to IAS 39.

	2013	2012	2011	2010	2009
TVO's share in the Finnish State Nuclear Waste Management Fund (VYR) (M€)	**1 253,3**	1 198,9	1 145,1	1 086,4	1 026,3
TVO's funding target obligation to the Finnish State Nuclear Waste Management Fund (M€)	**1 310,4**	1 242,3	1 179,1	1 123,4	1 069,8
The carrying value of TVO's share in the Finnish State Nuclear Waste Management Fund (non-current assets) (M€)	**897,9**	857,6	831,8	806,3	633,5

The difference between the funding target and the share in the Finnish State Nuclear Waste Management Fund at the end of each year is due to the funding target being completed by paying the nuclear waste management fee only during the first quarter of the following year.

Key figures of Teollisuuden Voima Oyj

TEOLLISUUDEN VOIMA OYJ (FAS) (M€)

Parent company's financial statement has been prepared in accordance with the Finnish Accounting Standards (FAS).	**2013**	2012	2011	2010	2009
Turnover	**363**	347	347	355	296
Profit/loss before appropriations	**1**	1	8	7	-24
Fuel costs	**73**	62	67	80	65
Nuclear waste management costs	**89**	77	68	65	66
Capital expenditure (depreciation and financial income and expenses)	**61**	65	68	68	68
Investments	**303**	337	314	339	803
Equity	**858**	858	858	793	713
Appropriations	**167**	166	165	157	150
Non-current and current interest-bearing liabilities (excluding loan from VYR) 1)	**3 088**	2 968	2 743	2 505	2 408
Loans from equity holders of the company 2)	**339**	229	179	179	179
Loan from VYR	**932**	882	843	802	751
Balance sheet total	**5 572**	5 283	4 944	4 611	4 377
Equity ratio, % 3)	**29,4**	28,5	29,3	29,7	28,8
Average number of personnel	**890**	879	847	837	830

1) The Finnish State Nuclear Waste Management Fund (VYR)
2) Subordinated loans

3) 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)

Olkiluoto 1	**7 458**	6 935	7 253	6 936	7 263
Olkiluoto 2	**7 148**	7 441	6 876	7 127	7 122
Total Olkiluoto 1)	**14 606**	14 376	14 129	14 063	14 385
Meri-Pori	**725**	477	815	1 622	845
Total	**15 331**	14 853	14 944	15 685	15 230

1) Includes wind power 1.0 (1.5 in 2012) GWh and gas turbine power 0.3 (0.3) GWh.

Capacity factors, %

Olkiluoto 1	**97,1**	90,4	94,8	91,8	97,0
Olkiluoto 2	**93,1**	96,9	90,9	95,2	95,1
Total capacity factor	**95,1**	93,7	92,8	93,5	96,0

TVO share of the electricity used in Finland, %	**18,2**	17,4	17,7	17,9	18,8

TVO Group financial statements

Consolidated income statement

EUR 1 000	Note	1 Jan-31 Dec 2013	1 Jan-31 Dec 2012
Turnover	3	**365 865**	352 171
Work performed for own purpose	4	**14 878**	13 509
Other income	5	**9 311**	9 163
Materials and services	6	**-121 583**	-125 095
Personnel expenses	7	**-63 318**	-61 668
Depreciation and impairment charges	3,8	**-57 369**	-56 497
Other expenses	9	**-84 922**	-93 463
Operating profit/loss		**62 862**	38 120
Finance income	10	**30 870**	35 526
Finance expenses	10	**-63 203**	-75 397
Total finance income and expenses	3	**-32 333**	-39 871
Profit/loss before income tax		**30 529**	-1 751
Income taxes	11	**-3**	1
Profit/loss for the financial year		**30 526**	-1 750
Profit/loss for the financial year attributable to:			
Equity holders of the company		**30 526**	-1 750

Consolidated statement of comprehensive income

EUR 1 000	1 Jan-31 Dec 2013	1 Jan-31 Dec 2012
Profit/loss for the financial year	**30 526**	-1 750
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	**6 963**	3 158
Cash flow hedges	**7 345**	-629
Total other comprehensive profit/loss items	**14 308**	2 529
Total comprehensive profit/loss for the financial year	**44 834**	779
Total comprehensive profit/loss for the financial year attributable to:		
Equity holders of the company	**44 834**	779

Consolidated balance sheet

EUR 1 000	Note	31 Dec 2013	31 Dec 2012
Assets			
Non-current assets			
Property, plant and equipment	12	**4 358 082**	4 095 056
Intangible assets	13	**9 382**	7 729
Loans and other receivables	16	**935 633**	885 963
Investments in joint ventures	14	**1 009**	1 009
Investments in shares	17	**23 945**	16 981
Derivative financial instruments	20	**60 047**	108 238
Share in the Finnish State Nuclear Waste Management Fund	24	**897 919**	857 643
Total non-current assets		**6 286 017**	5 972 619
Current assets			
Inventories	19	**243 091**	250 847
Trade and other receivables	16	**25 465**	36 321
Derivative financial instruments	20	**1 553**	1 583
Cash and cash equivalents	18	**144 367**	135 555
Total current assets		**414 476**	424 306
Total assets		**6 700 493**	6 396 925
Equity and liabilities			
Capital and **reserves attributable to equity holders of the company**			
Share capital	21	**606 193**	606 193
Share premium reserve and statutory reserve	21	**242 383**	242 383
Fair value and other reserves	21	**-2 181**	-16 489
Subordinated shareholder loans (hybrid equity)	21	**339 300**	229 300
Retained earnings	21	**275 927**	248 539
Total equity		**1 461 622**	1 309 926
Liabilities			
Non-current liabilities			
Provision related to nuclear waste management	24	**897 919**	857 643
Loan from the Finnish State Nuclear Waste Management Fund	22	**931 725**	881 726
Bonds	22	**2 191 411**	2 069 977
Other financial liabilities	22	**784 216**	837 517
Derivative financial instruments	20,22	**34 999**	51 875
Total non-current liabilities		**4 840 270**	4 698 738
Current liabilities			
Current financial liabilities	22	**201 774**	202 835
Derivative financial instruments	20,22	**8 212**	3 999
Advance payments received	23	**21 365**	23 927
Trade payables	23	**10 823**	9 536
Other current liabilities	23	**156 427**	147 964
Total current liabilities		**398 601**	388 261
Total liabilities		**5 238 871**	5 086 999
Total equity and liabilities		**6 700 493**	6 396 925

Consolidated statement of changes in total equity

EUR 1 000	Share capital	Share premium reserve and statutory reserve	Fair value and other reserves	Subordinated shareholder loans (hybrid equity)	Retained earnings	Attributable to equity holders of the company	Total equity
Equity 1 Jan 2013	**606 193**	**242 383**	**-16 489**	**229 300**	**248 539**	**1 309 926**	**1 309 926**
Profit/loss for the financial year	0	0	0	0	30 526	30 526	30 526
Other comprehensive profit/loss items:							
Changes in fair values of the available-for-sale-investments	0	0	6 963	0	0	6 963	6 963
Cash flow hedges	0	0	7 345	0	0	7 345	7 345
Subordinated shareholder loans (hybrid equity)	0	0	0	110 000	0	110 000	110 000
Interest paid of subordinated shareholder loans (hybrid equity)	0	0	0	0	-3 138	-3 138	-3 138
Equity 31 Dec 2013	**606 193**	**242 383**	**-2 181**	**339 300**	**275 927**	**1 461 622**	**1 461 622**

EUR 1 000	Share capital	Share premium reserve and statutory reserve	Fair value and other reserves	Subordinated shareholder loans (hybrid equity)	Retained earnings	Attributable to equity holders of the company	Total equity
Equity 1 Jan 2012	**606 193**	**242 383**	**-19 018**	**0**	**253 219**	**1 082 777**	**1 082 777**
Profit/loss for the financial year	0	0	0	0	-1 750	-1 750	-1 750
Other comprehensive profit/loss items:							
Changes in fair values of the available-for-sale-investments	0	0	3 158	0	0	3 158	3 158
Cash flow hedges	0	0	-629	0	0	-629	-629
Subordinated shareholder loans (hybrid equity)	0	0	0	229 300	0	229 300	229 300
Interest paid of subordinated shareholder loans (hybrid equity)	0	0	0	0	-2 930	-2 930	-2 930
Equity 31 Dec 2012	**606 193**	**242 383**	**-16 489**	**229 300**	**248 539**	**1 309 926**	**1 309 926**

Consolidated cash flow statement

EUR 1 000	Note	2013	2012
Operating activities			
Profit/loss for the financial year		**30 526**	-1 750
Adjustments:			
Income tax expenses		**3**	-1
Finance income and expenses		**32 333**	39 871
Depreciation and impairment charges		**57 369**	56 497
Other non-cash flow income and expenses		**-58 441**	-28 202
Sales profit/loss of property, plant and equipment and shares		**-100**	18
Changes in working capital:			
Increase (-) or decrease (+) in non-interest-bearing receivables		**1 262**	22 661
Increase (-) or decrease (+) in inventories		**7 756**	-16 513
Increase (+) or decrease (-) in short-term non-interest-bearing liabilities		**13 700**	16 331
Interest paid and other finance expenses		**-26 150**	-36 609
Dividends received		**853**	760
Interest received		**25 327**	16 007
Taxes paid		**-1**	3
Cash flow from operating activities		**84 437**	69 073
Investing activities			
Acquisition of property, plant and equipment		**-300 307**	-308 370
Proceeds from sale of property, plant and equipment		**18**	39
Acquisition of intangible assets		**-951**	-36
Acquisition of shares		**-6**	-4
Proceeds from sale of shares		**314**	0
Loan receivables granted		**-50 136**	-39 313
Repayments of loans granted		**390**	386
Cash flow from investing activities		**-350 678**	-347 298
Financing activities			
Withdrawals of subordinated shareholder loans (hybrid equity)		**110 000**	50 000
Withdrawals of long-term loans		**301 518**	764 176
Repayment of long-term loans		**-177 496**	-242 875
Interest paid of subordinated shareholder loans (hybrid equity)		**-3 066**	-4 245
Increase (-) or decrease (+) in interest-bearing receivables		**73**	35
Increase (+) or decrease (-) in current financial liabilities		**44 024**	-258 846
Cash flow from financing activities		**275 053**	308 245
Change in cash and cash equivalents		**8 812**	30 020
Cash and cash equivalents 1 Jan		**135 555**	105 535
Cash and cash equivalents 31 Dec	18	**144 367**	135 555

Notes to the consolidated financial statements

1 General information on the Group

Teollisuuden Voima Oyj together with its subsidiaries forms the TVO Group. The ultimate parent of the Group is Teollisuuden Voima Oyj, domiciled in Helsinki.

Teollisuuden Voima Oyj is a public limited liability company owned by Finnish industrial and power companies. In accordance with its Articles of Association, TVO delivers electricity to its shareholders at cost price (so-called Mankala principle), i.e. delivers the electricity produced or procured to its shareholders in proportion to their shareholdings in each series. Each of the shareholders of each series is liable for variable and fixed annual costs that are specified in detail in the Articles of Association. The Company owns and operates two nuclear power plant units (OL1 and OL2) and has a third unit (OL3) under construction at Olkiluoto in the municipality of Eurajoki. In order to build a fourth plant unit (OL4) at Olkiluoto, it has been started a bidding and engineering phase. In addition to the nuclear power plant in Olkiluoto, TVO has a share in the Meri-Pori coal-fired power plant and in a gas turbine plant and owns a wind power plant in Olkiluoto.

Copies of the consolidated financial statements are available at the internet address www.tvo.fi.

These consolidated financial statements were authorized for issue by the Board of Directors of TVO in its meeting on 26 February 2014. Under the Finnish Limited Liability Companies Act the Shareholders' meeting may modify or reject the financial statements.

2 Accounting policies

Basis of preparation

These consolidated financial statements of TVO Group have been prepared in accordance with International Financial Reporting Standards (IFRS). These financial statements have been prepared in accordance with the IAS and IFRS standards and SIC and IFRIC interpretations effective at 31 December 2013. In the Finnish Accounting Act and regulations issued by virtue of it, “IFRS” refers to the standards and interpretations which have been endorsed by the EU in accordance with the procedure defined in the EU Regulation (EY) No. 1606/2002.

The consolidated financial statements have been prepared under the historical cost convention, except for fund units and investments in shares and derivative financial instruments, which are recognized at fair value.

The consolidated financial statements are presented in euros, which is the functional and presentation currency of the Group's parent company.

The consolidated financial statements have been prepared according to the same accounting policies as in 2012. The following standards issued during 2012 and 2013 have no impact in the consolidated financial statements:

- IAS 12 (Amendment) Income taxes - Deferred tax
- IAS 19 (Amendment) Employee benefits
- IFRIC 20 Stripping costs in the production phase of a surface mine

The following new amendments to existing standards and one new standard issued during the year 2013. The Group has adopted standards in 2013.

- IAS 1 (Amendment) Presentation of financial statement
  The amendment relates to presentation of Comprehensive Income. Items that could be reclassified to profit or loss at a future point in time would be presented separately from items that will never be reclassified. The amendment effects

presentation only and has no impact on the Group's financial position or performance.

- IFRS 7 (Amendment) Financial instruments: Disclosures - Offsetting financial assets and financial liabilities
  The change in accounting policy relates to disclosures. As a result of the amendments the Group has expanded its disclosures about offsetting of financial assets and financial liabilities (see note 15).
- IFRS 13 Fair value measurement
  The standard establishes a single framework for measuring fair value. As a result of the amendments the Group has expanded disclosures of fair values in interim reports.

IASB published changes to 5 standards in May 2012 as part of the annual Improvements to IFRS's project, which were adopted by the Group in 2013. The amendments do not have significant impact on the consolidated financial statements.

The following new standards, interpretations and amendments to existing standards and interpretations issued during the year 2013 will be adopted by the Group in 2014 or later:

- IFRS 10, 11 and 12 (Amendment) Transition guidance
- IFRS 10 Consolidated financial statements
- IFRS 11 Joint arrangements
- IFRS 12 Disclosures of interests in other entities
- IAS 27 (Revised) Separate financial statements
- IAS 28 (Revised) Associates and joint ventures
- IAS 32 (Amendment) Financial instruments: Presentation
- IFRS 10, 12 and IAS 27 (Amendment) Investment entities
- IAS 36 (Amendment) Impairment of assets
- IAS 39 (Amendment) Financial instruments: Recognition and measurement
- IFRIC 21 [1)] Levies
- IFRS 9 [1)] Financial instruments
- IAS 19 [1)] (Amendment) Employee benefits: Defined benefit plans
- Annual improvements 2010-2012 [1)]
- Annual improvements 2011-2013 [1)]

Management is assessing the impact of these changes on the financial statements of the Group.

[1)] The standard, interpretation or amendment to published standard or interpretation is still subject to endorsement by the European Union.

Companies included in the consolidated financial statement

Subsidiaries

The consolidated financial statements include Teollisuuden Voima Oyj (TVO) and its subsidiaries TVO Nuclear Services Oy, Olkiluodon Vesi Oy and Perusvoima Oy. Merger of TVO's wholly-owned subsidiaries, Olkiluodon Vesi Oy and Perusvoima Oy, with TVO was registered in the Trade Register on December 31, 2013. Subsidiaries are companies in which the Group has control at the end of the financial period. Control exists if the Group holds more than a half of the voting rights or otherwise has control. Subsidiaries acquired are consolidated from the date on which control is transferred to the Group, and

subsidiaries sold are no longer consolidated from the date that control ceases.

The purchase method of accounting is used to consolidate subsidiaries into the Group. The purchase price is determined as the aggregate of the acquisition date fair values of the assets given as consideration and liabilities incurred or assumed. Costs directly attributable to the acquisition are recognized in profit or loss.

In the consolidation, intercompany share ownership, intercompany transactions, receivables, liabilities, unrealized gains and internal distributions of profits are eliminated. Unrealized losses are not eliminated, if the losses are due to impairment of the asset being transferred. To ensure consistency, subsidiaries' accounting policies have, in all material respects, been changed to conform to the accounting policies adopted by the Group.

Joint ventures

Joint ventures are entities over which the Group has contractually agreed to share the power to govern the financial and operating policies of that entity with another venturer or venturers. Posiva Oy is a joint venture of TVO, which has a 60 per cent interest in it. Both venturers are liable for its main activities, final disposal of spent fuel of nuclear power plants, in proportion to their own usage.

Interests in joint ventures are accounted for by the equity method of accounting.

Segment reporting

The Group has two reportable segments; nuclear power and coal-fired power. The Board of Directors is the chief operation decision maker.

Revenue recognition principles

TVO operates on a cost-price principle. Revenue is recognized based on the consideration received when electricity is delivered or services are rendered. Revenue is presented net of indirect sales taxes. Revenue is recognized as follows:

Sales of electricity and other revenue

Revenue on sales of electricity is recognized based on delivery. The recognized income for shareholders is based on the quantities delivered. The revenue from services is recognized on an accrual basis on the accounting period when the services are rendered to the customer.

Revenue on long-term consulting services projects that spread over several accounting periods is recognized based on the proportion of costs incurred from work performed up to the balance sheet date and the estimated total expenses of the project. If it is probable that total contract costs will exceed total contract revenue, the expected loss is recognized as an expense immediately.

Other income

Revenue from activities outside the ordinary course of business is reported as other income. This includes joint ventures' revenue from services, rental income and non-recurring items, such as gains from sales of property, plant and equipment. Rental income is recognized on a straight line basis over the rental period and gains from sales of property, plant and equipment when the significant risks and rewards of ownership, interests and control have been transferred to the buyer.

Government grants

Grants are recognized at their fair value, when the Group meets all the conditions attached to them and where there is a reasonable assurance that the grant will be received. Government grants relating to costs are deferred on the balance sheet and recognized in the income statement over the period in which their relevant costs are recorded. Government grants relating to the purchase of property, plant and equipment are deducted from the acquisition cost of the asset.

Research and development costs

Research and development costs (except R&D costs related to nuclear waste management) of the Group are recognized as an expense as incurred and included in other expenses in the income statement. Development costs are capitalized if it is assured that they will generate future income, in which case they are capitalized as intangible assets and amortized over the period of the income streams. Currently the Group does not have any development costs that would qualify for capitalization.

Research costs that relate to nuclear waste management are discussed in paragraph Assets and provisions related to nuclear waste management obligations.

Property, plant and equipment

Property, plant and equipment of the Group are stated on the consolidated balance sheet at historical cost less grants received, accumulated depreciation and impairment charges, if any. Historical cost includes expenditure that is directly attributable to the acquisition of an item.

In the historical costs of power plant projects and other significant investments (completion time more than a year) the financing costs incurred during the construction period will be included.

The historical costs of nuclear power plants include furthermore the estimated costs of dismantling and removing an item and restoring the site on which it is located (more information is included in paragraph Assets and provisions related to nuclear waste management obligations).

Land and water areas are not depreciated.

Other property, plant and equipment are depreciated using the straight-line method over their estimated useful lives.

Straight-line depreciation is based on the following estimated useful lives:

OL1 and OL2 nuclear power plant units:	
- Basic investment	61 years
- Investments made according to the modernization program	21–35 years
- Automation investments associated with the modernization	15 years
- Additional investments	10 years
TVO's share in the Meri-Pori coal-fired power plant:	
- Basic investment	25 years
- Additional investments	10 years
Wind power plant	10 years
TVO's share in the Olkiluoto gas turbine power plant	30 years

The assets' residual values and useful lives are reviewed, and adjusted if appropriate to reflect the changes in expectations of economic benefits.

Costs of renewal of an item or a part of an item of property, plant and equipment are capitalized if the part is accounted for as a separate item. Otherwise, the subsequent expenditure is included in the carrying amount only when it is probable that future economic benefits associated with the expenditure will flow to the Group.

Annual repair and maintenance costs are recognized in profit or loss, when they occur. Investments connected with the modernization and maintenance of the power plant units are capitalized.

OL3 is nuclear power plant unit under construction. All the realized costs on the OL3 project that meet recognication criteria are shown as incomplete plant investment. OL4 is a nuclear power plant unit under bidding and engineering phase. All the realized costs on the OL4 project that meet recognition criteria are shown as incomplete plant investment (see note 12).

Intangible assets

Intangible assets are shown at historical cost less grants received, accumulated amortization and impairment losses if applicable. Historical cost includes costs directly attributable to the acquisition of the particular asset.

Other long-term expenditure included in intangible assets are amortized on a straight-line basis over their estimated useful lives. These include computer software and certain payments made for the use of assets.

The amortization periods of the intangible assets are as follows:

Computer software	10 years
Other intangible assets	10 years

The amortization period of an intangible asset is changed where necessary if the estimated useful life changes from that previously estimated.

Furthermore, intangible assets include carbon dioxide (CO_2) emission rights. Emission rights are recognized at historical cost, and are presented under emission rights. Gratuitous emission rights are assets not included in the balance sheet. The current liability for returning emission rights is recognized at the carrying value of possessed emission rights. If there is a shortfall, a current liability is recognized to cover the acquisition of the missing emission rights. This current liability is valued at the current market value of the emission rights at the balance sheet date. The cost of the emission rights is recognized in the income statement under costs of materials and services. The gains from the sales of emission rights are refunded to the equity holders of the company.

Impairment of property, plant and equipment and intangible assets

The Group assesses at each balance sheet date whether there are indications that the carrying amount of an asset may not be recoverable. If such indications exist, the recoverable amount of the asset in question will be measured. For the purposes of assessing impairment, assets are examined at the level of cash-generating units, that is, at the lowest level that is mainly independent of other units and for which there are separately identifiable cash flows and largely independent from those of corresponding units.

The recoverable amount is the higher of an asset's fair value less costs to sell or value in use. The value in use is determined by reference to discounted future cash flows expected to be generated by the asset. The discount rate used is pre-tax and reflects the time value of money and asset specific risks.

Impairment loss is recognized when the carrying amount of the asset is greater than its recoverable amount. Impairment loss is charged directly to the income statement. If a cash-generating unit is subject to an impairment loss, it is allocated first to decrease the goodwill and subsequently, to decrease the other assets of the unit. At recognition of the impairment loss, the useful life of the reamortized assets is reassessed. Impairment loss of other assets than goodwill is reversed in the case that a change has occurred in the estimates used in measuring the recoverable amount of the asset. The increased carrying amount must not, however, exceed the carrying amount that would have been determined had no impairment loss been recognized in prior years.

Inventories

Inventories are measured at acquisition cost. The acquisition cost comprises raw materials, direct labor and other direct costs. The carrying amount of inventories is not reduced to a value that is less than its acquisition cost, as TVO operates at cost price, so the net realizable value of inventories always covers their acquisition cost. The cost of coal is determined by using the FIFO (first in, first out) method and the cost of supplies is determined by using the rolling weighted average cost formula. The use of nuclear fuel is recognized according to calculated consumption.

Leases

Finance leases

Leases are classified as finance leases when all substantial risks and rewards incidental to ownership are transferred to the Group. Assets acquired under finance leases are recognized in the balance sheet at the commencement of the lease term at the fair value of the leased asset or, if lower, the present value of the minimum lease payments. Leased assets are depreciated over the shorter of the useful life of the asset and the lease term. Lease obligations are recognized under interest-bearing liabilities.

Lease payments are apportioned during the lease term between the finance charge and the reduction of the outstanding liability to produce a constant periodic rate of interest on the remaining balance of the liability.

Other leases

Lease payments under other leases are recognized in the income statement as an expense under the accrual principle on a straight-line basis over the lease term.
Lease payments received are recognized as income on a straight-line basis over the lease term and presented in the income statement under other income.

Financial assets

The Group has classified its financial assets into four categories as following: derivative financial instruments at fair value through profit or loss, derivative financial instruments designated as cash flow and fair value hedges, loans and other receivables, and available-for-sale investments. The classification is based on the purpose of the acquisition of the assets, and the assets are classified at initial acquisition.

Transaction costs are included at original book value of financial assets, except for items that are measured at fair value through profit or loss. All purchases and sales of financial assets are recognized at fair value on the trading date.

Financial assets are derecognized when the contractual rights to the cash flows of the investment expire or have been transferred or the Group has substantially transferred all the risks and benefits of ownership.

Derivative financial instruments at fair value through profit or loss

Derivative financial instruments that do not meet the criteria for hedge accounting according to IAS 39 are booked at fair value to profit or loss. Gains and losses from changes in fair value are recognized in the income statement in the period in which they arise, except when they relate to the construction of OL3 power plant and are capitalized as part of the cost of the asset.

Derivative financial instruments designed as cash flow and fair value hedges

Financial assets include derivative financial instruments (see Derivative financial instruments and hedge accounting).

Loans and other receivables

Loans and other receivables include non-current loans and other receivables as well as current trade and other receivables. Items that mature after 12 months are recognized in non-current assets. After initial recognition, all loans and other receivables are measured at amortized cost using the effective interest method. Trade receivables are recognized on the balance sheet at their original nominal value, which reflects their fair value.

Available-for-sale investments

Available-for-sale investments include investments in shares, fund units, and instruments that mature after 3 months excluding fixed-term deposits which are recognized in loans and other receivables. Items maturing after 12 months are recognized in non-current assets. Available-for-sale investments are measured at fair value, and the changes in fair value are recognized in other comprehensive items in the fair value reserve under equity. The changes in fair value are transferred

from equity to the income statement when the investment is sold or when it is impaired so that an impairment loss needs to be recognized. Investments in unquoted shares whose fair value cannot be reliably determined are measured at acquisition cost.

Cash and cash equivalents

Cash and cash equivalents consist of cash on hand, demand deposits and other current, highly liquid investments. Assets classified as cash and cash equivalents have a maturity of three months or less from the date of acquisition.

Impairment of financial assets

At each closing date, the Group estimates whether there is any objective evidence that a financial asset or group of financial assets is impaired. If the fair value of equity investment is significantly below its acquisition cost at the closing date, this is evidence of the impairment of equities classified as available-for-sale. If any evidence exists of the impairment, any loss accumulated in the fair value reserve is transferred into profit or loss. Impairment losses on equity investments classified as available-for-sale are not reversed through profit or loss, whereas subsequent reversals of impairment losses on interest-bearing instruments are recognized in profit or loss. The Group recognizes an impairment loss on trade receivables when there is objective evidence that the receivable is not fully collectible.

Evidence of impairment may include indications that the counterparty is experiencing significant financial difficulty, default or delinquency in interest or principal payments, the probability that they will enter bankruptcy or other financial reorganisation, and where observable data indicate that there is a measurable decrease in the estimated future cash flows, such as changes in arrears or economic conditions that correlate with defaults.

Financial liabilities

Financial liabilities are initially recognized at fair value including related transaction costs. After initial recognition, all financial liabilities are measured at amortized cost using the effective interest method. Financial liabilities include non-current and current liabilities, and they can be interest-bearing or non-interest-bearing. An item is included in current liabilities if it matures within 12 months from the closing date. Financial liabilities also include derivative financial instruments (see Derivative financial instruments and hedge accounting).

Derivative financial instruments and hedge accounting

The Group uses derivative financial instruments as hedges of the currency risk relating to purchases of fuel and the currency and interest rate risk of loans. The derivative financial instruments are recognized at fair value on the date when the Group becomes a party to a derivative contract, and subsequently measured at fair value on closing date.

Hedge accounting referred to in IAS 39 is applied to instruments entered into for the purpose of hedging of the currency risk of the Group's commitments for purchases of uranium (forward foreign exchange contracts, currency swaps) and to part of the interest rate swaps entered into for the purpose of hedging against the fluctuations in the interest cash flows relating to the loan contracts of the Group.

Both at the inception of a hedge and thereafter, the Group documents its estimate on whether the derivative financial instruments used in the hedge transactions are highly effective. The derivative financial instruments to which hedge accounting is applied are classified as non-current and current assets and liabilities on the basis of the maturity. The Group applies both cash flow and fair value hedge accounting.

Cash flow hedge

The effective portion of the changes in the fair values of derivatives designated as and qualifying for cash flow hedges is recognized in other comprehensive items in the fair value reserve under equity. The gain or loss relating to the ineffective portion is recognized in profit or loss, except when they relate to the construction of OL3 power plant and are capitalized as part of the cost of the asset. The fair value changes accumulated in equity are recognized in profit or loss in the same period

when the hedged item affects profit or loss.

Gains and losses from hedges of the currency risk related to fuel purchases are transferred from equity to adjust the cost of the item of inventory in question. Gains and losses from hedges related to fuel purchases are recognized to adjust the fuel purchases under the Materials and services item in accordance with inventory recognition principles.

When a hedge no longer qualifies for hedge accounting, or the hedging instrument initially recognized as a cash flow hedge matures or is sold, the cumulative gains or losses currently included in equity are recognized in profit or loss during the lifetime of the hedging instrument in question. When an anticipated transaction is no longer expected to occur, the cumulative gain or loss included in equity is recognized in profit or loss.

When a hedge of the currency risk related to fuel purchases no longer qualifies for hedge accounting, or the hedging instrument initially recognized as a cash flow hedge matures or is sold, the cumulative gains or losses currently included in equity are recognized in inventory at the same moment as the purchase of the inventory. When an anticipated transaction is no longer expected to occur, the cumulative gain or loss included in equity is recognized in profit or loss.

Fair value hedge

The Group applies fair value hedge accounting for hedging fixed interest rate risk on publicly traded bonds. Changes in the fair value of derivative financial instruments that qualify as fair value hedges are recognized in the income statement under financial items, along with any changes in the fair value of the hedged asset or liability that are attributable to the hedged risk. The carrying amounts of hedged items and fair values of hedging instruments are included in interest-bearing liabilities and assets. If the hedge no longer meets the criteria for hedge accounting, the adjustment to the carrying amount of a hedged item, for which the effective interest method is used, is recognized to profit or loss over the period to maturity.

Derivatives that do not qualify for hedge accounting

The changes in the fair value of interest rate options, interest rate swaps and forward foreign exchange contracts that do not qualify for hedge accounting are presented under finance income and expenses, unless they relate to the construction of OL3 power plant and are capitalized as part of the cost of the asset.

Borrowing costs

Borrowing costs are recognized in profit or loss in the period when they have incurred, except when they relate to the construction of a power plant or any other significant investment, of which completion time exceeds one year. In that case, borrowing costs are capitalized as part of the cost of the asset.

Foreign currency items

Transactions and financial items denominated in a foreign currency are recognized at the rates on the day when they occur. Receivables and liabilities denominated in a foreign currency are measured in the financial statements at the ECB's official exchange rate on the closing date. Exchange gains and losses from operating activities are included in the corresponding items above operating profit or loss. Exchange differences arising from financial items are recognized in finance income and expenses.

Equity

Share capital

TVO has in its possession three series of shares, A, B and C. The A series entitles the shareholder to the electricity generated by the existing OL1 and OL2 nuclear power plant units. The B series entitles the shareholder to the electricity that will be generated by the OL3 unit. The C series entitles the shareholder to the electricity generated by the TVO share in the Meri-Pori coal-fired power plant.

Payments received from shares in connection with setting up the TVO and in the form of increases in share capital are recognized under share capital, statutory reserve and share premium reserve.

Subordinated shareholder loans (hybrid equity)

Subordinated shareholder loans (hybrid equity) are treated as equity. Subordinated shareholder loans (hybrid equity) are initially recognized at fair value including related transaction costs. There is no maturity date for the subordinated shareholder loans (hybrid equity), but the borrower is entitled to repay the loan in one or several installments. The Board of Directors of the borrower has the right to decide not to pay interest during any current interest period. Unpaid interest does not accumulate to the following interest periods.

The interest of the subordinated shareholder loans (hybrid equity) are recognized in liabilities when the obligation to pay interest is incurred. Interest expenses are recognized in the retained earnings and are not recognized in profit or loss.

Earnings per share

The Group does not report earnings per share, as the parent company is operating at cost price. The shares of TVO are not traded on a public market.

Provisions

The Group recognizes a provision for environmental restorations, asset retirement obligations, as well as legal and other claims, when the Group has a legal or constructive obligation and it is likely that an outflow of resources will be required to settle the obligation and the amount of the obligation can be reliably estimated. The provision is measured at the present value of the expenditure expected to be required to settle the obligation. The interest rate used in the measurement of provisions is the estimated long-term borrowing rate plus the ECP's inflation target and an estimated company-specific risk premium. The increase in the provision due to the passage of time is recognized as interest expense.

The most significant provision is that for the nuclear waste management obligation under the Nuclear Energy Act. The provision covers all future expenditure arising from nuclear waste management, including the decommissioning of nuclear power plants, the disposal of spent fuel and a risk marginal.

Assets and provisions related to the nuclear waste management obligation

The parent company's nuclear waste management obligation which is based on the Nuclear Energy Act is covered by payments made to the Finnish State Nuclear Waste Management Fund. The obligation covers all the future expenditures for nuclear waste management, including the decommissioning of nuclear power plants, the disposal of spent fuel, and a risk marginal. The amount of payments is determined by assuming that the decommissioning would start at the beginning of the year following the assessment year. The research relating to the disposal, as well as the actual disposal of TVO's spent fuel, are carried out by Posiva Oy, which charges from TVO the costs arising from these activities, including the acquisition cost of property, plant and equipment.

In the consolidated financial statements, TVO's share of the Finnish State Nuclear Waste Management Fund is shown as non-current assets. It is accounted for in accordance with IFRIC 5 Rights to Interests Arising from Decommissioning, Restoration and Environmental Rehabilitation Funds.

The nuclear waste management obligation is shown as a provision under non-current liabilities. The fair value of the nuclear waste management provision has been determined by discounting the future cash flows which are based on plans about future activity and the estimated expenditure relating to it, taking into account actions already taken.

The present initial value of the provision for the decommissioning of a nuclear power plant (at the time of commissioning the nuclear power plant) has been capitalized as property, plant and equipment and will be adjusted later for possible changes in the plan. The amount recognized relating to decommissioning will be depreciated over the estimated operating time of the nuclear power plant.

The provision for spent fuel covers the future disposal costs of fuel used by the end of each accounting period. The costs for

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

The timing factor is taken into account by recognizing the interest expense related to discounting the nuclear waste management provision. The interest accruing on TVO's share in the Finnish State Nuclear Waste Management Fund is presented as finance income.

TVO's share in the Finnish State Nuclear Waste Management Fund is higher than the corresponding asset recognized in the balance sheet. The nuclear waste management obligation is covered by TVO's share in the Fund, as required by the Nuclear Energy Act. The obligation for nuclear waste management is not discounted. The amount of the annual payment to the Finnish State Nuclear Waste Management Fund is based on the change on the nuclear waste management obligation and funding obligation target, the share of the profit or loss of the Fund, and the changes resulting from actions taken.

Taxes

The Group does not recognize deferred taxes, because TVO operates at cost price. According to this principle, TVO will not pay taxes on its operations, and therefore there is no taxable income. The tax recognized by the Group consists of tax relating to non-deductible expenses. It also includes any taxes for previous financial years.

Employee benefits

The pension benefits for Group personnel have been arranged with external pension insurance companies. The insurance policies relating to earnings-based pensions, as well as some voluntary pension insurance policies, have been accounted for as defined contribution plans.

Payments made to defined contribution plans as to pensions are recognized on an accrual basis in the income statement.

Critical accounting estimates and judgements

The preparation of financial statements requires estimates and assumptions concerning the future. Estimates and assumptions have an effect on the reported amounts of assets and liabilities, and expenses and income during the accounting period. The actual results may differ from these estimates.

The provision for future obligations for the decommissioning of the nuclear power plant and for the disposal of spent fuel

Estimates and assumptions have been used when estimating the assets, liabilities, expenses and income related to the future decommissioning of the nuclear power plant and the disposal of spent fuel. These are based on long-term cash-flow forecasts of estimated future costs.

The main assumptions relate to technical plans, time factor, cost estimates and the discount rate. The technical plans are approved by State authorities. Any changes in the assumed discount rate would change the provision. If the discount rate used were lowered, the provision would increase.

Any future increase in the provision would be offset by the recognition of an equal increase in TVO's share in the assets of the Finnish State Nuclear Waste Management Fund. According to IFRS, the carrying amount of the assets is limited to the value of the provision, as TVO does not have control in the Finnish State Nuclear Waste Management Fund (see note 24 Assets and provisions related to nuclear waste management obligation).

Power plant construction in progress - OL3

OL3 is a power plant unit under construction that has been ordered under a turnkey principle. According to an announcement of the OL3 turnkey supplier, the delivery will be delayed from the original schedule according to which the power plant unit should have been in production as of 30 April 2009. In compliance with the supply contract the company is entitled to

compensation in case the delay is due to the supplier. Additionally, because of the delay the company has incurred and will incur direct and indirect expenses for which the company on the basis of the supply contract has claimed for compensation. In its Financial Statement the company handles liquidated damages and compensation receivables and the supplier´s claims related to the plant supply as one entity. Claims between the parties will finally be settled in arbitration. Since the financial result of the arbitration procedure currently in progress cannot be reliably estimated, no receivables or liabilities, as required by IAS 37, have been booked.

No reserves have been booked for the supplier's claims and arbitration procedures as the claims have been considered and found to be groundless.

All the realized costs on the OL3 project that meet recognition criteria have been booked as acquisition costs of property, plant and equipment on the Group balance sheet.

Impairment testing

Impairment testing of non-current assets is performed when there are indications that the carrying amount of an asset may not be recoverable. In testing, future discounted cash flows which can be recovered by use of the asset and its possible sale are used as an indicator.

TVO operates on a cost-price principle. According to the company documents, the shareholders are obliged to pay all the expenses of the Group in electricity prices including amortization of property, plant and equipment. When assessing by means of recoverable amounts possible impairment of assets and subsequent need for recognition of impairment loss, the recoverable amounts always correspond, with some exceptions, to the carrying amount of the asset and thus, as a rule, no need for recognition of impairment loss arises

3 Segment reporting

Segment structure in TVO Group

The Group has two reportable segments; nuclear power and coal-fired 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. In order to build a fourth plant unit (OL4) at Olkiluoto, it has been started a bidding and engineering phase. The subsidiaries of TVO, TVO Nuclear Services Oy (TVONS), Olkiluodon Vesi Oy and Perusvoima Oy, of which operation is related to nuclear power, are also included in the nuclear power segment. Merger of TVO's wholly-owned subsidiaries, Olkiluodon Vesi Oy and Perusvoima Oy, with TVO was registered in the Trade Register on December 31, 2013.

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, depreciation and impairment charges, finance income and expenses, profit/loss for the year 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.

EUR 1 000	**2013**	2012
Turnover by segments		
Nuclear power	**325 508**	322 397
Coal-fired power	**40 357**	29 774
Total	**365 865**	352 171

Depreciation and impairment charges by segments		
Nuclear power	**45 229**	45 703
Coal-fired power	**7 600**	7 449
Depreciation and impairment charges (FAS)	**52 829**	53 152
The impact of the nuclear waste management obligation	**4 540**	3 345
Total (IFRS)	**57 369**	56 497

Finance income and expenses by segments		
Nuclear power	**6 118**	8 956
Coal-fired power	**1 961**	3 138
Finance income and expenses (FAS)	**8 079**	12 094
The impact of the nuclear waste management obligation	**24 980**	28 302
The impact of financial instruments	**-556**	-295
Other IFRS adjustments	**-170**	-230
Total (IFRS)	**32 333**	39 871

Profit/loss for the financial year by segments		
Nuclear power	**4 215**	6 590
Coal-fired power	**-3 335**	-5 420
Profit/loss before appropriations (FAS)	**880**	1 170
The impact of the nuclear waste management obligation	**28 920**	-3 445
The impact of financial instruments	**556**	294
Other IFRS adjustments	**170**	231
Total (IFRS)	**30 526**	-1 750

Assets by segments		
Nuclear power	**5 508 441**	5 195 967
Coal-fired power	**64 565**	89 483
Total (FAS)	**5 573 006**	5 285 450
The impact of the nuclear waste management obligation	**1 020 507**	951 310
The impact of financial instruments	**29 070**	84 806
The impact of finance leases	**61 691**	63 135
Other IFRS adjustments	**16 219**	12 224
Total (IFRS)	**6 700 493**	6 396 925

GROUP-WIDE DISCLOSURES

Turnover shared to production of electricity and services		
Production of electricity	**362 806**	347 111
Services	**3 059**	5 060
Total	**365 865**	352 171

Information about geographical areas

Teollisuuden Voima Oyj is company owned by Finnish industrial and power companies. TVO delivers electricity to its shareholders at cost price (so-called Mankala principle) , i.e. delivers the electricity produced to its shareholders in proportion to their shareholdings in each series.

The Group assets are located in Finland except part of inventories of nuclear fuel acquisition.

4 Work performed for own purpose

EUR 1 000	**2013**	2012
Personnel expenses related to OL3 and OL4	**14 857**	13 493
Water supply services related to OL3	**21**	16
Total	**14 878**	13 509

5 Other income

EUR 1 000	**2013**	2012
Rental income	**3 168**	3 027
Profits from sales of property, plant and equipment and shares	**102**	5
Sales of services	**5 793**	5 678
Other income	**248**	453
Total	**9 311**	9 163

6 Materials and services

EUR 1 000	**2013**	2012
Nuclear fuel	**56 476**	67 417
Coal	**8 012**	10 315
Materials and supplies	**2 875**	3 350
CO2 emission rights	**2 687**	933
Nuclear waste management services [1)]	**30 857**	48 679
Increase (-) or decrease (+) in inventories	**7 757**	-16 513
External services	**12 919**	10 914
Total	**121 583**	125 095

[1)] See note 24 Assets and provision related to nuclear waste management obligation.

7 Personnel expenses

EUR 1 000	2013	2012
Employee benefit costs		
Wages and salaries	**52 014**	50 680
Pension expenses - defined contribution plans	**8 317**	8 185
Other compulsory personnel expenses	**2 987**	2 803
Total	**63 318**	61 668

Employee bonus system

The Nomination and Remuneration Committee under the Board of Directors approves TVO's commitment and remuneration systems. All permanent and long-term temporary employees are included in the employee bonus system. Some of the personnel have deposited their bonuses in the Teollisuuden Voima Personnel Fund.

	2013	2012
Average number of personnel during financial year		
Office personnel	**740**	728
Manual workers	**154**	156
Total	**894**	884

Number of personnel on December 31		
Office personnel	**717**	724
Manual workers	**140**	144
Total	**857**	868

8 Depreciation and impairment charges

EUR 1 000	2013	2012
Intangible assets		
Computer software	**447**	505
Other intangible assets	**822**	773
Total	**1 269**	1 278
Property, plant and equipment		
Buildings and construction	**10 037**	10 166
Machinery and equipment	**37 569**	37 885
Other property, plant and equipment	**3 954**	3 823
Decommissioning	**4 540**	3 345
Total	**56 100**	55 219
Total	**57 369**	56 497

9 Other expenses

EUR 1 000	**2013**	2012
Maintenance services	**19 117**	20 058
Regional maintenance and service	**8 964**	8 971
Research services	**1 658**	2 994
Other external services	**23 718**	29 719
Real estate tax	**4 954**	4 666
Rents	**1 599**	1 614
ICT expenses	**4 512**	4 129
Personnel related expenses	**4 578**	4 835
Corporate communication expenses	**1 516**	1 916
Other expenses	**14 306**	14 561
Total	**84 922**	93 463

Auditors' fees and not audit-related services		
Audit fees	**90**	96
Other services	**62**	133
Total	**152**	229

10 Finance income and expenses

EUR 1 000	2013	2012
Items included in the income statement		
Dividend income on available-for-sale investments	**853**	760
Profit from available-for-sale investments	**0**	628
Interest income from loans and other receivables		
Nuclear waste management loan receivables from equity holders of the company	**7 050**	13 804
Other	**11 381**	12
Hedge accounted derivatives		
Ineffective portion of the change in fair value in cash flow hedge relationship	**11**	77
Ineffective portion of the change in fair value in fair value hedge relationship	**21**	38
Non-hedge accounted derivatives		
Change in fair value	**563**	461
Interest income from assets related to nuclear waste management	**10 991**	19 746
Finance income, total	**30 870**	35 526
Interest expenses and other finance expenses		
To the Finnish State Nuclear Waste Management Fund	**7 050**	13 804
To others	**18 666**	11 147
Hedge accounted derivatives		
Ineffective portion of the change in fair value in cash flow hedge relationship	**2**	8
Interest rate swaps, fair value hedges	**7 551**	-18 109
Fair value adjustment of loan attributable to interest rate risk	**-7 551**	18 109
Ineffective portion of the change in fair value in fair value hedge relationship	**37**	101
Non-hedge accounted derivatives		
Change in fair value	**0**	173
Realised derivative expenses, net	**1 477**	2 116
Interest expenses of provision related to nuclear waste management	**35 970**	48 049
Finance expenses, total	**63 203**	75 397
Total	**-32 333**	-39 871
Other comprehensive items		
Other comprehensive items related to derivative financial instruments:		
Cash flow hedges		
Changes in the fair value of which the following items have transferred	**-9 280**	-16 058
Transfers to the consolidated income statement	**-940**	-1 243
Transfers to inventories	**777**	651
Transfers to the nuclear power plant under construction	**-16 463**	-14 837
Transferred items, total	**-16 625**	-15 429
Cash flow hedges, total	**7 345**	-629
Changes in fair values of the available-for-sale investments	**6 964**	3 158
Total other comprehensive items	**14 309**	2 529

11 Income tax expense

EUR 1 000	2013	2012
Taxes based on the taxable income of the financial year	3	-1
Total	3	-1

TVO operates at cost price (so called Mankala principle, see note 1 General information on the Group), so TVO does not pay income tax during its operations. Taxes for the financial year consists of non-deductible expenses in taxation.

12 Property, plant and equipment

2013 EUR 1 000	Land and water areas	Buildings and construction	Machinery and equipment	Other property, plant and equipment	Construction in progress and advance payments	Decom-missioning	Total
Acquisition cost 1 Jan	11 509	286 011	1 324 680	53 573	3 445 960	148 739	5 270 472
Increase	470	352	6 064	751	290 129	33 460	331 226
Decrease	0	-917	-2 979	-1	-11 867	0	-15 764
Transfer between categories	0	0	8 046	0	-8 046	0	0
Acquisition cost 31 Dec	11 979	285 446	1 335 811	54 323	3 716 176	182 199	5 585 934
Accumulated depreciation and impairment charges according to plan 1 Jan	0	203 855	887 064	29 425	0	55 072	1 175 416
Decrease	0	-687	-2 976	-1	0	0	-3 664
Depreciation for the period	0	10 037	37 569	3 954	0	4 540	56 100
Accumulated depreciation and impairment charges according to plan 31 Dec	0	213 205	921 657	33 378	0	59 612	1 227 852
Book value 31 Dec 2013	**11 979**	**72 241**	**414 154**	**20 945**	**3 716 176**	**122 587**	**4 358 082**
Book value 1 Jan 2013	11 509	82 156	437 616	24 148	3 445 960	93 667	4 095 056

2012 EUR 1 000	Land and water areas	Buildings and construction	Machinery and equipment	Other property, plant and equipment	Construction in progress and advance payments	Decom-missioning	Total
Acquisition cost 1 Jan	11 421	284 520	1 303 904	51 065	3 163 098	148 839	4 962 847
Increase	88	1 491	19 609	2 508	312 887	0	336 583
Decrease	0	0	-20 874	0	-7 984	0	-28 858
Transfer between categories	0	0	22 041	0	-22 041	-100	-100
Acquisition cost 31 Dec	11 509	286 011	1 324 680	53 573	3 445 960	148 739	5 270 472
Accumulated depreciation and impairment charges according to plan 1 Jan	0	193 689	869 996	25 602	0	51 727	1 141 014
Decrease	0	0	-20 817	0	0	0	-20 817
Depreciation for the period	0	10 166	37 885	3 823	0	3 345	55 219
Accumulated depreciation and impairment charges according to plan 31 Dec	0	203 855	887 064	29 425	0	55 072	1 175 416
Book value 31 Dec 2012	**11 509**	**82 156**	**437 616**	**24 148**	**3 445 960**	**93 667**	**4 095 056**
Book value 1 Jan 2012	11 421	90 831	433 908	25 463	3 163 098	97 112	3 821 833

The costs for the new plant unit (OL3) under construction constituted EUR 3.7 billion of the advance payments in 2013 (EUR 3.4 billion in 2012).

Property, plant and equipment included in finance lease agreements:

EUR 1 000	Construction in progress
Book value 1 Jan 2013	72 339
Increase	240
Book value 31 Dec 2013	**72 579**

EUR 1 000	Construction in progress
Book value 1 Jan 2012	71 335
Increase	1 004
Book value 31 Dec 2012	**72 339**

The assets acquired through financial lease agreements are accumulated as costs for construction in progress so there is no accumulated depreciation.

13 Intangible assets

2013 EUR 1 000	CO_2 emission rights	Computer software	Other intangible assets	Advance payments	Total
Acquisition cost 1 Jan	716	20 366	20 874	0	41 956
Increase	2 904	42	909	0	3 855
Decrease	-933	0	0	0	-933
Transfer between categories	0	0	0	0	0
Acquisition cost 31 Dec	2 687	20 408	21 783	0	44 878
Accumulated depreciation and impairment charges according to plan 1 Jan	0	18 498	15 729	0	34 227
Depreciation for the period	0	447	822	0	1 269
Accumulated depreciation and impairment charges according to plan 31 Dec	0	18 945	16 551	0	35 496
Book value 31 Dec 2013	**2 687**	**1 463**	**5 232**	**0**	**9 382**
Book value 1 Jan 2013	716	1 868	5 145	0	7 729

2012 EUR 1 000	CO_2 emission rights	Computer software	Other intangible assets	Advance payments	Total
Acquisition cost 1 Jan	6 733	20 241	20 874	89	47 937
Increase	716	125	-89	0	752
Decrease	-6 733	0	0	0	-6 733
Transfer between categories	0	0	89	-89	0
Acquisition cost 31 Dec	716	20 366	20 874	0	41 956
Accumulated depreciation and impairment charges according to plan 1 Jan	0	17 993	14 956	0	32 949
Depreciation for the period	0	505	773	0	1 278
Accumulated depreciation and impairment charges according to plan 31 Dec	0	18 498	15 729	0	34 227
Book value 31 Dec 2012	**716**	**1 868**	**5 145**	**0**	**7 729**
Book value 1 Jan 2012	6 733	2 248	5 918	89	14 988

Capitalized borrowing costs included in property, plant and equipment, and intangible assets

The borrowing costs of the power plant construction in progress, OL3 and the power plant unit under bidding and engineering phase OL4 have been capitalized. Realized financial income and expenses have been divided by committed capital. The average share of capitalized borrowing costs in 2013 was 93.8 % (91.1 % in 2012). The average interest rate on loans and derivatives on 31 December, see note 27.

2013 **Capitalized interest costs during construction** EUR 1 000	Other intangible assets	Buildings and construction	Machinery and equipment	Other property, plant and equipment	Advance payments	Total
Acquisition cost 1 Jan	3 530	31 133	112 781	2 609	662 631	812 684
Increase	0	0	0	0	130 828	130 828
Decrease	0	0	0	0	-8 885	-8 885
Acquisition cost 31 Dec	3 530	31 133	112 781	2 609	784 574	934 627
Accumulated depreciation and impairment charges according to plan 1 Jan	2 621	22 232	80 686	1 857	0	107 396
Depreciation for the period	107	444	1 693	33	0	2 277
Accumulated depreciation and impairment charges according to plan 31 Dec	2 728	22 676	82 379	1 890	0	109 673
Book value 31 Dec 2013	**802**	**8 457**	**30 402**	**719**	**784 574**	**824 954**
Book value 1 Jan 2013	909	8 901	32 095	752	662 631	705 288

2012 **Capitalized interest costs during construction** EUR 1 000	Other intangible assets	Buildings and construction	Machinery and equipment	Other property, plant and equipment	Advance payments	Total
Acquisition cost 1 Jan	3 530	31 133	112 781	2 609	515 551	665 604
Increase	0	0	0	0	152 363	152 363
Decrease	0	0	0	0	-5 283	-5 283
Acquisition cost 31 Dec	3 530	31 133	112 781	2 609	662 631	812 684
Accumulated depreciation and impairment charges according to plan 1 Jan	2 515	21 788	78 994	1 823	0	105 120
Depreciation for the period	107	444	1 692	33	0	2 276
Accumulated depreciation and impairment charges according to plan 31 Dec	2 622	22 232	80 686	1 856	0	107 396
Book value 31 Dec 2012	**908**	**8 901**	**32 095**	**753**	**662 631**	**705 288**
Book value 1 Jan 2012	1 015	9 345	33 787	786	515 551	560 484

14 Investments in joint ventures

EUR 1 000	**2013**	2012
1 Jan	1 009	1 009
31 Dec	**1 009**	1 009

Assets, liabilities, turnover and profit/loss as presented by the Group's joint venture are as follows:

EUR 1 000	Place of in-corporation	Assets	Liabilities	Turnover	Profit/loss	Group share (%)
2013						
Posiva Oy	Eurajoki	22 595	20 913	63 220	0	60
2012						
Posiva Oy	Eurajoki	25 825	24 143	67 307	0	60

TVO has a 60 per cent shareholding in Posiva Oy. Posiva is responsible for the research and implementation of final disposal of spent nuclear fuel of its shareholders TVO and Fortum Power and Heat Oy (FPH). In the consolidated financial statements Posiva is accounted by the equity method of accounting.

TVO governs Posiva Oy jointly with FPH, based on Articles of Association and Shareholders Agreement. TVO is liable for approximately 74 per cent of Posiva's expenses. The duty of Posiva is to carry out all tasks related to the final disposal of spent nuclear fuel of its shareholder's nuclear power plants in Finland in order to fulfill their nuclear waste management obligation as specified in the Nuclear Energy Act. The company's operations also include research and construction related to the final disposal solution. Management of spent fuel is carried out according to the detailed plan examined by Finnish Centre for Radiation and Nuclear Safety and approved by The Ministry of Employment and the Economy.

15 Book values of financial assets and liabilities by categories

2013 EUR 1 000	Derivative financial instruments at fair value through profit or loss	Derivative financial instruments designated as cash flow hedges	Derivative financial instruments designated as fair value hedges	Loans and other receivables	Available-for-sale investments	Financial liabilities measured at amortized cost	Book value total	Fair value total	Note
Non-current financial assets									
Loans and other receivables				935 633			935 633	935 633	16
Investments in shares					23 945		23 945	23 945	17
Derivative financial instruments	48 310	1 423	10 314				60 047	60 047	20
Current financial assets									
Trade and other receivables				25 465			25 465	25 465	16
Derivative financial instruments	12	1 542					1 553	1 553	20
Total by category	**48 321**	**2 965**	**10 314**	**961 098**	**23 945**	**0**	**1 046 643**	**1 046 643**	
Non-current liabilities									
Loan from the Finnish State Nuclear Waste Management Fund						931 725	931 725	931 725	22
Other financial liabilities						2 975 627	2 975 627	3 196 873	22
Derivative financial instruments	13 339	21 661					34 999	34 999	20
Current liabilities									
Current financial liabilities						201 774	201 774	201 774	22
Trade payables						10 823	10 823	10 823	23
Other current liabilities						156 427	156 427	156 427	23
Derivate financial instruments	3 304	4 909					8 212	8 212	20
Total by category	**16 642**	**26 570**	**0**	**0**	**0**	**4 276 376**	**4 319 588**	**4 540 834**	

2012 EUR 1 000	Derivative financial instruments at fair value through profit or loss	Derivative financial instruments designated as cash flow hedges	Derivative financial instruments designated as fair value hedges	Loans and other receivables	Available-for-sale investments	Financial liabilities measured at amortized cost	Book value total	Fair value total	Note
Non-current assets									
Loans and other receivables				885 963			885 963	885 963	16
Investments in shares					16 981		16 981	16 981	17
Derivative financial instruments	85 372	4 757	18 109				108 238	108 238	20
Current assets									
Trade and other receivables				36 321			36 321	36 321	16
Derivative financial instruments	107	1 476					1 583	1 583	20
Total by category	**85 479**	**6 233**	**18 109**	**922 284**	**16 981**	**0**	**1 049 087**	**1 049 087**	
Non-current liablities									
Loan from the Finnish State Nuclear Waste Management Fund						881 726	881 726	881 726	22
Other financial liabilities						2 907 494	2 907 494	3 173 333	22
Derivative financial instruments	19 255	32 621					51 875	51 875	20
Current liabilities									
Current financial liabilities						202 835	202 835	202 835	22
Trade payables						9 536	9 536	9 536	23
Other current liabilities						147 964	147 964	147 964	23
Derivative financial instruments	0	3 999					3 999	3 999	20
Total by category	**19 255**	**36 620**	**0**	**0**	**0**	**4 149 556**	**4 205 430**	**4 471 269**	

Fair values of long-term loans have been estimated as follows:

The fair value of quoted bonds is based on the quoted market value as of 31 December. The fair value of fixed rate and market-based floating rate loans is estimated using the expected future payments discounted at market interest rates.

The carrying amounts of current financial assets and liabilities approximate their fair value.

Disclosure of fair value measurements by the level on fair value measurement hierarchy

2013 EUR 1 000	Level 1	Level 2	Level 3
Financial assets at fair value			
Derivative financial instruments at fair value through profit or loss		48 321	
Derivative financial instruments designated as cash flow hedges		2 965	
Derivative financial instruments designated as fair value hedges		10 314	
Available-for-sale investments			
Investments in listed companies	21 901		
Investments in other stocks and shares			0
Total	**21 901**	**61 600**	0
Financial liabilities at fair value			
Derivative financial instruments at fair value through profit or loss		16 642	
Derivative financial instruments designated as cash flow hedges		26 570	
Derivative financial instruments designated as fair value hedges		0	
Total	**0**	**43 212**	0

Disclosure of fair value measurements by the level of fair value measurement hierarchy

2012 EUR 1 000	Level 1	Level 2	Level 3
Financial assets at fair value			
Derivative financial instruments at fair value through profit or loss		85 479	
Derivative financial instruments designated as cash flow hedges		6 233	
Derivative financial instruments designated as fair value hedges		18 109	
Available-for-sale investments			
Investments in listed companies	14 938		
Investments in other stocks and shares			0
Total	**14 938**	**109 822**	0
Financial liabilities at fair value			
Derivative financial instruments at fair value through profit or loss		19 255	
Derivative financial instruments designated as cash flow hedges		36 620	
Derivative financial instruments designated as fair value hedges		0	
Total	**0**	**55 875**	0

TVO has also 31 December 2013 unquoted shares EUR 2,044 (2,043) thousand whose fair value cannot be reliably determined are measured at acquisition cost.

Fair value estimation

Available-for-sale investments include investments in shares and fund units. Listed shares and fund units are measured at fair value, which is the market price at closing date (Level 1). TVO has not level 3 investments (assets that are not based on observable market data).

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. The fair value of the interest rate options is calculated using market quotes at the closing date and by using the Black and Scholes option valuation model. The changes in fair value of the interest rate swaps and forward contracts are recognized in equity or profit or loss, depending on whether they qualify for cash flow hedges or not. The changes in fair value of interest rate options that do not qualify for hedge accounting are presented in the income statement.

2013 EUR 1 000	Gross amounts	Related amounts not set off	Net amount
Offsetting financial assets and liabilities			
Derivative financial assets	61 600	-20 484	41 116
Derivative financial liabilities	-43 212	20 484	-22 728

2012 EUR 1 000	Gross amounts	Related amounts not set off	Net amount
Offsetting financial assets and liabilities			
Derivative financial assets	109 889	-29 598	80 291
Derivative financial liabilities	-55 942	29 598	-26 344

For the financial derivative assets and liabilities subject to enforceable master netting arrangements or similar arrangements above, each agreement between the Group and the counterparty allows for net settlement of the relevant financial derivative assets and liabilities when both elect to settle on a net basis. In the absence of such an election, financial assets and liabilities will be settled on a gross basis, however, each party to the master netting agreement or similar agreement will have the option to settle all such amounts on a net basis in the event of default of the other party. Per the terms of each agreement, an event of default includes failure by a party to make payment when due.

16 Loans and other receivables

Loans and other receivables (non-current assets)

EUR 1 000	2013	2012
Nuclear waste management loan receivables	**931 725**	881 726
Loan receivables	**3 908**	4 237
Total	**935 633**	885 963

According to section 52 of the Nuclear Energy Act, TVO, in exchange for collateral payments, is entitled to receive fixed-term loans from the Finnish State Nuclear Waste Management Fund, the amount which cannot be larger than 75 per cent of the latest confirmed TVO's share in the Finnish State Nuclear Waste Management Fund. The nuclear waste management loan receivables formed by the amount loaned from the Finnish State Nuclear Waste Management Fund, has been further loaned (with the same terms and conditions) to the equity holders of the company and to Fortum Oyj.

Nuclear waste management loan receivables are allocated as follows:

EUR 1 000	2013	2012
EPV Energia Oy	**61 442**	58 165
Fortum Oyj	**247 583**	234 292
Karhu Voima Oy	**655**	620
Kemira Oyj	**17 437**	16 508
Oy Mankala Ab	**76 210**	72 141
Pohjolan Voima Oy	**528 398**	500 000
Total	**931 725**	881 726

In accordance with its Articles of Association, TVO delivers electricity to its shareholders at cost price (so-called Mankala principle), i.e. delivers the electricity produced or procured to its shareholders in proportion to their shareholdings in each series. Each of the shareholders of each series is liable for variable and fixed annual costs that are specified in detail in the Articles of Association.
The loan receivables constitute mainly the loan receivables of Posiva Oy EUR 3,357 (3,614) thousand.

Trade and other receivables (current assets)

EUR 1 000	2013	2012
Trade receivables	**8 833**	15 073
Loan receivables	**390**	387
Prepayments and accrued income	**10 060**	20 044
Other receivables	**6 182**	817
Total	**25 465**	36 321

Prepayments and accrued income include prepaid interests, accrued interest income, other accrued income and other prepaid expenses.

The maximum credit loss risk of trade and other receivables corresponds to their book value. On 31 December 2013 the Group had EUR 155 (1,063) thousand overdue receivables of which EUR 42 (226) thousand was overdue more than six months. The overdue receivables are not expected to cause the Group credit losses or impairments.

17 Available for-sale investments

EUR 1 000	**2013**	2012
Investments in listed companies	**21 901**	14 938
Investments in other stocks and shares	**2 044**	2 043
Total	**23 945**	16 981

18 Cash and cash equivalents

Cash and cash equivalents consist of on-hand cash, demand deposits and other current, liquid investments.

19 Inventories

EUR 1 000	**2013**	2012
Coal		
Replacement cost	**21 767**	35 779
Book value	**29 108**	45 440
Difference	**-7 341**	-9 661
Raw uranium and natural uranium		
Replacement cost	**65 277**	92 839
Book value	**51 198**	49 710
Difference	**14 079**	43 129
Coal	**29 108**	45 440
Raw uranium and natural uranium	**51 198**	49 710
Nuclear fuel	**156 723**	149 951
Materials and supplies	**6 062**	5 746
Total	**243 091**	250 847

20 Derivative financial instruments

Nominal values of the derivative financial instruments			Maturity structure			
2013						
EUR 1 000	< 1 year	1-3 years	3-5 years	5-7 years	> 7 years	Total
Interest rate swaps	410 000	90 000	198 446	280 000	23 000	1 001 446
Forward foreign exchange contracts and swaps	26 163	49 063	35 377	43 960	57 045	211 607
Cross-currency swaps	0	128 730	531 447	137 380	56 117	853 674
Total	**436 163**	**267 793**	**765 270**	**461 340**	**136 161**	**2 066 727**

Nominal values of the derivative financial instruments			Maturity structure			
2012						
EUR 1 000	< 1 year	1-3 years	3-5 years	5-7 years	> 7 years	Total
Interest rate swaps	190 000	470 000	60 000	338 446	23 000	1 081 446
Forward foreign exchange contracts and swaps	27 985	57 363	26 231	22 926	15 282	149 788
Cross-currency swaps	0	214 082	214 481	146 713	135 231	710 507
Total	**217 985**	**741 446**	**300 712**	**508 086**	**173 513**	**1 941 742**

Fair values of the derivative financial instruments			
2013			
EUR 1 000	Positive	Negative	Total
Interest rate swaps			
Cash flow hedges	471	-19 560	-19 089
Fair value hedges	10 314	0	10 314
Non-hedges	0	-4 445	-4 445
Forward foreign exchange contracts and swaps			
Cash flow hedges	2 494	-7 009	-4 516
Non-hedges	152	-33	119
Cross-currency swaps			
Non-hedges	48 157	-12 129	36 028
Currency options (non-hedges)			
Purchased	0	-35	-35
Written	12	0	12
Total	**61 600**	**-43 212**	**18 388**

Fair values of the derivative financial instruments			
2012			
EUR 1 000	Positive	Negative	Total
Interest rate swaps			
Cash flow hedges	0	-36 206	-36 206
Fair value hedges	18 109	0	18 109
Non-hedges	92	-14 286	-14 194
Forward foreign exchange contracts and swaps			
Cash flow hedges	6 233	-414	5 819
Non-hedges	134	0	134
Cross-currency swaps			
Non-hedges	85 253	-4 968	80 285
Total	**109 821**	**-55 874**	**53 947**

21 Equity

Share capital

The registered share capital of the Company according to the Articles of Association was EUR 606,193 thousand on 31 December 2013. TVO does not have a maximum or minimum limit for the share capital. The number of the shares on 31 December 2013 was 1,394,283,730. The shares are divided into the three series of shares as follows: A series 680,000,000, B series 680,000,000 and C series 34,283,730 shares. The shares have no nominal price as is stipulated in the Finnish Limited Liability Companies Act.

According to the Articles of Association, TVO delivers electricity to its shareholders at cost price, i.e. it delivers the electricity produced or procured to its shareholders in proportion to their shareholding in each series. Each of the shareholders of each series is liable for the variable and fixed annual costs that are specified in detail in the Articles of Association. The Company prepares annually a balance sheet divided into series of shares. The balance sheet, which will be presented to the Shareholders' Meeting, specifies the assets, liabilities and equity of the different series of shares.

Share number reconciliations:

EUR 1 000	Number of shares	Share capital	Share premium reserve and statutory reserve
1 Jan 2012	1 394 283 730	606 193	242 383
31 Dec 2012	1 394 283 730	606 193	242 383
31 Dec 2013	**1 394 283 730**	**606 193**	**242 383**

The company has three registered share series: A, B and C.

Share number	**31 Dec 2013**	31 Dec 2012
A series	**680 000 000**	680 000 000
B series	**680 000 000**	680 000 000
C series	**34 283 730**	34 283 730
Total	**1 394 283 730**	1 394 283 730

Share premium reserve

The share premium reserve contains the share premiums of the share issues, EUR 232,435 thousand.

Statutory reserve

The statutory reserve consists of EUR 9,948 thousand paid by Imatran Voima Oy, the predecessor of Fortum Power and Heat Oy, in 1979 when it became an equity holder in the company.

Fair value and other reserves

Profits and losses incurred by fair value changes of available-for-sale investments and derivatives used as cash flow hedges are entered in this reserve. The fair changes of derivatives are transferred to the profit/loss statement, when the cash flows they have been hedging have been realized. Fair value changes in available-for-sale investments are transferred to the income statement, when the investments are relinquished or their value diminishes.

Subordinated shareholder loans (hybrid equity)

The carrying value of the subordinated shareholder loans in the balance sheet 31 December 2013 was EUR 339,300 thousand of which 279,300 thousand was interest-bearing and 60,000 thousand non-interest. There is no maturity date for the subordinated shareholder loans (hybrid equity), but the borrower is entitled to repay the loan in one or several installments. The Board of Directors of the borrower has the right to decide not to pay interest during any current interest period. Unpaid interest does not accumulate to the following interest periods.

Subordinated shareholder loans (hybrid equity) are unsecured and in a weaker preference position than promissory notes. Holders of a subordinated shareholder loans has no shareholder rights, nor does the bond dilute the ownership of the company's shareholders.

Retained earnings

This item contains the earnings from previous financial periods and the profit/loss of the financial year.

22 Interest-bearing liabilities

EUR 1 000	2013	2012
Non-current interest-bearing liabilities		
Loan from the Finnish State Nuclear Waste Management Fund	**931 725**	881 726
Bonds	**2 191 411**	2 069 977
Bank loans	**500 620**	544 773
Loans from others	**222 744**	230 209
Finance leasing liabilities	**60 852**	62 535
Derivative financial instruments	**34 999**	51 875
Total	**3 942 351**	3 841 095
Current interest-bearing liabilities		
Bank loans	**45 376**	90 486
Other interest-bearing liabilities (Commercial paper program)	**154 715**	110 690
Finance leasing liabilities	**1 683**	1 659
Derivative financial instruments	**8 212**	3 999
Total	**209 986**	206 834
Total	**4 152 337**	4 047 929

TVO has issued EUR-, USD-, GBP-, SEK- and NOK-denominated Private Placements amounting to EUR 1,124.7 million. The Placements in foreign currency are treated as EUR floating or fixed rate loans that are adjusted at the closing date with ECB fixing rate. The Private Placements have been swapped by using cross-currency swaps. In 2013, the effect of foreign exchange hedges was negative amounting to EUR 44.3 million and correspondingly, the effect of foreign currency denominated loans was positive amounting to EUR 44.3 million.

Maturity period of finance lease liabilities

EUR 1 000	2013	2012
Finance lease liabilities - minimum lease payments		
No later than 1 year	**1 690**	2 035
Later than 1 year and no later than 5 years	**6 842**	7 824
Over 5 years	**54 065**	57 377
Total	**62 597**	67 236
Finance expenses to be accrued	**-62**	-3 042
Finance lease liabilities - current value of minimum rents		
No later than 1 year	**1 683**	1 659
Later than 1 year and no later than 5 years	**6 819**	6 785
Over 5 years	**54 033**	55 750
Total	**62 535**	64 194

The finance lease liabilities of the Group comprise the lease agreement of spare parts of the nuclear power plant.

23 Trade payables and other current liabilities

EUR 1 000	2013	2012
Advances received	**21 365**	23 927
Trade payables	**10 823**	9 536
Accruals and deferred income and other liabilities	**156 427**	147 964
Total	**188 615**	181 427

Accruals and deferred income and other liabilities are allocated as follows:		
Finnish State Nuclear Waste Management Fund	**64 430**	57 204
Accrued interests	**52 144**	52 388
Accrued personnel expenses	**16 543**	15 956
Accruals related to CO_2 emission rights	**2 687**	933
Others	**20 623**	21 483
Total	**156 427**	147 964

24 Assets and provision related to nuclear waste management obligation

Share in the Finnish State Nuclear Waste Management Fund

Under the Nuclear Energy Act in Finland, TVO has a legal obligation to fully fund the legal liability for nuclear waste including the decommissioning of the power plant through the Finnish State Nuclear Waste Management Fund (=nuclear waste management obligation).

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 carrying value of the fund in TVO's balance sheet is calculated according to the interpretation in IFRIC 5 "Rights to Interests arising from Decommissioning, Restoration and Environmental Rehabilitation Funds".

Provision related to the nuclear waste management obligation

The provision is related to future obligations for decommissioning of the power plant, management of spent fuel and operating waste. The fair value of the provision is calculated according to IAS 37 based on discounted future cash flows which are based on estimated future expenses. The cost estimate is based on a nuclear waste management plan covering the management of spent nuclear fuel and operating waste and decommissioning of the nuclear power plant.

The total cost estimate based on a new nuclear waste management technical plan and schedule was updated in June 2013. The updated cost estimate increased the provision related to the nuclear waste management and decreased the amount of materials and services and finance expenses.

The overall effect on profit for the period is positive 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 provision on balance sheet compared to the value at the end of the previous year was increased by EUR 24.8 million. The effect of revised cost estimate to the consolidated income statement compared to the previous estimate were EUR 22.2 million decrease in materials and services and EUR 11.9 million decrease in finance expenses.

At the end of the year, the balance sheet contains the following assets and liabilities concerning the nuclear waste management obligation:

EUR 1 000	2013	2012
The carrying value of TVO's share in the Finnish State Nuclear Waste Management Fund (non-current assets)	**897 919**	857 643
Provision related to nuclear waste management (non-current liabilities)		
Beginning of the year	**857 643**	831 828
Increase in provision	**36 494**	11 194
Used provision	**-32 188**	-33 427
Changes due to discounting	**35 970**	48 048
End of the year	**897 919**	857 643
The discount rate, %	**5,5**	5,5

TVO's legal liability and share in the Finnish State Nuclear Waste Management Fund

TVO's legal liability as stated in the Nuclear Energy Act and the Company's share in the Finnish State Nuclear Waste Management Fund at the end of the year are as follows:

EUR 1 000	2013	2012
Liability for nuclear waste management according to the Nuclear Energy Act	**1 317 800**	1 242 300
TVO's funding target obligation 2014 (2013) to the Finnish State Nuclear Waste Management Fund	**1 310 400**	1 242 300
TVO's share in the Finnish State Nuclear Waste Management Fund 31.12.2013 (31.12.2012)	**1 253 300**	1 198 900
Difference between the liability and TVO's share of the fund 31.12.2013 (31.12.2012)	**64 500**	43 400

The legal liability calculated according to the Nuclear Energy Act in Finland and decided by the supervising authority (Ministry of Employment and the Economy) is EUR 1,317.8 (1,242.3) million on 31 December 2013 (31 December 2012). The carrying value of the liability in the balance sheet calculated according to IAS 37 is EUR 897.9 (857.6) million on 31 December 2013. The main reason for the difference between the carrying value of the provision and the legal liability is the fact that the legal liability is not discounted to net present value.

TVO's share in the Finnish State Nuclear Waste Management Fund is EUR 1,253.3 (1,198.9) million on 31 December 2013. The carrying value of the TVO's share in the fund in the balance sheet is EUR 897.9 (857.6) 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 difference between the funding target and the share in the Finnish State Nuclear Waste Management Fund at the end of each year is due to the funding target being completed by paying the nuclear waste management fee only during the first quarter of the following year.

In June 2013, TVO submitted the waste management scheme for 2013 - 2015 to the Ministry of Employment and the Economy (MEE). The Ministry of Employment and the Economy (MEE) 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 2014.

TVO has issued to the State the shareholders' guarantees as security for the unfunded legal liability. The security also covers unexpected events as determined in the Nuclear Energy Act. The guarantees are included in the nuclear waste management obligations, see note 25 Obligations and other commitments.

TVO utilizes the right to borrow funds back from the Finnish State Nuclear Waste Management Fund in accordance with the defined rules. The loans are included in the interest-bearing liabilities, see note 22 Interest-bearing liabilities.

25 Obligations and other commitments

Operating leases

Group as lessee

Minimum rents to be paid based on non-cancellable lease agreements:

EUR 1 000	2013	2012
No later than 1 year	**349**	343
Later than 1 year and no later than 5 years	**354**	367
Total	**703**	710

The rents recognized as expenses during the period are as follows:		
Rents	**376**	336
Total	**376**	336

Non-cancellable lease agreements have been made for the office equipment and vehicles.

Pledged promissory notes and financial guarantees

EUR 1 000	2013	2012
Pledged promissory notes to the Finnish State Nuclear Waste Management Fund	**931 725**	881 726
Guarantees given by shareholders related to the nuclear waste management obligation	**153 160**	147 610

The Company under the nuclear waste management obligation is entitled to borrow an amount equal to 75 per cent of its share in the Finnish State Nuclear Waste Management Fund. TVO has lent the funds borrowed from the fund to its shareholders and has pledged the receivables from the shareholders as collateral for the loan.

The absolute guarantees given by the equity holders of the company are given to cover the unfunded portion of the nuclear waste management obligation and unexpected events as determined in the Nuclear Energy Act.

Investment commitments

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

EUR 1 000	2013	2012
OL1 and OL2	**75 000**	16 000
OL3	**774 000**	769 000
OL4	**2 000**	13 000
Total	**851 000**	798 000

Pending Court Cases and Disputes

TVO submitted in 2012 a claim and defense in the International Chamber of Commerce (ICC) arbitration proceedings concerning the delay and the ensuing costs incurred at the Olkiluoto 3 project. The quantification estimate of TVO's costs and losses was approximately EUR 1.8 billion which included TVO's actual claim and an estimated part until August 2014.

The proceedings were initiated in December 2008 by the OL3 Supplier. The monetary claim the Supplier updated in 2013 is in total approximately EUR 2.7 billion. The updated quantification is until the end of June 2011, and the sum includes approximately EUR 70 million of payments delayed by TVO under the plant contract as well as approximately EUR 700 million of penalty interest and approximately EUR 120 million of alleged loss of profit. TVO has considered and found the earlier claim by the Supplier to be without merit, scrutinizes the updated claim and will respond to it in due course.

The arbitration proceedings may continue for several years, and the claimed amounts may be updated.

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

CO_2 emission rights

In principle TVO has, on 31 December, emission rights at least the same amount as the actual annual emissions are. If the actual emissions exceed the amount of the emission rights that TVO possesses, TVO has booked the expense for exceeding emission rights at the market value on 31 December.

	2013		2012	
	t CO_2	EUR 1 000	t CO_2	EUR 1 000
Granted emission rights	**0**		296 281	
Total annual emissions from production facilities	**592 448**		400 221	
Possessed emission rights	**597 125**		402 310	
Emission rights sold 1)	**0**	**0**	75 000	525
Emission rights and emission right reductions bought 2)	**595 000**	**2 687**	175 000	933

TVO is, based on the electricity production during 2000 - 2003 of TVO's share in the Meri-Pori coal-fired power plant, entitled to a corresponding share of gratuitous emission rights. TVO is responsible for the amount of emission rights corresponding to its share of the production of the plant.

1) The sales of the emission rights are included in turnover.
2) The purchases of the emission rights and emission right reductions are included in materials and services. The emission rights that TVO possesses on 31 December are included in intangible assets on the balance sheet.

26 Related party

The Group's related parties include parent company Teollisuuden Voima Oyj and its subsidiary and joint venture. The related parties also include the Board of Directors and the Executive Management including the President and CEO and Deputy CEO.

Group's parent company and subsidiaries

Company	Home country	Ownership (%)	Share in voting rights (%)
Teollisuuden Voima Oyj	Finland		
TVO Nuclear Services Oy	Finland	100	100

Transactions with related parties are as follows

2013

EUR 1 000	Sales	Purchases	Interests	Receivables	Liabilities
Posiva Oy (joint venture)	8 174	46 453	78	4 739	10

2012

EUR 1 000	Sales	Purchases	Interests	Receivables	Liabilities
Posiva Oy (joint venture)	7 925	49 477	110	4 464	70

Teollisuuden Voima Oyj's shareholders

According to IAS 24 -standard in addition the Group related parties are TVO's two biggest shareholders Pohjolan Voima Oy (PVO) and Fortum Power and Heat Oy (FPH) which have significant authority and PVO's biggest owner UPM-Kymmene Oyj (UPM) and FPH's owner Fortum Oyj.

Transactions with related parties are as follows

2013

EUR 1 000	Sales	Purchases	Interests	Receivables	Liabilities
PVO, Fortum Oyj, Fortum Power and Heat Oy	301 729	11 054	8 782	788 918	258 689

2012

EUR 1 000	Sales	Purchases	Interests	Receivables	Liabilities
PVO, Fortum Oyj, Fortum Power and Heat Oy	288 890	9 119	14 984	756 480	174 004

Senior management's employee benefits

The senior management of TVO comprises the Board of Directors and the Executive Management including President and CEO and Deputy CEO. The Group has no business transactions with senior management.

	2013	2012
EUR 1 000	Senior management	Senior management
Wages, salaries and other short-term benefits	**2 183**	1 959
Total	**2 183**	1 959

Some of the Executive Management have option to retire at the age of 60, some at the age of 63.

27 Financial risk management

Financing and financial risks are centrally managed by the finance department of TVO in accordance with the Finance Policy approved by the Board of Directors. TVO is exposed to a variety of financial risks: liquidity-, market- and credit risk. These do not include the receivables and obligations between the Company and its owners, as the Company operates at cost price (see note 1 General information on the Group).

TVO's guiding financial principles are to ensure access to adequate liquidity reserves and, secondly, to reduce volatility in cash flows deriving form short- and medium-term fluctuations in the financial markets.

In accordance with the Finance Policy of the Company, derivative instruments are entered into only with hedging purposes and they should qualify for hedge accounting under IFRS.

Liquidity risk

Liquidity and refinancing risk is defined as the amount by which earnings and cash flows are affected as a result of the Company not being able to secure sufficient financing. In addition to sufficient liquid assets and committed credit lines TVO aims to diminish the refinancing risk by spreading the maturity dates of its loans and different financing sources as much as possible.

In accordance with the Finance Policy of TVO, the maturities and refinancing of long-term loans are planned so that no more than 25 per cent of the outstanding loans mature during the next rolling 12-month period. The loans borrowed from the Finnish State Nuclear Waste Management Fund, which have been lent further to the shareholders, form an exception.

TVO issues commercial papers under the Commercial Paper Program for short-term funding purposes. There shall always exist committed credit lines with a minimum duration of 12 months for an amount corresponding to the funding needs of the Company for the following 12 months.

In addition to long-term committed credit lines, the Company shall maintain liquid assets at an amount stated in the Finance

Policy. In accordance with the Finance Policy, bank deposits, certificates of deposits, commercial papers, municipal papers, and treasury notes as well as money market funds are accepted as investments, and they are mostly for the short-term purposes with maximum duration of 12 months.

Undiscounted cash flows of financial liabilities

2013 EUR 1 000	2014	2015	2016	2017	2018-	Total
Loans from financial institutions 1)	45 376	89 095	104 583	44 413	274 476	557 942
Financing costs 2)	17 857	16 921	14 334	10 726	13 116	72 954
Loan from the Finnish State Nuclear Waste Management Fund 3)					931 725	931 725
Financing costs	7 050	10 010	15 650	20 606	23 599	76 915
Bonds 4)		128 730	750 000	214 481	1 057 786	2 150 997
Financing costs	89 506	88 755	87 133	40 777	121 287	427 458
Loans from others 4)					223 677	223 677
Financing costs	4 556	4 608	4 622	4 632	12 492	30 910
Finance lease liabilities	1 690	6 842			54 065	62 597
Commercial papers	155 000					155 000
Other liabilities	50 676					50 676
Interest rate derivatives	16 137	6 320	4 868	4 346	4 505	36 175
Total	387 847	351 280	981 189	339 981	2 716 728	4 777 025

EUR 1 000	2014	2015	2016	2017	2018-	Total
Forward foreign exchange contracts	1 021	242	209	289	6 342	8 103

1) Repayments in 2014 are included in current liabilities in the balance sheet.
2) In addition to interest costs, financing costs include commitment fees.
3) The loan is renewed yearly and connected interest payments are calculated for five years.
4) The placements in foreign currency have been swapped into EUR-floating or fixed cash flow using cross-currency swaps.

On December 31, 2013, TVO had undrawn credit facilities amounting to EUR 1,500 million (2012: 1,500 million). In addition, the Group has subordinated shareholder loan (hybrid equity) commitments totaling EUR 720 million of which EUR 220 million is allocated to the financing of the bidding and engineering phase of the OL4 project and EUR 500 million to the financing needs of the OL3 project. In addition, TVO had cash equivalents amounting EUR 142 million.

Undiscounted cash flows of financial liabilities

2012 EUR 1 000	2013	2014	2015	2016	2017-	Total
Loans from financial institutions 1)	90 485	45 376	89 095	104 583	318 889	648 427
Financing costs 2)	15 281	14 245	13 276	10 681	18 992	72 475
Loan from the Finnish State Nuclear Waste Management Fund 3)					881 726	881 726
Financing costs	13 804	5 394	8 359	11 439	15 339	54 334
Bonds 4)			214 082	750 000	1 020 747	1 984 830
Financing costs	86 984	86 764	85 144	83 033	145 197	487 121
Loans from others 4)					223 677	223 677
Financing costs	4 689	4 462	4 452	4 466	16 545	34 614
Finance lease liabilities	2 035	7 824			57 377	67 236
Commercial papers	111 000					111 000
Other liabilities	47 908					47 908
Interest rate derivatives	28 050	15 969	5 603	4 015	7 105	60 742
Total	400 236	180 033	420 010	968 216	2 705 595	4 674 090

EUR 1 000	2013	2014	2015	2016	2017-	Total
Forward foreign exchange contracts	34	23	41	7	340	445

1) Repayments in 2013 are included in current liabilities in the balance sheet.
2) In addition to interest costs financing costs include commitment fees.
3) The loan is renewed yearly and connected interest payments are calculated for five years.
4) The placements in foreign currency have been swapped into EUR-floating or fixed cash flow using cross-currency swaps.

Market risk

Currency risk

TVO is exposed to currency risk mainly in connection with its fuel purchases. The currency of purchases of raw uranium, enrichment and coal is frequently USD. Hedging of a currency denominated purchase is commenced when a agreement is entered into and the forecasted currency risk becomes highly probable. Both short-term and long-term loans are withdrawn mainly in euros. The loans denominated in other currencies than euros are hedged latest at the withdrawal date.

Currency swaps, forward contracts, and options can be used to hedge the currency exposure.

Interest rate risk

Interest-bearing liabilities expose the Company to interest rate risk. The objective of the Company's interest rate risk management is to maintain the interest costs at as low level as possible and to diminish the volatility of interest costs. In accordance with the Finance Policy, the duration of the loan portfolio of the Company can vary between 18 and 30 months. At the closing date the duration was 20 months.

The average interest rate duration is managed with fixed interest rate loans, interest rate swaps, forward rate agreements as well as with interest rate caps and floors.

The average interest rate on loans and derivatives on 31 December 2013 was 3.91 % (2012: 4.32 %).

Borrowings issued at variable rates expose TVO to cash flow interest rate risk. Borrowings issued at fixed rates expose TVO to fair value interest rate risk. TVO shall apply hedge accounting as far as practical. Based on the various scenarios, TVO manages its cash flow interest rate risk by using floating-to-fixed interest rate swaps. Such interest rate swaps have the econimic effect of converting borrowings from floating rates to fixed rates. TVO also enters into fixed-to-floating interest rate swaps to hedge the fair value interest rate risk.

Expected cash flows from financial instruments under cash flow hedge accounting

2013 EUR 1 000	2014	2015	2016	2017	2018-	Total
Interest rate swaps						
Cash flows	-11 084	-6 309	-5 056	-4 931	-5 089	-32 469

Expected cash flows from financial instruments under cash flow hedge accounting

2012 EUR 1 000	2013	2014	2015	2016	2017-	Total
Interest rate swaps						
Cash flows	-17 909	-11 786	-6 532	-5 257	-10 381	-51 865

Sensitivity to market risks

Sensitivity to market risks arising from financial instruments as required by IFRS 7.

	2013		2012	
EUR 1 000	**Income statement**	**Equity**	Income statement	Equity
+ 10% change in EUR/USD exchange rate	**0**	**-17 075**	0	-14 608
- 10% change in EUR/USD exchange rate	**0**	**17 075**	0	14 608
1% upward parallel shift in interest rates	**-3 847**	**11 649**	-959	10 383
1% downward parallel shift in interest rates	**3 133**	**-12 198**	2 297	-7 530

Assumptions:

The change in EUR/USD exchange rate is assumed to be +/- 10 per cent.

The USD-denominated position includes the forward foreign exchange contracts which are designated as cash flow hedges and recognized in equity and the forward foreign exchange contracts not qualified as cash flow hedges, affecting the income statement.

The variation in interest rates is assumed to be 1 percentage point parallel shift in the interest rate curve.

The interest rate risk position includes the floating rate loan receivables, interest-bearing borrowing, the interest rate derivatives and cash equivalents.

The income statement is affected by the interest-bearing loan receivables, floating rate borrowings and the interest rate derivatives, excluding those interest rate derivatives that are designated as and qualifying for cash hedges, which are recognized in equity. The gain or loss is recognized in profit or loss, except when they relate to the construction of OL3 and are capitalized in the balance sheet.

Bonds

Euro Medium Term Note Programme EUR 3.500.000.000

EUR 1 000	**2013**		2012			
Currency	Nominal amount	Carrying amount	Nominal amount	Carrying amount	Interest rate %	Maturity date
EUR	750 000	750 000	750 000	750 000	6,00	27 June 2016
EUR	500 000	500 000	500 000	500 000	4,625	4 Feb 2019
EUR	30 000	30 000	30 000	30 000	3,88	9 May 2022
EUR	100 000	100 000	100 000	100 000	Euribor 6M+1,58	12 Sep 2022
EUR	23 000	23 000	23 000	23 000	4,08	1 Dec 2022
EUR	75 000	75 000	75 000	75 000	3,60	14 Dec 2027
EUR	20 000	20 000	20 000	20 000	3,875	8 Nov 2032
EUR	23 000	23 000	0	0	3,50	3 May 2030
NOK	550 000	63 218	550 000	63 218	6,20	22 Feb 2017
SEK	100 000	9 794	100 000	9 794	Stibor 3M+1,25	20 Jan 2015
SEK	320 000	31 342	520 000	50 931	4,00	20 Jan 2015
SEK	0	0	200 000	21 186	Stibor 3M+1,25	
SEK	210 000	20 751	500 000	49 407	4,00	12 Feb 2015
SEK	500 000	51 546	500 000	51 546	4,00	12 Feb 2015
SEK	147 000	15 297	300 000	31 218	3,65	23 June 2015
SEK	650 000	63 601	650 000	63 601	5,30	28 Mar 2017
SEK	300 000	33 899	300 000	33 899	5,30	28 Mar 2017
SEK	500 000	53 763	500 000	53 763	4,50	8 Nov 2017
SEK	875 000	99 977	0	0	3,875	13 Sep 2018
SEK	1 125 000	128 542	0	0	Stibor 3M+1,40	13 Sep 2018
SEK	600 000	58 267	600 000	58 267	5,30	30 Oct 2019
Total		**2 150 997**		**1 984 830**		

Credit risk

Credit risk arises from the potential failure of a counterparty to meet its contractual payment obligations. Commercial trade receivables as well as receivables from financial institutions relating to investments, deposits and derivative transactions expose the Company to credit risk. In addition to money market funds, financial institutions that meet the credit rating requirements of the Group´s Financial Policy are accepted as counterparties. Furthermore TVO has in place a master agreement (ISDA) with all derivative contract counterparties.

Fuel price risk

The main fuels used for electricity production by the Group are uranium and coal.

TVO purchases the uranium fuel from the global markets. The purchasing process consists of four stages: purchase of uranium concentrate, conversion, enrichment and fuel fabrication. Purchasing Policy is used to guarantee the availability of fuel and to minimise price risk. This includes storage strategy and diversified long-term purchasing agreements with different suppliers.

TVO has not used commodity derivatives to hedge fuel price risk.

Capital risk management

TVO's objective is to secure sufficient equity and equity-like funding that guarantees diversified funding sources.

The equity ratio of the Company varies along investment cycles. The Group targets to have a minimum equity ratio (IFRS) of 25 per cent in the long-term. When calculating the equity ratio, the loan from the Finnish State Nuclear Waste Management Fund (lent further to the shareholders) and the provision related to nuclear waste management obligation are excluded. Additionally, subordinated loans or equivalent loans from the shareholders are regarded as equity.

According to the terms of some loan agreements, the Company is obliged to offer a repayment of the loan if TVO's equity ratio (IFRS) falls below 25 per cent. There are no other key ratio-related covenants in the loan contracts.

The equity ratio monitored by TVO's management	**2013**	2012
Equity ratio, % (IFRS, Group) 1)	**30,0**	28,1
Equity ratio, % (Parent company) 2)	**29,4**	28,5

1) Equity ratio % = 100 x	equity + loans from equity holders of the company / balance sheet total - provision related to nuclear waste management - loan from the Finnish State Nuclear Waste Management Fund
2) Equity ratio % = 100 x	equity + appropriations + loans from equity holders of the company / balance sheet total - loan from the Finnish State Nuclear Waste Management Fund

28 Events after the balance sheet date

TVO announced in February 2014 that it had not received the requested overall schedule update for the OL3 project from the Supplier. Therefore TVO does not provide an estimate of the start-up time of the plant unit at the moment. TVO has required the Supplier, who is in charge of the project schedule, to update the overall schedule and to provide a clarification of the measures needed to ensure proper progress to complete the plant unit. Information about the start-up date of electricity production of the OL3 plant unit is pending the finalization of the Supplier's schedule clarification.

Parent company's financial statements

Parent company's income statement

EUR 1 000	Note	**1 Jan-31 Dec 2013**	1 Jan-31 Dec 2012
Turnover	2	**362 806**	347 111
Work performed for own purpose	3	**14 781**	13 341
Other income	4	**11 812**	12 180
Materials and services	5	**-179 766**	-151 685
Personnel expenses	6	**-62 911**	-61 165
Depreciation and write-downs	7	**-52 824**	-53 148
Other expenses	8	**-85 205**	-93 676
Operating profit/loss		**8 693**	12 958
Financial income and expenses	9	**-8 077**	-12 094
Profit/loss before extraordinary items		**616**	864
Extraordinary items +/-	10	**67**	305
Profit/loss before appropriations and taxes		**683**	1 169
Appropriations	11	**-683**	-1 169
Profit/loss for the financial year		**0**	0

Parent company's balance sheet

EUR 1 000	Note		31 Dec 2013		31 Dec 2012
Assets					
Non-current assets					
Intangible assets	12		**9 451**		7 834
Tangible assets	12		**4 189 710**		3 942 570
Investments					
Holdings in group companies	13	**8**		237	
Holdings in joint ventures	13	**1 009**		1 009	
Other investments	13	**940 263**	**941 280**	890 738	891 984
Total non-current assets			**5 140 441**		4 842 388
Current assets					
Inventories	14		**243 091**		250 847
Long-term receivables	15		**45**		125
Current receivables	16		**45 943**		55 292
Cash and cash equivalents			**142 142**		134 759
Total current assets			**431 221**		441 023
Total assets			**5 571 662**		5 283 411
Equity and liabilities					
Equity					
Share capital	17		**606 193**		606 193
Share premium reserve	17		**232 435**		232 435
Statutory reserve	17		**9 948**		9 948
Retained earnings (loss)	17		**9 360**		9 360
Profit (loss) for the financial year	17		**0**		0
Total equity			**857 936**		857 936
Appropriations			**167 138**		166 455
Liabilities					
Non-current liabilities	18,19		**2 887 240**		2 766 449
Shareholders' loans	18		**339 300**		229 300
Loan from the Finnish State Nuclear Waste Management Fund	18		**931 725**		881 726
Current liabilities	20		**388 323**		381 545
Total liabilities			**4 546 588**		4 259 020
Total equity and liabilities			**5 571 662**		5 283 411

Parent company's cash flow statement

EUR 1 000	2013	2012
Operating activities		
Operating profit/loss	**8 693**	12 958
Adjustments to operating profit /loss 1)	**52 724**	53 166
Changes in working capital 2)	**21 194**	22 676
Interest paid and other financial expenses	**-29 213**	-40 852
Dividends received	**853**	760
Interest received	**25 327**	16 004
Cash flow from operating activities	**79 578**	64 712
Investing activities		
Acquisition of shares	**-6**	-4
Acquisition of non-current assets	**-302 917**	-310 038
Proceeds from sale of other investments	**314**	0
Proceeds from sale of intangible and tangible assets	**18**	39
Loan receivables granted	**-50 136**	-39 313
Repayments of loans granted	**390**	386
Cash flow from investing activities	**-352 337**	-348 930
Financing activities		
Withdrawals of long-term loans	**411 518**	814 176
Repayment of long-term loans	**-175 837**	-241 243
Increase (-) or decrease (+) in interest-bearing receivables	**73**	35
Increase (+) or decrease (-) in short-term interest-bearing liabilities	**44 024**	-258 845
Group contribution received	**305**	434
Cash flow from financing activities	**280 083**	314 557
Change in cash and cash equivalents	**7 324**	30 339
Cash and cash equivalents 1 Jan	**134 759**	104 420
Cash and cash equivalents received in merger	**59**	0
Cash and cash equivalents 31 Dec	**142 142**	134 759

1) Adjustments to operating profit/loss

Depreciation and write-downs	**52 824**	53 148
Gain (-) or loss (+) from divestment of non-current assets	**-100**	18
Total	**52 724**	53 166

2) Changes in working capital

Increase (-) or decrease (+) in inventories	**7 757**	-16 513
Increase (-) or decrease (+) in non-interest-bearing receivables	**-1 111**	23 781
Increase (+) or decrease (-) in short-term non-interest-bearing liabilities	**14 548**	15 408
Total	**21 194**	22 676

Notes to the parent company's financial statements

1 Accounting principles

Valuation principles

Non-current assets and their depreciation

Non-current assets have been capitalized at direct acquisition cost including interest costs over the period of construction less planned depreciation and received allowances. Depreciation according to plan is calculated on a straight-line basis according to the estimated useful economic lives.

The depreciation periods are as follows:

OL1 and OL2 nuclear power plant units:	
- Basic investment	61 years
- Investments made according to the modernization program	21–35 years
- Automation investments associated with the modernization	15 years
- Additional investments	10 years
TVO's share in the Meri-Pori coal-fired power plant:	
- Basic investment	25 years
- Additional investments	10 years
Wind power plant	10 years
TVO's share in the Olkiluoto gas turbine power plant	30 years

Valuation of inventories

Materials and supplies have been valued at direct acquisition cost, coal on the basis of the FIFO principle (first in, first out), nuclear fuel according to calculated fuel consumption, and supply stocks at average acquisition cost. If the replacement value of inventories on 31 December is lower than the original acquisition cost, the difference will not be entered in the books as an expense because the company operates at cost price.

CO_2 emission rights

Carbon dioxide (CO_2) emission rights are included in the intangible assets. Emission rights are recognized at historical cost. Gratuitous emission rights are assets not included in the balance sheet. The current liability for returning emission rights is recognized at the carrying value of possessed emission rights. If there is a shortfall, a current liability is recognized to cover the acquisition of the missing emission rights. This current liability is valued at the current market value of the emission rights at the balance sheet date. The cost of the emission rights is recognized in the income statement under costs of materials and services. The gains from the sales of emission rights are refunded to the equity holders of the company.

Research and development costs

Research and development costs associated with production activity are entered as annual costs for the year in which they were incurred.

Items denominated in foreign currency

Transactions in foreign currency have been entered at the relevant exchange rate or at the transaction rate for purchase and sale of foreign currency. On the balance sheet date exchange rate differences on foreign currency accounts have been entered in the income statement under financial income and expenses.

Money market instruments

Money market instruments comprise liquid shares in short-term money market funds and certificate of deposits. They are valued in the balance sheet at their original acquisition cost and are included in cash and cash equivalents in the cash flow statements.

Derivative financial instruments

Derivative financial instruments have not been entered on the balance sheet. Their nominal values and fair values are presented in the notes to the financial statements.

Interest rate duration of floating rate loans has been managed with interest rate swaps, caps and floors. Interest costs of these instruments have been entered on accrual basis and shown in net amount under financial income and expenses. The premiums on interest rate options have been accrued over the period to maturity.

Payments of foreign currency denominated inventory acquisitions have been hedged with currency derivatives. The realized exchange rate differences of derivative financial instruments have been entered to adjust the acquisition cost of inventories. Cross currency swaps have been used to hedge foreign currency denominated long term loans.

Items related to nuclear waste management liability

Nuclear waste management obligation is provided for in the Nuclear Energy Act. The obligation covers all future costs from nuclear waste handling including decommissioning of nuclear power plant units, costs for final disposal of spent nuclear fuel and the risk margin, decommissioning being assumed to start at the end of the year in question.

The Ministry of Employment and the Economy confirms annually at the end of the calendar year the liability for nuclear waste management for the current year and the target reserve for the next year.

The company liable for nuclear waste management shall pay its contribution to the Finnish State Nuclear Waste Management Fund so that the company's share in the Fund on 31 March is equal to the company funding obligation target confirmed for the calendar year in question.

The annual contribution to the Finnish State Nuclear Waste Management Fund and costs from nuclear waste management and services are entered as annual expenses. The nuclear waste management fee is based on the company's proposal. If the nuclear waste management fee set by the Finnish State Nuclear Waste Management Fund differs from the amount proposed by the company, the difference is entered in the accounts for the following financial year.

Nuclear waste management liability and the TVO's funding target obligation to the Finnish State Nuclear Waste Management Fund are presented in the notes to the financial statements.

The company must supply the Ministry with guarantees to cover for the difference between the legal nuclear waste management liability and the company´s share in the Finnish State Nuclear Waste Management Fund as well as for unforeseen expenses in nuclear waste management. Guarantees are presented in the notes to the financial statements.

A company, liable for nuclear waste management, or its shareholder, is entitled to a loan from the Finnish State Nuclear Waste Management Fund corresponding to 75 per cent of the company's share in the Fund. TVO uses the right to borrow back and loans the funds borrowed from the Fund further to its shareholders.

2 Turnover

EUR 1 000	**2013**	2012
Olkiluoto 1 and Olkiluoto 2	**322 449**	317 337
Meri-Pori	**40 357**	29 774
Total	**362 806**	347 111
Electricity delivered to equity holders of the company (GWh)		
Olkiluoto 1	**7 458**	6 935
Olkiluoto 2	**7 148**	7 441
Total Olkiluoto 1)	**14 606**	14 376
Meri-Pori	**725**	477
Total	**15 331**	14 853

1) Includes wind energy 1.0 (1.5 in 2012) GWh and energy produced by gas turbine 0.3 (0.3) GWh.

3 Work performed for own purpose

EUR 1 000	**2013**	2012
Personnel expenses related to OL3 and OL4	**14 781**	13 341

4 Other income

EUR 1 000	**2013**	2012
Rental income	**3 170**	3 029
Sales profit of tangible assets and shares	**102**	5
Sales of services	**8 327**	8 693
Other income	**213**	453
Total	**11 812**	12 180

5 Materials and services

EUR 1 000	**2013**	2012
Purchases, accrual basis		
Nuclear fuel	**56 476**	67 417
Coal	**8 012**	10 315
Materials and supplies	**2 875**	3 350
Increase (-) or decrease (+) in inventories	**7 757**	-16 513
Total	**75 120**	64 569
CO_2 emission rights	**2 687**	933
Nuclear waste management		
Contribution to the Finnish State Nuclear Waste Management Fund 1)	**57 109**	43 454
Nuclear waste management services	**32 188**	33 427
Total	**89 297**	76 881
External services	**12 662**	9 302
Total	**179 766**	151 685

1) Based on TVO's proposal. If the contribution confirmed by the Finnish State Nuclear Waste Management Fund for the year differs from the proposal, the difference will be booked in the following financial year.

Consumption		
Nuclear fuel	**48 216**	46 131
Coal	**24 344**	15 908
Materials and supplies	**2 560**	2 530
Total	**75 120**	64 569

6 Notes concerning personnel and members of administrative bodies

	2013	2012
Average number of personnel		
Office personnel	**736**	723
Manual workers	**154**	156
Total	**890**	879

Number of employees 31 Dec		
Office personnel	**712**	719
Manual workers	**140**	144
Total	**852**	863

EUR 1 000	2013	2012
Personnel expenses		
Wages and salaries	**51 667**	50 262
Pension expenses	**8 266**	8 113
Other compulsory personnel expenses	**2 978**	2 790
Total	**62 911**	61 165

Salaries and fees paid to management		
President and CEO deputy and members of the Board of Directors	**882**	831

Management pension plan

Some of the Executive Management have an option to retire at the age of 60, some at the age of 63.

7 Depreciation and write-downs

EUR 1 000	2013	2012
Depreciation according to plan		
Other capitalised long-term expenses	**1 306**	1 315
Buildings and construction	**10 036**	10 166
Machinery and equipment	**37 568**	37 885
Other tangible assets	**3 914**	3 782
Total	**52 824**	53 148

8 Other expenses

EUR 1 000	**2013**	2012
Maintenance services	**19 116**	20 056
Regional maintenance and service	**8 964**	8 971
Research services	**1 658**	2 994
Other external services	**24 052**	30 037
Real estate tax	**4 954**	4 665
Rents	**1 599**	1 614
ICT expenses	**4 508**	4 121
Personnel related expenses	**4 565**	4 823
Corporate communication expenses	**1 494**	1 881
Other expenses	**14 295**	14 514
Total	**85 205**	93 676

Auditors' fees and not audit-related services		
Audit fees	**88**	94
Other services	**59**	127
Total	**147**	221

9 Financial income and expenses

EUR 1 000	2013	2012
Dividend income		
From others	**853**	760
Total	**853**	760
Interest income on long-term investments		
From joint ventures	**78**	110
From others	**7 050**	13 804
Total	**7 128**	13 914
Other interest and financial income		
From others	**11 302**	528
Total	**11 302**	528
Interest income on long-term investments and other interest and financial income, total	**18 431**	14 442
Interest expenses and other financial expenses		
To the Finnish State Nuclear Waste Management Fund	**7 050**	13 804
To others	**156 514**	146 881
Capitalised interest costs	**-136 203**	-133 389
Total	**27 361**	27 296
Total financial income (+) and expenses (-)	**-8 077**	-12 094
Financial income and expenses include exchange rate gains (+) and losses (-) (net)	**-15**	38

10 Extraordinary items

EUR 1 000	2013	2012
Extraordinary income/Group contribution	**263**	305
Extraordinary expense/Loss on merger	**-196**	0
Total	**67**	305

11 Appropriations

EUR 1 000	2013	2012
The difference between depreciation according to plan and tax depreciation, increase (-) or decrease (+)	**-683**	-1 169

12 Non-current assets

EUR 1 000	Formation expenses	Intangible rights	Other capitalised long-term expenses	Advance payments	Total
Intangible assets					
Acquisition cost 1 Jan 2013	57 961	716	42 019	0	100 696
Increase	0	2 904	951	0	3 855
Decrease	0	-933	0	0	-933
Transfer between categories	0	0	0	0	0
Acquisition cost 31 Dec 2013	57 961	2 687	42 970	0	103 618
Accumulated depreciation according to plan 1 Jan	57 961	0	34 900	0	92 861
Accumulated depreciation from deduction	0	0	0	0	0
Depreciation according to plan	0	0	1 306	0	1 306
Book value 31 Dec 2013	**0**	**2 687**	**6 764**	**0**	**9 451**
Accumulated depreciation difference 1 Jan	0	0	6 054	0	6 054
Change in depreciation difference	0	0	-881	0	-881
Accumulated depreciation difference 31 Dec	0	0	5 173	0	5 173
Undepreciated acquisition cost in taxation 31 Dec 2013	0	2 687	1 591	0	4 278

EUR 1 000	Land and water areas	Buildings and construction	Machinery and equipment	Other tangible assets	Construction in progress and advance payments	Total
Tangible assets						
Acquisition cost 1 Jan 2013	11 507	283 152	1 324 676	52 718	3 390 103	5 062 156
Increase	471	352	6 064	753	291 022	298 662
Decrease	0	-687	-2 979	0	0	-3 666
Transfer between categories	0	0	8 046	0	-8 046	0
Acquisition cost 31 Dec 2013	11 978	282 817	1 335 807	53 471	3 673 079	5 357 152
Accumulated depreciation according to plan 1 Jan	0	203 846	887 060	28 680	0	1 119 586
Accumulated depreciation from deduction	0	-687	-2 975	0	0	-3 662
Depreciation according to plan and write-downs	0	10 036	37 568	3 914	0	51 518
Book value 31 Dec 2013	**11 978**	**69 622**	**414 154**	**20 877**	**3 673 079**	**4 189 710**
Accumulated depreciation difference 1 Jan	0	6 132	153 359	910	0	160 401
Change in depreciation difference	0	-4 206	5 459	311	0	1 564
Accumulated depreciation difference 31 Dec	0	1 926	15 818	1 221	0	18 965
Undepreciated acquisition cost in taxation 31 Dec 2013	11 978	67 696	255 336	19 656	3 673 079	4 027 745

Share of machinery and equipment from book value 31 Dec 2013	396 034
Share of machinery and equipment from book value 31 Dec 2012	419 952

Capitalised borrowing costs included in non-current assets

EUR 1 000	Formation expenses	Other capitalised long-term expenses	Buildings and construction	Machinery and equipment	Other tangible assets	Construction in progress	Total
Interest during construction period							
Acquisition cost 1 Jan 2013	11 601	3 530	31 133	112 781	2 609	667 820	829 474
Increase	0	0	0	0	0	133 033	133 033
Acquisition cost 31 Dec 2013	11 601	3 530	31 133	112 781	2 609	800 853	962 507
Accumulated depreciation according to plan 1 Jan	11 601	2 621	22 232	80 686	1 857	0	118 997
Depreciation according to plan	0	107	444	1 693	33	0	2 277
Book value 31 Dec 2013	**0**	**802**	**8 457**	**30 402**	**719**	**800 853**	**841 233**
Accumulated depreciation difference 1 Jan	0	909	8 901	32 095	752	0	42 657
Change in depreciation difference	0	-107	-444	-1 693	-33	0	-2 277
Accumulated depreciation difference 31 Dec	0	802	8 457	30 402	719	0	40 380
Undepreciated acquisition cost in taxation 31 Dec 2013	0	0	0	0	0	800 853	800 853

13 Investments

EUR 1 000	Holdings in group companies	Holdings in joint ventures	Other stocks and shares	Loan receivables, joint ventures	Loan receivables, others	Total
Acquisition cost 1 Jan 2013	237	1 009	4 892	3 614	882 231	891 983
Increase	0	0	15	133	49 999	50 147
Decrease	-229	0	-230	-391	0	-850
Acquisition cost 31 Dec 2013	8	1 009	4 677	3 356	932 230	941 280
Book value 31 Dec 2013	**8**	**1 009**	**4 677**	**3 356**	**932 230**	**941 280**

Loan from the Finnish State Nuclear Waste Management Fund lent further to the equity holders of the company	**931 725**	**931 725**

Group companies	Group share (%)
TVO Nuclear Services Oy, Eurajoki	100

Joint ventures	Holding of the parent company (%)
Posiva Oy, Eurajoki	60

14 Inventories

EUR 1 000	2013	2012
Coal		
Replacement cost	**21 767**	35 779
Book value	**29 108**	45 440
Difference	**-7 341**	-9 661
Raw uranium and natural uranium		
Replacement cost	**65 277**	92 839
Book value	**51 198**	49 710
Difference	**14 079**	43 129
Coal	**29 108**	45 440
Raw uranium and natural uranium	**51 198**	49 710
Nuclear fuel	**156 723**	149 951
Supplies	**6 062**	5 746
Total	**243 091**	250 847

15 Long-term receivables

EUR 1 000	2013	2012
Loan receivables from group companies	**0**	7
Loan receivables from others	**45**	118
Total	**45**	125

16 Current receivables

EUR 1 000	2013	2012
Receivables from group companies		
Loan receivables	**0**	4
Accrued income	**1 323**	1 305
Total	**1 323**	1 309
Receivables from joint ventures		
Trade receivables	**11**	0
Interest receivables	**1**	1
Loan receivables	**390**	386
Prepayments and accrued income	**991**	463
Total	**1 393**	850
Receivables from others		
Trade receivables	**8 451**	12 588
Other receivables	**6 160**	816
Total	**14 611**	13 404
Prepayments and accrued income		
Prepaid interests	**19 605**	21 623
Accrued interest income	**7 464**	15 876
Other accrued income	**1 547**	1 802
Other prepaid expenses	**0**	428
Total	**28 616**	39 729
Total	**45 943**	55 292

17 Equity

EUR 1 000	2013	2012
Share capital 1 Jan 2013	**606 193**	606 193
Share capital 31 Dec 2013	**606 193**	606 193
Share premium reserve 1 Jan 2013	**232 435**	232 435
Share premium reserve 31 Dec 2013	**232 435**	232 435
Statutory reserve 1 Jan 2013	**9 948**	9 948
Statutory reserve 31 Dec 2013	**9 948**	9 948
Retained earnings/loss 31 Dec 2013	**9 360**	9 360
Profit/loss for the financial year	**0**	0
Total	**857 936**	857 936

18 Non-current liabilities

EUR 1 000	2013	2012
Bonds	**2 150 997**	1 984 830
Bank loans	**512 566**	557 942
Other loans	**223 677**	223 677
Shareholders' loans 1)	**339 300**	229 300
Loan from the Finnish State Nuclear Waste Management Fund 2)	**931 725**	881 726
Total	**4 158 265**	3 877 475

1) Subordinated loans.
2) Lent further to the shareholders.

BONDS

Euro Medium Term Note Programme EUR 3.500.000.000

Currency	Capital	Maturity date	EUR 1 000 2013	EUR 1 000 2012
EUR	750 000	27 June 2016	**750 000**	750 000
EUR	500 000	4 Feb 2019	**500 000**	500 000
EUR	30 000	9 May 2022	**30 000**	30 000
EUR	100 000	12 Sep 2022	**100 000**	100 000
EUR	23 000	1 Dec 2022	**23 000**	23 000
EUR	75 000	14 Dec 2027	**75 000**	75 000
EUR	20 000	8 Nov 2032	**20 000**	20 000
EUR	23 000	3 May 2030	**23 000**	0
NOK	550 000	22 Feb 2017	**63 218**	63 218
SEK	100 000	20 Jan 2015	**9 794**	9 794
SEK	320 000	20 Jan 2015	**31 342**	50 931
SEK	0		**0**	21 186
SEK	210 000	12 Feb 2015	**20 751**	49 407
SEK	500 000	12 Feb 2015	**51 546**	51 546
SEK	147 000	23 June 2015	**15 297**	31 218
SEK	650 000	28 Mar 2017	**63 601**	63 601
SEK	300 000	28 Mar 2017	**33 899**	33 899
SEK	500 000	8 Nov 2017	**53 763**	53 763
SEK	875 000	13 Sep 2018	**99 977**	0
SEK	1 125 000	13 Sep 2018	**128 542**	0
SEK	600 000	30 Oct 2019	**58 267**	58 267
Total			**2 150 997**	1 984 830

OTHER LOANS

US Private Placements

Currency	Capital	Maturity date	EUR 1 000 2013	EUR 1 000 2012
USD	55 000	19 Aug 2018	**53 111**	53 111
GBP	35 336	19 Aug 2018	**35 336**	35 336
USD	50 000	26 Aug 2020	**39 557**	39 557
USD	50 000	26 Aug 2020	**39 557**	39 557
GBP	50 000	15 Nov 2022	**56 116**	56 116
Total			**223 677**	223 677

19 Debts due in more than five years

EUR 1 000	**2013**	2012
Debts due in more than 5 years	**1 483 861**	1 533 720

20 Current liabilities

EUR 1 000	**2013**	2012
Liabilities from joint ventures		
Trade payables	**0**	7
Accruals	**10**	63
Total	**10**	70
Liabilities from others		
Advances received	**21 364**	23 382
Trade payables	**11 868**	10 843
Total	**33 232**	34 225
Interest-bearing liabilities		
Bank loans	**45 376**	90 485
Interest-bearing liabilities	**154 715**	110 690
Total	**200 091**	201 175
Accruals and deferred income		
Finnish State Nuclear Waste Management Fund	**57 380**	43 400
Accrued interests	**59 225**	66 192
Accrued personnel expenses	**16 380**	15 809
Accruals related to CO_2 emission rights	**2 687**	933
Other accruals and deferred income	**19 318**	19 741
Total	**154 990**	146 075
Total	**388 323**	381 545

21 Distributable equity

EUR 1 000	2013	2012
Retained earnings	**9 360**	9 360
Profit/loss for the financial year	**0**	0
Total	**9 360**	9 360

22 Commitments

EUR 1 000	2013	2012
Leasing liabilities		
Leasing liabilities falling due in less than a year	**2 039**	2 378
Leasing liabilities falling due later	**61 261**	65 568
Total	**63 300**	67 946

TVO has the right to redeem the lease object for EUR 42.7 million in 2025.

Nuclear waste management

Liability for nuclear waste management according to the Nuclear Energy Act [1)]	**1 317 800**	1 242 300
TVO's funding target obligation 2014 (2013) to the Finnish State Nuclear Waste Management Fund	**1 310 400**	1 242 300
Collateral for nuclear waste management contingencies	**153 160**	147 610
Nuclear waste management loan receivables pledged to the Finnish State Nuclear Waste Management Fund	**931 725**	881 726

[1)] Based on the nuclear waste management programme and proposal for the liability made by the Company and which is to be confirmed by the Ministry of Employment and the Economy at the end of the year.

Pending Court Cases and Disputes

See note 25 Obligations and other commitments in the consolidated financial statements.

23 Derivative financial instruments

EUR 1 000	**2013**	2012
Interest rate derivatives		
Interest rate swaps (nominal value)	**1 001 446**	1 081 446
Fair value	**-13 220**	-32 291
Forward foreign exchange contracts		
Forward foreign exchange contracts (nominal value)	**211 607**	149 778
Fair value	**-4 397**	5 953
Currency options, purchased		
Fair value	**-35**	0
Currency options, written		
Fair value	**12**	0
Cross-currency swaps		
Cross-currency swaps (nominal value)	**853 674**	710 507
Fair value	**36 028**	80 285

24 Series of shares

Share capital and series of shares

	Number	Number	EUR 1 000	EUR 1 000
	2013	2012	**2013**	2012
A-series - OL1 and OL2				
1 Jan	**680 000 000**	680 000 000	**115 600**	115 600
Change	**0**	0	**0**	0
31 Dec	**680 000 000**	680 000 000	**115 600**	115 600
B-series - OL3				
1 Jan	**680 000 000**	680 000 000	**484 765**	484 765
Change	**0**	0	**0**	0
31 Dec	**680 000 000**	680 000 000	**484 765**	484 765
C-series - TVO's share in the Meri-Pori coal-fired power plant				
1 Jan	**34 283 730**	34 283 730	**5 828**	5 828
Change	**0**	0	**0**	0
31 Dec	**34 283 730**	34 283 730	**5 828**	5 828
Total	**1 394 283 730**	1 394 283 730	**606 193**	606 193

According to the Articles of Association, TVO delivers electricity to its shareholders on the so-called Mankala principle, i.e. it delivers the electricity produced or procured to its shareholders in proportion to their shareholding in each series. Each of the shareholders of each series is liable for the variable and fixed annual costs that are specified in detail in the Articles of Association. The Company prepares annually a balance sheet divided into series of shares. The balance sheet, which will be presented to the Shareholders' Meeting, specifies the assets, liabilities and equity of the different series of shares.

25 Carbon dioxide emission rights

In principle TVO has, on 31 December, emission rights at least the same amount as the actual annual emissions are. If the actual emissions exceed the amount of the emission rights that company possesses, the company has booked the expense for exceeding emission rights at the market value on 31 December.

	2013 t CO_2	EUR 1 000	2012 t CO_2	EUR 1 000
Granted emission rights	**0**		296 281	
Total annual emissions from production facilities	**592 448**		400 221	
Possessed emission rights	**597 125**		402 310	
Emission rights sold 1)	**0**	**0**	75 000	525
Emission rights and emission right reductions bought 2)	**595 000**	**2 687**	175 000	933

TVO is, based on the electricity production during 2000 - 2003 of TVO's share in the Meri-Pori coal-fired power plant, entitled to a corresponding share of gratuitous emission rights. TVO is responsible for the amount of emission rights corresponding to its share of the production of the plant.

1) The sales of the emission rights are included in turnover.
2) The purchases of the emission rights and emission right reductions are included in materials and services. The emission rights that company possesses on 31 December are included in intangible rights on the balance sheet and emission right reductions.

Proposals to the Annual General Meeting

Teollisuuden Voima Oyj's distributable equity as of December 31, 2013 amounted to EUR 9,360,000. The Board of Directors proposes to the Annual General Meeting that no dividend shall be paid.

Signatures for the report of the Board of Directors and financial statements

Helsinki, February 26, 2014

Lauri Virkkunen	Matti Ruotsala
Hannu Anttila	Jukka Hakkila
Tapio Korpeinen	Pekka Manninen
Markus Rauramo	Juha Taavila
Tiina Tuomela	Rami Vuola

Jarmo Tanhua
President and CEO

The Auditor's Note

Our auditor's report has been issued today.

Helsinki, February 26, 2014

PricewaterhouseCoopers Oy
Authorised Public Accountants

Jouko Malinen
Authorised Public Accountant

Auditor's report

(Translation from the Finnish Original)

To the Annual General Meeting of Teollisuuden Voima Oyj

We have audited the accounting records, the financial statements, the report of the Board of Directors and the administration of Teollisuuden Voima Oyj for the year ended 31 December, 2013. The financial statements comprise the consolidated statement of financial position, income statement, statement of comprehensive income, statement of changes in equity and statement of cash flows, and notes to the consolidated financial statements, as well as the parent company's balance sheet, income statement, cash flow statement and notes to the financial statements.

Responsibility of the Board of Directors and the Managing Director

The Board of Directors and the Managing Director are responsible for the preparation of consolidated financial statements that give a true and fair view in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU, as well as for the preparation of financial statements and the report of the Board of Directors that give a true and fair view in accordance with the laws and regulations governing the preparation of the financial statements and the report of the Board of Directors in Finland. The Board of Directors is responsible for the appropriate arrangement of the control of the company's accounts and finances, and the Managing Director shall see to it that the accounts of the company are in compliance with the law and that its financial affairs have been arranged in a reliable manner.

Auditor's Responsibility

Our responsibility is to express an opinion on the financial statements, on the consolidated financial statements and on the report of the Board of Directors based on our audit. The Auditing Act requires that we comply with the requirements of professional ethics. We conducted our audit in accordance with good auditing practice in Finland. Good auditing practice requires that we plan and perform the audit to obtain reasonable assurance about whether the financial statements and the report of the Board of Directors are free from material misstatement, and whether the members of the Board of Directors of the parent company or the Managing Director are guilty of an act or negligence which may result in liability in damages towards the company or whether they have violated the Limited Liability Companies Act or the articles of association of the company.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements and the report of the Board of Directors. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation of financial statements and report of the Board of Directors that give a true and fair view in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the company's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements and the report of the Board of Directors.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion on the Consolidated Financial Statements

In our opinion, the consolidated financial statements give a true and fair view of the financial position, financial performance,

and cash flows of the group in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU.

Opinion on the Company's Financial Statements and the Report of the Board of Directors

In our opinion, the financial statements and the report of the Board of Directors give a true and fair view of both the consolidated and the parent company's financial performance and financial position in accordance with the laws and regulations governing the preparation of the financial statements and the report of the Board of Directors in Finland. The information in the report of the Board of Directors is consistent with the information in the financial statements.

Other Opinions

We support that the financial statements and the consolidated financial statements should be adopted. We support that the Members of the Board of Directors and the Managing Director of the parent company should be discharged from liability for the financial period audited by us.

Helsinki, 26 February, 2014

PricewaterhouseCoopers Oy
Authorised Public Accountants

Jouko Malinen
Authorised Public Accountant

Financial information in 2014

Teollisuuden Voima Oyj will publish the interim reports in 2014 as follows:

Interim Report for January–March 2014 on April 25, 2014

Interim Report for January-June 2014 on July 17, 2014

Interim Report for January–September 2014 on October 20, 2014