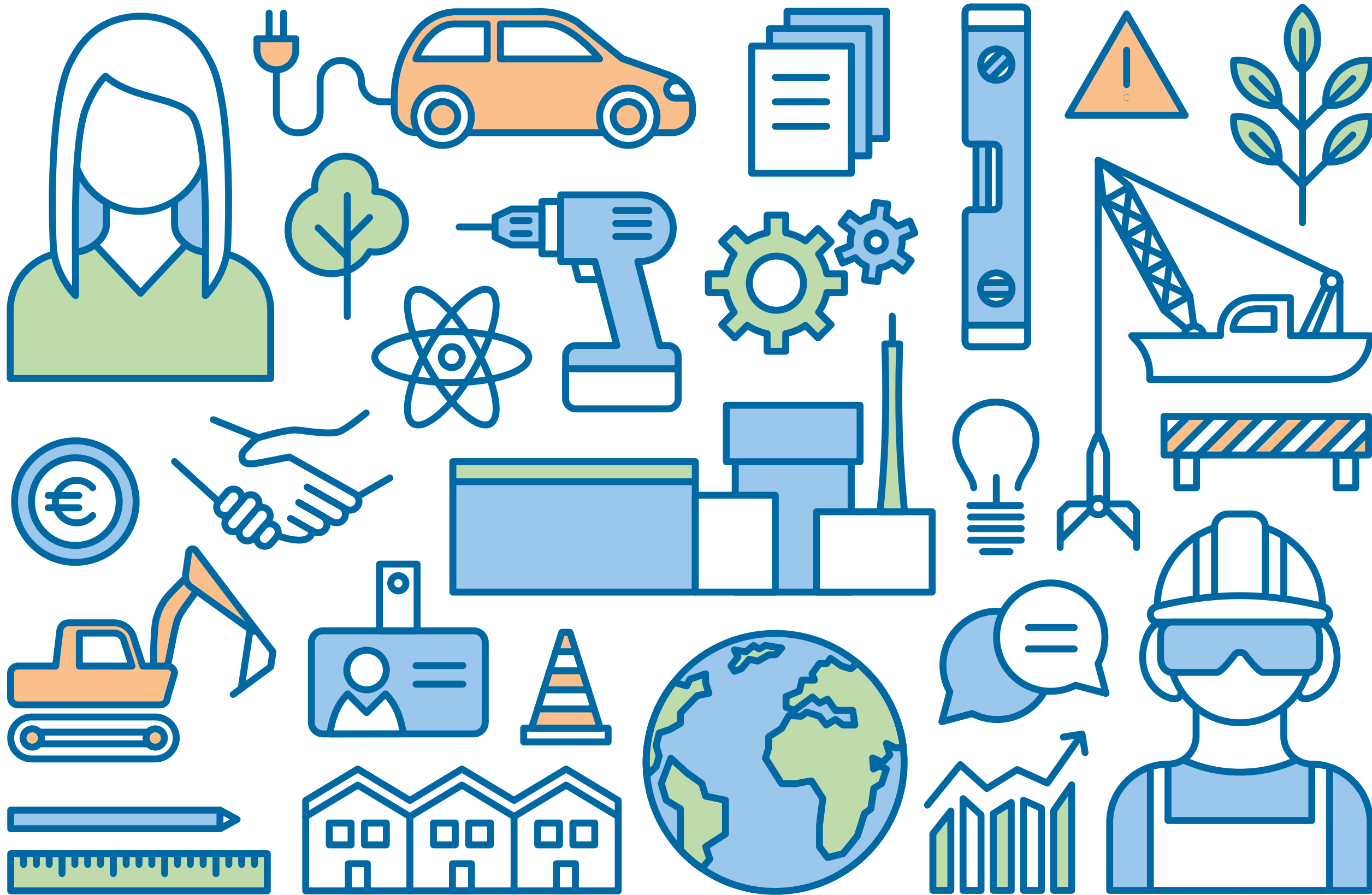


# FENNOVOIMA

# Year 2017

Corporate Responsibility Report



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# On behalf of sustainable energy production



## Low-emission energy generated with nuclear power

During the past year, several parties have expressed their concern about the insufficiency of the actions agreed to mitigate climate change. In Finland, approximately 75 percent of greenhouse gas emissions comes from energy production and consumption, including energy used by traffic.

Discussion of the significance of nuclear power in curbing greenhouse gas emissions has become active worldwide, and Fennovoima has also taken a prominent stand on behalf of clean energy production. The least effects on the climate over the entire life cycle are created by wind and solar power, as well as nuclear power, where there are practically no carbon dioxide emissions from production at all.

Even though the use of renewable energy sources has increased significantly in Europe, most of the EU's low-emission energy is generated with nuclear power. On the global scale, more energy was generated with nuclear power last year than ever before.

Renewable energy sources and nuclear power are not mutually exclusive forms of electricity production. Investments in all forms of electricity production with low emissions will make it possible to produce clean electricity in Finland for the country's increasing needs in accordance with the principles of sustainable development, while improving the security of supply.

## Responsibility guides our operations

Fennovoima's Corporate Responsibility Program is based on taking safety and social, economic and environmental responsibility into account in the operations of the organization. We focus on matters that are important both to us and our stakeholders.

In early 2017, Fennovoima was accepted into the UN Global Compact corporate sustainability initiative, after which we verified that our Corporate Responsibility Program conforms with all the ten principles of the initiative. At the same time, we clarified and refined the goals set in the Program to even better describe our progress with regard to responsibility.

## Results in occupational health and safety through persistent work

Alongside nuclear safety, occupational health and safety is a number one priority in the Hanhikivi 1 project. In 2017, more than 550,000 hours of work was performed at the Hanhikivi 1 construction site without a single lost-time accident. We are very proud of this achievement.

Central to the success were the commitment of all parties working at the construction site to the principle of zero accidents, strict occupational safety practices, and continuous training of different parties to prevent accidents.



## FENNOVOIMA

### Objective to achieve readiness for starting construction in 2019

Last year, Fennovoima faced challenges in delivering the design documentation of the nuclear power plant required for the safety assessment to the Finnish Radiation and Nuclear Safety Authority. Taking the Finnish requirements and legislation into account in the design work has taken more time for the plant supplier than we originally anticipated.

Now, our objective is to receive the Construction License required to build the power plant in 2019. The Construction License is granted by the Government, after the Finnish Radiation and Nuclear Safety Authority finds that the power plant can be built in compliance with Finnish safety requirements.

As the project proceeds, the plant supplier's supply chain preparedness and supply chain management also become more important. In accordance with our strategy, we are committed to acting in a responsible manner, and we expect the same of our business partners.



### Environmental impacts considered in decision-making

The responsibility principle also applies to the management of the project's environmental impacts. At the beginning of 2018,

Fennovoima's environmental management system received an environmental certificate conforming to the ISO 14001 standard.

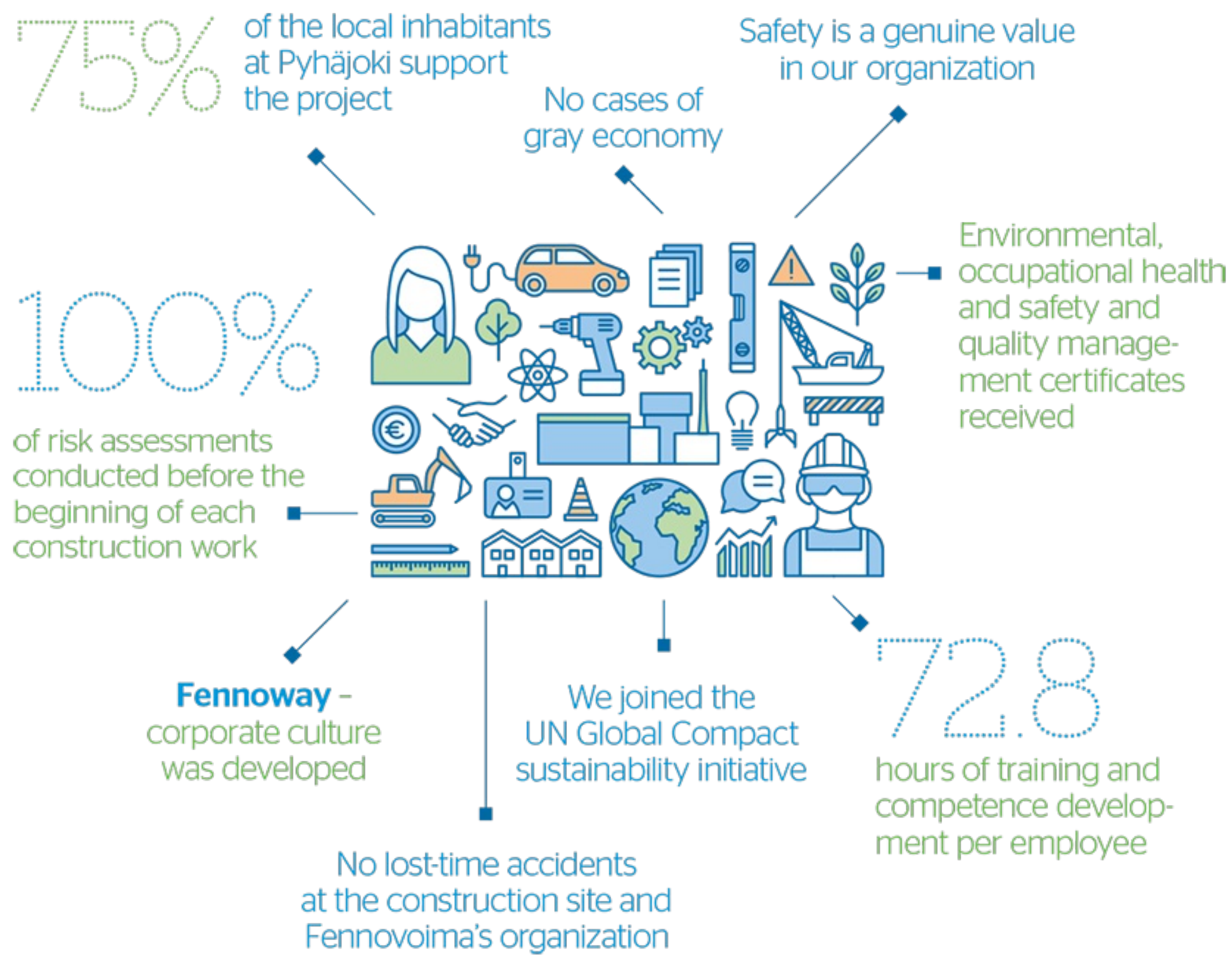
The environmental management system is developed and kept always up to date, so that it will correspond to the changing conditions at the construction site. This way, we want to ensure that the environmental impact during all construction stages remains as low as possible.

### The Hanhikivi 1 project has strong local support

In everyday life in Pyhäjoki, the progress of the Hanhikivi 1 project has been visible to the local residents as increased construction work, new job opportunities and generally increased activity in the area, among other things. According to an opinion poll we commission every year, support for the project in Pyhäjoki and its neighboring region has risen above 70 percent.

*Toni Hemminki*  
Fennovoima's CEO

# Highlights of the year 2017



Fennovoima's Annual Report of the Board of Directors 2017 is available at: [www.fennovoima.fi/en/publications/annual-reports](http://www.fennovoima.fi/en/publications/annual-reports)

# Responsibility Strategy

The Fennovoima Responsibility Program supports sustainable development of Fennovoima’s operations and Hanhikivi 1 Program.



Nuclear power is an economical source of electricity generation, combining the advantages of security, reliability, very low greenhouse gas emissions and cost competitiveness. It plays an important role in the implementation of the Finnish Climate and Energy Strategy towards a carbon-free society. Currently more than half of the clean energy production in Europe is based on nuclear energy. Photo: Ferry Design Agency.

## Fennovoima Responsibility Program

The Fennovoima Responsibility Program supports sustainable development of Fennovoima’s operations and Hanhikivi 1 Program. During 2017, the Responsibility Program was revised to clarify its presentation and simplify its structure, and to ensure that all the Principles of the UN Global Compact are included.

The objective of the Responsibility Program is to ensure that practices, operations and objectives in Fennovoima’s organization and at the construction site are in line with the corporate responsibility expectations of Fennovoima’s internal and external stakeholders.

This Corporate Responsibility report follows the structure of the Fennovoima Responsibility Program. Our responsibility goals and progress in the different areas is described in the following pages.

## Goals and targets

Effective implementation of the Responsibility Program requires continuous development, setting targets and monitoring their achievement, and when required, adjustments to the operations to fulfill the sustainability and responsibility standards that Fennovoima has set for the organization and its operations.

The Responsibility Program’s goals and targets are reviewed annually. The progress and achievement of the targets of the Responsibility Program is monitored by the responsible departments and units and the management team. The progress in each area is reported yearly in the Corporate Responsibility Report.



The responsibility goals defined in the Fennovoima Responsibility Program are marked in the report with this symbol.



## Risk management

As a nuclear power company, Fennovoima operates in an environment that is rigorously regulated at both national and international level.

From a risk management perspective, corporate responsibility relates to effective and transparent corporate governance and management, and to people, nuclear safety and the environment. Besides putting Fennovoima's reputation, and even operations, at risk, a breach of law or regulations could cause serious harm to society overall. As a responsible member of society, and complying with the regulatory requirements as well as Fennovoima's policies, Fennovoima's activities and decision-making are characterized by a low risk appetite.

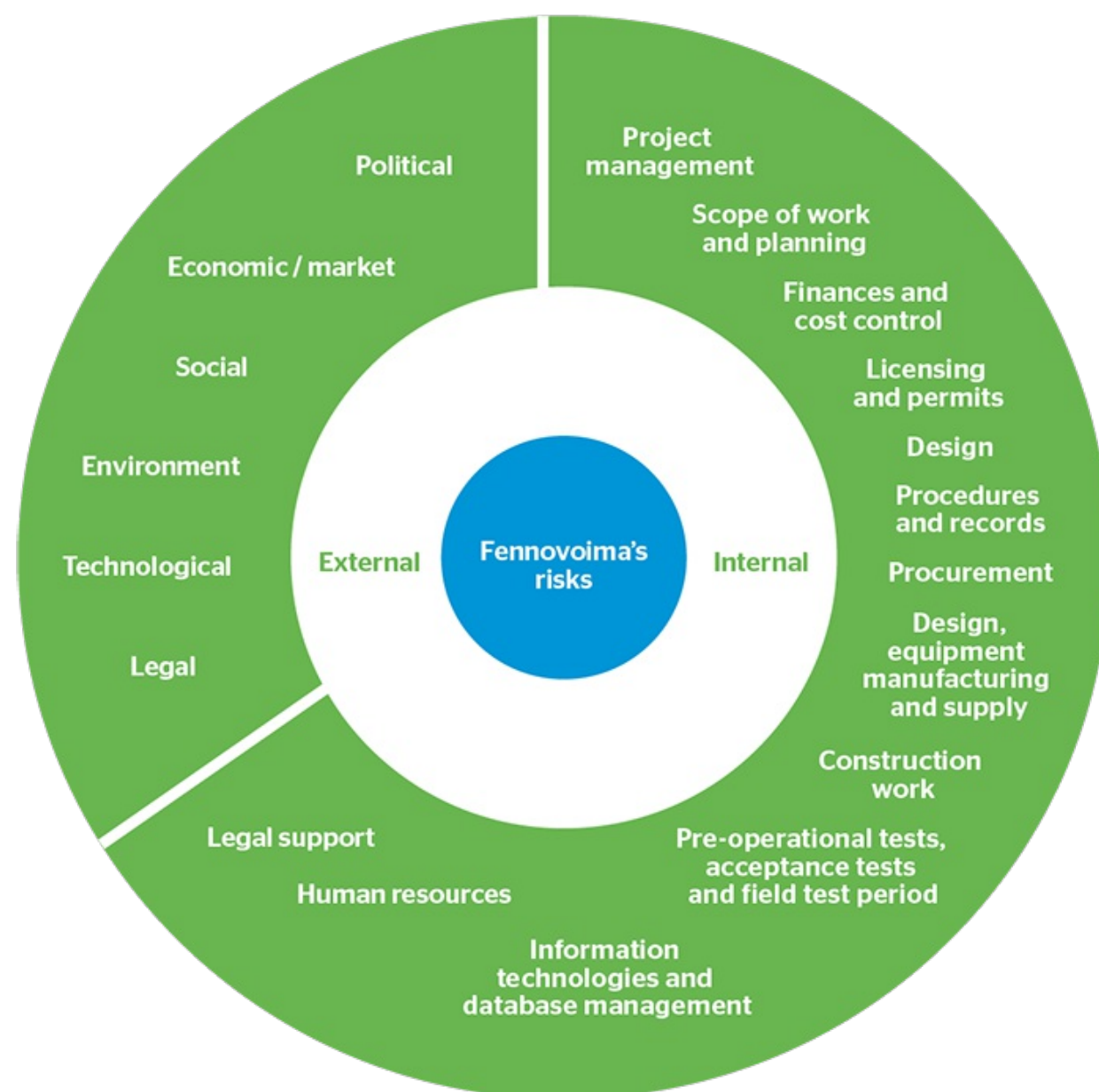
The aim of Fennovoima's risk management is to support the achievement of the set objectives and prevent negative effects in all areas of Fennovoima's operations, as well as to enhance the safety, quality and security of operations, economic value creation, corporate responsibility, and cooperation and dialogue with stakeholders.

This is done by identifying risks as early as possible, and by actively taking corrective and preventive action.

### Integrated risk management approach

Fennovoima applies the "integrated risk management approach," where strategic, financial, and operational and safety-related risks are integrated in an effective way. Fennovoima's entire organization is involved in risk management, which is coordinated centrally. This allows the organization to use the best possible risk management and know-how in each area, as well as systematic methods and practices. It also ensures that the risk management is integrated into all operations.

Since a significant part of the project's risks are in the hands of the plant supplier, Fennovoima ensures that the supplier's risk management is conducted in accordance with Fennovoima's requirements.



Fennovoima's high level risk map

## Effective risk management

Fennovoima's risk management covers all phases of the Hanhikivi 1 Program. Risk monitoring ensures that existing risks and newly discovered risks are effectively managed. Existing risks as well as the success of risk treatment are continuously monitored and reported as part of Fennovoima's monthly reporting.

**Nuclear and radiation safety:** As a nuclear power company, Fennovoima puts nuclear and radiation safety first in all its activities and decision-making. Nuclear and radiation safety comprises safety, security, emergency arrangements and nuclear safeguards at all stages of the use of nuclear energy. Regulatory Guides on nuclear safety (YVL Nuclear Safety Guides) set requirements for the overall use of probabilistic risk assessment (PRA) for analysis of nuclear safety.

Probabilistic risk assessments are integrated into risk assessments of nuclear safety-related risks and the overall risk management process. The same also applies to radiation safety risks.

**Occupational health and safety:** Fennovoima has set a target of zero accidents for its operations. Occupational accidents and diseases will be prevented by proactive measures. Efficient risk management is one of the most effective tools for ensuring the fulfilment of the target. Fennovoima, as the Project Owner, ensures that occupational health and safety risks have been eliminated or mitigated, and that construction work is executed safely without endangering the health of employees.



## FENNOVOIMA

**Environment:** To ensure that the environmental impact of its operation is minimized as much as possible, Fennovoima sets high standards for its environmental management activities. Risk management is integrated with each operation that may have impacts on the environment.

**Quality:** To ensure safety, Fennovoima sets high standards for the quality of its activities. The quality criteria for activities and products are set according to their significance regarding safety. According to YVL requirements (e.g. A.7 301), the strictest quality requirements are assigned to products and functions with the highest risk significance. Thus, risk mitigation and control measures are reflected in the quality requirements.

Quality affects the project mostly through safety, technical performance, or other aspects ultimately affecting licensability, schedule, costs or plant features.

**Security:** Corporate security ensures the security of operations, information security, personnel security, physical security, crime prevention, fire protection and preparedness. It also discusses business continuity planning as well as crisis management. As required in YVL A.12, Fennovoima has an information security management system in place, including specific information security risk assessment and management.





# Responsible business practices

Compliance with applicable laws, regulations and ethical guidelines is crucial for Fennovoima's success.



## Our practices

Fennovoima aims to be a world-class nuclear power company with a good safety culture and the highest level of integrity in everything we do.

Fennovoima's Compliance and Ethics Program is based on inserting compliance into the overall strategy process and into the existing Fennovoima Management System and the related risk management processes. The Compliance Program is approved by the Board of Directors, while the CEO is responsible for the Compliance and Ethics Program being executed and complied with in Fennovoima.

Fennovoima has defined the three most significant goals related to responsible business practices of our operations. These goals are compliance with legal requirements, consistent protection and support of human rights, and continuous work against corruption in all its forms.

The fulfilment of the targets defined for these goals is monitored by Fennovoima's Compliance function, which is responsible for the planning and development of the Compliance and Ethics Program, handling compliance concerns, providing advice and training to the organization, and taking necessary action regarding suspected violations of compliance.

Our key policies and guidelines for responsible business practices are the following:

- The Fennovoima Code of Conduct (which incorporates the principles that are considered in all our actions and operations.)
- The Company Policy (which defines the principles according to which Fennovoima takes care of nuclear and radiation safety in its functions and ensures the quality of its activities and products. It includes aspects related to nuclear and radiation safety, quality, human resources, occupational health and safety, security, environment, and communication.)
- Instructions on preventing money laundering and terrorist financing (Fennovoima is committed to international standards preventing money laundering and terrorist financing, and complies with applicable laws.)
- Instructions on anti-bribery and anti-corruption (Fennovoima has zero-tolerance to bribery and corruption)
- The principles of the UN Global Compact (which is a voluntary initiative to implement universal sustainability principles in our operations and actions)

More information on the Compliance and Ethics Program can be found at our website: [Policies and guidelines](#).



 Compliance with legal requirements

We comply with all applicable legislation, protect human and labor rights, employ fair labor practices, and never accept any form of bribery or corruption.

Fennovoima conducted a third-party compliance risk assessment in 2016. The main areas with risk exposure were identified as potential risks of corruption, unjust influence, conflicts of interest, non-compliance with legislation, and risks relating to the supply chain.

According to a follow-up assessment conducted in 2017, Fennovoima's Compliance and Ethics Program covers the above-mentioned risk areas. Also, Fennovoima's supply chain management practices have been developed to cover the monitoring and management of these matters (more information in the Supply Chain Management chapter of this report).

**Compliance and ethics training**

Fennovoima's personnel and in-house consultants have been trained to ensure the employees have sufficient knowledge of the legislation

and the correct procedures for how to act in case there are any suspected breaches. At the end of the year 2017, over 88 percent of Fennovoima's employees and in-house consultants had attended the training. The training will continue during 2018 also as part of the induction training for new employees, and targeted interactive group training sessions will be developed.

**Reporting compliance concerns**

At Fennovoima, the primary way of raising compliance concerns is to report them to the person's direct supervisor or to the Compliance function. The Compliance function is available and encourages employees to raise their concerns, ask in case of any questions, and speak up if they suspect any misconduct or violations.

Fennovoima also has an independent whistleblowing tool that enables anonymous internal reporting of any compliance concerns. The Compliance function is responsible for evaluating all reports received of suspected compliance violations and ensuring that appropriate action is always taken. During 2017, none of the reports received required action.

**SIGNIFICANT NON-COMPLIANCES WITH LAWS AND LEGAL REQUIREMENTS**      **2017 2016**

Fines or non-monetary sanctions for non-compliance in the social and economic area	0	0
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 Protection and support of human rights

According to the Constitution, Finland adheres to international treaties of human rights. Fennovoima's Code of Conduct emphasizes the compliance with laws and regulations, and the importance of human rights protection in the supply chain.

During 2017, Fennovoima's contract templates were reviewed, and all new contracting partners of Fennovoima must confirm their compliance with the Fennovoima Code of Conduct as part of the contract.

Our aim is to conduct a follow-up of all contracts during 2018. Compliance and ethics assessments will be implemented in Fennovoima's procurement and supply chain management procedures from 2018 onwards.

Also, a specific steering committee will be established to analyze compliance concerns raised in supplier pre-qualification and supplier reviews, and to make decisions concerning the required corrective actions or consequences.



 Continuous work against corruption in all its form

Fennovoima has zero tolerance for bribery and corruption. All Fennovoima's operations were assessed for risks related to corruption as part of the third-party compliance risk assessment conducted in 2016. Fennovoima's Compliance and Ethics Program provides instructions, training, monitoring and processes to handle incidents of suspected corruption and violations. In 2017, there were no incidents where Fennovoima employees were found to have been involved in corruption.

To prevent money laundering and terrorist financing, we follow risk-based identification and due diligence procedures for suppliers and other contracting parties.

Anti-corruption training is part of the compliance and ethics training that is mandatory for all Fennovoima employees and in-house consultants. Our anti-bribery and anti-corruption instructions are available on the intranet for all employees. Fennovoima's Compliance function is available to provide further advice for the personnel and, if necessary, to take action regarding any suspected compliance violations. All compliance concerns are taken seriously and handled confidentially.

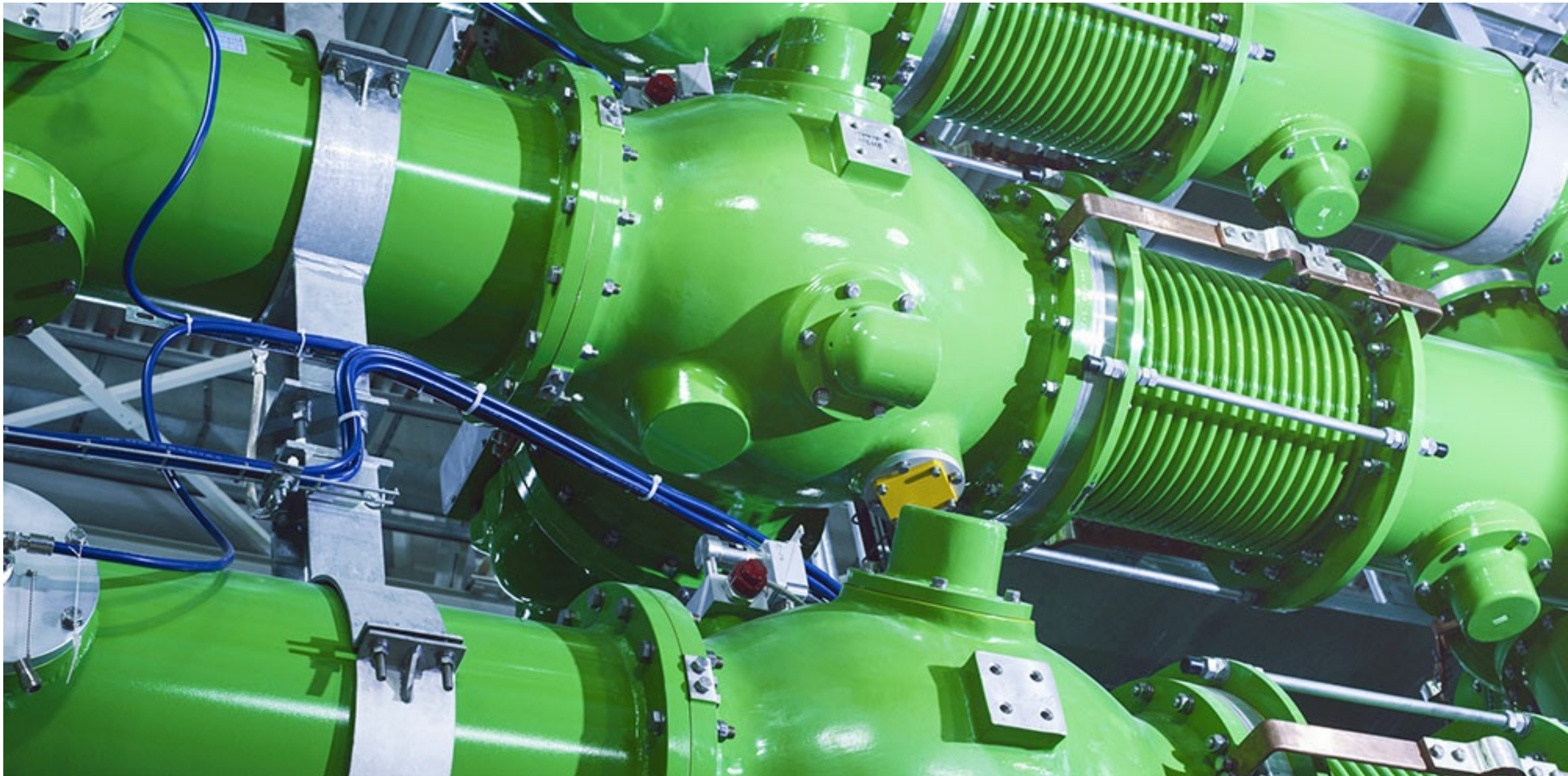
There were no incidents where Fennovoima employees were found to have been involved in corruption.

CORRUPTION	2017	2016
Incidents of corruption	0	0



# Effective Hanhikivi 1 program and construction management

Fennovoima's own internal functionality is a precondition for responsible operations.



## Our practices

Efficient program management requires, among other things, effective processes and systematic ways of working, and a well-functioning management system. The Fennovoima Management System (FMS) ensures that nuclear and radiation safety is always considered first in all operations, to meet the requirements set by applicable regulations and good corporate governance, to bear the responsibilities of a nuclear licensee, and to oversee shareholders' and other key stakeholders' interests.

The FMS helps us in ensuring that responsible business and labor practices, occupational health and safety practices, and environmental management practices are followed in all Fennovoima's activities.

Fennovoima's goal for the FMS is to have a well-functioning management system that complies with all regulatory requirements relevant to the current state of the life cycle and ISO 9001, ISO 14001 and OHSAS 18001 standards.





## Well-functioning management system that complies with all regulatory requirements and ISO 9001, ISO 14001 and OHSAS 18001 standards

During 2017, the development of the FMS continued, with participants from all over our organization. The usability of the FMS was improved, and the implementation of management system was emphasized by e.g. launching a new FMS training program including company-wide training of the review and approval process. Also, internal project communications practices have been developed to improve the information flow between departments.

Fennovoima's environmental management system was assessed according to the ISO 14001:2015 standard at the end of the year, and the certificate was granted at the beginning of 2018. The quality management system was assessed according to the new standard revision ISO 9001:2015, and the certificate was granted at the beginning of 2018.

### FMS review and assessments

All Fennovoima's operations must comply with the regulatory nuclear safety requirements. The ability of the FMS to meet the specific needs of each phase of the life cycle is objectively assessed and systematically monitored. The status of the management system and progress of adequate development actions are reported monthly.

#### Management reviews

Our biannual management reviews, which are routine evaluations of whether management systems are performing as intended, were organized as planned. The results of the FMS development are presented in the management reviews, where also applicable corrective actions are defined.

In addition, we perform self-assessments and we are developing methods to facilitate the personnel's commitment to continuous improvement of the FMS.

The OHSAS 18001 certificate was granted for the occupational health and safety management system at the beginning of 2017, and a follow-up audit was conducted at the end of 2017.

In 2018, we are focusing on further improving the effectiveness of the process-based FMS by e.g. training and implementing effective process follow-up methods. Also, a graded approach method will be implemented to support us in identifying those of our activities that are significant in terms of safety.

The management system is implemented through a web interface, training and internal communication according to the FMS Communication Plan.

#### Internal audits

Fennovoima conducts regular internal audits according to its current audit program. The purpose of these audits is to review whether the performance is in compliance with the processes and instructions defined in the Fennovoima Management System, and to indicate development needs, where applicable.

Altogether, 19 audits were conducted in 2017. Three planned audits were rescheduled for 2018. A comprehensive internal audit program will also be conducted during 2018–2020.





# Economic profitability

Economic responsibility means us creating long-term value for the shareholders and having a positive economic impact on Finnish society.



## Our practices

Fennovoima contributes to maximizing the positive impact of the project in many ways and has set the related goal: the Hanhikivi 1 Program will have a significant positive contribution to the site region and the country as a whole.

## Key financial figures

Fennovoima has one major task, which is to build a new nuclear power plant in Finland and to produce electricity at a stable price for its shareholders.

Fennovoima's Finnish shareholders consist mainly of industrial companies and municipal energy companies that utilize energy in their own operations. Fennovoima's Hanhikivi 1 project will benefit the whole of Finland due to the increased carbon-free electricity supply.

Fennovoima will be operating on the cost-price principle (the "Mankala principle"), whereby the shareholders are entitled to the electricity generated by the nuclear power plant at cost price in proportion to their ownership in the company. As a result of this principle, Fennovoima will not make a profit nor pay dividends in the normal course of its business.

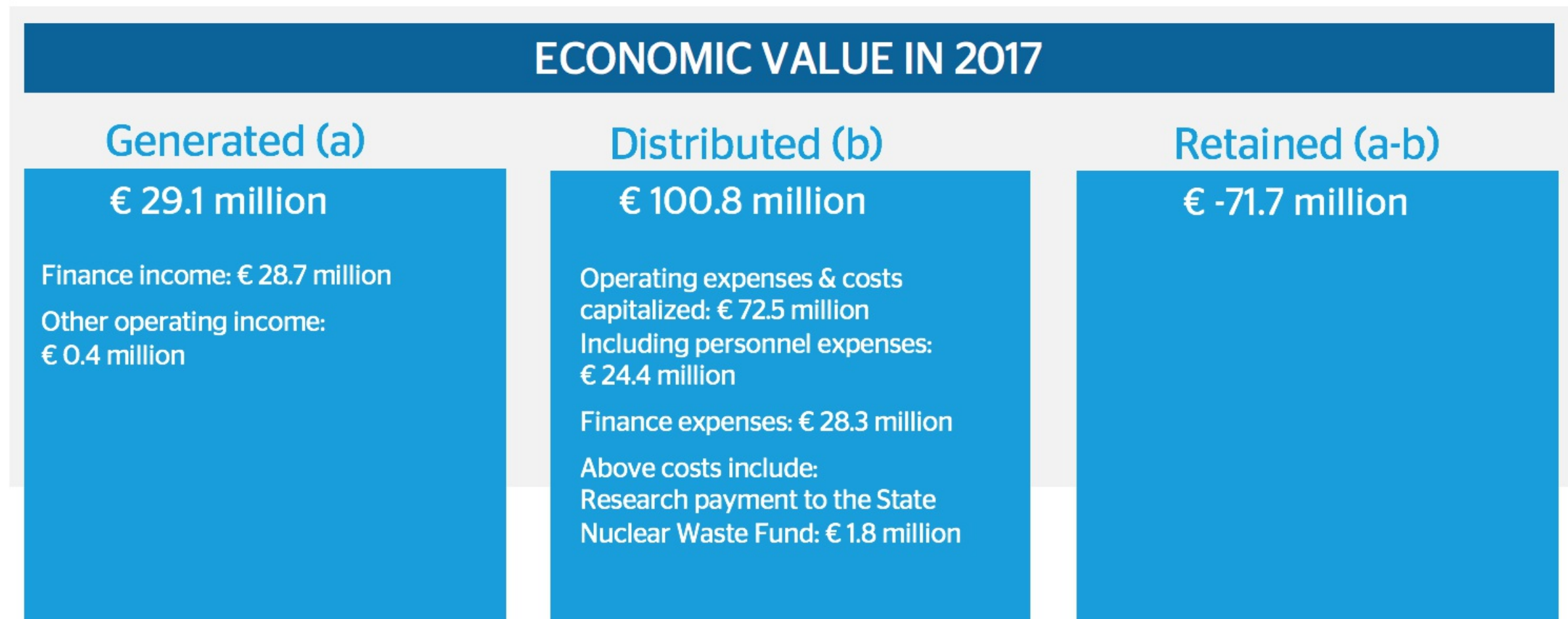
Fennovoima has offices in Helsinki and Pyhäjoki. The headquarters is in Helsinki. Fennovoima Oy has a 100%-owned subsidiary, OOO Fennovoima Rus, in Russia. The subsidiary was registered in November 2015 to control procurement in Russia. OOO Fennovoima Rus has an office in St. Petersburg, Russia.

## Financial year 2017

Fennovoima had no turnover in 2017. The reason is that the company is still in the project phase. The construction of the actual plant will begin as soon as the project site is prepared and the Construction License is granted by the Government of Finland. According to the plant supplier, the construction and commissioning of Hanhikivi 1 is planned to be completed by 2024, after which the plant will be in commercial use.

As a result, all the costs of Fennovoima basically relate to the design, construction and commissioning of this nuclear power plant. The distribution of economic value is described in the following figure.





As there are no revenues expected before the plant begins commercial operations:

*The economic value generated (a)* remains at a modest level, consisting mainly of occasional financing income related to the loan facilities and liquidity management.

*The economic value distributed (b)* is naturally considerable prior to commercial operations, because the whole power plant investment is spent during this period. Fennovoima is not yet able to generate revenues nor economic value that it could distribute as a typical enterprise. Instead, the company distributes the invested capital to various stakeholders: its own personnel, external services, authorities, EPC (engineering, procurement and construction) contractors, etc. which contributes to the completion of the power plant.

As a result, *the economic value retained (a - b)* is currently negative. After the plant starts commercial operations, the economic value generated is going to cover the economic value distributed. However, due to the Mankala principle applied by the company, the economic value retained is expected to be close to zero, even during commercial operations.



**Hanhikivi 1 project has a significant positive contribution to the site region and on national level**

The Hanhikivi 1 Program is a significant domestic investment, which will have an effect on the whole of Finland and its economy. The investments related to the project will increase employment, particularly in the construction industry.

The building of new nuclear power also generates significant additional investments, not only within the energy sector and construction, but also in capital-goods-producing industries. The additional income that is created by the investments will increase the purchasing power of households and stimulate consumer demand.

According to our surveys and discussions with local residents, the effects of the Hanhikivi 1 project are already visible in the area as Pyhäjoki has become a more lively living environment, construction activities have burgeoned and there are more job opportunities available than before.

#### Improving the capabilities of local actors

The Hanhikivi 1 project has a significant social dimension as the large construction project sets requirements also for the area. Fennovoima has sought

to work closely with private and third sector actors right from the early stages of the project.

Fennovoima participates in the work of collaboration projects that focus on improving the capabilities of the local actors to prepare for the Hanhikivi 1 project.

The main objective of these preparations is to maximize the positive impact of the Hanhikivi 1 project on the region and increase the attractiveness of the region as well as creating prerequisites for capacity-building. The area's ability to support and adapt to the requirements that the project sets for the area is important for the fluent realization of the Hanhikivi 1 project.

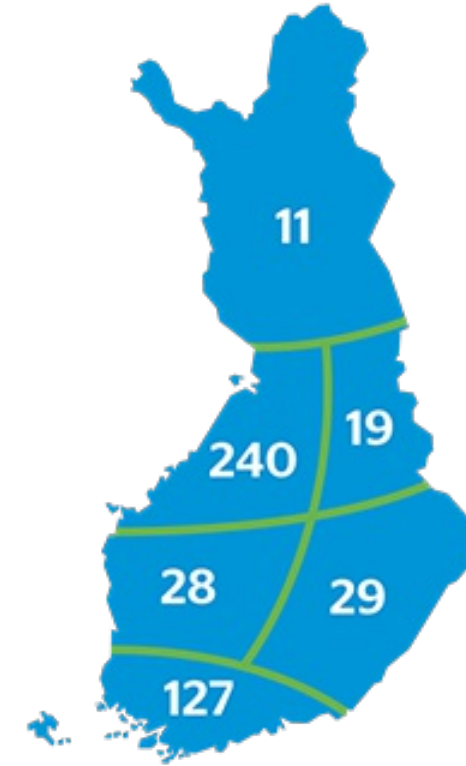


## FENNOVOIMA

### Business support

We are actively encouraging Finnish companies to take part in the Hanhikivi 1 project and providing related information through various events and forums that are organized in the plant site region or other parts of Finland. In addition, Pyhäjoki municipality itself along with business associations and business development organizations are providing information about the employment and contracting opportunities at the Hanhikivi 1 construction site. We are also helping the plant supplier RAOS Project and the main contractor Titan-2 to collaborate with Finnish companies.

Fennovoima provides the Finnish business sector with information concerning the project and the related contracts, procurement procedures and requirements at info and networking events organized by FinNuclear at national level and locally by municipalities and business services. The abilities of Finnish companies to successfully participate in the bidding process are enhanced by coaching. Fennovoima participates in the design and implementation of the training provided by FinNuclear.



Regional breakdown of the Finnish companies in the site register.

SITE REGISTER	2017	2016
<i>Companies</i>		
Total number of companies	486	345
Registered in Finland	454 (93%)	329 (95%)
<i>People</i>		
Total number of people	2299	1523
Finns	2017 (88%)	1498 (98%)

The share of the Finnish companies and people in the site register.

The number of people working at the site has doubled since last year.

Approximately 300 people have been working at the site on a daily basis.





# Nuclear safety

Nuclear safety is the core of our operations.



LAES II

## Our practices

Nurturing safety mindset of the organization is essential in the management of the overall safety of the nuclear power plant - during its whole life cycle. Prioritizing safety, being mindful of the importance of one's own actions, bearing responsibility, openness, learning from own and others' experiences, and encouraging partners to act safely are key elements of Fennovoima's way of working.

It is of the utmost importance that there is a consensus among all project parties on what is meant by safety, and that everyone working in the project bears the responsibility for safety. Shared safety culture principles were agreed upon to ensure a coherent approach to safety, which all parties involved in the project must follow. Our four safety principles are:

- **Commitment:** put nuclear safety first, take responsibility and show a good example
- **Awareness:** know what you are doing and why
- **Transparency:** communicate and cooperate
- **Continuous improvement:** take the initiative and seek to learn more

Continuous observation of these safety principles is a precondition for the safe construction, operation and decommissioning of Fennovoima's nuclear power plant.

Fennovoima has set three specific goals for nuclear safety culture development and nuclear and radiation safety in its Responsibility Program. The goals are the following:

- **Strong safety culture:** Fennovoima continuously develops its safety and keeps safety at as high a level as possible.
- **The highest level of nuclear safety:** Fennovoima is committed to the highest level of nuclear safety, resulting in a low risk of incidents and radiation exposure for the environment and public.
- **The highest level of occupational radiation safety:** Fennovoima is committed to the highest level of occupational radiation safety. Radiation doses are kept as low as reasonably achievable (the ALARA principle).

Fennovoima has a Safety Culture Program in place to support implementation of the above mentioned principles and to continuously develop the safety culture in the Hanhikivi 1 Program.





## Fennovoima continuously develops its safety and keeps safety at as high level as possible

During 2017, the Nuclear Safety Culture Program and its associated procedures were revised as part of making the Fennovoima Management System ready for the nuclear construction. The revision built on experiences gained from the implementation of the previous version of the program, as well as international experience. Two new procedures were written to cover both Fennovoima's internal safety culture development, and safety culture assurance in the supply chain of the Hanhikivi 1 Program.

The resources of safety culture work were further increased by recruiting a safety culture specialist.

### WANO support mission

A WANO (World Association of Nuclear Operators) technical support mission on safety culture was conducted at Fennovoima in May 2017. Experts from various other power companies reviewed Fennovoima's safety culture program and offered advice. A training workshop for senior management was also held during the mission.

### Description of safety leadership and culture

Fennovoima also delivered to STUK a description of safety leadership and culture during construction for their information. The description specifies how Fennovoima will ensure the supplier's competence and the appropriateness of project management systems for pursuing the construction project in compliance with the safety culture requirements specified in the YVL Nuclear Safety Guides.

The description also presents how the license applicant will assess the fulfilment of safety culture requirements during the construction stage in respect of its in-house organization, the plant supplier's organization, and other organizations involved in the project. Requirements for the description of safety leadership and safety culture during construction are stated in YVL A.1, Annex A, Chapter A14.

### Evaluation of project site surveys

Fennovoima also initiated an internal evaluation of the project site surveys that the plant supplier conducted at the Hanhikivi peninsula during 2014–2016. The investigation was done in order to confirm that the surveys were conducted correctly and their results have been utilized in the basic design of Hanhikivi 1, especially the selection of the exact location of the reactor.

Phase 1 of the investigation was carried out during 2017, and it focused on the validity and utilization of the survey data. The second phase of the investigation aims to clarify the handling of the topic within Fennovoima. This investigation will be conducted by an independent group of experts during 2018.

The aim of both investigations is to assure the nuclear safety of the Hanhikivi 1 nuclear power plant and learn in order to develop work practices and safety culture within the Hanhikivi 1 Program. Several corrective actions were initiated during 2017 to make sure the project site surveys are performed and the data is used systematically in the basic design of the power plant.



### Safety culture in the supply chain

Fennovoima continued its safety culture assurance practices in the supply chain.

The nuclear safety culture working group met five times in 2017. The working group aims to clarify common safety culture expectations, to increase awareness of the topic among all parties, and to control and monitor the development of safety culture in the entire supply chain and at the project site.

By the end of 2017, the group had official representatives from Fennovoima, RAOS Project, Gidropress, Atomproekt, Atomenergomash, Titan-2, RASU, TVEL and the Kurchatov Institute.

The latter three organizations joined the working group at the beginning of 2017. New members will be nominated during the 2018 as the project progresses.

The working group meetings have been whole-day meetings, where topics such as safety culture lessons learned, safety culture and management systems, evaluation of safety culture, safety culture-related documentation, and Finnish requirements in safety culture have been discussed and clarified. In addition to the working group meetings, several other workshops have been arranged, for both manufacturing organizations (chaired by Atomenergomash) and construction organizations (chaired by RAOS Project).





LAES II

### Safety culture audits

In addition to working groups, Fennovoima carried out dedicated safety culture audits in the supply chain. During 2017, six audits were carried out in the following companies: Atomenergomash, Titan-2, Atomproekt, Gidropress, RAOS Project, and AEM-Technology (jointly with a management system audit). Some progress was noted in comparison to the previous year.

### Independent assessment of safety culture

In 2017, STUK ordered an independent assessment of the Hanhikivi 1 Program safety culture from the Technical Research Centre of Finland (VTT). The objective of the independent evaluation was to gain a picture of the current status of safety culture at Fennovoima, the plant supplier RAOS Project and the main building contractor, Titan-2, in order to provide information that supports STUK in its assessment of the Fennovoima's Construction License Application.

The main conclusion of the evaluation was that the safety culture within Fennovoima is acceptable for a license-holder, but some things still need to be improved. Safety culture at Titan-2 and RAOS Project required more improvement.

According to the report, the strengths of Fennovoima's organization are its working climate, the fact that its employees have adopted safety as a genuine value quite well, and organization being mindful of safety in its practices. The report concluded that the biggest challenge in the Hanhikivi 1 project resides in the supply chain and the ability of Fennovoima to monitor, control and support it, and to obtain a comprehensive understanding of the entire project and the integrity of the design. Fennovoima will conduct a self-assessment of its safety culture during autumn 2018, and the development of safety culture in the supply chain will continue.

### Safety observations

The aim of the safety observation system is to facilitate organizational learning and employee involvement. A safety concern can be reported if a person feels an issue is not getting the attention warranted by its significance. Such issues may concern e.g. human resources, legal issues, project management, engineering, nuclear safety, security, occupational health and safety, or safety culture in general. This process supports a good safety culture by giving a legitimate route for reporting of safety observations and by increasing transparency in the organization. The threshold for making an observation should be low in a learning organization, and thus everyone is encouraged to make them.

Fennovoima's personnel were active in making observations, and a new Observation Team was established to facilitate the handling of observations and follow up on the corrective actions. The critical safety concerns dealt with commenting of documents and management practices at Fennovoima. For both concerns, a corrective action plan was drawn up.

SAFETY CONCERNS	2017	2016
<i>Number of reported concerns</i>	42	18
Critical	2	0
Significant	25	10
Minor	15	8
<i>Number of development initiatives</i>	69	n/a (implemented in 2017)





LAES II.

## Preparing for commissioning

Commissioning is one of the main phases of the project. In order to ensure successful commissioning, along with Fennovoima's priority of nuclear safety, we are committed to investing resources in preparing for commissioning. Two such activities are currently underway: commissioning lessons learned and development of Fennovoima's employee skills at Leningrad Nuclear Power Plant II (LAES II), which is Hanhikivi 1's reference power plant. LAES II is situated approximately 70km to the west of St. Petersburg and is currently undergoing commissioning.

Essentially, both LAES II and Hanhikivi 1 share key design aspects, safety features and suppliers. Fennovoima is utilizing this shared design and supply chain to better understand any differences between commissioning in Russia and Finland. Where possible, Fennovoima will also identify any specific lessons learned (technical, organizational, etc.) from LAES II to better enhance the Hanhikivi 1 commissioning activities.

Furthermore, Fennovoima is using LAES II commissioning as an opportunity for observational learning. Individuals from multiple units of Fennovoima (commissioning, design and Operations & Maintenance) have witnessed a number of commissioning activities at LAES II, e.g., containment pressure tests and Passive Heat Removal System (PHRS) tests, improving their knowledge of these systems. If skills and experience gaps are identified within Fennovoima's personnel, which could be resolved by LAES II 'On-The-Job' training, these individuals are deployed to LAES II.

In all aspects of the Hanhikivi 1 project, Fennovoima takes its responsibilities as license applicant seriously and the commissioning phase is no exception. Commissioning at Hanhikivi 1 nuclear power plant will follow a disciplined and systematic approach to convert newly constructed systems to a fully operational plant in the most safe, efficient and environmentally-friendly manner.



LAES II. Photo: Aleksander Kashin, JSC Concern Titan-2.



LAES II. Photo: Aleksander Kashin, JSC Concern Titan-2.



## Final Disposal

In June 2016, Fennovoima entered into a ten year service agreement with Posiva Solutions, a Finnish expert organization in nuclear waste management. The agreement will enable Posiva's extensive expertise to be utilized in Fennovoima's final disposal of spent nuclear fuel.

The estimated duration of the final disposal project is more than 100 years. The location will be selected in the 2040s and the final disposal of Fennovoima's spent fuel will begin in the 2090s at the earliest.

In the Environmental Impact Assessment Program (EIA) for final disposal of spent nuclear fuel submitted in June 2016, Fennovoima presented two alternative locations for the facility: Eurajoki and Pyhäjoki. Field investigations in the Pyhäjoki and Eurajoki research areas will begin in a few years' time at the earliest.

Resident surveys will be conducted as part of the EIA procedure. At the same time, monitoring groups consisting of key stakeholders will be established to monitor the EIA procedure. The objective of the monitoring groups is to further communications between Fennovoima, the authorities and other interest groups. Local residents will also be invited to small group events.

Currently we are doing design work together with Posiva Solutions. In 2017, we have implemented e.g. a study of geological characteristics that are required from the final disposal location and a research into the final disposal of low and intermediate level waste.

During 2018, Fennovoima will establish a new website for final disposal in cooperation with Posiva Solutions to provide information about spent nuclear fuel and its final disposal in an easily accessible manner.

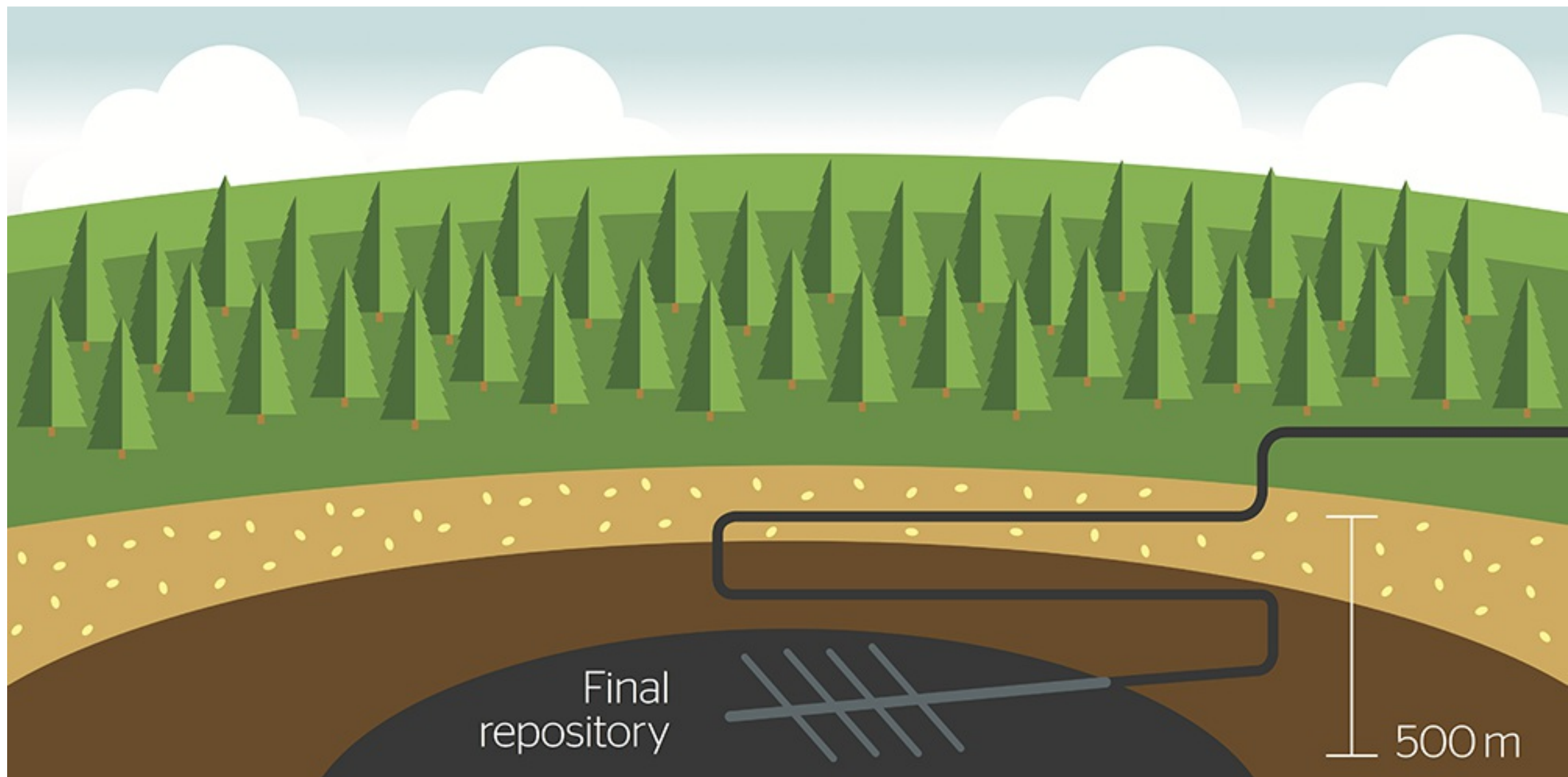


Image: Ferry Design Agency



# Organizational development and employment

Competent and committed personnel is one of our key assets.



## Our practices

Competent and committed personnel is one of our key assets. Fennovoima ensures that it has the necessary expertise and competence in all phases of the project and pays a lot of attention to the continuous development of its organization.

Resource planning and competence management are critical success factors for Fennovoima. Fennovoima's corporate culture development is continuous, and wellbeing management and related processes are in place to create a good and equal working environment.

Fennovoima's Human Resource Manual, Organizational Manual and related processes and plans are an integrated part of the Fennovoima Management System.

Fennovoima realizes its human resources management according to the company policies and follows the guidelines of the UN Global Compact principles.

Fennovoima has set the following goals for organizational development and employment: all competencies and personnel for ensuring the statutory and legal requirements according to project phase, continuous development of competences and qualifications, effective training, high-quality leadership, a strong corporate culture and highly engaged employees, high personnel wellbeing, and a good and continuously improving employer image.





## All competencies and personnel to meet the statutory and legal requirements according to project phase

Our key objective for the moment is to develop an organization that has all the competencies and personnel to meet the statutory and legal requirements set for the construction phase of the nuclear power plant.

The recruitment decisions are made based on the competence, qualifications, motivation and suitability of the candidate related to the open position in question, i.e. the gender, age or nationality do not affect the selection. During 2017, Fennovoima conducted seven recruitment phases. In addition, some extra recruitments took place.

The emphasis on recruitment remained as before in strengthening Fennovoima's engineering, nuclear and turbine island areas, project management and nuclear safety organizations.

Some of the planned recruitments were postponed due to the updated project schedule. We also faced some challenges in finding competent and suitable candidates for positions in the Electrical Engineering and I&C Engineering (Instrumentation and Control), but by the end of the year, the situation had clearly improved.

Activities to strengthen the resources and competences of our organization will continue also in 2018, when we aim to recruit over 50 new employees. The focus in recruitment remains on engineering, project management and nuclear safety competences, as during past years.

EMPLOYMENT	2017	2016
Total number of employees	303	270
Change in the employment number	+33	+55
Personnel covered by collective bargaining agreement	100%	100%
Personal Development Discussions	98%	97%

EMPLOYEES BY CONTRACT TYPE, GENDER AND REGION	OPEN-ENDED				FIXED-TERM				TOTAL	
	Helsinki		Pyhäjoki		Helsinki		Pyhäjoki		Women	Men
	Women	Men	Women	Men	Women	Men	Women	Men		
Full-time	71	189	10	17	3	5	1	1	85	208
Part-time	1	3	0	0	1	1	0	0	2	8
All	72	192	10	17	4	6	1	1	87	216

The share of female employees is 28.7 %. Fennovoima applies mostly open-ended employment contracts. Fixed-term contracts are used only for e.g. temporary positions when a permanent employee has taken parental or study leave, summer jobs, or to cover short-time project needs. The possibility to have reduced working hours (part-time employees) has mostly been used for part-time child-care leave.

NEW EMPLOYEES	HELSINKI		PYHÄJOKI		TOTAL	
	Women	Men	Women	Men	n	%
Under 30 years	2	7	0	3	12	16.0%
30-39 years	9	17	3	5	34	45.3%
40-49 years	5	10	0	0	15	20.0%
50-59 years	0	12	0	0	12	16%
Over 60 years	1	1	0	0	2	2.7%
Total (n)	17	47	3	8	75	

Total number of new employees in 2017 was 75 including 11 summer trainees (2016: 84 new employees including summer trainees).



 Continuous development of competences and qualifications – effective training

In Fennovoima, training is organized based on the annual training plan, which is updated regularly according to the needs of the project, the organization and the employees, as well as regulatory requirements.

All employees are offered training regularly, and there are several mandatory training courses related to matters such as induction training for new employees, VVER plant technology, YVL Nuclear Safety Guides, nuclear safety culture, compliance and ethics, the Fennovoima Management System, and internal tools.

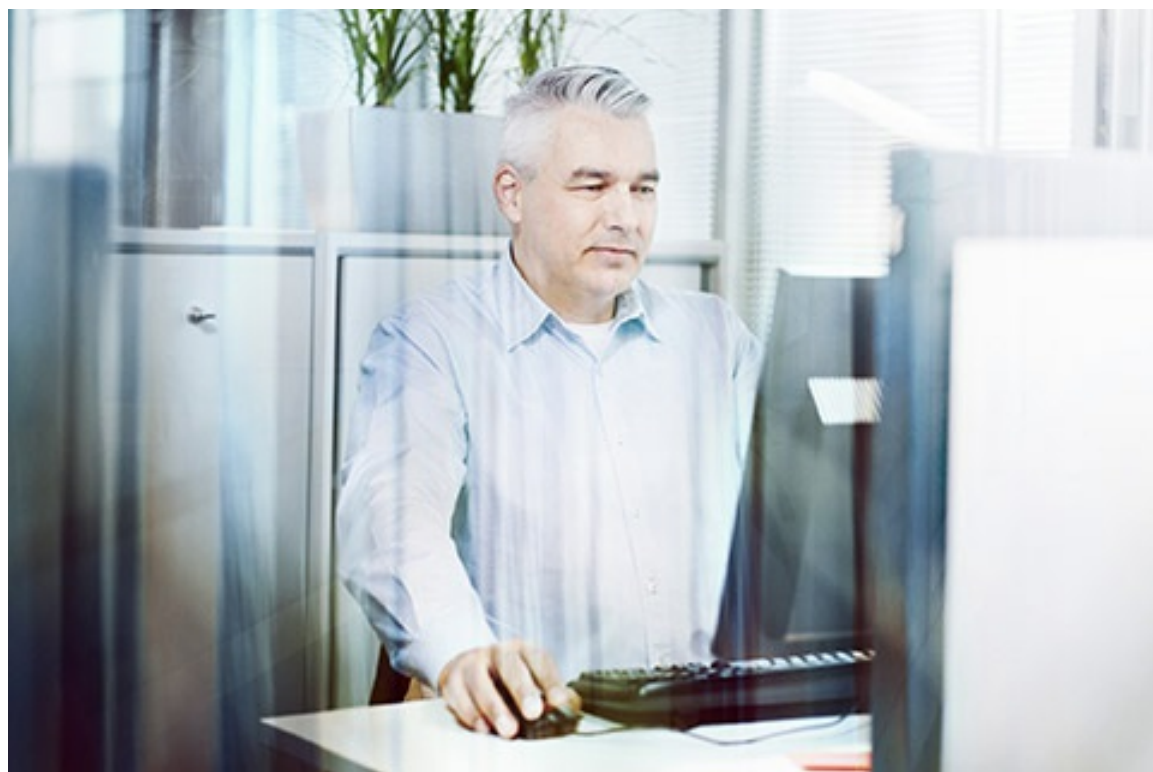
In 2017, our training management processes and procedures were further developed.

Our training activities continued intensively according to our training plan, and the training offering was extended with several new courses.

This year, we are continuing the development of a long-term training plan, and attention will be paid to the development of the supplier training in cooperation with RAOS Project. Training activities will continue mainly as in the past year. To better meet the requirements set for competence management we plan to gradually replace our current HR-system with a new talent management system. Also, development of competence model and defining job role profiles continues.

AVERAGE HOURS OF TRAINING	WOMEN 2017	WOMEN 2016	MEN 2017	MEN 2016	TOTAL 2017
Management team	45.3	13	43.5	38	44.1
Supervisors	50.1	40	48.5	37	48.8
Employees	54.6	44	77.9	50	77.0

The average hours of training for the whole organization were 72.8 hours (46h in 2016). The differences in the training hours depend on the attendance at the introduction training, as only new employees attend the training, and on the participation in VVER plant technology training for engineers.




 High quality leadership

Fennovoima develops its leadership culture and emphasizes management and leadership skills. Fennovoima has in place leadership and management development practices for the company supervisors and management team to ensure skillful management and uniform ways of action. The management and leadership development program includes training, individual and group coaching, and mentoring.

During 2017, all the supervisors and company management participated in the development program as planned.

According to a survey conducted in June within Fennovoima’s employees, the leadership culture is on a good and positive track, and the results of our indicator “My supervisor treats employees fairly” rose from 4.88 to 5.04 in a six-month period. New leadership quality targets have been defined for 2018 to improve the follow-up of development in the area.



 Strong corporate culture and highly engaged employees

Fennoway cornerstones were implemented in our corporate culture 2017. As a result, new operating models were developed and implemented, for instance in our meeting practices, to make sure that our ways of working are in accordance with the corporate culture.

Fennoway promotes personnel wellbeing, employee engagement, equal and fair treatment of all people, diversity and cultural versatility, and work-life balance.

Fennoway also highlights the importance of clear roles and responsibilities in our working environment, high-quality leadership and employeeship, and high motivation and professionalism among managers and employees.

The corporate culture is effective if it materializes in our everyday working practices. During 2017, we rewarded employees acting according to Fennoway. The development of the corporate culture will continue during the coming years.



Fennoway cornerstones.

VOLUNTARY TURNOVER	HELSINKI		PYHÄJOKI		TOTAL	
	Women	Men	Women	Men	n	%
Age group						
under 30 years	0	0	0	0	0	
30-39 years	2	8	1	1	12	
40-49 years	3	3	1	0	7	
50-59 years	2	6	0	0	8	
over 60 years	1	1	0	0	2	
Total	8	18	2	1	29	9.57%

\*Voluntary turnover rate: voluntarily resigned / total number of employees on Dec. 31, 2017 × 100. In 2017, the voluntary turnover rate was 9.57% (7.04 in 2016).





 High personnel wellbeing

**High-quality leadership and training**

We want Fennovoima to be a good place to work for all of us. The workplace wellbeing consists of many different matters. High-quality management and leadership skills are a key factor in workplace wellbeing and we devote attention to the leadership culture and management practices. Fennovoima provides the personnel with extensive training and career development possibilities.

Also, personal development discussions, that include target setting and follow-up, wellbeing, feedback, competence evaluation and personal development plans, are held annually for everyone.

**Facilitating wellbeing**

In addition, personnel wellbeing is facilitated i.e. with different working arrangements, flexible working hours, and by increasing awareness among management. We also organize wellbeing days for our personnel, we have a sports club, cultural club and Young Professionals Club, and we participate in sports campaigns together.

**Monitoring the level of wellbeing**

The level of wellbeing at work is followed biannually with the ParTy® survey, which will be conducted again in 2018. The survey is implemented by the Finnish Institute of Occupational Health. We also monitored the work welfare with a Pulse survey once last year. According to the results, workplace wellbeing is at good stage in Fennovoima. The survey will be replaced with another survey tool in 2018.

**Non-discriminatory and equal working environment**

Fennovoima aims to provide a non-discriminatory, equal working environment in which all genders, employees with different duties and from different backgrounds receive equal treatment and can participate without discrimination in all activities. The management team and supervisors are responsible for promoting equality and non-discrimination in their work and follow-up realization of it in Fennovoima.

Each Fennovoima employee has the responsibility to promote equality and non-discrimination in their own working environment. There were no reported incidents of discrimination in 2017.



**Occupational health and safety in the workplace**

Fennovoima's occupational health care is more comprehensive than legal requirements dictate. To maintain a good working ability, Fennovoima has adopted an early caring and intervention approach. It means that all sick leave is registered and monitored, and if sick leave occurs frequently, preventive and health-maintaining measures can be addressed in time.

During 2017, we experienced five (seven in 2016) accident in the Salmisaari headquarters or on the way to work or home from work. However, these accidents did not lead to any absences from work.

PERSONNEL WELLBEING	2017	2016
Absentee rate of the personnel (sick leaves) (target: >2.5%)	1.63%	2.07%
Pulse wellbeing index (scale 0-6, national average 4.53, target: 4.5)	4.59	4.76 and 4.63
Party survey result (scale 0-20, manufacturing sector average 13.9, target: 14)	Next survey will be conducted in 2018.	14.5
Lost-time accidents in the office premises	0	2 (of which, one accidents resulted in 14 lost-working days)



 Good and continuously improving employer image

Having a good employer image is an important aspect while developing a successful organization. Fennovoima has received good feedback on its recruitment campaigns.

The employer image survey was last conducted in 2016 and will be conducted again in 2018.





# Supply chain management

The purpose of Fennovoima's supply chain management is to provide a way of managing, monitoring and developing the performance of the entire supply chain of the Hanhikivi 1 project.



## Our practices

High-quality supply chain management requires appropriate contracts, experienced and qualified personnel, a proper description of the management system and the processes, close relationships with the subcontractors, active monitoring and guiding, and immediate corrective action if non-conformances are found.

The fulfillment of the safety requirements is a prerequisite for acting as a supplier in the Hanhikivi 1 project. Fennovoima ensures that only those suppliers who have the capacity to comply with the requirements and have clear quality management and assurance procedures can participate in deliveries.

Fennovoima has set three goals for the responsible supply chain management and labor practices. These goals are a qualified and well-functioning supply chain, effectively preventing the gray economy, and respecting and supporting human and labor rights and fair labor practices.

Fennovoima's supply chain management assesses prospective supplier companies in a comprehensive manner. The selection criteria to act as a supplier in the Hanhikivi 1 project includes for instance technical, financial and safety requirements, compliance with Finnish and international laws, fulfilment of the contractual requirements and compliance with the occupational safety and environmental requirements of the OHSAS 18001 and ISO 14001 standards.

Also, safety-related suppliers must have a quality management system that is appropriately certified or independently evaluated by a third party, e.g. ISO 9001 certification, and suppliers must have in place processes to control the operations of their own sub-suppliers.

In addition to the above-mentioned requirements, Fennovoima expects its suppliers to comply with the ethical requirements of Fennovoima's Code of Conduct and to monitor the compliance of their own sub-suppliers.



## FENNOVOIMA

The Code of Conduct requires the suppliers and sub-suppliers to ensure:

- Full compliance with all applicable laws,
- Prohibition of corruptive behavior,
- Occupational safety in all operations,
- Respect for human rights, including prohibition of child labor and slavery,
- Environmental compliance and sustainability actions, and
- Promotion of Fennovoima's Code of Conduct amongst stakeholders, especially sub-suppliers.



### Qualified and well-functioning supply chain

Developing a qualified and well-functioning supply chain for the construction of the nuclear power plant is one of the key requirements for a successful commissioning phase.

In total, 331 new sub-suppliers have been accepted for the RAOS Project's and Fennovoima's supply chains during 2017.

GE Alstom Power Systems has been selected for the supply of complete turbine generator set and in November, Titan-2 and Rolls-Royce signed an agreement for the I&C licensing support work. The final I&C delivery contract is under negotiation by Titan-2.

Fennovoima and RAOS Project have a supply chain working group that gathers monthly to discuss supply chain development matters. In addition, the working group arranges topical workshops and seminars about specific themes (e.g. the Machinery Directive) when necessary.

During 2017, the assessment and approval practices of the supply chain have been further developed, and attention was paid to ensuring that the sub-suppliers have the required awareness and understanding of the regulatory and contractual requirements of the Hanhikivi 1 project.

Also, the pre-qualification of suppliers and supplier compliance and ethics assessment methods were developed to include the compliance management and monitoring processes of prospective and actual suppliers. The implementation of the new processes is scheduled for 2018.

To ensure that the suppliers fulfil the requirements and have the required abilities to produce the products or services they are contracted for, Fennovoima executes established supplier audit procedures.

#### FENNOVOIMA'S SCOPE OF WORK

	2017	2016
Total number of suppliers	184	158
Suppliers by country		
Finland	84%	89%
Sweden	9%	5%
United Kingdom	1.5%	2%
USA	1.5%	0%
Others (Czech, Denmark, Germany, South Africa, Switzerland)	4%	4%

Fennovoima's supply chain included 184 companies, of which 84 percent were Finnish (12/2017).



RAOS PROJECT'S SCOPE OF WORK

2017 2016

Total number of suppliers	524	210
Suppliers by country		
Finland	80%	72%
Russia	15%	23%
Estonia	1%	<0.5%
France	1%	1%
Netherlands	0.5%	1%
United Kingdom	0.5%	1%
Others (Bulgaria, Czech, Germany, Hungary, Latvia, Lithuania, Sweden, Ukraine)	2%	2%

RAOS Project's supply chain included 524 companies, of which 80 percent were Finnish (12/2017).

Supply chain auditing

Fennovoima's audits cover all the safety-significant suppliers of the Hanhikivi 1 project supply chain according to a graded approach. Fennovoima conducted 35 audits of its own and the plant suppliers' supply chain in 2017.

The plant supplier performs its own audits of its sub-suppliers within the whole supply chain of the Hanhikivi 1 project. In addition to Fennovoima and the plant supplier, in different phases of the Hanhikivi 1 project, audits and inspections can be conducted by sub-suppliers, third parties or the Finnish Nuclear and Radiation Authority (STUK), if any audit is regarded as necessary within the scope of work. STUK always has the authority to participate in these audits according to its own decision.

Requirements to perform audits and assessments are referred to in the YVL Nuclear Safety Guides. Fennovoima's Responsibility Program together with the Compliance and Ethics Program set requirements for ethics and compliance assessments of the supply chain.

During 2017, the focus of the implemented audits was on the management system, safety culture, design process, requirements

management, and manufacturing capabilities of long lead items. Most of the remarks identified in the supplier audits were related to missing practices and poor implementation of documented practices.

Fennovoima also audited the environmental and occupational health and safety management systems of the plant supplier, RAOS Project, and its main contractor, Titan-2. In addition, we participated as an observer in most of the audits that were conducted by the plant supplier and its sub-suppliers.

During 2018, we continue to focus on clarifying the EPC agreement requirements and YVL Nuclear Safety Guides to the supply chain.

The manufacturing of components critical for nuclear safety will impact the scope of audits in 2018. Future audits will place more emphasis on nuclear safety culture, requirements management, configuration management, the design review process, and the safety assessment of design analysis.





 Gray economy is effectively prevented

Fennovoima has committed to effectively preventing the gray economy and ensuring compliance with Finnish labor legislation in the Hanhikivi 1 construction site. Addressing and managing labor practices is necessary for Fennovoima to ensure functioning and responsible labor practices and for the successful execution of the construction phase.

The subcontractor network is managed and supervised, and the gray economy prevented through efficient cooperation with labor and employer unions, the plant supplier, and authorities. Fennovoima's Construction unit is responsible for ensuring that the Site Agreement on the common rules at the construction site is followed, human rights are respected, and the gray economy prevented.

Fennovoima utilizes a site register to ensure that all required information regarding the supply chain companies and people working at the site are in order and the construction site always complies with applicable legal obligations. During 2017, the register was updated to improve the monitoring of the Contractors Liability Act documentation. Also, training regarding the site register was organized.

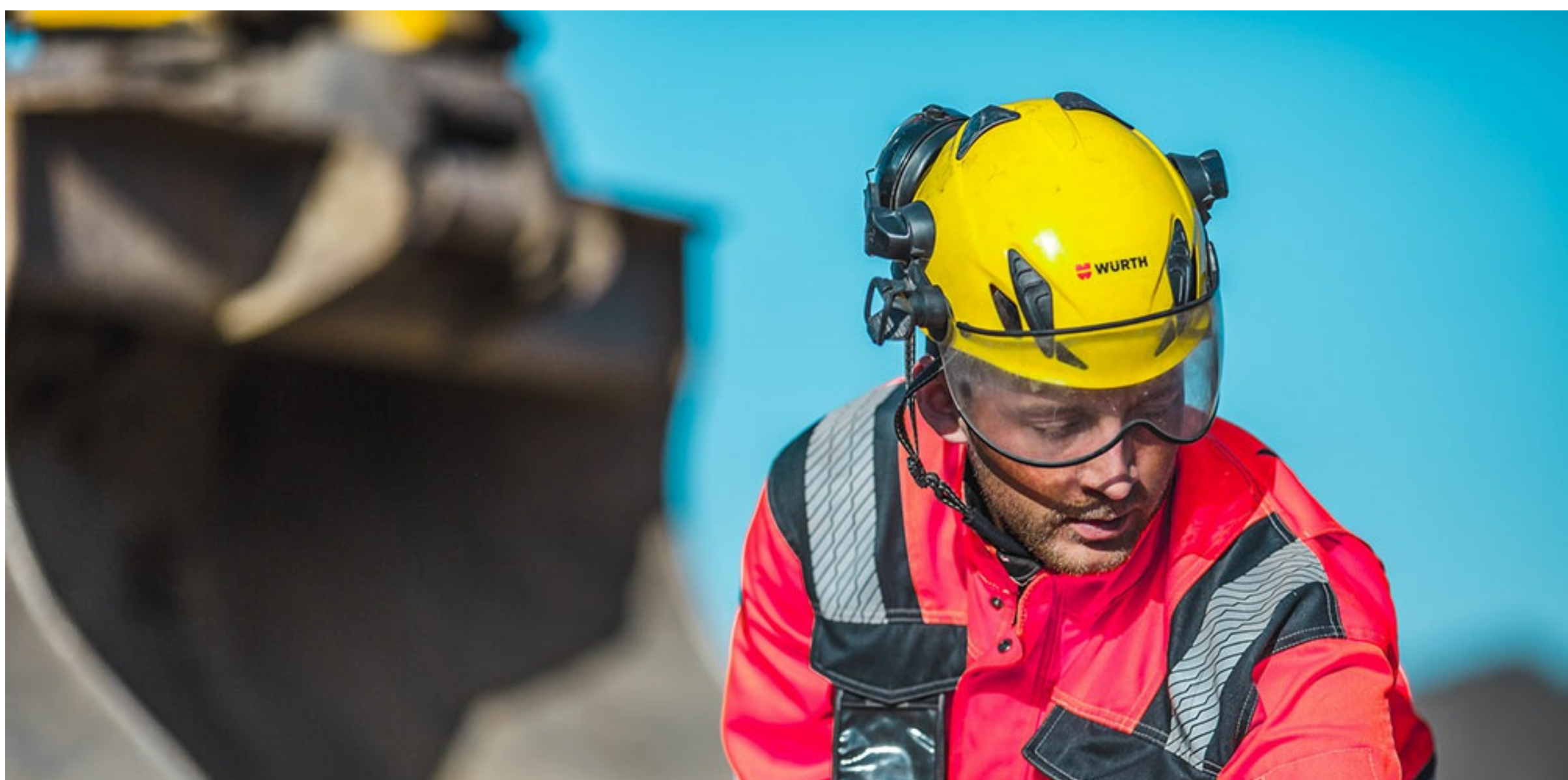
All required information regarding the supply chain companies and people working at the site was in order in 2017, and no access to the site was granted to unregistered companies or persons.

 Respecting and supporting human and labor rights, fair labor practices

Compliance and ethics assessments that include monitoring practices for e.g. compliance with human and labor rights will be implemented in Fennovoima's procurement and supply chain management procedures from 2018 onwards.

A compliance and ethics questionnaire, which includes questions on respecting human rights will be incorporated in the existing supplier pre-qualification questionnaire and sent to suppliers in Fennovoima's own supply chain. The suppliers will undergo a compliance and ethics assessment that is based on the SA 8000 standard, ISO 37001:2016 anti-bribery management systems and Fennovoima's Code of Conduct.

Also, a compliance and ethics steering committee will be established with representatives from the Compliance function, Contract Management, Corporate Responsibility, Sourcing and Quality. The committee analyzes compliance concerns raised in supplier pre-qualification and supplier reviews, and makes decisions concerning required corrective actions or consequences.





# Occupational health and safety

Fennovoima follows the zero-accident principle – and the occupational health and safety concept covers the entire subcontracting chain.



## Our practices

Commitment to the zero-accident principle is required from everyone working in the project. Occupational safety and nuclear safety are the top priorities.

Related to the zero-accident principle, Fennovoima has set three goals for occupational health and safety management. These goals are: providing a healthy and safe working environment for all, having a strong occupational safety culture, and maintaining an efficient risk management system.

Fennovoima's responsible bodies at different levels of the organization participate in decision-making on occupational safety and bear their own responsibility for occupational safety management.

Occupational health and safety (OHS) performance is monitored by the OHS Manager, who reports weekly to the Construction Director and monthly to the Management Team of Fennovoima.



 Providing a healthy and safe working environment

Fennovoima is establishing and overseeing the project site safety regulations in cooperation with the plant supplier and project supervisors of the construction site. During the year, OHS tasks and daily responsibilities between Fennovoima, RAOS Project and Titan-2 have been clarified.

We also focused on developing the cooperation practices with the site contractors and creating a good safety culture at the Hanhikivi 1 site. As the project owner, Fennovoima requires the operators at the site to commit to continuously improving occupational safety.

**OHSAS 18001 certification**

Fennovoima’s occupational health and safety management system received OHSAS 18001 certification in February, and during the year it was further improved to be more easily readable and functional. Also, RAOS Project and Titan-2 have received OHSAS 18001 certification for their OHS management systems for the Hanhikivi 1 construction site. During 2018, Fennovoima will update its OHS management system to meet the requirements of the new ISO 45001 standard.

**Reviews and inspections**

The members of the Fennovoima Management Team conducted two occupational health and safety reviews at the project site, as planned. Daily practices at the project site have also been developed and improved. A new Hazard Hunt procedure was implemented at the project site. The Hazard Hunt procedure means targeted thematic inspections that focus, for instance, on all lifting accessories or all storage locations for chemicals on the project site.

The inspection findings are reported, and required remedial measures are indicated to the contractors.

In addition, alcohol testing at the site and a sanctions procedure for occupational safety violations were implemented at the project site. In the case of a violation, first a verbal warning is given; if necessary, it is followed with a written warning; and ultimately with withdrawal of the site access permit for a fixed period or permanently.

Contractor OHS inspections, a way to ensure that the contractors fulfil the regulatory requirements, were first implemented in 2016 and fully in use from the beginning of 2017. A total of nine inspections by the authorities were conducted in 2017, and one non-compliance concerning activities of a sub-contractor was received. The sub-contractor conducted the required improvement and the non-compliance was closed.

**No lost-time accidents**

During 2017, a total of 554,557 working hours were recorded at the construction site, and there were no lost-time accidents. Four workers received medical aid after small injuries, but they did not result in any absence from work.

Even though the safety culture at the project site is good, further improvements will be made during 2018, when a larger variety of safety inspections will be conducted, and communication about occupational health and safety will be developed as the extranet to the project site will be implemented and info screens will be taken into use.

OCCUPATIONAL ACCIDENTS	2017	2016
Occupational accidents leading to absence*	0	3
Lost work days	0	9
Average severity of accidents (in work days)	0	3
Lost-time injury frequency rate (LTIFR)**	0	8.08
TR & MVR index (target: Our minimum requirement level 90% achieved 100% of the measurements)	99 times out of 105 measurements (94%)	123 times out of 129 (95%)
Fatalities	0	0

a) First-aid-level injuries are not included in the IR; b) fatalities are included in the IR; c) “lost day” indicates the loss of one full work shift; d) “days” means scheduled work days; e) count begins from the day after the accident (one full work shift). If the injured person is treated on the day of the accident and he/she returns to work on the next day, the injury is reported as a first-aid case. \*\*LTIFR is calculated by number of lost-time accidents per million hours worked. A lost-time accident is an accident that causes an absence from work of at least one work shift.





 Strong occupational safety culture

We are committed to ensuring that everyone working on the Hanhikivi 1 project has the required knowledge and skills regarding safe working methods and best safety practices, and that they use personal protective equipment.

Occupational safety is promoted at the Hanhikivi 1 site, in particular, by active training of contractors. During 2017, three safety training courses for the construction site superiors were held, and 11 Toolbox Talk training materials and eight Safety Flash info sheets were published.

Since the beginning of the construction work, Fennovoima has trained all people working at the site with site access training. At the end of the year, altogether 2299 (791 in 2017) people had received the training.

**Safety Notices**

Safety Notices are occupational safety-related observations made at the project site. We encourage our employees to make these notices and report them to further develop the occupational safety culture. Fennovoima had an average of 28 employees at the site during the year, and our target of an average of two Safety Notices per member of Fennovoima's personnel per year was exceeded.

The observations vary from traffic jams to internal fire inspections and the use of personal protective equipment. Positive observations were also made and reported. Our target is to begin handling of observations within two days, to define a corrective action plan within seven days, and to conduct corrective actions within the given timetable. This target was achieved 57 out of 75 times.

During 2018, the safety observation practices and analysis of the observations will be further developed.



SAFETY NOTICES	2017	2016
Reported observations at the project site	627 observations, of which Fennovoima reported 102 (87 concerning owner's scope and 15 concerning EPC scope)	521
Average of Fennovoima personnel per person (target in 2017 >2 and in 2016 >1)	3.6	2.7



 Maintaining an effective risk management system

Fennovoima has established occupational health and safety monitoring and inspection practices, which are continuously improved and extended. Comprehensive, regularly assessed risk management processes and active reporting of safety observations form an important part of preventive management of occupational health and safety. Risk assessments are done before every work. All contractors working under Fennovoima's scope of work follow a comprehensive risk assessment and management procedure that is based on Fennovoima's risk register and ensures that the risk assessments are uniform and meet the required level. Fennovoima's risk register is updated four times a year.

The plant supplier RAOS Project and main contractor Titan-2 use similar assessment and management practices.

Identified risks are also communicated to the contractors and the project site workers with Toolbox Talk training materials or Safety Flash info sheets that describe the identified risks and best practices to avoid these risks.

As we want to continuously improve our operations, the development of risk management processes will also continue during 2018.

**OCCUPATIONAL HEALTH AND SAFETY 2017**  
**RISK MANAGEMENT**

**2016**

Risk assessments conducted	100%	100%
Occupational diseases	No	No
Investigations of the occupational accidents and near-miss situations	There were no accident investigations as no lost-time accidents occurred.	100% of occupational accidents (3) were investigated within 7 days.
Workers with high incidence or high risk of diseases related to their occupation	No	No





# Environmental management

Fennovoima supervises environmental actions at the entire construction site.



## Our practices

Fennovoima's objective is to proactively prevent and mitigate any environmental impact from the construction work. We assess environmental risks and monitor the state of the environment.

Fennovoima's undertaking for continuous improvement of environmental management relies on training, motivation and leadership, good cooperation with the plant supplier, and effective communication with the environmental authorities and external stakeholders.

Our five main goals for environmental management are: proactively preventing and mitigating the environmental impact of the project, preserving the nature conservation areas and protected species on the Hanhikivi headland and in the Natura 2000 area, ensuring that all operations comply with the water and environmental permits, ensuring efficient construction waste management, and functioning and timely communication with environmental authorities and other external stakeholders.

### Environmental management system

The environmental management system (EMS) supports Fennovoima in ensuring that the requirements of environmental legislation and permits are fulfilled and construction operations at the site are

executed in such a manner that environmental impacts are minimized. In accordance with our principles, all activities at the construction site must be carried out in a safe manner, and relevant environmental management procedures and instructions must be in place and followed.

The EMS is part of the company's integrated management system, and it received environmental ISO 14001:2015 certification at the beginning of 2018. It covers Fennovoima's scope of work at the project site and will, at a later stage, also cover the operations at the Salmisaari premises.

### Environmental supervision

The plant supplier, RAOS Project, and all subcontractors working at the project site bear the main responsibility for continuous environmental supervision and fulfilment of environmental requirements primarily within the scope of their own work. The plant supplier is required to supervise the environmental management of subcontractors who perform work within the supplier's scope of work. RAOS Project has prepared and implemented its own environmental management system for the construction site activities, and it received ISO 14001:2015 certification in 2017.



 Proactively preventing and mitigating the environmental impact of the project

Our objective is that the environmental impacts of the construction of the nuclear power plant are minimized as far as possible, and that the work interferes as little as possible with the nature around the construction site area. A risk assessment is conducted before the beginning of each phase of construction work.

**Environmental monitoring**

Fennovoima and RAOS Project conduct environmental monitoring according to their common environmental monitoring program, which consists of monitoring required in permits as well as additional monitoring to evaluate the environmental impacts of construction activities. Environmental monitoring and studies ensure good

knowledge of the status of the environment of the Hanhikivi headland and provide information that is necessary for applying for permits, as well as for the design of the buildings and structures.

**Environmental inspections**

In addition, Fennovoima and RAOS Project conduct regular environmental inspections of the Hanhikivi 1 site. Environmental inspections are used to drive continuous improvement of environmental management and to ensure that all contractors comply with environmental legislation and permits and follow Fennovoima's instructions.

ENVIROMENTAL MANAGEMENT	2017	2016
Non-compliance with environmental laws and regulations	No non-compliances	No non-compliances
Instances of permit limits being exceeded (Target: No instances of permit limits being exceeded)	No	No
Environmental observations (Target: <50 observations per year)	159 (20 from Fennovoima's scope of work and 139 from EPC scope)	127

The environmental observations consisted mainly of small oil leaks, waste management, and chemical handling-related issues. All observations were handled and appropriate actions taken.





## FENNOVOIMA

### Seawater quality

Water construction work started with dredging work in November 2015, and continued in September 2016 and in June 2017. The water construction work paused for the winter. The next dredging season will begin in spring 2018 with removal of soft soil. Blasting work will begin in the sea area again at the end of May according to the water permit. All dredging work should be completed during 2018.

Fennovoima continued seawater quality monitoring. Water samples are taken five times a year at six monitoring points. Two monitoring points are located in the marine spoil area approximately 10 km from the Hanhikivi headland, and four near the Hanhikivi headland.

#### Turbidity

The construction activities in the shallow offshore area cause temporary turbidity of the seawater. The shallow offshore area is natural mixing zone, which can be seen in depositions of sand and organic material. Therefore, higher turbidity results have been monitored from the dredging area, and some of the turbidity has spread to north-northeast towards Raahe during heavy winds. Turbidity levels decreased back to normal once the wind dropped.

The spread of turbidity is monitored with a continuous measurement system. The turbidity of the seawater off the coast of the Hanhikivi headland also naturally increases during storms or periods of heavy rainfall.

#### Oil spill response

Related to the oil spill accidents that took place in 2016 during dredging work, Fennovoima, the plant supplier RAOS Project Oy, the main contractor Titan-2 and the dredging company established a steering group for the dredging work.

A thorough analysis of the accidents resulted in improved prevention of environmental accidents and preparedness to act in similar situations.

During winter and spring 2017, prior to the commencement of the dredging work, more emphasis was placed on proactive prevention measures related to

environmental accidents. The oil spill response plan for the construction site was prepared together with the plant supplier, and it has been communicated to the authorities. All contractors at the plant site are obliged to follow the oil spill response plan. Also in May 2017, an oil spill prevention drill was arranged at the project site to enhance cooperation between the companies involved in the Hanhikivi 1 project and the associated authorities and develop the participants' skills in oil spill prevention on land and on sea.

As a result of the improved prevention measures, there were no significant spills during 2017.

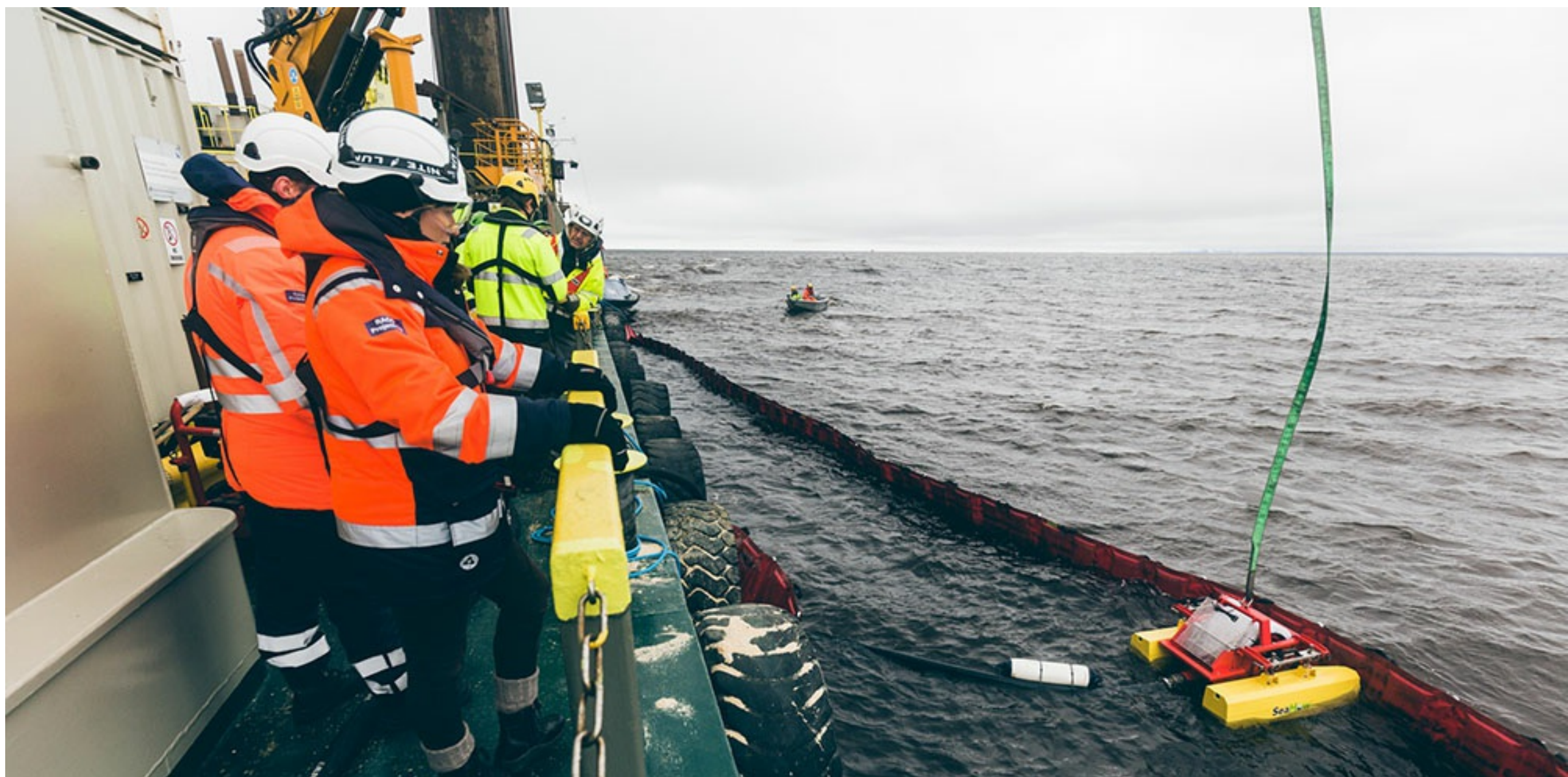
#### Fishing

Related to water construction work and as required in the water permits, fishery monitoring and studies and fishing industry surveys were conducted during 2017. These monitoring and studies included fish stock surveys of commercial and recreational fishermen, test fishing for whitefish and vendace and production of Baltic herring fry, and coastal net test fishing.

In addition to previous years' monitoring, a survey of free-time fishermen was carried out. The purpose of the monitoring is to assess the impact the water construction work has on fishing. The monitoring included a survey of commercial fishermen, experimental net fishing, and fry production surveys of whitefish, vendace and herring.

The fishery monitoring report regarding monitoring conducted in 2016 was finalized in May 2017. According to this report, water construction work did not cause significant impacts on fry production of whitefish and vendace. In the survey, commercial fishermen reported adverse impact on fishing, e.g. turbidity of the water, which caused fouling of the fishing nets, and some of the fishermen had to change their fishing areas.

Fishery subsidies and compensation paid to professional fishermen totalled EUR 70,000 in 2017.



Oil spill response drill in May 2017.

Read more about the oil spill response drill and check a video in [Fennonen](#).



## FENNOVOIMA

### Noise

The noise levels can vary greatly depending on the current construction phase. The area influenced by noise during construction and operation is less than one kilometer from the power plant site. The impact of noise on nesting or bird populations is not likely to be significant.

Noise is monitored continuously at seven monitoring points located throughout the Hanhikivi area. The distance from the closest monitoring point to a residential area is about 1 km. The noise levels measured at different measuring points vary depending on the distance from the work location and the time of day (day versus night time).

Average noise levels at different measuring points have been 30–65 dB during 2017 (the same level as in 2016). A level of 30 dB is equal to the sound of a whisper and 65 dB to the noise caused by normal conversation or laughter.

Water construction work caused some noise levels above guideline values measured from the monitoring point next to the sea area. The most significant sources of the noise were blasting warning signals, blasting, loading of rock material and noise from the vessels. The individual peaks in the noise level are also explained by the weather conditions, such as strong wind or heavy rain.

Fennovoima received complaints concerning blasting work at sea during night time. All complaints received were handled carefully.

Also, the relevant ELY Centre asked for clarification about the issue from Fennovoima in September.

The dredging company aimed to conduct all the blasting work before 10 p.m. However, one bigger blast was delayed due to technical problems, and it took place after 10 p.m. The blast caused a peak in the noise measurements. Also, it was necessary to conduct some minor blasting work after the intended end of the work time, but according to the noise measurements, this minor blasting work was not the cause of the higher noise levels.

The dredging company will do their best to avoid blasting work at night time by means of thorough and careful work planning during the next dredging season, from May 20 until October 10, 2018.

### Air quality

The earthwork, traffic at the site, and certain operations, such as rock crushing, generate dust during the construction work. Most dust sources are located at low elevation levels, so the dust cannot spread far and its impact on air quality will mainly be limited to the construction site.

Dust monitoring has been conducted at the project site since 2015. Fennovoima has conducted dust monitoring especially near the nature conservation areas. Since the beginning of the monitoring, no increase in dust levels has been detected.



## Preservation of the nature conservation areas and protected species of the Hanhikivi headland and Natura 2000 area

The Hanhikivi headland's nature conservation areas and areas defined as habitat types protected under the Nature Conservation Act remain outside the construction areas. Fennovoima uses different measuring methods to monitor that the construction work does not have adverse impacts on the natural values of the conservation areas and valuable nature sites.

### No negative changes observed

The nature conservation areas and other valuable natural sites located in the vicinity of the construction site area are outside the construction site fence, and some of the valuable areas are isolated with separate fences. In addition, construction workers are instructed and trained to avoid moving around in the areas outside the site fence.

This is to ensure protected areas and preservation of the natural values. During the year, no negative changes within these areas were observed.

### Yellow iris

Some of the protected yellow iris (*Iris pseudacorus*, IUCN classification: Least Concerned LC) population was located in the construction area and had been transferred during 2015 and 2016 to another suitable habitat on the Hanhikivi headland according to the exemption permits. The final monitoring of all transferred yellow irises was conducted in June 2017. The plants were well rooted in their new location and are growing well.







## All operations comply with the water and environmental permits

The Hanhikivi 1 project requires numerous conventional permits to be applied for. The responsibilities between Fennovoima and the plant supplier regarding applying for conventional permits have been agreed. During 2017, some changes were needed for current conventional permits in order to ensure up-to-date permits.

### Permit change related to water construction work and to the marine spoil area

In April, Fennovoima submitted permit change application related to water construction work and to the marine spoil area to the permit authority, the Regional State Administrative Agency of Northern Finland. The agency granted the permit to Fennovoima in August. The permit enables the dredged material to be placed in the marine spoil area to a level of -20 meters from the surface level, instead of -23 meters. The permit change will not cause any additional environmental impact on the area.

### Permit change related to excavation and crushing of rock material

RAOS Project applied a change for the environmental permit for excavation and crushing of rock material. The permit change concerned the time limits for crushing operations.

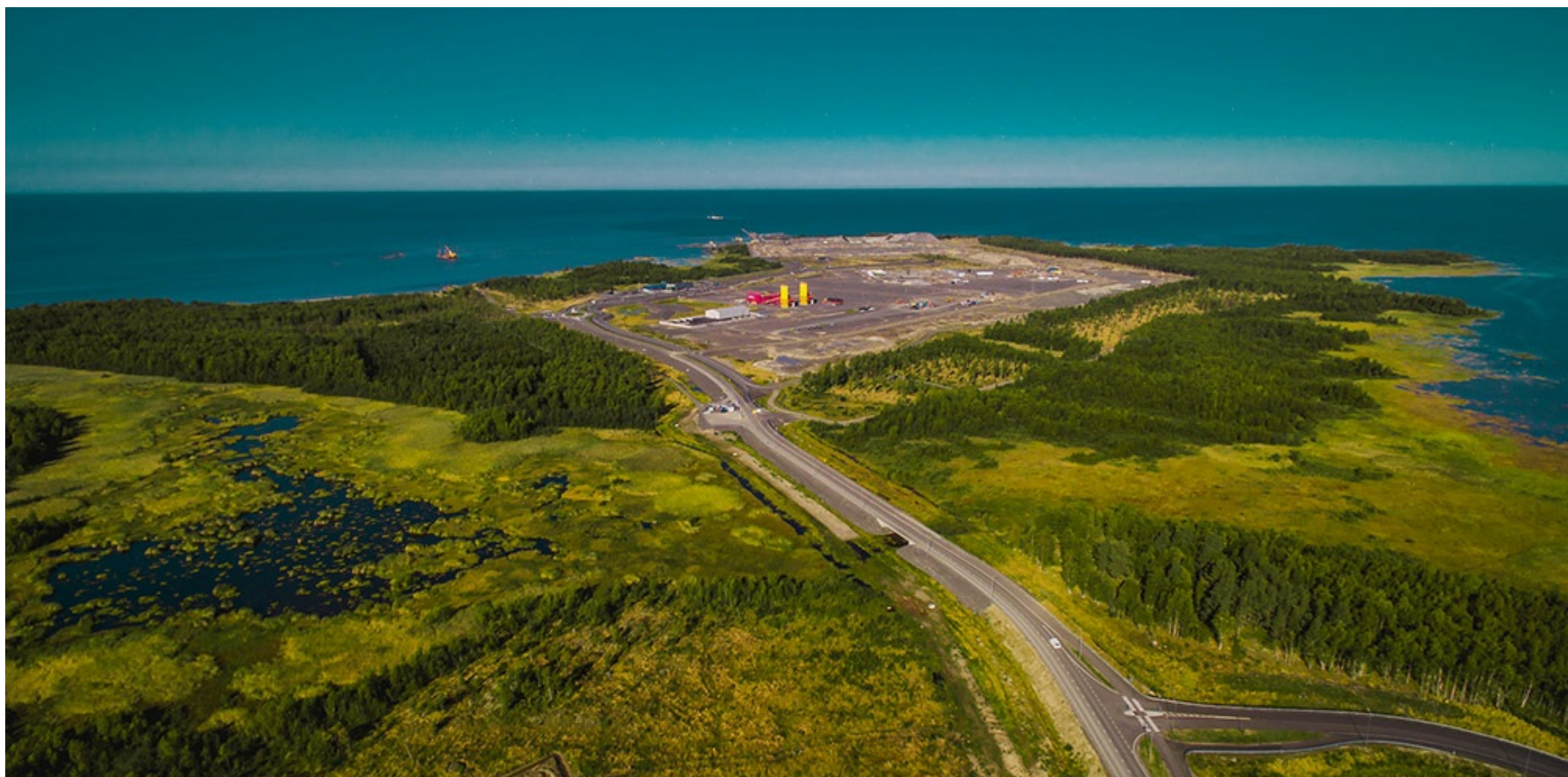
The granted permit change allows the RAOS Project to execute crushing of rock material 24/7.

### Environmental permit for the operation of the nuclear power plant

Fennovoima was granted an environmental permit for the operation of the nuclear power plant and the back-up power production of the plant in June 2016. The permit also includes the construction of cooling water outlet structures, as well as a water permit for the seawater intake and use as cooling water of the nuclear power plant. In December 2017, the Administrative Court of Vaasa gave its decision regarding complaints concerning the permit. Some changes to the permit obligations were made, and at the moment, the decision is not legally valid. Fennovoima decided to appeal to Supreme Administrative Court, and this was submitted in January 2018.

### Chemical permit application

Currently, Fennovoima is preparing the chemical permit application material. The permit concerns the large-scale industrial handling and storage of hazardous chemicals during the operation of the power plant. The chemical permit application will be submitted to the Finnish Safety and Chemicals Agency (Tukes) during 2018.





 Ensuring efficient construction waste management

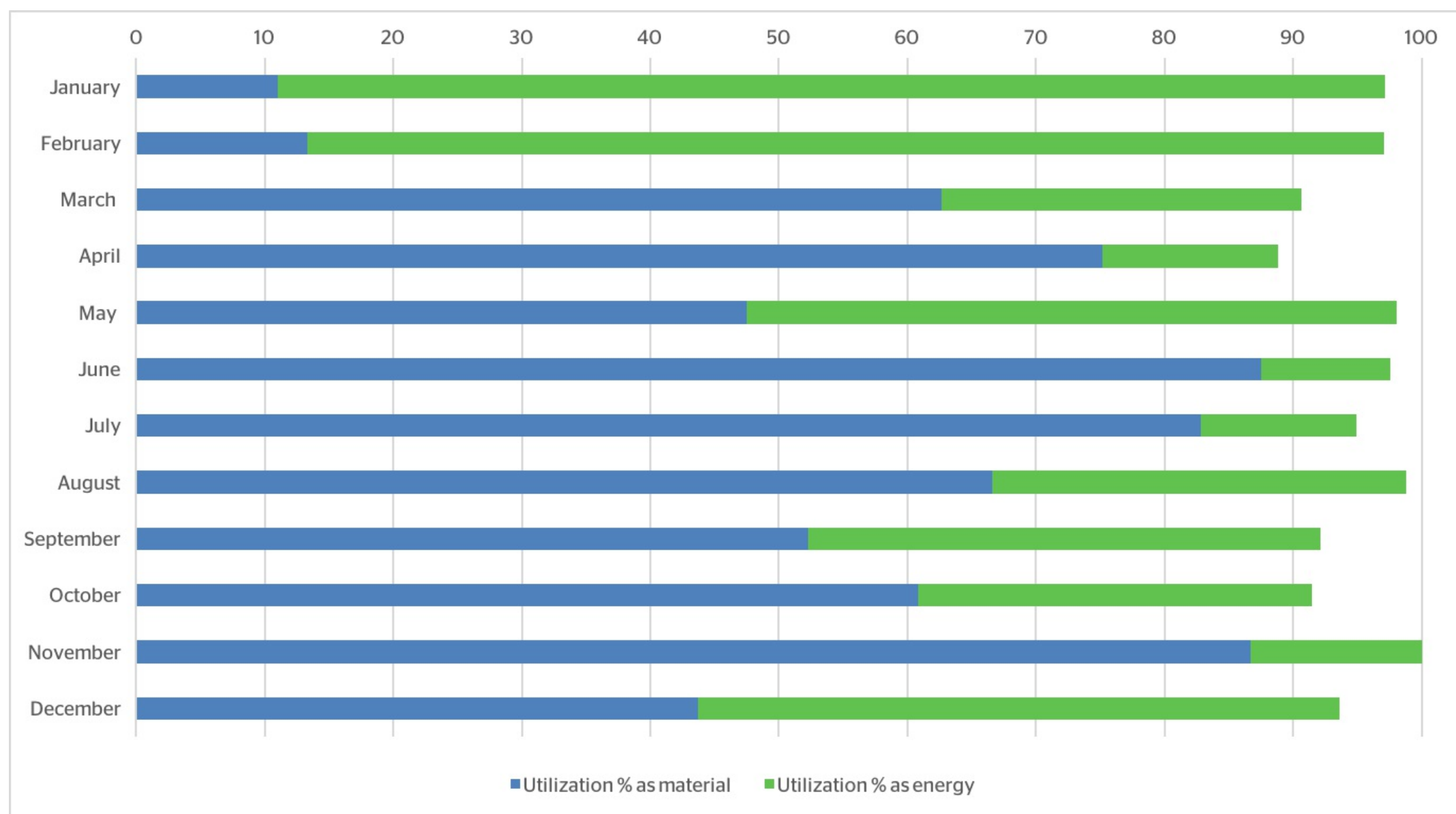
Construction waste management is based on efficient sorting of waste at the site of its generation, as well as on uniform and efficient instruction of the various parties and companies operating at the plant site on appropriate waste management procedures.

Waste generated during construction is appropriately sorted and recycled, or utilized in energy production as far as possible.

The earth-moving, excavation, and dredging masses generated during the construction phase are utilized, as far as possible, in various on-site

filling and levelling operations. The handling, storage, and transportation of hazardous waste is arranged in accordance with the regulations.

Our target of 85 percent of construction waste fractions to be utilized as material or energy was exceeded. For the years 2018–2020, the target is set to 90 percent of the waste fractions to be utilized as material or energy.



Construction waste utilization as material or energy in 2017.

**Waste fractions**

During 2017, a total of 883 tons of waste was generated at the Hanhikivi 1 construction site. Of the demolition waste, 88.5 percent was wood, concrete and energy waste, which was utilized as material or energy. All hazardous waste was managed appropriately by waste management partners.

The majority of waste from the construction site consists of normal construction waste in different categories of waste (metal, wood, concrete, energy waste, biowaste, paper, cardboard, glass and WEEE). The waste formed as a result of the construction of infrastructure and auxiliary buildings is presented in the following table.

**Drainage water treatment**

RAOS Project began excavation work in the reactor pit area in spring 2016. During 2017, excavation work continued to the level of -2.0 meters. Around 172 300m<sup>3</sup> of drainage water from the reactor pit was treated at a temporary water treatment system before being discharged into the sea. Water from the reactor pit caused temporary turbidity of seawater near the discharge point. Water quality was monitored by taking monthly samples.

Drainage water is visually monitored also in Fennovoima’s excess soil area. Samples of the drainage water are taken every three years, with the next occasion in 2018. The first water samples were taken when the excess soil area was taken into use in 2015. Ditch expansions and small rock dams have been constructed, which delay the water flow and allow particles to settle from the drainage water.



WASTE	2017		2016	
	Tons (t)	% of waste	Tons (t)	% of waste
Construction waste	796	90%	208	42%
Demolition waste	29	3%	259	53%
Hazardous waste	58	7%	24	5%
Total	883	100%	491	100%

Waste generated at the Hanhikivi 1 construction site.

CONSTRUCTION WASTE	2017		2016	
	Tons (t)	% of waste	Tons (t)	% of waste
Wood waste	82	10%	132	64%
Energy waste	72	9%	50	24%
Concrete and brick waste	212	27%	14	6%
Bitumen waste	369	46%	0	0%
Mixed construction waste	42	5%	2	1%
Other	19	3%	10	5%
Total	796	100%	208	100%

Construction waste generated at the Hanhikivi 1 site in 2017 and 2016 broken down by type and percentage. The category "Other" includes e.g. metal waste, paper, cardboard and biowaste.



## Functioning and timely communication with environmental authorities and other external stakeholders

### Meetings with the main suppliers and authorities

Regular environmental meetings between the main suppliers and authority stakeholders at the construction site ensure information flow between different project participants.

### Environmental training of the sub-suppliers

The development of environmental health and safety training for the sub-supplier supervisors began together with RAOS Project and Titan-2 in 2017. With the training module, we want to ensure that the environmental requirements set are considered carefully at the plant site.

In addition, all contractors receive information about topical environmental issues, for example by participating in Toolbox training. During 2017, environmental related Toolbox training subjects were chemical handling, oil spill response materials, and making environmental observations.

### Informing for the local residents

Fennovoima informs the local residents about the beginning of work, such as rock crushing operations at the project site. The commencement of the dredging work was also made public with ads in local newspapers. As we want to ensure bidirectional information flow between Fennovoima and the local residents, we are developing the communication and information-sharing practices further during 2018. For example, two public events concerning environmental matters at the construction site will be arranged for the local stakeholders.

### Environmental concerns and complaints

Fennovoima has implemented instructions for how concerns and complaints regarding environmental matters are handled. The purpose of the instructions is to ensure that all environmental concerns and complaints relating to activities at the construction site are recorded and appropriate actions taken. The complaints received during 2017 concerned noise, night-time blasting work and turbidity.



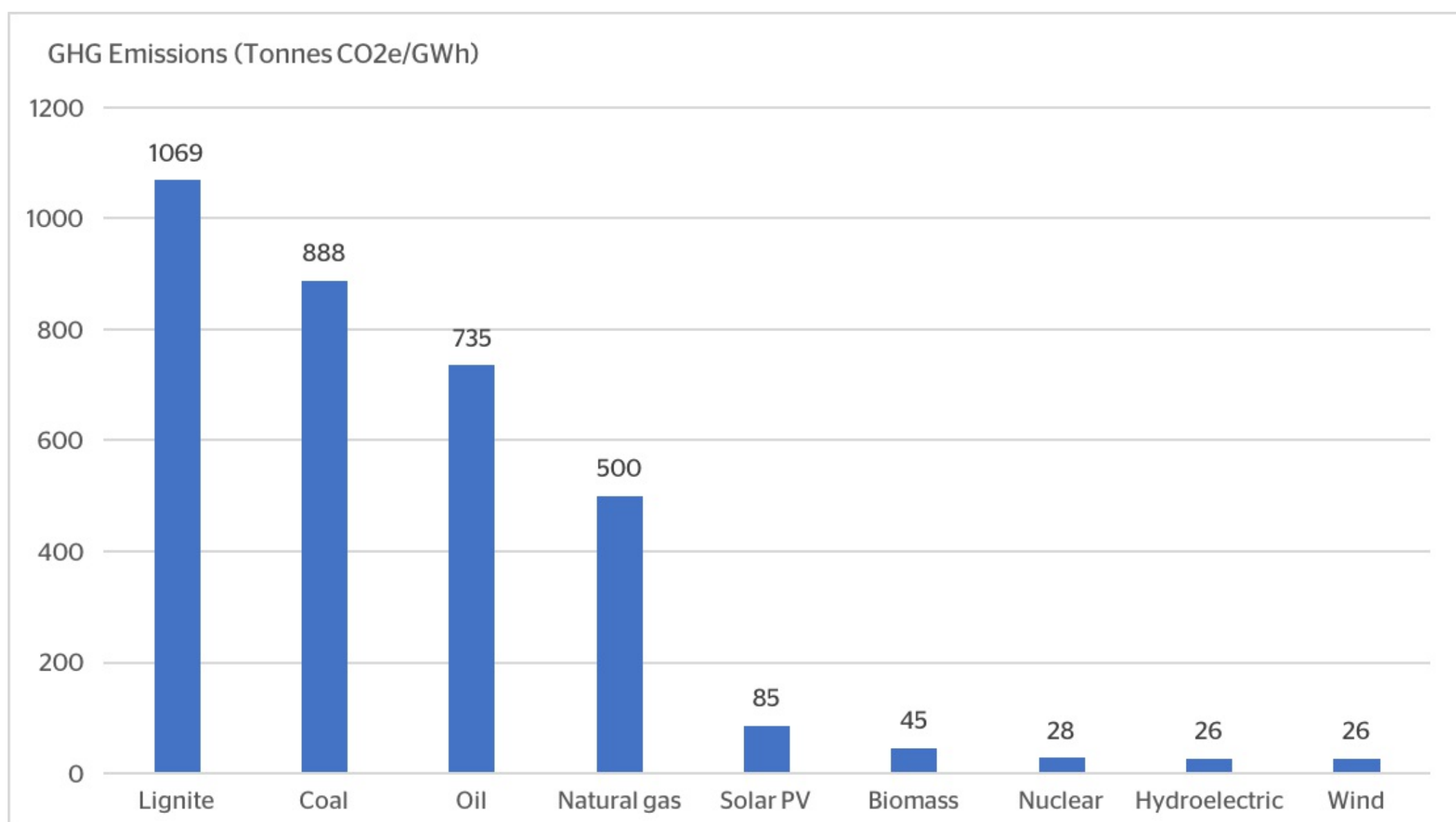
## Energy supplies with low greenhouse gas emissions must be prioritized to keep global warming below severe levels



Greenhouse gases (GHGs) from human activities are the most significant driver of observed climate change. Energy-related emissions account for two-thirds of total greenhouse gas emissions and 80 percent of CO<sub>2</sub> emissions. These emissions must be cut deeply to keep global warming below severe levels while boosting energy security, sustaining the growth of the world economy, and securing the availability of modern energy for the billions around the world who still lack it today.

Energy production with nuclear power does not emit greenhouse gases. During the entire life cycle of a nuclear power plant, greenhouse gas emissions are generated during the construction and decommissioning of the power plant and from fuel production.

The lifecycle emissions of nuclear power energy production are similar to wind and hydroelectric.



Lifecycle GHG Emissions Intensity of Electricity Generation Methods (World Nuclear Association, 2011).



# Stakeholder engagement

Fennovoima's project has a significant social dimension, both domestically and internationally.



## Our practices

Fennovoima wants to be a good corporate citizen and cooperates with a large variety of stakeholders at local, national and international levels. In our company strategy, stakeholders are understood as those organizations or entities that influence the project or are influenced by the project.

The most important stakeholders (not in order of importance) include our employees and owners, the Pyhäjoki region, the plant supplier and all our contractors, related authorities and decision-makers, Finnish labor market organizations,

educational institutions in the technical field, educational institutions in the technical field, our peer companies and organizations within the industry, the media, the public sphere, and NGOs in the field.

Fennovoima has set the following goals and targets related to stakeholder engagement: transparency and proactive communication, continuous collaboration with the key stakeholders, and strong reputation within the organization and among stakeholders.



 Transparency and proactive communication

Trust and transparency are the basis of all stakeholder cooperation and our communication is respectful, honest and proactive towards the stakeholders.

Fennovoima's management is committed to ensuring that the communication and information needs and expectations of our key stakeholder groups are always considered. This includes continual dialogue with the key stakeholders, proactive communications on a daily basis and responding promptly and accurately in all situations.

Fennovoima published four press release and 25 news items in 2017.

Also media follows the Hanhikivi 1 project closely. During 2017, the media covered a variety of topics concerning Fennovoima and the Hanhikivi 1 project. The main topics were the schedule of the project and progress in the Construction License procedure and construction work at the plant site, the economic and employment effects of the Hanhikivi 1 project and the participation of Finnish shareholders in the project.

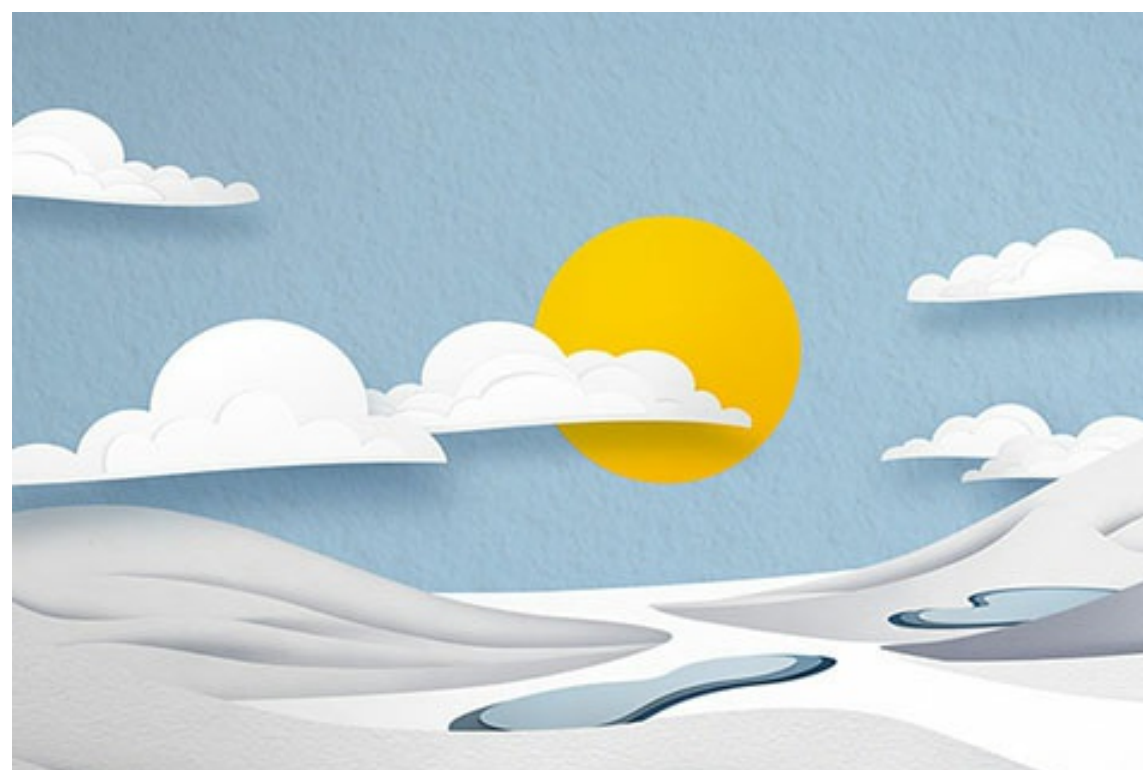
Get to know more about our stakeholder cooperation at our website.



Climate action

We are concerned about climate change and its effects on our planet.

To take action and support our mission of building a carbon-free future for Finland, Fennovoima launched a campaign to raise awareness of climate change and low-emission electricity production in November 2016. Sustainability and climate awareness are also promoted in Fennovoima's communication channels such as the stakeholder magazine Fenنونen.



 Upholding continuous cooperation with the key stakeholders

Fennovoima cooperates with a large variety of stakeholders at local, national and international levels. The engagement and communication activities are designed taking into account the needs of each stakeholder group.

In addition to official reports, working groups, meetings and daily communication, Fennovoima provides information on the project via the company website and social media channels, organizes events for different stakeholders, publishes a stakeholder magazine and is available for inquiries and questions both in Pyhäjoki and Helsinki.

In 2017, we gave over one hundred project presentations and organized more than 70 site visits for different stakeholders.

PARTNERS AND MEMBERSHIPS

Association for Finnish Work, European Nuclear Society (ENS), Federation of Finnish Enterprises, Northern Ostrobothnia, FIBS Corporate Responsibility Network, Finnish Energy, FinNuclear, Foratom, Helsinki Region Chamber of Commerce, Industrial Lawyers Association, International Atomic Energy Agency (IAEA), Oulu Chamber of Commerce, Project Management Association Finland, PSK Standardisation Association, Taxpayers Association of Finland, World Association of Nuclear Operators (WANO), World Energy Council (WEC), World Nuclear Association (WNA)



## FENNOVOIMA

### Local engagement

Fennovoima places a strong emphasis on personal communication and face-to-face interaction with the inhabitants of Pyhäjoki and the surrounding areas. Our Pyhäjoki office serves the local stakeholders, responding to their inquiries and providing information regarding the current work phases at the construction site.

We produce a regular newsletter about the topical issues at Pyhäjoki and publish the stakeholder magazine Fennonen, which is distributed to 130,000 households in the area twice a year and is openly available in digital format.

### Public events

In addition, we arrange public events for local residents. For instance, we organized energy evenings where matters such as combatting climate change, the future prospects of electricity production in Finland and the current and future role nuclear power in the energy mix were discussed. Furthermore, our open doors day at the Hanhikivi 1 construction site in

September attracted 2500 visitors. We also organized a public concert in Pyhäjoki for Fennovoima's tenth anniversary in June.

### Sponsoring

As part of our social agenda, we support local projects and activities in Pyhäjoki and the surrounding areas. Our focus is on supporting the recreational opportunities and leisure activities of children and young people as well as supporting projects of public interest. In 2017, the largest financial donations were granted to the Pyhäjoki ice hall for the renovation of the lighting, and for the dredging of the fishing port in Parhalhti.

In total, Fennovoima's contribution to local activities and events was EUR 146,000 (2016: EUR 168,000). The supported projects and organizations are selected annually through an open call.



### Strong reputation within the organization and its stakeholders

#### Studies and surveys

To ensure that the opinions of the stakeholders are heard, Fennovoima promotes open dialogue and conducts surveys to ascertain the views of key stakeholders regarding Fennovoima. The surveys are conducted for one selected stakeholder group at a time.

In 2017, Fennovoima commissioned a survey of the general public's view on Fennovoima. According to the survey, the general public emphasizes the importance of responsible business practices, transparency and openness, and proactive communication in Fennovoima's operations.

In addition, the general public expects Fennovoima to deliver on the promise to produce low-emission electricity at a stable price in the future, increase domestic energy production and energy self-sufficiency, and safeguard the competitiveness of Finnish industry and the economy.





## FENNOVOIMA

### Local support

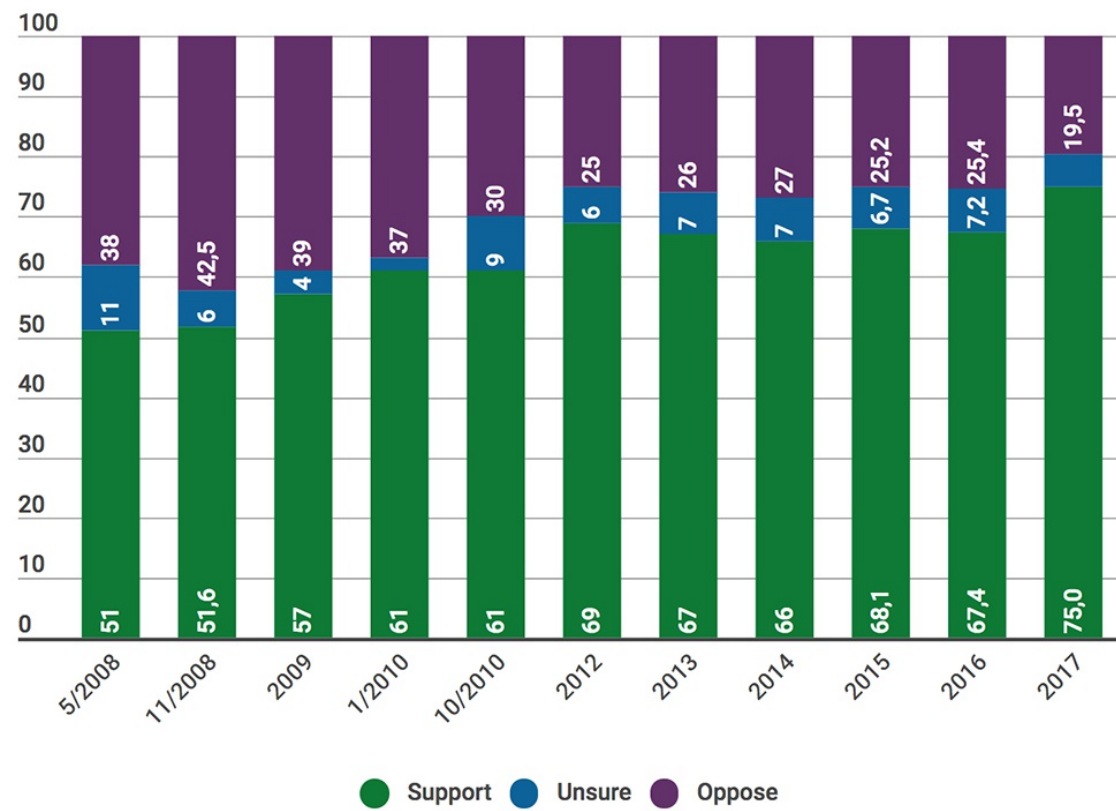
The local support for Fennovoima's nuclear power plant project increased significantly compared to the previous year. Maintaining and improving the earned position of trust requires genuine involvement and engagement, face-to-face interaction and open dialogue with the local stakeholders.

According to a survey conducted in December 2017, a total of 75.0 percent of Pyhäjoki residents support the Hanhikivi 1 project (2016: 67.4%).

The support for the project also strengthened in the entire study area as 71.9 percent of the residents of Pyhäjoki, Kalajoki, Merijärvi, Oulainen and Raahе combined were in favor of the project (2016: 62.0 %).

### Pyhäjoki

What is your opinion about Fennovoima building a nuclear power plant to Pyhäjoki?



Fennovoima's support in Pyhäjoki (12/2017) Norstat Finland Oy.

### Topics of interest

Topics of interest for local residents have largely remained unchanged from previous years. According to the survey and discussion with people living in the Pyhäjoki region, the topics of interest regarding Fennovoima are the effects of the project on the lives of the residents, employment opportunities, environmental impacts and safety.

People are also interested in getting information about the final disposal of spent nuclear fuel, the possible location of the final disposal facility, the schedule of the nuclear power plant project and how it will proceed, the profitability and financing of the project, and the involvement of the Russian plant supplier in the project.





# Company information



## Operational environment

Fennovoima's operational environment can be seen from two perspectives. Prior to commercial operations, Fennovoima's operations have similarities with large-scale infrastructure projects. At this stage, factors such as availability of resources (labor, raw materials and know-how) impacting the project implementation play a key role.

After the start of commercial operations or in the utility company phase, Fennovoima's operational environment is characterized by factors typical for nuclear power plants. For the operating plant, the factors affecting the plant operations, output, production costs, and electricity demand and market price are the most vital.

### Energy markets and political environment

Fennovoima is dependent on the trends related to the energy markets and political environment. In Europe, the pursuit of emission-free power generation has led to vast utilization of subsidies for renewable energy resources. However, in Finland, nuclear power plays a major role in the implementation of the Finnish Climate and Energy Strategy towards a carbon-free society, and currently more than 33 % of electricity production is based on nuclear energy.

Also, international political trends can have an effect on Fennovoima's project. Before the nuclear power plant is in operation, Fennovoima is dependent on the EPC Contractor, which is a Russian state company. Not only is the power plant being acquired from a Russian company, but also a significant amount of financing is being sourced from Russia.

Trends affecting the operational environment:

- Climate change and EU-level requirements concerning e.g. greenhouse gas emissions, emission trading and renewable energy sources
- Integration of European energy markets
- Support for renewables leads to increased capacity, lowering electricity prices
- Changes in the political environment
- Transformation of the energy markets and regulatory framework
- Changes in customer preferences
- Technological innovations



## FENNOVOIMA

### Company structure

The annual general meeting of shareholders elects five to eleven actual members and four deputies to the Board of Directors for one year at a time. The CEO heads the company, assisted by the Management Team.

Fennovoima's operations are divided into departments, each headed by a member of the Management Team. He or she, in turn, reports to the CEO, who is Mr. Toni Hemminki.

The Board of Directors ensures that the CEO carries out his obligations and works for the best interests of the company.

Fennovoima has the following committees nominated by the Board of Directors: Nuclear Safety Committee, Project Execution Committee, Finance Committee, and Nominating Committee.

Fennovoima's Annual Report of the Board of Directors 2017 is available at: [www.fennovoima.fi/en/publications/annual-reports](http://www.fennovoima.fi/en/publications/annual-reports).

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BOARD OF DIRECTORS 2017	COMMITTEES	NATIONALITY
Mr. Esa Härmälä (Chairman)	Nominating (Chairman)	Finnish
Mr. Pekka Erkkilä (Dep. Chairman)	Project execution (Chairman)	Finnish
Mr. Jussi Lehto	Project execution, Finance (Dep. member), Nominating (Dep. member)	Finnish
Mr. Seppo Siljama	Finance (Dep. member)	Finnish
Mr. Stefan Storholm	Project execution	Finnish
Mr. Djurica Tankosic	Project execution	USA
Mrs. Anastasia Zoteeva	-	Russian

The committees also included the following members:

Project Execution Committee: Mrs. Irina Andropova, Mr. Juha Mäkitalo, Mr. Sasu Valkamo (Dep. member)

Finance Committee: Mr. Esa Lager (Chairman), Mr. Juha Mäkitalo and Mrs. Anastasia Polovinkina,

Nominating Committee: Mr. Arto Rätty, Mrs. Diana Shafieva

Nuclear Safety Committee: Mr. Ami Rastas (Chairman), Mrs. Kirsi Kavonius-Hietanen, Mr. Juhani Hyvärinen, Mr. Peter Tuominen, Mr. Gabor Vamos, Mr. Timo Äikäs

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FENNOVOIMA MANAGEMENT TEAM 2017	AREA OF RESPONSIBILITY	NATIONALITY
Mr. Toni Hemminki	CEO	Finnish
Mrs. Minna Forsström	Project	Finnish
Mr. Wilhelm Guthwert	Legal	Finnish
Mrs. Maira Kettunen	Communications and Public Affairs	Finnish
Mr. Olli Virtanen	Quality	Finnish
Mr. Vesa Ruuska	Nuclear Safety	Finnish
Mrs. Eija Salo	Human Resources and Administration	Finnish
Mr. Otso Torniainen	Finance	Finnish

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## FENNOVOIMA

### Fennovoima's role in the project

Fennovoima is the owner of the Hanhikivi 1 project and will become the operator of the finished power plant. Fennovoima has granted RAOS Project Oy an EPC (engineering, procurement and construction) contract for a complete turnkey delivery of the nuclear power plant.

The plant supplier, RAOS Project Oy, has four main subcontractors. Titan-2, as the main construction contractor of the Hanhikivi 1 project, is in charge of site preparation and infrastructure work, construction of the nuclear and turbine islands,

installation work, materials and equipment, as well as instrumentation and control (I&C) equipment.

Fennovoima is responsible for applying for the required licenses, including the construction and operating licenses.

Fennovoima's own construction scope primarily covers auxiliary buildings, such as the training center, the administration building and the plant office.

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### Supply chain structure

Fennovoima's supply chain structure is divided into Fennovoima's own scope of works and the RAOS Project's scope of works, which is agreed in the turnkey EPC contract of the nuclear power plant supply.

#### Fennovoima's scope of work

The owner's scope covers the engineering and site construction work performed by contractors and consultants directly contracted by Fennovoima.

It includes all the work preceding and related to licensing, conventional permits, site preparation, construction and other work and services (e.g. the grid connection project, regional infrastructure projects, interim storage of spent fuel, and the final disposal facility for low- and intermediate-level waste), excluding the EPC contract scope.

Fennovoima's own scope of construction mainly covers the auxiliary buildings, such as the training center, administration building and plant office.

#### RAOS Project's scope of work

According to the EPC contract, the plant supplier, RAOS Project, is responsible for the supply of the nuclear power plant on a turnkey basis.

Most of the key organizations in the Hanhikivi 1 project EPC supply chain are subsidiaries of Rosatom.

So far JSC Atomproekt (Rosatom subsidiary) has been selected to act as the general designer with overall responsibility for ensuring that the design of the Hanhikivi 1 nuclear power plant is developed in accordance with and fulfils Finnish legislation and regulatory requirements, and the requirements set in the EPC contract.

JSC OKB Hidropress, also a Rosatom subsidiary, has been selected to develop the basic reactor plant design. The reactor plant chief designer, Hidropress, is responsible for integrated elaboration of the reactor plant design, including systems of safety, control, diagnosis and safety assurance in the design boundaries of the reactor plant.

JSC Concern TITAN-2 has been approved as the main contractor, responsible for organization of detailed design and construction operations for the Hanhikivi 1 nuclear power plant.

OJSC Atomenergomash (AEM), which is also part of the Rosatom corporation, will provide the reactor building long lead equipment, such as the nuclear steam supply system, for the Hanhikivi 1 project.

GE Alstom Power Systems has been selected for the supply of complete turbine generator set.

Titan-2 and Rolls-Royce have signed an agreement for the I&C licensing support work. The final I&C delivery contract is under negotiation by Titan-2.

Later, RAOS Project will select the companies for the training of the operators and commissioning of the nuclear power plant.



# Reporting principles

The Corporate Responsibility Report covers the financial year 2017. Fennovoima's Corporate Responsibility Report references to Disclosures of GRI Standards 2016 are presented in the GRI index. In addition, the report includes Fennovoima's own disclosures that we have defined as material to our corporate responsibility. Also these disclosures are presented in the GRI index.

When defining the materiality of issues impacting our operations, we consider the expectations of significant stakeholders inside and outside the company.

The report has been prepared in accordance with the GRI Standards: Core option.

## Data boundaries

The data presented in this report covers Fennovoima Oy's functions in Helsinki and Pyhäjoki and in the Hanhikivi 1 nuclear power plant construction site, if not otherwise stated.

Fennovoima's subsidiary Fennovoima RUS controls procurement in Russia and has only one employee. The subsidiary is not included in Fennovoima's corporate responsibility and performance targets and thus not included in this report.

To cover the Hanhikivi 1 construction site operations, relevant information related to the plant supplier RAOS Project Oy is also provided. The matters related to the plant supplier RAOS Project or main contractor Titan-2 that are not directly related to the material aspects of Fennovoima's corporate responsibility are excluded from this report.

The financial data presented in the document are from Fennovoima's audited financial statement.

Supply chain data includes information from the Fennovoima Management System (FMS) and the Hanhikivi 1 site register. EPC scope related supply chain data is supplied by RAOS Project Oy.

Environmental data provided in this report covers the Hanhikivi 1 construction site. The information is collected from the Fennovoima Management System, Environmental Management System (EMS), monthly reports, Fennovoima's Environmental Impact Assessment Report for the construction and operation of a nuclear power plant (2014) and from independent experts' studies conducted at the plant site area. The construction waste data is from Fennovoima's own systems and contractors working at the construction site, from Fennovoima's waste management partner Remeo Oy.

Human resources related data in this report covers Fennovoima's organization in Helsinki and Pyhäjoki. Occupational health and safety data describes the Hanhikivi 1 construction site.

## External assurance

An independent third party, KPMG Oy Ab, has provided limited assurance for the specific performance indicators on environmental, social and economic disclosures in the English language corporate responsibility report 2017 as indicated in the GRI Index and KPMG's assurance report. The assurance report is available at: [responsibility.fennovoima.com/documents/assurance](https://responsibility.fennovoima.com/documents/assurance)

## Global Compact Communication on Progress

Fennovoima supports the ten principles of the United Nations' Global Compact sustainability initiative. We respect and promote these principles throughout our operations, and report on our progress in this report.



# GRI content index

This material references to the following Disclosures of GRI Standards 2016 presented in the GRI index below.

In addition, the report includes Fennovoima's own disclosures that Fennovoima has defined as material to its corporate responsibility.

The external assurance scope covers disclosures marked with an asterisk (\*).

DISCLOSURES	LOCATION AND COMMENTS	OMISSIONS
GRI 102 General disclosures 2016		
ORGANIZATIONAL PROFILE		
102-1*	Name of the organization	Fennovoima
102-2*	Activities, brands, products and services	p. 14
102-3*	Location of headquarters	p. 14
102-4*	Location of operations	p. 14
102-5*	Ownership and legal form	Limited company
102-6*	Markets served	p. 14
102-7*	Scale of the organization	p. 23
102-8*	Information on employees and other workers	p.23
102-9*	Supply chain	p. 51
102-10*	Significant changes to the organization and its supply chain	p. 28-31, 51
102-11*	Precautionary Principle or approach	p. 7-8
102-12*	External initiatives	p.3-4, 6
102-13*	Membership of associations	p. 45
STRATEGY		
102-14*	Statement from senior decision-maker	p. 3-4
102-15*	Key impacts, risks and opportunities	p. 3-4, 6-8, 48
ETHICS AND INTEGRITY		
102-16*	Values, principles, standards and norms of behavior	p. 6, 9, 17, 25
102-17*	Mechanisms for advice and concerns about ethics	p. 9-10
GOVERNANCE		
102-18*	Governance structure	p.49
STAKEHOLDER ENGAGEMENT		
102-40*	List of stakeholder groups	p. 44
102-41*	Collective bargaining agreements	p. 23
102-42*	Identifying and selecting stakeholders	p.44
102-43*	Approach to stakeholder engagement	p. 44-47
102-44*	Key topics and concerns raised	p. 42, 47
REPORTING PRINCIPLES		
102-45*	Entities included in the consolidated financial statements	Fennovoima and Fennovoima Rus



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102-46*	Defining report topics and reporting boundaries	p. 51
102-47*	List of material topics	p. 6, 52
102-48*	Restatements of information	No
102-49*	Changes in reporting	No
102-50*	Reporting period	Jan 1 to Dec 31, 2017
102-51*	Date of most recent report	April 4, 2017
102-52*	Reporting cycle	Annual
102-53*	Contact point for questions regarding the report	Back cover, <a href="http://www.fennovoima.fi/en/contact-us">www.fennovoima.fi/en/contact-us</a>
102-54*	Claims of reporting in accordance with GRI Standards	p. 51. The report has been prepared in accordance with the GRI Standards: Core option.
102-55*	GRI content index	p. 52
102-56*	External assurance	p. 51

MATERIAL TOPICS*	LOCATION AND COMMENTS	OMISSIONS
ECONOMIC PERFORMANCE		
GRI 201 Economic performance 2016		
GRI 103	Management approach p.14	
201-1	Direct economic value generated and distributed p.14	
INDIRECT ECONOMIC IMPACTS		
GRI 203 Indirect economic impacts 2016		
GRI 103	Management approach p.15-16	
203-2	Significant indirect economic impacts p.14, 16	
ANTI-CORRUPTION		
GRI 205 Anti-corruption 2016		
GRI 103	Management approach p. 9, 11	
205-1*	Operations assessed for risks related to corruption p. 11	
205-2*	Communication and training about anti-corruption policies and procedures p. 11	Information is not collected regarding the Board of Directors, business partners or others.
205-3*	Confirmed incidents of corruption and actions taken p. 11	
Fennovoima disclosure	Gray economy p. 31. Our targets are that there are no cases of gray economy and that all the information regarding the companies and people working at the Hanhikivi 1 construction site are in order.	
WATER		
GRI 303 Water 2016		
GRI 103	Management approach p. 36-40	
Fennovoima disclosure*	Turbidity monitoring p.38. Our target in 2017 was that turbidity monitoring is always started before the beginning of work.	
BIODIVERSITY		
GRI 304 Biodiversity 2016		
GRI 103	Management approach p. 36-42, Fennovoima's EIA Report 2014 chapter 7	



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304-1	Operational sites owned, leased, managed in, or adjacent to projected areas and areas of high biodiversity value outside protected areas	p. 39, Fennovoima's EIA Report 2014 chapter 7.6	
304-2*	Significant impacts of activities products and services on biodiversity	p. 37-39, Fennovoima's EIA Report 2014 chapter 7	
304-3	Habitats protected or stored	p. 39, Fennovoima's EIA Report 2014 chapter 7.6	
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by the operations	p. 39, Fennovoima's EIA Report 2014 chapter 7.6.4.5	
Fennovoima disclosure*	Noise and dust monitoring in place	p. 39, Fennovoima's EIA Report 2014 chapter 7.3. Our target for 2017 was that noise and dust monitoring is conducted according to plan,	
EFFLUENTS AND WASTE			
GRI 306 Effluents and waste 2016			
GRI 103	Management approach	p. 41	
306-1*	Water discharge by quality and destination	p. 42	
306-2*	Waste by type and disposal method	p. 42-43, The share of hazardous waste of the total amount of waste is 7% and it is reported in the same table with other waste information.	Waste not reported by all disposal methods as all data was not available.
306-3*	Significant spills	p. 38	
Fennovoima disclosure*	Percentage of construction waste utilization as material or energy	p. 42, Data related to the utilization of waste is provided by our waste management partners and our contractors. Our target in 2017 was that 85% of the construction waste is utilized as energy or material.	
ENVIRONMENTAL COMPLIANCE			
GRI 307 Environmental compliance 2016			
GRI 103	Management approach	p. 36, 40	
307-1*	Non-compliance with environmental laws and regulations	p. 37	
Fennovoima disclosure	Compliance with environmental and water permits	p. 40. Our target is that there are no instances of target limits being exceeded.	
Fennovoima disclosure:	Number of environmental observations per year	p. 38. Our target for environmental observation was 50 observations made at the Hanhikivi 1 construction site in 2017.	
EMPLOYMENT			
GRI 401 Employment 2016			
GRI 103	Management approach	p. 22-27	
401-1*	New employee hires and employee turnover	p. 23, 25	
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Employees with temporary contract (i.e. summer trainees are provided with lunch coupons and mobile phone for work related calls. Employees with over six month temporary or permanent contract are provided with Smartum lunch card and mobile phone benefit.	
Fennovoima disclosure*	Party and Pulse survey results	p. 26. Our target for Party survey index results is 14. The Pulse survey target was 4.5 in 2017. The Pulse survey will be replaced with another survey in 2018.	
OCCUPATIONAL HEALTH AND SAFETY			
GRI 403 Occupational health and safety 2016			
GRI 103	Management approach	p. 26, 32-35	
403-1	Workers representation in formal joint management-worker health and safety committees	Fennovoima has an Occupational health and safety (OHS) committee that represents all employees of Salmisaari headquarters and Pyhäjoki office.	



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403-2*	Types of injury and rate of injury, occupational diseases, lost-days and absenteeism, and number of work related fatalities	p. 26, 33	
403-3*	Workers with high risk of incidents or diseases related to their occupation	p. 35	
403-4	Health and safety topics covered in formal agreements with trade unions	Fennovoima has a Site agreement with Rosatom and trade unions. The Site agreement states that all operators at Hanhikivi 1 construction site must comply with Finnish legislation and collective labor agreement. The agreement states that trade unions are allowed to name joint shop steward and joint OHS delegate to the Hanhikivi 1 construction site.	
Fennovoima disclosure*	Safety observations, investigation of occupational accidents, implementation of preventative and corrective measures	p. 35. Our target for the OHS observations at the Hanhikivi 1 construction site is over two observations per Fennovoima employee annually. Our target is that all observations are handled within two days of receiving the observation, action plan is made within seven days and the corrective actions are implemented according to agreed schedule.	
Fennovoima disclosure*	TR and MVR index	p. 33. Our target is that the minimum requirement level that we have set to 90% is exceeded in every measurement.	
Fennovoima disclosure*	Personnel absenteeism (sick leaves)	p. 26 Our target is under 2.5% of absenteeism.	
TRAINING AND EDUCATION			
GRI 404 Training and education 2016			
GRI 103	Management approach	p. 22, 23, 24	
404-1*	Average hours of training per year per employee	p. 24	
404-2*	Programs for upgrading employee skills and transition assistance programs	p. 24	No information regarding transition assistance programs collected. Reporting practices will be improved in 2018.
404-3*	Percentage of employees receiving regular performance and career development reviews	p. 23	
DIVERSITY AND EQUAL OPPORTUNITY			
GRI 405 Diversity and equal opportunity 2016			
GRI 103	Management approach	p. 9, 11, 25, 26	
405-1	Diversity of governance bodies and employees	p. 23, 49	Reported data includes the gender and age of the employees and nationality of the Board of Directors and Management Team.
NON-DISCRIMINATION			
GRI 406 Non-discrimination 2016			
GRI 103	Management approach	p. 26	
406-1*	Incidents of discrimination and corrective actions taken	p. 26	
LOCAL COMMUNITIES			
GRI 413 Local communities 2016			
GRI 103	Management approach	p. 15, 46-47	
413-1	Operations with local community engagement, impact assessments and development programs	p. 15, 46-47	Quantitative data not available.
Fennovoima disclosure	Image study	p. 46-47. Our target is a positive trend in the image study results.	
Fennovoima disclosure*	Score in the local opinion poll	p. 47 Our target is a positive trend in the opinion poll results.	



## FENNOVOIMA

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### SOCIOECONOMIC COMPLIANCE

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491 Socioeconomic compliance 2016

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GRI 103	Management approach	p. 10
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419-1*	Non-compliance with laws and regulations in the social and economic area	p. 10
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### SAFETY

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GRI 103	Management approach	p. 17-21
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Fennovoima disclosure	Safety concerns	p. 19. We monitor the quality and number of the safety concerns. Numerical target has not been set.
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