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Fennovoima Ltd
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ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR FENNOVOIMA LTD'S NUCLEAR POWER PROJECT; STATEMENT BY THE CONTACT AUTHORITY

On 13 February 2014, Fennovoima Ltd submitted an environmental impact assessment report (EIA report) to the Ministry of Employment and the Economy in accordance with the environmental assessment procedure (EIA procedure), pursuant to the Environmental Impact Assessment Act (468/1994; EIA Act), concerning the construction project of a new nuclear power plant unit. This statement by the Ministry of Employment and the Economy is the contact authority's statement required by the EIA Act on the construction project in question, and it also concludes the EIA procedure for the project.

1 Project details, EIA procedure and permit procedure

1.1 Responsible organisation and contact authority

The organisation responsible for the project is Fennovoima Ltd. Its primary consultant in the environmental impact assessment procedure was Pöyry Finland Oy.

Pursuant to the EIA Act, the Ministry of Employment and the Economy is acting as the contact authority in the EIA procedure.

1.2 Project and project options described in the EIA report

Fennovoima has studied the environmental impacts of the nuclear power station project. In 2008, the company carried out an EIA procedure in which three different plant options in three optional locations were examined.

The project currently under scrutiny is a nuclear power plant unit with an electric power output of some 1,200 megawatts and a thermal output of approximately 3,200 megawatts located in Northern Ostrobothnia, Hanhikivi headland in Pyhäjoki municipality.

The project also includes the on-site interim storage of spent nuclear fuel generated by the new unit and the treatment of low and intermediate level waste, final disposal repository, and the construction of the infrastructure required by the nuclear power plant. In the EIA report, both construction period and operating period environmental impacts are assessed.

If the project is implemented, Fennovoima aims to launch the building of the new nuclear power plant immediately after the construction licence has been granted, and the new plant is to begin electricity production in 2024.

As a zero option, the EIA report presents a situation in which the project would not be implemented. The zero option would entail increasing the importation of electricity and/or implementing power plant projects of other organisations in order to meet the corresponding electricity requirements. The environmental impacts of the zero option were only assessed assuming that nuclear power will be replaced by electricity produced in a coal-fired thermal power station.

1.3 Environmental impact assessment procedure

The EIA procedure constitutes part of the environmental impact and safety assessment for nuclear power plants laid down in a Decision-In-Principle and permit procedure under the Nuclear Energy Act (990/1987, NEA).

The current EIA report draws on information contained in Fennovoima's environmental impact assessment conducted in 2008. Fennovoima has also conducted new studies and drawn up additional reports since 2008 that provide more specific information about the current status of the plant area. The more detailed current status information and more accurate planning data were relied on when drawing up the environmental impact assessment. Certain additional studies were also completed in connection with the EIA procedure.

An EIA procedure is implemented in two stages: initially, the organisation responsible for the project compiles an environmental impact assessment plan, or an EIA programme, and on the basis of statements and opinions received on the programme, the contact authority finally gives its own statement.

The responsible organisation then draws up an assessment programme and, based on the contact authority's statement on it and the studies the organisation has carried out, prepares an EIA report.

During the ensuing second round of comments, the Ministry of Employment and the Economy invites several ministries as well as authorities and communities designated by the contact authority to submit their

statements on the EIA report. Citizens can also take part in the consultation organised in the programme phase and the second round of comments. On the basis of the EIA report and statements received, the Ministry prepares its final statement that concludes the EIA process.

The EIA process also includes an international consultation referred to in the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention, SopS 67/1997). The Finnish contact authority in this process, which progresses in step with the national EIA process, is the Ministry of the Environment.

1.4 Permit procedures for a nuclear power plant

1.4.1 Decision-In-Principle

The prospective nuclear power plant complies with the definition of a nuclear facility of considerable general significance referred to in the Nuclear Energy Act, which requires the Government's project-specific Decision-In-Principle stating that the construction project is in line with the overall good of society.

The processing of an application for a Decision-In-Principle is not solely based on documents provided by the applicant, as the authorities will obtain supplementary reports, both those required pursuant to the Nuclear Energy Decree and other reports deemed necessary.

Pursuant to section 24(h) of the Nuclear Energy Decree, the application for a Decision-In-Principle shall include an overview of the applicant's plans and available methods for arranging nuclear waste management. The submission of plans based on binding agreements involving matters such as nuclear waste management of the nuclear power plant project cannot be expected at the Decision-In-Principle stage. This rule also applies to the arrangements for fuel supply management (section 24(g) under the Nuclear Energy Decree.

The Ministry of Employment and the Economy will provide local authorities, residents and municipalities in the immediate vicinity of the power plant with an opportunity to express their opinions in writing before the Decision-In-Principle is made. This will be partly based on an overall description of the facility publicised by the applicant, the environmental effects it is expected to have, and its safety. Therefore, the description must be made generally available, and for instance in the municipality where the planned site of the facility is located, it will be distributed to all households (NEA, section 13).

The Ministry will also arrange a public hearing where the public will have an opportunity to give their opinions either orally or in writing. The Government will be informed of any opinions stated at the meeting.

Pursuant to the Nuclear Energy Act, before making the Decision-In-Principle, the Government shall ascertain whether the municipality where the nuclear facility is to be located is in favour of the facility, and ensure that no facts indicating a lack of sufficient prerequisites for con-

structing and using a nuclear facility in a safe manner and not causing injury to people, or damage to the environment or property, have arisen in the statement of the Finnish Radiation and Nuclear Safety Authority or elsewhere during the processing of the application. The Government's Decision-In-Principle shall be forwarded, without delay, to the Parliament for perusal. The Parliament may reverse the Decision-In-Principle or decide that it should remain in force as it stands.

The Government made a Decision-In-Principle in favour of the project on 6 May 2010, and the Parliament adopted it without modification on 1 July 2010. As the original project has changed since the Decision-In-Principle was issued, Fennovoima decided to reiterate the EIA procedure in autumn 2013. In addition, the company submitted an application for a decision complementing the Decision-In-Principle to the Government on 4 March 2014.

1.4.2 Construction licence

In order to build a nuclear power station, a construction licence granted by the Government is required (Sections 18-19 of the NEA). Any decision regarding the construction licence shall describe how the EIA report and the related statement by the contact authority have been taken into account (Section 13 of EIA Act).

In connection with the construction licence application, it will also be verified that a site has been reserved for the construction in a local detailed plan and that the applicant is in possession of the site required for the operation of the facility (Section 19(4) of the NEA).

A hearing procedure for the relevant municipalities, authorities and citizens will be organised during the application process for the construction licence.

1.4.3 Operating licence

A licence to operate a nuclear facility issued by the Government is required to operate a nuclear power plant. In order for such a licence to be granted, the operation of the nuclear facility must be arranged so as to conform with the overall good of society, taking appropriate account of the safety of workers, general safety and environmental protection.

A hearing of municipalities, authorities and citizens will be organised during the operating licence application process.

1.4.4 Other required permits

Activities causing a risk of environmental pollution require a permit in compliance with the Environmental Protection Act. In this case, the thermal load caused by the cooling water of a condensing power plant is the most significant impact to be assessed. The activities are subject to a licence under the Environmental Protection Act (86/2000) and the Environmental Protection Decree (169/2000) issued by virtue of the afore-

mentioned Act. An environmental permit covers such aspects as releases into air and water, waste management (excluding nuclear waste) and noise abatement. The environmental permit may also contain provisions on monitoring releases and reporting on them.

Separate environmental permits are required for any construction-period operations, and the actual construction requires a construction licence granted by the municipality. A permit in accordance with the Water Act (587/2011) is required for arranging the cooling water circulation associated with the operation of a nuclear power station. The EIA procedure must be completed before any licences or permits are granted.

Other technical permits related to environmental impacts include permits for inflammable liquids and permits under the Chemicals Act.

2 Communication about the assessment report and the hearing concerning the report

A public notice concerning the assessment report was published on 24 February 2014 (or in the first issue of the newspaper after that date) in Helsingin Sanomat, Hufvudstadsbladet and the following newspapers: Kalajokilaakso, Kaleva, Keskipohjanmaa, Pyhäjokiseutu and Raahen Seutu.

The public notice and the EIA report are available for viewing on the Ministry of Employment and the Economy's website at www.tem.fi

Members of the public were able to view the assessment report between 24 February and 24 April 2014 in the local government offices of the following municipalities: Pyhäjoki, Raahen, Alavieska, Merijärvi, Siikajoki, Oulainen and Kalajoki. All of the aforementioned municipalities were also invited to comment on the EIA report.

Together with the organisation responsible for the project, the Ministry organised a public meeting to discuss the project in Pyhäjoki on 18 March 2014.

Moreover, the following organisations were invited to comment on the assessment report:

the Ministry of the Environment, the Ministry for Foreign Affairs, the Ministry of the Interior, the Ministry of Social Affairs and Health, the Ministry of Defence, the Ministry of Finance, the Ministry of Transport and Communications, the Ministry of Agriculture and Forestry, the Finnish Radiation and Nuclear Safety Authority, the Finnish Safety and Chemicals Agency Tukes, the Finnish Environment Institute, Fingrid Oyj, Posiva Oy, the Regional State Administrative Agency for Northern Finland, the Centre for Economic Development, Transport and the Environment for Northern Ostrobothnia, WWF, Greenpeace, the Finnish Association for Nature Conservation, Pro Hanhikivi Association, Finnish Energy Industries ET, the Federation of Finnish Enterprises, the Central Union of Agricultural Producers and Forest Owners, the Central Organisation of Finnish Trade Unions SAK, Akava Confederation for Professionals and Managerial Staff in Finland, the Finnish Confederation of Salaried Employees STTK, the National Board of Antiquities, the regional rescue

services and the following municipalities: Pyhäjoki, Raahe, Alaveska, Merijärvi, Siikajoki, Oulainen and Kalajoki.

The project will also be subjected to an international consultation procedure, in which countries that are parties to the so-called Espoo Convention have the possibility of participating in the EIA procedure. The Ministry of the Environment is responsible for the practical arrangements of conducting the international consultation. The countries that participated in the international consultation on the EIA report were Austria, Sweden, Norway, Germany, Latvia, Estonia and Poland.

3 Summary of comments and opinions

The following is a summary of the statements on the EIA report received by the Ministry. The particular focus of the summary is on comments on the basis of which the adequacy of the EIA report at this stage of the nuclear power project can be assessed. The organisations having issued statements also came up with comments and proposals for improvements alongside with other advice and requirements concerning the planning and monitoring of the project, in case it proceeds further.

3.1 Statements

Ministry of the Environment: The Ministry of the Environment notes that in the new EIA report the justifications of the project, and the reviews of energy consumption, the outlook for energy-saving measures and the impacts of not implementing the project that are closely associated with the project, remain at a superficial level. According to the Ministry of the Environment, the Ministry of Employment and the Economy as the contact authority of the EIA report should, in the further preparation of the project, give serious consideration to the changes that have taken place during the life cycle of the project and other circumstances originally used to justify the necessity of the project.

Regarding the impacts of accidents, the EIA report discusses the consequences of a serious reactor accident, and the Ministry of the Environment finds it positive that a short review of post-accident measures and social impacts was also included in the assessment of the impacts of an accident. These sections could have been more extensive and also covered radiation doses and their potential impacts on organisms.

Regarding the environmental impacts of nuclear fuel, the Ministry of the Environment points out that the report should have addressed the entire life cycle of the fuel from manufacturing to the final disposal of spent nuclear fuel. The Ministry of the Environment considers that the environmental impacts of the reprocessed uranium production process are missing in the report, and states that the description of the final disposal repository for low and intermediate level waste is very short in the EIA report. The Ministry of the Environment finds it a cause for concern that Fennovoima cannot at this stage propose a more accurate plan for the final disposal.

In general, the impacts of the project on marine environment have been carefully assessed. The Ministry of the Environment draws attention to the challenges related to defining the plant area and land use requirements, shortcomings in the assessment of the thermal load caused by waste water and the impacts of demolished structures, as well as examination of joint effects with other projects. The Ministry of the Environment notes that even if the environmental impact assessment was mainly drawn up carefully, the significance of these impacts was assessed inadequately.

In the context of preventing negative impacts and monitoring environmental impacts, the Ministry of the Environment urges that the new dredging and disposal guidelines about to be completed be taken into consideration, that observing invasive alien species be included in the monitoring exercise and that endangered species and habitats be monitored.

The Ministry of the Environment also finds the manner in which the Ministry of Employment and the Economy circulates an application for a Decision-In-Principle on a project for comments before the statement of the contact authority that concludes the environmental impact assessment has been issued an extremely poor administrative procedure.

Ministry of the Interior: The Ministry's Rescue Department finds close cooperation between the local rescue services and various other parties and potential implementers of the plant project important. In the environmental impact assessment, potential impacts on rescue service arrangements, regional risks and maintaining the service level of the rescue services should also be assessed. Protecting and evacuating the population in case of an accident should also be taken into consideration, as well as the impacts of preparedness for and implementation of these actions on traffic arrangements among others.

Ministry of Social Affairs and Health: According to the Ministry, even more detailed plans and analyses of this plant type, as well as modifications in order to meet the Finnish standards, will be required for the final nuclear safety assessment. In its statement, the Ministry of Social Affairs and Health points out that the Finnish Radiation and Nuclear Safety Authority also drew attention in its opinion to a number of other technical details which the plant supplier must work on in order to ensure that Finnish standards are met.

The Ministry finds that Fennovoima's EIA report describes other operations or processes vital for nuclear and radiation safety appropriately and for the main part at an adequate level of accuracy, including preparedness arrangements, phases of nuclear fuel production, transport of fresh nuclear fuel, interim storage of spent nuclear fuel, management of low and intermediate level waste and the demolition of the nuclear power plant. The final disposal of spent nuclear fuel from the plant would not begin until the 2070's, and Fennovoima would thus have plenty of time to draw up a comprehensive final disposal plan. In general, the EIA report describes the operating principles of the final disposal activities that have been carefully researched in Finland and that are soon to be launched, and the principles of selecting their location, at an adequate level of accuracy.

Ministry of Agriculture and Forestry: In its statement, the Ministry of Agriculture and Forestry refers to its statement on the EIA programme, in which the Ministry drew attention to sea levels and urged the company to check and, if necessary, update the sea level scenarios to correspond with the 2013 situation. The frequencies of sea levels were examined in the EIA report, and based on what is stated in the report, they were taken into account in the plans. However, the report does not indicate if the latest data from 2013 were incorporated in the description of extreme phenomena.

The Ministry finds it positive that the construction period impacts on fish life and fisheries have now been included in the assessment. The proposed measures appear inadequate, however, and no actions that would prevent or mitigate the construction period impacts are suggested. The Ministry finds it important that more detail is provided on these actions.

Ministry of Transport and Communications: The Ministry of Transport and Communications requested statements from the Finnish Transport Safety Agency and the Finnish Transport Agency within its branch of administration. The Ministry proposes that the statements of these agencies be taken into consideration. The Ministry of Transport and Communications points out that amendments are made in international provisions on the transport of hazardous substances every two years and proposes that the party responsible for the project should, as early as possible, contact the Finnish Transport Safety Agency, the Finnish Transport Agency and the Centre for Economic Development, Transport and the Environment for Northern Ostrobothnia.

Finnish Transport Agency: Finnish Transport Agency points out that Rajakiiri Oy is planning to set up its Maanahkiainen offshore wind farm off the project area, and recommends that its potential impacts on Fenno-voima's project be taken into account already in the planning phase. If the planned offshore wind farm goes ahead, direct navigation to the channel leading from open sea to the nuclear power station area will only be possible through the offshore wind farm.

In addition, the planned disposal site is partly located in the area of the projected offshore wind farm. The EIA report does not show the location of the offshore disposal site on a map, and the Agency recommends that the impacts of the offshore wind farm on the disposal area be established as early as possible, at least regarding the locations and cabling of individual power plants.

In the event that a need for transporting heavy abnormal loads by road arises when the plant is being constructed, the load-bearing capacity of roads, bridges and culverts should be verified in good time before such loads are transported. While the technical description of the project touches on the transportation of hazardous substances, this aspect has not been taken into consideration in the assessment of impacts on traffic. The EIA report should also have examined the volumes of hazardous substances transported, the schedules of such transportation and risks in case of an accident.

Finnish Transport Safety Agency (Trafi): In its statement, Trafi points out the requirement of acquiring a licence for an obstacle to aviation, which in Hanhikivi area relates to obstacles that are higher than 60 metres above the ground. According to the report, a licence was required for an obstacle that is 30 metres in height.

Trafi notes that the report does not adequately address the location to be selected as the final disposal repository of spent nuclear fuel.

Considering the condition of bridges in the current road network, rail or sea transport could be preferable options over transport by road. If the location of the final disposal repository to be selected is inland, transport connections to this location should be examined before the decision is made. Once the location of the final disposal repository is known, the additional capacity needed for transporting spent nuclear fuel could be taken into consideration as improvements are being made in the road network.

The Finnish Transport Safety Agency finds the EIA report for Fennovoima's nuclear power plant appropriate and requests that the issues referred to in the Agency's statement be also taken into account.

Municipality of Pyhäjoki: The municipality notes that it has no comments to make on the EIA report. The municipality would have liked the EIA report to also address the nuclear power plant's impacts on regional economy.

Finnish Radiation and Nuclear Safety Authority (STUK): The EIA report covers all key issues relevant to the Authority's remit in this phase of the project, and the Authority's comments contained in its statement on the EIA programme were adequately taken into account. In its statement, the Authority puts forward observations and comments, the most significant ones of which concern releases and their impacts in case of an accident. For the Authority's part, these issues will be verified in connection with the plant project's safety assessment.

Regarding releases, the EIA report discusses both operating time releases and those in case of an accident. The Finnish Radiation and Nuclear Safety Authority finds that normal radioactive releases while the plant is in operation, actions to restrict them and their environmental impacts are appropriately described in the report from the perspective of the Authority's remit. The Authority sees that the discussion of accidental releases and their impacts is limited to serious reactor accidents. The impacts of less serious accidents or incidents were not assessed in detail.

The Finnish Radiation and Nuclear Safety Authority considers that as a whole, radiation doses were underestimated in the assessment methods used. The radiation doses include the doses accumulated over 2 days, over 7 days and over lifetime. According to the Authority, the dose in the first year or two should have been given, as following an accidental release, doses that are significant for the assessment of late effects of radiation are accumulated during the first years.

From the perspective of the Authority's remit, accidental releases and their environmental impacts are mainly described appropriately. However, it would have been a good idea to indicate more clearly in the report that while releases caused by a reactor accident exceeding the ones examined in the report cannot be excluded, Finnish requirements make it possible to reduce the probability of their occurrence to a very small figure. Incidental and accidental releases and the radiation doses caused by them will be discussed in greater detail in connection with the potential construction licence application for the power plant.

The Finnish Radiation and Nuclear Safety Authority feels that regarding the monitoring of environmental radiation, the radiation monitoring programme does not examine more closely the typical features of the area and the manner in which these should be taken into account. The environmental radiation monitoring programme must also be planned so that it can be used to maintain an adequate preparedness to carry out the required radiation measurements and sampling, also in the conditions of an accident.

In the context of preparedness arrangements and rescue activities, the key issue of access to the plant area (the ability of the preparedness organisation and such actors as the rescue services to access the site to deal with an incident) is not discussed. It would have been a good idea to put together and describe the roads and all arrangements related to access and the evacuation of the surrounding areas in the EIA report from the perspective of preparedness arrangements.

The EIA report also assesses the environmental impacts of waste management, taking into account the requirements arising from rules and regulations. The Finnish Radiation and Nuclear Safety Authority notes that the descriptions of the plant's waste management, storage of spent nuclear fuel and transport can be considered appropriate.

Town of Raahе: The Town of Raahе notes that the EIA report was expertly drawn up and that the town has no comments to make on the report.

Municipality of Siikajoki: The municipality feels that the project has to a certain extent impacts that extend to the area of Siikajoki and affect the residents of the municipality. The municipality finds it important that the municipalities located slightly further away, including their residents, are also kept informed about the various phases of the project. The EIA procedure offered the citizens a good additional possibility of participating in the various phases of the project and of finding out about future changes. Versatile dissemination of information and dialogue should also be continued as the project progresses. In the future, it is important to ensure in connection with planning and implementing the project that accident risks are minimised and that their evolution into more serious risks is prevented as efficiently as possible.

Town of Oulainen: In its statement, Oulainen notes that it has no comments to make on the EIA report concerning Fennovoima Oy's nuclear power project.

Finnish Safety and Chemicals Agency (Tukes): The EIA report notes that due to the chemical volumes involved, the plant will be subject to supervision by Tukes. The risks entailed in the processing and storage of hazardous chemicals and the prevention of and preparedness for accidents will be dealt with by Tukes during the application procedure under the Chemicals Safety Act.

Issues related to hazardous chemicals have been addressed adequately in the EIA report, and Tukes thus has no comments to make on the report.

Town of Kalajoki: The environmental impacts on Pyhäjoki as an optional location for the power plant were assessed in a versatile manner considering the planning phase of the project. The negative operating period impacts extending to Kalajoki may be assessed as being relatively minor, and the Town of Kalajoki has no comments to make on Fennovoima's environmental impact assessment.

Municipality of Merijärvi: The Municipality of Merijärvi has no comments to make on the EIA report concerning Fennovoima Oy's nuclear power project.

Fingrid Oyj: Drawing on previous studies and updated plant data received from Fennovoima Ltd, Fingrid Oyj has examined connectivity to the national grid of the plant referred to in the EIA report. Fingrid's statement gives a brief description of the measures required to connect a nuclear power plant to the main grid. The need to increase emergency power capacity resulting from Fennovoima's nuclear power plant project will be clarified as the planning progresses. A background study of the need for new power lines was conducted for the purposes of regional land use planning, and Fingrid Oyj will make decisions on the power lines associated with the project in step with the decisions made by Fennovoima Ltd.

Posiva Oy: Posiva had no remarks or other comments to make regarding the EIA report for Fennovoima Ltd's nuclear power plant project.

Centre for Economic Development, Transport and the Environment for Northern Ostrobothnia: In its statement, the Centre for Economic Development, Transport and the Environment notes that as regards land use and the natural environment, the report extensively describes all plans that are valid or pending in the area at all levels of planning. While the construction of the plant will restrict land use within the plant's protection zone, building will remain possible in urban centres and villages. The assessment of impacts on land use and the built environment are adequate.

According to the EIA report, the lack of or reduction in the modifying and cleaning effect of ice on shores due to a rise in the water temperature may increase the growth of reed stands and scrub cover in coastal meadows. As a result of such infestation in the meadows, sites where the endangered Siberian primrose occurs may deteriorate. The current coherent coastal and forest area will also become fragmented, which may have a negative effect on the habitats of certain species and weaken ecological links. The Centre for Economic Development, Trans-

port and the Environment notes that the natural state of coastal meadows should be monitored, and if necessary, action should be taken to prevent the negative impacts.

In the context of impacts on water systems, national legislation adopted by virtue of the EU's Marine Strategy Framework Directive (2008/56/EY) must be complied with. A monitoring programme for the national Marine Strategy will be completed in spring 2014 (assessment of the current status, environmental objectives, indicators). In the Bay of Bothnia, projects to revitalise stocks of migratory fish associated with the implementation of the National Fish Pass Strategy are under way, which must also be taken into account when assessing the environmental impacts. The studies of migratory fish should be more extensive, and the impacts on the annual migration behaviours and stays in the area of seals should be assessed more accurately.

The Centre points out that the assessment of possibilities for winter fishing during the plant's operation is incorrect, and the report does not consider the project's impacts from the perspective of recreational fishing.

In terms of impacts on transport, the growth in traffic volumes, especially during the construction period, will undermine road safety, impair the fluency of traffic and increase nuisances caused by noise, dust and vibration. The report also discusses measures that could mitigate the problems related to traffic safety and fluency caused by the project.

Council of Oulu Region: The statement notes that the new plant option does not involve essential changes to land use in the area. From the perspective of its impacts, the new plant option is thus not essentially different from the one assessed previously. The Council of Oulu Region finds it important that open questions associated with the final disposal of nuclear waste are resolved among nuclear power actors. The Council of Oulu Region has no other comments to make on the environmental impact assessment report.

National Board of Antiquities: The statement given by the National Board of Antiquities regarding Hanhikivi in the programme phase was quoted in an abridged form in the summary of statements at the end of the report. The assessment of impacts concerning the culturally and historically valuable area of Hanhikivi was thus not implemented as proposed by the Board. Safeguarding the protection and accessibility of Hanhikivi requires more detailed planning.

Greenpeace: According to Greenpeace's statement, the EIA process of Fennovoima's nuclear power plant project is not likely to achieve the objectives set for it. If the contact authority approves this process, the EIA will lose an essential part of its significance.

Fennovoima describes the basic principles of safety solutions at a general level. However, the description does not in all parts provide sufficient information to allow an assessment of the project's environmental impacts. Contrary to what is stated in the assessment report, the plant model does not meet Western safety requirements, and Rosatom has additionally faced major difficulties related to quality control in similar plants in Russia.

In the context of fuel supply, Greenpeace draws attention to the only plant manufacturing reprocessed uranium fuel for civilian use in Russia, which is located in one of the worst polluted areas in the world. Greenpeace also notes that exploitation of fuel procured from alternative sources has proven considerably more difficult than expected.

Finally, the statement points out that high-level nuclear waste is one of the most significant negative environmental impacts that will certainly become reality, and waste management must be worked out at an adequate level before waste-producing activities can start.

Confederation of Finnish Industries (EK): EK finds that the assessment report was thoroughly drawn up and that it takes into account the issues highlighted in the contact authority's statement on the EIA programme.

Central Organisation of Finnish Trade Unions (SAK): SAK finds that the project is viable in terms of its environmental impacts, and no negative environmental impacts that could not be accepted or mitigated so that an acceptable level can be reached have emerged in the course of the EIA process. SAK sees the project as having important positive impacts on regional economy, the competitiveness of the entire country and the combat against climate change. In SAK's opinion, the EIA report was drawn up competently, and it meets statutory requirements. SAK and its member unions with a stake in the project are prepared to engage in a dialogue with Fennovoima, plant suppliers and the authorities in order to ensure a good end result.

Akava: Akava reports that it has no comments to make on the EIA report.

Regional State Administrative Agency for Northern Finland: The unit for basic services, legal protection and permits in the Regional State Administrative Agency for Northern Finland notes that the assessment of impacts on humans can be considered comprehensive. The unit finds that the issues the unit brought up in its statement on the EIA programme have mainly been addressed in the assessment.

The unit considers it vital that even before the project is implemented, the organisation responsible for it works closely together with the various stakeholders regarding preparedness for accidents and emergencies, and takes into account preparedness for and the effectiveness of any post-accident cleanup activities in the area.

The unit finds it important that any decisions on the final disposal repository are made in good time, and it regards a single final repository in Finland as the preferable alternative. Regarding the location of the final repository of low and intermediate level waste, the EIA report does not indicate in detail how the bedrock and the repository location have been studied in the relevant area. The unit considers it crucial that studies of this type be brought up in connection with information activities and other cooperation with stakeholders.

Finnish Association of Nature Conservation: According to the Finnish Association of Nature Conservation's statement, the impact assessment in the report is superficial and generalised, and the feedback on the EIA

programme is mainly overlooked, as responding to it would not have been in the interest of the organisation responsible for the project.

The Association does not consider the repository location suitable, as Hanhikivenniemi headland as well as the sea area off Hanhikivi with its shipping lanes and disposal areas would have to be redesigned.

In addition, the main part of the energy to be produced will be released in the sea, where the heat losses will result in a vicious cycle of eutrophication and destroy biodiversity. The price in terms of environmental economics is too high, and on the basis of this alone the project should be deemed unviable.

Pro Hanhikivi Association: Pro Hanhikivi notes that the location selected for the plant represents rich natural values, and that the EIA report invalidates the significant negative impacts on these numerous natural sites and valuable areas by stating that all possible environmental impacts are acceptable or can be mitigated so as to reach an acceptable level.

In its statement, the Association considers that the predictions of future electricity consumption have been downgraded and that the electricity needs in 2020 can be adequately responded to by means of other actions and forms of production. Pro Hanhikivi also feels that the project's viability has essentially changed as the domestic share in the company's ownership structure has declined further, and the Association sees that the actual Finnish share in the ownership at the time of the consultation for the EIA report was less than one half.

Finally, Pro Hanhikivi notes that the contents and impact assessments in the existing EIA report are partly inadequate, and part of the information contained in it is outdated. Based on the EIA report, Pro Hanhikivi suggests that because of significant negative environmental impacts, Fennovoima Ltd's project is unviable in essential parts.

International consultation statements

Austria: Federal Ministry of Agriculture, Forestry, Environment and Water Management represents Austria in procedures under the Espoo Convention. The Ministry requests that Finland take into account Austria's comments in its permit procedure and final decision. Austria expects to receive the information it requests for and the final decision on the project, including justifications and points of view on which the decision was based.

Austria expects answers to questions concerning the operating conditions of the nuclear power plant, INES 7 class release modellings and the arrangements for nuclear waste management.

According to Austria's statement, the Ministry of Employment and the Economy should require Fennovoima to provide information after the conclusion of the EIA procedure about the issues that were raised during the procedure but for which it has not been possible to provide an answer as yet.

Regarding the reactor type, the ability to control accidents should be proven by means of reliable probability-based or deterministic methods, taking into consideration the corresponding publications and safety targets of WENRA, the Western European Nuclear Regulators Association. In addition, utilisation of what was learnt about the VVER-1200 reactor type in Fukushima could be discussed.

The statement questions whether the plant's construction level is high enough in case of a flood and requests the company to take into account the need for appropriate additional protection. In order to prevent potential disruption to cooling caused by fluctuations in the sea levels, the Ministry recommends that additional cooling options be implemented. Regarding the location of the plant and its operation, Austria requests information about the impacts of natural conditions or external accidents and protection against such incidents.

Regarding accident analyses and cross-border impacts, the statement recommends that the company present a modelling of the worst possible accident to an AES-2006/V-491 reactor, source terms, the timing and duration of the release and the frequency of occurrence.

Austria expects more detailed information about the volume of nuclear waste. Fennovoima should also describe the type, capacity and storage periods of interim storage, and the schedule of construction work. Austria additionally requests more detailed information about the locations of the repository for spent nuclear fuel, and the schedule and EIA procedure relevant to the repository, in the event that Fennovoima itself organises the final disposal of spent fuel. In addition, Austria requests additional information about the treatment of low and intermediate level waste.

Latvia: In its statement, the Latvian environmental authority, the *Ministry of Environmental Protection and Regional Development of the Republic of Latvia*, reports that the Latvian radiation safety authority does not see any significant need to intervene in the plans to build Fennovoima's nuclear power station.

In order to improve nuclear safety and in view of cross-border impacts, the statement proposes information exchanges between the countries in the event of potential emergencies and nuclear disasters.

The Ministry requests information from Fennovoima about the progress of the construction work and the launching of productive operation, as well as about the integration of monitoring systems and other important factors that concern the development and use of the monitoring system. In addition, the company is asked to present the radiation doses to which Latvian citizens would be exposed in case of a serious reactor accidents.

Norway: The *Ministry of Climate and Environment*, which is the environmental authority, passes on the statements of the Norwegian radiation safety authority Statens strålevern and the association Tekna – Teknisk-naturvitenskaplig forening . The Ministry notes that it has no comments to make or anything to add to the statement of the Norwegian radiation safety authority. In its statement, the radiation safety authority

Statens Strålevern notes that an accident could have impacts on Norway in the form of restrictions related to food products. However, the authority reports that the country is well prepared for accidents of this type.

Sweden: The Swedish environmental authority, *Naturvårdsverket*, organised a public consultation for preparing its statement and received comments from 20 official organisations and 18 NGOs, and 23 statements or opinions from private individuals or groups. The majority of the statements issued by authorities drew attention to the need for research and monitoring. Several authorities urge the company to carry out thorough risk analyses.

Questions were posed by the Swedish radiation safety authority, *Strålsäkerhetsmyndigheten SSM*, including whether the best usable technology has been applied, and the authority stresses the importance of making sure that funding is in place for nuclear waste management before the plant is commissioned. Municipalities in the affected area object to the nuclear power project to variable degrees. A handful of NGOs take a positive view of the project and the environmental impact assessment. Others point out shortcomings in the EIA process and oppose to the project. All private individuals who submitted statements are against the project.

SSM notes that the environmental impacts of waste processing cannot be assessed as the repository for spent fuel and decommissioning of the plant are not included in the EIA report and will be addressed at a later stage. SSM finds financial preparedness for managing radioactive releases crucial, and also clarifying the plans for final disposal before the plant is commissioned. SSM also notes that Fennovoima should use a source term greater than that referred to in the EIA report in modelling an accident to obtain more comprehensive information about the impacts. In the EIA report, only direct radiation doses and life-time doses are taken into account in the impacts of a nuclear accident. In the interest of protection and risk mitigation, effective doses over a year should also be given.

The Swedish meteorological institute, *Sveriges meteorologiska och hydrologiska institut SMHI*, notes in its statement that important clarifying information concerning the grounds for the results and conclusions presented is missing in the report, and in addition, not all environmental impacts caused by a serious accident extending to Sweden had been addressed. The SMHI considers that an environmental impact assessment should be carried out for plant demolition and the final disposal repository of nuclear waste before permits can be granted for the planned activities. The SMHI also points out shortcomings in the radioactive substance diffusion modelling, examination of the zero option and mitigating the impacts of fuel manufacture.

Länsstyrelsen i Norrbottens län pays attention in its statement to inadequate information provided about environmental impacts in the EIA report and the fact that some of the feedback previously received on the EIA programme had not been dealt with extensively enough. The requested information is regarded as having major significance to the province in terms of making preparedness plans. Data on fallout in different accident scenarios should be examined more closely, and they

should be assessed e.g. by means of calculations, in various weather conditions and in relation to impacts on Norrbotten. The actors in the province must be able to assess impacts on foodstuffs, reindeer husbandry, livestock, drinking water supply, land use etc.

Länsstyrelsen i Uppsala län announces that it has nothing to add to the statement it submitted on the previous EIA report in 2008.

Luleå kommun and the environmental committee that drew up its statement note that they do not have the requisite expertise to evaluate the project. Building a nuclear power station in the vicinity of Luleå gives rise to concern over a potential accident and the subsequent impacts, and the statement thus voices a preference for less dangerous and more renewable forms of electricity production to be built in the vicinity of Luleå.

In its statement, *Skellefteå kommun* notes that the Swedish authorities should oppose to the construction of a nuclear power station in the vicinity of Skellefteå. The statement refers to the impacts of releases caused by the Chernobyl accident in Northern Sweden and considers that the impacts of a nuclear power station to be constructed in the vicinity of the region could be even more serious in case of an accident. The statement also points out that the question of final disposal of nuclear waste has not yet been resolved.

Sveriges kärntekniska sällskap considers that the EIA report is highly detailed and gives a good picture of the nuclear power station's environmental impacts. However, the association found the report inadequate for assessing the quality of the conclusions and presumptions made in it. The statement also notes that the plant's design data will be processed as further permits for the power station are applied for to the Finnish Radiation and Nuclear Safety Authority.

Regarding exportation of electricity, the statement stresses the possibilities offered by the new reactor of replacing fossil fuel fired thermal power plants abroad, and the building of additional nuclear capacity is seen as having positive impacts on the environment. The statement believes that nuclear power will free up the production of hydro power for use as regulating energy and for exportation to the European markets.

Regarding the zero option, the report should have described the impacts on electricity consumption in more detail. The new reactor will have an impact on the Nordic electricity market, as low marginal cost energy will enter the market. The role of nuclear power in the Nordic electricity market should have been stressed more.

Kärnkraftsfritt Bottenviken communicated its statements to the Ministry of Employment and the Economy in a public event organised in Luleå on 17 March 2014, and at a later date, the group submitted a more extensive and detailed statement to the Ministry. In its statement, *Kärnkraftsfritt Bottenviken* announces that they are concerned over the potential major negative impacts of the project on the living environment both in Finland and in Sweden and wish to appeal to the general public and politicians in Finland as well as Fennovoima in order change the course of development.

The group brings up the location of Swedish towns and municipalities in the vicinity of Pyhäjoki site and is concerned over radioactive substances, their processing and their long-term storage, as well as over potential radioactive releases carried by air or water in case of an accident.

Of the other environmental impacts, the group brings up concerns over the building of infrastructure, including roads, a harbour area and shipping lanes, and the changes caused by the cooling water in the unique marine environment, the coast and the archipelago in all parts of the Gulf of Bothnia.

Up till now, the local councils of six municipalities have opposed to nuclear power in the setting of the Gulf of Bothnia. In Skellefteå, the majority of the parties in the local council are opposed to nuclear power. These municipalities have over 172,000 residents in total.

As an alternative, the group recommends replacing nuclear power by exploitation of renewable energy forms and the possibilities of saving energy in order to mitigate climate change and the phenomena associated with it.

The opinions of private individuals received from Sweden generally expressed a negative opinion about nuclear power and shared a concern over the impacts of a nuclear power station to be built near them. Regarding the impacts, strong negative views or uncertainty about the operating period and long-term impacts were often mentioned, as well as the impacts of a potential accident on the environment and livelihoods in the northern region and the area's image.

Several statements and opinions expressed doubtful views of Rosatom as the plant supplier and Russia. Some of those who submitted statements and opinions also felt that the zero option had been inadequately discussed, and the majority recommended that nuclear power be replaced by renewable energy sources, in particular wind power.

Germany: The Ministry of Employment and the Economy received statements from three states and directly from German citizens.

Ministerium für Energiewende, Landwirtschaft, Umwelt und Ländliche Räume des Landes Schleswig-Holstein suggests in its statement that each new nuclear power plant increases the possibility of a serious reactor accident, and thus the area of the state could also be affected by radiation damage. The state also brings up problems associated with the repository of spent nuclear waste and the challenges associated with the new reactor type.

Ministerium für Inneres und Sport Mecklenburg-Vorpommern suggests in its statement that the method of assessing the source term of a serious reactor accident employed by Finland is not realistic, as the reactor core activity inventory may result in a much larger release, in which case the state of Mecklenburg-Vorpommern may also be exposed to serious cross-border environmental impacts.

Ministerium für Wirtschaft, Klimaschutz, Energie und Landesplanung Rheinland-Pfalz suggests in its statement that nuclear power represents uncontrollable high-risk technology and that the negative experiences of Fukushima accident warrant a rapid decommissioning of nuclear power.

Several private individuals mention that Fennovoima's nuclear power plant would not stand up to a collision by a large airliner. The source term used in the report was also considered small. While *Niedersachsen* announced that it would take part in the process under the Espoo Convention, it did not submit its response to the EIA report by the deadline.

Estonia: The *Ministry of the Environment* acknowledges the invitation to participate in the consultation and reports that it received two statements from the Environmental Board and Health Board. The Ministry passes on the statements received and notes the following as its own position: The EIA report is detailed and the potential cross-border impacts affecting Estonia were appropriately dealt with.

The EIA report includes a diffusion model of a radioactive release in case of a potential accident, and the radiation dose outside Finland is considered insignificant. The statement also wishes to bring up the question of drinking water produced for large Estonian cities (Tallinn and Narva) from surface waters, which is why Estonia must prepare for securing its water supply in case of an accident.

Of the other countries that took part in the EIA procedure and received a request for statements, Denmark and Russia had not submitted their comments by the time this statement was published.

Other comments and opinions

This section contains a summary of questions and views that were brought up or highlighted in other comments and opinions received from Finnish stakeholders. In total, 38 other comments and opinions were submitted. Comments or opinions were submitted by 6 Finnish associations or organisations and 32 private individuals or groups of individuals.

Environmental authorities in the Town of Raase, Pyhäjoki municipality and Siikajoki municipality: The environmental authorities find it crucial that the environmental impacts of a project of such high significance to the environment are established thoroughly before the project is launched. The processes associated with the project must be as transparent as possible, and an active dialogue on it must be possible, also after the EIA phase.

The local environmental authorities deplore the fact that in the planned project, operating time radioactive releases are greater than those produced by the plant type presented earlier. The report does not clearly indicate the reasons for these larger releases, and it would be especially important to establish the technical and financial possibilities of mitigating the impacts to reach at least the same level as in releases from the reactor type discussed earlier. The authorities find it important that adequate action compensating for the negative environmental impacts and

restrictions to using the area are undertaken in the vicinity of the project site.

According to the authorities, the discussion of the final repository for nuclear waste was not sufficiently concrete, and they would like to know how an adequate capacity and safety of facilities used for interim storage of nuclear waste can be ensured before a decision on the final disposal repository has been made and the facilities completed.

The Nuclear Network of Meri-Lappi: In its statement, the Network considers that the environmental report for the project is within the remit of the Ministry of the Environment and wonders how the principle of good governance is realised when the Ministry of Employment and the Economy acts as the contact authority in this case.

The Nuclear Network also notes that changes have taken place in the ownership of the plant, announces that the ownership diagram presented in the EIA report is outdated, and considers that the shares of Finnish shareholders cannot be established based on the information in the diagram.

The discussion of the zero option is considered short, and the Network feels it contains arguments based on beliefs rather than facts; on this basis, the corporate social responsibility of the consultants having prepared the report is seen as questionable.

Private individual H.K.: The opinion submitted notes that the EIA report is in part deficient and does not clearly indicate the negative impacts of the project on the area of Hanhikivi. Based on the report, it can be concluded that Hanhikivi is completely inappropriate for a site of industrial activities. The justifications for the project are seen as having lost momentum as industrial enterprises have pulled out and as the share of foreign ownership may exceed 34%. Of the justifications is highlighted aspects related to increasing self-sufficiency in electricity and improving national security of supply. The opinion also notes that the overall impacts of the project remain unclear and the assessment of their significance is inadequate as the environmental impacts of various elements are assessed separately.

Private individual A.M.: The opinion suggests that the nuclear power plant project is not viable and that the risks it poses to the environment and the residents in the Bay of Bothnia area are unreasonable considering the potential benefits. The financial viability of the project is questioned on the basis of the lower predictions of electricity consumption and the surplus capacity expected to arise in the Nordic market. In other words, no domestic need is seen for Fennovoima's project based on electricity consumption or price projections. The opinion also brings up individual negative environmental or financial impacts of the project and views related to radioactive releases and nuclear waste.

Private individual K.M.: The opinion states that the report does not pay attention to the gradual integration of the European energy market and the associated problems arising from an ownership structure based on the Mankala principle. The opinion also doubts the economic viability of electricity production now and especially in the future, and presumes

that impacts on the regional economy will be directed to countries with lower cost levels and, along with Rosatom, to Russia. Finally, the opinion brings up the problems of final disposal of nuclear waste and Fennovoima's lack of experience in this respect.

Private individual V.M.: The opinion questions the validity of reducing dependence on Russia as a justification for the project and focuses attention on the changed ownership base. In other respects, the statement brings up such aspects as potential changes in the regional economy, compulsory purchases, shortcomings experienced by residents in the residents' survey, problems with acquiring fuel and other inadequacies in the EIA report.

Almost all statements or opinions received from private individuals are opposed to nuclear power in general and the construction of additional nuclear power in Pyhäjoki. In many statements, as the reasons for this opposition were given negative impacts on the environment and residents in the area surrounding the plant site on Hanhikivi headland. In particular, the project was seen as having impacts on the flora and fauna in the area and the utilisation of the area for other purposes. The statements also drew attention to the questions of the processing and final disposal of nuclear waste and suggested that nuclear power be replaced by alternative forms of renewable energy.

The statements also criticised the project's justifications from the perspectives of changes in the plant's ownership, energy independence and regional economy. Changes in energy consumption predictions and the international energy environment were also brought up, and the financial profitability of the project was questioned.

4 Statement of the contact authority

The Ministry of Employment and the Economy's statement is based on the requirements laid down in the EIA Act and Decree (EIAA Section 1, EIAAD Sections 9 and 10), the contact authority's statement on the EIA programme (13 December 2013) and the statements and other comments requested concerning the EIA report.

The contact authority is obliged to express its opinion on the adequacy of the EIA report, for which reason the discussion of statements received above primarily highlights the comments and criticism expressed in the statements concerning the adequacy of the EIA report. Furthermore, the contact authority's statement weighs the comments on and criticism against the report and the adequacy of the report in the light of the requirements laid down in the EIA Act. All statement documents can be accessed at the Ministry's website.

4.1 General points

The current EIA report draws on the EIA report from 2008 as well as subsequent studies and reports. Such studies as cooling water modelling, noise modelling, serious reactor accident modelling and a residents' survey were also completed for the environmental impact assessment. If

implemented, the nuclear power plant project will have major and far-reaching significance for society, which makes its environmental impact assessment a key procedure preceding decision-making, and the assessment must thus be appropriate in all respects. The minimum requirements for the contents of an EIA report are provided in the EIA Act, the EIA programme of the project in question, and the statement issued by the contact authority on the programme.

The following is the Ministry's statement on the adequacy of the EIA report. A number of requests for additional information addressed to the organisation responsible for the project and a schedule for submitting this information to the Ministry are also presented.

The Ministry points out that on 4 March 2014, Fennovoima Ltd submitted an application for a decision complementing the existing Decision-In-Principle. The application documents include information that to some extent contains replies to the questions with respect to which the Ministry requires clarification in this contact authority's statement. Nevertheless, all additional information required in this statement shall be explicitly presented in a construction licence application according to the guidelines provided by the Ministry herein.

In the Ministry's opinion, as stated by many of the organisations that gave statements, the EIA report is an independent document and an expert report on the assessed environmental impacts of Fennovoima Ltd's project. In relation to the scope of the project and its complex impacts, the report gives a good overall view of the impacts.

4.2 The project and the discussion of project options in the EIA report

Information on the project and project options, including not implementing the project, the purpose of the project alongside with all other key general information about project implementation included in Chapter 1 of this statement are described to a sufficient extent in the EIA report. In the Ministry of Employment and the Economy's view, the description meets the requirements of EIA legislation.

Some of those who submitted statements express their discontent with the examination of the so-called zero option (non-implementation of the project). The parties issuing statements felt that electricity production from renewable energy forms should have been examined as the zero option. Similarly, the fact that the project's implementation criteria were tied to the need to produce electricity was criticised.

The Ministry maintains that considering its contact authority's statement on the EIA programme and the fact that Fennovoima Ltd's plan is restricted to implementing the nuclear power plant project only, the EIA report examines the zero option and resulting impacts sufficiently. The justifications for the implementation of the actual project are linked to the examination of the zero option. In the Ministry's view, the justifications provided by the organisation responsible for the project for the need for electricity production as stated in the EIA report are acceptable. The justifications for implementing the project and society's overall interests will

be examined separately as the application for a complementary decision is processed.

4.3 Land use

The land use needs of the new nuclear power unit are discussed in the EIA report.

The plans related to the plant site in Hanhikivi, Pyhäjoki are legally valid at all three levels (regional land use plan, local master plan and local detailed plan).

Regarding land ownership, which is crucial for the project, a compulsory purchase procedure is under way in some of the areas.

The Ministry of Employment and the Economy finds the report on land use needs and the project's impacts sufficient in terms of decision-making at this stage.

4.4 Nuclear waste management, sourcing of nuclear fuel and the final disposal repository

The Ministry of Employment and the Economy is of the opinion that the general review of the environmental impacts of the entire fuel supply chain and the company's opportunities to influence this chain, drawn up by the organisation responsible for the project, is adequate in this phase of the project. The Ministry notes that certain statements and opinions expressed concern over the use of recycled fuel.

The Ministry also considers that the description of nuclear waste management is consistent with the current situation. Fennovoima is making progress with drawing up more specific plans for nuclear waste management as required in the criteria for the construction licence application and the permit conditions in the Decision-In-Principle of 2010.

4.5 Assessments of radiation impacts and nuclear safety

The Radiation and Nuclear Safety Authority finds in its statement that 'the EIA report covers key issues related to the Authority's remit at this stage of the project'.

4.6 Cooling and waste waters

The Ministry takes the view that the impact of cooling waters is the most significant environmental impact during normal use of the nuclear power plant. Indeed, the statements pay a lot of attention to the assessment of environmental impacts resulting from the thermal load caused by cooling waters. The Ministry also notes that compared to what was suggested in the EIA report from 2008, the environmental impacts will be reduced as the highest thermal power of the plant will be lower than that of the plant option examined in 2008, and the environmental impact studies so far

completed allow the further planning of methods by which negative environmental impacts can be limited.

4.7 Flora, fauna and natural values

The statements received from environmental authorities bring up impacts that the project would have on the flora, fauna and natural values of the area. The Ministry of the Environment states that many of these impacts will require continuous monitoring, and the Centre for Economic Development, Transport and the Environment requires further studies of the project's impact on migratory fish and seal behaviour.

The Ministry of Employment and the Economy requires that additional studies be completed of the following subjects: occurrence of invasive alien species, aquatic vegetation, migratory routes of fish species, migratory behaviour of seals and impacts on fisheries. These studies should be completed early enough to be taken into consideration in the construction licence application, see section 4.12.1.

4.8 Social and financial environmental impacts

According to the EIA Act, an environmental impact assessment should also cover the social and financial impacts of the project. On the basis of the statements received, the Ministry concludes that, as reviewed on the basis of the EIA Act and the contact authority's statement on the EIA programme, the social and financial environmental impacts presented in the EIA report have been assessed to a sufficient extent at this stage of the project.

4.9 Other environmental impacts discussed in the EIA report

As the contact authority, the Ministry of Employment and the Economy has verified the project's environmental impacts assessed in the EIA report other than the ones described above during the project's construction and operating period. These verifications were based on the EIA legislation and the contact authority's statement on the project's EIA programme. In addition, the Ministry has taken into account the comments presented in the statements received.

Some of the criticism in the statements is directed at aspects concerning the acceptability of the project, which will be addressed when the application for a decision complementing the Decision-In-Principle is processed. Such criticism is partly targeted at impact assessments handled in other EIA procedures (e.g. power lines), or at the licensing stage (e.g. environmental permit). The EIA process, and the partial overlap of the EIA and Decision-In-Principle processes, have also been criticised.

Considering the statements of expert authorities on topics within their administrative branches, the EIA Act and the statement on the project's EIA programme, and also the fact that no decisions on the project are made during the EIA procedure, the Ministry of Employment and the Economy states that no additional information will be required at this

stage of the project on aspects other than the environmental impact assessments dealt with in sections 4.1 - 4.8 of this statement.

4.10 Interaction and participation arrangements in the EIA process

Local citizens' groups and private persons brought up individual reasons to criticise these procedures. The key one of these is criticism levelled at the arrangements for distributing the residents' survey. Due to the low response rate of the survey, its reliability was also questioned.

A consultation concerning the actual EIA report by means of statements plays a key role in the participation arrangements. Based on the so-called Espoo Convention, the Ministry of the Environment has for its part also provided other states with an opportunity of participating. This international consultation and participation of nations is discussed elsewhere in this statement.

The EIA report adequately describes the interaction and participation arrangements. The Ministry finds that the description and actual interaction procedures and participation arrangements meet the requirements of the EIA Act.

4.11 Prevention and mitigation of negative environmental impacts

The EIA report describes the project and its assessed environmental impacts, the possibilities for mitigating those impacts, and also the key contents of the monitoring programme.

Due to the nature of the project (radiation and nuclear safety requirements), the risk of health impacts caused by radiation will be minimised and monitoring ensured pursuant to the relevant regulations at the licensing and implementation stage of the project.

The project's most significant environmental impact during normal operation will be the thermal load caused by condensation waters, the intake of cooling water and the multiple consequences of these.

The Ministry of Employment and the Economy finds that the EIA report describes the methods for mitigating adverse environmental impacts and the impact monitoring programme sufficiently, and the contents of the description are acceptable and sufficient at this stage of the project.

4.12 Summary and adequacy of the EIA report

4.12.1 Environmental impact assessments and their adequacy

The Ministry of Employment and the Economy notes that, due to the nature of the project, the EIA report on Fennovoima Ltd's nuclear power plant project is extensive. Its contents meet the requirements of the EIA legislation, and the contact authority's statement on the EIA programme had been taken into account in the report.

In the Ministry's view, the EIA report is acceptable in the application process for a decision complementing the Decision-In-Principle on the project as a document that describes the project's environmental impacts, and the possibilities of mitigating them, to a sufficient extent.

At any later decision-making stages of the project, such as the processing of the construction licence referred to in the Nuclear Energy Act and the consideration of construction and environmental permits, aspects highlighted in the current EIA process will also come up for closer scrutiny by various authorities.

In most statements, the EIA report was considered appropriate and comprehensive. However, such stakeholders as the Ministry of the Environment and the Centre for Economic Development, Transport and the Environment suggested that the EIA report had shortcomings regarding assessments related to marine environment and fisheries. The Ministry of Employment and the Economy requires Fennovoima to complete the additional studies and reports listed below so that they can be taken into consideration in the construction licence application that must be submitted to the Government by 30 June 2015. At that time, the Ministry can proceed to an assessment of the overall environmental impacts referred to in Section 13 of the EIA Act and record it in the possible construction licence.

Required additional studies

On the basis of the statements issued by the aforementioned parties in particular, as well as of the remaining statements, the Ministry of Employment and the Economy requires that studies and reports be attached to the construction licence application for the project, including the following assessments:

1. An assessment of the impacts that warm cooling water has on the success of invasive alien species and their reproduction in the sea area of Pyhäjoki.
2. A more accurate study of the operating period impacts of the power station, taking into account the Marine Strategy prepared for the area and the associated monitoring programme to be completed in 2014. Operating period impacts on sea bottoms dominated by submerged plants and the occurrence of endangered stonewort meadows should also be specified.
3. More specific information on the project's impacts on the routes of migratory fish species and their access to their spawning rivers in the light of existing information.
4. The project's impacts on annual migratory behaviour of seals and their stay in the area.
5. More specific information about impacts on fisheries caused by the intake of cooling water and discharge of warm cooling water.

Responses to comments and questions received from other countries

On the basis of the Espoo Convention, Austria, Sweden, Norway, Germany, Estonia, Latvia and Poland participated in an international consultation on the EIA report through their statements. The questions and comments included in the statements of these countries mostly pertain to the project's radiation and nuclear safety (serious reactor accidents), acceptability of the project and its justifications, and other such aspects that will be handled later in connection with the application for a decision complementing the Decision-In-Principle on the project.

Austria and Latvia posed questions related to the environment impact assessment to Finland.

The Ministry of Employment and the Economy requires that Fennovoima Ltd submit responses to the questions contained in the statements issued by these countries in English in compliance with the requirements of the Espoo Convention. The responses must be submitted to the Ministry by 31 October 2014. The Ministry will forward these responses to the Ministry of the Environment, which is responsible for the international consultation.

4.12.2 Summary

The Ministry of Employment and the Economy has examined the EIA report with regard to the requirements laid down in the EIA Act and Decree. The Ministry notes that the EIA report adequately describes the project's environmental impacts and the possibilities of mitigating them. This contact authority's statement concludes the assessment process referred to in the EIA Act.

4.12.3 Communication about the statement

The Ministry of Employment and the Economy will deliver the statement on the EIA report to those authorities that have submitted comments. The statement can also be accessed online at www.tem.fi. All statements and opinions received by the Ministry can also be accessed online. The original documents will be kept on file in the Ministry's archives.

Jan Vapaavuori
Minister of Economic Affairs

Jorma Aurela
Chief Engineer

COPY TO: Authorities having submitted comments