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Comments on the supplementary information in accordance with the Convention on Environmental Impact Assessment in a Transboundary Context for the Nord Stream Gas Pipeline

Estonia has received from Sweden the developer's comments on four issues concerning the Nord Stream environmental impact assessment (EIA) process. Unfortunately, the material presented is addressing some issues in rather general terms and does not cover the most critical key questions of the EIA. The materials submitted by Estonia for June 8 containing the relevant questions, most of which have remained unanswered, are appended to this letter. Estonia keeps waiting a well-substantiated and systemic answer to them in the format of a chapter of transboundary impacts (see below).

The Environment Committee of the Parliament of Estonia is discussing the subject concerning Nord Stream on 15th of October, so we are planning to send You the additional opinion after that.

The required format of presenting the information on the transboundary environmental impacts, the most relevant missing parts of the information and the notes on the quality of the EIA information provided so far are presented as follows.

General provisions

The decision-making in the EU Member States concerning the issues of environment and health is a high responsibility. Erroneous decisions may cost human lives and cause extensive health problems.

The health risks of young people related to accumulation of dioxins and methyl mercury closely associated with dioxins in sediments, even in case of moderate doses, have been demonstrated worldwide. For example, in the context of Nord Stream, the Finnish state institution with the highest competence in the field of food safety, EVIRA, has pointed out that the due to the health risks, munition clearance by exploding the mines in their present places should be avoided (cited by the statement of Uusimaa Environmental Centre):

Estonia is of high regard of the Swedish expertise in ecotoxicology, and considers that the Swedish laboratories are able to provide the independent analysis and corroborate the risks related to the toxicants. Estonia suggests that Sweden, during the EU presidency, as a practical consequence of the implementation of the EU strategy of the Baltic Sea, could mobilize an international expert team to evaluate the critical points of the Nord Stream EIA-s and the hypothesis of the environmental safety of the pipeline project in the context of the HELCOM 2021 target to diminish the level of pollution of the Baltic Sea.

The purpose of the Espoo EIA process is transboundary environmental impact assessment, according to the Espoo Convention and the EU EIA directive.

Therefore, the overall recommendation of Estonia that has been clearly expressed in several written documents and during the consultations, is, that **the developer is obliged to present a complete and coherent chapter of transboundary impacts to Estonia, that was missing in the Espoo EIA and in the Finnish EIA. This should include all transboundary impacts to Estonia, emerging from Finnish, Russian, Swedish, Danish and German EEZ-s and their possible cumulative effects.**

For example, the cumulative effects of the toxicants re-mobilized from the sea bed in the Russian EEZ, carried by currents to Finnish EEZ and affecting the Finnish and Estonian fisheries in the western Gulf of Finland. There are no physical borders in the Gulf of Finland and any impact to the eastern Gulf of Finland immediately affects the situation in the Finnish and Estonian waters. Therefore, the responsibility of Finland and Estonia, as the EU Member States, is to prepare for taking the joint steps according to the environmental priorities of the EU Baltic Sea strategy, which are in a good accordance with the HELCOM Baltic Sea Action Plan signed in November 2007.

This chapter should comply with good standards of completeness and quality.

As only a small part of the relevant transboundary questions concerning the Espoo EIA is included to the „Transboundary answers“, all the questions that are not answered as yet in the letter and the expert report of May, 2009, still apply. These documents are also appended and form a part of this statement and should be used as further guidelines in compiling this chapter on trans-boundary impacts to Estonia.

Integrating the information of the Russian EEZ to all relevant discussions on the Gulf of Finland

In point 6.1. (p. 59) of the „Transboundary answers“ it has been stated that „The Espoo Report has been compiled based upon the assessments in the National EIAs and identifies and assesses impacts along the full length of the pipelines.“, and in point 4.4.2. „National environmental and social monitoring programmes of Russia, Finland, Sweden, Denmark and Germany are an integral part of the Nord Stream Environmental and Social Management System and are currently being developed.“

From the above two statements, it can be understood that Estonia and all affected parties are entitled to claim full-scale environmental assessments along the full length of the pipelines, including the Russian EEZ and that the baseline aspects for the monitoring system should be in place.

As the baseline data of seabed geochemistry and results of the studies of contaminants from the depths of 10-50 cm in the Russian EEZ are still not available for the affected parties, Estonia calls the parties of origin, in this case, Finland and Sweden, to ask the necessary data, and in case of refusal, to postpone the project activities until the data will become available.

Because the Gulf of Finland is a united system, it is necessary to include the data from the Russian EEZ to all the matters discussed so far only in the limits of the Finnish EEZ. From the environmental perspective, discussing the part of the gulf in the Finnish EEZ separately leads to distorted results.

Preliminary comments on the materials addressing the four issues of the EIA

As the selection of the subjects is incomplete and the treatment of each subject is incomplete as well, only preliminary comments can be given as regards of the quality of the information presented.

1. Information on the conventional and chemical munitions in the EEZ's of all parties of origin and mercury containers in the EEZ's of Sweden and Denmark

The developer reports three chemical munitions that have been discovered so far and refers to the recommendation of the Admiral Danish Fleet to leave them in the sea bed.

Our question did not concern the ability of Nord Stream to discover some munitions in a limited section of sea bed, but the necessity of the full knowledge on the dumping sites and the exact distribution of the munitions in the area surrounding the pipeline routes, with the exact maps. From various reports, it is evident that in course of fishing, the munitions are continuously re-located in the seabed, and the probability that some of them end up near the pipeline route is high. Nord Stream has recently referred to the Coalition Clean Baltic report indicating that the sediments to the depths of 5-10 cm are relocated 1-4 times a year. It gives a very high probability for the relocation of the munitions. There are other several other aspects treated in various reports, that have not been considered.

2. Missing environmental assessment of potentially higher pressure after abandoning the platform near Gotland

„The risk assessment was revised to take the new project plans into the consideration. The highest safety standards are a primary design objective for Nord Stream. The pipeline is designed for the applicable pressure, as such, there are no changes to the existing environmental impact assessment.“

The sequence of this kind of narrative statements is the main weakness of all the Nord Stream EIAs – the statements are not supported by any evidence or quantitative data.

What is the value of the „applicable pressure“ in different parts of the pipeline? It can be understood that it is different than for the project submitted for the EIA. With higher pressure, the risks of accidents of the pipeline break-up will rise exponentially. If the pipeline design has been changed, its environmental impact has changed. As regards to the initial project, the situation has changed significantly, and, essentially, a new project has been developed. The systemic environmental impact assessment of this new project should be carried out.

3. Questioning of the result of „little or no impact of the existing current patterns due to the presence of the pipelines on the salinity, volume flow and oxygen concentration of new deep water in the Bornholm basin.“

First we would like to note that the comments of the Nord Stream regarding this issue are controversial. For example, in the document „Transboundary answers“ directed to Finnish and Estonian relevant authorities it is stated that “[SMHI – the Swedish Meteorological and Hydrological Institute] is currently updating the background memo” while this memo (SMHI report 2007-61) is characterised as „extensive and sufficiently detailed” in the answer to Swedish authorities.

As the inflow of salt water through Danish Straits into the Baltic Sea has an extremely important role in functioning of the entire Baltic Sea ecosystem, any deviations of this inflow properties from the natural course may have devastating consequences. In particular, the SMHI states that „The Institute does not agree with the conclusion presented to the effect that it has been found that the pipelines will not block the inflow of deep water through the Arkona and Bornholm Basins. The investigation shows that no effect can be identified, but it does not say that it has been established that the pipelines will not affect the inflow” (see Enclosure to Answer from Sweden, 2009-06-08, p. 3). Also, the SMHI has the opinion (which coincides with the opinion of Estonian experts) that increased turbulence around the pipeline may increase the mixing of inflowing saltwater, and this does not reduce the effects of eutrophication in the Baltic Sea.

The main overall problem with the results of modeling in the Nord Stream EIAs indicated by the Estonian experts is that the models have not been validated with the field measurements and are too inaccurate to simulate the complicated current fields. From several relevant questions, only three are addressed and the explanations given are not scientifically acceptable (see separate analysis by Prof. Tarmo Soomere, Academician of the Estonian Academy of Sciences – Annex 1).

As pointed out earlier, **the models used have not been compared to the field data and remain speculative, and therefore, are not usable for making the predictions on sediment transport.** The SMHI also notices that impacts of the pipeline on the ecosystems of the Baltic Sea cannot be excluded as they may result in a cumulative impact over time. The main problem indicated by SMHI and agreed with Estonian experts is that conclusions drawn in the Espoo EIA report „are based on indicative information which, unfortunately, does not rest on a solid factual ground. This is particularly serious considering that the operation of the pipeline system through the Baltic Sea will be of long duration.” (ibid, p. 3). This issue has not been clarified in the answers by Nord Stream.

4. Further information on the geotechnical stability and related risk assessment required.

„The largest earthquake in the Baltic Sea occurred on September, 21, with a magnitude of 4.8“

In the „trans-boundary answers“, the same question is answered as follows:

„The Seismic Design Basis /13/ for the Nord Stream Pipeline is established based on a dedicated Probabilistic Seismic Hazard Assessment performed by D’Appolonia. These documents have been verified by Det Norske Veritas (DNV) /14/. Note: the study includes the recent Kaliningrad earthquake which occurred on September 21, 2004 (Mw = 4.8).

This earthquake is the strongest instrumentally recorded earthquake in the Baltic region (Husebye and Mäntyniemi, 2005).“

This study of D'Appolonia dated November, 2007 and confirmed by Det Norske Veritas appears to be out of date with respect of the Kaliningrad earthquake. Gregersen et al. 2007, in a mainstream research paper published in *Physics of the Earth and Planetary Interiors*, 164, 63-74, provided the data for two earthquakes on Sept. 21, 2004, with an error of 0.15: Mw = 5.04 (11:05 UTC) and Mw = 5.22 (13:32 UTC).

Although this paper was available online from June, 26, 2007, it appears that the authors of the D'Appolonia report were not aware of it. However, it makes the most recent strong earthquake in the Baltic Region 0.4 magnitudes stronger.

By the time of the public consultations in March, 2009, another relevant earthquake, in southern Sweden was well known, but it was neither reported not considered in the risk analysis.

On December, 16, 2008, an earthquake occurred near the Sjöbö, 60 km east of Malmö, with the reported local ML values from 4.6 to 5.8 magnitudes (University of Bergen 4.7; Geological Survey of Denmark and Greenland and US Geol Survey 4.8; University of Helsinki 4.9; Helmholtz-Zentrum Potsdam – Deutsches GeoForschungZentrum 5.4) (Voss et al., 2009; *Geological Survey of Denmark and Greenland Bulletin* 17, 9-12; http://www.geus.dk/publications/bull/nr17/nr17_p09-12.pdf)

In public consultations, Nord Stream has announced that the overall risk analysis has been based on these seismicity data that has been also confirmed by Det Norske Veritas. Accordingly, this overall risk analysis is no longer valid.

From the point of view of the public hearings in the context of the Aarhus Convention, the transparency of the project is under doubt, because the report of d'Appollonia, dated November, 2007, was neither include to the Espoo EIA and national EIAs nor made available to the Competent Authorities or to the public during the public hearings in March-April 2009. The Finnish EIA and the Espoo EIA were not supplied with the information of the D'Appolonia report and presented passages from old text-books printed in 1994.

As a result, the report of d'Appollonia has not passed sufficient expertise or public response and the adequacy of the EIA procedure, and the public hearings should be questioned.

Yours sincerely,



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Enclosure: Annex 1. Comments on hydrodynamic issues

Annex 2. Statements on the documents on the Gulf of Finland sent to Estonia in connection with the Water Permit application from in Finland

Annex 3. Estonian position 08 June 2009

Annex 4. Review of the transboundary EIA of the Nord Stream gas pipeline
(report by the expert group sent on 08 June 2009)

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