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#### Reference

The environmental impact assessment programme arrived at the contact authority on 25 March 2013

## **Statement of the contact authority on the environmental impact assessment programme for the Nord Stream extension project**

### **1. PROJECT INFORMATION AND EIA PROCEDURE**

Nord Stream AG delivered the environmental impact assessment programme for the Nord Stream extension project to the Centre for Economic Development, Transport and the Environment for Uusimaa (ELY Centre) on 25 March 2013. The purpose of the Nord Stream extension project is to build a maximum of two natural gas pipelines from a landfall in Russia through Finnish, Swedish and Danish waters to a landfall in Germany. Within the Finnish Exclusive Economic Zone (EEZ), the route follows the existing Nord Stream Pipelines 1 and 2. The overall length of the planned pipelines is 1,250 km, and their length in the Finnish Exclusive Economic Zone is 370 km.

#### **Assessment programme and assessment report**

The assessment programme is a plan made by the developer on the reports needed to assess the environmental impacts and on how the assessment procedure will be arranged.

The developer draws up an assessment programme as well as an assessment report based on the statement given on the programme by the contact authority.

#### **The developer and the contact authority**

The developer is Nord Stream AG, where the contact persons for the project are Tiina Salonen and Simon Bonnell. The assessment programme has been drawn up as a consulting assignment by Ramboll, where the contact persons are Tore Granskog and Heikki Surakka.

Invoice to the developer €19,000. Bases of payment are attached to the statement.

The ELY Centre for Uusimaa acts as the contact authority for this project in accordance with the Act on Environmental Impact Assessment Procedure. The representative of the contact authority is Päivi Blinnikka (Act on Centres for Economic Development, Transport and the Environment, section 3, sub-section 1, paragraph 10, and the Government Decree on Centres for Economic Development, Transport and the Environment, section 2, sub-section 1, paragraph 3 and section 3, sub-section 1, paragraph 1).

**Project description**

Nord Stream AG plans to construct a maximum of two new natural gas transmission pipelines from a landfall in Russia through the Finnish, Swedish and Danish Exclusive Economic Zones (EEZs) in the Baltic Sea to a landfall in Germany. The route of the natural gas pipelines in the Finnish EEZ follows the route of the existing Nord Stream pipelines 1 and 2. The overall length of the planned pipelines from Russia to Germany is 1,250 km, and the length of the route within the Finnish EEZ is 370 km.

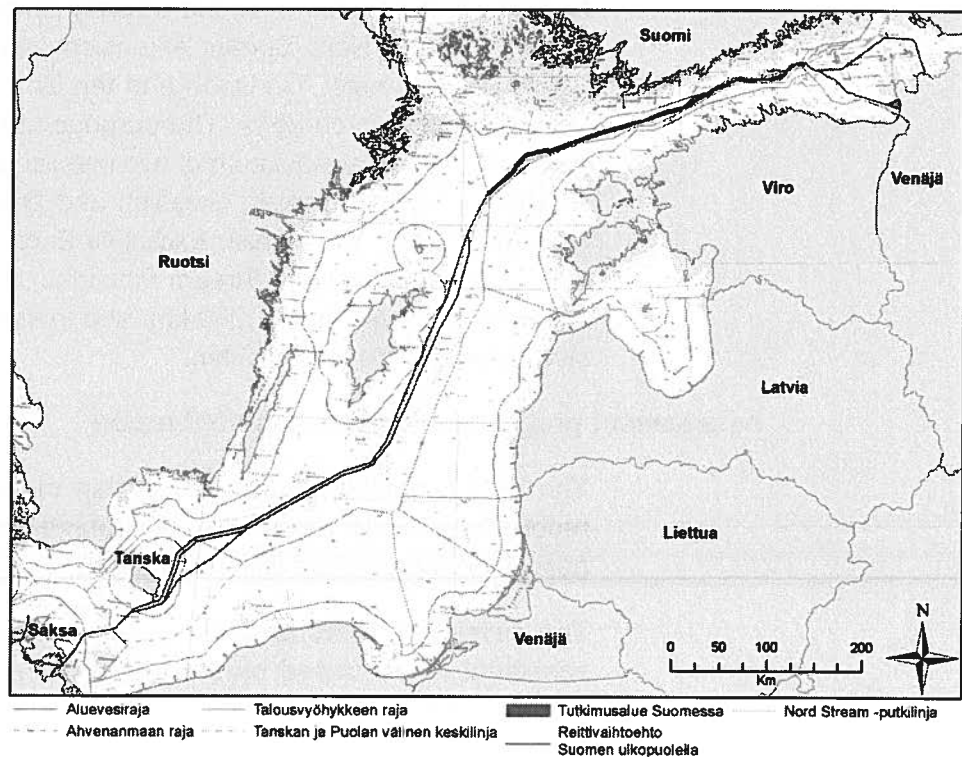


Image: Possible routes and landfalls of the pipelines in the Nord Stream extension project

The project includes the activities during the construction and usage phases of the pipelines, as well as related activities and the decommissioning of the pipelines.

Activities during the construction phase in the Finnish EEZ:

- munitions clearance
- placement of rock material
- transport of rock material from a Finnish port, possibly Kotka, to the location of the rock placement
- installation of structures at the crossings with existing cables
- pipe supply vessel traffic from ports, possibly Kotka and Hanko, to the pipe lay vessel
- laying pipe for two pipelines using a dynamically positioned and anchored pipe lay vessel
- possibly making underwater connections of sections of pipe
- preparations for commissioning
- commissioning

Activities during the usage phase in the Finnish EEZ:

- use and maintenance of the pipelines for a period of 50 years

Decommissioning the pipelines in the Finnish EEZ:

- a programme on decommissioning will be drawn up when the pipelines approach the end of their planned or economic service life

Related activities in Finland and in the Finnish EEZ:

- transporting the pipes by sea from the concrete coating plant, possibly in Kotka, to the potential storage area in Hanko
- transporting rock material from a quarry or quarries potentially located in Finland to a temporary storage area at a Finnish port, possibly the port of Kotka
- temporary storage of rock material at the port

There are other activities related to the project that are proposed in the EIA programme to be left outside the EIA procedure. These include:

- a concrete coating plant, possibly in Kotka, its storage areas and ports
- transport of material to the concrete coating plant
- transport of material from the storage areas to the ports
- manufacturing and transport of raw materials

## **Project background**

In 2012, Nord Stream AG conducted a feasibility study on the possible extension of the Nord Stream project, and based on the study, the extension project was found feasible. Several main route alternatives were evaluated in the feasibility study, such as a route passing through the Estonian and Latvian EEZs. The government of Estonia decided in December 2012 not to grant Nord Stream AG a permit to start conducting

research in the Estonian EEZ; therefore, the route alternative passing through the Estonian and Latvian EEZs cannot be taken into account in further planning.

Nord Stream pipelines 1 and 2 were constructed during 2010–2012. According to Nord Stream AG, the construction of the first two pipelines has shown that the underwater transport of natural gas across the Baltic Sea is a sustainable solution from a technical, economic and environmental point of view.

The share of natural gas in the primary energy consumption of the EU member states is one quarter. By 2035, the share of natural gas in the primary energy consumption of the EU is expected to increase from 25 per cent to 30 per cent. The goal is to offer a stable delivery of natural gas from Russia to Europe with the current Nord Stream pipelines 1 and 2 as well as the two planned new pipelines.

Russia has large reserves of natural gas. 44,600 billion cubic metres or approximately 21 per cent of the known easily exploitable gas reserves in the world are located in Russia.

### **Alternatives to the project**

#### **ALT 0: Non-implementation**

The natural gas pipeline between Russia and Germany will not be implemented via the Baltic Sea. No actions related to the implementation of the project, including the clearing of munitions, preparing the seabed, and construction and use of the pipeline will be taken, and therefore no impact on the environment will occur because of the project.

#### **ALT 1: Project alternative within the Finnish EEZ**

Alternative 1 is located in the Finnish EEZ in its entirety, ranging from the Russian border to the border of the Swedish EEZ. The length of the section located in the Finnish EEZ is 370 km and its width is 1.6–4.7 km.

The northern border of the ALT 1 pipeline corridor is located 1.6–4.7 km to the north of the Nord Stream pipeline 1, and its southern border is the Nord Stream pipeline 1 from the border of Finland and Russia to the south of Hanko.

The northern border of the ALT 1 pipeline corridor is 2.8–8 km to the north of the Nord Stream pipeline, and its southern border is the Nord Stream pipeline 1 and a maximum of 4.1 km to the north of Nord Stream pipeline 1 from the south of Hanko to the border of Finland and Sweden.

#### **ALT 1a: Sub-alternative to the south of Porkkala**

The length of ALT 1a is 21 km and its width is 2 km. It is located to the south of Porkkala, and follows the northern border of the Traffic Separation Scheme directed towards the west at the front of Porkkala lighthouse.

The assessment of the environmental impact of ALT 1a is based on the feasibility study of the Nord Stream extension project from 2012. In the feasibility study, ALT 1 and the sub-alternative ALT 1a were found to have advantages and disadvantages that differed from each other, which is why a closer comparison of these alternatives in the EIA procedure is needed.

In the feasibility study, the following was found to be an advantage of sub-alternative ALT 1a compared to alternative ALT 1:

- There is less existing infrastructure in the area of ALT 1a, and it offers a technically more suitable angle for the crossings of the pipelines and existing cables.
- During construction, ALT 1a impedes ship traffic less than ALT 1. ALT 1a passes through the vicinity of the northern border of the area of the Traffic Separation Scheme, so the ship traffic to the west can pass the pipeline lay vessels from the south via the channel to the west.
- It is likely that a large number of mines still remain on the sea bed in front of Porkkala. Clearance of some of the mines may be necessary. Mine clearance in the northern part of the area of the Traffic Separation Scheme is likely to cause less inconvenience to ship traffic, and the risks of clearance to existing infrastructure are likely to be smaller.

In the feasibility study, the following was found to be a disadvantage of sub-alternative ALT 1a compared to alternative ALT 1:

- From the point of view of future use of the Finnish EEZ, the sub-alternative ALT 1a is more likely to limit the areas where emergency anchoring will be possible in the future. If the planned pipelines are built in the corridor according to ALT 1, the future impact on emergency anchoring will be smaller.

The EIA report will contain an assessment of the impacts of alternative ALT 1 and sub-alternative ALT 1a and their comparison.

There are two possible types of pipe lay vessel that can be used in the Finnish EEZ. Two pipe lay vessels will be assessed in the EIA procedure:

- an anchored lay vessel that needs anchor handling vessels to manoeuvre the anchors required to position it, and

- a dynamically positioned lay vessel that does not need an anchor during the pipe laying process, because it maintains position with the help of thrusters.

Due to environmental limitations or technical reasons, other sub-alternatives can be taken into account during the basic planning of the project. These potential new sub-alternatives may require permits for additional research, which will be included in the assessment.

As the project planning progresses, other alternative technical solutions will also be assessed, such as the methods used for handling and clearing munitions.

### **Need for an EIA procedure for the project**

The need for an EIA procedure for the project is determined in accordance with section 4a and sub-section 1 of section 4 of the Act on the Environmental Impact Assessment Procedure (EIA Act 468/1994, with amendments). In accordance with section 4a, the EIA Act is applied to the Finnish Exclusive Economic Zone (EEZ). In accordance with sub-section 1 of section 4, the project's EIA need is determined by the paragraph 8 b of the project list in section 6 of the Government Decree on the Environmental Impact Assessment Procedure, gas pipelines with a diameter of more than DN 800 millimetres and length of over 40 km.

### **Connections with other projects**

Based on current information, there are 18 power and communication cables altogether that cross the survey area in the Finnish EEZ in the survey area of the Nord Stream expansion project, of which 12 are active cables in use, 5 are not in use and 1 is planned. The active, decommissioned and planned cables crossing the area and their routes are known. In addition, there are cables going in the same direction as the planned pipelines in the survey area, the routes of which are known.

Nord Stream pipelines 1 and 2 pass from Russian territorial waters via the Finnish EEZ to the Swedish EEZ. Pipeline 1 passes along the southern border of the survey area for the pipelines currently being planned. No crossings with the existing and planned pipelines have been planned in the Finnish EEZ, but the existing pipelines will cross the planned pipeline corridors in the Russian territorial waters near the border of the Finnish EEZ.

The gas pipeline connection planned between Finland and Estonia, Balticconnector, crosses with the survey area of the Nord Stream extension project and the planned pipeline route.

An underwater communication cable between Finland and Germany is being planned; its route is not known at this stage.

### **Connections with other plans**

The strategies and plans that concern the Finnish sea areas, territorial waters and the EEZ may have effects on the Nord Stream extension project. These include the Marine Strategy according to Marine Strategy Directive, the maritime transport strategy and maritime spatial planning.

### **Combining the assessment procedure with other procedures in accordance with legislation**

Implementing the Nord Stream extension project in the Finnish EEZ requires a building permit in accordance with the Water Act for clearance of munitions and the construction, use, maintenance and repairs of the pipeline, as well as the approval of the Finnish government in accordance with the Act on the Finnish Exclusive Economic Zone. Because the EIA procedure is applied to the project, the conclusion of the EIA procedure is a requirement for granting the permits.

The developer was granted a permit for conducting surveys in the Finnish EEZ for the Nord Stream extension project by the Finnish government on 4 April 2013, and the survey permit will be valid until the end of 2014. The compatibility of the survey area and the area impacted by the pipeline presented in the EIA procedure has been examined.

The information exchange in accordance with the Convention on Environmental Impact Assessment in a Transboundary Context of the United Nations Economic Commission for Europe, a.k.a. the Espoo Convention (SopS 67/1997), has been linked to the assessment procedure.

In addition, Finland and Estonia have a bilateral agreement on environmental impact assessment in a transboundary context (SopS 51/2002), in which the principles of application of the Espoo Convention have been specified.

## **2. COMMUNICATION AND HEARINGS ON THE ASSESSMENT PROGRAMME**

The assessment programme has been published in the following newspapers, with the assessment plan on the impact of the project as supplementary material: Helsingin Sanomat, Hufvudstadsbladet, Turun Sanomat, Åbo Underrättelser, Kymen Sanomat, Borgåbladet, Uusimaa, Länsi-Uusimaa and Västra Nyland.

The assessment programme and the report concerning the international section have been displayed from 8 April 2013 to 6 June 2013 in the coastal municipalities of the Gulf of Finland and the municipalities in the southern parts of the Archipelago Sea as follows:

- City of Espoo, Environment Centre, Kirkkojärventie 6, Espoo

- The municipality of Föglö, Municipal office, Tingsvägen 3, Föglö
- Town of Hamina, Customer Service, Puistokatu 2, Hamina
- Town of Hanko, Tekninen ja ympäristövirasto (Technical and Environmental Office), 2nd floor, Santalantie 2, Hanko
- City of Helsinki, City Hall, Administration Centre, Pohjoisesplanadi 11–13, Helsinki
- The municipality of Ingå, Municipal hall, Ola Westman allé 3, Ingå
- City of Kaarina, Yhteispalvelupiste (Common service point), Lautakunnankatu 4, Kaarina
- The Municipality of Kemiönsaari, Kunnankeskus (Municipal centre), Malmitie 2, Kemiö
- The Municipality of Kirkkonummi, Service Point, Ervastintie 2, Kirkkonummi
- City of Kotka, City Hall, registry, Kustaankatu 2, Kotka
- The Municipality of Kökar, Municipal office, Karlby, Kökar
- The Municipality of Lemland, Municipal office, Kommunrundan 7, Lemland
- City of Loviisa, Raatihuone, Mannerheiminkatu 4, Loviisa
- Town of Mariehamn, Mariehamn Town Library, Strandgatan 29, Mariehamn
- Town of Naantali, Town Hall, service point, Käsityöläiskatu 2, Naantali
- Town of Pargas, Town Hall, Strandvägen 28, Pargas
- City of Porvoo, Ympäristönsuojelutoimisto (Environmental Protection Office), Piispankatu 38, Porvoo
- The Municipality of Pyhtää, Municipal office, Siltakyläntie 175, Siltakylä
- Town of Raseborg, Virastotalo, reception, Ystadsgatan 3, Ekenäs
- City of Salo, Ympäristönsuojelutoimisto (Environmental Protection Office), Tehdaskatu 1, Salo
- The Municipality of Sauvo, Municipal office, Vahtistentie 5, Sauvo
- The Municipality of Sipoo, Kuntala, Iso Kylätie 18, Sipoo
- The Municipality of Siuntio, Municipal Hall, Puistopolku 1, Siuntio
- City of Turku, Central Administration registry, Puolalankatu 5, Turku
- The Municipality of Virolahti, Municipal office, Opintie 4, Virolahti

On the Internet, the notice has been displayed at the address [www.nord-stream.com/extension](http://www.nord-stream.com/extension) and [www.ymparisto.fi/uus](http://www.ymparisto.fi/uus) > Ympäristövaikutusten arviointi YVA ja SOVA > Vireillä olevat hankkeet (in Finnish).

Presentations of the project and the assessment programme to the public were arranged as follows:

- Helsinki: Tuesday 16 April 2013 at 6 p.m., Marina Congress Center, address: Katajanokanlaituri 6, Helsinki
- Turku: Wednesday 17 April at 6 p.m., Forum Marinum, address: Linnankatu 72, Turku



- Hanko: Thursday 18 April at 6 p.m., City Hall, address: Vuorikatu 1, Hanko
- Kotka: Monday 22 April at 6 p.m., Höyrypanimo, address: Metsontie 41, Kotka
- Mariehamn: Wednesday 24 April at 6 p.m., Hotel Arkipelag, address: Strandgatan 35, Mariehamn.

Records of the presentations have been published on the Internet at the address [www.ymparisto.fi/uus](http://www.ymparisto.fi/uus) > Ympäristövaikutusten arviointi YVA ja SOVA > Vireillä olevat hankkeet (in Finnish).

Two separate presentation and discussion events for the authorities were organised when the assessment programme was on display; the first was held on Tuesday 16 April 2013 in Helsinki at the Marina Congress Center and the second on Wednesday 22 May 2013 in Helsinki at the ELY Centre for Uusimaa.

The Convention on Environmental Impact Assessment in a Transboundary Context of the United Nations' Economic Commission for Europe, a.k.a. the Espoo Convention (SopS 67/1997), is applied to the Nord Stream extension project. Based on this, the Finnish people also have an opportunity to present their opinions on the environmental impact of the whole project on Finland. Other citizens, communities and authorities in the Baltic Sea area have similarly been able to present their opinions on the EIA programme concerning the parts where the Finnish section of the project affects other countries.

The Ministry of the Environment transmits the information related to the international hearing to the affected parties in accordance with the Espoo Convention, and the statements from the feedback from Finland and other countries in the Baltic Sea area are transmitted to the ELY Centre of Uusimaa that acts as the contact authority.

### **3. SUMMARY OF THE STATEMENTS AND OPINIONS PRESENTED**

Opinions of the public and statements of the ministries, expert institutes, authorities and coastal municipalities of the Gulf of Finland as well as the municipalities in the southern parts of the Archipelago Sea that are central to the project were requested concerning the Nord Stream extension project's assessment programme.

Short summaries of the opinions and statements can be found below. More detailed summaries of the opinions and statements can be found as appendices to this statement. All opinions and statements that have arrived at the ELY Centre for Uusimaa, with the exception of information related to private persons, have been published as is on the Internet at the address [www.ymparisto.fi/uus](http://www.ymparisto.fi/uus) > Ympäristövaikutusten arviointi YVA ja SOVA > Vireillä olevat hankkeet (in Finnish).

### **Summary of the opinions**

By 6 June 2013, a total of five opinions from private persons and associations arrived at the ELY Centre for Uusimaa. The opinions presented views on e.g. the activities occurring on land related to the project such as quarrying and handling rock material and their negative impact, and it was proposed that existing reserves of rock from the land should be utilised, in which case the negative impact of quarrying and handling rock material would diminish.

In addition, the increased negative impacts on commercial fishermen caused by the widening of the pipeline corridor were brought up, and it was proposed that the further planning of the project should include co-operation with parties representing commercial fishermen.

It was also noted that the concrete coating plant and the assessment of its impact should be included in the EIA procedure.

### **Summary of the statements by municipalities**

By 6 June 2013, a total of 12 statements from municipalities arrived at the ELY Centre for Uusimaa. In the statements by municipalities, the Natura 2000 areas of Sandkallan and the outer archipelago of Porvoo were taken into account, and it was proposed that an assessment should be made on the impacts of the pipeline project on the Natura 2000 areas nearby.

The project may have an impact on areas available for emergency anchoring. The statements included reminders that the current guidelines for ship traffic require that there must be emergency anchoring areas in the Finnish EEZ, and that the limitations on emergency anchoring during the use of the pipelines must be marked on nautical charts.

The Baltic Sea is a heavy traffic area. The statements by municipalities contained requests to evaluate the impacts of the project on ship traffic during the construction of the pipelines in particular. Investigating the impacts of the planned pipelines on new fairways in co-operation with the Finnish Transport Agency was considered important.

In addition, the statements by municipalities noted that the seabed under the pipelines must be examined carefully for e.g. contaminants, munitions and wrecks. The heating effect of the pipeline during use was also brought up, and it was requested that the assessment report should describe how the heating effect of the pipelines that have already been constructed has been monitored and what kind of impacts have been observed. It was also proposed that the impact of the underwater noise

caused by the project both during construction and on a permanent basis thereafter should be investigated.

The EU Marine Strategy Framework Directive creates an obligation to apply an approach based on the ecosystem in order to control human activity in maritime areas. In Finland, the directive and strategy are implemented via national Marine Strategy with programme of measures. In the statements by municipalities, it was proposed that the goals of the Marine Strategy Framework Directive and its national Marine Strategy should be taken into account in the further planning of the project.

The statement of one municipality stated that the project should not be implemented. Among other things, the reasons given for the non-implementation of the project included that the project did not support sustainable development and would increase the consumption of fossil natural resources at the expense of renewable sources of energy.

### **Summary of the statements by authorities**

By 6 June 2013, 18 statements from other authorities, including Regional Councils, arrived at the ELY Centre for Uusimaa.

In the statements by authorities, it was considered important to take the sensitivity and vulnerability of the Baltic Sea into account in the project, as well as the requirements of maritime and environmental safety and the precautionary principle, and that all existing environmental agreements, programmes and policies as well as ones under preparation should be taken into account in planning the project. The HELCOM convention, recommendations and the HELCOM's Baltic Sea Action Plan have not been taken into account in the EIA programme.

The statements noted that the impacts of the project should be evaluated for a period of at least 50 years, and that organising the monitoring of the project should also be planned during the EIA procedure.

Of the species under special consideration, the statements by authorities brought up Baltic ringed seals, grey seals and common seals. The impact on their breeding grounds and resting places should be minimised.

The seal reserve of Sandkallan-Stora Kölhällen is the most important of the two seal reserves in the Gulf of Finland, and the statements by authorities propose that an assessment in accordance with the Nature Conservation Act should be conducted on the Natura 2000 areas in the vicinity of the project. The construction phase of the pipelines should be scheduled outside the ice-cover period of the year in consideration of the protection of seals. Alternative pipeline routes should be considered, if necessary.

The impacts on ship traffic and on traffic safety in particular have been taken into account in the statements by authorities, as well as the noise and other harmful effects of the transport of rock and other raw materials. A more precise evaluation of the amount of rock material needed during the EIA procedure is also requested.

Underwater noise and pressure waves will be caused by the construction, laying the pipeline and the possible detonation of munitions. Underwater noise has been found to cause serious harm to marine mammals and fish. The level of underwater noise must not be such that it would have a negative impact on the marine environment.

Other issues noted in the statements by authorities include e.g. taking the underwater cultural heritage and scientific sampling sites into account in the project planning, avoiding littering, the heating effects of the pipes in use, the issues to be considered in the bottom sediment spill modelling, measuring the dioxin levels of fish, and the effects of the project from the point of view of the general welfare of fishery.

### **Responses to the notice in accordance with the Espoo Convention**

Latvia, Poland, Sweden, Germany, Denmark, Estonia and Russia have stated to the Ministry of the Environment by 28 June 2013 that they will participate in the assessment of the project's environmental impact. The other countries, with the exception of Russia, have also presented their views on the assessment of the project's environmental impact.

The international statements have proposed, among other things, the examination of several route alternatives and a more comprehensive alternative 0, as well as the assessment of the environmental impact over the whole life cycle of the project, including the decommissioning of the pipelines.

The statements of Poland and Estonia proposed that the spread of the contaminants in the bottom sediments should be assessed through modelling and by taking the special characteristics of the environment into account. The statements of Sweden and Poland, among others, raised the issue of the impact of the project on maritime transport. The statements of Latvia and Sweden proposed that the impacts of the project on the other projects in the Baltic Sea as well as fish and fishery should be investigated. In its statement, Germany stated that the area where the pipeline is laid must be examined in case of munitions using methods suitable for discovering potentially dangerous objects, and that the alternatives for handling any munitions found must be described thoroughly.

Many statements expressed a concern that the Baltic Sea is a particularly sensitive environment for the planned project.

An appendix to this statement contains a summary of the international statements, and this has also been published on the Internet at the address [www.ymparisto.fi/uus](http://www.ymparisto.fi/uus) > Ympäristövaikutusten arviointi YVA ja SOVA > Vireillä olevat hankkeet (in Finnish).

#### **4. STATEMENT OF THE CONTACT AUTHORITY**

The Nord Stream extension project extends to the territories and territorial waters of Russia and Germany as well as the Finnish, Swedish and Danish EEZs.

The environmental impact assessment programme drawn up on the project covers the content requirements of section 9 of the Government Decree on the Environmental Impact Assessment Procedure, and the assessment programme has been handled in the manner required by the EIA legislation.

In addition to the assessment programme, the following issues must be taken into account in the assessment of environmental impact and the related reports as well as the environmental impact assessment report.

The Baltic Sea and the Gulf of Finland in particular are sensitive and have unique natural conditions. From the point of view of environmental effects, the pipelines as a whole must be planned so that they do not have a significant impact on the structure and functioning of the marine ecosystem.

The pipelines are planned to have a service life of 50 years at minimum. The environmental impacts of the project must be assessed for a period of 50 years at minimum; the impacts of decommissioning the pipelines must also be assessed during the project planning phase.

##### **Project description**

The background, purpose and description of the project are presented clearly.

In addition to what has been proposed in the EIA programme, the project's land use requirement must be presented in the assessment report, i.e. how large an area the planned and existing pipelines require on the sea bottom.

The activities related to the construction phase of the project, including the methods of clearing munitions and their effects, pipe laying, the installation equipment required and the possible boundary conditions related to the installation of the pipelines, e.g. the requirements posed by the ice cover and sea disturbance, must be described in detail.

For dumping rock material on the sea bottom and the concrete support mattresses of the crossing structures, the extent, size and placement on the sea bottom of the dumping areas and structures as well as the area

they require on the sea bottom must be stated. The type of rock material used must also be described.

### **The Finnish Exclusive Economic Zone as the planning area**

The Finnish Exclusive Economic Zone (EEZ) is not part of the territory of the state of Finland; the zone is in international waters, where the United Nations Convention on the Law of the Sea (SopS 49-50/1996) defines the rights of Finland and other states. On its exclusive economic zone, Finland has jurisdiction in accordance with the Convention on the Law of the Sea.

Provisions on rights related to the exclusive economic zone of a coastal state are laid down in the Finnish Act on the Exclusive Economic Zone (1058/2004). The government can, upon application, grant its approval for conducting research with the goal of exploiting the sea bottom or performing other activities with the purpose of economic exploitation of the zone in the exclusive economic zone.

Both coastal and land-locked states enjoy the freedoms of navigation and overflight and of the laying of submarine cables and pipelines, and all other internationally lawful uses of the sea in the exclusive economic zones.

In its exclusive economic zone, a coastal state has the sovereign right to explore and exploit, conserve and manage the natural resources, whether living or non-living, of the waters above the seabed and of the seabed itself as well as its subsoil, and to other activities with the purpose of economic exploitation and exploration of the zone.

The assessment report must describe the starting points, the legislation concerning the exclusive economic zone, as well as the international agreements and the competent authorities for the planning and implementation of the project in this case when the planning area is the Finnish Exclusive Economic Zone.

### **Permits and approvals needed by the project**

In order to implement the project, two government approvals given at different stages as well as the permit in accordance with the Water Act (587/2011) are required. The government's conditional approval for the Nord Stream extension project for research activities with the goal of economic exploitation of the Finnish Exclusive Economic Zone (EEZ) was granted on 4 April 2013. The approval is valid until 31 December 2014.

The research permit with the goal of economic exploitation of the EEZ requires the building permit necessary for the actual economic exploitation or the construction, use, maintenance and repair of pipelines, which will be processed after the presentation of the Ministry of the Employment and the Economy at the government. In addition, an application

must be made at the Regional State Administrative Agency for an action permit for the pipelines in accordance with the Water Act.

The assessment report must state what issues these applications must contain. A possible connection of a Natura assessment to the permit processes in accordance with section 65 of the Nature Conservation Act must also be stated.

The conditions given in connection with the government approval for the research must be taken into account in the EIA procedure and the related studies and reports.

The approval has emphasised environmental aspects and taking the precautionary principle into account in the project, as well as the aspects that concern the other uses of the EEZ. The conditions of the approval require that the project takes the sensitivity and vulnerability of the Baltic Sea as well as the requirements of maritime and environmental safety into account.

The other existing projects and their rights must be taken into account in the planning and implementation of the project, and the general precautionary principle must be followed.

The Ministry of Employment and the Economy is the competent authority regarding research and construction in the Finnish EEZ. For its part, the Regional State Administrative Agency is the competent authority regarding the action permit in accordance with the Water Act.

The permits needed by the project can only be granted after the national and international EIA procedure in accordance with the Espoo Convention has been concluded.

### **Strategies, programmes and plans that concern the project and the project area**

In the environmental impact assessment of the Nord Stream extension project, all laws, decrees, agreements, strategies and policies that concern the project or the project area must be taken into account.

Marine policies, strategies and plans have been taken into account in the assessment programme. The Marine Strategy Directive and its National marine Strategy with the indicators of a good status and functional goals presented therein have been described comprehensively. Similarly, the EU Commission's proposal for a directive establishing a framework for maritime spatial planning and integrated coastal management has been taken into account.

The assessment report must also describe how the strategic goals of the marine resources management plan are taken into account in the planning, implementation and use of the project.

The Finnish action plan to implement the HELCOM Baltic Sea Action Plan (BSAP) must also become one of the starting points of the impact assessment. In this action plan, the goals concerning the biodiversity of the Baltic Sea and the protection of different species are particularly important with regard to the gas pipelines.

Based on the Act on Water Resources and Marine Environment Management and the Decree on Marine Environment Management, eleven qualitative indicators are used to define the good status of the marine environment. The new qualitative issues to take into account are underwater noise and littering.

In Table 7.1 of the EIA programme, there is a general overview of the impact targets of the project and the estimated impacts based on current knowledge. Marine policies, strategies and plans are the first impact target in the table. The marine usage and protection policies, strategies and plans should affect the project planning so that the project as a whole is planned to adjust to these socially approved goals.

It is proposed in the assessment report that the starting points of the planning and implementation as well as the other socially made agreements, programmes, plans and policies should be handled as a whole of its own. In addition, the details and wholes in these programme documents that have an effect on the planning and implementation of this project must be taken into account.

### **The project's connections to other projects**

The other existing and planned projects in the Finnish EEZ and their rights must be taken into account in all activities, and the general precautionary principle must be followed in the project. The construction and use of the pipelines must be planned and implemented so that it will not prevent current or future projects for the scientific research or economic exploitation of the Finnish EEZ, and that the negative impacts on these other projects are as small as possible. This point of view must also be taken into account when making the decision on the final route of the pipelines.

Some of the monitoring points important to scientific heritage are located on the route of the planned pipeline or in its immediate vicinity. The developer must specify the exact routes of the pipelines together with representatives of HELCOM, the Finnish Environment Institute (SYKE) and the Finnish Meteorological Institute so that there are no detrimental effects to scientific research or as few such effects as possible.

The planned pipelines cross a planned gas pipeline connection between Finland and Estonia, the Balticconnector. On 30 May 2013, the Finnish government gave its conditional approval for research with the goal of economic exploitation of the Finnish EEZ to Gasum Oy for studies made for the placement of the Balticconnector natural gas pipeline. In



the government's conditional approval, the same environmental aspects and aspects related to the other uses of the EEZ have been emphasised as in the approval granted to the Nord Stream extension project.

The crossings of the Nord Stream extension project and the Balticconnector pipelines must be planned and implemented in co-operation with the developers of the pipeline projects as far as possible, and at minimum in such a way that the crossings do not cause unreasonable harm to the other party.

The decommissioned, active and planned power and communications cables that cross the planned pipelines have been listed in the assessment programme. Crossings and the crossing structures must be agreed upon in co-operation with the owners of the cables well in advance of the implementation of the project.

The exact route of the communication cable planned between Finland and Germany is not yet known, but the intention is to start its construction in 2014.

### **Ship traffic in the Gulf of Finland**

Because the Gulf of Finland is a busy area for ship traffic, particular attention must be paid to the impact on ship traffic and on safety during the construction and use of the pipeline in particular. The assessment must be based on risk mapping and experiences on the construction and use of the two previous pipelines.

Conducting a reliable impact assessment requires the use of up-to-date nautical charts and information on traffic.

GOFREP (Gulf of Finland Reporting System), a mandatory reporting and routing system, is in use in the Gulf of Finland. The impact of the pipeline construction project on the GOFREP system must be investigated. The vessels' opportunities for following compulsory routes during the construction and use of the project must be assessed in particular. If vessels must deviate from the mandatory routes, the impact on traffic safety must be assessed. Special arrangements in vessel traffic may require the approval of the International Maritime Organization (IMO).

The permanent traffic arrangements created with the GOFREP system in the Gulf of Finland as well as the national Vessel Traffic Service are a central factor in increasing the predictability and safety of vessel traffic.

In the installation and marking of gas pipelines, the guidelines of the Finnish Transport Agency on installing and marking cables, overhead cables and other lines (Register No. 6155/040/2010, in Finnish) must be followed.

The developer must deliver the coordinate information of the pipeline routes to the Finnish Transport Agency, so that the project can be

marked on nautical charts labelled under construction for the information of other people on the water. After the installation of the pipelines, the developer must deliver a notification and a map showing the location of the pipeline with location information to the unit responsible for sea routes ('Meriväylät') and the Hydrographic Office of the Finnish Transport Agency.

The vessels used in the research and implementation of the project must follow the rules of the road at sea and they must be in constant contact with the Finnish and Estonian traffic control centres. Constant co-operation is a significant factor in reducing risks.

### **Options to be examined**

In the assessment programme, a proposal is made to examine the Nord Stream extension project's main route alternative with two pipelines of 370 kilometres in length (ALT 1) and the alternative pipeline route of 21 kilometres in length to the south of Porkkala (ALT 1a), as well as the non-implementation of the project (ALT 0).

The route alternatives of the pipelines only differ from each other on the map by a small amount, but their environmental impacts may be significantly different. In the assessment report, reasons should be given for why these alternatives have been taken under review, what other route alternatives may have been studied already before the EIA procedure, and why the other alternatives have been dropped.

There is a shoal area to the south-east of Kalbådagrund lighthouse that delimits the area of the Traffic Separation Scheme. The Finnish Transport Agency has a preliminary plan for dredging the shoal area; for this reason, the gas pipeline route must be drawn at a distance of at least 500 metres from the shoal area.

The route passing to the south of Nord Stream pipelines 1 and 2 within the Finnish EEZ has not been presented in the EIA programme to be examined as one of the alternatives. If this route alternative has been studied preliminarily before the EIA procedure, the assessment report must contain grounds for dropping this route alternative. If the route alternative passing to the south of Nord Stream pipelines 1 and 2 has not been previously examined, the possibilities for this route, and if necessary, its impact, must also be examined during the EIA procedure.

The emergence of new alternatives and sub-alternatives during the EIA procedure may be a positive thing with regard to the impact. If it proves to be necessary to assess new route alternatives or route deviations in the Finnish EEZ, their impacts must be assessed in the same way or on the same level as the alternatives presented at the moment.

All the project alternatives and their positive and negative impacts will be compared in the assessment report. The comparison must be analytical and understandable.

### **Environmental impact assessment**

In the EIA programme of the Nord Stream extension project, the starting point for the planning of the assessment of the project's impact is section 2 of the EIA Act. The most significant environmental impacts of the project are caused by the actions related to the construction of the pipelines, in addition to which the project may have an impact during use. The most important potential impact targets of the project have been identified in the EIA programme.

The following specifications must be taken into account during the assessment of the environmental impacts of the project.

#### **Fish and fishery**

Out of all fishers registered in Finland, there are a little over 2000 commercial fishers at sea. Commercial fishing is practised in the Gulf of Finland and the northern parts of the Baltic Sea, both in coastal waters and in the open sea. Open sea fishing includes trawling and longline fishing.

The impacts on fishing are caused by the safety zones during the construction of the pipelines, to which no third party vessels have access, and the possible changes to trawling depth for fishing boats at the clear spans of the pipelines.

Because the project has probable impacts on the fishing trade, it is recommended that co-operation and discussion events should be organised with commercial fishermen and organisations representing commercial fishermen.

Analysis of fish in the Baltic Sea for dioxins was carried out the last time in 2009. The possible impacts of Nord Stream pipelines 1 and 2 on the dioxin levels in fish can be discovered by measuring the current dioxin levels in fish. This would also make it possible to assess the impact of the construction of the planned pipelines on the dioxin levels in fish.

#### **Sea bottom**

The placement of rock material on the sea bottom and pipe laying are likely to have an impact on the bottom sediments and their dispersion.

The impacts of the project on the seabed are assessed with the help of the experiences from pipelines 1 and 2, expert statements, and mathematical modelling. Even though the environmental impact of the construction phase of the first pipelines on the sea bottom was mainly found to be minor, it is important to investigate the starting point of the extension project and the impacts of the construction phase with new

samples in a sufficiently comprehensive manner. Particular attention should be paid to the concentrations of contaminants and the possible spreading of contaminants.

In addition to the analysis solids in the bottom sediment, background information must be investigated, and the type of bottom sediment, the grain size of the material of the seabed, as well as the amount of nutrients and the concentration of organic matter in the bottom sediment must be described. The background information is needed for the interpretation of the measurement results of contaminants and nutrients. Results that have not been normalised must also be examined in the assessment report.

### **Hydrology and water quality**

In addition to the chemical, biological and physical factors related to water quality, the impact on the ecological state of the sea must also be assessed.

The impact of the project on hydrology and water quality will be examined based on mathematical modelling and expert opinions. For the mathematical model, attention must be paid to gaining sufficiently accurate results with it.

The results of water samples must be compared to the valid EQS values developed in connection with the Water Framework Directive when available; otherwise, PNEC values should be used.

If this should become necessary on the basis of an examination of the model and expert opinions, the impact on phytoplankton must be included in the examination.

### **Heating effect of the gas pipelines**

It is estimated that the heating effect of the gas pipelines on the sea water will be local and focused mainly on the start of the pipeline. Investigating the issue and measuring the heating effect of existing pipelines is recommended. Even if the effect of the existing pipelines is minor, it is possible that the heating effect of the new pipelines combined with the heating effect of the existing pipelines may raise the combined effect of the gas pipelines to a level that must be taken into account.

### **Underwater noise**

Based on the Act on Water Resources and Marine Environment Management and the Decree on Marine Environment Management, the impacts of the project to be examined also include underwater noise and littering. The level of underwater noise must not be such that it would have a negative impact on the marine environment. Underwater noise has been taken into account in the EIA programme, but its measurement and assessment method must be specified. The noise during the

construction and use of the pipelines must be assessed in accordance with the following decrees and limit values:

- the European Commission decision on criteria and methodological standards on good environmental status of marine waters (2010/477/EU) and
- the Government Decree on the Marine Resources Management Plan for Finland (first part).

If it is estimated that the limit values will be exceeded during the construction and use of the pipelines, methods for decreasing the impact must be presented. Special attention to underwater noise must be paid in the vicinity of Natura 2000 areas and seal reserves in particular.

### **Munitions**

In order to decrease the negative impact of the clearing of munitions on the environment in addition to what has been proposed in the EIA programme, the possibilities of driving away the seals and aquatic birds in the area to be cleared should be investigated.

### **Biodiversity**

The impact of the project on the biodiversity in the marine ecosystem must be assessed.

### **Nature Conservation Areas**

The planned route of the pipeline passes approximately six metres from the Natura 2000 area of Sandkallan. The impact of the pipeline construction on the Natura 2000 area of Sandkallan must be assessed.

### **Marine mammals**

The impact on the Sandkallan-Stora Kölhällén seal reserve during the construction and use of the pipeline must be investigated. The area is the most important seal reserve in the eastern Gulf of Finland. The construction of pipelines must be implemented so that the negative impact on seals is as small as possible. This means for example that construction ceases in the autumn when the ice cover forms, and it will be continued in mid-June at the earliest, when the breeding and moulting seasons of the seals are over.

The Baltic ringed seal has been classified as endangered throughout the whole Baltic Sea area, and the population of Baltic ringed seals in the Gulf of Finland consists of a few hundred individuals at most. Baltic ringed seals exhibit site fidelity, which is why disturbances at their breeding grounds and resting places threaten the whole population of Baltic ringed seals in the Gulf of Finland. The impacts of constructing the pipeline on the population of Baltic ringed seals in the Gulf of Finland must be investigated.

### **Underwater cultural heritage**

The Antiquities Act is not applied to the Finnish EEZ, but taking the underwater cultural heritage into account in the planning and construction of pipelines is recommended. There are many underwater cultural heritage sites in the Baltic Sea that have historical and military historical interest and are part of the international cultural heritage; the wrecks of warships are property controlled by the ship states.

The EIA programme proposes that the cultural heritage sites on the planned pipeline are identified and the pipeline should be diverted around any wrecks discovered. This is a sufficient plan for the project's impact on underwater cultural heritage and minimising it.

### **Littering**

Activities occurring on land and in particular on sea must be planned and implemented so that littering is avoided. For this purpose, the amount of by-products and waste produced during the construction and use of the pipeline must be estimated and their recycling and disposal must be planned.

### **Decommissioning the gas pipelines**

The plan is to use the pipelines for 50 years at minimum, but their use may be continued after this, if it proves possible based on monitoring. The alternatives for the decommissioning of pipelines, i.e. leaving the pipelines on the bottom of the sea or raising them out of the water, and the impacts of these alternatives should be presented on a general level in the assessment report. The decommissioning of the pipelines and their environmental impacts should be planned in detail at the end stage of their service life.

## **Related activities**

In the EIA programme of the Nord Stream extension project, it is proposed that in addition to the project's own activities, the project's EIA procedure should include

- ship transport of the pipes from the concrete coating plant to the storage area,
- transport of rock material from quarries to the port and
- storage of rock material at the port.

Transport of the pipes and rock material and the temporary storage of rock material must be included in the assessment procedure as presented in the EIA programme.

### **Transport of rock material**

The traffic impacts caused by the project on land are limited to the Kotka area and they are caused by the transport of rock material to the port of Kotka, where the rock material is stored and loaded to be transported to the installation location of the gas pipelines. An estimate of the amount of rock material needed, the most likely transport routes, the amounts transported and the duration of transports must be presented in the assessment report with the greatest precision possible at this stage.

Residential areas and the Kymenlaakso Central Hospital are situated on the rock material transport route. In 2012, a survey was conducted on the negative environmental impacts caused by the port activities and industrial areas in Kotka. The respondents considered the greatest negative impact to be the noise caused by the road traffic during the day.

The impacts of traffic must be assessed through noise modelling as proposed in the EIA programme. The assessment must take into account all other targets of the disturbance in addition to residential areas, such as day care centres, schools and hospitals.

The transport of rock material to the port of Kotka by rail has not been studied in the EIA programme. It is recommended that the possibility of rail transport should be assessed.

### **Concrete coating plant**

The EIA programme proposes that the concrete coating plant for the pipes and its storage area should be left outside the EIA procedure. The location of the concrete coating plant is not known at this stage of the project, and it is possible that Nord Stream AG will subcontract the coating of the pipes based on a call for tender.

The Southeast Finland Regional Environment Centre made a decision on 29 September 2008 that, as a separate project, the assessment procedure in accordance with the EIA Act will not be applied to the concrete coating plant in Kotka. With a letter dated 14 June 2013, the ELY Centre for Southeast Finland has confirmed that the matter has been settled by the aforementioned decision in this respect.

The concrete coating plant is connected to the construction of the pipelines, which is why the impact of the plant and its storage areas should be studied in the project's EIA procedure. Because there is no certainty of the operator and the location of the concrete coating plant at this stage, the impacts of the activity can be assessed during this EIA procedure on a general level, and by using the concrete coating plant with its storage areas located in Kotka and operated for Nord Stream pipelines 1 and 2 as an example.

## **Monitoring**

The monitoring plan of the environmental impact during the construction and use of the Nord Stream extension project will be attached as a part of the EIA report. The plan will be updated in two stages; first when the permit application in accordance with the Water Act is prepared and later based on the conditions of the permit.

The goal of the monitoring is to follow the impact of the project on the state of the environment, how well the methods used in the assessment and the results gained from them correspond to reality, and how successful the mitigation measures have been against negative impacts.

The plan on organising the monitoring proposed in the EIA programme is sufficient at this stage.

## **Participation and reporting**

During the time the assessment programme was on display, five public meetings and two events for the authorities were organised, and in addition, the developer organised a discussion event for the authorities already before the EIA programme had been completed.

When the assessment report is still pending, the intention is also to organise five public meetings and separate presentation and discussion events for the authorities.

As a part of the impact assessment, a residents survey and a separate survey targeted at fishermen will be conducted. Because the project is likely to have an impact on the fishing trade, it is recommended that in addition to the survey, co-operation and discussion events should be organised with organisations representing commercial fishers.

The EIA programme has a clear structure and a concise outline. The map material attached to the programme is illustrative. The project website at the address [www.nord-stream.com/extension](http://www.nord-stream.com/extension) is also illustrative and of high quality.

The Finnish name of foreign locations should be used in the EIA reports in Finnish, if the location has a Finnish name.

## **International EIA procedure**

International procedure is applied to this EIA procedure in accordance with sections 14, 15 and 22 of the EIA Act. In the assessment procedure and when drawing up the assessment report, the agreements on the EIA procedure made in the Espoo Convention (Convention on Envi-



ronmental Impact Assessment in a Transboundary Context) and the bilateral agreement between Finland and Estonia must be taken into account.

The Ministry of the Environment is responsible for the communication and negotiation duties related to the Espoo Convention.

## 5. COMMUNICATING THE STATEMENT

The statement of the contact authority will be sent for information to those who have offered an opinion, as well as to the municipalities and to those authorities who have presented their own statements on the project's EIA programme. The statement of the contact authority is available on the Internet at the address [www.ymparisto.fi/uus](http://www.ymparisto.fi/uus) > Ympäristövaikutusten arviointi YVA ja SOVA > Vireillä olevat hankkeet (in Finnish).

Copies of the opinions and statements received on the EIA programme have been sent to the developer. The original documents are kept at the ELY Centre for Uusimaa.

Deputy Director

Eija Lehtonen

Senior Officer

Päivi Blinnikka

## APPENDICES

Can be found in the [www.ymparisto.fi/uus](http://www.ymparisto.fi/uus) > ympäristövaikutustenarviointi YVA ja SOVA > vireillä olevat hankkeet

- 1) Summary of the opinions
- 2) Summary of the statements by municipalities
- 3) Summary of the statements by authorities
- 4) Summary of the international statements

## INFORMATION

Ministry of the Environment

The Finnish Environment Institute SYKE (statement + 2 pcs assessment programmes)

Parties that have provided an opinion

Parties that have provided a statement