

Nord Stream 2

Espoo Consultation Finland - Sweden

**Responses to Relevant Comments to the Espoo Report from
Sweden**

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1 Introduction

The Espoo Convention defines a transboundary impact as “any impact, not exclusively of a global nature, within an area under the jurisdiction of a Party caused by a proposed activity the physical origin of which is situated wholly or in part within the area under the jurisdiction of another Party.”

Nord Stream 2’s Espoo Report addresses any potential transboundary impact on Sweden that could be caused by a proposed activity taking place in the Finnish EEZ. In the framework of the Espoo consultation process for Nord Stream 2, the competent authority in Sweden has forwarded several statements that it received from Swedish stakeholders.

The Finnish Competent Authority for the Environmental Impact Assessment has asked Nord Stream 2 AG to respond to relevant comments from Swedish stakeholders. This document provides the responses to these comments.

2 Statement from Greenpeace Nordic about Natura 2000

Statement

According to Greenpeace Nordic, both the EIA report and the Espoo Report give an inaccurate assessment of the impact of the proposed investment on Natura 2000 sites located in both the countries of origin and the affected countries. The proposed investment is clearly likely to have a significant impact on the environment. It is therefore clear that since the investment runs through or very near to Natura 2000 sites, it must be assessed also as to its potential impact on these sites and that such an assessment must meet the standards provided for in European Union law, specifically in art. 6 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (hereinafter referred to as the "Habitats Directive").

It is the established case law of the Court of Justice of the European Union that art. 6 (3) of the Habitats Directive nor any other provision thereof specifies the exact procedure which must be followed in order to ensure an appropriate assessment of the impact of an investment on Natura 2000 sites. The Court has, however, held that such an assessment must be organized in such a manner that the competent national authorities can be certain that a plan or project will not have adverse effects on the integrity of the site concerned, given that, where doubt remains as to the absence of such effects, the competent authority will have to refuse authorization (thus: CJEU in case no. C-304/05 Commission of the European Communities vs. the Italian Republic, paragraph 58, and see, to that effect, Waddenzee, paragraphs 56 and 57, and Castro Verde, paragraph 20).

In the case of the instant investment, there are numerous Natura 2000 sites, spread across a total of 8 countries. The Espoo Report indicates that the Natura 2000 sites located in Poland selected for assessment:

- SAC PLH990002, Ostoja na Zatoce pomorskiej
- SPA PLB990003, Zatoka Pomorska

are both located 22 kilometres from the planned investment.

At the same time, however, the Espoo Report (pg. 375 and 376) lists these two Natura 2000 sites among those located no more than 6 km from the proposed route of the investment. Irrespective of this discrepancy, however, we believe that there are as yet insufficient

grounds to state that the proposed investment will have no impact on the Natura 2000 sites, particularly those in Poland, as is stated in the Espoo Report.

Furthermore, given that there are concerns as to the effect of the investment on the Natura 2000 sites, specifically those that have marine mammals as the designation basis, it is not enough for the Espoo Report simply to have one paragraph (on page 377) stating that there is a limited potential for an impact on the overall functioning of the Natura 2000 system. This assessment is, in our view, at least premature, particularly given that, as is stated on page 376 of the Espoo Report "In writing this Espoo Report (and the Finnish EIA), detailed information about the location and features of munitions on the seabed was not available. The Natura 2000 Appropriate Assessment for the Kallbådan Islets and Waters Natura site will be carried out in accordance with the requirements of the Habitats Directive after receiving the detailed information on observed munitions (location, characteristics) to be cleared."

We consider it impossible in these circumstances to issue a decision allowing for the construction of the investment, given that there are doubts concerning its impact on Natura 2000 sites and the information regarding at least one such site is incomplete. It should be noted that only once an administrative authority is certain that an investment shall have no adverse impact on a Natura 2000 site may it grant permission for such an investment – this is confirmed by CJEU case law, exemplified by case no. C-258/11 Peter Sweetman and Others v An Bord Pleanála, where the CJEU stated that "It is to be noted that, since the authority must refuse to authorize the plan or project being considered where uncertainty remains as to the absence of adverse effects on the integrity of the site, the authorization criterion laid down in the second sentence of Article 6(3) of the Habitats Directive integrates the precautionary principle and makes it possible to prevent in an effective manner adverse effects on the integrity of protected sites as a result of the plans or projects being considered. A less stringent authorization criterion than that in question could not ensure as effectively the fulfilment of the objective of site protection intended under that provision (Waddenvereniging and Vogelbeschermingsvereniging, paragraphs 57 and 58)."

It is our opinion, moreover, that this incomplete documentation concerning Natura 2000 sites makes the public consultation process regarding both the EIA Report and the Espoo Report inadequate and flawed.

It is clear that public participation, both on the basis of (i) Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (OJ L 26, 28.1.2012, p. 1–21, hereinafter referred to as the "EIA Directive") and the (ii) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, done at Aarhus, Denmark on 25 June 1998 (hereinafter referred to as the "Aarhus Convention") must be ensured at an early stage, however no earlier than after all relevant documentation necessary for the issuance of a decision is available and provided to the public. This is not the case here, as documentation concerning at least one Natura 2000 site is still unavailable.

Answer

In accordance with the requirements of the Habitats Directive, Nord Stream 2 have carried out Natura 2000 screening assessments and/or, where required, full Natura Assessments of all Natura 2000 sites (existing or proposed), which based on: the features for which they were designated, the propagation characteristics of impacts arising from Nord Stream 2 to

which such features could be sensitive and the location of the site, could potentially be affected by activities associated with the pipeline's construction or operation

For *existing* Natura 2000 sites in German waters, full Natura 2000 Assessments were undertaken as part of the EIA process for those sites, which will be crossed by or are within 5 km of the Nord Stream 2 alignment

For existing Natura 2000 sites in Danish and Swedish waters, the Natura 2000 screening assessments were undertaken as part of the national EIA process, whereas for Estonia a standalone report was produced (as such an assessment is not required under Russian legislation). These screening assessments determined whether there could be potential for significant impacts to be experienced by such sites.

For the *proposed* "Hoburgs Bank och Midsjobankarna" site, a consultation exercise was undertaken with the Swedish authorities and a separate supplementary report to the Swedish EIA was produced that specifically considered the potential implications of Nord Stream 2 construction and operation on the integrity of that site and its values.

Natura 2000 sites in Finnish waters have been considered in accordance with Section 65 of the Finnish Nature Conservation Act, which implements the Habitats Directive. Screening reports are provided to the ELY centre (the regional environmental authority) which determines whether a full Natura Assessment is required and if so provides its opinion on the outcome of such an assessment taking account of views of Metsähallitus (the authority that supervises Natura 2000 sites). Approval of the Natura Assessment is a condition for granting the Water Permit which enables construction to commence. Ahead of this process, however, an appraisal of the potential for significant effects on Natura 2000 sites to arise from Nord Stream 2 was provided in the Finnish EIA, and the results summarised in the Espoo Report.

For Natura 2000 sites in Polish waters screening assessments of the potential for significant effects to arise from Nord Stream 2 was provided in the German EIA documentation and the results summarised in the Espoo Report. These assessments concluded that the sites are too distant from the pipeline route for the features for which they are designated to be potentially affected by its construction or presence. It was thus not necessary to undertake further consideration of these sites as part of a Natura 2000 Assessment process.

From all above studies that were undertaken as part of the EIA process, it was concluded that there would be no potential for significant impacts on the integrity or conservation objectives of Natura 2000 sites except for possibly on the "Kallbådan Islets and Waters" site where, based on an initial precautionary analysis of the effects of underwater detonation of unexploded ordnance (a conservative scenario with respect to munition size, location and receptor sensitivity), the potential for an impact ranking of up to moderate was predicted.

The results of these studies were documented in the Espoo Report together with the stated intention to undertake a full Natura Assessment that would more accurately model, consider and evaluate the impacts at the "Kallbådan Islets and Waters site" in order to confirm whether they would be as per the conservative scenario determined through the appraisal undertaken as part of the EIA, or at a lower level. However, in accordance with the precautionary principle specified in the Habitats Directive, ahead of such a full assessment a worst case scenario was documented in the Espoo Report.

The Natura Assessment for the “Kallbådan Islets and Waters” site has now been completed as part of the Finnish Natura 2000 process and concluded that the Nord Stream 2 project, either individually or in combination with other projects and plans, will not adversely affect the integrity of the site or achievement of the conservation objectives for which it was included in the Natura network.

The screening assessments of other Natura 2000 sites in Finnish waters, similarly undertaken as part of the Finnish Natura 2000 assessment process, also supported the results of the appraisal made in the EIA i.e. that there would be no potential for significant impacts on the integrity or conservation objectives of these sites. In the case of the “Sea Area South of Sandkallan” Natura 2000 site, this was further substantiated by a subsequent full Natura Assessment undertaken to address specific queries raised by Metsallitus,

As all the full Natura Assessments for the German sites, the “Sea Area South of Sandkallan” and “Kallbådan Islets and Waters” sites, the supplementary report for the proposed Hoburgs Bank och Midsjobankarna” and the screening assessments for all other sites show that there is no potential for significant impacts on any of the existing or proposed Natura 2000 sites, there is similarly no potential for significant impacts on the network of such sites from Nord Stream 2 activities in their vicinity.

With respect to activities in Finnish waters such a conclusion is supported by the statement from the Finnish Competent Authority for the Environmental Impact Assessment (which includes both the Finnish EIA and the Espoo Report) that, due to project activities in the Finnish EEZ, *“the project has no transboundary impacts on the Natura 2000 areas in other countries.”*

The Natura Screenings and full Assessments are subject to review by the appropriate agencies as part of the EIA / permitting process (in the case of impacts that may arise from activities in Germany, Denmark, Sweden and Russia) and as part of a separate Natura Assessment review and subsequent Water permitting process in Finland. During the Water permitting phase, both the permitting authority and the interested authorities, stakeholders and public, have the possibility to review and comment on the Natura 2000 Assessment regarding the “Kallbådan Islets and Waters” and “the Sea Area South of Sandkallan” site. This procedure is in line with the national legislation that defines the Natura 2000 assessment procedure.

The rationale provided in Table 10-48 is necessarily a summary as, given the number of sites involved, it is not practical to provide a detailed explanation for each site. More information is provided elsewhere in the Espoo report and cross referenced from Table 10-48, and in the national EIA reports, to support the “no adverse impact” assessments.

The Espoo Report thus provides an accurate documentation of potential impacts on Natura 2000 sites, in a manner that allows the competent authorities to consider such factors in their decision making. Where there was uncertainty at the time of preparation of the Espoo Report (e.g. in relation to the Kallbaden site) the assessment has been based on a precautionary approach as required by the Directive. The public and interested stakeholders have an opportunity through the EIA and Espoo consultation processes and the Water Permit Consultation process (in Finland) to comment on these assessments thus ensuring compliance with relevant legal requirements with respect to access to information and participation.

In relation to the two Polish Natura 2000 sites, as the list on page 375-376 of the Espoo Report refers to more than nine sites it is clear that not all these are within 6 km of Nord Stream 2. The distance of the Polish sites from the pipeline project is clearly stated in Table 10-48.

3 Statement from Greenpeace Nordic about Impact on Climate and Air

Statement

We believe that the EIA Report is inadequate as its analysis concerning the investment's impact on the climate and air, contained in chapter 11, is limited to:

- a) "Only direct impacts in Finland from the activities included in the project scope (...)" (p. 278);
- b) In terms of the climate impact – solely as concerns CO₂ (carbon dioxide) emissions;
- c) In terms of air quality impacts – solely as concerns nitrogen oxides (NO_x), sulphur dioxide (SO₂) and particulates (PM).

This assessment is in violation of art. 3 of the EIA Directive, which requires an environmental impact assessment to identify, describe and assess in an appropriate manner, in the light of each individual case and in accordance with Articles 4 to 12 of said directive, the direct and indirect effects of a project on the following factors:

- a) human beings, fauna and flora;
- b) soil, water, air, climate and the landscape;
- c) material assets and the cultural heritage;
- d) the interaction between the factors referred to in points a, b and c above.

It is clear that an EIA Report, which lacks an analysis of the indirect effects of the proposed investment on the climate and the air, is not in accordance with the EIA Directive. Moreover, too little justification has been given as to why the analysis of the investment's impact on the climate and the air is limited only to CO₂, NO_x, SO₂ and PM, to the exclusion of other pollutants, which are, incidentally, included in Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe (OJ L 152, 11.6.2008, p. 1–44).

Answer

Both direct and indirect impacts of emissions to air have been considered. The Finnish Competent Authority for the Environmental Impact Assessment states "*direct and indirect climate impacts caused by the project in the Finnish Exclusive Economic Zone have been adequately assessed.*" In the scoping process, the nature of pollutants requiring consideration were determined based on: the concentrations of such pollutants emitted the locations of their points of discharge, their dispersion characteristics, and the locations of receptors that could be sensitive to such pollutants. Such scoping narrowed the compounds to be analysed to the following: CO₂, NO_x, SO₂ and PM, which is in line with the HELCOM recommendations. Other pollutants could be relevant for other projects, e.g. CH₄ and VOC would be relevant when assessing the impacts of e.g. tanker loading of crude oil, due to the potential for fugitive emissions from oil, particularly at near shore locations i.e. close to receptors, However, due to the nature of the Nord Stream 2 activities, and associated emissions, and their largely offshore location where there will be good dispersion, these

compounds are not relevant to consider further in connection with its construction and operation. For accidental events, however, the potential release of CH₄ has been assessed.

The above listed emissions have been quantified and dispersion characteristics considered (Section 10.1 of the Espoo Report) so that their concentrations at, and hence potential for indirect impacts on, the environmental and social receptors could be evaluated (Sections 10.2-10.12). The potential for direct and indirect impacts of air emissions at the landfall areas are reported in Sections 10.7.1. (Russia) and 10.8.1. (Germany). At other locations, where it can be demonstrated that the dispersion of air pollutants from Nord Stream 2 is such that concentrations experienced at receptors is negligible, an in-depth analysis of possible indirect effects is not required and has therefore not been carried out.

4 Statement from Geological Survey of Sweden on Sediments and Mitigation Measures

Statement

The seabed areas of the planned pipeline route in the vicinity of the Swedish Exclusive Economic Zone (EEZ) border, on both the Danish and Finnish sides, including the Swedish side, are basin areas where there are predominantly an accumulation of fine sediments and organic material. Therefore, the sediments here consist of young, fine sediments with high organic and water contents, which have the capabilities to bind metals as well as anthropogenic environmental toxins. This could be seen both from the sediment analyses done and presented by Nord Stream2 in the Environmental Impact Assessment as well as sediment analyses done by SGU at stations SE-11 ny and SE-05 within the national Swedish status and monitoring programme for contaminants in marine sediments, see figure 1, SGU report 2016:04 and

<https://apps.sgu.se/kartvisare/kartvisare-miljoovervakning-sediment.html>. The results from the analyses refers first of all to tributyltin (TBT) which had high sediment contents of 7,9 µg/kg DW at SE-1 Iny and 14 µg/kg DW at SE-05, but also for Cd and Chlordanes having large deviations from national backgrounds.

SGU would therefore like to state that during the construction and laying work of the pipeline, including the work to eliminate munitions through explosions, there will be turbidity/dissemination of suspended materials in the basins close to the Swedish EEZ . This suspended material , which then also could contain anthropogenic environmental toxins now bound in the sediment, could enter the marine ecosystem as well as be transported to and accumulated in other surroundings, including Swedish, seabed areas. Therefore, the greatest care as well as possible measures should be taken here to minimize the dispersion of contaminated sediments. SGU considers, in that case, that the influencing factors on the environment should be limited both in time and space.

Answer

Initially, it is noted that the seabed intervention works are not adding a new source of sediment or contaminants, but rather redistributing or re-suspending the existing pollutants. Most of the re-suspension and redistribution of the sediments will occur locally in the deeper areas of the Baltic Sea.

The release of sediment caused by Nord Stream 2 construction was initially modelled using state-of-the-art modelling software, and subsequently evaluated in the light of experience obtained during Nord Stream construction and associated monitoring. The aim was (i) to

describe the amount of sediment/contaminants that may potentially be spread in the water column during the construction works and (ii) to understand the spatial scale of the impacts, i.e. how the sediment/contaminants may spread to the surrounding areas.

Numerical modelling of seabed movement was performed using a flexible mesh version of the MIKE 3 hydrodynamic (HD) model suite for three-dimensional modelling of currents, water levels and the transport of suspended sediment. The modelling covered the entire Baltic Sea and was specific to the Nord Stream 2 project. Three simulation scenarios were chosen to represent different conditions in relation to particle transport and temperature/salinity stratification: A summer scenario (June 2010), a normal scenario (April 2010) and a winter scenario (November 2010). The three scenarios should therefore cover both the average situation and the "worst case" situation for each parameter.

Subsequently, monitoring results from the construction of the existing Nord Stream pipelines was considered and used to evaluate the modelling outcome:

- **Postlay trenching:** The plough used during post-lay trenching created a plume of suspended sediment, with a release rate conservatively estimated to be in the range of 3-25 kg/s. The plume was most dense near the plough, with concentrations up to a maximum of 22 mg/l observed at a distance of approximately 100 m. The plume widened and concentrations decreased with distance from the plough, with concentrations less than 4 mg/l observed at a distance of approximately 500 m behind the plough. This indicates that a significant quantity of the suspended sediment settled during the initial 500 m of transport. Together, the monitoring results indicated that the results of the sediment dispersion modelling can be considered conservative.
- **Rock placement:** Sediment dispersion related to rock placement was undertaken in Russia in 2010, as well as Finland in 2010 and 2011. In Russia, the highest concentration (20 mg/l) was measured one hour after rock placement at a distance of 100 m from the placement location. Measurements in Finland (2010) confirmed that the increase in turbidity was limited to the lowermost 10 m of the water column and that the impact distance, taken as the 10 mg/l contour, was less than 1 km from the rock placement site. Subsequent monitoring in Finland (2011) showed SSC peaks above 10 mg/l at only one sensor located 200 m from the construction site, on three occasions with a total duration of 6.5 hours. Together, the monitoring results indicated that the maximum values of SSC caused by rock placement were significantly lower than those calculated by numerical modelling, and that the numerical modelling was thus highly conservative.
- **Munitions clearance:** Monitoring also showed that munitions clearance resulted in smaller craters than was assessed by the modelling, and the actual total amount of released sediment was substantially smaller than predicted by the model.

Information on munitions to be cleared in the Finnish section was collected for the preparation of the permit applications. The survey data showed that the closest munition to Sweden is located more than 100 km away from the Finnish-Swedish border.

Modelling has shown that sediment plumes originating from munitions clearances could reach distances in the order of 2-3 kilometres, depending on location and hydrography, but in any case largely below the distance between the nearest munitions and the Swedish border. The modelling results were in line with the monitoring of Nord Stream munition clearance activities. For these reasons, impacts due to munition clearances taking place in Finland will not reach Sweden.

The release of contaminants was evaluated on the basis of the sediment release modelling and levels of contaminants identified in the national field environmental surveys, as presented in the national EIAs and the Espoo Report. Using worst-case estimated sediment release rates, the calculations showed that the amount of contaminants released during construction is very small compared with the annual input from the Baltic Sea catchment. More so it was calculated that only a small fraction (~10-12%) will be available for bioaccumulation. Given the limited area affected and the short duration of the suspended sediment, bioaccumulation of substances is evaluated not to occur. It was concluded that the release of sediment and contaminants would not significantly affect the offshore benthic or pelagic life.

Furthermore, the release of CWA was analyzed thoroughly based on measured concentrations of 29 different CWAs/CWA degradation products in a total of 121 samples collected along the proposed route in Danish waters, including the section that transects the designated munitions dumping area in the Bornholm Deep (Hans Sanderson & Patrik Fauser, 2016, "Nord Stream 2 added CWA environmental risk assessment", Aarhus University). The types of CWA present in the Baltic Sea are poorly soluble in water, and will mainly be present as particulate material that will rapidly resettle on the seabed after getting suspended. Using worst-case estimated sediment release rates and CWA concentrations, it was shown that CWA concentrations would remain far below PNEC thresholds, and thus would not affect the benthic or pelagic life.

In conclusion, it is agreed with SGU that the influencing factors on the environment will be limited both in time and space. No significant transboundary impacts to the offshore marine environment are expected due to release of sediment and contaminants during construction of Nord Stream 2.

5 Statement from the Swedish Agency for Marine and Water Management about Munitions Clearance, Seals and Mitigation Measures

Statement

The assessment of country level transboundary impacts identified that only the generation of underwater noise from munitions clearance in Russia and Finland has the potential to result in significant impacts. Detonations will affect the marine environment and proper mitigation measures needs to be undertaken to avoid damage to marine mammals, seabirds and fish.

Especially the sensitive population of ringed seals in the Gulf of Finland needs to be considered when planning and conducting munition clearance to avoid any injuries on individuals.

Answer

Standard munitions clearance methods utilised by the navies in the Baltic Sea including through the annual international NATO manoeuvre "Open Spirit", comprise in-situ clearance by detonation. To avoid and minimise impacts on marine mammals, Nord Stream 2 will implement a number of mitigation measures for such in situ clearance work in Finnish waters, including the use of marine mammal observers, passive acoustic monitoring and acoustic deterrents (seal scramblers) and avoiding clearance during the ice period.

In addition to above mentioned mitigation measures, subsequent to the submission of the Espoo Report, Nord Stream 2 AG has committed to use bubble curtains for *in situ* clearance of munitions, in the vicinity of the most sensitive receptors. The location where such measures will be adopted are thus those in proximity to Natura 2000 sites (with seals listed as a conservation objective) and to those areas known to be used by the Gulf of Finland ringed seal population in the Finnish EEZ. The reduction of 6 – 8 dB in underwater noise levels resulting from their application will further ensure that any impacts on these sites and population are not significant.

Since the level of impact due to munitions clearance will not affect the viability or functioning of the birds/fish populations (or fisheries that depend on them), the impact on fish and birds is not considered significant and does not, therefore necessitate mitigation.