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## WWF Baltic Ecoregion Programme<sup>1</sup>

### Position Statement

#### on the Nord Stream Gas Pipeline ESPOO EIA Report

7 May 2009

#### 1. General remarks

The Nord Stream natural gas pipeline is the largest submarine structure ever planned for the Baltic Sea, extending over the territories of 5 countries and over a length of app. 1200 km. The process undergone in the Espoo procedure is unique not only for the Baltic Sea but also the methodology – a co-ordinated and simultaneous EIA procedure in 5 countries with a relatively transparent approach – was undertaken in such a comprehensive form for the first time.

Given the complexity and the size of the project, Nord Stream has had to undertake quite a comprehensive compilation of data, including some research leading to additional knowledge on the ecosystem and threats of the Baltic Sea. The research programme agreed upon in the scoping phase of the process has been formally fulfilled and has added new details to our still largely unsatisfactory knowledge about man-made impacts in the Baltic Sea.

Nonetheless, there are significant gaps in the EIA. Some of them are severe and there are numerous others that inhibit an accurate assessment of the pipeline's impacts. This position statement presents a detailed analysis of the most critical shortcomings of the EIA which must be addressed in order to make an informed and accurate assessment of the project's environmental impacts.

**This position statement demonstrates that the negative implications of the Nord Stream pipeline project on the environment, especially the marine environment, are much more severe than characterized by Nord Stream in the EIA.** The classification of a substantial number of hazards as insignificant simply contradicts evidence to the contrary and is therefore not only incorrect but inappropriate. Also, quite a number of the other impacts are considerably more severe than stated, meaning their significance classification must be raised to a higher level. Further, given the misclassification of impacts the EIA lacks appropriate proposals for ensuring effective mitigation and compensation measures necessary to minimize and offset negative impacts.

Significant problems also arise with regards to undersea munitions, the integrity of some Natura 2000 sites and MPAs (especially concerning birds) and the risks posed by increased eutrophication by nitrogen and phosphorus and pollution by harmful substances such as cadmium.

Despite some thorough research, the remaining data gaps are too large to make a detailed assessment of the pipeline's impacts in many of the respective fields. The EIA does not take the obligatory approach to evaluate the worst case scenario in these situations, but rather relies on assumptions that can only be qualified as wild guesses in some cases. Additionally, the cumulative effects of other projects are not taken into account in adequate depth<sup>2</sup>, although they will be very extensive.

**Based upon the evidence presented in this position statement, it is clear to WWF that the EIA prepared by Nord Stream is insufficient. It must be dramatically revised, updated and completed with all of the necessary data (currently missing) in order to ensure that an adequate assessment of the environmental impacts of the pipeline project can be fairly considered.**

<sup>1</sup> The following organizations are partners within the WWF Baltic Ecoregion Programme: Baltic Fund for Nature, Estonian Fund for Nature, Lithuanian Fund for Nature, Pasaules Dabas Fonds, WWF-Denmark, WWF-Finland, WWF-Germany, WWF-Poland,

## WWF's general position on use and transport of natural gas.

WWF's general position is that fossil energy should be phased out as energy for heating and power generating and that renewable energy should be given priority for these purposes. However, as long as renewables cannot completely substitute fossil energies, natural gas is one of the fossil energies with the lowest greenhouse gas emissions and with relatively high energy efficiency. So in some European countries WWF does regard the use of natural gas as a justified bridging technology for some years.

WWF does not comment about the geo-political role of gas supply of Western Europe from Russian sources. This is a geo-strategical discussion which will have to be handled in a forum separate from the Environmental Impact Assessment.

The transport of natural gas through large sea areas via pipelines is a common and relatively mature technology. A transport alternative would be to liquidise the natural gas and to transport it via LNG tankers to Western Europe and the world market. This would add substantial ship traffic to the already very intensive traffic travelling through the Baltic and increase the risk of ship accidents. During the liquidising process there will be also a loss of energy content of approx. 25%.

WWF has claimed during the pipeline discussion in recent years that our main focus is to guarantee an EIA process of highest standard in order to avoid and mitigate negative environmental impacts as well as insure that full compensational measures are implemented to offset potential damages.

The following position on the EIA report presented by Nord Stream for the Baltic Gas pipeline Espoo consultation process is the result of the evaluation of the documents presented by Nord Stream in March 2009.

### Guiding principles:

#### Demand for highest quality quantified data without gaps

In general, WWF claims that the research results should be comprehensive and quantified so that an appropriate judgement of the impacts of the project can be derived, mitigation measures be developed and - if no mitigation is possible - compensation measures be designed and planned.

#### For remaining gaps: precautionary principle – worst case assumption

For the existing gaps, due to lack of data **a worst case assumption is for WWF the only way to estimate the potential degree of environmental impacts.** Unfortunately, the procedural rules in the Espoo report do not demand scientifically proven judgements of the authors of the EIA as the only basis. This allows taking unjustified speculations as the basis for the prognoses made. Accordingly, this in several cases leads to drastically false assumptions. **In consequence, some findings of the impact assessment of the pipeline can be described as unjustified.**

The methodology put forward and described by the Nord Stream team as a "*precautionary approach*"<sup>3</sup> is neither scientifically sound nor acceptable. In situations of absolute uncertainty, the predicted impact is envisaged on the basis of being "*likely to occur or not*"<sup>4</sup>. This is far from any worst possible effects as a basis. As long as there is simply no data to support an assumption, it is prudent to take the worst case into account, even though this might often not be the probable case. The EIA's conclusions about the environmental impact in ALL cases where gaps exist are therefore false or - in the best cases - severely doubtful. The EIA clearly describes the methodology used in these cases, and it is also clear that this methodology is unsuitable. For this reason, **much of the EIA must be thoroughly revised, and it will be inevitable to drastically elevate some of the predicted impacts to more acute levels.**

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WWF-Russia and WWF-Sweden.

<sup>2</sup> e.g. p. 1360 ff., 1536 ff.

<sup>3</sup> p. 1659

<sup>4</sup> p. 1659: "*Where the magnitude of impacts cannot be predicted with certainty, the EIA team has used its professional experience and available scientific research from the Baltic Sea to judge whether a significant impact is likely to occur or not.*"

Although there is a dedicated chapter for addressing the gaps<sup>5</sup>, the Espoo report does not name a single measure or method on how the serious issue of the numerous remaining gaps should be dealt with. Simply stating that one has collected some data in addition to already published material known to science is simply unacceptable and does not deal with the issue of gaps, but rather that of already filled gaps.

**All gaps must be filled in order to be able to reliably estimate the consequences of the pipeline; otherwise assuming a worst case scenario is the only acceptable way to address these gaps.**

A proper EIA should also cover the stone mining operations near Kotka and the necessary transportation measures (also for a reliable assessment of the total CO<sub>2</sub>, SO<sub>2</sub> and NO<sub>x</sub> emissions caused by the project) as well as the plants for coating of the pipes in Kotka and Sassnitz.

The time frame for the construction process of the pipeline is not explained in sufficient detail with the different options needed (especially in case not all needed permissions have been granted by the end of 2009). In the Gulf of Finland it is crucial that no pipeline construction works will take place during winter months, as this could cause problems for maritime safety. For the Finnish EEZ, it is not stated where the construction process will be started, during which months it will be completed and how long the total process will take. This information is critical, as the impacts on various biota cannot be adequately assessed without considering these factors.

Additionally, the geological data around the Isle of Gogland is based on sediment maps and bathymetric maps without any field surveys<sup>6</sup>. In our view this is not satisfactory, as the alternative southern route is crucial in order to protect the Natura 2000 areas and the Eastern Gulf of Finland National Park in the Finnish waters.

## **1.2. Evaluation of alternative routes**

### **Land route alternative**

No land route (e.g. the southern through Poland) has been evaluated<sup>7</sup>. There is no reason why such an alternative route should not be studied. Just like the undersea solution, a land pipeline could be routed solely through the territories of Russia and EU member states. The practicability of such an alternative thus cannot be disqualified, especially without any further justification. An assessment of the environmental impacts of such a route is demanded from the Espoo convention.

In consequence, the non-consideration of the land route in the evaluation of the alternatives is a severe shortcoming. With the provided data, no judgment can be made if the selected route is indeed the one with the least negative impacts, or if a land route would be the ecologically least detrimental solution. Appropriate data must be provided to fill these gaps.

### **Missing alternative sea routes**

The planned pipeline crosses high-risk munitions-polluted areas near Bornholm, Gotland, Finland and presumably Russia. We are aware that in some of these cases there will be no alternatives, but there still are some obvious alternative route options worth evaluating. There would be more than one option for a route east and south of Gotland (the only alternative evaluated route runs west of the island)<sup>8</sup>. Also, another option includes a route near Bornholm further south (it might have to cross through Polish waters, but that cannot be an argument to rule it out) might relieve conflicts concerning possible ammunition encounters.

The alternative route with the EIA on land, either through the Baltic countries (Amber -pipeline) or through Finland and Sweden is not given in the present EIA - only the history of the pipeline is described.

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<sup>5</sup> p. 1660

<sup>6</sup> Finnish EIA p. 198

<sup>7</sup> p. 299 ff.

<sup>8</sup> p. 346

### Evaluated alternative sea routes

WWF is not convinced by the arguments put forward in favour of the alternative route north of Gogland, because the cross-boundary impacts on the Eastern Gulf of Finland National Park (only 6,5 km away from the planned gas pipeline in the Russian waters) and two Natura 2000 sites (F10408001 and F10100078) will be high. The Eastern Gulf of Finland National Park is also a Baltic Sea Protected Area (BSPA) area designated by HELCOM. Furthermore, Finland is planning to designate two new offshore Natura 2000 areas - Länsileton alue (F10400001) and Luodematalat (F10400002) - to protect reefs (1170) in the Eastern Gulf of Finland south of Kotka and Pyhtää. These two areas are candidates to be designated also as BSPA-areas under the HELCOM umbrella. The northern route alternative around the Isle of Gogland could cause serious impacts especially on the Länsileton alue-site north of Gogland. For these reasons, WWF's view is that the southern route alternative around Gogland Island should be chosen. Further, as a connection to the previous alternative southern route, the alternative route in the Finnish EEZ should be chosen (1a/2a)

In the Kallbådagrund area the southern route alternative (C16) should be chosen. There is a seal sanctuary in the vicinity (9km) and furthermore, the Finnish government is planning to designate a new offshore Natura 2000 area (F10100106) to protect reefs southeast of Kallbådagrund. The Finnish EIA also states several other reasons to choose the southern route alternative: there is less need to build stone bridges and, for this reason, the harmful impacts of the relocation of sediments (including the leakage of nutrients and harmful substances) are lower.

### 1.3. Impacts of sea bed interventions

The planned twin pipeline will - with a total length of 2.440 km - probably be the most massive man-made structure in the Baltic Sea. Its location on or in the sea floor makes massive interventions into natural sea bed structures and communities inevitable. The conclusion of the EIA, which claims that these impacts will be largely insignificant or minor cannot be shared.

The very rough and inhomogeneous structure of the underwater landscape along much of the pipeline's projected route (ridges, peaks reaching close to the surface, followed by deep channels and basins, sometimes steep drop-offs) combined with unfavourable water and soil chemistry (oxygen-depleted zones, H<sub>2</sub>S) make it a technical challenge to lay a stable and safe pipeline. Ideally a pipeline needs plain ground and should not be placed in an environment with aggressive substances that could corrode the pipe or destroy the concrete coatings. Instead, along the proposed pipeline route in the Baltic Sea there are drop-offs of up to 200m in depth, free span areas of several meters length and highly unfavourable conditions.

Because of the uneven terrain, there is a need to either remove obstacles like ridges or build artificial underwater support structures (berms and bridges) to offer a suitable ground for the pipeline. Even though stated as a major technical challenge from an early stage of the project on, the EIA does not give much detail on these underwater structures and their impacts. It is unknown to us to what extent rocks will have to be cut, blown away (which would generate additional noise from explosions, apart from the habitat loss in the route of the pipeline) and where small-scale relocations of material will occur. The EIA provides absolutely no data on this. Also, the possible disposal of surplus material must be clarified in respect to where, and to what extent, possible dumpings will occur.

Dredging, quarrying, dumping and anchoring lead to substantial sediment spread and the release of harmful substances. The corridor affected by massive deposition of the material (e.g. > 10mm) can reach a width of more than 1 - 2 km<sup>9</sup>. Depending on the grain size of the dumped material and its relation to the underlying ground, a long-term change in benthic communities in the affected area is possible. Defining the effect as "reversible" is thus not generally appropriate and must be modified.

High-rise underwater structures needed to support the pipeline will interrupt currents and produce zones with an elevated sedimentation of organic material and potentially lowered oxygen supply in the sediment and potentially also in the lower part of the water body. These structures will also be an obstacle for fishing activities, risking the loss of gear and thereby increasing the number of 'ghost nets' (abandoned fishing nets which may spend years drifting about on the sea floor entangling and killing fish and other marine life).

<sup>9</sup> see e.g. p. 912, 1244, 1277

In the Gulf of Finland, no detailed data are given on where exactly the total amount of rock and gravel material needed for stone bridges will be mined or transferred.

#### **1.4. Explosives and other munitions**

The construction of the pipeline will require the removal of explosives in Danish, Swedish, Finnish and probably Russian waters (the latter to a completely unknown extent!). Possibly, the removal of dumped munitions may also be necessary in Germany. The most important mine fields were observed in the Gulf of Finland. In Finnish waters alone, 31 active and highly explosive mines were detected along the planned route of the pipeline by Nord Stream. The only planned way to deal with ammunition is to blast it<sup>10</sup>. Any alternatives, possibly more environment-friendly methods that could be an option at least in shallower waters, are neither presented nor even discussed.

Nord Stream has gone to great efforts in locating explosives on the sea floor along the route. Nonetheless, the methods employed cannot provide certainty that all munitions present have been discovered. Natural sedimentation can cover up explosives and make detection difficult to impossible. Nord Stream also expresses that minor modifications of the pipeline's route may still occur, possibly even during the construction work. This could mean that the pipeline construction could intrude into un-investigated areas with a potentially high risk of running into additional explosives. Also the effects of the anchor vessels needed to stabilize the pipe laying vessel during laying are not yet studied. They will operate in an area of about 1000m from the pipeline corridor. The anchor-sites were not studied in advance – and, consequently, the findings of ongoing munition screening on the anchor sites are not reflected in the EIA. All risks and impacts connected with explosives have therefore to be assumed higher than indicated in the EIA. The same is true for chemical weapons (which most likely exist in the Danish munitions risk areas).

Explosions are estimated to severely harm marine mammals within a radius of more than 10 - 30 km around the blasting site<sup>11</sup>, so this is the minimum extent of the shockwave where severely detrimental effects have to be expected. If mitigation measures like bubble curtains can be applied, this distance can possibly be reduced. The EIA unfortunately does not describe any detailed mitigation measures. The EIA's assumption that the extent of the shockwaves resulting from munitions blasts is unknown, is simply false.<sup>12</sup> The shockwaves of underwater explosions have been studied in great detail, not only in a military context<sup>13</sup>. Of course the distance greatly varies, depending on the size and type of the explosive, its specific location on the sea floor and the mitigation measures applied (e.g. bubble curtains). Also, the used threshold to define the point where the resulting shockwave's strength is no longer significant is decisive. Nonetheless, a detailed prediction of different shockwave types is simply not needed for an adequate EIA assessment. **For the precautionary approach to be applied in the EIA, the occurrence of large explosives in unfavourable conditions must be envisaged, since this can neither be ruled out nor be regarded as improbable.**

No procedures for dealing with chemical weapons have been set up, nor have the ecological consequences of their handling or disposal been taken into account. Since the pipeline will run through several areas that are known to carry a heavy pollution with dumped chemical munitions, this is a severe gap. **Action plans with a strong focus on mitigation measures must be developed to tackle possible dangers and additional emissions of harmful substances.** The handling and removing of munitions can have severe effects on marine life – a fact that is critically underestimated in the EIA.

Alternative methods of dealing with undersea munitions with a reduced noise transmission are constantly being investigated and improved. These methods are suitable at least for shallower water areas. The installation of bubble curtains or the disposal or blasting of munitions on land is possible - not in all cases, but this has to be decided as the case arises. Sometimes it is also possible to direct a part of the noise into the sediment instead of the water body. As Nord Stream only states that

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<sup>10</sup> p. 871

<sup>11</sup> e.g. Koschinski: <http://www.wal-und-mensch.de/wum2007/koschinski.php>; with further literature citations

<sup>12</sup> p. 913

<sup>13</sup> e.g. Committee on Potential Impacts of Ambient Noise in the Ocean on Marine Mammals (2003): *Ocean Noise and Marine Mammals*. Washington D.C.