

GEOLOGICAL SURVEY OF FINLAND

STATEMENT

ESPOO

24 January 2007

E/951/42/2006

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P.O. Box 36
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Reference: The Russia-Germany undersea natural gas pipeline in Finland's exclusive economic zone – the environmental impact assessment programme

STATEMENT ON THE ENVIRONMENTAL IMPACT ASSESSMENT PROGRAMME

General

The natural gas pipeline of the company Nord Stream from Russia to Germany is a significant infrastructure project which when implemented will have a large impact on energy services in Central Europe. The forecast reduction in the overall pollution load in Europe by replacing more harmful energy sources such as coal with natural gas is also significant.

The construction of the undersea natural gas pipeline will have a significant impact on the maritime environment, and the construction should be carried out using technology that places the least strain on the environment. The seafloor of the Gulf of Finland in Finland's exclusive economic zone presents great challenges for construction projects. Presumably, large-scale earthwork will be required which places a strain on the environment of the planned corridor of the pipeline during the construction stage. The installation of the pipeline and its protective structures will change the seafloor to such an extent that, at least in places, sea currents close the bottom will be altered. The change in the currents will change the erosion/sedimentation conditions of the seafloor, at least locally, which will have a permanent impact on the environment. In addition, the change in the erosion/sedimentation conditions may eventually cause geotechnic instabilities for the pipeline or its protective structures.

Comments on the environmental impact assessment programme

Including its appendices, the report of the company Nord Stream is quite long, but still partly inadequate. The data on the seafloor that are referred to are dealt with in a few sentences without tables or maps. With respect to e.g. hazardous substances, there

are references to high concentrations of heavy metals and PCBs, but no results of analyses are presented. The geological structure of the seafloor is accurately described as having a steep topography in places, and qualitatively alternating, being made up of some areas with a bottom of hard rock and tills and other areas with a bottom composed of soft clay soil. But the report on the programme contains no images of examples.

The assessment programme notes that the work to alter the seafloor will have an impact on the environment by e.g. spreading sediment from the construction corridor of the pipeline into the environment up to a distance of 1,000 metres. Marine geological studies indicate, however, that the most fine-grained material is spread by sea currents to a much wider area. The finest particles which spread to the largest area contain proportionately the largest amounts of hazardous substances.

In the Gulf of Finland, work to alter the seafloor will have to be carried out along a large part of the length of the pipeline, e.g. quarrying/removal of ridges, building of transition wedges or the ploughing of the soft seafloor to allow the installation of the pipeline. All of these tasks produce large amounts of fine-grained material that will be spread by the sea currents. The programme report presents no plans for the dumping of material possibly produced in the removal of ridges.

The abovementioned deficiencies in the report should be corrected to produce a satisfactory account of the conditions of the seafloor of the Gulf of Finland so that the environmental impact could be assessed. For this reason, it would be a good idea to study the general geology of the seafloor more, and the concentrations of hazardous substances in the sediments along of pipeline corridor. There should be studies and modeling of the effects of sea currents close to the bottom on the conditions of erosion/sedimentation before and after the construction of the pipeline.

There are a few known gas eruption holes in the Baltic Sea and Gulf of Finland with a diameter in excess of one metre. These largest of these eruption holes have a diameter of several hundred metres. The gas eruption areas and related bed rock crush zones should be studied in the area of the gas pipeline for the sake of pipeline safety.

The preliminary studies should take into account the possible occurrence of sand and gravel formations on the seafloor in the area of effect of the pipeline within Finland's exclusive economic zone. The preliminary studies of the environmental conditions should ensure reliable baseline data for the monitoring of the state of the environment before the installation of the pipeline, during the installation work, and after it is completed.

The geological and geotechnic data related to the EIA programme of the gas pipeline should be stored and freely available in the national databases of the relevant expert organization.

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