ENVIRONMENTAL REPORT

2021

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Reliable green power

The Olkiluoto plant units are known for their world-class load factors. 14.4 TWh of climate-friendly electricity was produced in Olkiluoto in 2021, reaching a combined load factor of 92.8 percent. The production in Olkiluoto eliminated some 12 million metric tonnes of CO_2 emissions when compared to producing the same volume of electricity with more carbon-intensive production methods. This roughly corresponds with emissions from all the traffic in Finland.

TVO'S MISSION is to produce climate-friendly nuclear electricity for its shareholders safely and competitively, thus creating well-being for the whole of Finland. We at TVO want to be valued trailblazers of the nuclear industry, and the management of the nuclear power lifecycle is an integral part of this aspiration. We are also the first in the world to have a solution for the final disposal of spent nuclear fuel. Posiva's final disposal project proceeded at the end of 2021 to the submittal of the operating licence application to the Ministry of Economic Affairs and Employment. The final disposal solution of nuclear fuel acts as a game changer in Finland, when assessing the overall sustainability of the lifecycle of nuclear power.

The commissioning of Olkiluoto 3 proceeded to fuel loading in March 2021. Historical moments were experienced in December, when the startup of the plant unit took place, i.e., the chain reaction started. Electricity production starts in March 2022 according to the schedule, when OL3 EPR (European Pressurised Reactor) is connected to the national grid. Regular electricity production is to start in July 2022. This also means the fulfilment of Finland's greatest act for the climate and the increase of our production to about 30 percent of Finland's annual demand for electricity. TVO's preparedness to commission OL3 EPR has been verified for years also by independent experts. Now, activities are already carried out according to procedures of a nuclear power plant in use, putting safety before everything else.

> **14.4 TWh of climate-friendly electricity was produced in Olkiluoto in 2021, reaching a combined load factor of 92.8 percent.**

Being a nuclear professional and a trailblazer is defined by completing tasks safely and responsibly, as well as continuously improving operations, anticipating, and communicating openly. Our Group-level policies and Code of Conduct have been built on these values to support optimal work. Responsible operations are reflected in many different ways in the TVO Group, and the topic has been reported on in the Environmental Report already for 25 years and in the Corporate Social Responsibility Report for 20 years.

Jarmo Tanhua

TVO as a company

Teollisuuden Voima Oyj (TVO) is a non-listed public limited liability company owned by Finnish industrial and energy companies. TVO's line of business is construction and procurement of power plants and power transmission equipment, as well as production, supply, and transmission of electricity, primarily to its shareholders under the terms specified in the Articles of Association.

TVO OPERATES according to the cost-price principle (Mankala principle). TVO is owned by five shareholders, some of which – like TVO – operate according to the cost price principle. Electricity generated by TVO serves the needs of Finnish industrial and energy companies, some of which were owned by a total of 131 Finnish municipalities in 2021. The Olkiluoto nuclear power plant generates approximately 17 percent of all the electricity consumed in Finland.

TVO's operations are based on a strong safety culture and securing the safety of production. TVO's operational system covers production operations at the Olkiluoto nuclear power plant, maintenance and development of production capacity, construction of additional production capacity, as well as related steering and resourcing operations. The system meets the requirements of international quality management, environmental, and health and safety standards, and it has been certified by DNV Business Assurance Finland Oy Ab. The general part of the operational system also acts as the licensee's quality management system approved by the Radiation and Nuclear Safety Authority (STUK).

The nuclear electricity produced in Olkiluoto plays a significant role in the economic development, electricity self-sufficiency, and general well-being of the whole of Finland. Nuclear electricity also plays an important role in the reduction of greenhouse gas emissions and the achievement of climate targets. The emissions generated by nuclear power are low: throughout the lifecycle, the greenhouse gas emissions remain at the same level as for hydropower and wind power. TVO is a major contributor to sustainable development and the mitigation of climate change.

The objectives of TVO's strategy include a solid safety brand, predictable and competitive price of electricity, and satisfied customers. The goals are to maintain a competitive average electricity production cost and to ensure that the operability of the plant units meets the company's goals. The safety culture is maintained at a high level and safety is systematically upheld and developed at all stages of the nuclear power lifecycle.

The TVO Group comprises subsidiaries TVO Nuclear Services Oy (TVONS) and nuclear waste management company Posiva Oy (Posiva). TVONS is a subsidiary fully owned by TVO, providing services based on TVO's expertise and covering the entire lifecycle of a nuclear power plant. Posiva is jointly owned by TVO and Fortum Power and Heat Oy (Fortum), TVO's shareholding being 60 percent. Posiva is responsible for the final disposal of spent nuclear fuel generated at the power plants of its owners TVO (Olkiluoto NPP) and Fortum (Loviisa NPP). Posiva Solutions Oy (PSOY) is a fully owned subsidiary of Posiva, which sells Posiva's expertise generated through 40 years of multidisciplinary research.

MISSION

We produce climate-friendly electricity with nuclear power for our shareholders in a safe and competitive manner, creating quality of life for Finland.

VISION

A valued pioneer of the nuclear industry.
Producing 30% of Finland's electricity reliably.

STRATEGIC CHOICES

Safety and availability at a high level

OL3

POSIVA

Strategic investments

BUSINESS FOCUSED LEADERSHIP – SMOOTH EVERYDAY WORK FOR OLKILUOTO CREW

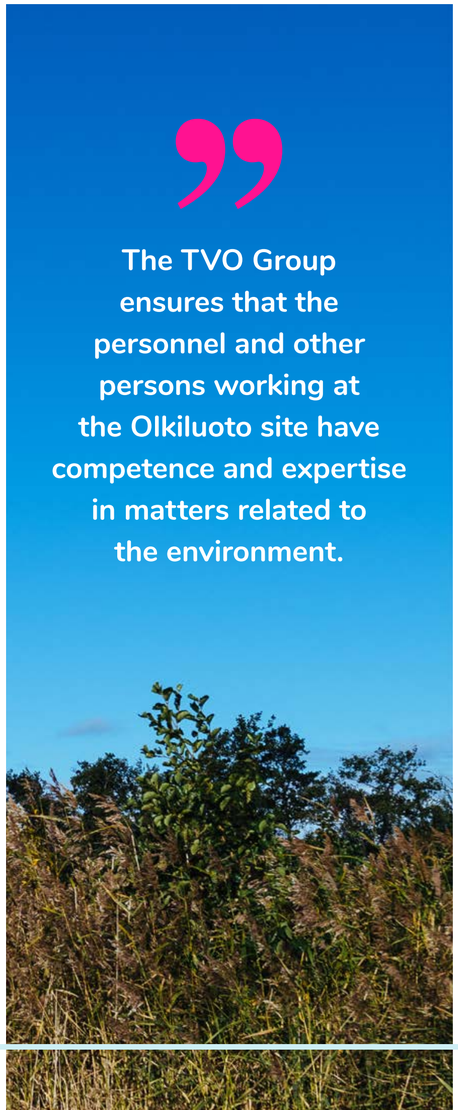
VALUES

• Sustainability • Proactiveness
• Transparency • Continuous improvement

Responsibility for the environment and climate

With its Group-level policies, the TVO Group has committed to the principles of sustainable development, and environmental responsibility is an important part of the company's management system.

TVO AND POSIVA carry their responsibility for the environment by identifying the environmental and energy efficiency aspects of their operations and by minimising the related adverse impacts. Operational objectives are specified in compliance with the principle of continuous improvement. Environmental research has been conducted on the Olkiluoto island since the 1970s, years before electricity production was started. The early baseline studies created a basis for the environmental monitoring programmes aimed at facilitating environmental radiation monitoring and determination of the impact on waters. The TVO Group ensures that the personnel and other persons working at the Olkiluoto site have competence and expertise in matters related to the environment.



The TVO Group acknowledges the importance of its overall responsibility for the environment during all the phases of the fuel cycle. The safe use of nuclear fuel is ensured from raw material procurement to final disposal. The company monitors and supervises the management of environmental issues implemented by the fuel suppliers. TVO requires that the suppliers assume responsibility for the securing and development of living conditions in the surroundings of uranium production and processing plants, taking indigenous peoples into consideration. Fuel is dealt with in a responsible manner all the way from uranium mines to final disposal, according to the principle of "from bedrock to bedrock". The environmental responsibility of final disposal is also on financially stable ground, since nuclear power companies in Finland bear the costs of nuclear waste management, and the funds for that purpose are collected into the Finnish State Nuclear Waste Management Fund.

The aim at the Olkiluoto nuclear power plant is to prevent and further reduce the already low releases of radioactive substances. Abnormal events in the plant process are anticipated and preparedness for the prevention of environmental damage caused by them has been established.

Energy and material efficiency is taken into account in all operations

ENERGY EFFICIENCY requirements are observed and energy efficiency is improved in all operations at Olkiluoto. The efficiency of energy consumption is monitored and continuously improved by taking energy aspects into account in project planning, the procurement of components, and the development of operating practices. Plant unit modernisation projects are implemented to improve the energy efficiency of the power plant process.

TVO participates in the Energy Efficiency Agreement and complies with the associated Action Plan for Energy Production that describes the implementation of actions designed to make the use of energy more efficient and to improve the efficiency of primary energy use as well as the total efficiency of energy production.

TVO and Posiva improve the efficiency of the use of energy and raw materials, and improve the reuse of waste. The goals are to increase the relative share of waste delivered to reuse and to decrease the amount of radioactive waste. TVO also strives to reduce the amount of spent fuel by optimising the use and properties of the fuel.

Sustainable utilisation of the environment is taken into account in the development of the Olkiluoto area and the expansion of operations. Surrounded by four nature conservation areas, the small island of Olkiluoto currently produces around one-sixth of all the electricity used in Finland. Once OL3 is completed, the production volume will increase to around one-third. The concentration of energy production in a small geographic area minimises the environmental impact and allows the preservation of other areas in their natural state.

Employees as well as companies and partners working in the power plant area are expected to demonstrate a responsible attitude towards environmental matters in accordance with the Group-level policies.

Environmental management

The TVO Group's operations are managed with a certified environmental management system that complies with the international standard ISO 14001:2015 and includes an integrated energy efficiency system. TVO's environmental management system is also EMAS registered.

THE GOAL of the management system is increasing the level and continuous improvement of environmental protection. TVO and Posiva have identified environmental and energy aspects related to their operations and assessed their significance. The significance of environmental and energy aspects is assessed based on statutory and permit requirements as well as by observing the severity / utility of the impact, probability, and impacts to the stakeholder groups.

Also, opportunities to influence the issue affect the assessment process.

Targets have been specified for the significant environmental and energy aspects in the Environment and Energy Efficiency Programme. The targets have been confirmed by the Management Group. A team of environmental experts from various organisational units monitors the status of the targets regularly. Other subjects discussed at the team meetings include the current status of environmental non-conformities, environmental observations, current statutory matters, and other environmental issues. The team acts as an expert, advisor, and provider of information in environmental issues.

The feasibility of the environmental management system is assessed semi-annually in conjunction with the management review. If necessary, corrective actions are specified to ensure that the goals are reached. The TVO Group identifies all statutory and other requirements pertaining to its operations and systematically monitors the requirements for any changes. Compliance with the requirements is also assessed in conjunction with the management review. Furthermore, operations are regularly assessed both within the organisation and by means of external audits.

TVO's environmental management system complies with the ISO 14001:2015 standard. The system is also EMAS registered.

TARGET 2021	ACTUAL RESULT
Management of environmental issues at OL3: Harmonizing and updating the environmental systems of TVO and the plant supplier	The need to update the Environmental Manual as a result of the commissioning of OL3 was assessed and the required procedures have been updated. The development of waste management was continued and the screenings recovery plant entered service.

Proactive environmental safety

THE ASSESSMENT of environmental risks is part of TVO's comprehensive risk management process. Environmental risks have been identified and assessed, and no risks with significant impact were detected. TVO also utilises a proactive safety observation procedure to prevent environmental damage. A total of 132 observations regarding the environment and energy efficiency were made over the course of the year. They involved matters such as the processing of waste, the management of chemicals, energy efficiency, cleanliness, and general order. TVO's initiative operations also support stakeholder group involvement in TVO's environmental management. All of the safety observations and initiatives are monitored, and all deficiencies are corrected without delay.

In 2021, a total of 55 litres of oil was released into the soil as a result of the breakage of working machines and equipment. All of the oil was successfully recovered. There were also minor refrigerant leaks from the cooling devices. The environmental authorities are informed of all significant environmental deviations and events.

Active stakeholder cooperation

STAKEHOLDERS PLAY a key role for a company that is engaged in sustainable operations. The Olkiluoto Visitor Centre normally receives some 13,000-15,000 visitors each year. The visitors are openly told about the TVO Group's operations, and their questions are answered. This year, the visits were carried out remotely as Digital Visits due to the COVID-19 pandemic.

Stakeholders also have the opportunity to submit feedback and questions to TVO via the TVO website. TVO replies to all contacts made with contact details appended. TVO received one expression of concern related to environmental issues from external sources in 2021. It was related to minor inoperability of the cleaning system of OL3's condenser, which led to the system's taprogge balls being released into the sea area. As corrective measures, extensive mechanical and automation technical maintenance and necessary adjustments were carried out for the system.

TARGET 2021	ACTUAL RESULT	
Development of environmental risk management	The HSE risk analyses of functions were carried out, as a rule, according to plans. A preparedness plan for the management of environmental risks has also been prepared for the power plant.	●
Zero environmental accidents: There are no serious or significant environmental accidents, there are at least 100 proactive environmental observations	The environmental accident target was reached. There were 132 proactive environmental observations, the majority of which were related to the management of municipal waste and the handling of chemicals. Observations related to good practices and procedures were also recorded.	●
Optimal and controlled environmental load from the use of chemicals	Inspection and maintenance of pools preventing chemical contamination and oil trap wells in accordance with the preventive maintenance program (100%). The operation of oil separation wells was verified through sampling of outlet water and the oil separation capacity of the vehicle fuelling station was improved.	●

TCFD at TVO

TCFD (Task Force on Climate-related Financial Disclosures) is an international reporting recommendation, which offers companies a framework for reporting on the financial risks and opportunities connected with climate change in relation to four thematic areas: governance, strategy, risk management, and metrics and targets. TVO has reported in accordance with TCFD since 2020.

THE PRODUCTION of climate-friendly electricity for society is one of the TVO Group's material responsibility aspects, since nuclear power plays a significant role in the mitigation of climate change as a low-emission form of electricity production. The TVO Group's objective is to also assess climate change and environmentally responsible operations from the perspective of possible risks in accordance with the principle of continuous development.

Governance

THE TVO GROUP'S operations relating to sustainable development and environmental responsibility are addressed and developed both in the Responsibility Team and the Environmental Team, which report directly to the Management Group. Some members of the Management Group also belong to the Responsibility Team. The Management Group handles and approves the targets and policies set out in the Responsibility Team and the Environmental Team and is in charge of their strategic implementation. The highest decision-making authority in matters concerning sustainable development and environmental responsibility belongs to the company's Board of Directors and its Committees.

With its Group-level policies, TVO has committed to the principles of sustainable development, and environmental responsibility is an important part of the management system. In its Group-level policies, TVO requires a responsible attitude towards environmental matters not only from its own employees, but also all the companies and partners working in the power plant area.

Strategy

THE TVO GROUP'S MISSION is to create quality of life for Finland by producing climate-friendly electricity with nuclear power for shareholders in a safe and competitive manner. Consequently, the production of climate-friendly electricity is an integral part of the TVO Group's strategy. An operating environment analysis is carried out as part of the strategy planning process, in which the central role of nuclear power in achieving climate goals has been recognised.

The TVO Group's strategic decision has been to invest in the production of clean electricity. This is reflected in the increase in the production capacity of nuclear power through the OL3 plant unit. With the regular electricity production of the plant unit, approximately 30 percent of Finland's electricity will be produced with nuclear power from Olkiluoto. In addition, TVO renounced its share in the Meri-Pori coal-fired plant in July 2020, after which 100 percent of electricity produced by TVO has been nuclear power.

More detailed strategic targets for the next decade in relation to the climate and environment are specified in the TVO Group's Sustainability Roadmap 2030. With the targets, the TVO Group aims at supporting broader climate goals, such as the Paris Agreement. The most significant target in the roadmap as concerns climate change mitigation is the commercial use of the OL3 plant unit by 2022, which enables the annual reduction of approximately 11 million metric tons of CO_2 emissions. In addition, the TVO Group aims to keep emissions from its own operations as low as possible and is committed to promoting climate neutrality.

Future strategic opportunities include small modular reactors (SMR). In a currently ongoing scheme, TVO is investigating the technical and financial possibilities of SMRs in climate-friendly electricity and heat production. TVO's R&D activities aim at advancing future technological solutions, which can also function as ways to mitigate climate change.

Risk Management

THE MANAGEMENT of climate risks is part of the TVO Group's overall risk management, which includes both strategic and operative risks. Risk management, and therefore also the management of climate risks, forms a part of the Group's strategic work. TVO's Board of Directors monitors the companies' risk management and confirms the policies which are to be complied with. The Group's CEOs oversee the risk management for their own company, and the members of the Management Group in turn are responsible for the risk management of their own responsibility area. The purpose of the risk management unit is to ensure that procedures and methods are consistent. Environmental effects and environmental safety are assessed in conjunction with each task. The overall risk management thereby covers the entire organisation from a managerial to an operative level, where each person carries responsibility for the identified risks.

Risks which have been identified in the operating environment include different reputational risks as stakeholders are increasingly aware of aspects relating to climate change, as well as the position of nuclear power in relation to the EU Sustainable Finance Taxonomy. The eligibility of nuclear power in the Sustainable Finance Taxonomy will be resolved in 2022. To ensure future business opportunities, TVO promotes the competitiveness and position as a desirable production form of nuclear power.

Plant modifications are carried out at the TVO Group, which improve the plants' safety, operability, and efficiency. The aim with these measures is to follow the Group companies' values, strategic goals, and to develop the climate-friendliness of the plants.

Probabilistic Risk Assessments (PRA) are carried out as part of risk management. PRA is based on STUK's nuclear power plant guides (YVL Guides). According to PRA, TVO analyses the following: the plant's internal failures, disturbances and human errors, loss of off-site power supply, fires, flooding, hoisting of heavy loads, abnormal weather conditions, seismic events and other environmental factors, as well as external factors caused by human activities. STUK oversees the licensee's risk management and the actualisation of PRA.

The TVO Group also observes learnings from other operators in the nuclear sector. For example, improvements were made to the Olkiluoto plant units after the Fukushima nuclear accident, where the effects of extreme weather and climate phenomena, such as floods or storms, are taken into account even more efficiently.

Metrics and Targets

METRICS and targets for climate-friendly electricity production and the climate neutrality of operations are specified in the TVO Group's Sustainability Roadmap 2030. The progress of achieving climate neutrality is monitored through the TVO Group's Scope 1 and 2 greenhouse gas emissions, which have been calculated according to the Greenhouse Gas Protocol (GHG Protocol). In addition, significant metrics concerning the climate and the environment are presented in the Environmental Balance Sheet.

An Environment and Energy Efficiency Programme has been prepared for the Group, which has been approved by the management. Targets and results of the Environment and Energy Efficiency Programme are reported annually in the Environmental Report.

Greenhouse gas emissions

GHG emissions, t CO_2eq	2021
Scope 1	3,897
Scope 2	68,743

Read more about TCFD:
www.fsb-tcfd.org

Read more about Greenhouse Gas Protocol reporting:
www.ghgprotocol.org

Environment and energy efficiency programme

The Environment and Energy Efficiency Programme has been prepared to ensure the achievement of the environmental targets specified in the Group-level policies and to improve the efficiency of the management of significant aspects related to the environment and energy.

THE SET TARGETS are based on the production of stable and environmentally friendly electricity for society, and on the minimisation of adverse environmental impacts of the operations at all stages of the electricity production chain. Actions, responsibilities, and schedules are set to ensure that the targets are met. To ensure the continuous improvement of operations, the achievement of the targets is regularly monitored.

During 2021, the Sustainability Roadmap 2030 was also introduced at the TVO Group, the targets of which are defined based on the material responsibility aspects and UN Sustainable Development Goals. The environment-related targets of the roadmap are a part of the Environment and Energy Efficiency Programme.

The targets and results for 2021 of the Environment and Energy Efficiency Programme are presented in this report in the relevant chapters. The targets were achieved apart from the production target set for OL1/OL2 and the target related to the electricity production of OL3. Environmental monitoring of suppliers could only be partly carried out due to the COVID-19 pandemic.

In 2021, the operations at the Olkiluoto nuclear power plant and Posiva's spent nuclear fuel disposal facility worksite complied with legislation, environmental permits, and the environmental management and energy efficiency system.

Environment and energy efficiency programme 2022–2024

CLIMATE-FRIENDLY ELECTRICITY PRODUCTION

- Reliable use of the plant units: Production goal for 2022: 24,874 GWh.
- In 2022, OL3 is in commercial use, which enables the production of about 30% of Finland's electricity in Olkiluoto, as well as the avoidance of about 23 million metric tonnes of CO_2 emissions annually (compared with coal).
- The TVO Group's operations are climate neutral by 2030.

RESPONSIBLE NUCLEAR WASTE MANAGEMENT

- Posiva's final disposal activities begin according to plan in the mid-2020s.
- Posiva has the best knowledge and expertise in the final disposal of spent nuclear fuel, and it is the most desired international reference and valued partner.

DEVELOPMENT OF THE ENVIRONMENT AND ENERGY EFFICIENCY PROGRAMME

- Awareness of environment and energy efficiency is promoted in the projects and modifications implemented within the area by means of general guidelines and utilisation of model templates prepared for Project Managers.
- Proficiency in energy efficiency is maintained by providing an Energy Manager training opportunity to at least one new person.

MANAGEMENT OF ENVIRONMENTAL LOAD

- Zero environmental accidents: There are no serious or significant environmental accidents, there are at least 100 proactive environmental observations.
- Management of cooling water heat load: No excesses of the environmental permit target values. The thermal load of cooling water does not exceed 56.9 TWh annually.
- The objective of the construction project of a parallel raw water line is to secure the supply of raw water and the reliable operation of water management at the Olkiluoto nuclear facilities. From the year 2023 onward, sanitary water from Olkiluoto will be led to Rauma for treatment. The larger wastewater treatment unit makes more effective purification of wastewater possible and reduces the impact of wastewater on water bodies.
- With the commissioning of OL3, the areal heating network is to be extended in the Olkiluoto area by 20 GWh by the year 2024. The extension of the areal heating network will reduce emissions from operations in terms of the Scope 2 emissions referred to in the GHG Protocol.
- The implementation of the near-surface final disposal facility for very low-level waste (VLLW) according to current plans will reduce the amount of LLW placed in the operating waste repository by 5,400 m^3.
- The introduction of fuel with a bio component for use in emergency diesel generators and reserve heating boilers will reduce emissions from operations in terms of the Scope 1 emissions referred to in the GHG Protocol.
- Condition monitoring of structures and equipment designed for the storage and handling of chemicals, and leak detection to be implemented in compliance with the preventive maintenance programme. A plan to be prepared for the handling of chemicals in the logistics terminal.

IMPROVEMENT OF MATERIAL AND ENERGY EFFICIENCY, SUSTAINABLE LAND USE AND BIODIVERSITY

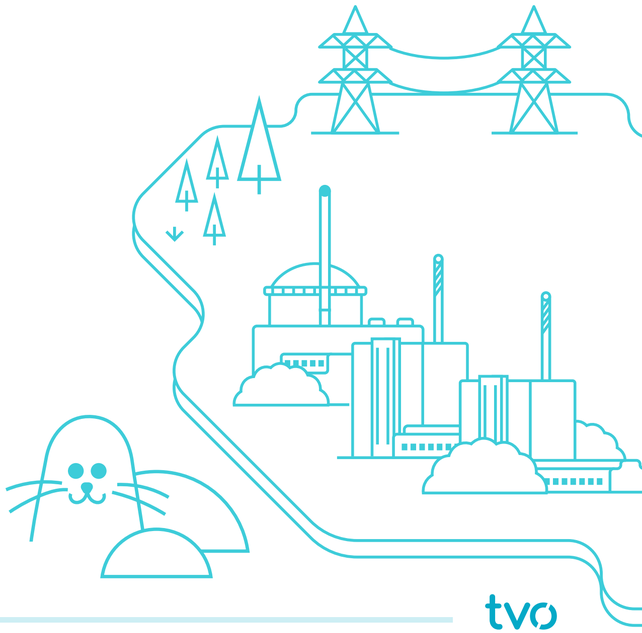
- Development of circular economy: Reduction of waste volume and recycling of waste as material (a minimum of 55% of the overall waste volume, excluding sludge).
- Commitment to the goals set out in the Energy Efficiency Agreement period 2017–2025, as well as the goals of the following period. Goals are advanced by carrying out at least four location reviews and one plant measurement annually in Olkiluoto.
- Biodiversity: The concentration of energy production to a small geographic area minimises the environmental impact and allows the preservation of other areas in their natural state. The share of produced electricity with respect to the surface area of built environment ca. 15,647 GWh / km^2 from 2023 onwards.
- At least one voluntary project promoting biodiversity carried out annually.

SUPPLIERS' ENVIRONMENTAL RESPONSIBILITY

- Environment and energy efficiency in procurement processes: The implementation of environmental assessments to be continued.
- Cooperation partners who operate in Olkiluoto comply with the general guidelines regarding environmental safety and environmental control of suppliers is carried out on a regular basis.

ISOLATION OF RADIOACTIVITY ORIGINATING AT THE POWER PLANT FROM THE ORGANIC ENVIRONMENT

- Keeping radioactive emissions into the air (noble gas emissions) clearly below the limits set by the authorities.
- Keeping radioactive emissions into the water (fission and activation products) clearly below the limits set by the authorities.
- Management of nuclear safety risks: Risks are actively identified, and measured for their probability and consequences by means of up-to-date Probabilistic Risk Assessment (PRA). The identified risks are mitigated applying the Safety As High As Reasonably Achievable (SAHARA) principle.



Supply of electricity in Finland and its climate impact

The volume of electricity production from Olkiluoto will be nearly doubled when the OL3 plant unit starts production. This means that the low-emission nuclear electricity produced in Olkiluoto will play a significant role in the economic development, electricity self-sufficiency, and general well-being of all of Finland for decades to come.

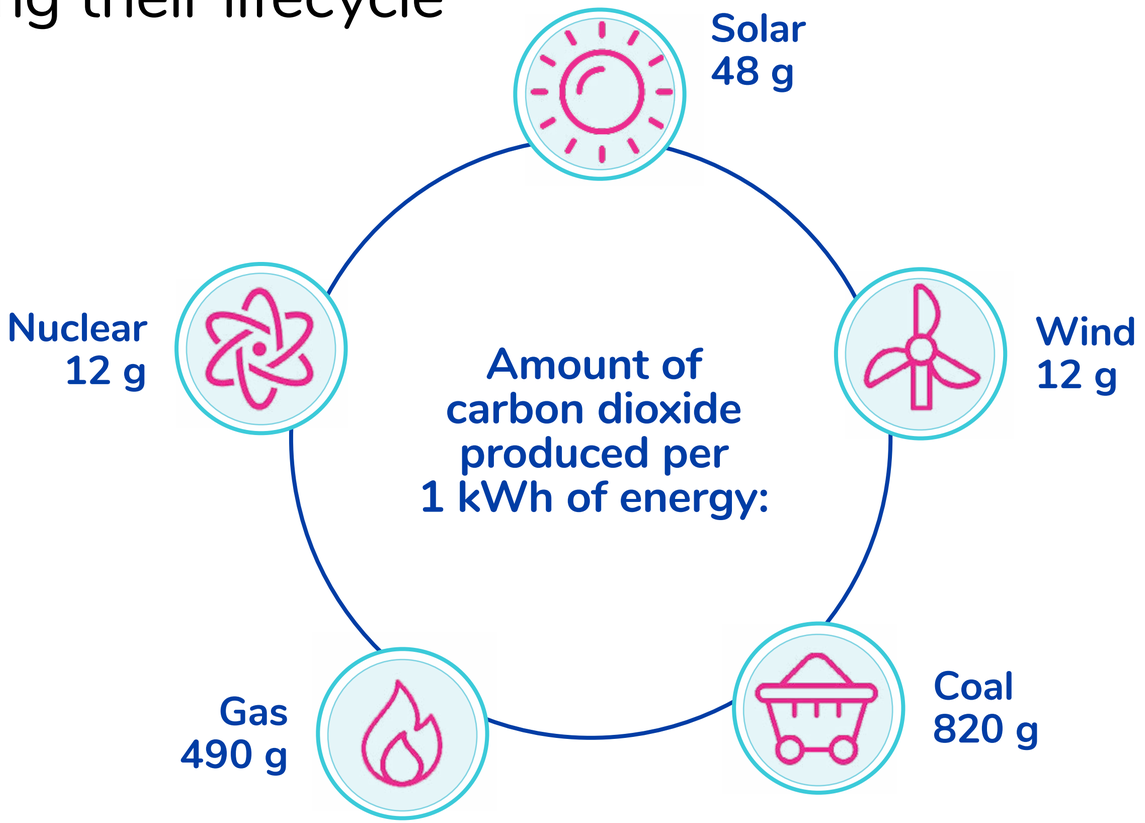
FINNISH PEOPLE are highly concerned about climate change and the majority consider climate change mitigation to be extremely important. Nuclear power is seen to play a major role in the common fight against climate change, and an increasing number of respondents to TVO's latest stakeholder survey believe that it is very difficult for Finland to reduce greenhouse gas emissions into the atmosphere without the construction of new nuclear power plants. Nuclear power plays a key role in achieving climate goals, and the number of people who are in favour of nuclear power due to environmental reasons is increasing.

In 2021, the International Energy Agency (IEA) published its new Net Zero 2050 scenario. The aim of the scenario is to demonstrate the necessary actions to limit global warming to 1.5 degrees Celsius. IEA predicts that meeting the target would require the doubling of existing nuclear capacity by 2050. Nuclear power will remain a major part of the energy mix of Finland and the entire EU as we make our way towards a carbon neutral society. In 2021, the share of nuclear power was about 33 percent of all the electricity produced in Finland.

In terms of greenhouse gas emissions, nuclear electricity is as environmentally friendly an electricity production method as wind power, hydropower, and solar power during its entire lifecycle. The use of bioenergy also does not add to the amount of carbon dioxide in the atmosphere. The electricity generated by nuclear power each year in Finland helps prevent approximately 20 million tonnes of CO_2 emissions.

The role of low-carbon energy, such as renewable energy and nuclear power, is crucial in the mitigation of climate change.

CO_2 emissions of different production modes during their lifecycle



The environmental impacts of nuclear power

The emissions generated by nuclear power are low: throughout the lifecycle, the emissions remain at the same level as for renewable sources of energy. The long service lives of nuclear power plants and their small land use requirements make them even more environmentally friendly.

NUCLEAR POWER causes some negative environmental effects as well, such as slight warming of the surrounding sea areas, minor releases into the air, water, and soil, as well as nuclear waste consisting of spent nuclear fuel.

In particular, the final disposal of nuclear waste is a key question in the use of nuclear power. The TVO Group has a unique solution for the final disposal of nuclear waste that is even known all around the world: ONKALO.

14.44 TWh

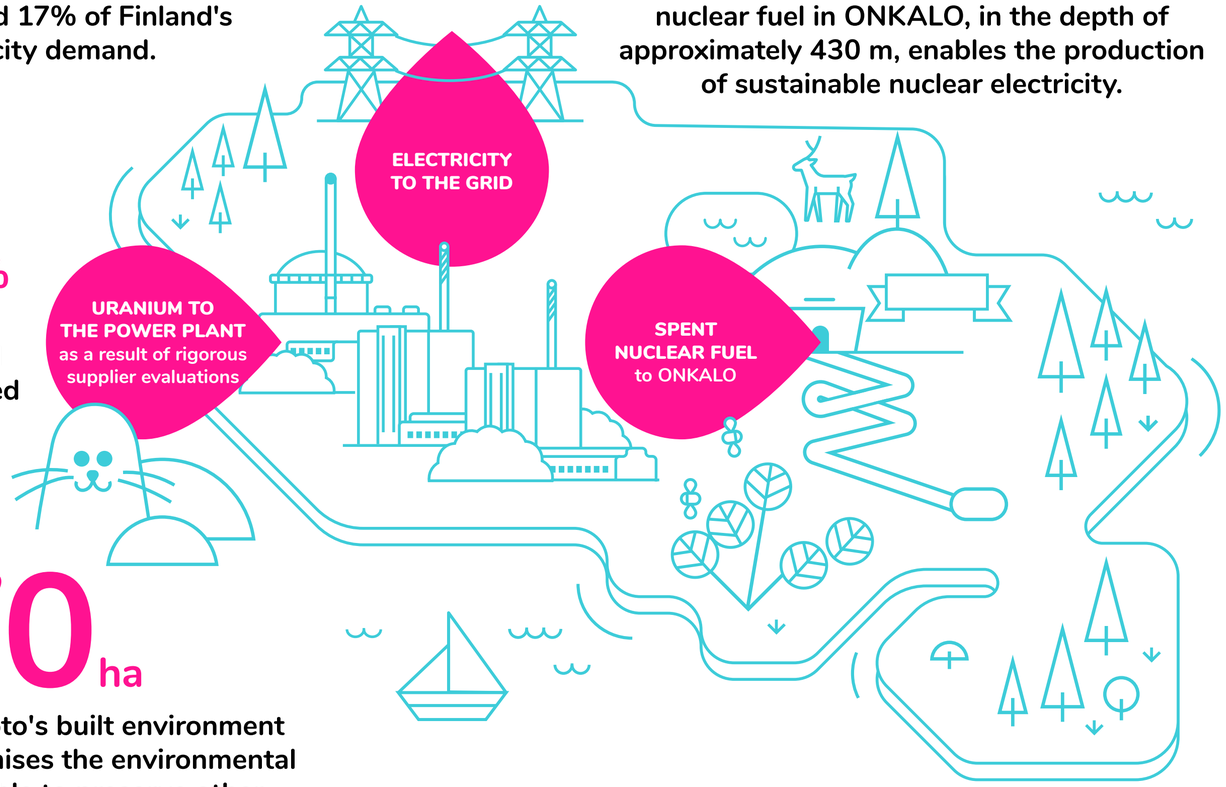
TVO's electricity production in 2021 covered 17% of Finland's electricity demand.

430 m

The safe final disposal of spent nuclear fuel in ONKALO, in the depth of approximately 430 m, enables the production of sustainable nuclear electricity.

30 %

of all electricity produced in Finland will soon be generated on the island of Olkiluoto.



170 ha

The centralisation of Olkiluoto's built environment to a small surface area minimises the environmental impact and makes it possible to preserve other areas in their natural state.

Nuclear power enables major reductions in emissions

Nuclear power plays an important role in climate change mitigation. With the current nuclear power production in Europe, approximately 700 million tonnes of CO_2 emissions are avoided annually, of which Finland's share accounts for 20 million tonnes of CO_2 emissions.

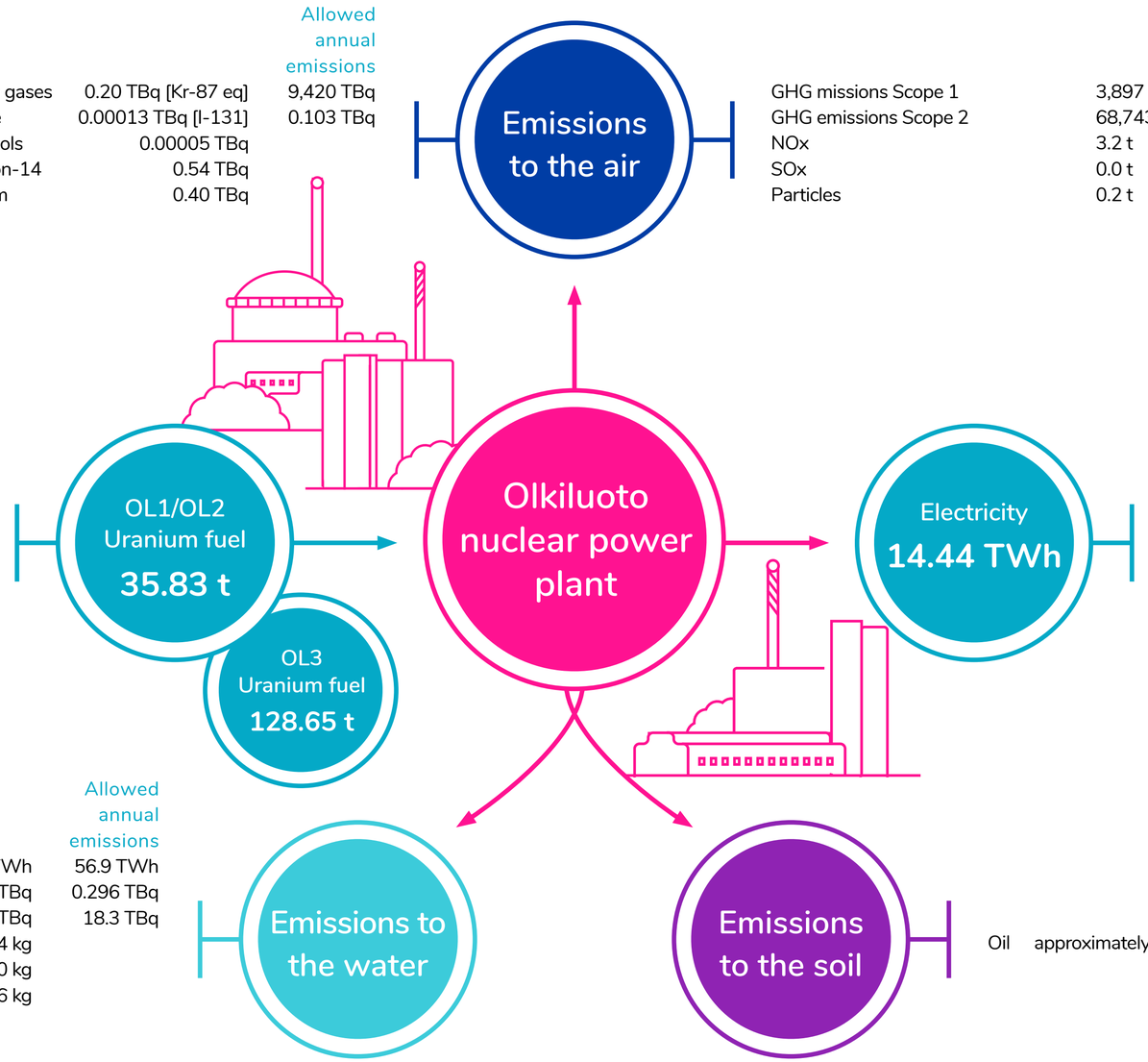
Over the course of its entire history, the Olkiluoto nuclear power plant has generated 539 TWh of electricity. This production volume prevented greenhouse gas emissions of more than 442 million tonnes, which corresponds to all the greenhouse gas emissions in Finland during a period of approximately eight years in a scenario where nuclear power was replaced with condensing coal power, the specific emissions of which amount to 820 g/kWh.

12

million tonnes

By producing electricity at the Olkiluoto nuclear power plant, Finland avoids 12 million tonnes of carbon dioxide emissions annually.

Environmental balance sheet



Cooling water

The warming of the seawater due to the thermal load from the cooling water is the most important environmental impact of the Olkiluoto nuclear power plant. The total volume of seawater used for the cooling of the OL1 and OL2 plant units is approximately 76 m³/sec.

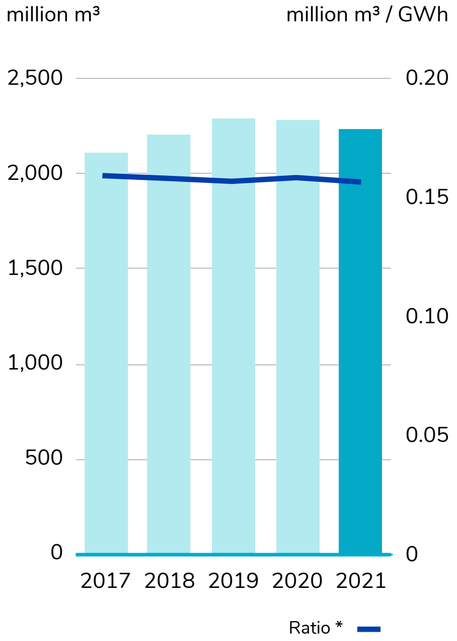
IN 2021, 2,232 million cubic metres of seawater was used for cooling, and the resulting thermal load on the sea was 26.2 TWh. Seawater temperature is monitored as required by the environmental permit. One of the permit conditions is that the seawater temperature must not exceed the target value of 30°C when measured as a weekly rolling average at a distance of 500 metres from the cooling water discharge channel. Limit values have also been specified for the amount of cooling water (max. 4,415 million m³) and the thermal load (max. 56.9 TWh) in the environmental permit. None of the permit limits were exceeded in 2021.

As the cooling water passes through a plant unit, its temperature increases by approximately 10°C, after which it mixes with seawater. The cooling water does not come into direct contact with the power plant's process water. Throughout the operation of the power plant, TVO has monitored the impact from cooling water and conducted related surveys. The cooling water accumulates in an extensive sea area in the surface layer, from where part of the heat transfers into the air.

Depending on the weather conditions, an increase in temperature can be observed at an approximate distance of 3–5 kilometres from the cooling water discharge location.

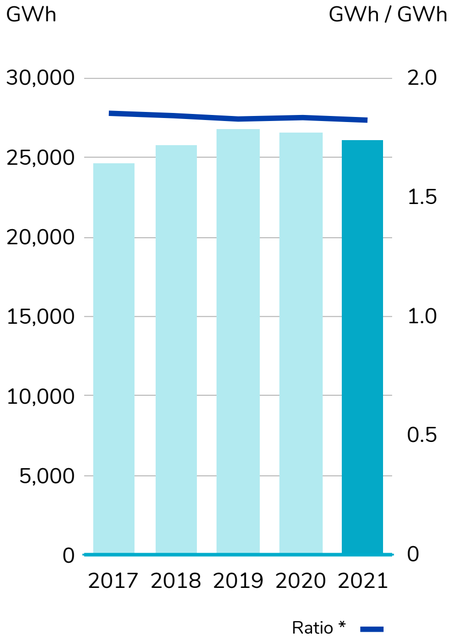
The cooling water also causes changes in the ice conditions, as the cooling water discharge area remains unfrozen throughout the winter. The size of the unfrozen and weak ice area varies depending on the winter weather. Warnings about the unfrozen area are issued to the local residents in newspapers and with ice warning signs. The warm cooling water extends the growth period in the unfrozen sea area and increases its overall biological production. Other biological effects caused by the cooling water are minor.

Water usage
Cooling water



* The ratio is given per GWh of electricity produced.

Emissions
Thermal load on the sea



* The ratio is given per GWh of electricity produced.

TARGET 2021	ACTUAL RESULTS
Management of cooling water heat load	The cooling water temperature remained below the target values specified in the environmental permit. Extended voluntary monitoring of seawater temperature was continued in the sea areas near Olkiluoto, and measurements were carried out to obtain more information about the spreading of cooling water into the sea area.

Raw materials and material efficiency

TVO ensures the safe use of the uranium used as nuclear fuel at all stages of the electricity production chain from responsible procurement to safe final disposal. TVO's OL1 and OL2 plant units require an annual total of approximately 40 tonnes of low-enriched uranium for fuel.

TVO USES a diversified nuclear fuel procurement chain, meaning that separate contracts are concluded for the different procurement stages, usually with several suppliers for each stage. Procurement operations are based on long-term contracts with leading suppliers. Uranium is only acquired from suppliers who meet the strict requirements specified by TVO.

Material efficiency through recycling

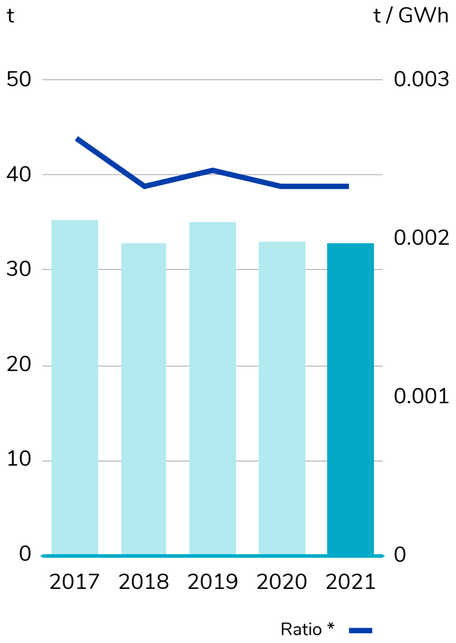
THE TVO GROUP procures products that are durable and have a long lifespan, and takes into account opportunities for their recycling and potential reuse at the end of their service lives. The procurement operations ensure safe, competitive, and reliable production and the long-term operation of the plant units.

The purchased products and services must meet the TVO Group's requirements concerning quality, industrial safety, and the environment. The availability of products and services necessary for the Group's operations is ensured by means of long-term agreements based on mutual trust and partnership.

Intermediate agents in production

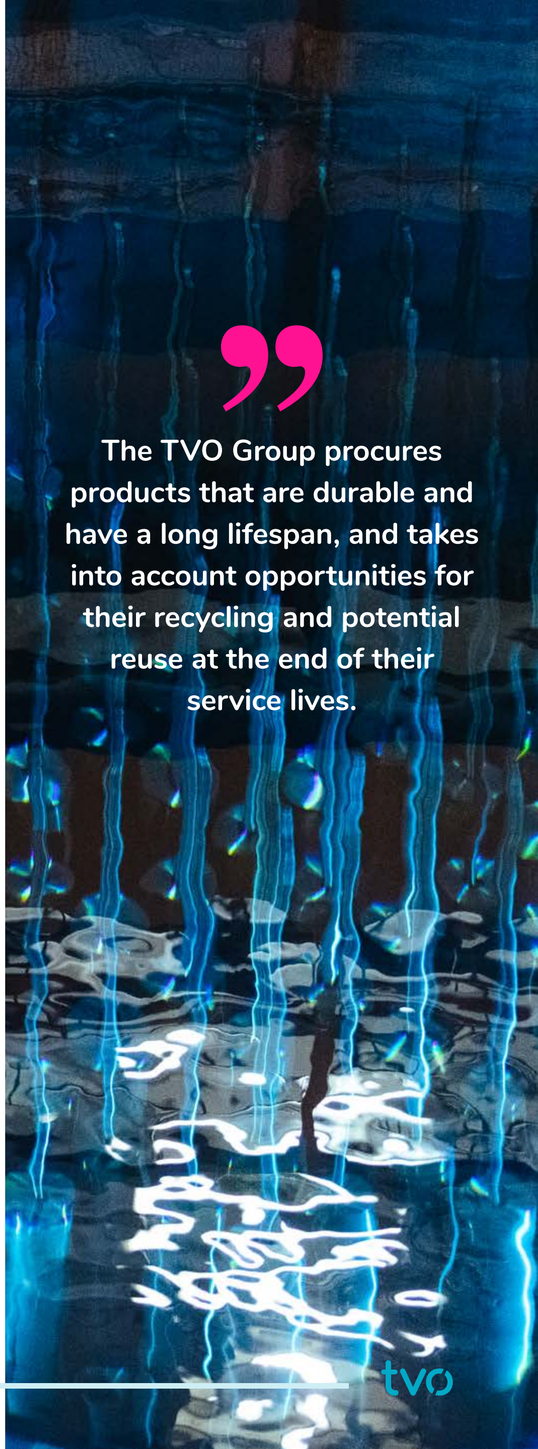
CHEMICALS are extensively stored and processed by TVO. The Olkiluoto nuclear power plant is a safety report establishment. The intermediate agents include the fuel (oil) of the emergency diesel generators, the reserve power boiler plant and vehicles, and the sodium hypochlorite (NaClO) used for hydroid control in the seawater systems. The ion exchange resin used to clean the process water as well as solvents, bitumen, and nitrogen used at the plant (other chemicals) are among the intermediate agents to be reported. Consumption of oil increased due to the commissioning tests of the emergency diesel generators that help to ensure safety.

Material efficiency
Nuclear fuel spent



* The ratio is given per GWh of electricity produced.

TARGET 2021	ACTUAL RESULTS	
Environmental and energy efficiency in procurement	The survey feedback forms used in supplier assessments were reformed in terms of issues related to environment and energy efficiency in February 2021.	
Development of supplier monitoring in Olkiluoto	The activities of the cooperation and safety forum for contractors operating in Olkiluoto were continued. Environmental plans were prepared for projects and the control of work areas was carried out based on the plans, as allowed by coronavirus restrictions.	



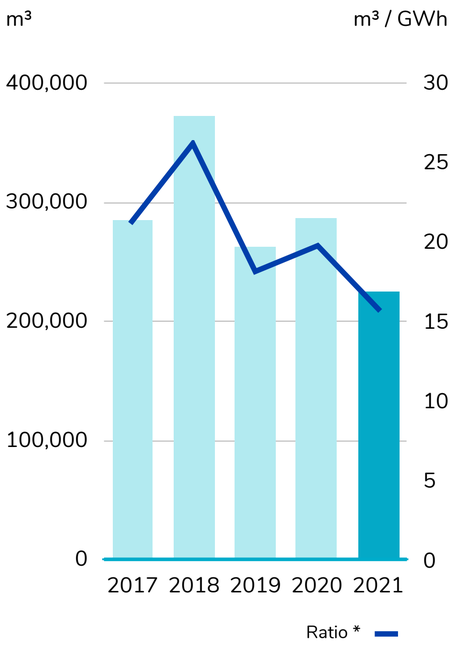
Reducing consumption of water

IN ADDITION to the seawater used as cooling water, the Olkiluoto power plant makes use of fresh water, which is used as tap water and process water. The process water that boils in the reactor must not contain any salts, impurities, or particles that could damage the reactor internals. Olkiluoto has all the necessary plants for water treatment: a water treatment plant, a demineralisation plant, a laboratory, and a wastewater treatment plant. The tap water and process water are treated at TVO's own water treatment plant. Ion exchange and reverse osmosis methods are used to purify all the water used at Olkiluoto. Process water is continuously recirculated and purified.

During annual outages, the fuel pool water is stored in storage pools and later reused. The recirculation of water reduces TVO's need for clean process water and the amount of process wastewater discharged from the plant by approximately 30,000 m^3 each year. During the reporting year, 224,176 m^3 of fresh water was taken from the Eurajoki river for use at the power plant.

Intermediate agents	2021	2020	2019	2018	2017
Oils (m^3)	1,046	748	732	657	258
NaClO (15%) (m^3)	42	48	39	45	40
Other chemicals (t)	148	223	118	137	176
Ion exchange resins (t)	13	15	15	15	17
Water treatment chemicals (t)	112	83	104	153	122

Water usage
Untreated water



* The ratio is given per GWh of electricity produced.

TARGET 2021	ACTUAL RESULTS
Ensuring the purity of the process: Implementing the TLTA (safety-classified supplies) system at OL3	The adoption of the TLTA (safety classified supplies) system in practice was continued at OL3.

Production and energy efficiency

In 2021, the combined electricity production of the Olkiluoto plant units, OL1 and OL2, was 14,438 GWh. The combined load factor of the plant units was 92.8 percent. TVO produced approximately 17 percent of all the electricity consumed in Finland.

THE PLANT UNITS operated safely. OL1 generated 7,404 GWh of electricity. The load factor for OL1 was 95.1 percent. The net generation for OL2 was 7,033 GWh and the load factor was 90.4 percent.

Preparing the OL3 plant unit for production proceeded to nuclear commissioning in 2021. Fuel loading was completed in April, and the startup of the reactor took place for the first time in December. Electricity production is to start in March 2022, once the plant unit is connected to the national grid. Regular electricity production starts in July 2022.

OL1	2021	2020	2019	2018	2017
Net production (GWh)	7,404	7,310	7,542	6,755	7,158
The plant units' own electricity consumption (GWh)	262	259	268	246	264
Capacity factor (%)	95.1	93.7	96.9	87.8	93.1
Efficiency (net) (%)	35.6	35.5	35.5	35.3	35.1

OL2	2021	2020	2019	2018	2017
Net production (GWh)	7,033	7,277	7,209	7,334	6,256
The plant units' own electricity consumption (GWh)	252	262	258	264	226
Capacity factor (%)	90.4	93.3	92.7	94.3	81.3
Efficiency (net) (%)	35.5	35.4	35.5	35.4	35.4

TARGET 2021	ACTUAL RESULTS
Production of climate-friendly electricity: Production goal for 2021: 14,870 GWh and with the completion of OL3, 1/3 of electricity in Finland.	The OL1 and OL2 plant units produced electricity amounting to 14,438 GWh, which means the production goal was not reached. The start of electricity production at OL3 was postponed until 2022.

CASE

One of the largest battery energy storage systems in Europe is being constructed at Olkiluoto

IN 2021, Hitachi Energy (previously Hitachi ABB Power Grids) and TVO signed a contract on the delivery of one of Europe's largest battery energy storage systems (BESS) to Olkiluoto.

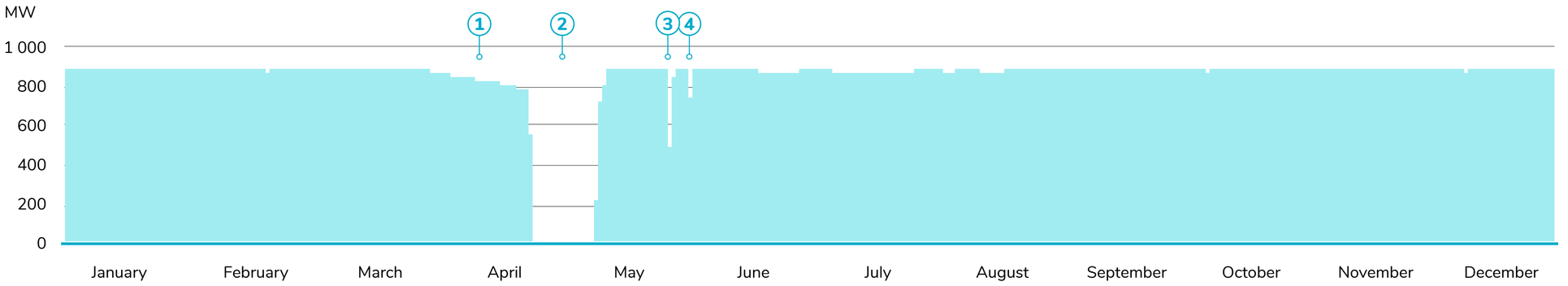
For its part, the 90-megawatt BESS will support the entire energy system in case of a possible production disturbance at the OL3 plant unit, thereby reducing the effects of power changes on the national grid. This turnkey solution acts as a quick power reserve.

– The national significance of TVO's electricity production will increase with the OL3 plant unit, which will soon be completed. Investing in a battery energy storage system will, for its part, secure disturbance-free power supply in Finland. In case of a possible operational occurrence at the nuclear power plant, the BESS will act as reserve power until substitute production has been ramped up. This allows us to secure the operability of the national grid even in situations where a large amount of generating capacity is lost, says **Sami Jakonen**, Senior Vice President of Engineering at TVO.

The BESS will be commissioned during 2022.

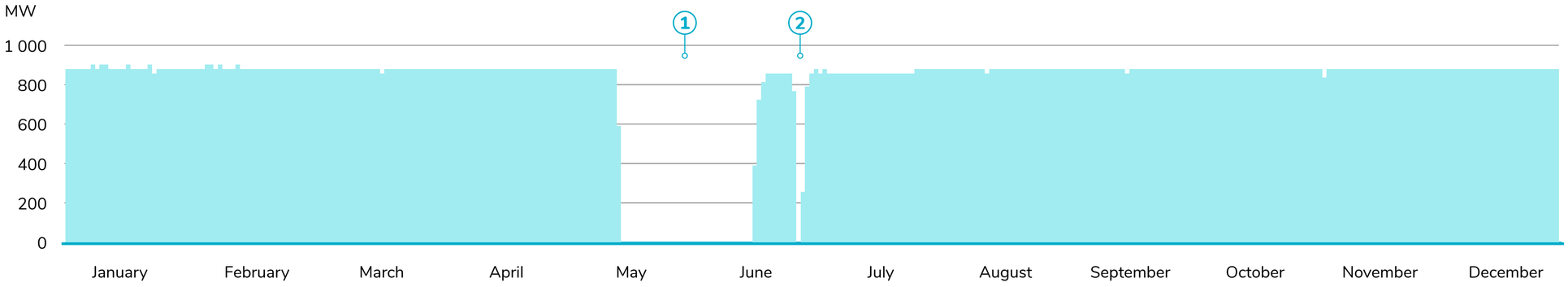
Read more on TVO's website

OL1 Production
Average output



1. Coast-down
2. Annual refuelling outage
3. Inspection of main condenser
4. Repair of valve in turbine side

OL2 Production
Average output



1. Annual maintenance outage
2. Repair of valve in reactor side

Improving energy efficiency

FOR SEVERAL YEARS, the TVO Group has participated in the voluntary Finnish Energy Efficiency Agreement for Industries. TVO signed the agreement for the first time in 1998. In accordance with the agreement, efforts have been focused on the continuous improvement of energy efficiency at the plant units and in the Olkiluoto area.

TVO has also signed the Energy Efficiency Agreement for 2017–2025. During this period, the associated Action Plan for Energy Production aims to implement actions designed to make the use of energy more efficient, as well as to improve the efficiency of primary energy use and the total efficiency of energy production. TVO's energy savings target for the 2017–2025 agreement period is a total of 150 GWh, which corresponds to the average annual consumption of about 7,500 single-family homes with electric heating. The target was already achieved in 2019, so an annual savings target of 1 GWh has been set for 2020–2021.

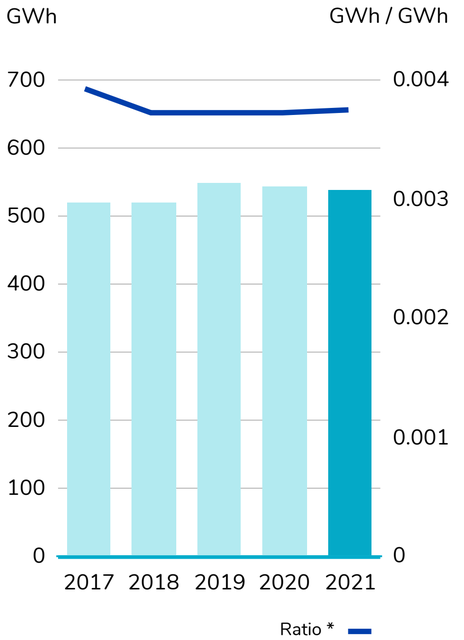
TVO and Posiva carry out activities related to energy efficiency as part of their normal operations. For TVO, the highest potential for savings involves the improvement of the efficiency of the electricity production process; this has been implemented in the long term by means of modernisation projects at the plant throughout the operational history. Another area for improvement is the reduction of in-house energy consumption at the site in Olkiluoto. The TVO Group's environmental management system incorporates the energy efficiency system ETJ+ that is used to continuously improve energy efficiency across all functions.

The electricity used in Olkiluoto consists of electricity produced in-house and electricity purchased from the power market. The operating plant units, OL1 and OL2, use electricity generated in their own production. Currently, electricity is purchased from the power market for the Olkiluoto outdoor areas, Posiva, and the OL3 plant unit. The distribution of production methods in the electricity purchased from the power market is calculated according to the residual distribution from the Energy Authority. In 2020, the percentages were as follows: nuclear power 51.54, fossil-based energy sources and peat 40.58, and renewable energy sources 7.88.

34 GWh

district heating from the plant units to buildings in Olkiluoto. In 2021, energy measurements were increased in the buildings of the area, and measurement analysis was developed.

Energy efficiency
TVO's in-house electricity consumption



* The ratio is given per GWh of electricity produced.

TARGET 2021	ACTUAL RESULTS	
Total energy saving target for the agreement period 2017–2025: 150 GWh	The goal was achieved already in 2019, and the additional 1 GWh goal set for the years 2020–2021 was also achieved. Energy efficiency measures carried out in 2021 included the renovation of the ventilation in the OL2 entrance building and the HVAC renovation of the operating waste repository (VLJ repository). The modification in the VLJ repository was completed in 2021 and the ventilation work in the OL2 entrance building continues in 2022. During the year, energy reviews were also performed at the Olkiluoto visitor centre and the main gate, for example. A minimum of four location reviews are performed each year, and they are used as the basis for selecting the modifications to be performed. Plant measurements were performed at both of the operating plant units after the annual outages.	●
Increasing awareness of environmental matters and energy efficiency	The general guidelines for environmental safety have been prepared as instructions to both TVO-employees and cooperation partners on conducting environmentally safe operations in the Olkiluoto area. The inclusion of issues related to environment and energy efficiency in the model templates prepared for projects and modifications has promoted awareness of these issues.	●

Releases into the air

With regard to the management of releases of radioactive substances, TVO always strives to keep any releases well below both the limits set by the authorities and TVO's own target limits, which are more stringent than the official limits. With the electricity production at the Olkiluoto nuclear power plant, approximately 12 million tonnes of CO_2 emissions into the atmosphere are avoided each year, compared with the same amount being produced by fossil fuels.

Radioactive releases into the air

NOBLE GAS emissions into the air amounted to 0.002 percent and iodine emissions into the air amounted to 0.13 percent of the allowed limit value specified by the authorities.

The theoretical radiation dose caused to neighbouring residents in Olkiluoto is estimated to remain clearly below the threshold value. In 2020, the radiation dose was 0.24 µSv (threshold value: 100 µSv).

Greenhouse gases and other releases into the air

TVO TAKES PART in Finland's fight against climate change by producing low-emission base load electricity. The Olkiluoto nuclear power plant is included in the European Union's emissions trading scheme that aims at monitoring greenhouse gas emissions and achieving the CO_2 reduction goals. Posiva also plays an important role in the mitigation of climate change, since the final disposal solution is a part of the lifecycle of nuclear power.

The power plant's actual CO_2 emissions are generated by the releases of the reserve boilers and the emergency diesel generators. The purpose of the emergency diesel generators is to automatically ensure the power supply of the plant in a possible but unlikely loss-of-power situation. In order to ensure safety, the emergency diesel generators are regularly tested in compliance with the Technical Specifications, which means that their emissions cannot be lowered.

The replacement of the emergency diesel generators at OL1 and OL2 will reduce particulate emissions to the atmosphere.

Radioactive emissions to the air	2021	2020	2019	2018	2017
Noble gas TBq (Kr-87 equivalent)	0.20	0.97	1.76	0.91	3.43
% of allowed amount	0.002	0.01	0.02	0.01	0.04
Iodine TBq (I-131)	0.00013	0.00012	0.0008	0.0005	0.0009
% of allowed amount	0.13	0.12	0.74	0.48	0.85
Aerosols TBq	0.00005	0.0002	0.0001	0.0006	0.025
Tritium TBq	0.40	0.34	0.82	1.32	1.07
Carbon-14 TBq	0.54	0.65	0.64	0.93	1.02

Emissions to the air (t)	2021	2020	2019	2018	2017
GHG emissions Scope 1 (CO_2eq)	3,897	3,254	-	-	-
CO_2 emissions included in emissions trading scheme	2,436	1,751	1,388	1,505	717
GHG emissions Scope 2 (CO_2eq)	68,743	29,677	-	-	-
NOx	3.2	2.2	2.2	1.8	1.0
SOx	0.0	0.0	0.0	0.0	0.0
Particles	0.2	0.1	0.2	0.1	0.1

This largest modernisation project in history reached a milestone in summer 2020, when the ninth emergency diesel generator was deployed. This unit, separate from OL1 and OL2, will enable the replacement of the original generators one by one, the first of which was deployed in summer 2021 and another will be completed in spring 2022.

During the reporting period, the TVO Group started the calculation of greenhouse gas emissions in accordance with the Greenhouse Gas Protocol (GHG Protocol). Scope 1 includes direct emissions from the company's operations, and it takes into account the emissions from the emergency diesel generators, reserve boilers, vehicles, working machines and equipment, as well as refrigerant leaks. Scope 2 accounts for indirect emissions generated by the company's energy consumption. The majority of Scope 2 emissions are from electricity purchased to OL3.

Going forward, the emergency diesel generators and reserve boilers will switch to a fuel that contains a biocomponent, which makes them more climate-friendly. This transition is included in the goals of the Environment and Energy Efficiency Programme for 2022–2024.

TARGET 2021	ACTUAL RESULTS
Keeping radioactive emissions into the air clearly below the limits set by the authorities	Radioactive emissions into the air remained clearly below the limits set by the authorities. The targets of TVO's own ALARA program were partially reached for air emissions.

Releases into water and soil

The releases of radioactive fission and activation products into water amounted to 0.06 percent and tritium emissions to 9.2 percent of the annual limit value specified by the authorities.

SANITARY WASTEWATER is treated at the Olkiluoto wastewater treatment plant before it is discharged into the sea. In 2021, the amount of treated sanitary wastewater was 180,412 m^3. The phosphorus load discharged into the seawater was 4.4 kg, the nitrogen load was 4,380 kg and the biological oxygen demand (BOD_{7ATU}) was 296 kg. The treatment of sanitary wastewater is based on the permit regulations specified for the purification efficiency and loads discharged into water bodies, as well as regulatory requirements.

Emissions from the sanitary wastewater treatment plant were a fraction of the nutrient load of the Eurajoki river running to the north of Olkiluoto. Water quality measurements are taken by a third party.

TVO has started a project where, going forward, wastewater from Olkiluoto will be routed for processing at the Maanpää wastewater treatment plant in Rauma via a transfer sewer system that runs from Eurajoki to Rauma. Processing wastewater in a larger unit allows for its more efficient purification and reduces the load caused on the water systems. The total value of the project is approximately EUR 5.9 million. The goal for the period 2022–2024 of the Environment and Energy Efficiency Programme is for the project to be completed by summer 2023.

Releases into the soil

OVER THE COURSE of the year, a total of approximately 55 litres of oil ended up in the soil due to failures of working machines and equipment. All of the oil was recovered. There were also minor refrigerant leaks from the cooling devices.

Radioactive emissions to water	2021	2020	2019	2018	2017
Fission and activation products TBq	0.0002	0.0004	0.0001	0.0001	0.0003
% of allowed amount	0.06	0.15	0.04	0.04	0.09
Tritium TBq	1.68	1.55	1.59	1.62	2.46
% of allowed amount	9.2	8.5	8.7	8.9	13.5

Wastewater treatment	2021	2020	2019	2018	2017
Amount of water (m^3)	89,957	90,304	83,545	89,558	97,207
Concentration (mg/l)[1)]					
BOD_{7ATU}	3.3	4.0	6.6	10	8.0
Phosphorus	0.05	0.07	0.37	0.12	0.12
Treatment efficiency average (%)[1)]					
BOD_{7ATU}	99	98	97	96	96
Phosphorus	100	99	96	99	98
Load on the sea area (kg)					
Phosphorus	4.4	6.2	31	11	12
Nitrogen	4,380	4,745	2,993	4,380	5,840
BOD_{7ATU}	296	365	548	913	767
Water treatment chemicals (t)	26	29	32	35	39

[1)] The permit regulation for the sanitary wastewater: The maximum BOD_{7ATU} value of wastewater discharged into the seas is 13 mg O_2/l and the maximum phosphorus concentration is 0.52 mg P/l. The minimum treating efficiency for the BOD_{7ATU} value and phosphorus is 95%. All values are calculated as annual averages.

TARGET 2021	ACTUAL RESULTS
Keeping radioactive emissions into the water clearly below the limits set by the authorities	Radioactive emissions into the water remained clearly below the limits set by the authorities. The targets of TVO's own ALARA program were reached for water emissions.

Waste

The TVO Group is committed to reducing the amount of waste and promoting its utilisation. Radioactive waste is isolated from the organic environment until its radioactivity has decreased to a harmless level. The TVO Group disposes of the radioactive waste it generates in a responsible manner.

Radioactive waste

THE WASTE produced at the power plant is classified, based on their radioactivity, into waste exempted from control, low and intermediate level operating waste, high-level spent fuel, and decommissioning waste.

Waste exempted from control contains such a small amount of radioactive substances that the waste can be reused or delivered to the Olkiluoto landfill for final disposal. The waste is produced during the operation and maintenance of the power plant. In 2021, no maintenance waste was exempted from control. Approximately 33 tonnes of metal and mixed scrap were cleared for recycling.

Protective equipment used in operating and maintaining the power plant, components removed from the process, and insulating materials are low-level waste. Such waste is tightly packaged and placed in the operating waste repository (VLJ repository) located at an approximate depth of 100 metres in the plant area. TVO is planning to construct a disposal repository for very low-level waste (VLLW) at Olkiluoto. It will reduce the amount of low-level waste placed in the VLJ repository.

The ion exchange resins used for the treatment of the process water at the power plant are classified as intermediate level waste, which is incorporated in bitumen and placed in the VLJ repository. In 2021, no intermediate or low level waste was placed in the VLJ repository because of the HVAC renovations taking place at the repository.

TVO uses an operating waste management manual that contains procedures and instructions for the handling, storage, and final disposal of radioactive waste. The employees working with operating waste management receive training on the subject on the basis of separate training requirements and induction programmes.

The total amount of high-level radioactive waste (spent fuel) generated during the reporting year was 32.73 t. It is kept in an interim storage at Olkiluoto until it can be placed in final disposal in the Olkiluoto bedrock. The final disposal will start in the 2020s. Posiva is the first company in the world to commission a safe final disposal solution for spent nuclear fuel. In order to construct the final disposal repositories, approximately 500,000 solid cubic metres of Olkiluoto bedrock has been excavated by 2021. The majority

Radioactive waste	2021	2020	2019	2018	2017
Low-level (m^3)[1)]	0	92	150	92	47
Intermediate level (m^3)[1)]	0	18	7	53	51
Operating waste cleared after monitoring (t)	0	0	0	44	40

[1)] Operating waste placed in the VLJ repository during the year.

Amount of spent fuel in the OL1 and OL2 storage polls and interim storage, cumulative	2021	2020	2019	2018	2017
Number of assemblies (pcs)	9,724	9,524	9,328	9,122	8,922
Assemblies (t)	1,629.6	1,597.5	1,564.9	1,531.2	1,498.5

TARGET 2021	ACTUAL RESULTS
Reducing low and intermediate level waste and clearance from regulatory control	The EIA report for the planned near-surface final disposal facility for very low-level waste was finalised and procedures were continued for the development of sorting of operating waste.

of blasted stone has been utilised for construction on the Olkiluoto island and in the local area. The objective in all the preparations for final disposal, such as method research and the construction of facilities, is to minimise the impacts on the surrounding nature.

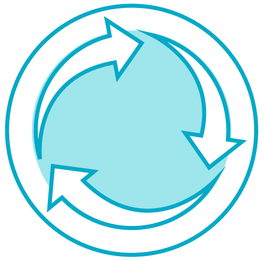
Decommissioning waste is waste produced in connection with the disassembly of the power plants at the end of the operating life. The final disposal of decommissioning waste will also take place at Olkiluoto.

Municipal waste

THE OPERATION of the power plant also generates municipal waste and hazardous waste. The TVO Group is committed to the reduction of the amount of waste and to the improvement of the reuse of waste. This is a requirement for everybody working at Olkiluoto. The goal is to route any usable products for reuse, and donations to charity are also made. The generation of waste is considered already at the procurement stage, with the aim to reduce the volume of waste generated. The TVO Group focuses on procuring products that are durable and have a long lifespan, and takes into account opportunities for their recycling and potential reuse at the end of their service lives.

All waste generated in Olkiluoto is sorted and processed. The sorted waste is recycled as materials whenever possible, or reused as energy. Only waste that cannot be reused in any manner is taken to the landfill. In 2021, there was no such waste. The optimal use of chemicals is one of the ways aiming at reducing the amount of hazardous waste. All hazardous waste is collected in the hazardous waste storage to be sent to an appropriate waste treatment plant.

In 2021, the total volume of waste was 3,096 tonnes. Waste suitable for recycling as materials or reuse as energy amounted to 91 percent of the total amount of waste and the share of hazardous waste was 9 percent. Most of the hazardous waste was batteries and WEEE (waste electrical and electronic equipment), as well as oil-water mixtures, glycol, and asbestos.



91%

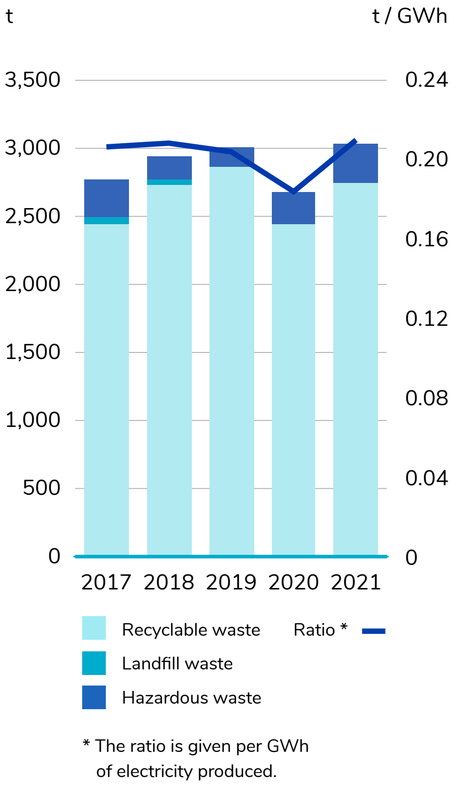
The share of waste reused for materials and energy of the total amount of waste.

Municipal and hazardous waste OL1, OL2 and OL3 (t)	2021	2020	2019	2018	2017
Mixed waste to energy	209	176	126	232	233
Landfill waste to TVO's landfill	0	0	0	44	41
Paper and cardboard	73	111	69	75	81
Energy waste	203	205	194	230	272
Biowaste	98	86	66	100	102
Wood	180	220	407	276	313
Metal	172	119	955	251	383
Glass	4	5	4	5	5
Plastic	3	4	2	-	-
Cable refuse	9	20	11	45	0
Crushed brick and concrete	210	8	5	439	0
Screening	11	38	25	36	79
Hazardous waste	298 [1)]	243	151	165	283
Sludge[2)]	1,627	1,425	990	1,038	993

[1)] Includes hazardous waste recycled as material 33 t.

[2)] Sludge from the wastewater treatment plant, sand water and shellfish water mixture (solid matter 8-10%).

Waste
Municipal waste



* The ratio is given per GWh of electricity produced.

TARGET 2021	ACTUAL RESULTS
Development of circular economy: Minimising municipal solid waste and reuse of waste as material (minimum 35% of total amount of waste, excluding waste sludges)	Waste reused as material accounted for ca. 52% of the total amount of waste. The scope of plastic waste collection was expanded to all canteens and coffee rooms in February 2021. Also, computers, displays and office supplies removed from use, for example, were given away to employees. The volume of crushed surplus concrete used in earth works amounted to 4,900 m^3.

Environmental research and biodiversity

The island of Olkiluoto is one the most researched areas in Finland, and its diverse nature is charted in detail. Environmental research has been conducted on the island since the 1970s, years before electricity production was started. The early baseline studies created a basis for the environmental monitoring programmes aimed at facilitating environmental radiation monitoring and determination of the impact on waters.

ENVIRONMENTAL RADIATION safety at the Olkiluoto nuclear power plant is continuously monitored with many different methods and through the cooperation of several parties. Around 300 samples are taken from the environment of Olkiluoto each year to be analysed in compliance with an environmental radiation monitoring programme approved by STUK. There are also several radioactivity monitors in the immediate vicinity of the plant. They continuously measure radiation and are connected to STUK's automatic network for monitoring external radiation.

Over 100 water samples are taken from the sea surrounding Olkiluoto each year. These samples are subjected to about 1,500 different water quality analyses. Furthermore, the condition of fish stocks in the sea area is monitored by, for instance, fishing for record-keeping purposes and surveys among professional and recreational fishermen. Test fishing takes place every four years in the areas surrounding Olkiluoto in accordance with the environmental monitoring plan. The state of aquatic plants is monitored by means of transect line diving every six years.

All the Olkiluoto plant projects have undergone extensive environmental impact assessments. The final disposal of spent nuclear fuel has been studied since the 1980s, and it has also been evaluated through environmental impact assessments. In the spring of 2021, TVO published the environmental impact assessment (EIA) for the construction of a near-surface final disposal facility for very low-level waste in Olkiluoto.

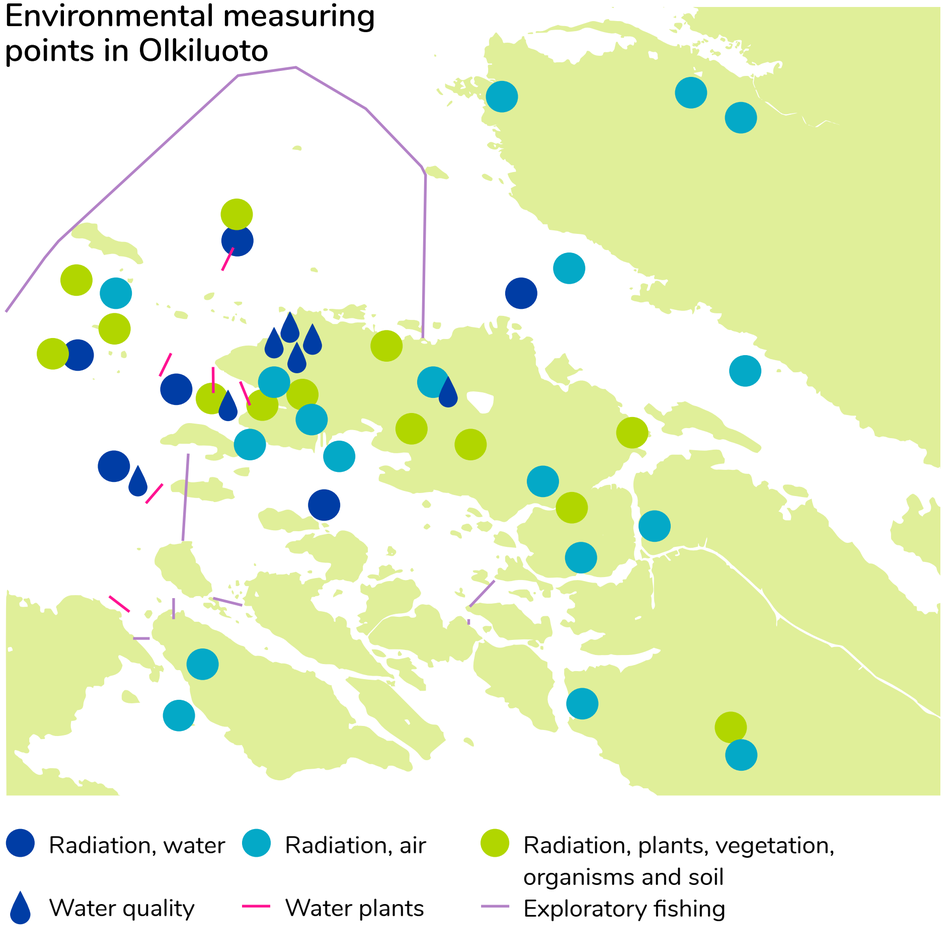
TARGET 2021	ACTUAL RESULTS	
Sustainable land use and biodiversity	A steering group for infrastructure and land use adapts infrastructure designed and implemented in the area to the natural environment, paying particular attention to natural sites and nature conservation areas. The long-term infrastructure plan was updated in February 2021 and the results of the nature survey carried out in the west part of the Island of Olkiluoto became available.	●

Centralising production secures biodiversity

CLIMATE CHANGE also has a major impact on biodiversity. As a producer of climate-friendly electricity, TVO safeguards and maintains the diversity of nature. About 21 percent of all electricity produced in Finland and about 17 percent of all electricity consumed in Finland is generated on the small island of Olkiluoto, surrounded by four nature conservation areas. The concentration of energy production in a small geographic area minimises the environmental impact and allows the preservation of other areas in their natural state.

The total surface area of the Olkiluoto island is 900 hectares, of which areas constructed for nuclear power and final disposal amount to approximately 170 hectares. The total volume of non-water-permeable areas is 42 hectares. TVO does not own any nature conservation-oriented areas.

Environmental measuring points in Olkiluoto



Promoting biodiversity

A BIODIVERSITY STUDY is completed on the island of Olkiluoto every ten years. The last comprehensive study was performed in 2013. A nature investigation was carried out in the island's western part in 2020. The results indicate that the biotopes occurring at Olkiluoto are mostly barren, with few species, but the four nature conservation areas surrounding the power plant area add to biodiversity. In places, the bird population on the island of Olkiluoto and its surrounding areas is diverse and plentiful, and the constructed areas offer nesting opportunities from some notable bird species. Energy production has had no significant impact on the nature of Olkiluoto, which for the most part is barren and poor in species.

Biodiversity is promoted as part of the Environment and Energy Efficiency Programme, which includes, for instance, the principle of aligning the needs of the natural environment and any infrastructure being planned and placed in the area during land use planning, with special emphasis on locations relevant in terms of nature and nature conservation areas. The TVO Group's Sustainability Roadmap also includes goals concerning biodiversity, in relation to efficient land use and projects promoting biodiversity.

TVO and Posiva aim to improve biodiversity in connection with their operations and cooperate with stakeholders within different projects. The impacts of the power plant's cooling water are mitigated with an annual fishery fee of EUR 11,000.

Biodiversity is also considered when planning decommissioning. The Centre for Economic Development, Transport and the Environment and the municipality of Eurajoki monitor the environmental permits, according to which detailed landscaping plans are required for the decommissioning of the power plant or a specific area. The plan for the landscaping takes into account restoring the area to its natural state and other goals regarding biodiversity, and they are approved by the authorities.

Cooperation with authorities

The operation of a nuclear power plant is subject to licences and permits, and it is governed by the authorities. The authority supervising nuclear and radiation safety is the Radiation and Nuclear Safety Authority in Finland, STUK.

THE COMPETENT environmental permit authority is the Southern Finland Regional State Administrative Agency, and the supervising authority is the Southwest Finland Centre for Economic Development, Transport and the Environment. Other authorities involved in the management of environmental matters include the environmental department of the municipality of Eurajoki and the Ministry of Economic Affairs and Employment, which acts as TVO's liaison authority in EIA procedures.

Radiation monitoring samples taken from the Olkiluoto environment are submitted to STUK for analysis. TVO annually prepares a report on the waste and emissions caused by its operations and submits the report to several regional and national authorities. TVO annually reports its environmental investments and environmental protection activity expenses to Statistics Finland. After verification, the annual carbon dioxide emissions of the emergency diesel generators and reserve boilers are reported to the Energy Authority. Energy saving measures are reported to Motiva. The Finnish Safety and Chemicals Agency (Tukes) acts as the supervising authority for the industrial processing and storage of hazardous chemicals.

There were eight special events in 2021

THE OLKILUOTO nuclear power plant units, OL1 and OL2, operated safely throughout the year. TVO classifies events affecting nuclear safety in accordance with the international INES scale (0–7). In 2021, eight events rated as INES level 0 (no nuclear or radiation safety significance) took place at the Olkiluoto nuclear power plant. TVO

analyses and investigates all events that may have affected nuclear safety and defines the corrective actions for their causes. TVO publishes news on any significant events that may be of public interest on its website.

TVO also follows events at other nuclear power plants around the world. Activities of the Olkiluoto nuclear power plant are constantly developed on the basis of any observations made.

Permits govern the activities

IN ADDITION to legislation pertaining to nuclear energy and radiation safety, operations are also regulated by requirements laid down in environmental legislation. Operating the Olkiluoto nuclear power plant is subject to a permit according to the Environmental Protection Act, and cooling water intake is subject to a permit according to the Water Act. The permits are valid until further notice.

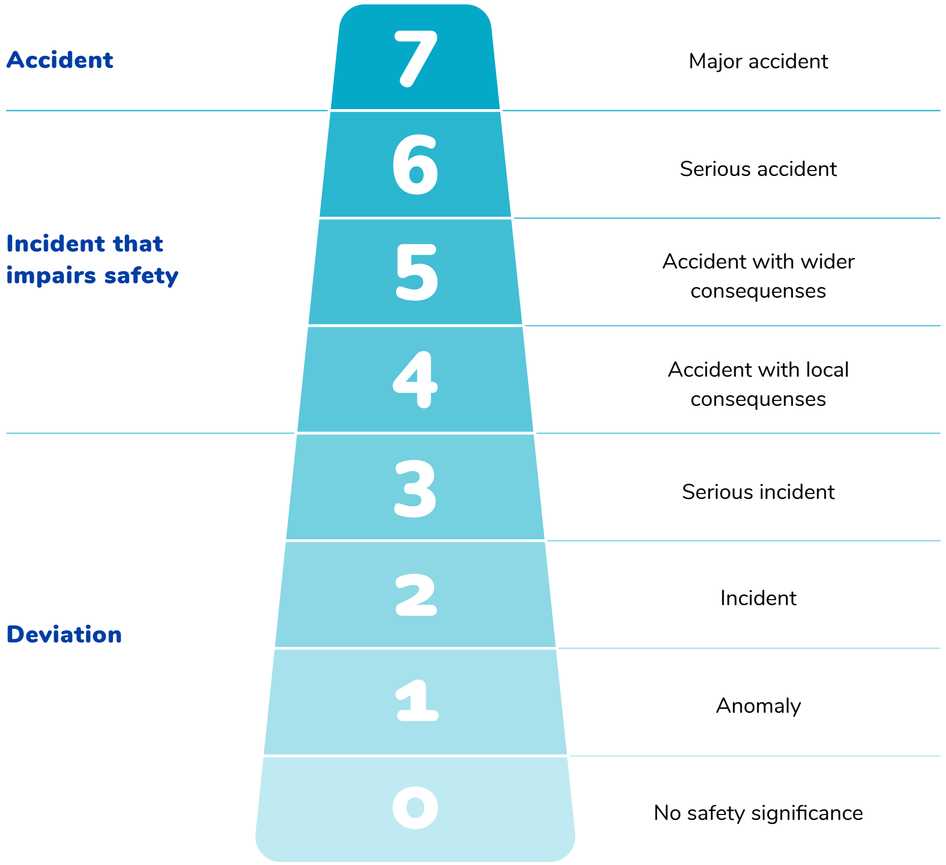
Environmental and water permit decisions cover power plant operations and its emergency power generation systems. The permit conditions control the nuclear power plant's cooling water volume and the amount of heat contained in it, wastewater treatment efficiency, the processing of waste, operations in the event of operational occurrences and emergencies, as well as monitoring and reporting. In addition, there are separate environmental permits for the supporting operations of the Olkiluoto nuclear power plant, such as the landfill and the quarry material storage area. During the year, the permit regulations concerning hydroid prevention were updated and the Olkiluoto spoil deposit was granted a new environmental permit.

Licences according to the Chemicals Act have been granted for the handling and storage of hazardous chemicals. The reserve boilers of the Olkiluoto nuclear power plant, as well as the emergency diesel generators of OL1, OL2, and OL3 (a total of 16 generators), are included within the scope of the emissions trading system. During the reporting year, the power plant received an emissions permit for the period of 2021–2030. In compliance with the Finnish Emissions Trading Act, TVO submits an annual verified emissions report and a verifier's statement to the emissions trading authority. TVO is planning to construct a disposal repository for very low-level waste (VLLW) in Olkiluoto. The EIA report concerning the plan was completed in 2021. In addition, the Olkiluoto water management project for securing the supply of raw water and building a transfer sewer for wastewater progressed from design to the construction stage.

Compliance with environmental legislation

THE TVO GROUP continuously monitors statutory regulations and other requirements pertaining to its operations. People in charge of different areas are responsible for ensuring that the organisations receive sufficient up-to-date information about statutory requirements and their impact on the TVO Group's operations. Compliance with the requirements is regularly assessed in internal and external audits as well as in management reviews. In 2021, the TVO Group's operations complied with environmental legislation, licences, and permits.

INES-scale



TARGET 2021	ACTUAL RESULTS	
Management of nuclear safety risks	Risks are actively identified and measured for their probability and consequences by meansof up-to-date Probabilistic Risk Assessment (PRA). The identified risks are mitigated applying the Safety As High As Reasonably Achievable (SAHARA) principle. Following the Fukushima accident, TVO has further developed the capabilities of the plant units to withstand extreme natural phenomena and simultaneous loss of power supply. Plant modifications related to these capabilities have significantly reduced the nuclear safety risk.	●

Final disposal of spent nuclear fuel

The types of nuclear waste generated at a nuclear power plant include waste exempted from control, low and intermediate level operating waste, and high-level spent nuclear fuel. Posiva is responsible for the final disposal of spent nuclear fuel generated at the power plants of its owners, TVO (Olkiluoto NPP) and Fortum (Loviisa NPP).

COMPARED to the amount of produced energy, the volume of waste and its space requirements are low. The principle of nuclear waste management is to isolate the waste from organic nature until the radioactivity of the waste has decreased to an insignificant level.

The responsibility for nuclear waste management lies with the nuclear power companies. They must carry out the necessary nuclear waste management measures for their own waste and cover their costs. According to the Finnish Nuclear Energy Act, nuclear waste generated in Finland must be treated, stored and placed in final disposal in Finland, and the import of nuclear waste into Finland is prohibited.

Spent nuclear fuel from the nuclear power plants of TVO and Fortum will be packed in copper canisters and placed in final disposal in Olkiluoto bedrock at a depth of approximately 430 metres. Posiva manages the research into the final disposal of spent nuclear fuel, the construction and operation of disposal facility and the eventual closure of the facility on behalf of its owner companies.

In 2019, Posiva started the EKA project, which aims at initiating final disposal operations in the 2020s. The project involves constructing an above-ground encapsulation plant and installing the systems for final disposal in the underground ONKALO facility, obtaining the requisite operating licence for the final disposal concept, the facility complex and its systems, and preparing the supply chains needed for production before starting the actual final disposal of spent nuclear fuel.

The work in the EKA project progressed according to schedule during 2021 despite COVID-19 restrictions. In May, the excavation of the five first deposition tunnels, accessed through the central tunnels, was started in ONKALO at a depth of approximately 430 meters. In December, the roof wetting ceremony for the encapsulation plant was celebrated. A significant event in the preparation of the project in 2021 was the submittal of the operating licence application to the Finnish Government in December.

Finland is the only country to proceed to the implementation of final disposal, which makes the EKA project unique on a worldwide scale. Therefore, Posiva also plays an important role in the mitigation of climate change as part of the lifecycle of nuclear power. Several countries employing nuclear energy have disposal facilities for low and intermediate level waste, but the final disposal of high-level spent nuclear fuel has not been started anywhere in the world.

Final disposal is based on employing multiple release barriers. Release barriers ensure that the nuclear waste cannot be released into organic nature or become accessible to humans. A deficiency of a single barrier or a predictable geological or other change will not jeopardise the performance of the isolation. The release barriers include the physical state of the fuel, the final disposal canister, the bentonite buffer, the backfilling of the tunnels, and the surrounding rock.

The long-term safety of the solution is paramount in the final disposal of spent nuclear fuel. It is evaluated and demonstrated with the safety case. According to the international definition, a safety case refers to all of the technoscientific documentation, analyses, observations, examinations, tests, and other evidence for justifying the reliability of the assessments made on the long-term safety of final disposal. Plenty of time has been reserved for the preparation and practical execution of final disposal, and safety is evaluated at many stages. The final disposal of spent nuclear fuel will continue for approximately one hundred years.

According to legislation, a party with a nuclear waste management obligation must present to the Ministry of Economic Affairs and Employment at regular intervals a plan on how they intend to carry out the measures pertaining to nuclear waste management and their preparation. At the end of September, Posiva's owners submitted nuclear waste management

plans for 2022–2024 to the Ministry, as well as the nuclear waste management programme YJH-2021, which describes preliminary plans for 2025–2027. The nuclear waste management programme contains plans for the processing, storage and final disposal of spent fuel and the decommissioning of the plant units, for example.

For more information on Posiva, please visit www.posiva.fi/en/

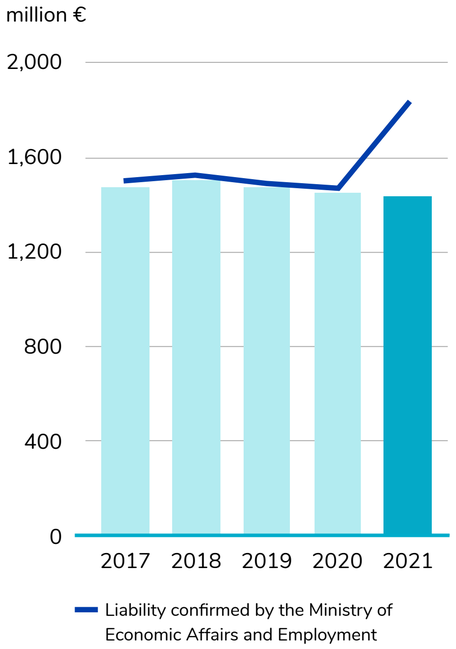
Advance collection of waste management funds

THE COSTS of nuclear waste management and final disposal of spent fuel are collected in the price of nuclear electricity from shareholders into a fund for future use.

In Finland, nuclear power companies bear the costs of nuclear waste management, and the funds for that purpose are collected into the Finnish State Nuclear Waste Management Fund. Each year, the Ministry of Economic Affairs and Employment determines the share of each nuclear power company in the Fund as well as the waste management fee to be paid to the Fund. The liability share of the nuclear power companies in the Fund is decreased by the investments they make in final disposal. The increase in 2021 of the liability confirmed by the Ministry of Economic Affairs and Employment is due to the fuel loading of OL3, which began the plant unit's nuclear waste management obligation.

The annual fee payable to the Fund is determined on the basis of the difference between the amount of accumulated nuclear waste for final disposal and the measures implemented 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 share in the Fund is correspondingly reduced. The objective is to accumulate enough assets in the Fund for the final disposal of accumulated nuclear waste.

TVO's fund target
share in the Finnish state nuclear waste management



CASE

Excavation of the world's first deposition tunnels started inside Posiva's ONKALO

POSIVA STARTED the excavation of the first five deposition tunnels in ONKALO in May 2021. Starting the excavation was a major milestone for Posiva, as it was preceded by years of research and development in rock construction. STUK determined that the prerequisites for starting excavation have been met.

– This moment is the crystallisation of long-term research and development in rock construction that has resulted in nuclear facility construction methods suitable for the Finnish bedrock. The development of the methods started already with the construction of ONKALO in 2004, Posiva's Construction Manager **Juha Riihimäki** said as the excavation started.

The excavation of the first five tunnels is part of the EKA project, worth approximately EUR 500 million. The EKA project boldly signifies that Posiva is the first company in the world to implement geological final disposal of spent nuclear fuel.

The encapsulation of spent nuclear fuel and the placement of the canisters inside the deposition holes will begin once the Finnish Government has granted an operating licence for the disposal facility.

– The current estimate is that final disposal activities will begin in the mid-2020s, says Program Manager **Kimmo Kemppainen** from Posiva.

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EMAS statement

TVO's Environmental Report is based on the requirements laid down in the EMAS Regulation and serves as a verified environmental statement of the operation of the Company.

THE ENVIRONMENTAL REPORT for 2021 provides a comprehensive presentation of the environmental impact of TVO's operation, the Company's objectives with respect to environmental protection, and their achievement, as well as the key environmental indicators.

DNV Business Assurance Finland Oy Ab (FI-V-0002) has in the capacity of an accredited, independent and objective party verified the information presented in the Environmental Report on the 14th of February 2022.

TVO publishes the Environmental Report in Finnish and English.

The information to be reported for 2022 will be published in the spring of 2023.

EMAS
Todennettu ympäristöasioiden hallinta
REG.NO. FI - 000039

The Olkiluoto power plant has been EMAS (Eco-Management and Audit Scheme) registered with the code FI-000039 (NACE code 35)

REQUIREMENT	REPORT PAGE
A clear and unambiguous description of the organization registering under EMAS and a summary of its activities, products, and services, and its relationship to any parent organizations as appropriate.	Review by the CEO TVO as a company
The environmental policy and a brief description of the environmental management system of the organization.	Group-level policies Environmental management
A description of all the significant direct and indirect environmental aspects which result in significant environmental impacts of the organization and an explanation of the nature of the impacts as related to these aspects.	Responsibility for the environment and climate The environmental impacts of nuclear power Environmental balance sheet Environmental management
A description of the environmental objectives and targets in relation to the significant environmental aspects and impacts.	Environmental management Environment and energy efficiency programme 2022-2024
A summary of the data available on the performance of the organization against its environmental objectives and targets with respect to its significant environmental impacts. Reporting shall be on the core indicators and on other relevant existing environmental performance indicators.	Environmental management Environment and energy efficiency programme 2022-2024 Supply of electricity in Finland and its climate impact The environmental impacts of nuclear power Cooling water Raw materials and material efficiency Production and energy efficiency Releases into the air Releases into water and soil Waste Environmental research and biodiversity Final disposal of spent nuclear fuel
Other factors regarding environmental performance including performance against legal provisions with respect to their significant environmental impacts.	Environmental management Cooperation with authorities Cooling water Releases into the air Releases into water and soil Waste Final disposal of spent nuclear fuel
A reference to the applicable legal requirements related to the environment.	Cooperation with authorities
The name and accreditation number of the environmental verifier and the date of validation.	Verification report of the environmental report

Verification report of the environmental report

Confirmation Of Compliance

DNV BUSINESS ASSURANCE FINLAND OY AB has, as an accredited certifier (FI-V-0002), reviewed the environmental management system at Teollisuuden Voima Oyj's Olkiluoto power plant. Based on this review, DNV Business Assurance Finland Oy Ab states that the environmental system with the programs and audit procedures as well the updated environmental statement including the indicators fulfil the requirements of Regulation (EC) No. 1221/2009 as well as Commission regulation (EC) 2017/1505.

Scope and methodology of verification

THE UPDATED Environmental Statement 2021 (called Environmental Report 2021) was verified at the Olkiluoto location of Teollisuuden Voima Oyj remotely the 7th of February 2022. The audit of the environmental management system according to ISO 14001:2015 that was continued on-site at Olkiluoto at the 8th-11th of February 2022 is acknowledged to be a part of the verification process.

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

The updated Environmental Statement 2021 has the same structure as the Environmental Report 2020. The content and environmental indicators can easily be compared year by year. The statement provides a clear and accurate image of Teollisuuden Voima Oyj's operations and their impact on the environment. The environmental system is implemented by setting goals. The implementation and effectiveness of the system is monitored by the environment team and management reviews. The updated Environmental Report 2021 with environmental indicators, which describe the impact of the system, meet the EMAS 1221/2009 requirements for updated environmental statement as well as the requirements of EU 2017/1505 for annexes I-III and requirements of EU 2018/2026 for the annex IV.

The dedicated level of Teollisuuden Voima Oyj’s commitment to a high standard of safety, quality and environmental protection, and continuous improvement is shown in the updated Environmental Report 2021.

At Kirkkonummi,
the 24th of March 2022
DNV Business Assurance Finland Oy Ab
EMAS-accredited verifier
FI-V-0002

Esa Notkonen
Lead Auditor, Verifier

Group-level policies

The Group-level policies have been approved in the meeting of the TVO Group's Management Board on 9 November 2020.

Safety culture

TVO Group and its entire personnel are committed to a high standard of safety culture.

Safety culture is comprised of organisational practices and individuals' attitudes. Thanks to the safety culture, all factors that affect the nuclear power plant's safety will receive attention in proportion with their significance and are given priority in decision making.

Group-level policies

TVO Group and its personnel comply in their actions with the policies defined by the Group.

Applicable laws, decrees, and official regulations as well as international agreements are strictly followed. TVO Group sets objectives for its operations, which are stricter than those set out in the applicable laws.

Issues are dealt with transparently within the Group. Reporting of development needs, detected shortcomings, nonconformances and errors is encouraged.

TVO Group requires its partners and their personnel working at Olkiluoto to be committed to the high safety culture and high-quality operating methods. This means that the companies and personnel in a direct or indirect contractual relationship engage in responsible operations according to TVO Group environmental, nuclear safety and quality policy, and information security principles.

Policy on nuclear safety and quality

The nuclear safety and quality policy includes nuclear safety, radiation protection, nuclear material supervision and quality.

Nuclear safety

TVO Group is committed to maintaining operating conditions where efficient procedures can be implemented by taking safety, quality, and costs into account. This ensures the capacity to also produce competitive electricity in a safe and reliable manner over the long term.

TVO Group's operations shall not cause any damage to people, the environment or property.

Radiation protection

In all their radiation protection activities, TVO Group and its personnel are committed to following the ALARA (As Low As Reasonably Achievable) principle. According to the principle, individual and collective radiation doses are kept as low as possible by practical measures.

Restricting the amount of doses and keeping the amount of radioactive emissions as low as possible are already accounted for when designing the structures and functions. All employees shall observe matters affecting radiation protection in their work.

In addition to authority guidelines, the development of radiation protection operations also takes international recommendations into account.

Nuclear safeguards

TVO Group takes good care of nuclear material and ensures that it does not get into the hands of unauthorized persons.

Quality

Work practices of a high standard are followed within TVO Group, which creates a basis for safe and economically efficient operation.

The professionals in nuclear industry who work at TVO Group are expected to show unfaltering compliance with procedures and verified execution of their own work. On the level of individual employees, this refers to a prudent approach to work, i.e., compliance with the STAR principle (Stop, Think, Act, Review) The personnel shall be aware of the safety significance of their work and utilise methods developed for the management of human errors which are employed in the Group.

Risk management is implemented on a regular and consistent manner. Any risks affecting operation, and in particular safety, are identified already at the operational planning phase.

We consider our internal and external customers equally important. We perform all work tasks appropriately, according to schedule, and with high quality.

TVO Group develops co-operation with its suppliers so that the safety, availability, and environmental friendliness of the plant units remain at a high international level.

Corporate social responsibility policy

The corporate social responsibility policy covers the environment, energy efficiency, procurement, personnel, occupational health and safety, and communication.

Environment and energy efficiency

TVO Group operates in accordance with the principle of sustainable development and produces environmentally friendly nuclear electricity. The Group recognises the environmental and energy aspects of its operation and minimises the related adverse impacts at all phases of electricity production. Operational objectives are specified in compliance with the principle of continual improvement. TVO Group monitors the impact that its operations have on the state of the environment, and when necessary, launches immediate corrective actions. TVO Group ensures that the personnel and other persons working at the Olkiluoto nuclear facilities have competence and expertise in matters related to the environment and energy efficiency.

The objective of TVO Group is to prevent and further reduce the already low emissions of radioactive substances. Abnormal events in the plant process are anticipated and preparedness for the prevention of environmental damage caused by them has been established.

TVO Group acknowledges the importance of its overall responsibility for all the phases of the fuel cycle. The Group monitors and supervises the management of environmental issues implemented by the fuel suppliers. TVO Group requires the suppliers to assume responsibility for the securing and development of living conditions in the surroundings of uranium production and processing plants, taking indigenous peoples into consideration. Fuel management extends from the uranium mines all the way to final disposal according to the “from bedrock to bedrock” principle.

TVO Group is committed to improving the efficiency of energy production. The Group monitors its own energy consumption and improves its efficiency by taking energy aspects into account in the operations. Plant unit modernisation projects are implemented to improve the energy efficiency of the power plant process. Opportunities for improvement of energy efficiency are considered in investments, modifications and procurement. The level and performance of energy efficiency are also reported on in the annual environmental report. TVO Group minimises the amount of waste through the improvement of the use of raw materials and the reuse of waste. The goal is to increase the relative share of waste delivered for reuse and to decrease the amount of radioactive waste. TVO Group also takes efforts to reduce the amount of spent fuel through optimisation of the use and properties of fuel.

Sustainable utilisation of the environment is taken into account in the development of the Olkiluoto area and expansion of operations. The design and construction of any new nuclear power plant units aims to minimise harm and disruption to the environment.

Procurement

TVO Group employs procurement activities of a high standard to ensure safe, competitive and reliable production as well as the long service life of the plant units.

The products and services purchased by the Group are required to meet the requirements for safety, quality and the environment which the Group has specified. The availability of requisite products and services is ensured by means of long-term agreements based on mutual trust and partnership.

Factors particularly emphasised by TVO Group in the selection of suppliers include the continuity of the supplier’s operation, security of supply, management of quality and environmental aspects, as well as competitiveness, with domestic and local suppliers given priority. Supplier assessments are based on the safety significance of the products and services to be ordered. The quality of deliveries is monitored and when necessary, corrective actions are taken without delay.

TVO Group conducts its relations with the supplier chain and business partners in a responsible and ethical manner. TVO Group expects its partners to uphold a high level of safety culture and responsible practices in their own operations.

Personnel

The objective of TVO Group is to ensure that the whole personnel is motivated, carry out their tasks in a responsible manner and commit to observing the agreed practices and procedures.

TVO Group makes sure that the human resources of the Group are competent and adequate to guarantee the achievement of the objectives specified for the Group.

TVO Group offers the employees opportunities for self-development in their work and profession and for the improvement of their competence by taking advantage, according to their own individual needs, of the training programmes provided by the Group. TVO Group offers competitive rewards and encourages employees to work profitably, to meet their goals, and to work to a high standard every day.

TVO Group provides its personnel with opportunities for the maintenance of their work ability. The principles of the HR policy are implemented through good cooperation with the personnel. The objective of TVO Group is to ensure the equality and well-being of the work community where no discrimination is approved and which promotes the iplementation of equality.

Health and safety

The goal of health and safety activities in TVO Group is to promote health and occupational safety by a proactive approach.

A good atmosphere is maintained in the work community within the Group, ensuring good working conditions as well as equality of treatment. We do not approve of any form of harassment or bullying in the workplace.

The goal of every employee in terms of occupational safety is to look after the safety of oneself and others. When making decisions related to occupational safety, TVO Group is committed to consultation and participation of workers, and their possible representatives.

Communication

TVO Group increases mutual trust by supporting open and responsible interaction with all of its stakeholders in the local region, the Finnish society and the international cooperation network of the nuclear industry.

The Group promotes public knowledge about and acceptance of nuclear power by participating in social debate and communicating transparently about operations and events at the Olkiluoto nuclear facilities.

TVO Group uses internal communication to support an interactive work community culture and ensures that the personnel understand the goals and policies of the Group and are aware of the Group's financial and production situation. TVO Group's contact with stakeholders is based on high ethical principles and thus reinforces confidence in the operation of both the Group and the stakeholders, posing no threat to the reputation or objectivity of either.

Sponsorship of culture, sports, research and non-profit activities is part of the corporate social responsibility of TVO Group. Factors considered in the seletion of cooperation partners and sponsorship recipients include reputation, values and compatibility with the strategic objectives and principles of the Group. Finnish origin, a ground-breaking role, reliability, and interaction are some of the key selection criteria.

Production policy

The production policy covers the operation and maintenance of the plant, and the expansion of the production capacity.

Operation and maintenance

The objective of the operation and maintenance activities implemented by TVO Group is to ensure uninterrupted, predictable and competitive electricity production. Nuclear and operating safety are always given priority.

Plant safety and reliability are developed systematically. Modification and renovation projects are implemented at the plant in accordance with pre-approved plans to ensure an as long service life as possible for the plant.

Systematic test and inspection activities of an appropriate scope are carried out to verify the safe and reliable operation of the plant. Plant maintenance operations are implemented in a well-planned manner, predicting potential disruption situations, and preparing for the measures the situations require.

Expansion of production capacity

TVO Group follows development in nuclear power technology and participates in international cooperation both with power plant suppliers and with nuclear power companies.

The electrical output of the existing plant units in Olkiluoto will be increased where possible by taking advantage of the latest available technology.

The best economically feasible technology that minimises environmental impacts over the entire life cycle of the plant unit is applied in the design and implementation of Olkiluoto 3.

Corporate security policy

The corporate security policy covers the safety of production and operation, personnel safety and facility security, rescue and emergency preparedness, and information security.

Safety of production and operation, personnel safety, and facility security

Procedures related to safety and security are implemented in a systematic, pro-active and comprehensive manner. The procedures are designed to guarantee the safe operation of the plant, as well as the physical integrity of the personnel and others working at the plant.

Rescue and emergency preparedness

TVO Group maintains and develops preparedness for special conditions. Exercises in rescue and emergency operations are arranged systematically and regularly.

TVO Group maintains at all times its awareness of risks related to the company, the personnel and the operating environment.

Information security

Information security procedures are in TVO Group designed according to the significance and risk of each function. The objective is to secure nuclear safety, financial interests and the privacy protection of the personnel, to verify the availability of correct and reliable information, and to avoid any damage resulting from information processing.

TVO Group's information security proce-dures cover the availability, authenticity, and confidentiality of information, as well as procedures for the management of access rights.

Group employees are granted access rights to the Group's information and information systems as required for the performance of their work tasks. Disclosure of information to third parties is only allowed when this is in the interest of the Group. Information disclosed by other parties is in TVO Group processed using at least the information security procedures used or required by the disclosing party.