

The background features a large, abstract graphic composed of several overlapping circles in shades of blue, teal, and green. To the right of these circles, there is a series of concentric, curved lines that create a sense of depth and movement, resembling a stylized wave or a series of ripples. The overall design is clean and modern.

Corporate Social Responsibility 2012

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RESPONSIBLE LEADERSHIP

TVO BELIEVES IN VOLUNTARY CORPORATE SOCIAL RESPONSIBILITY THAT SUPPORTS ITS 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 2012 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

TVO's mission is the safe, economical, and environmentally benign generation of electricity for the needs of Finnish society. We are part of the Finnish well-being chain with our social responsibility commitment: well-being from nuclear energy.

For TVO, 2012 was a year of major modernization and construction projects at Olkiluoto. Design and preparations for the new OL4 nuclear power plant unit also took place at the same time. We engaged in the active development of our corporate responsibility procedures, which are closely connected with our business operations.

Focus on safe production operations and personnel

The safe production of nuclear energy continues to be our most important responsibility by far. Each day is filled with diligent work towards this end by TVO's people, with no compromises. At TVO, the safe production of nuclear energy is not merely a matter of equipment and technology, but first and foremost of competent personnel who have the right attitude. Commitment to and maintenance of a high safety culture – together with long-term work for the environment – is something all TVO people take pride in.

We are going through great changes. Our large investment projects have increased the number of our personnel by nearly 50% in a few short years. We now have a situation where 40% of our staff have been with us for less than five years, and nearly half of us are under the age of 40. To

ensure the continued achievement of our business objectives also in the future, it is self-evident that our work in the area of social responsibility will include good HR management, building the competence of our personnel, and the management of well-being at work.

New code of conduct adopted

In 2012, we promoted our shared responsibility objectives through the adoption of a code of conduct. The code of conduct aims to ensure that all TVO employees see eye to eye on our basic ethical principles and what is good for the company. We are all entitled to a safe working place with predictable and fair operations. Training on the new code of conduct began at the start of 2013, and we aim to provide training for the majority of staff by the end of the year.

Launch of management, planning, and development projects

In fall 2012, we launched several projects related to the management, planning, and development of our operations. A large number of TVO people from various branches of the organization participate in the process. We aim to standardize our operations with the objective of improving their efficiency. A shared framework will also provide a clear and fair management system.

In a nuclear power company, social responsibility must be integrated into all aspects of operation, development, and management. Responsibility is one of our values, observed by all of our personnel.

Jarmo Tanhua
President and CEO

Operating environment

In 2012, the consumption of electricity in Finland totaled 85.2 TWh. Compared to the previous year, consumption increased by 11%. Domestic production accounted for a smaller share of the consumption than before. The share of imported electricity climbed to a record figure of 21%. The warm weather decreased the volume of the generation of combined heat and power to 26.8%. The production of nuclear energy amounted to 22.1 TWh, which accounted for 25.9% of consumption.

*Total consumption of electricity in Finland 2012**

*Purchases of electricity in Finland by energy source 2012**

*Net purchases of electricity in Finland 2012**

*Production of electricity in Finland 2012**

*The share of TVO's production of the electricity consumed in Finland from 2008 to 2012**

*Power deliveries to shareholders**

Strategic objectives

TVO's strategy is based on its vision, mission, values, and major success factors. The vision, mission and major success factors give a direction to all our operations. Values and the high 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 reasonably priced, safe and environmentally benign electricity. The electricity produced at Olkiluoto benefits the whole of Finland, as the owners of TVO, Finnish industries and power utilities with 133 municipalities behind them, receive electricity from TVO at cost price.

TVO believes in voluntary corporate social responsibility that supports its business operations and is based on TVO's values, targets, and corporate social responsibility policy as well as legislation and stakeholder expectations. Responsibility is a part of our company strategy and everyday operations. As a value behind the work of every TVO employee, it means uncompromising quality, adherence to the strictest safety requirements, and compliance with shared and valid rules and regulations. TVO's personnel are committed to a high safety culture, valued by us all.

The Management Group is responsible for the strategic ob-

jectives and planning of TVO's corporate social responsibility. In the Management Group, the SVP responsible for corporate relations presents issues related to the development, monitoring or 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. 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. In 2012, the Corporate Social Responsibility Group met five times.

Launch of management, planning, and development projects

In fall 2012, several projects concerning the management, planning and development of operations were launched with the aim of focusing the company's the strategy and business model and developing the setting, monitoring, and measuring of HR goals. Practical implementation of the strategy is another important objective.

The work 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 participate in the process. Other development projects currently active at TVO include the development of risk management and processes as well as the work based on the results of the personnel survey. The new code of conduct currently being implemented will also create a basis for a new operational culture based on a shared framework.

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 a conflict of interests. TVO's company-level policies define all the central aspects of social responsibility.

Risk management

The purpose of risk management is to support the achievement of objectives, prevent the realization of risks, lower the probability of their adverse impact, and to mitigate that impact. At TVO, risk management is monitored by the Board of Directors, which also confirms the principles of the work.

Management system

Our vision, mission, and major success factors give direction to all of our operations. TVO uses an activity based management system as a tool to support 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 procedures described within the activity based management system direct the work of all TVO employees and partners working at Olkiluoto. The procedures are based on TVO's mission, values, and company-level policies.

TVO's activity based management 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 is 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 14 Management systems for nuclear facilities, Quality management system ISO 14001:2004, EMAS
- 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 safety, rescue and preparedness operations, and information security).

Code of Conduct

TVO operates in a responsible, transparent, and proactive manner, and continuously improves its operations. A Code of Conduct was introduced in 2012 to strengthen the social responsibility aspect of operations. The ethical principles were revised to reflect the 2011 update of the OECD Guidelines for Multinational Enterprises 2011. A draft of the Code of Conduct was discussed at a meeting of the Management Group on June 11, 2012, and presented in a co-determination meeting that took place from August 9 to 11, 2012. The Code of Conduct was approved by the Board of Directors on September 28, 2012, and adopted on February 1, 2013.

The Corporate Social Responsibility Group, which met five times during the year, discussed the content of the Code of Conduct, how compliance would be monitored, and methods of practical implementation among the personnel. The group appointed a smaller working group to manage the process. Personnel was informed via an internal blog entry by the CEO, and in an internal briefing. The Code of Conduct was distributed to the entire personnel in January 2013. Related training was launched at the same time. The aim is to have most of the personnel trained by the end of 2013.

The Code of Conduct, based on TVO's values, 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. The Code of Conduct 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. Suppliers and subcontractors will be informed of the Code of Conduct during 2013 and will be expected to commit to it by the end of the year.



SAFETY

THE SAFE OPERATION OF THE OLKILUOTO NUCLEAR POWER PLANT IS BASED ON HIGH-QUALITY POWER PLANT ENGINEERING, 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 2012 REPORT INCLUDES A DESCRIPTION OF TVO'S SAFETY CULTURE AND ITS DEVELOPMENT, AS WELL AS A REPORT ON SPECIAL EVENTS.

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.

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 a high standard of 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 things went as they should. 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.

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". The 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. The related official instructions are being revised. Modifications to improve safety have already been done, and more are being implemented and planned. At the end of 2012, STUK prepared a national action plan based on the results of the safety assessments. For more information, see the STUK website at www.stuk.fi/ydinturvallisuus.

EU stress tests and their results

In spring 2011, the European Council decided to carry out a risk and safety assessment, or a "stress test", of all European nuclear power plants. The nuclear power plants submitted their own reports to the national radiation safety authorities at the end of October, and STUK sent Finland's national report to the EU Commission at the end of December 2011.

The purpose of the assessment was to establish what precautions nuclear power plants have taken regarding earthquakes, floods, and extreme weather conditions. The consequences of a simultaneous failure of safety systems of the nuclear power plants, as well as their preparedness for serious accidents, were also assessed.

In spring 2012, the ENSREG expert group that compiled the final report for the stress tests 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. National action plans will be processed at an ENSREG meeting in April 2013. Representatives of power companies may also be present when the plan is processed.

Special events

Reporting of special events

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 for safety.

In 2012, two INES 1 events (anomalies with a safety impact) occurred at the Olkiluoto nuclear power plant. These concerned deviations in the control circuits of isolation valves detected in the tests carried out during the annual outage. Four events classified as INES 0 (no nuclear or radiation safety significance) also took place in 2012. All events will be examined and the necessary corrective measures will be carried out. TVO has reported all INES events on its web site in the News section.

Several events related to the isolation of systems have been identified during the latest annual outages. These events have been analyzed and corrective measures defined in order to prevent similar occurrences in the future. A root cause overview was prepared for these events with the aim of identifying any deficiencies in TVO's operations and defining corrective and preventive measures based on the deficiencies to prevent the recurrence of these events.

TVO processes all operational events that take place at the Olkiluoto nuclear power plant, and follows the events at other nuclear power plants around the world. Operations are continuously developed based on the observations made of such events.

In case of special events and operating transients, TVO submits separate case-specific reports to STUK.

*INES scale**



URANIUM FROM BEDROCK TO BEDROCK

THE SAFE USE OF URANIUM IS ENSURED AT ALL STAGES OF THE POWER PRODUCTION CHAIN, FROM THE PROCUREMENT OF RAW MATERIAL TO THE FINAL DISPOSAL OF SPENT FUEL.

THE URANIUM FROM BEDROCK TO BEDROCK THEME OF THE CORPORATE SOCIAL RESPONSIBILITY 2012 REPORT INCLUDES THE FOLLOWING SECTIONS: PROCUREMENT OF URANIUM; CASE: RIO TINTO URANIUM MINE; PRODUCTION OF ELECTRICITY AT OLKILUOTO 1 AND OLKILUOTO 2; PROGRESS OF THE OLKILUOTO 3 AND OLKILUOTO 4 PROJECTS; FINAL DISPOSAL OF SPENT NUCLEAR FUEL; MULTIPLE BARRIER PRINCIPLE; NUCLEAR WASTE MANAGEMENT, AND FINNISH STATE NUCLEAR WASTE MANAGEMENT FUND.

Procurement of uranium

From responsible partners only

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 2011) 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 licences 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.

Procurement of uranium in 2012

In 2012, TVO spent EUR 67 (2011: 50) million on the procurement of uranium fuel. The OL1 and OL2 plant units require approximately 40 tonnes of uranium fuel per year. At the end of 2012, the value of TVO's nuclear fuel stock stood at EUR 200 (178) million.

*Olkiluoto nuclear power plant's environmental balance sheet 2012**

Case: Rio Tinto's uranium mine

Benefits to local people

Rio Tinto is one of the world's largest mining corporations. In Namibia, it is an important employer of local people and source of regional development. Rio Tinto also supplies uranium to TVO.

The surface area of Namibia, located in south-east Africa, is some 820,000 km², more than two and a half times that of Finland; however, Namibia has a population of only slightly over two million. The economy is highly dependent on mining operations, which yield more than half of the country's export income.

Rio Tinto opened the Rössing uranium mine in Namibia in 1978. Rössing is located in Erongo region, in the middle of the Namib desert. The mine directly employs approximately 1,600 people, with around 1,000 subcontractor employees working at the site on a daily basis. The mine produces more than 2,000 tonnes of uranium per year. More than 98% of the employees at Rössing are Namibian.

A foundation to help and support development

The Rössing Uranium mining company built the town of Arandis, located only 12 kilometers from the mine, for the employees and their families to live in. In 1978, the company also established the Rössing Foundation to implement development programs to benefit local people.

The operations of the foundation are based on the principle of creating permanent benefit for the local people through mining operations. The aim is to help local people help themselves. The Rössing Foundation has promoted local businesses and helped adopt sustainable farming methods, and has launched and maintains teaching programs in mathematics, biology, chemistry, physics, and the English language, among other subjects. The craft center established in Arandis has also yielded excellent results. The center encourages women in particular to make use of their traditional handicraft skills. The creation of markets for the center's products has been an important part of the operations. Currently, the center has more than 30,000 visitors each year, creating an abundant clientele for the products.

The greatest challenge for the future lies in making these achievements permanent and ensuring successful business in the area after the mining operations come to a close. In the long term, the foundation plans to transfer the administration of the town of Arandis over to local people. Development of the administration and building stronger and more varied administrative expertise among local people is of primary importance for the achievement of this goal.

Nuclear power plant

The second best production output in plant history

TVO produces electricity at Olkiluoto, Eurajoki, with two plant units, Olkiluoto 1 and 2 (OL1 and OL2). Both have been in production operation for over 30 years. The plant units operated safely for the entire year.

The production output for 2012 was the second best in the history of the Olkiluoto nuclear power plant, reaching 1445 TWh (billion kWh) of electricity. The combined load factor of the plant units was 93.7%. Olkiluoto accounted for approximately 17% for all the electricity produced in Finland.

OL2 achieved its best production output so far at 748 TWh.

The load factor of OL2, 96.9%, was also the best in the plant unit's history. Production at OL1 was cut back by a generator breakdown in the spring. The annual outage was brought forward as a result. Despite these challenges, the load factor of OL1 reached 90.4% with a production output of 6.97 TWh.

On April 20, 2012, the Olkiluoto nuclear power plant crossed the record limit of 400 TWh of electricity produced.

*TVO power production 2008–2012**

*Production hours in 2012**

*Production in 2012**

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. Upgrades implemented between 2010 and 2012 further improved the nuclear power plant's safety, and the improved efficiency of the turbine islands increased the net electrical output of both plant units by around 20 megawatts. Both plant units now have a rated net electrical output of 880 MW, while the original output was 660 MW. TVO continues to plan and implement safety improvements within projects such as the "stress tests" carried out for nuclear power plants throughout the EU.

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 already achieved its own objective, savings of 340 GWh of electricity, by the end of 2011.

Annual outage with refueling and maintenance

The Olkiluoto nuclear power plant is constantly kept as good as new 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 2012 annual outages at the Olkiluoto nuclear power plant began already in April. The exception was due to moisture detected in the OL1 generator on April 24. The outages were completed on June 6, when OL2 was brought back online. During the 2012 outage, the OL1 generator was replaced according to the original plan. Other major tasks carried out at OL1 included modification of LP turbines' discharge sides, modernization of the condensate purification system I&C, a containment leak test and replacing an auxiliary transformer. The annual outage of OL1 took a little over 31 days. After the completion of the actual annual outage, valve repair prevented the startup of the plant unit for another day. Only a brief refueling outage was performed at OL2. In addition to refueling, it mostly entailed inspections and tests. The annual outage of OL2 took a little over nine days. Both plant units have operated reliably since the annual outages.

In addition to TVO's employees, a maximum of 997 people employed by contractors participated in the annual outages simultaneously. Of these employees, 887 were Finnish.

Olkiluoto 3

TVO is currently building a third plant unit, OL3, at Olkiluoto. The OL3 site is a major international project that gives us an opportunity to contribute to the creation of international trends for the future of nuclear power construction. Most of the construction work has been completed, and the main components are in place. The I&C design work for the nuclear island, pipework and electrical installations, and pressure tests continued. Commissioning of the nuclear island electricity distribution system began. Process system commissioning tests also continued at the turbine island.

The work proceeds despite delays. Based on information received from the plant supplier, TVO estimated during the reporting period that regular production of electricity will not begin at the plant unit in 2014. After the reporting period, TVO announced that the launch of commercial operations may have to be postponed to 2016.

TVO requires Finnish law and terms of employment to be observed at the OL3 site. TVO allows no exceptions from legal obligations in its own operations, and requires the same from all companies with operations at Olkiluoto. TVO fully bears its own responsibility at the OL3 plant unit site, constructed by applying the turnkey principle, and takes an extremely serious attitude to all claims related to compliance with laws and regulations or the terms of contracts or agreements. TVO has worked systematically to eradicate the gray economy by requiring the plant supplier and subcontractors to observe, among other things, the laws and regulations governing taxation and working hours, as well as union contracts.

Compliance is continuously monitored. There are several alternative channels available at the site for reporting any deficiencies or for expressing concerns to TVO. If TVO learns of any suspected failures to observe regulations, TVO will report them 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. Authorities can be granted permanent access permits to the OL3 site, enabling unannounced inspections. TVO actively cooperates with the authorities and regularly submits information on the people working at the site and their employers.

TVO is involved in a cooperation team coordinated by the Employment and Economic Development Office of Rauma, with the representatives of various authorities discussing current issues related to the OL3 project and possible methods of advancing official procedures. The team includes representatives from 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.

In fall 2012, TVO began the gradual implementation of tax numbers, with changes valid in access cards starting from January 1, 2013. The change applies to more than 5,000 people working at Olkiluoto. Training sessions were organized at Olkiluoto together with tax administration and the Finnish Centre for Pensions to provide information on the new system. In addition, the tax administration made a representative regularly available at Olkiluoto for questions.

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 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. During this phase, the prerequisites will be created for TVO to apply for a construction license from the Government. This phase also includes a competitive bidding process where a safe plant unit, fulfilling all the latest requirements, will be selected.

In 2012, TVO continued to investigate the licensing potential and suitability of the power plant alternatives together with the potential plant suppliers. TVO launched the competitive bidding for the OL4 project in March 2012.

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 organic nature or people. 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.

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 around 2020; it will continue for nearly 100 years.

In Olkiluoto, Posiva Oy is currently constructing ONKALO, an underground facility for research into the final disposal of spent nuclear fuel. The research tunnel ONKALO has helped Posiva gain information on the bedrock in Olkiluoto and of its suitability for the safe disposal of spent nuclear fuel. The excavation of the research tunnel was completed in 2012. The excavation of two characterization tunnels at the final repository depth were completed and accepted in 2012. The purpose of the characterization tunnels is to prove Posiva's ability to build and excavate actual final repository tunnels, to drill disposal holes, and to determine the best location for the tunnels and holes to ensure the safe disposal of nuclear materials.

Posiva submitted a construction license application on the repository for spent nuclear fuel to the Finnish Government on December 28, 2012.

Multiple barrier principle

Final disposal based on the multiple barrier principle

The purpose of final disposal of spent fuel is to isolate the radioactive fuel permanently from organic nature so that the

radioactivity contained in the waste cannot affect the natural environment.

When removed from the reactor, spent uranium fuel is radioactive and generates heat. Water is a good coolant and provides efficient radiation protection. The spent fuel removed from the reactor is first stored and cooled in the reactor hall water pools for a few years before moving it to the interim storage. In the water pools of the interim storage facility, the activity of the fuel decreases, and the fuel continues to cool down. The multiple safety systems of the interim storage facility are independent of each other and correspond to those in place at the nuclear power plant units.

The fuel assemblies spend decades cooling down in the water pools of the interim storage facility. In about 30–40 years, the radioactivity and heat generation decrease to a level that allows the fuel assemblies to be handled, and final disposal can begin. The interim storage pools at Olkiluoto contain spent fuel from the entire operating life of the nuclear power plant, since 1978.

In Posiva's final disposal plan, the spent fuel assemblies are sealed in disposal canisters consisting of a copper shell and a cast iron insert. The copper shell is leak-tight and corrosion resistant. The insert is the load-bearing part of the canister that gives it the necessary mechanical strength. It also serves as a rack that holds the fuel assemblies. The canisters are disposed of at the depth of 420 meters inside the Olkiluoto bedrock. The spent fuel will be packed into canisters in the encapsulation plant. The safety requirements applicable to nuclear plants will also be observed in the design of the encapsulation plant.

The filled disposal canisters will be transported into the disposal tunnels where they will be installed in the disposal holes. Compressed bentonite clay rings will be placed around the disposal canisters. Bentonite readily absorbs water and also expands considerably when compressed into hard rings and blocks. The expanded clay mass will efficiently prevent bedrock groundwater from accessing the space between the canister and the bedrock.

As the disposal process advances, the disposal tunnels will be backfilled with bentonite blocks and pellets. The other underground facilities and shafts will also be backfilled with bentonite blocks, crushed rock or bentonite aggregate or large rock boulders, and carefully sealed off with reinforced concrete plugs.

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. Before final disposal, spent nuclear fuel is kept in the interim storage facility for spent nuclear fuel.

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.

Twenty years of final disposal of operating waste

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.

On May 8, 2012, 20 years had passed since the first transportation of radioactive waste into the Olkiluoto VLJ repository. The VLJ repository also receives the small radioactive waste created by Finnish healthcare, industries, and research institutions. On November 22, 2012, the Finnish Government granted TVO a license to dispose of the low and intermediate level waste from the OL3 plant unit, currently under construction, in the VLJ repository. It is estimated that the repository will need to be extended in the 2030s.

TVO also manages the interim storage for spent nuclear fuel. The new extension of the spent fuel interim storage facility has reached its final height, which was celebrated on August 31, 2012. The extension doubles the available fuel pool capacity.

Finnish State Nuclear Waste Management Fund

The Finnish State Nuclear Waste Management Fund secures final disposal

Financial investments are already made into final disposal. 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.

*TVO's fund share in the State Nuclear Waste Management 2008–2012**



THE ENVIRONMENT

TVO AIMS TO BE A PIONEER IN ENVIRONMENTAL MANAGEMENT. 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.

THE ENVIRONMENT THEME OF THE CORPORATE SOCIAL RESPONSIBILITY 2012 REPORT DESCRIBES THE EFFECTIVE ENVIRONMENTAL MANAGEMENT OF TVO.

Good environmental results

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. TVO aims to be a pioneer in environmental management.

In 2012, 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. Thirteen of these targets were reached wholly or in part.

The most important environmental issue for the Olkiluoto nuclear power plant is the heat conveyed into the sea by the

cooling water. Continuous management and potential utilization of the thermal load contained in the cooling water is a long-term objective for TVO. In 2012, research was conducted into the potential use of cooling water for the defrosting of outdoor areas. 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. 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. In 2012, TVO participated in Energy Saving Week. During the week, personnel were encouraged to submit suggestions for improving energy efficiency in their own work. The campaign resulted in 45 initiatives, most of them concerning everyday energy efficiency measures, improvement of the energy efficiency of the power plant process, and other feasible energy saving methods. 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 is currently being planned 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.

For example, a physical and chemical monitoring study of the waters around Olkiluoto, conducted in 2012, showed that the state of the sea bed has improved compared to 2011.

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.

*Olkiluoto nuclear power plant's environmental balance sheet 2012 (2011)**

*Environmental measuring points in Olkiluoto**

*Energy efficiency**

*Material efficiency**

*Waste - Municipal waste**

*Waste - Low and intermediate level waste**

*Water usage - Cooling water**

*Water usage - Untreated water**

*Biodiversity**

*Emissions**

*The Olkiluoto environment - Measurements in 2012**

*Lifecycle greenhouse gas emissions**

*Environmental figures**



TVO AND SOCIETY

TVO SUPPORTS FINNISH WELL-BEING THROUGH THE RELIABLE PRODUCTION OF ENVIRONMENTALLY FRIENDLY AND REASONABLY PRICED ELECTRICITY. COMPETENT AND MOTIVATED PERSONNEL ARE A PREREQUISITE FOR THE SAFE OPERATION OF A NUCLEAR POWER PLANT. TVO SUPPORTS OPEN AND CONSTRUCTIVE INTERACTION IN THE IMMEDIATE REGION, FINNISH SOCIETY, AND WITHIN THE INTERNATIONAL NUCLEAR ENERGY SECTOR. TVO'S OPERATIONS BENEFIT THE REGION AND THE WHOLE OF FINLAND.

THE TVO AND SOCIETY THEME OF THE CORPORATE SOCIAL RESPONSIBILITY 2012 REPORT INCLUDES AN OVERVIEW OF TVO AND INFORMATION ON THE FUNDING AND FINANCIAL BASIS OF OPERATIONS, PERSONNEL, OCCUPATIONAL AND RADIATION SAFETY, RESEARCH AND DEVELOPMENT, 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 Finns with cost price electricity produced in a safe, reliable, and environmentally friendly manner at the Olkiluoto nuclear power plant in Eurajoki.

TVO is a respected Finnish nuclear power company and has become a leader in the nuclear power sector during the course of its more than 40 years of operation. 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 know-how and experience attract global interest.

TVO is a limited liability company that was established in 1969 and provides electricity for its owners at cost price. TVO produces approximately one-sixth of the total electricity consumed in Finland. The Olkiluoto nuclear power plant has been granted the right to use the Key Flag Symbol as recognition of its Finnish work and know-how.

Every year, the nuclear power produced at Olkiluoto helps prevent carbon dioxide emissions of over 10 million tonnes 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.

Through its direct owners, TVO's nuclear electricity brings well-being to 133 municipalities. These municipalities are shareholders in the more than 65 energy companies that serve as a route for distributing electricity from Olkiluoto throughout Finland.

*The share of TVO's production of the total consumption of electricity in Finland, 2012**

*TVO's electricity production 2012**

*Lifecycle greenhouse gas emissions**

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's ownership by sector:

- Industry 44%
- Municipal electric utilities 30%
- Fortum 26%

*65 companies owned by 133 municipalities

Teollisuuden Voima Oyj and its subsidiaries TVO Nuclear Services Oy (TVONS), Olkiluodon Vesi Oy, and Perusvoima Oy constitute the TVO Group. TVO and Fortum also have a joint venture, Posiva Oy, of which TVO owns 60%.

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

*TVO's owners and their holdings, December 31, 2012**

*TVO's ownership by sector**

Financial basis

TVO's responsibilities toward its shareholders include the cost efficiency of its production operations. The company has a significant impact on the economy of the immediate region and the owner municipalities, and it touches the everyday life of all Finns either directly or indirectly.

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 produced by TVO pro-rata to their ownership. TVO's owners consume the power themselves or sell it on to third parties. The cost price model allows companies and communities of various sizes to participate in major investments, such as those required for nuclear power, and reap the benefits of large-scale production. The price of electricity is the same for all shareholders.

The financial performance of companies is compared using various indicators. Due to the cost price operating principle of TVO, conventional financial indicators are not suitable, 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 2012, OL2 achieved its best production output of all time, 748 TWh. The load factor of OL2, 96.9%, was also the best in the plant unit's history. OL1 underwent a long annual outage and produced 70 TWh of electricity with a load factor of 90.4%. Together, OL1 and OL2 reached in 2012 the second best combined net output (14.5 TWh) in their history; their combined load factor was 93.7%.

The modernization projects carried out for the OL1 and OL2 units from 2010 to 2012 have further improved the nuclear power plant's safety. The modernization projects have also increased the combined rated electrical output of the plant units by 40 MW, reaching a total of 1,760 MW.

Stable electricity prices

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 electricity and maintains its future production capacity.

The operations were compliant with the plans in 2012; 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 2012, TVO's turnover was EUR 347 (347) million. The use of the Meri-Pori coal-fired power plant decreased compared to the previous year. TVO's share of the electricity produced at the Meri-Pori power plant is 45%.

The electricity produced by OL1 and OL2 is competitive, and the plant units have been producing electricity for more than 30 years. OL1 and OL2 are continuously maintained and developed. In 2012, the Olkiluoto nuclear power plant achieved the milestone of 400 TWh of electricity produced.

*TVO's electricity production 2008–2012**

*Turnover 2008–2012**

Strong local presence

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. At the end of 2012, the OL3 construction site employed approximately 3,000 people who helped generate a positive economic impact on the entire province.

The value of nuclear fuel procurement amounted to EUR 67 (50) million in 2012. Nuclear fuel worth EUR 46 (44) million was consumed in the electricity production process. TVO only procures uranium and processing services related to the fuel supply chain from suppliers it has specifically approved.

In compliance with the Nuclear Energy Act, TVO paid EUR 43 (34) million in nuclear waste management fees to the State Nuclear Waste Management Fund to cover future costs of nuclear waste management. During the past year, TVO's total costs for nuclear waste management amounted to EUR 77 (68) million.

TVO's investments in 2012 amounted to EUR 337 (314) million, of which the OL3 project accounted for EUR 274 (253) million. The main components of the OL3 nuclear island (the reactor pressure vessel, pressurizer, and four steam generators) have been installed. The I&C design work for the OL3 nuclear island, welding of pipes, installation of electrical systems, and pressure testing continued.

The OL4 project advanced to the bidding and engineering phase. TVO received bids for the plant unit at the end of January 2013.

*Olkiluoto nuclear power plant's environmental balance sheet 2012 (2011)**

TVO's fund share in the State Nuclear Waste Management Investments 2008–2012**

*Social responsibility indicators**

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. A description of TVO's economic impact on major stakeholders (M€).

*TVO's economic impact in 2012**

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

*Turnover**

*Equity ratio**

*Investments**

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 has major investments ahead; 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 30 years with high load factors, and the original investments have been amortized.

It is indicative of the trust placed in TVO by investors that the EUR 500 million bond issued in February 2012 was over-subscribed many times over. TVO's history of power generation with world-class load factors, the stability of Finnish investments and political system, and TVO's committed long-term owners create a solid foundation for the trust of investors.

Personnel

TVO is a Finnish center of nuclear power expertise with top-quality results produced by a 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. In addition to solid and long-term experience, TVO has the necessary infrastructure and prerequisites for maintaining and further developing its competencies at Olkiluoto.

The personnel are committed to the responsible performance of their duties in accordance with the agreed procedures which were revised with the Code of Conduct approved by the Board of Directors in fall 2012. Training on the Code of Conduct began in January 2013. Most of the personnel will undergo the training during 2013.

TVO's Code of Conduct defines the company's general principles concerning practical operations and social responsibility. The purpose is to create a unified way of working in accordance with a shared framework of responsibility and ethics.

Personnel figures

The number of TVO employees continued to grow in 2012. At the end of the year, TVO employed 863 (813) people, an average of 879 (847) during the year. In 2012, 71 (73) new employees were hired.

At the end of the year, 224% (23%) of the permanent workforce were female. The Board of Directors had one (1) woman, and the Management Group two (2). The average age of the personnel in 2012 was 43.6 (44.0) years.

During the year, 53 (65) people changed their jobs within the company, while 36 (49) permanent employees left the company. Of these, 21 (29) left due to retirement. Low staff turnover and long employment relationships – an average of 14 years in 2012 – form the basis of TVO's competencies and professionalism.

In 2012, TVO spent EUR 61.1 (58.7) million on personnel expenses, of which wages and salaries accounted for EUR 50.2 (48.2) million, pension costs EUR 8.1 (7.8) million and other statutory employer's contributions EUR 2.8 (2.6) million.

TVO observes the collective labor agreements for the energy sector, valid until September 30, 2014, in accordance with the 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 2008–2012**

*TVO's personnel by age group**

*TVO employees by educational level**

*TVO employees by educational field**

*TVO personnel data**

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.

In 2012, a personnel survey was carried out. The response rate was 72%, which corresponds to the level achieved in the

previous personnel survey in 2009. The results were presented to the personnel in three briefings in November. 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, partly necessary due to the requirements set for the nuclear sector, as well as the efficiency of the decision-making processes, the personnel's ability to participate in decisions, equal treatment, and rewarding. Development measures were discussed within the organization by the end of December. Actual measures will take place in 2013.

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 events 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, job rotation, and induction targeted at different occupational groups.

A personal or task-specific training plan is created for each TVO employee. In 2012, the employees received a total of 8,636 (11,137) days of training, which means an average of 9.8 (13.1) days for each TVO employee.

TVO's first trainee program, which will last for nearly two years, started in 2012 under the name of Tomorrow's Experts (Huomisen tekijät). Thirteen undergraduates or newly graduated students were selected for the program.

Basic supervisor training was organized for 21 new supervisors, and the company's own supervisor training program, the TVO/Posiva Forerunner, was launched for the third time with 15 supervisors participating in it.

The operating personnel of the power plants receive extensive training throughout their career. In 2012, operators of OL1 and OL2 participated in operating 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 or 2012 proceeded according to plan with basic simulator training and a period of basic training.

Simulator training of OL3 operators was completed in January 2012. Operators then proceeded to commissioning duties within the OL3 project until their training program can be resumed.

In 2012, operators of OL3 participated in operating training events in the spring and in the fall as required by their refresher training program.

All employees working at the Olkiluoto nuclear power plant must complete induction training every three years. The general section of the training is intended for everyone working in the Olkiluoto area, while the radiation protection section is intended for those working in the controlled area. In 2012, 4,109 people completed the general section of induction training, while 1,115 completed the radiation protection section (reported on January 11, 2013). Both sections of training were provided in Finnish and in English. An interpreter can also be obtained for the training.

The need for nuclear energy experts will increase in the future. A report by the Committee for Nuclear Energy Competence in Finland, set by the Ministry of Employment and the Economy, was completed in spring 2012. The committee, which also included representatives of TVO, was set up to examine the long-term competence needs of the nuclear energy sector. One of the key conclusions of the committee

was that the need for nuclear energy expertise is increasing in Finland. TVO is aware of its role in competence development as well as its needs as a future employer of new nuclear energy experts. TVO has engaged in varied cooperation with students and schools. In 2012, studies in nuclear technology became available at the Satakunta University of Applied Sciences, among others. TVO has ordered an average of 20 thesis or diploma projects each year.

*Training days per employee (2008–2012)**

*Internal training days of TVO employees**

Occupational safety

Occupational health and safety operations for the OL1 and OL2 plant units and the OL3 site are guided by dedicated occupational health and safety systems compliant with the requirements of the OHSAS 18001 certificate. The need for a standardized system and the approach of the commissioning phase of OL3 resulted in 2012 in preparations for merging the systems into one.

One of the basic requirements for an organization aiming for zero accidents is systematic and regular implementation and monitoring of occupational safety operations, including identification and analysis of risks. Risk assessment is carried out in various units of the organization with the objective of updating the risk analysis for each task every two years. TVO has been involved in the Zero Accidents Forum since 2008. In an occupational safety evaluation conducted within the forum, TVO achieved level 3. On the three-level scale, level 1 is the highest and level 3 indicates a need for development. The level is determined by various factors, including the number of accidents and resulting absences.

In 2012, TVO's project for the zero accidents campaign was the development of a positive safety atmosphere. The visibility of the occupational safety personnel was increased by rounds of workstations, discussing occupational safety with the staff. These operations are a part of the Human performance (HU) management program applied at TVO since 2008. Other HU tools include kick-off and closing meetings, confirmation of other team members' work, and clear communication. The personnel has received training on HU matters and tools. Objectives include the further development of safe working practices and proactive safety. For example, unit-specific packages were compiled for safety observations made during annual outages.

Occupational safety operations are coordinated by an oc-

occupational safety organization with 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. Preparations for the occupational safety aspects concerning the commissioning of the OL3 plant unit have begun in 2012 with confirmation of unified practices with the OL1 and OL2 plant units.

To ensure cooperation as set out in the Occupational Safety Act, occupational health and safety representatives have been elected. The team of representatives consists of the 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. Close cooperation with the occupational health and safety representatives takes place during annual outages in particular, when regular safety rounds are conducted at the plant units every other day.

During the course of the year, 5 (4) accidents leading to a TVO employee being absent from work occurred. The accident frequency was 3.6 (3.0) accidents per one million working hours. Combined, the accidents led to 56 (63) days of sick leave. Two commuting accidents resulting in absence took place during the year. All accidents that lead to absences are investigated and corrective measures are defined for them to prevent similar situations from occurring.

A total of 9 (12) accidents resulting in absence occurred to TVO's contractors outside the OL3 site, the accident frequency being 8.2 (9.3) accidents per one million working hours. The number of absence days resulting from these accidents was 96 (121).

At the OL3 site, contractors had 33 (56) accidents resulting in absence, the accident frequency being 4.0 (6.6) accidents. The total number of absence days accumulated of all accidents that occurred at the OL3 site was 250 (509).

Safety observations, that is, events observed before an accident or deviation, totaled 546 (557), of which 392 were made during annual outages. The numbers of safety observations were the highest in the fields of occupational and fire safety and the quality of work.

*Occupational safety**

*Accidents per million working hours**

*Social responsibility indicators**

Radiation safety

The radiation exposure of employees at Olkiluoto has been low year after year, remaining clearly below the dose limits specified by the authorities. In 2012, the total dose of employees working in conditions where radiation is present was 717 man-mSv, which is the lowest annual dose since the plant units' first years of operation. A total dose of 568 man-mSv accumulated during the power plant's annual outage was also a new record low. The annual dose was approximately 25% lower than that of the previous year.

The combined radiation dose of TVO's own personnel was 215 man-mSv, and that of external personnel was 502 man-mSv. The highest individual annual dose incurred at Olkiluoto Nuclear Power Plant was 9.04 mSv. The number of personnel under dose monitoring was 2,577, with recorded doses accumulated for 793 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**

Communications

Communications build trust

TVO communicates its operations in an open and neutral manner, without delay and based on facts. In addition to distributing information, communications aim to maintain open dialog with decision-makers, opinion leaders, and the public. TVO aims 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 wishes to be an active participant in public debate, raising various themes for discussion. According to surveys, stakeholders place an emphasis on themes such as nuclear safety, the final disposal of spent nuclear fuel, and the environmental impact of nuclear power.

From the point of view of communications, the general public is the most important stakeholder group. Communications in 2012 aimed at the strategic objective of further expanding interaction and increasing discourse with stakeholder groups everywhere in Finland.

Acceptability of nuclear power

The results of a new survey concerning the energy attitudes of Finns were reported in 2012. Similar surveys have investigated and monitored attitudes towards energy policy questions for 29 years now, from 1983 to 2012. In 2012, a little over one in three (34%) of respondents were in favor of increasing the use of nuclear power, and one in three (35%) were in favor of decreasing it. The share of respondents who are satisfied with the current level of nuclear power has remained stable around one in four (24%) in recent surveys. The survey of the energy attitudes of Finns was conducted by IRO Research at the request of Finnish Energy Industries in October 2012. A total of 967 respondents were interviewed. The margin of error for the survey was +3.2%. TVO is a member of Finnish Energy Industries.

*Attitudes towards nuclear power**

In 2012, TVO carried out a visitor survey with the particular purpose of developing the visiting operations. One of the objectives of the survey was to find out how visitors see TVO's operations. A similar survey was last conducted in 2007. Some of the questions were the same to allow the comparison of results.

The survey was targeted at six visitor groups: schoolchildren and students, organizations, companies, experts, and visitors who participate in normal guided tours during the summer weeks. The responses were gathered by TVO. A separate web survey was also conducted for reporters by the Pohjois-ranta B-M communications consultancy agency. The questionnaire for reporters differed somewhat from the questionnaire for other groups. Data was gathered between April and November 2012, and 298 responses were received.

Visits build the trust of visitors in TVO's operations; four out of five respondents (79%) felt that their visit increased their trust in TVO's operations. Most of the reporters who visited (82%) felt no change in their trust in TVO in either direction.

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 the 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 operations.

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 2012, the following methods and channels were used in stakeholder communications, among others:

- 13 bulletins
- 19 pieces of web site news
- 4 press conferences
- 4 stakeholder events
- 4 Ytimekäs stakeholder publications
- 4 Uutisia Oikiluodosta magazines targeted at the population of the region
- 4 What's On magazines
- 3 electronic newsletters
- several fairs and market square events.

Last year, TVO adopted a new format of stakeholder communications with a summer roadshow in Savonia at the end of June. A large number of local people came to discuss nuclear power at the public meetings TVO organized at the market places of Varkaus, Mikkeli, Kuopio, and Pieksämäki.

Student recruitment events were also organized in Helsinki, Rauma, Lappeenranta, Turku, and Tampere.

Particular issues raised in stakeholder interaction in 2012 included matters related to the OL3 projects, the final disposal of spent nuclear fuel, and the competitive bidding of the OL4 project.

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 impact 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. Of TVO's owners, 33% are municipal energy utilities – 65 companies owned by 133 municipalities.

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 stakeholders in the immediate region, and organizes regular interaction in various forums. These forums include the municipal cooperation committee and the Olkiluoto regional cooperation committee. TVO maintains close interaction with Eurajoki in the municipality's own cooperation team.

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. The committee met two times in 2012, while three working groups met several times during the year.

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 2012, 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 300 people, while the event in Rauma attracted about 500 people.

In addition to these events, TVO conducts cooperation with the Eurajoki comprehensive school, organizing thematic events and the Energy in Western Finland 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 daily from 10 a.m. to 8 p.m., and anyone may pay a visit without an advance reservation. The science and technology exhibition at the Visitor Center provides information about the production of nuclear electricity and covers the entire lifecycle of the uranium fuel from mining to final disposal.

Groups with advance reservation may receive a guided tour of the science and technology exhibition and TVO's operations, complete with a bus tour of the Olkiluoto power plant area and a visit to the operating waste repository.

In 2012, a total of 15,041 persons visited the Visitor Center for a guided tour; 6,101 of these viewed the exhibition independently. The number of visitor groups was 681. 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 December was the quietest. In July 2012, the summer Wednesday campaign attracted up to two busloads of visitors per day.

During the year, almost 600 foreign experts as well as 79 Finnish and 50 international reporters visited TVO and the Visitor Center.

In the summer 2012, a kilometer-long observation path was opened in the environment of the Visitor Center. 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 2012, 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 lasts for a week 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 supported activities, the most important criteria include both national and regional effectiveness, visibility and good reputation. Being Finnish, reliable, interactive, and a forerunner are key selection criteria.

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

The most important sponsorship targets in 2012 were the following:

- The Finnish national men's ice hockey team and young ice hockey players
- The Rauman Lukko ice hockey 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
- The CO₂-raportti 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.

TVO's Management Group makes the decisions concerning sponsorship activities and donations.

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 participates in the activities of EURELECTRIC, the Union of the Electricity Industry, and FORATOM, the trade association for the nuclear energy industry in Europe. TVO has been a signatory to the ICC Business Charter for Sustainable Development since the 1990s. The Communications Executive Council of the Corporate Executive Board provides an op-

portunity to monitor trends in communications, corporate social responsibility, and public relations, and to observe best practices.

TVO has representatives in the following organizations, among others: 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, Association for Finnish Work, and 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.

Research and development

Primary areas of focus for research in 2012 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 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. Lifecycle management is a central issue in the research of automation and I&C technology as well. Demonstration of compliance with regulations has also become an important subject with cooperation with universities and research institutions.

The total costs of TVO's research and development operations were EUR 44.7 (45.7) million. The figure includes nuclear waste management research and development costs, of which Posiva's share was EUR 38.2 (38.8) million.

TVO is a major contributor to the financing of public reactor safety and radioactive waste management research programs in Finland. In 2012, TVO's contribution to the Finnish State Nuclear Waste Management Fund, which

funds these programs, amounted to EUR 4.6 (4.3) million.

Fuel research to secure safe and efficient utilization of nuclear fuel

TVO's most important international research cooperation takes place in the field of fuel research, which requires special competence, available testing reactors and fuel hot cell studies. The best option to obtain all of these is international cooperation.

The central objective of the research work is to improve the fuel economy through improved burnup. Improved burnup means that more electricity can be produced with the same fuel quantity. Research further specifies and validates the safe use of the fuel and accident safety margins with a higher burnup.

TVO has strived to reveal the behavior of high-burnup fuel for all the fuel types it uses in the fuel research conducted in cooperation with the fuel suppliers and other power companies. Research has also been carried out for fuel exposed to radiation at Olkiluoto. TVO also participates in more extensive international fuel research programs, such as the program coordinated by OECD/NEA.

*Focus areas of TVO's R&D operations**



A612

NSÄHKÖÄ
ILUODOST

CONTENTS OF THE REPORT

TVO'S CORPORATE SOCIAL RESPONSIBILITY REPORT 2012 DESCRIBES TVO'S MAJOR SUCCESS FACTORS AND HOW SOCIAL RESPONSIBILITY IS INCORPORATED IN THE COMPANY'S RESPONSIBLE EVERYDAY OPERATIONS. THE 2012 REPORT IS THE COMPANY'S TWELFTH CORPORATE SOCIAL RESPONSIBILITY REPORT, AND THE FIRST ONE TO BE PUBLISHED ONLINE.

THE CONTENTS OF THE REPORT SECTION OF THE CORPORATE SOCIAL RESPONSIBILITY 2012 REPORT DESCRIBES THE EXTENT AND BASIS OF REPORTING, MATERIALITY ASSESSMENT, GRI COMPARISONS, AND SOCIAL RESPONSIBILITY INDICATORS. 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 34 years. TVO has reported its responsible management of the environment starting from 1996, and corporate social responsibility issues since 2001.

The 2012 report is the company's twelfth corporate social responsibility report, and the first one to be only 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 by TVO's social responsibility materiality matrix that was prepared in 2011 and is still current and valid.

In 2012, 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 corporate social responsibility effort carried out at Olkiluoto in 2012. Further information on responsibility and TVO's operations in 2012 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) G31 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 2013 will be published on the website in spring 2014.

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
- neighbors and nearby municipalities
- decision-makers
- investors
- subcontractors and suppliers
- the media
- general public

TVO's latest materiality assessment was carried out in 2011 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 decision-makers, public officials, the media, opinion leaders, experts, and NGOs, 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.

*Materiality matrix**

Scope and basis

TVO's corporate social responsibility reporting is based on TVO's values – responsibility, continuous improvement, proactiveness and transparency – vision, mission, success factors 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, the final disposal of spent nuclear fuel, and the environmental impact of nuclear power.

The Corporate Social Responsibility 2012 report forms a close-knit entity with TVO's other annually published reports

and the company's website. The report also contains financial information; for a more thorough presentation of this information, see TVO's annual report for 2012 including the report of the board of directors and financial statements and prepared in compliance 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 for 2012, 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 is based on the occupational health and safety management system. Other personnel information have been gathered during the company's operations.

Principles and guidelines

TVO's corporate social responsibility report has been prepared according to the Global Reporting Initiative (GRI) G3 guidelines. The current report complies with 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 2012 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 March 2013 that the corporate social responsibility report meets the requirements set out in the Global Reporting Initiative (GRI) G31 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 Annual Review 2012, Report of the Board of Directors and Financial Statements 2012, Corporate Governance Statement 2012, and Environmental Report 2012 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 2011 was published in April 2012, and the report for 2012 in April 2013.

The corporate social responsibility report for 2013 will be published in spring 2014.

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.

Glossary

Social responsibility glossary can be found at TVO's website: www.tvo.fi/Sanasto

Certification report

Certification report can be found at TVO's website: www.tvo.fi/certificationreport

Additional information

Please feel free to visit www.tvo.fi and www.posiva.fi for additional information.

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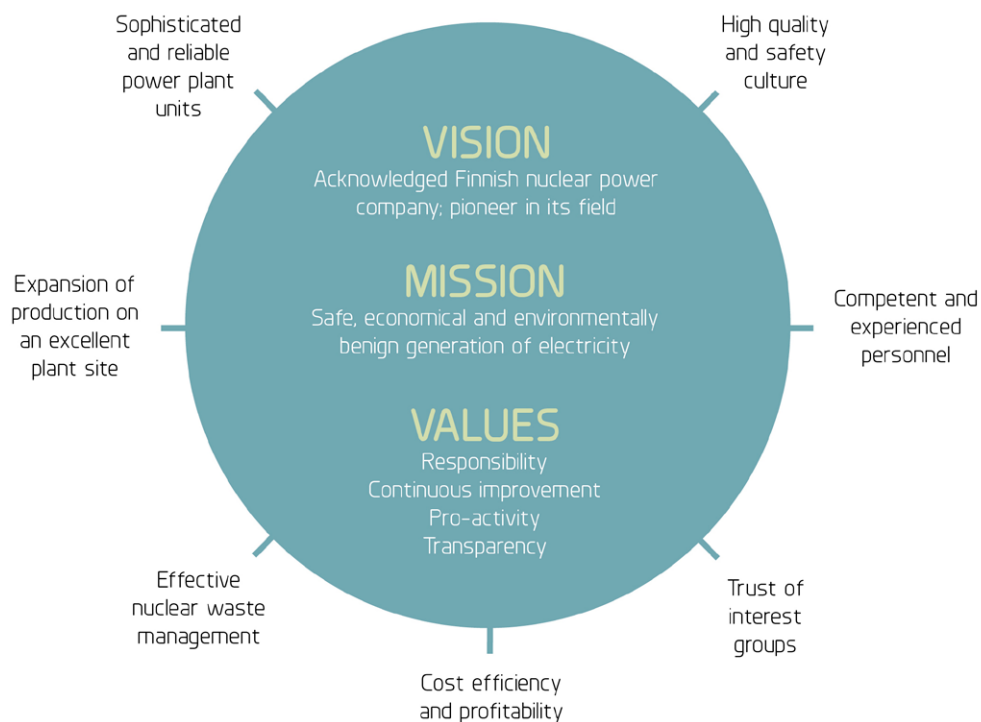
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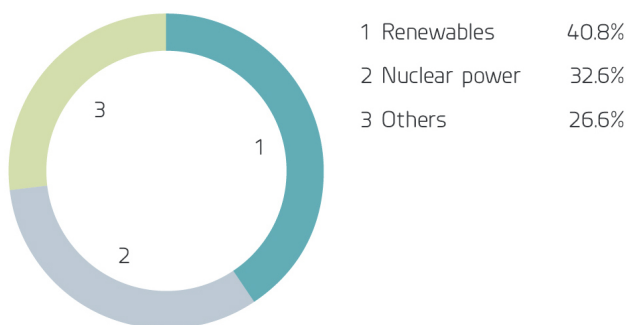
Corporate Social Responsibility Indicators

SUCCESS FACTORS



ELECTRICITY PRODUCTION IN FINLAND

2012

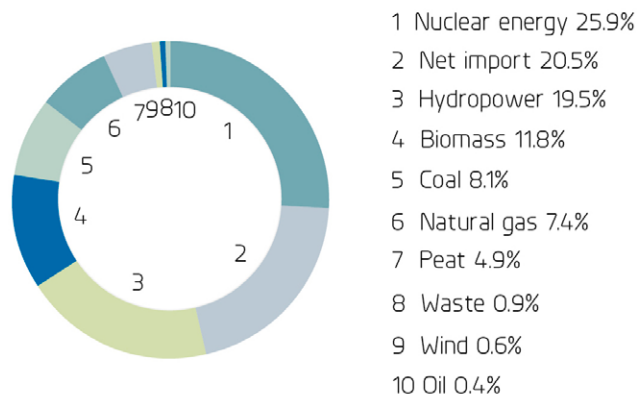


Source: Finnish Energy Industries

The share of carbon-free production of electricity in Finland is 73%. Continuing investments in nuclear power help Finland achieve very low carbon levels in the production of electricity quickly and cost-efficiently.

ELECTRICITY SUPPLY BY ENERGY SOURCE 2012

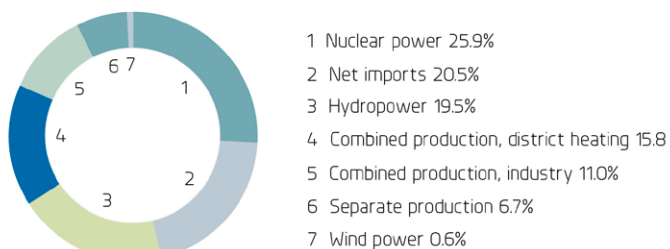
TOTAL: 85.2 TWh



Source: Finnish Energy Industries

NET ELECTRICITY SUPPLY IN FINLAND 2012

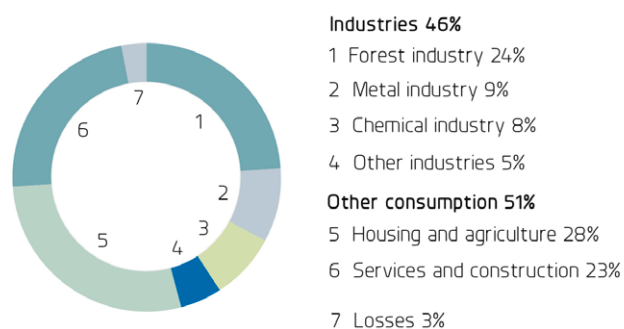
TOTAL: 85.2 TWh



Source: Finnish Energy Indust

TOTAL ELECTRICITY CONSUMPTION IN FINLAND 2012

TOTAL: 85.2 TWh



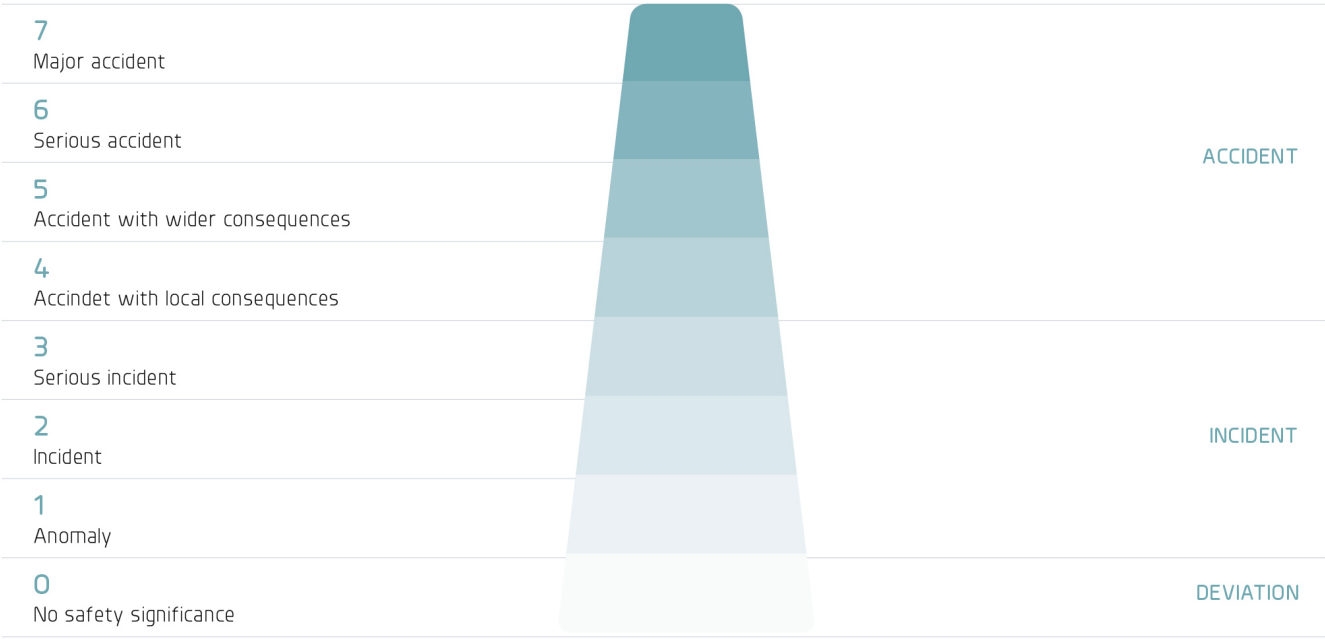
Source: Finnish Energy Industries

RELEVANCE MATRIX



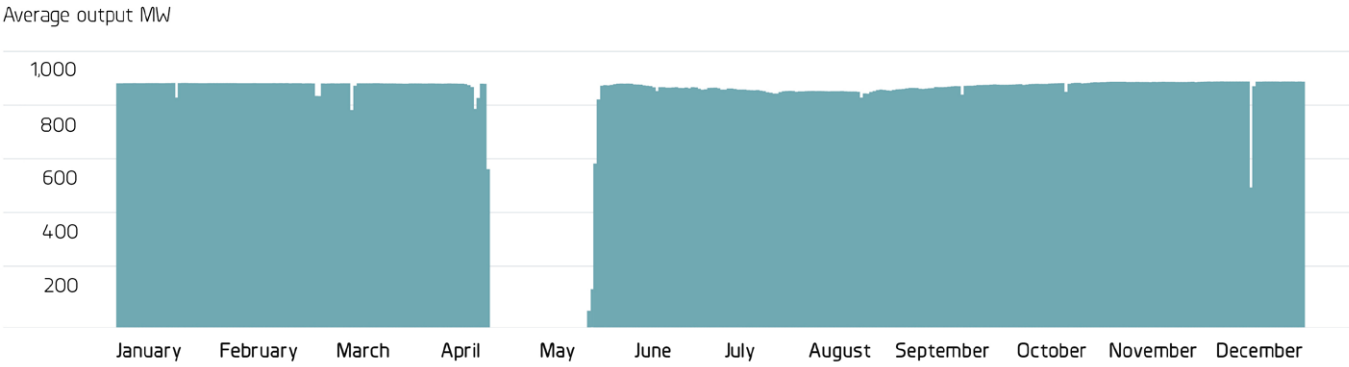
- Safety**
- 1. Nuclear safety
 - 2. Appropriate handling of transients
 - 8. Continuous development
 - 9. Personnel competence development
 - 15. Occupational safety
- Life cycle from bedrock to bedrock**
- 3. Safe final disposal of spent nuclear fuel
 - 12. Responsibility of the procurement chain
- Environmental matters**
- 4. Environmental impact during production
 - 5. Low carbon dioxide emissions from production
 - 17. Energy efficiency in production
 - 18. Environmental impact of the construction phase
- TVO as a company**
- 6. Reliability of production
 - 7. Acceptability of nuclear power
 - 10. Domestic production base
 - 11. Openness in communications
 - 13. Avoidance of the grey economy
 - 14. Economic profitability of production
 - 16. Cooperation in neighboring areas
 - 19. Creation of jobs
 - 20. Transparency and ethics of administration
 - 21. Cooperation with stakeholder groups
 - 22. Sponsorship activities

INES SCALE

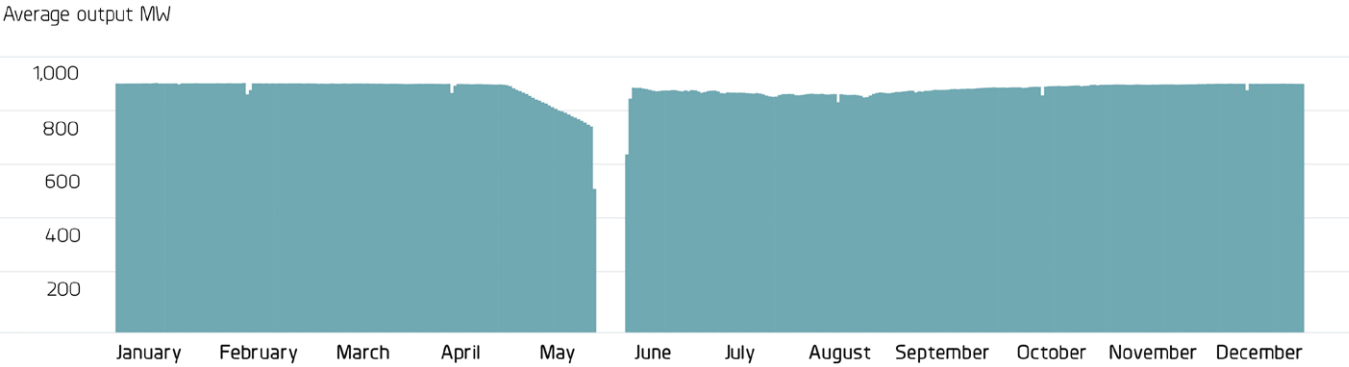


PRODUCTION IN 2012

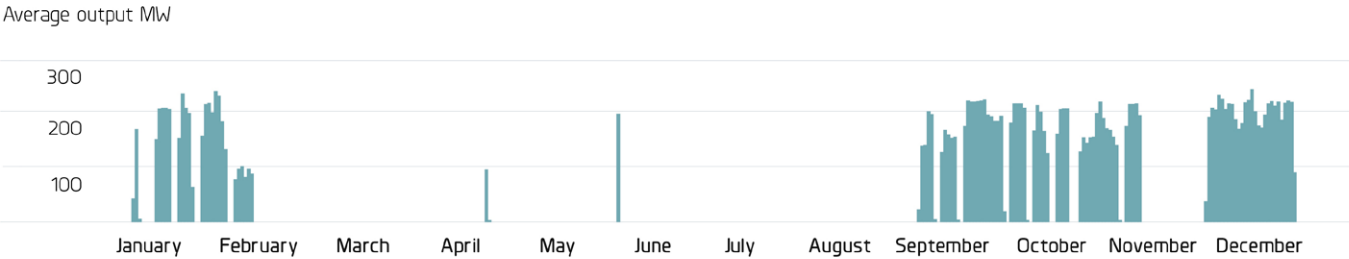
OL1



OL2

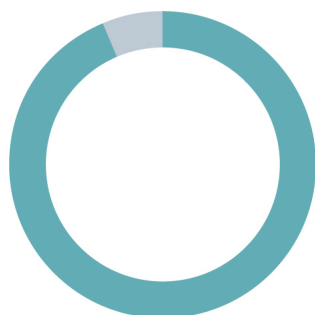


TVO'S SHARE OF MERI-PORI'S PRODUCTION



PRODUCTION HOURS

2012

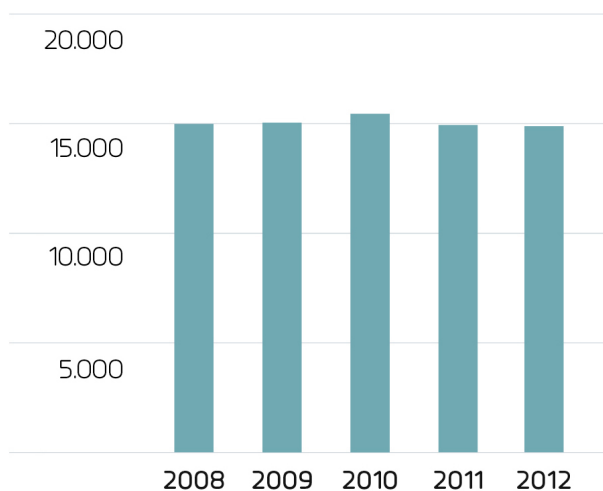


In 2012, the Olkiluoto nuclear power plant produced electricity at full power for 93.7% of the hours.

TVO produces a stable supply of electricity all year round.

ELECTRICITY DELIVERED TO SHAREHOLDERS

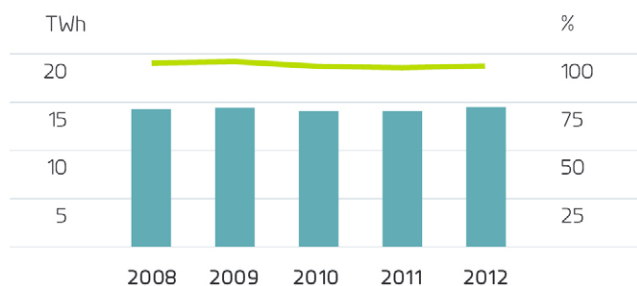
GWh



TVO'S ELECTRICITY PRODUCTION

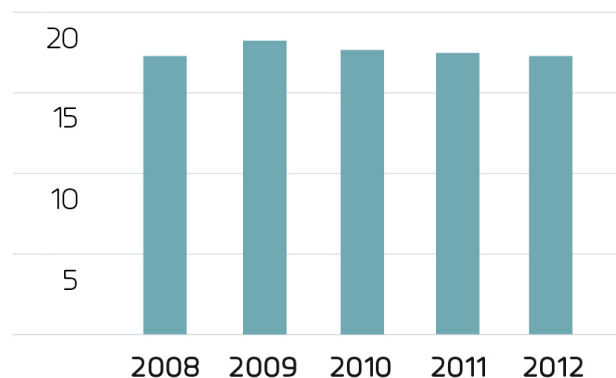
TWh FROM 2008 TO 2012

Load factor of TVO's nuclear power production



TVO'S DELIVERY SHARE OF THE ELECTRICITY USED IN FINLAND

%



OLKILUOTO NUCLEAR POWER PLANT'S ENVIRONMENTAL BALANCE SHEET 2012 (2011)

Emissions into the air			Allowed annual emissions	
Noble gases (TBq)	1.21 (Kr-87 equivalent)	(1.24)	(9.420)	
Iodine (TBq)	0.000017 (I-131 equivalent)	(0.000002)	(0.103)	
Aerosols (TBq)	0.000016	(0.000011)		
Carbon-14 (TBq)	0.88	(0.81)		
Tritium (TBq)	0.36	(0.24)		
CO ₂ (t)	384	(456)		
NO _x (t)	0.52	(0.59)		
SO _x (t)	0.001	(0.002)		
Particles (t)	0.36	0.41		

URANIUM FUEL (t)	37.6	(41.0)
Intermediate agents		
Oils (m ³)	238	(259)
NaClO (15 %) (m ³)	67	(86)
Other chemicals (t)	115	(204)
Ion exchange resins (t)	11	(19)
Water treatment chemicals (t)	94	(108)
Raw water (tap and process water) (m ³)	211,659	(379,659)
Cooling water (million m ³)	2,297	(2,154)



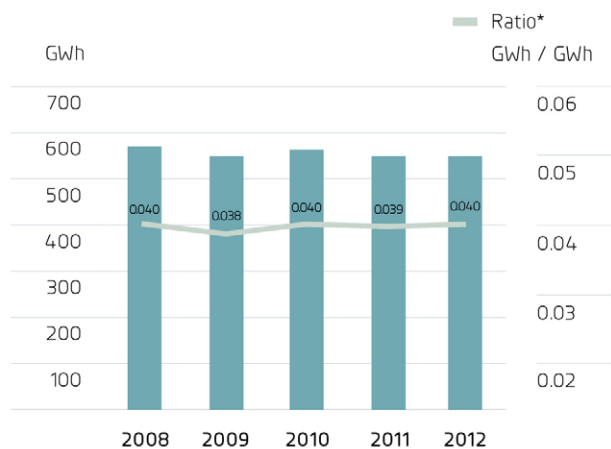
ELECTRICITY (TWh)		14.5	(14.2)
Municipal waste	OL1 and OL2	OL3*	Total
Recyclable waste (t)	539 (839)	1,571 (4,133)	2,110 (4,972)
Landfill waste (t)	108 (183)	296 (405)	404 (588)
Hazardous waste (t)	109 (48)	73 (149)	182 (197)
* construction phase			

Radioactive waste			
Low level waste (m ³)		172	(117)
Intermediate level waste (m ³)		20	(56)
Spent nuclear fuel (t)		35.8	(39.1)

Emissions into the water			Allowed annual emissions	
Cooling water (million m ³)	2,297	(2,154)		
Thermal load to the sea (TWh)	26.8	(26.6)		
Fission and activation products (TBq)	0.0002	(0.0001)	0.296 (18.3)	
Tritium (TBq)	1.31	(1.31)		
Phosphorus (kg)	31	(19)		
Nitrogen (kg)	5,475	(6,935)		
BOD _{7ATU} (kg)	985	(1,022)		

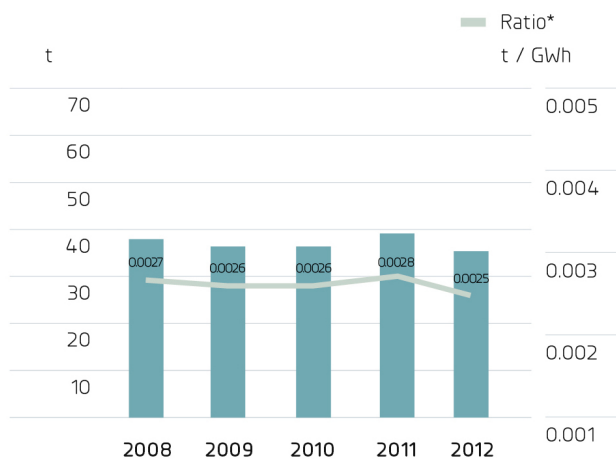
ENERGY EFFICIENCY

TVO'S ELECTRICITY CONSUMPTION



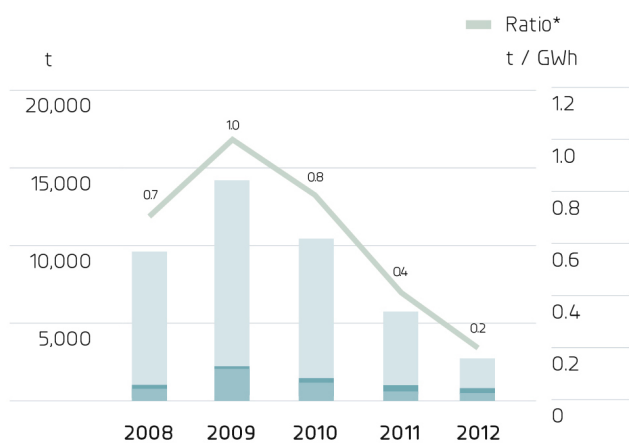
MATERIAL EFFICIENCY

NUCLEAR FUEL SPENT



WASTE

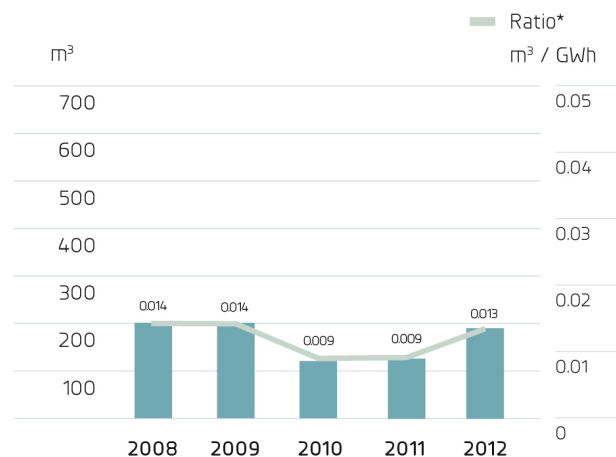
MUNICIPAL WASTE



■ Landfill waste (t)
 ■ Hazardous waste (t)
 ■ Recyclable waste (t)

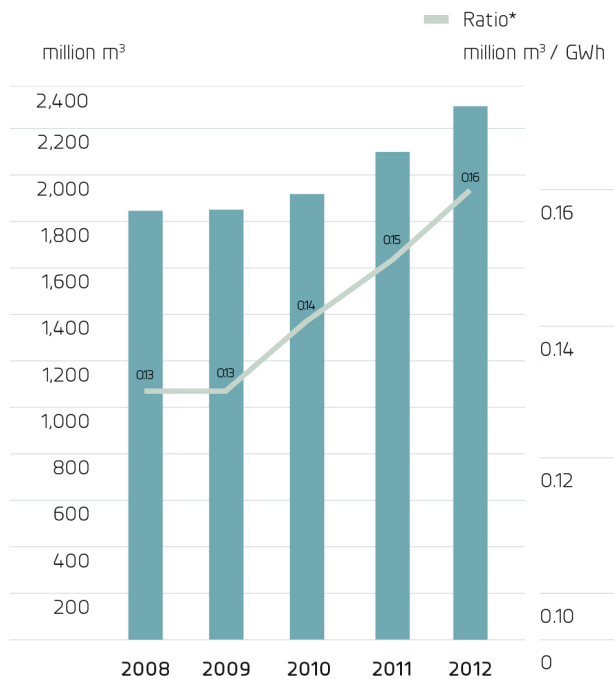
WASTE

LOW AND INTERMEDIATE LEVEL WASTE



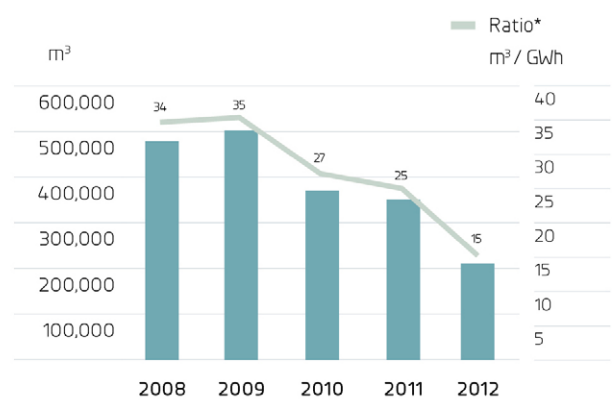
WATER USAGE

COOLING WATER



WATER USAGE

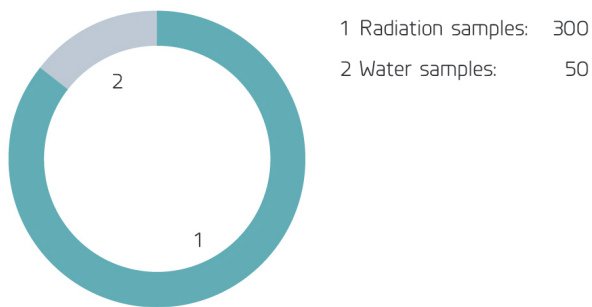
UNTREATED WATER



* The ratio is given per GWh of electricity produced.

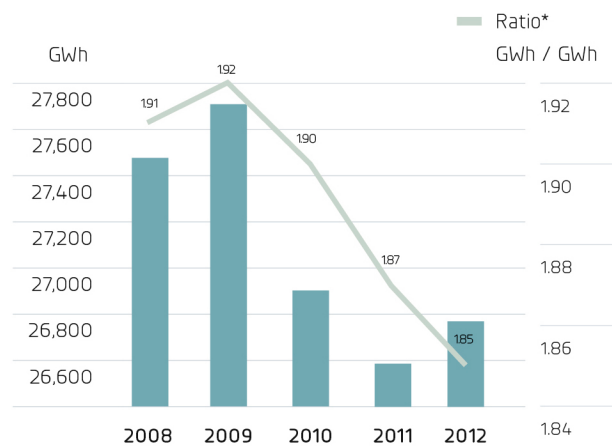
OLKILUOTO ENVIRONMENT

MEASUREMENTS IN 2012



EMISSIONS

THERMAL LOAD ON THE SEA

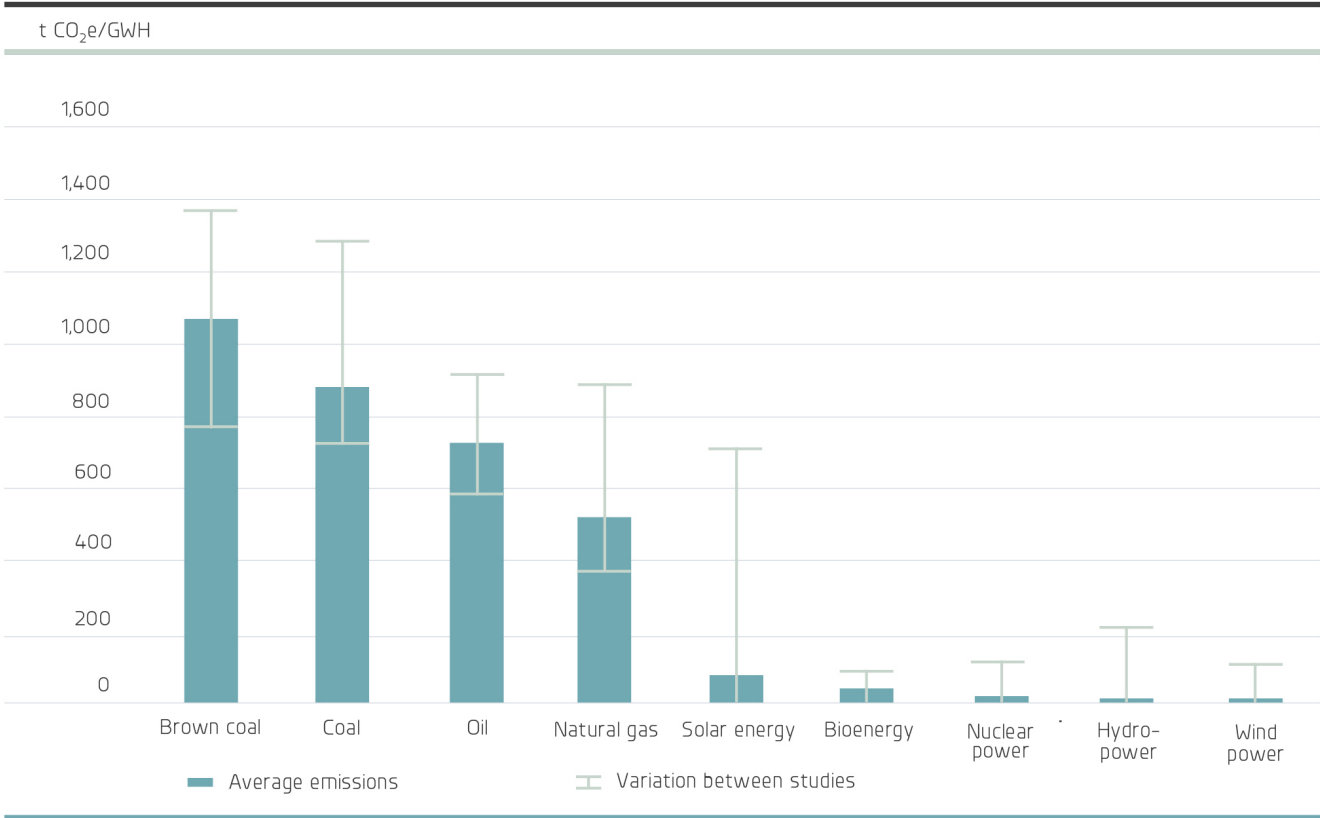


* The ratio is given per GWh of electricity produced.

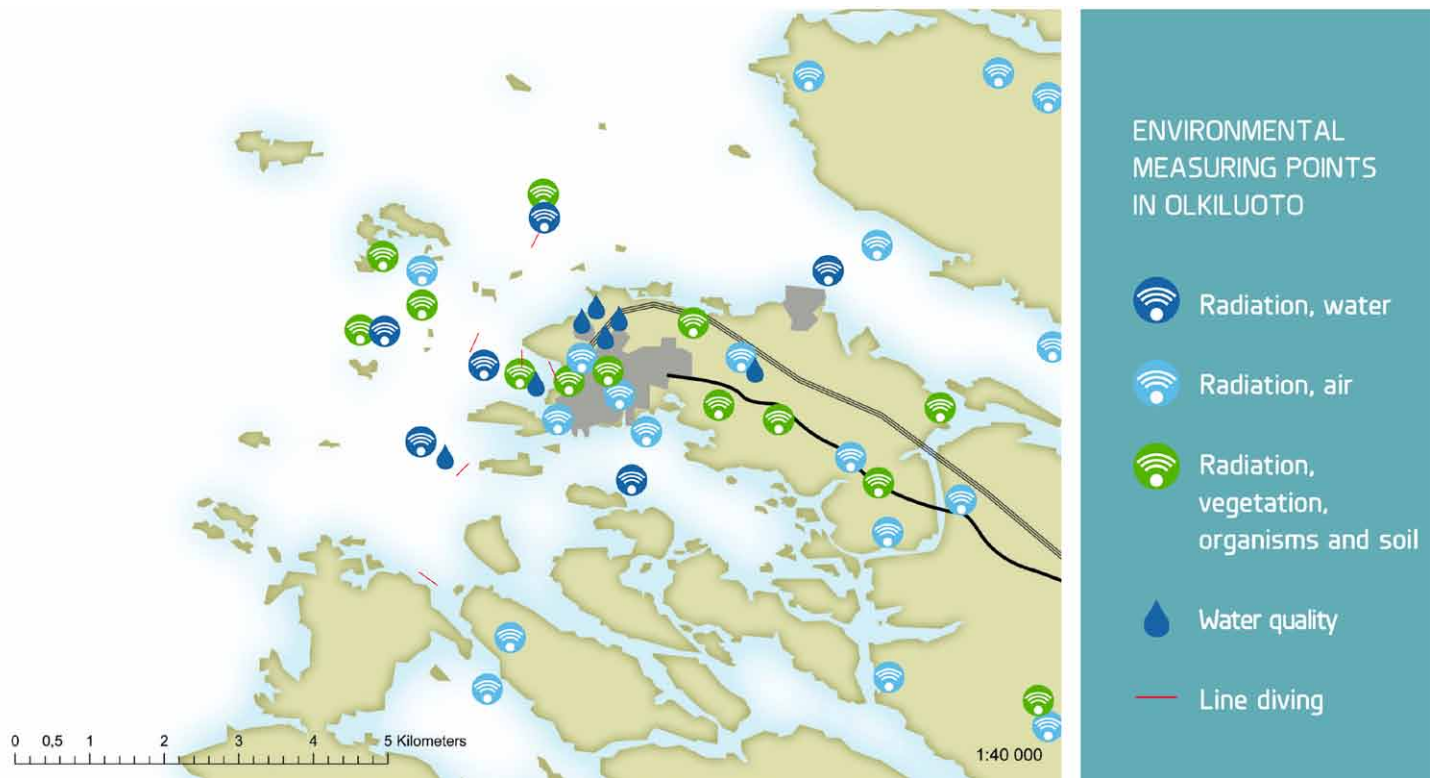
BIODIVERSITY

Due to the nature of operations and the area, the land usage indicator is not significant.

LIFECYCLE GREENHOUSE GAS EMISSIONS



Source: World Nuclear Association, compilation of various studies



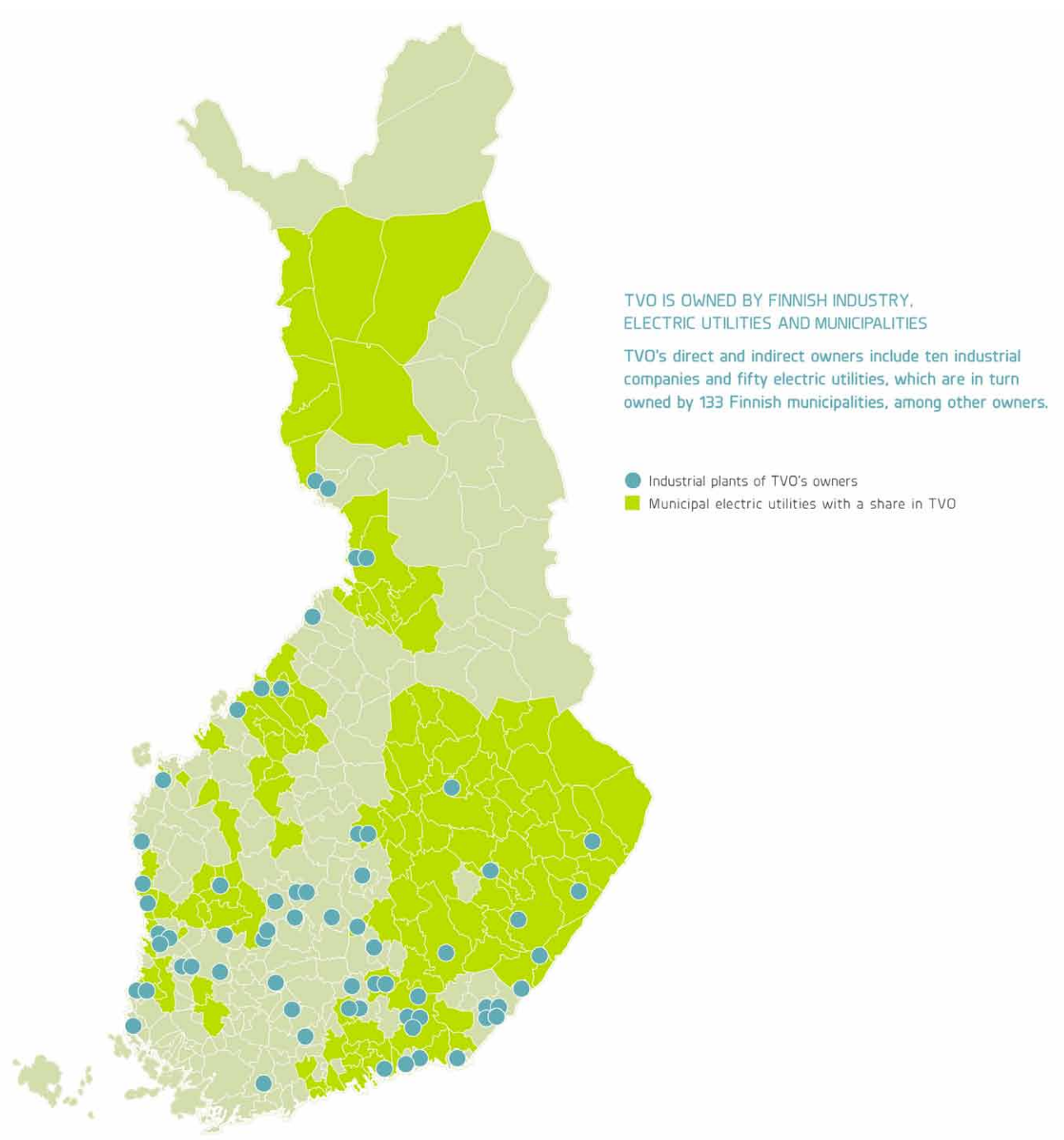
ENVIRONMENTAL FIGURES

	2012	2011	2010	2009	2008
OL1					
Net output (GWh)	6,973	7,290	6,977	7,296	7,066
The plant unit's own consumption (GWh)	256	268	258	266	258
Load factor (%)	90.4	94.8	91.8	97.0	93.7
Cooling water (million m ³) ¹⁾	1,110	1,150	1,023	923	895
Thermal load to sea (GWh) ²⁾	12,993	13,635	13,183	14,006	13,516
Efficiency (net) (%)	34.9	34.8	34.6	34.2	34.3
1) Permit regulation of a cooling water volume of 3,800 million m ³ per year (combined for OL1, OL2, and OL3).					
2) Permit regulation for thermal load: 205,000 TJ/year (~56,900 GWh/year) (combined for OL1, OL2, and OL3).					
OL2					
Net output (GWh)	7,477	6,914	7,167	7,156	7,314
The plant unit's own consumption (GWh)	271	250	258	256	262
Load factor (%)	96.9	90.9	95.2	95.1	96.9
Cooling water (million m ³) ¹⁾	1,190	1,000	906	903	927
Thermal load to sea (GWh) ²⁾	13,778	12,954	13,716	13,694	13,965
Efficiency (net) (%)	35.2	34.8	34.3	34.3	34.4
1) Permit regulation of a cooling water volume of 3,800 million m ³ per year (combined for OL1, OL2, and OL3).					
2) Permit regulation for thermal load: 205,000 TJ/year (~56,900 GWh/year) (combined for OL1, OL2, and OL3).					
Wind power plant					
Net output (GWh)	1.5	1.9	1.1	1.5	1.6
Load factor (%)	17	22	13	17	18
Electricity production capacity (MW)	1	1	1	1	1
Nuclear fuel					
Spent nuclear fuel in the storage pools of OL1 and OL2 and in the interim storage (KPA)					
Bundles (number of)	7,884	7,668	7,434	7,210	6,982
Bundles (metric ton)	1,327.3	1,291.8	1,253.4	1,216.9	1,179.8
Radioactive waste ¹⁾					
Low level waste (m ³)	172	132	117	163	95
Intermediate level waste (m ³)	20	0	10	36	104
Operating waste exempted from control (t)	78	130	266	66	25
1) Reporting of radioactive waste has been changed to reflect the amount of waste placed in the VLI repository. The amounts reported earlier have indicated changes in the MAJ and KAJ storages.					
Radioactive emissions					
Emissions into the air					
Noble gases ¹⁾ TBq (Kr-87 equivalent)	1.21	1.24	0.58	0	0
% of allowed	0.01	0.007	0.0033	0	0
Iodine ¹⁾ TBq (I-131 equivalent)	0.000017	0.000002	0.000094	0.0000001	0.000002
% of allowed	0.02	0.0015	0.082	0.00009	0.001
Aerosols TBq	0.000016	0.000011	0.000012	0.000059	0.00002
Tritium TBq	0.36	0.24	0.27	0.32	0.43
Carbon-14 TBq	0.88	0.81	0.71	0.78	0.88
1) Permit regulation for radioactive emissions into the air: Noble gases 17,700 TBq Kr-87 equivalent, Iodine 0.114 TBq I-131 equivalent.					
Emissions into water					
Fission and activation products ¹⁾ TBq	0.0002	0.0001	0.0002	0.0002	0.0003
% of allowed	0.07	0.05	0.08	0.07	0.12
Tritium ¹⁾ TBq	1.31	1.31	1.50	1.85	2.39
% of allowed	7.1	7.2	8.2	10.1	13.1
1) Permit regulation for radioactive emissions into the water: Tritium 18.3 TBq. Other beta-active nuclides 0.296 TBq.					

	2012	2011	2010	2009	2008
Treatment of raw water					
Water volume (m ³) ¹⁾	211,312	357,659	378,470	500,669	485,158
Water treatment chemicals (t) ²⁾	52.3	63.3	65.0	69.2	66.1
¹⁾ Surface water pumped from Eurajoki river to the Korvensuo storage pool. ²⁾ Chemicals used for the treatment of raw water (H ₂ SO ₄ , NaClO (10%), NaOH, chemical precipitation agents).					
Sanitary waste water treatment					
Water volume (m ³)	111,565	139,251	154,503	157,383	150,069
Concentration (mg/l) ¹⁾					
BOD _{7ATU}	8.9	7.4	16	9.3	7.1
Phosphorus	0.28	0.14	0.16	0.10	0.27
Average treatment efficiency ¹⁾ (%)					
BOD _{7ATU}	96	96	96	97	98
Phosphorus	97	98	99	99	97
Load to the sea (kg)					
Phosphorus	31	19	25	15	40
Nitrogen	5,475	6,935	8,800	8,400	6,200
BOD _{7ATU}	985	1,022	2,500	1,500	1,100
Water treatment chemicals (t) ²⁾	41.6	44.7	54.5	56.1	42.6
¹⁾ Permit regulation for sanitary waste water: for waste water discharged into the sea, maximum allowable BOD _{7ATU} value is 15 mg O ₂ /l and phosphorus content 0.7 mg P/l. Minimum treatment efficiency for BOD _{7ATU} value and phosphorus is 90%. All values are calculated as annual averages. ²⁾ Chemicals used for the treatment of sanitary waste water.					
Ordinary municipal and hazardous waste					
OL1 and OL2 (OL3)					
Landfill, total volume (t)	108 (296)	183 (405)	270 (928)	531 (1,601)	396 (387)
TVO's own landfill site ¹⁾	78 (225)	138 (284)	176 (777)	335 (560)	237 (106)
Crushed brick and concrete (t)	21 (114)	37 (107)	22 (1,913)	182 (376)	519 (40)
Paper and cardboard (t)	81 (61)	117 (73)	121 (67)	107 (74)	70 (78)
Wood and wood chip (t)	88 (613)	177 (1,629)	146 (3,115)	206 (5,310)	399 (4,412)
Metal (t)	102 (335)	212 (1,815)	176 (2,959)	220 (3,645)	228 (2,046)
Cable (t)	17 (37)	34 (31)	20 (8.0)	40 (7.5)	29 (2.5)
Energy waste (t)	96 (376)	144 (431)	206 (451)	326 (1,459)	336 (567)
Compostable waste (t)	62 (34)	83 (48)	95 (26)	99 (24)	69 (44)
Glass (t)	8 (0)	9 (0)	19 (0)	14 (0)	13 (0)
Hazardous waste (t)	109 (73)	48 (149)	56 (79)	60 (71)	102 (39)
Screenings (t) ²⁾	42	26	59		
¹⁾ Permit regulation max 1,000 t/year (combined for OL1, OL2 and OL3). ²⁾ The collection of screenings from the sea began in 2010 in accordance with the environmental permit.					
Intermediate agents					
Oils (m ³) ¹⁾	238.0	269.7	268.6	267.4	254.3
NaClO (15%) (m ³) ²⁾	67.1	86.2	67.6	37.0	40.4
Other chemicals (t) ³⁾	114.6	204.1	137.6	133.0	136.1
Ion exchange resins (t)	10.8	19.1	16.2	14.3	21.4
¹⁾ Backup diesel generators and heating boilers (amount consumed) and the amount of gasoline and diesel fuel consumed by TVO vehicles through their own tanks. ²⁾ Used for hydroid control in seawater channels. ³⁾ Solvents, bitumen, and nitrogen. ⁴⁾ The oil volume for 2010–2011 changed to include the fuel consumed in the vehicles of TVO's subcontractors.					
Coal fuel					
Volume of coal used at Meri-Pori to produce TVO's share of the electricity (t)	168,704	274,041	561,450	299,323	286,839
Verified CO₂ emissions of the Olkiluoto power plant					
Backup heating boilers (8MW + 12MW = 20MW) (t)	1	1	32	2	5
Backup diesel generators (8 x 1.5 MW = 12 MW) (t)	383	455	424	483	433
Total (t)	384	456	456	485	438

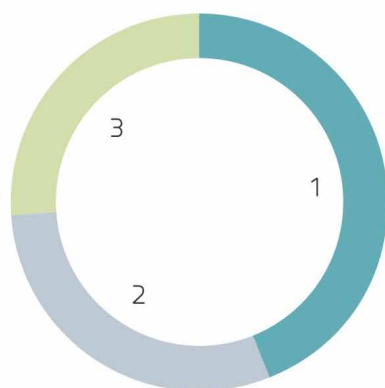
TVO'S SHAREHOLDERS AND THEIR HOLDINGS, DECEMBER 31, 2012:

	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
	100.0	100.0	100.0	100.0



TVO'S OWNERSHIP PER SECTOR

2012



1 Industry	44%
2 Municipal electric utilities	30%
3 Fortum	26%

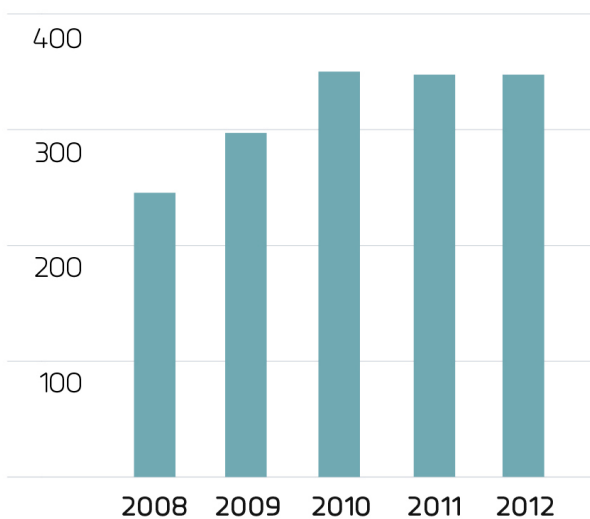
INVESTMENTS

EUR MILLION

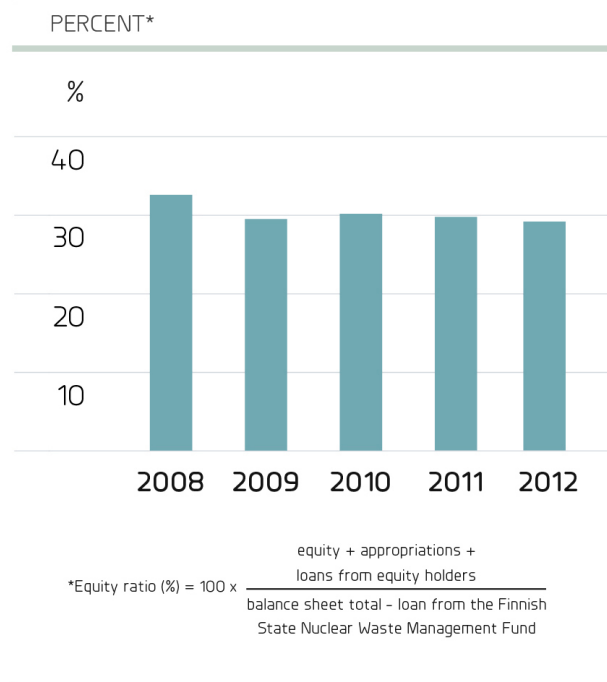


TURNOVER

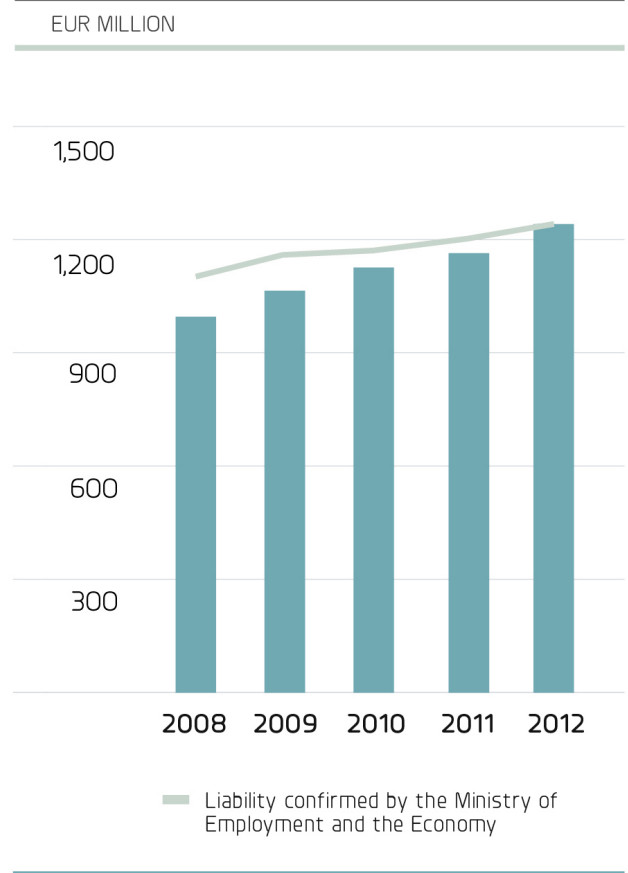
EUR MILLION



EQUITY RATIO



TVO FUND SHARE IN THE FINNISH STATE NUCLEAR WASTE MANAGEMENT



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. TVO's economic impact on its most important stakeholders is described in the figure below.

Production of added value

Shareholders

TVO produces electricity for its shareholders at cost price. In 2012, TVO's shareholders paid a total of EUR 347 (347) million for the electricity. TVO delivered 14,853 GWh of electricity, approximately one-sixth of all electricity consumed in Finland.

Through the direct owners of TVO, the electricity is distributed throughout Finland. TVO's largest owner, Pohjolan Voima, is owned by a large group of Finnish industrial operators as well as electric utilities owned by 133 towns and municipalities. Pohjolan Voima's share of the electricity flows to all these.

Approximately half of the electricity produced by TVO is used at industrial plants of TVO's owners in many localities. The other half is used at homes, in agriculture and in the service sector.

347 (347)
million

Suppliers and subcontractors

Approximately 1,000 external employees were involved in the annual outages, 900 of them Finns.

Long-term partners include the security service provider Securitas Oy, Sodexo Oy with their cafeteria service, and the cleaning and sanitation service provider RTK-Palvelu Oy. These employ more than 300 people at Olkiluoto. The total number of subcontractors and consultants working for TVO in 2012 exceeded 700.



146 (136)
million €

196 (187)
million €

194 (190)
million €

50 (48)
million €

58 (51)
million €

Distribution of added value

Investors

At the end of the year, TVO's current and non-current liabilities amounted to EUR 3,197 (2,922) million. The company raised a total of EUR 775 (34) million in non-current liabilities while repayments amounted to EUR 241 (12) million.

At the end of the year, TVO had undrawn credit facilities and cash amounting to EUR 2,164 (2,376) million. Of this, subordinated shareholder loan commitments by the owners account for a total of EUR 530 million, of which EUR 230 million is intended for financing the bidding and engineering phase of the OL 4 project and EUR 300 million for the financing needs of the OL 3 project.

All credit ratings agencies estimate TVO's future as stable.

Investments

The annual outage of OL1 included work that belonged to the modernization project, such as the replacement of a generator, the modification of LP turbines' discharge side, and the modernization of the condensate purification system I&C.

The main part of the construction work for OL3 is completed, and main components are in place. The I&C design work for the nuclear island, welding of pipework, electrical installations, and pressure tests continued. Competitive bidding included in the bidding and engineering phase of the Olkiluoto 4 plant unit also took place during the year.

R&D costs totaled EUR 45 (46) million, most of it spent for R&D on nuclear waste management.

Personnel

TVO employed an average of 879 (847) people, 834 (786) of them in Olkiluoto and 29 (27) in Helsinki.

Of the personnel, 55% (56%) come from Rauma, 18% (18%) from Eurajoki and 11% (11%) from Pori. The percentage of women among all TVO personnel amounted to 22% (23%). In 2012, TVO hired 71 (73) new employees, and 21 (29) retired.

At the end of 2012, the OL3 site employed approximately 3,000 people. Subcontracting work provided additional employment in Finland and in other countries.

State and municipalities

TVO paid EUR 12 (10) million to the municipality of Eurajoki in real estate tax.

In 2012, TVO paid EUR 43 (34) million in nuclear waste management fees to the State Nuclear Waste Management Fund to cover future costs of nuclear waste management.

The figures presented in the figure are derived from TVO's income statement and balance sheet. The legend does not include all effects.

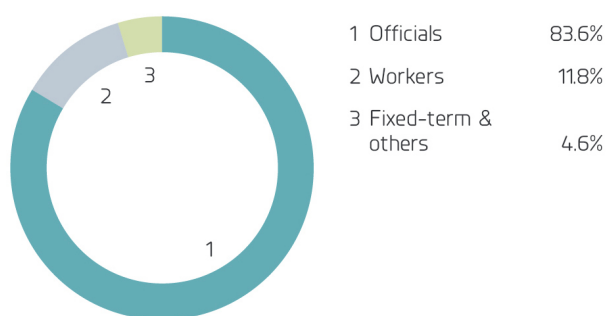
TVO PERSONNEL

	2012	2011	2010	2009	2008
Personnel, permanent, December 31	772	738	714	717	709
Male	599	569	560	567	567
Female	173	169	154	150	142
Personnel, fixed-term, December 31	91	75	84	80	68
Male	48	38	36	32	22
Female	43	37	48	48	46
Average age of employees ¹⁾	43.6	44.0	44.7	44.6	44.4
Average number of years of service ¹⁾	14	15	15	15	15
Training days / person	9.8	13.1	8.9	10.6	12.7
Training days, total	8,636	11,137	7,482	8,835	8,869

¹⁾ The data is only reported for permanent personnel.

TRAINING DAYS BY EDUCATIONAL LEVEL

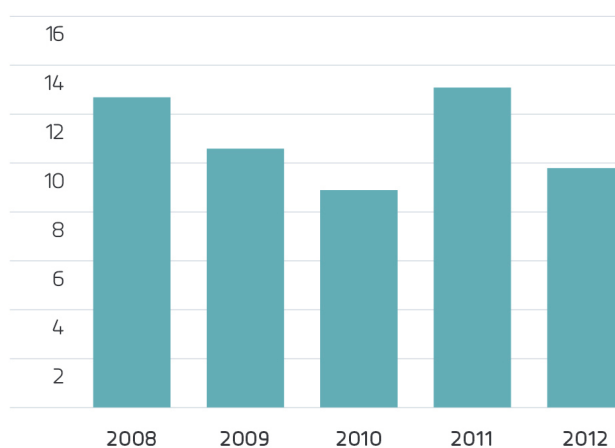
2012



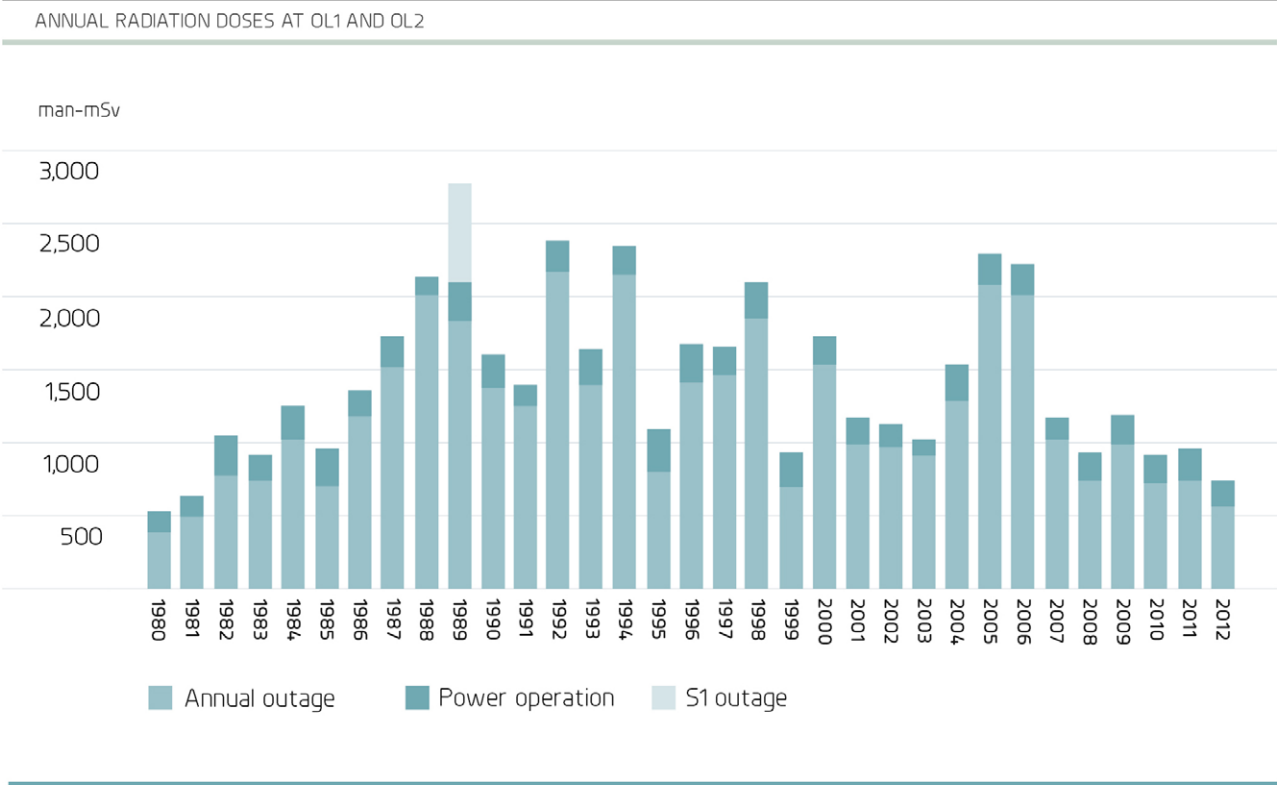
A safe nuclear power plant requires competent personnel to use its sophisticated technology. TVO personnel receive an average of 10 days of training each year to maintain and develop their professional competencies.

TRAINING DAYS

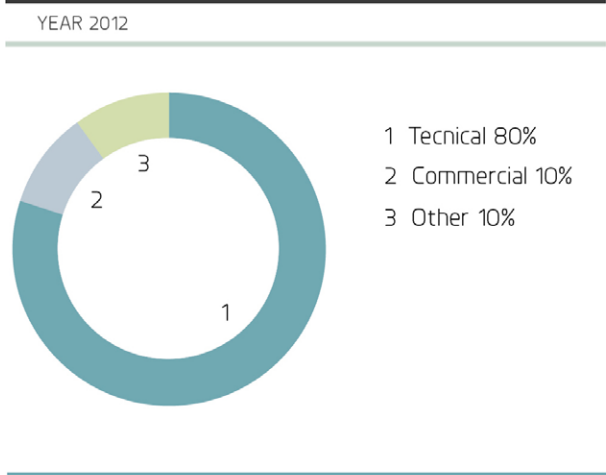
PER EMPLOYEE FROM 2008 TO 2012



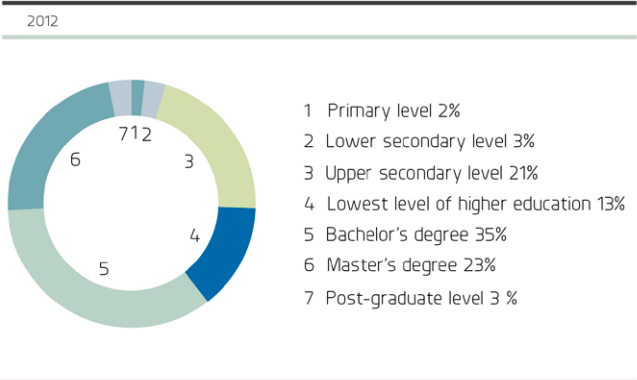
RADIATION DOSE AT THE OLKILUOTO NUCLEAR POWER PLANT



TVO EMPLOYEES BY EDUCATIONAL FIELD



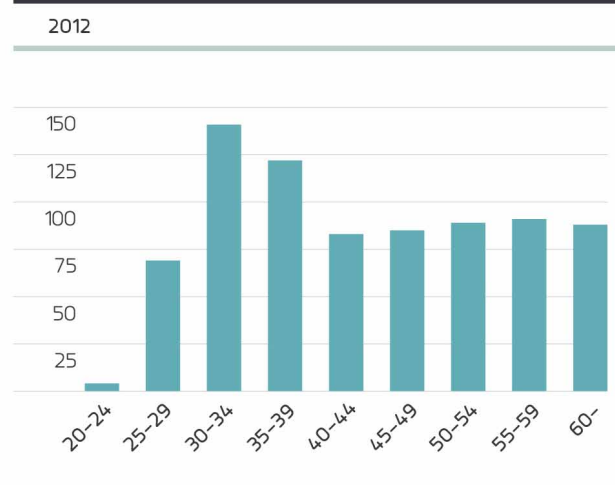
TVO EMPLOYEES BY EDUCATIONAL LEVEL



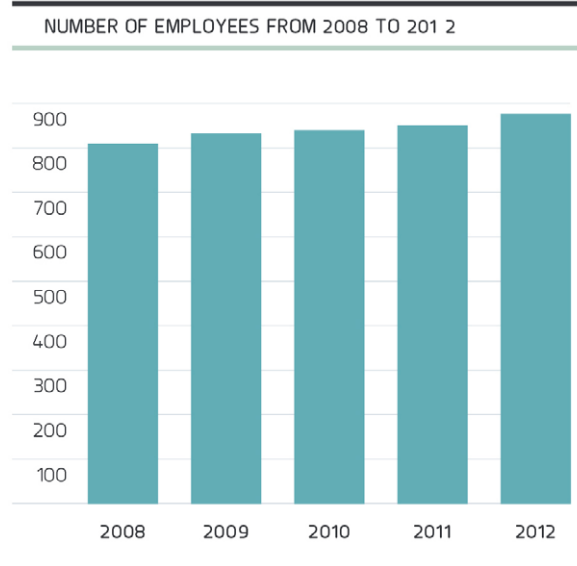
IN-HOUSE TRAINING DAYS FOR TVO PERSONNEL

Subject area	2012	2011	2010	2009	2008
General technology	39	75	85	52	32
Nuclear power plant technology	1,571	1,704	1,064	1,143	1,317
Plant engineering	857	1,937	1,195	1,879	2,169
Operating technology	1,962	2,680	2,009	1,810	1,549
Maintenance	582	505	421	433	490
Protection and preparedness	1,033	965	946	1,338	1,131
Administration and finance	248	123	172	204	284
IT	322	480	140	130	302
Cooperation and communication	151	456	306	215	357
Other	946	1,353	628	854	640
Total	7,711	10,278	6,966	8,058	8,271

TVO'S PERSONNEL BY AGE GROUP

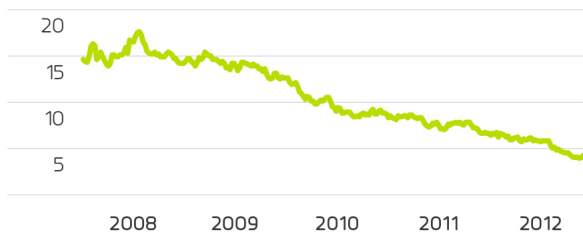


TVO'S PERSONNEL



ACCIDENTS PER MILLION WORKING HOURS

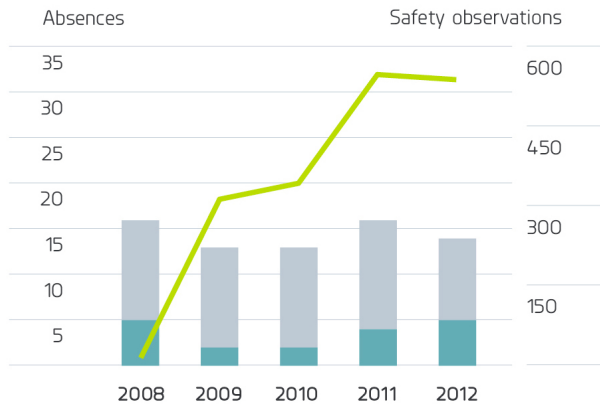
AT THE OL3 SITE FROM 2008 TO 2012



OCCUPATIONAL SAFETY

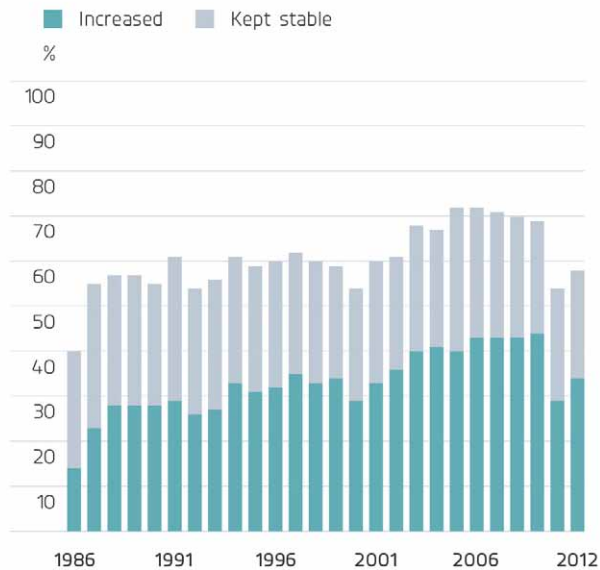
NUMBERS

- Absence of one day or more
- Absence of one day or more, subcontractors
- Safety observations (incl. reported near misses)



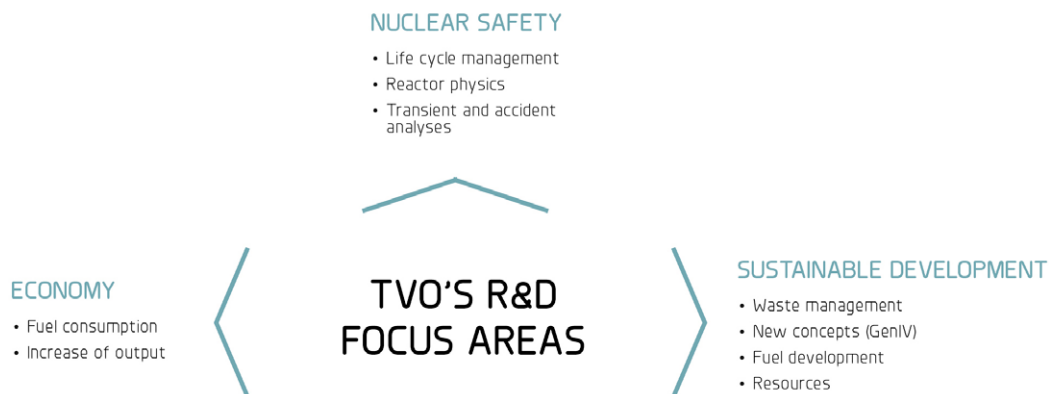
ATTITUDES TOWARDS NUCLEAR POWER

THE USE OF NUCLEAR POWER SHOULD BE



58% of Finns wishes to increase the use of nuclear power or keep it at the same level.

Source: IROResearch Oy, Suomalaisten energia-asenteet 2012



TVO'S KEY INDICATORS, FAS

M€	2012	2011	2010	2009	2008
Turnover	347	347	355	296	245
Research expenses	24.1				
Investments	337	314	339	803	600
Balance sheet total	5,283	4,944	4,611	4,377	3,617
Equity ratio, %	28.5	29.3	29.7	28.8	33.1
Average number of personnel	879	847	837	830	806

SOCIAL RESPONSIBILITY INDICATORS

	2012	2011	2010	2009	2008
Personnel structure					
Personnel, permanent, December 31	772	738	714	717	709
Male	599	569	560	567	567
Female	173	169	154	150	142
Personnel, fixed term, December 31	91	75	84	80	68
Male	48	38	36	32	22
Female	43	37	48	48	46
Average age of the personnel (%) ¹⁾	43.6	44.0	44.7	44.6	44.4
Male	44.1	44.8	45.3	45.1	44.9
Female	41.7	41.4	42.8	42.7	42.1
Place of residence of the personnel (%) ¹⁾					
Eurajoki	18	18	19	20	19
Rauma	55	56	57	57	57
Pori	11	11	10	9	9
Other	16	15	14	14	15
New TVO employees ¹⁾	71	73	29	31	70
Male	62	47	21	21	54
Female	9	26	8	10	16
Average age of new TVO employees ¹⁾	34	34	34	34	33
Employee turnover, incoming (%) ¹⁾	9.2	9.9	4.1	4.3	9.9
Employee turnover, leaving (%) ¹⁾	4.6	6.6	4.5	3.2	5.2
Number of employees retired ¹⁾	21	29	18	13	12
Average age of employees retired ¹⁾	64	63	63	64	63
Summer employees	166	173	168	186	166
Male	115	117	106	116	102
Female	51	56	62	70	64
Competence					
Average service years ¹⁾	14	15	15	15	15
Training days / person	9.8	13.1	8.9	10.6 ³⁾	12.7
Training days, total	8,636	11,137	7,482	8,835 ³⁾	8,869
Training days					
Senior officials	4,549	6,095	3,952	4,176 ³⁾	4,233
Technical officials	2,443	3,596	2,242	3,103 ³⁾	2,985
Industrial officials	230	291	276	261 ³⁾	233
Workers	1,015	778	655	883 ³⁾	973
Fixed term + others	399	377	356	406 ³⁾	445
Induction training					
– general section (in Finnish)	152	174	275	261	315
participants (Finnish)	1,939	2,471	1,412	1,337	1,653
Induction training					
– general section (in English)	100	104	117	149	159
participants	2,170	2,543	3,020	2,660	3,187
Induction training					
– radiation protection section (in Finnish)	87	76	-	-	-
participants	1,088	1,210	1,343	1,117	1,224
Occupational safety card training	9	21	28	54	19
number of employees who have completed the training	133	243	329	775	189
Occupational health and safety					
Absence due to sickness (%)	3.4	3.4	3.4	3.5	3.9
Absence due to sickness (h / person)	64	63	65	60	79
Persons with 0 absences due to sickness during the year ¹⁾	224	232	214	185	200
Accidents of TVO employees					
absence of more than one day	5	4	2	2	5
absence days due to accidents	56	63	16	23	13
accident frequency (number of accidents per million working hours)	3.6	3.0	1.5	1.5	3.8
zero accidents, no absences	5	11 ⁴⁾	5	4	4
accidents on the way to work or home	2	5 ⁴⁾	3	1	5
Subcontractor accidents ²⁾					
absence of more than one day (LTA1)	9	12	11	11	11
Accidents of the employees of OL3 plant supplier consortium AREVA-Siemens					
Absence of more than one day (LTA1)	33	56 ⁷⁾	75	105	92
Safety observations, number ²⁾					
	546	557 ⁵⁾	384	359	-
Radiation safety ⁶⁾					
highest radiation dose of personnel (mSv)	9.04	9.25	9.1	9.9	8.1
collective radiation dose (man-mSv)	717	964	900 ⁴⁾	1186	936
annual outage dose (man-mSv)	568	796	768	990	776

¹⁾ Data only reported for permanent employees.

²⁾ Includes reported near misses.

³⁾ An error was detected in the training figures for 2009 in January 2011, and the figures were corrected.

⁴⁾ An error was detected in the training figures for 2011 in August 2012, and the figures were corrected.

⁵⁾ At the time of reporting, the number of safety observations in 2011 was 554, but the correct figure is 557. This is due to some observations being reported after the social responsibility reporting was completed.

⁶⁾ The maximum allowed annual dose for radiation workers is 50 mSv, or a total of 100 mSv during five consecutive years.

⁷⁾ A typing error was detected in the number of absences of more than one day (LTA1) in 2011 for the plant supplier consortium. The correct figure is 56 instead of 46.

Accidents occurring before March 22, 2013 have been included.