

ANNUAL REPORT **2012**



Contents

Posiva and nuclear waste management	4
President's review	6
The Board of Directors' report	8
Financial statements	22

Posiva and nuclear waste management

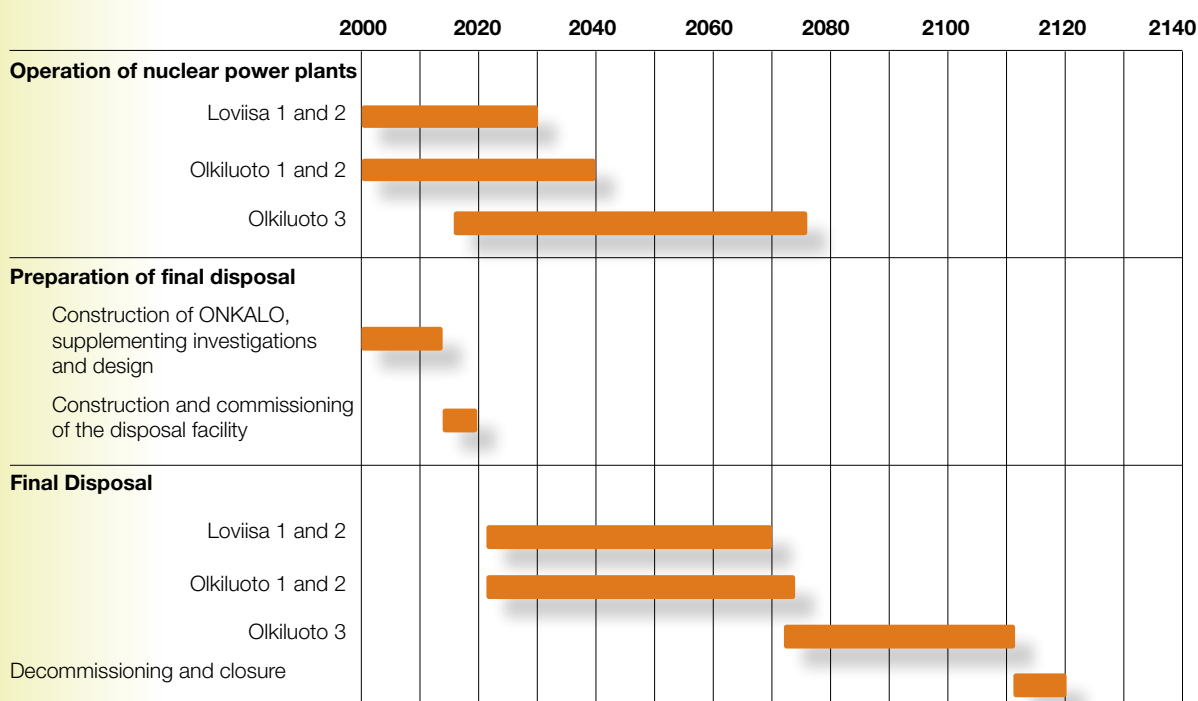
According to the Nuclear Energy Act, Teollisuuden Voima Oyj (TVO) and Fortum Power and Heat Oy (Fortum) are responsible for nuclear waste management measures and their costs at their power plants. The companies take care of the storage, processing and final disposal of their nuclear waste. Both plant sites feature an operational disposal facility into which the low-level and intermediate-level reactor waste generated during the operation of the plant is placed. Waste generated from the eventual decommissioning of the power plants is to be disposed of in the same facilities. The companies are also responsible for the interim storage of spent nuclear fuel at their power plant sites.

TVO and Fortum established Posiva Oy (Posiva) in 1995 for the purpose of managing the disposal of the spent nuclear fuel belonging to its owners. Posiva has carried out the research, development and design work required for final disposal, in accordance with the binding schedule set by the authorities. Posiva's

task is to acquire the required licences, construct the required nuclear waste management facilities, and to use the facilities in accordance with the terms of the licences.

According to the Government decision-in-principle ratified by the Finnish Parliament, the spent nuclear fuel produced in the plant units of TVO and Fortum will be disposed of at Olkiluoto, Eurajoki. The current total amount of waste confirmed by decisions-in-principle is 9,000 tonnes of uranium, and in 2012, Posiva applied for the construction licence specified in the Nuclear Energy Act for this amount. Posiva is prepared to construct the encapsulation and final disposal facility in Olkiluoto so that final disposal may be started after the operating licence has been granted, in approximately 2020. Until that time, the interim storage of spent fuel takes place at TVO and Fortum's power plant sites. At the end of 2012, the quantity of spent nuclear fuel in storage at Olkiluoto NPP amounted to 1,370 tonnes, while 540 tonnes were

General schedule for final disposal



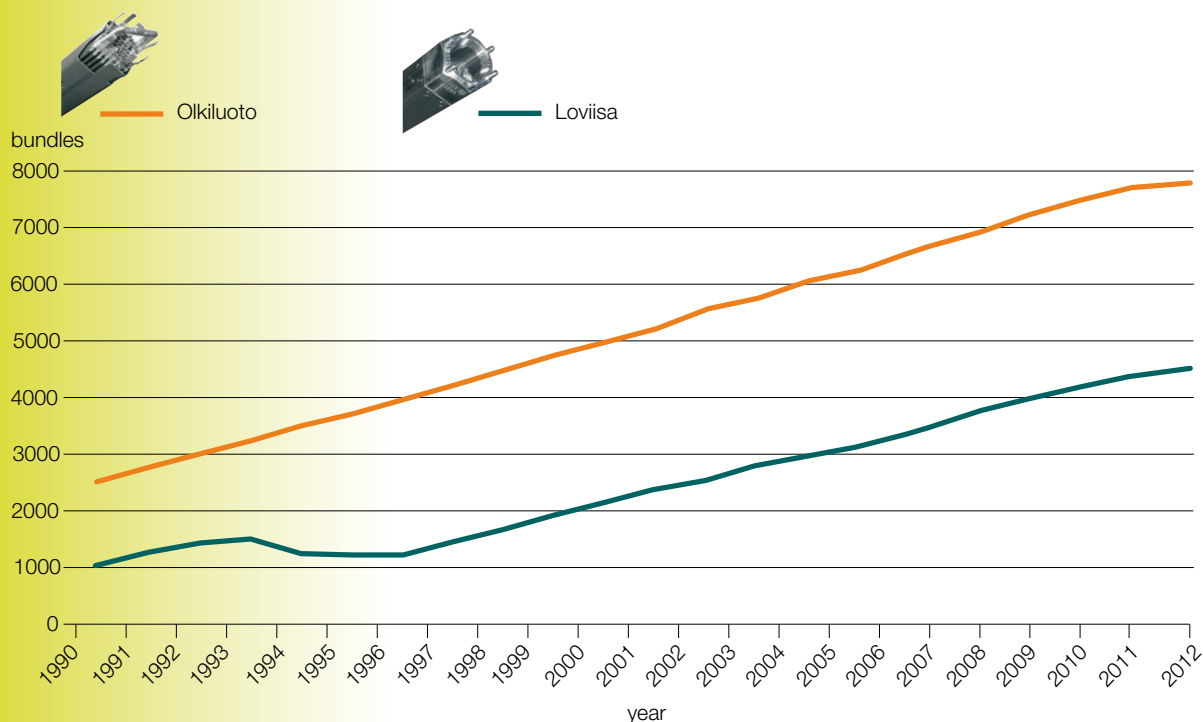
stored at the Loviisa plant. It is estimated that the final disposal of the 9,000 tonnes of uranium specified in the decision-in-principle will take roughly 100 years.

In accordance with the Nuclear Energy Act, the construction and operating licences for final disposal operations are granted by the Government. The Ministry of Employment and the Economy (TEM)

is responsible for handling licence applications. The Radiation and Nuclear Safety Authority (STUK) supervises final disposal operations. TVO and Fortum have prepared their nuclear waste management measures by investing the required funds in the State Nuclear Waste Management Fund administered by TEM.



Quantity of spent fuel



Preparations for facility construction will begin in earnest after submission of the construction licence application for the final disposal facility

To conclude Posiva's 17th year of operation, the licence application for the construction of an encapsulation and final disposal facility in Olkiluoto was submitted to the Ministry of Employment and the Economy on 28 December. At the same time, the related final disposal safety case was submitted to the Radiation and Nuclear Safety Authority. These measures fulfilled the requirement, set in the Government decree of 2003, to file the construction licence application for a final disposal facility in 2012. The completion and submission of the licence application according to the agreed schedule was the result of decades of research and development work, begun in the early 1980s.

In its licence application, Posiva presents the reports and plans required by the decree of 2003, which enable the construction of the final disposal facility in a manner that allows final disposal to begin in the early 2020s. The core message of the application materials is that final disposal can be carried out according to the KBS-3 concept, in compliance with the requirements on the operational and long-term safety. Based on the safety case, STUK will assess whether compliance with the requirements regarding long-term safety has been demonstrated in a sufficiently reliable manner. The safety case is made up of materials created through decades of research and development work, and of the thousands of pages from the dozens of reports drawn up by Posiva and outside experts on the basis of those materials.

The excavation work for the two demonstration tunnels excavated in final disposal depth in the rock of Olkiluoto, begun in 2011, has been completed and the tunnels have been approved and accepted. The excavation of the demonstration tunnels demonstrated Posiva's ability to construct and excavate future final deposition tunnels, to drill final deposition holes, and to determine the location of final deposition tunnels



final disposal sector. The DOPAS Project, belonging to the EU's Seventh Framework Programme and coordinated by Posiva, tests the functionality of solutions for closing final deposit tunnels in different rock environments, one of which is ONKALO in Olkiluoto. The project ranks amongst the most extensive Seventh Framework Programme projects in the nuclear sector. Posiva also coordinates cooperation aiming at the development of training and competence in the community.

In addition to increasing cooperation within the EU, the R&D partnership of Posiva and Swedish SKB for a final disposal solution has continued in accordance with established procedures. On the basis of the positive experiences gained from the partnership, both companies wish to continue the cooperation in the future as well, as the transition from research to implementation is made. Continued cooperation is important to both companies, since they intend to implement final disposal according to a similar concept. According to the latest timetables, it appears that Posiva will be ready to start final disposal operations earlier than SKB, and we at Posiva should therefore be prepared to advance our project as the first licence holder in the world.

Posiva believes that it is possible to obtain the construction licence in 2014, which would allow the company to commence the excavation work related to the construction of the encapsulation plant. In order for us to be able to start civil works as planned, all construction plans as well as plans for the implementation and installation of equipment and systems must be complete, and the project organisation must be capable of implementing the project. The project planning for the encapsulation and final disposal facilities is nearing completion, and plans have been made for the organisational changes that will ensure high-quality planning and implementation of the project. The coming years will be extremely challenging for employees of Posiva, as the focus of operations moves from research to implementation. The whole world is watching to see how we succeed with our project.

Reijo Sundell
President
Posiva Oy

and holes to ensure safe final disposal. Four final deposition holes eight metres deep and 1.8 metres in diameter were drilled into one of the tunnels, using a drilling device designed by Posiva. Two other prototype devices for use in final disposal – a transport and handling device for final disposal canisters and a handling device for bentonite blocks – have been ordered and will be delivered to Olkiluoto in 2013. Civil work for the ONKALO research tunnel was completed in the summer. Structural work and heating, ventilation, air conditioning and electrical erection work in the most recently completed, approximately one-kilometre-long section of tunnel is still under way. Excavation work related to the construction of the hoist device and entrance building's second stage has been begun, and actual construction is slated to begin in late 2013.

Finland and Posiva are a model for implementing final disposal in the EU. Posiva has taken an active role in launching the operations of the 'Implementing Geological Disposal – Technology Platform' technological community established in the geological

The Board of Directors' Report for 2012

Main events

Nuclear Waste Management Programme completed

The Nuclear Waste Management (NWM) Programme 2012 that describes Posiva's work and operations for the next six years was completed and delivered to the Ministry of Employment and the Economy (TEM) and Radiation and Nuclear Safety Authority (STUK) in September. The programme guides and defines Posiva's operations until 2018.



Construction licence application submitted

A construction licence application for a final disposal facility for spent nuclear fuel was submitted to the MEE on 28 December 2012. The final disposal facility that is planned to be constructed in Olkiluoto, Eurajoki, will cover the spent nuclear fuel created by the four currently-operating plant units of TVO and Fortum, as well as the Olkiluoto 3 unit under construction and the Olkiluoto 4 unit being planned, a total of 9,000 tonnes of uranium.



YJH-2012
Olkiluodon ja Loviisan voimalaitosten
ydinjätetuollon ohjelma vuosille 2013–2015
Posiva Oy



ONKALO completed to the planned extent

Excavation work at the technical level and demonstration tunnels of ONKALO, in depth of more than 420 metres, has been completed. Four full-sized deposition holes were successfully drilled into one of the demonstration tunnels. Civil and HVAC (heating, ventilation, and air conditioning) work for the underground openings was started late in the summer of 2012.

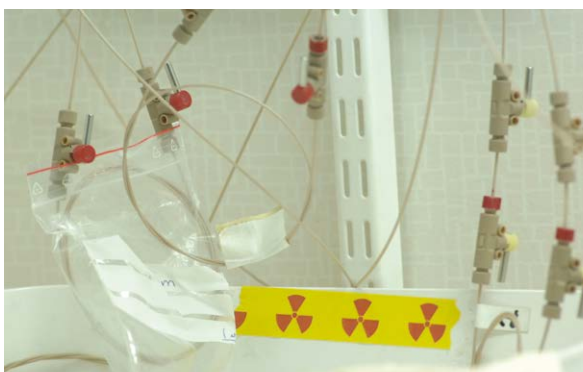
Organisational restructuring begun

Posiva's organisation was modified as part of the preparations for the construction of a nuclear facility. A Development Department and Project Department were created in place of the old Technical, Research and Construction Departments. The new departments will be responsible for the configuration management of Posiva's facilities and final disposal system, as well as for the implementation of the final disposal facility.

Research and investigations

The safety case drawn up in support of the construction licence application is the most extensive assessment of the long-term safety of geological final disposal drawn up in Finland to date. The safety case comprises more than ten reports on factors that impact long-term safety and on the safety level achievable through the planned geological solution. The assessment is based on designs compliant with the developed design principles, and on scenarios of the future evolution of the disposal system, built over the course of several years. Multifaceted performance analyses demonstrate the system's performance in its projected environment in the bedrock of Olkiluoto. Compliance with the safety regulations imposed by authorities has been examined through careful analyses of different scenarios, also including scenarios where it is assumed that the performance of some of the system's barriers has been impaired. The required safety criteria will be met in such cases as well.

The extensive report drawn up on the characteristics of Olkiluoto's bedrock collects the results of site investigations carried out over more than a quarter of a century. At first, the assessments were based on observations and measurements made above ground and from the air; later studies had access to the results of investigations of deep drill holes and the ONKALO underground facility. Relying on the investigations data, procedures have been developed for defining the locations of deposition tunnels and holes in Olkiluoto.



Research equipment used for the retention testing of radionuclides.

Demonstrating the performance of the clay materials used in the final disposal system has been a central subject of research. The sufficiency of current knowledge on the corrosion characteristics of the copper canisters has been questioned in the media. The doubts are based on the results of experiments carried out at the Royal Institute of Technology (KTH) in Sweden, which suggest that the copper could corrode much faster than previously assumed. In Posiva's view, the conditions under which the tests were carried out at KTH differ from conditions prevailing in deep bedrock, and the results, as they stand, are inapplicable to assessing the long-term safety of final disposal. Nevertheless, Posiva will continue to follow further studies on the subject, and has launched some studies of its own as well. The objective of these studies is to obtain information that would enable a more detailed understanding of the phenomena observed in the experiments.

Final disposal technology

From the demonstration tunnel excavation work carried out in ONKALO, Posiva has obtained sufficient information to start planning the excavation of the deposition tunnels. Good results were achieved in drilling four deposition holes, and the holes can be used to test the installation of bentonite buffers and canisters in the future. A crushing test was conducted on the floor of the other demonstration tunnel to improve the method for levelling the rock surface after excavation work. The test showed the method to be highly practicable, if a need for the further treatment of floor surfaces should arise in the future.

The procurement of prototypes of the equipment required for the installation of the final disposal solution's engineered barriers has progressed from the design stage to manufacture. The development work of the bentonite buffer installation device is part of the EU's Seventh Framework Programme's LUCOEX Project, whose participants include the Swedish SKB, French ANDRA and Swiss Nagra, in addition to Posiva. Each participant is developing its own final disposal solution in the project. Detailed plans for the canister transport and installation device were drawn up and manufacture of the device was started in 2012.



Collection of soil samples related to biosphere studies in Olkiluoto.

Posiva procured the manufacture of both of the above-mentioned device prototypes in Finland.

To a large extent, the R&D work for the final disposal solution's engineered barriers is carried out in cooperation with Swedish company SKB. The main focus of the work carried out in 2012 was on producing the materials required for the construction licence application, while preparing for the upcoming implementation work. The design of the final disposal canister was supplemented by analyses of the residual stress caused during the manufacture of the insert and the copper canisters creep resistance. Positive results were achieved in both analyses. To support the licence application, the required reports were drawn up on the manufacture and inspection of the canister components, as well as on the closure of the copper canisters. The design materials for the bentonite buffer that surrounds the canister were finalised, as were the materials on backfilling and closing the tunnels. The closure plan for the underground final disposal facility was also completed. The plan presents the required operations and technology for permanently filling and closing all underground spaces at the end of final disposal operations. The Posiva-coordinated DOPAS project under the EU's Seventh Framework Programme was launched in 2012. As part of the project, we started planning a construction experiment for a massive tunnel plug for ONKALO. The experiment will test the feasibility and performance of the plug's design. We also continued clay component manufacturing experiments, mostly concentrating on producing the clay blocks needed to backfill the tunnels.

We are developing a horizontal disposal alternative,

KBS-3H, in cooperation with SKB. This alternative is a variation on the vertical disposal alternative, KBS-3V, which is currently the basic solution for final disposal. The Äspö rock laboratory will carry out a full-scale test of the method as part of the aforementioned LUCOEX Project. The information obtained from the test will be used to evaluate the safety and feasibility of this alternative. In 2012, a separate description of the horizontal disposal alternative was drawn up as part of the licence application materials.

Construction

Excellent progress in sealing rock by using colloidal silicate as the grouting material was made during the excavation of the ONKALO demonstration tunnels. Expertise in the use and application of grouting methods and materials will play an important role in rock engineering planning that takes into account the long-term safety.

Excavation of the underground openings required for the research stage of ONKALO was completed in 2012. As the excavation and sealing work wound down, we recommenced complementary construction work and HVAC installation work for the technical rooms and ramp section of ONKALO, after a pause of some years. The simultaneous implementation of several construction contracts markedly enlivened the construction activities of Posiva towards the end of the year. Occupational safety remained at an excellent level throughout civil works. We made significant investments in improving our safety culture, achieving



In July, Posiva organised a Suomi Areena public event at the Olkiluoto visitor centre for the discussion of trust in final disposal.

zero tolerance, i.e. no occupational accidents occurred during the year, in our long-term accident statistics at the end of the year.

International cooperation

Posiva is involved in international cooperation both through bilateral cooperation agreements and multilateral research projects. Our bilateral cooperation with the Swedish SKB has a special position due to their similar implementation solution and the similar rock conditions in Sweden. In recent years, the technology community established by European nuclear waste organisations, 'Implementing

Geological Disposal – Technology Platform' (IGDTP), has become an important organizer of cooperation with a major role in planning the nuclear waste research carried out under the EU's framework programmes. In addition to European nuclear waste organisations, Posiva has close contacts with nuclear waste research in Canada and Japan.

Posiva also takes an active role in the projects launched by the OECD's nuclear energy agency NEA and has a representative in the organisation's Radioactive Waste Management Committee.

Corporate social responsibility and communications

The submission of the construction licence application was the most important subject of Posiva's communications in 2012. The subject was introduced through several events and media appearances over the course of the year. Posiva invited local and national media to Olkiluoto, where the research and testing of final disposal technology carried out in ONKALO was showcased to journalists. Several foreign media and nuclear industry representatives also visited Posiva to learn more about its operations. Director General Yukiya Amano of the IAEA gave a positive evaluation of the Finnish model for implementing nuclear waste management while visiting ONKALO in August. Approximately 100 groups, more than a



In February, Posiva participated in the recruiting event held at the Äijänsuo ice hall in Rauma.

thousand persons in total, were introduced to Posiva's operations during the year.

A public discussion was held at the Olkiluoto visitor centre as part of the SuomiAreena event, with the theme 'Nuclear waste into ONKALO – do you trust final disposal?'. Approximately 100 persons arrived by bus from Eurajoki, Pori and Rauma to attend the discussion.

Posiva's most significant communications channel in Eurajoki and elsewhere in the region of Satakunta is the Posiva Tutkii magazine, five issues of which were published in 2012.

In November, Posiva held a press conference to mark the publication of the book 'Kohti turvallista loppusijoitusta – ydinjätehuollon neljä vuosikymmentä' on the preparation work to date for final disposal of spent nuclear fuel. Current and former employees of Posiva, TVO and Fortum participated in the writing of the book.

The construction licence application for a final disposal facility for spent nuclear fuel was submitted to the Ministry of Employment and the Economy on 28 December 2012, and a press conference was held to publicise the event.

Environmental impact management

The company manages environmental matters in line with the certified management system and annual action plan. As part of the construction licence application, Posiva drew up a report on the environmental impact of its operations. According to the report, the company's operations do not have a significant impact on the environment. The key environmental considerations of the company's normal operations are connected to the construction of ONKALO, the processing of household and construction waste, and energy use. An analysis of potential problem situations revealed that chemical spills pose the most significant environmental risk.

The excavation work in ONKALO produced some 14,000 m³ of blasted rock in 2012, some of which was used for civil works in the area, as well as tunnel maintenance. A total of some 10,000 m³ of water was used in constructing the tunnel. The



Final disposal was showcased at Posiva's stand in the Environment Technology Exhibition in Helsinki.

average total water seepage amount of ONKALO was approximately 37 l/min, which is a low figure considering the volume of the underground space. Water pumped from the tunnel (operational water and seepage water) was first led to sedimentation and oil separation and then to the sea via an open ditch. As in previous years, the quality of the water was regularly monitored.

The action plan describes the measures taken to reduce the possible environmental impact of the company's operations. In 2012, Posiva developed its waste management through measures such as closer cooperation with TVO.

Operations management system

Posiva's integrated management system consists of manuals providing an overview of Posiva's activities, as well as of supplementary process descriptions, codes of practice and instructions. The purpose of the management system is to ensure that the safety requirements are met at Posiva's final disposal facility, and that Posiva's operations are safe, timely and cost-effective.

The comprehensiveness and functionality of the management system was assessed twice in 2012 by management review, and ten internal audits were carried out on the management system's processes.

In October, DNV Certification Oy carried out the periodic audit of Posiva's occupational health and



Director General Yukiya Amano of the IAEA (third from the left) visited ONKALO in September.

occupational safety systems required by the ISO 9001 certificate of quality and standard OHSAS 18001, as well as the recertification audit for the ISO 14001 environmental certificate.

In November, Qualitas Fennica Oy carried out an independent assessment of the functionality of the processes of Posiva's management system.

We carried out supplier audits for our major suppliers, with the intention of ensuring their ability to produce services for Posiva in compliance with the requirements set by the company.

Risk management

At Posiva, any matters that may jeopardise or delay the attainment of goals related to final disposal are perceived as the most significant risks.

Risk management is organised in a holistic manner in compliance with the operational targets set by Posiva's owners and with the principles of good governance. Posiva's risk management supports the realization of the company's strategic plans and its associated project plan in the long term and the realization of the action plan in the short term. Posiva's risk management is a systematic process where risks are identified and assessed, and their treatment measures are systematically planned, implemented and monitored. Risk management is implemented at the strategic and operative levels in line with the

instructions included in the management system.

Posiva's Operations Team discussed strategic risks in the spring and again at the end of the year. The company's most significant risks are related to international events and new requirements related to final disposal that will affect Posiva's progress. In addition, there are risks associated with the availability of human resources, expertise and suppliers of vital components, as well as with unexpected changes in costs due to issues such as changes in plans or increases in cost levels. Further risks are associated with the safety of personnel and the company, and Posiva has invested heavily in the management of these risks.

Safety and safety culture

The company manages matters of occupational health and safety in line with the certified management system and annual action plan. The year 2012 was a significant one with regard to safety, since no occupational accidents leading to absence from work occurred at Posiva or its contractors. Occupational safety was improved through various measures over the course of the year. An occupational health and safety committee was established in Posiva, and workplace visits by managers, and management safety walks, were established as a regular part of operations. The reporting of safety non-conformities was encouraged through several campaigns.

The company guards against illegal activity in its underground research facilities through structural solutions and the use of technological surveillance devices and guards. There were no disruptions that would have endangered the safety of personnel or the smooth progress of construction work in 2012.

Several reports concerning radiation and nuclear safety were drawn up in connection with the construction licence application in 2012, regarding both the characteristics of spent nuclear fuel and its safe handling. The plans for the encapsulation plant's structural safety and plans for incidents and accidents were brought up to date with the new, more accurate plant designs. In connection with the preparation of the application materials, the company drew up a probability-based safety analysis for the design stage and a preliminary readiness plan for accident management. Posiva also laid the groundwork for a plan regarding the national and international monitoring of nuclear materials.

The pursuit of a high-quality safety culture is evident in all of Posiva's operations.

Construction licence application

The construction licence application and its appendices were submitted to the Ministry of Employment and the Economy by the end of 2012 as planned. The application consisted of the reports required by Sections 31 and 32 of the Nuclear Energy Decree (161/1988) on matters such as the company, place of final disposal, plant unit to be constructed, design and safety principles, as well as significance with regard to safety. The reports on transport, retrieval and environmental impact required by decisions-in-principle were also enclosed with the application. The core conclusion reached in the application materials is that the encapsulation and final disposal facility in Olkiluoto can be constructed to enable final disposal of spent nuclear fuel to begin around the year 2020.

Altogether, the application materials submitted to the Ministry comprised close to five hundred pages. The application was drawn up in Finnish, and key sections will be translated into Swedish. The application can be read on Posiva's web site.

In connection with the submission of the application, Posiva submitted the reports required by Section 35 of the Nuclear Energy Decree, Government Decree 736/2008 and STUK's regulatory guides on nuclear safety (YVL guides) to the Radiation and Nuclear Safety Authority STUK. The application materials submitted to STUK consisted of hundreds of individual documents and several background reports referred to in the documents. In early 2013, the application materials will be complemented with a number of reports, mostly related to demonstrating long-term safety. The final reports concerning final disposal, along with the justifications related to demonstrating safety, will be submitted in connection with the operating licence application, in accordance with Section 36 of the Nuclear Energy Decree.

The core conclusion reached in the reports delivered to STUK in connection with the construction licence application is that the final disposal of spent nuclear fuel can be carried out safely in the manner described in the materials, with regard to both the operational safety and long-term safety.

Nuclear Waste Management Programme 2012

The NWM 2012 programme drawn up by Posiva to provide guidelines for the research, development and planning work regarding the final disposal of spent nuclear fuel was submitted to the Ministry of Employment and the Economy and the Radiation and Nuclear Safety Authority in the autumn.

The NWM 2012 programme describes the current state of the final disposal of spent nuclear fuel, as well as plans for the years 2013–2018. In addition, the current state of and future plans for the storage of spent nuclear fuel, handling of power plant waste and decommissioning, that TVO and Fortum are responsible for, are described in a separate report.



The Board of Directors from left to right: Reijo Sundell, Veijo Ryhänen, Pekka Leskelä, Sasu Valkamo and Jarmo Tanhua.

Administrative bodies

BOARD OF DIRECTORS

Teollisuuden Voima Oyj
Jarmo Tanhua, Chairman
Veijo Ryhänen

Fortum Power and Heat Oy
Sami Hautakangas until 20 April 2012
Pekka Leskelä
Sasu Valkamo from 20 April 2012

Ulla-Maija Moisio, Secretary,
Teollisuuden Voima Oyj

President Reijo Sundell and Executive
Vice President Timo Äikäs have attended
the Board meetings.

The Board of Directors convened six times.

PRESIDENT

Reijo Sundell

OPERATIONS TEAM

Reijo Sundell, Chairman

Members

Erkki Palonen, Construction Director
Vesa Ruuska, Safety Manager
Timo Seppälä, Communications Manager,
Secretary
Anja Smeekes, Financial Manager
Elisa Vahteristo, HR Manager
Juhani Vira, Research Director
Timo Äikäs, Executive Vice President

The Operations Team convened 23 times.



The Operations Team from left to right: Anja Smeekes, Reijo Sundell, Juhani Vira, Timo Seppälä, Vesa Ruuska, Erkki Palonen, Timo Äikäs, Elisa Vahteristo.

COMMITTEES APPOINTED BY THE BOARD

Technical Committee

Teollisuuden Voima Oyj
 Mikko Kosonen, Chairman
 Liisa Heikinheimo
 Juha Riihimäki
 Fortum Power and Heat Oy
 Harriet Kallio
 Jukka Sorjonen
 Jari Tuunanen
 Posiva
 Erkki Palonen
 Juhani Vira
 Timo Äikäs
 Kimmo Lehto, Secretary

The Committee convened six times.

Financial Committee

Teollisuuden Voima Oyj
 Klaus Luotonen
 Timo Palomäki
 Veijo Ryhänen
 Fortum Power and Heat Oy
 Tiina Tuomela, Chairman
 Sami Hautakangas
 Mikko Huopalainen
 Posiva
 Reijo Sundell
 Anja Smeekes
 Jussi Palmu, Secretary

The Committee convened seven times.



Auditors

CPA Eero Suomela, nominated by
PricewaterhouseCoopers Oy
CPA Robert Kajander, nominated by Deloitte &
Touche Oy

Shares of ownership

Posiva Oy is a joint venture company owned by
Teollisuuden Voima Oyj and Fortum Power and Heat
Oy. Teollisuuden Voima Oyj owns 60 % and Fortum
Power and Heat Oy 40 % of Posiva.

Personnel and organisation

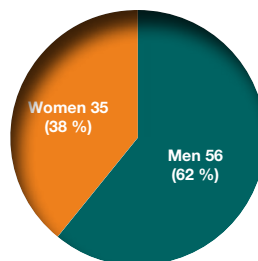
At the end of the year, Posiva employed 101 persons
(94 in 2011). The figure includes both permanent and
temporary employment contracts. During the year,
Posiva employed an average of 104 (98) persons,
some of them on a fixed-term contract and some
doing summer jobs. During the year, the company
recruited 9 (9) new permanent employees, mainly to
different specialist positions related to nuclear waste
management. Five (four in 2008) persons left the
company, two (one) of these due to retirement.

The average number of training days per person
in 2011 was nine (11.1). To date, 1,378 persons have
undergone the introductory training arranged by
Posiva for the ONKALO construction site. In addition
to internal training and training arranged by TVO,
several employees of Posiva attended the national
course on nuclear safety and the national course on
nuclear waste management. The planning teams of
both of these courses included representatives from
Posiva. In addition, Posiva personnel also participated
in several external training events and seminars within
their respective areas of expertise. Morning meetings
with supervisors, arranged for the discussion of
questions related to supervisory work, were instated as
a new procedure. At the beginning of 2012, a SAFEX
survey that measured organisational functionality,
development of competence and cooperation between
nuclear industry organisations was carried out for the
personnel of Posiva. Development targets were set on
the basis of the results. In the summer of 2012, Posiva
took part in the 'Vastuullinen kesäduuni' campaign
promoting responsible summer employment. Through
its participation in the campaign, the company wished
to facilitate the employment of young people in
meaningful summer jobs, leading to a good working
life later on.

There were no changes to the collective agreements
in the energy industry in 2012. The agreements are

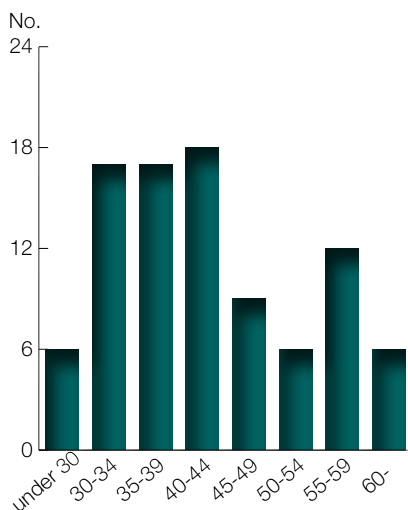


valid until 30 September 2014. Employment matters were discussed in the HR relations meetings between personnel groups. Matters pertaining to the entire personnel were discussed in consultation meetings. The entire personnel of Posiva are included in a performance bonus scheme. Performance bonuses can be transferred directly to the Group's personnel fund.

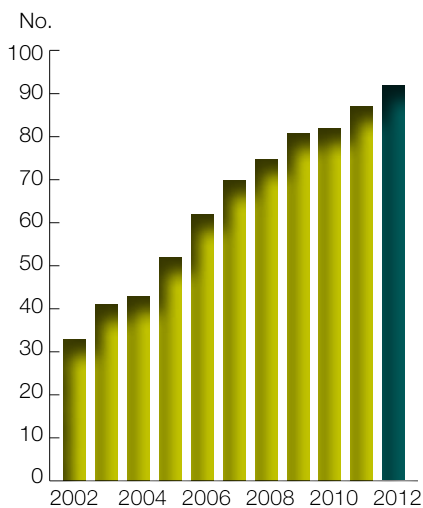


Gender distribution

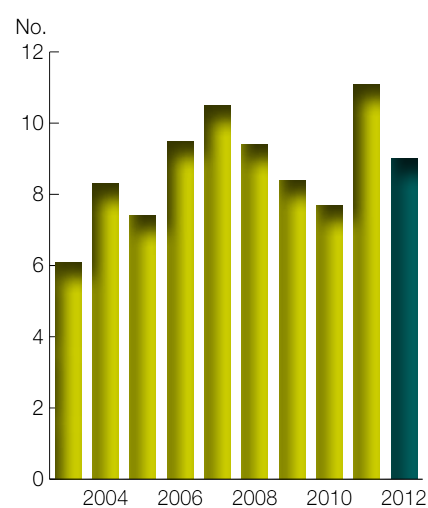
Age structure of Posiva personnel



Number of employees



Number of training days per person



Office premises

Posiva has offices in Eurajoki at Olkiluoto and at the Vuojoki Mansion. In Olkiluoto, there are Posiva employees working at the central office and in the ONKALO office building.

Economy and finance

Posiva's shareholders bear the costs related to its main line of business, i.e. the management of spent nuclear fuel from the Olkiluoto and Loviisa power plants, as well as the research and development necessitated by it. Charges made by the company account for most of its revenue. In addition, the company carries out minor assignments for its owners and external customers. The company's sales amounted to EUR 67.3 (68.6) million, of which the main line of business accounted for EUR 67.2 (68.5) million.

Posiva attends to the nuclear waste management tasks stipulated in the Nuclear Energy Act on behalf of the power generation companies, its owners. Consequently, the company charges for the annual costs arising from this, including the acquisition cost of property, plant and equipment. Since the nuclear waste management costs will not accrue income in the future for the companies with waste management obligations, nor for Posiva, Posiva's nuclear waste management costs have been deducted in total as annual costs, even the acquisition cost of property, plant and equipment. The companies with waste management obligations make provisions for the cost of nuclear waste management by paying annual nuclear waste management fees to the State Nuclear Waste Management Fund.

Extent of research and development operations

Posiva's current operations mainly consist of extensive research and development work aimed at establishing the prerequisites of final disposal. In 2012, a total of some EUR 51.9 (52.7) million was used for R&D, accounting for 77.1% (76.8%) of sales. The research

and development activities encompass, besides ONKALO, surveys above ground, the development of encapsulation technology and the planning and design of the final disposal facility.

Key indicators

Due to the company's principle of operations, the presentation of key financial indicators is not meaningful for illustrating the company's financial position or financial performance. The financial statements do not show a profit or loss.

Events after the end of the financial period

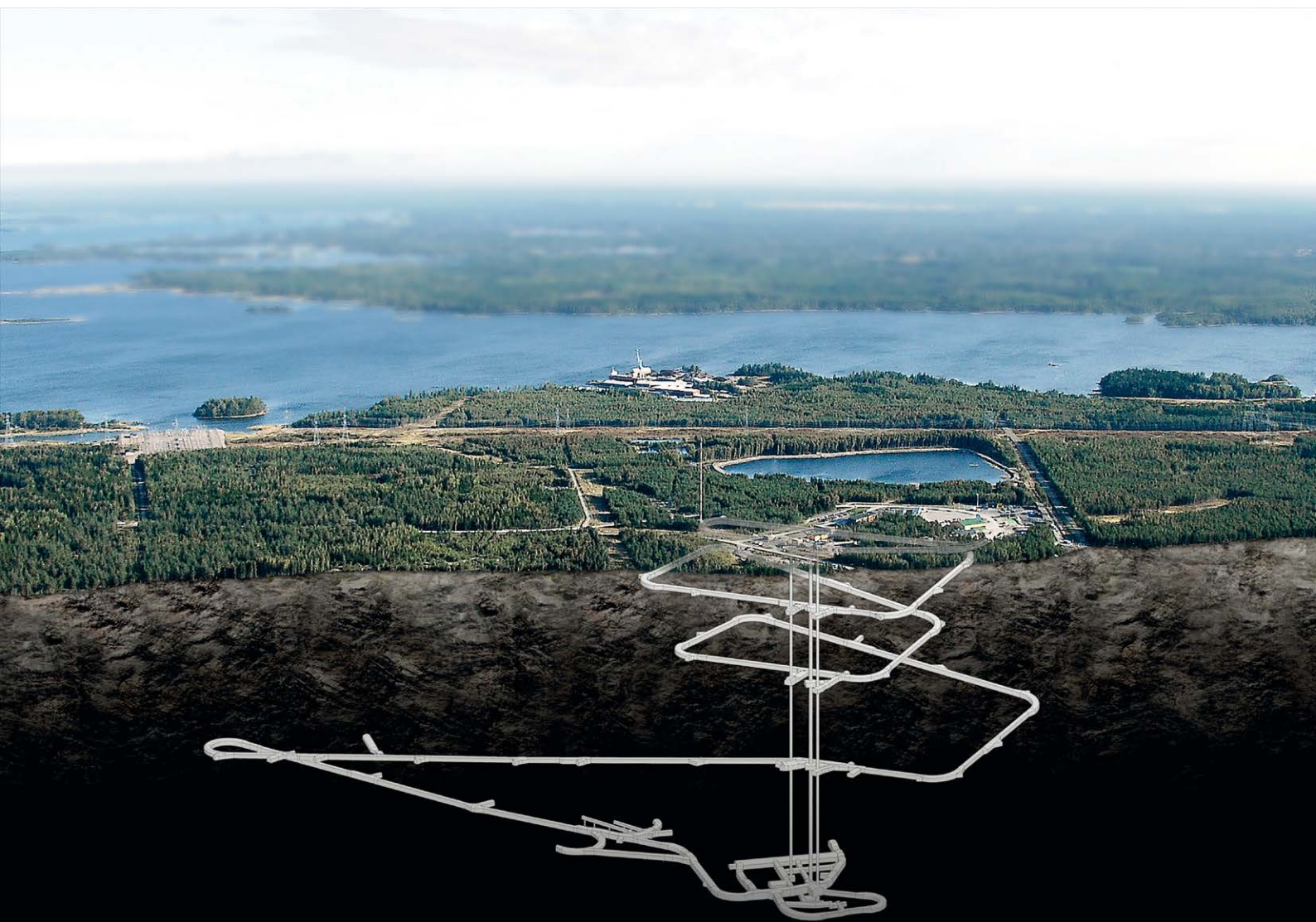
No events having an impact on business developments have taken place since the end of the financial period.

Assessment of probable future developments

The company's operations are expected to continue during the current financial period primarily as they did in the previous year. Sales are expected to increase somewhat compared with the previous financial period.

Distribution of profits

The company does not have any unrestricted equity, which is why no dividends can be distributed.



In the summer of 2012, nearly five kilometres of the ONKALO road tunnel had been excavated in the rock of Olkiluoto.

Financial statements

INCOME STATEMENT

	Note	1.1. - 31.12.2012	1.1. - 31.12.2011
Turnover	1	67,307,058.67	68,622,212.91
Other income	2	462,850.28	462,704.52
Personnel expenses	3	-7,249,183.69	-6,604,676.32
Depreciation	4	-349,837.33	-362,256.18
Other expenses	5	-60,130,039.03	-62,148,762.45
Profit/loss from operations		40,848.90	-30,777.52
Financial income and expenses	6	-36,929.99	34,300.20
Profit/loss before appropriations and taxes		3,918.91	3,522.68
Income taxes	7	-3,918.91	-3,522.68
Profit/loss for the financial year		0.00	0.00

BALANCE SHEET

ASSETS	Note	31.12.2012		31.12.2011	
Non-current assets					
Intangible assets					
Intangible rights	8	13,125.44		9,115.31	
Other non-current expenditure	8	743,207.15	756,332.59	1,047,846.50	1,047,846.50
Tangible assets					
Buildings	8	81,409.79		84,801.86	
Machinery and equipment	8	119,772.78	201,182.57	158,804.75	243,606.61
Investments					
Other shares and holdings	8	208,771.50		208,771.50	
Other loan receivables	8	3,810,306.99	4,019,078.49	4,158,661.25	4,367,432.75
Total non-current assets			4,976,593.65		5,668,001.17
Current assets					
Current receivables					
Trade receivables	9	179,213.47		170,283.92	
Loan receivables	10	348,354.26		340,655.44	
Prepayments and accrued income	11	2,091,041.51		1,859,676.94	
Other receivables	12	70.00	2,618,679.24	0.00	2,370,616.30
Cash and cash equivalents	13		18,229,516.85		21,141,906.46
Total current assets			20,848,196.09		23,512,522.76
Total assets			25,824,789.74		29,180,523.93
EQUITY AND LIABILITIES					
Equity					
Share capital	14	1,682,000.00		1,682,000.00	
Retained earnings/loss		0.00		0.00	
Profit/loss for the financial year		0.00		0.00	
Total equity			1,682,000.00		1,682,000.00
Liabilities					
Non-current liabilities	16	5,838,037.08		6,243,245.67	
Current liabilities					
Advances received	17	4,699,465.67		1,820,235.86	
Trade payables	18	6,694,557.85		9,873,970.51	
Other current liabilities	19	1,449,497.72		757,991.03	
Accruals and deferred income	20	5,461,231.42	18,304,752.66	8,803,080.86	21,255,278.26
Total liabilities			18,304,752.66		21,255,278.26
Total equity and liabilities			25,824,789.74		29,180,523.93

CASH FLOW STATEMENT

€1,000	2012	2011
Operating activities		
Operating profit/loss	41	-31
Adjustments to operating profit/loss *	350	362
Change in working capital **	-3,196	4,942
Interest received	145	209
Interest paid	-183	-174
Taxes paid	-4	-2
Cash flow from operating activities	-2,847	5,306
Investing activities		
Acquisition of intangible and tangible assets	-7	-27
Proceeds from sale of intangible and tangible assets	0	0
Withdrawals of loans granted	341	333
Cash flow from investing activities	334	306
Financing activities		
Withdrawals of long-term loans	221	221
Repayment of long-term loans	-620	-613
Cash flow from financing activities	-399	-392
Change in financial assets	-2,912	5,220
Financial assets January 1	21,142	15,922
Financial assets December 31	18,230	21,142
* Adjustments to operating profit/loss		
Depreciation and write-downs	350	362
Total	350	362
** Change in working capital		
Increase (-) or decrease (+) in non-interest-bearing receivables	-240	181
Increase (+) or decrease (-) in short-term non-interest-bearing liabilities	-2,956	4,761
Total	-3,196	4,942

NOTES TO FINANCIAL STATEMENTS 31/12/2012

GENERAL INFORMATION ABOUT THE COMPANY

Posiva Oy is a joint venture company owned by Teollisuuden Voima Oyj and Fortum Power and Heat Oy. Copies of the financial statements are available at www.posiva.fi and by post from Olkiluoto, 27160 Eurajoki, Finland.

ACCOUNTING PRINCIPLES

Measurement principles and methods and accrual principles and methods

Measurement of non-current assets

Intangible rights, other non-current expenditure as well as property, plant and equipment are capitalised at immediate acquisition cost less depreciation/amortisation according to plan. The depreciation/amortisation according to plan equals the maximum amounts allowed by the Finnish Business Tax Act.

The acquisition costs of property, plant and equipment acquired for nuclear waste management prescribed by the Nuclear Energy Act have been deducted in their totality as annual costs because nuclear waste management costs will not accrue income in the future for the companies with waste management obligations or for Posiva.

The depreciation/amortisation periods for other non-current assets are as follows:

Intangible rights	Straight-line depreciation over 10 years
Other long-term expenditure	Straight-line depreciation over 10 years
Computer software	Straight-line depreciation over 5 years
Machinery and equipment	Reducing balance depreciation at 25%

Research and development costs

The research and development costs have been recognised as annual costs during the year in which they were incurred.

NOTES TO THE INCOME STATEMENT

	2012	2011
1. Turnover		
Income, main line of business	67,249,377.51	68,549,764.14
Income, auxiliary line of business, shareholders	43,376.24	45,361.07
Income, auxiliary line of business, other companies	14,304.92	27,087.70
Total	67,307,058.67	68,622,212.91
2. Other income		
Rental income	127,411.36	74,051.36
Subsidies received	333,522.64	388,653.16
Other income	1,916.28	0.00
Total	462,850.28	462,704.52
3. Personnel		
Average number of personnel	104	98
Number of employees on 31.12.	101	94
Personnel expenses		
Wages and salaries	5,998,955.86	5,445,748.26
Pension expenses	972,347.24	893,350.78
Other compulsory personnel expenses	277,880.59	265,577.28
Total	7,249,183.69	6,604,676.32
4. Depreciation		
Depreciation plan		
Planned depreciation is the maximum depreciation under Finnish Business Tax Act.		
Planned depreciation		
Intangible rights	2,162.09	1,428.94
Other long-term expenditure	304,639.35	304,639.33
Buildings	3,392.07	3,533.42
Machinery and equipment	39,643.82	52,654.49
Total	349,837.33	362,256.18

NOTES TO THE INCOME STATEMENT

	2012	2011
5. Other expenses		
Rents	2,957,318.48	2,732,696.45
Infrastructure services	4,702,944.00	5,199,967.06
Research services	32,994,955.10	28,849,299.26
Research facility expenses	14,270,770.77	19,132,474.51
Other expenses	5,204,050.68	6,234,325.17
Total	60,130,039.03	62,148,762.45
Acquisition costs of fixed assets used for nuclear waste management are booked as annual expenses under Section 5:1 of the Accounting Law	15,061,527.97	20,203,480.67
Auditors' fees		
Audit fees	9,000.00	12,000.00
Total	9,000.00	12,000.00
6. Financial income and expenses		
Interest income and other financial income		
Interest income from long-term investments	101,684.56	109,213.22
Other interest and financial income	42,906.47	99,509.94
Total	144,591.03	208,723.16
Interest and other financial expenses		
To others	181,521.02	174,422.96
Total financial income (+) and expenses (-)	-36,929.99	34,300.20
7. Income tax expense		
Taxes based on the taxable income of the financial year	3,918.91	3,522.68
Total	3,918.91	3,522.68

NOTES TO THE BALANCE SHEET

8. Non-current assets	Intangible rights	Other non-current expenditure	Intangible assets total
Intangible assets			
Acquisition cost 1.1.2012	43,923.50	3,260,179.14	3,304,102.64
Increase	6,172.22	0.00	6,172.22
Acquisition cost 31.12.2012	50,095.72	3,260,179.14	3,310,274.86
Accumulated planned depreciation 1.1.	34,808.19	2,212,332.64	2,247,140.83
Planned depreciation	2,162.09	304,639.35	306,801.44
Book value 31.12.2012	13,125.44	743,207.15	756,332.59
	Buildings	Machinery and equipment	Tangible assets total
Tangible assets			
Acquisition cost 1.1.2012	138,183.20	878,884.05	1,017,067.25
Increase	0.00	611.85	611.85
Decrease	0.00	0.00	0.00
Acquisition cost 31.12.2012	138,183.20	879,495.90	1,017,679.10
Accumulated planned depreciation 1.1.	53,381.34	720,079.30	773,460.64
Accumulated depreciation from deduction	0.00	0.00	0.00
Planned depreciation	3,392.07	39,643.82	43,035.89
Book value 31.12.2012	81,409.79	119,772.78	201,182.57

Investments	2012	2011
Other shares and holdings	208,771.50	208,771.50
Other loan receivables	3,810,306.99	4,158,661.25
Total	4,019,078.49	4,367,432.75

NOTES TO THE BALANCE SHEET

	2012	2011
9. Trade receivables		
Trade receivables from related party	6,628.96	18,446.33
Trade receivables	172,584.51	151,837.59
Total	179,213.47	170,283.92
10. Loan receivables		
Loan receivables	348,354.26	340,655.44
Total	348,354.26	340,655.44
11. Prepayments and accrued income		
Prepayments and accrued income from related party	63,424.00	0.00
Prepaid rent	1,990,530.00	1,769,360.00
Other deferred income	37,000.00	89,800.00
Other prepaid expenses	87.51	516.94
Total	2,091,041.51	1,859,676.94
12. Other prepaid expenses		
Other prepaid expenses	70.00	0.00
Total	70.00	0.00
13. Cash and cash equivalents		
Cash and equivalents	18,229,516.85	21,141,906.46
Total	18,229,516.85	21,141,906.46
14. Share capital		
Share capital 1.1.	1,682,000.00	1,682,000.00
Change in share capital	0.00	0.00
Share capital 31.12.	1,682,000.00	1,682,000.00
15. Debts fall due in more than five years	4,869,626.75	5,052,643.22

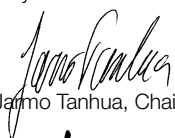
NOTES TO THE BALANCE SHEET

16. Non-current liabilities	2012	2011
Non-current liabilities from related party	5,838,037.08	6,243,245.67
Total	5,838,037.08	6,243,245.67
17. Advances received		
Advances received from related party	497,365.67	1,820,235.86
Other advances received	4,202,100.00	0.00
Total	4,699,465.67	1,820,235.86
18. Trade payables	6,694,557.85	9,873,970.51
19. Other liabilities		
Financial liabilities from related party	626,375.59	619,803.43
Tax liability	821,534.21	137,263.47
Other liabilities	1,587.92	924.13
Total	1,449,497.72	757,991.03
20. Accruals and deferred income		
Accrued interests	874.38	2,266.63
Accrued wages and salaries	1,906,808.71	1,707,745.37
Estimate of expenses not yet charged	3,553,548.33	7,093,068.86
Total	5,461,231.42	8,803,080.86
21. Commitments		
Rent liabilities		
Rent liabilities falling due in less than a year	442,340.00	442,340.00
Rent liabilities falling due later	4,423,400.00	4,865,740.00
Total	4,865,740.00	5,308,080.00

Posiva has rented from Teollisuuden Voima Oyj a land area for the final disposal of spent nuclear fuel. The rental period is from July 1, 2003 to June 30, 2103. The rental agreement is subject to notice in case the land area is not suitable for the final disposal of spent nuclear fuel. The rent is checked every two years according to cost-of-living index. The rent was EUR 590,982.08 in 2012 (EUR 449,190.53 in 2011).

SIGNATURES TO THE ANNUAL REPORT AND FINANCIAL STATEMENTS

Helsinki, 28. February 2013



Jarmo Tanhua, Chairman



Pekka Leskelä



Veijo Ryhänen



Sasu Valkama



Reijo Sundell, President

AUDITORS' REPORT

To Posiva Oy's Annual General Meeting

We have audited the accounts, the financial statements, the annual report and the management of Posiva Oy for the financial year 1 January – 31 December 2012. The financial statements include the balance sheet, income statement, funds statement and the notes to the financial statements.

The responsibilities of the Board of Directors and the President

The Board of Directors and the President are responsible for drawing up the financial statements and annual report as well as for giving correct and necessary information that is in accordance with Finnish regulations governing the preparation of financial statements. The Board of Directors is responsible for organising proper monitoring of accounting and financial management. The President is responsible for ensuring that accounts are in compliance with legislation and that financial management has been organised in a reliable manner.

The responsibilities of the Auditor

We are obligated to issue a statement on the financial statements and the annual report on the basis of our audit. The Auditing Act prescribes that we are obligated to observe the principles of professional ethics. We have performed the audit in compliance with the good auditing practice observed in Finland. Good auditing practice requires us to plan and perform the audit to obtain reasonable assurance as to whether the financial statements and the report by the Board of Directors are free from material misstatement and whether the members of the Board of Directors or the President are guilty of an act or omission that may result in liability for damages, or have violated the Finnish Limited Liability Companies Act or the Articles of Association.

An audit involves the performance of procedures to obtain audit evidence relating to the amounts and disclosures in the financial statements and the review by the Board of Directors as well as other information presented therein. The procedures selected depend on the auditor's judgment, including the assessment of risk of material misstatement due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements and the review by the Board of Directors. The auditor evaluates internal control in order to be able to design audit procedures that are appropriate in the circumstances, but not for the purpose of issuing a statement regarding the effectiveness of the company's internal control. An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of accounting estimates made by the executive management, as well as evaluating the overall presentation of the financial statements and the review by the Board of Directors.

We believe that we have obtained a sufficient amount of appropriate audit evidence to provide a basis for our statement of opinion.

Statement of opinion

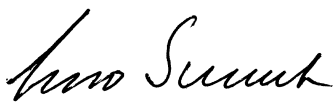
We therefore state that the financial statements and the annual report present true and sufficient information about the result of the Company's activities and its financial standing, as stipulated in the Finnish regulations governing the preparation of financial statements and the annual report. The annual report is consistent with the financial statements.

Other statements of opinion

We recommend that the financial statements be adopted. We recommend that the members of the Board of Directors as well as the President be discharged from liability for the financial year audited by us.

Helsinki, 28 March 2013

PricewaterhouseCoopers Oy
Authorised Public Accountants



Eero Suomela
CPA

Itämerentori 2, PO BOX 1015, FI-00101 Helsinki
Registered office in Helsinki, Business ID 0486406-8

Deloitte & Touche Oy
Authorised Public Accountants



Robert Kajander
CPA

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