

**Analysis of the Espoo Convention as applied to mega  
projects:  
The case of Nord Stream.**

by

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## **Abstract**

Concerns about transboundary impacts from development projects are growing with time as the number and size of developments increase. Transboundary impacts could generate tensions and even conflicts between countries. The *Convention on Environmental Impact Assessment in a Transboundary Context* (Espoo Convention) establishes a procedure to manage transboundary impacts. However, some problems could arise when the Convention is applied to mega projects. Mega projects complexity is a big challenge for the application of Espoo mechanisms. Problems in the application of Espoo mechanisms could interfere with the achievement of the Espoo Convention aims and objectives. This thesis explores the applicability of the Espoo Convention to the mega projects and recommends improvements to enhance such applicability. The mega project chosen to explore how Espoo mechanisms work is *Nord Stream*, a planned gas pipeline to transport gas from Russia to Germany through the Baltic Sea. Difficulties in the application of Espoo mechanisms to *Nord Stream* are identified. These difficulties are analyzed in light of the Convention's assumptions and objectives. It was found that some Espoo objectives could not be achieved because the Convention mechanisms are not adequate to assess mega projects like Nord Stream. One of the most important difficulties found was that the mega project's strategic dimension is not considered in the EIA process, the principal Espoo mechanism. In line with this, it is recommended, among other things, that this Dimension is included in the Espoo process.

**Key words:** Espoo Convention; mega projects; strategic dimension; EIA; SEA.

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## **Acronyms**

EC: European Commission  
EEZ: Exclusive Economic Zone  
EIA: Environmental Impact Assessment  
EU: European Union  
PID: Project Information Document  
SEA: Strategic Environmental Assessment  
UNECE: United Nations Economic Commission for Europe

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## 1 Introduction

### 1.1 Background and problem definition

Concerns about transboundary impacts from a variety of development projects are growing with time as the number and size of developments increase. Transboundary impacts<sup>1</sup> are impacts generated in one country that affects other countries. A range of projects including nuclear power plants near the borders (Denmark-Sweden) (BBOFF 2004), industries affecting shared waters (Argentina-Uruguay) (MRECIC 2006), dams affecting hydrology (Spain-Portugal) (Albergaria 2006), roads that raise the transit between countries (from Mexico to Panama) (Plan Puebla Panama 2008), and gas pipelines (Germany-Denmark-Sweden) (BGI 2002) could generate transboundary impacts. If communication between countries is not adequate, transboundary impacts could generate tensions and even conflicts between them.

The Environmental Impact Assessment (EIA) process is a planning tool with almost 40 years of history, nowadays applied in more than 100 countries, (Petts 1999b; Wood 2003; cited in Jay et al. 2007) including the European Union. The *Convention on Environmental Impact Assessment in a Transboundary Context* (Espoo Convention 1991), known as the Espoo Convention, establishes a procedure to manage transboundary impacts. The Convention was adopted with the support of the United Nations Economic Commission for Europe (UNECE) (Sands 2003, p.814) and entered into force in 1997. The general aim of the Convention is to “ensure environmentally sound and sustainable development” through international cooperation. Transboundary assessments under the Espoo Convention have already helped to mitigate tensions between countries (UNECE 2006).

Some of the Espoo Convention mechanisms are the requirement to undertake an EIA process, the consultation between countries, and the facilitation for public participation for all the stakeholders. At this moment the Convention applies only at the project level of proposed activities leaving open the possibility to be applied for policies, plans and programmes (Espoo Convention 1991). In 2003 a Strategic Environmental Assessment (SEA) protocol of the Convention was adopted. Once SEA is in force it will be mandatory to assess the environmental consequences of official government plans and programmes.

The Convention was ratified by 41 countries and has been implemented extensively with relative success (UNECE 2007). However, some problems could arise when it is applied to mega projects.

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<sup>1</sup> According to Espoo Convention (art. 1) a transboundary impact is 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.

Mega projects have distinctive characteristics. They can involve a large number of stakeholders, generate environmental and socio-economic impacts beyond a local, regional and national scale, and have close links with political and economical factors (Sykes 1990).

Mega projects complexity is a big challenge for the application of Espoo<sup>2</sup> mechanisms. One of the problematic areas is the assessment of strategic factors. The EIA process focuses at the project level of activities, so strategic factors could be outside the discussion. In this sense, Steinemann (2001) highlighted that strategic decisions are made before the EIA process and they are often irreversible. In the same way Jay et al. (2007) and Cashmore et al. (2004) in their studies about EIA effectiveness showed that it has influences just on a projects' design.

Another conflict with Espoo mechanisms is generated by the large number of stakeholders, a typical characteristic of mega projects in a transboundary context. A great number and diversity of stakeholders could generate difficulties to facilitate public participation (Art. 2, Espoo Convention), difficulties to agree about the preparation of the EIA documentation (art. 4), and difficulties in the decision-making due to the number of countries with a stake in the final decision (Art. 6).

Problems in the application of such mechanisms could interfere with the achievement of the Espoo Convention aims and objectives. International cooperation could not be achieved if Espoo does not provide a framework to discuss different strategies, e.g. different views about regional development, among stakeholders. Lack of adequate public participation could diminish the environmental performance of the project (Aarhus Convention 1998). If this happens environmental sound development, an Espoo objective, could not be achieved. That is why the Espoo Convention might not be adequate to assess mega projects.

The mega project chosen to explore how Espoo mechanisms work is *Nord Stream*. This project, currently under assessment, is about the construction of a pipeline to transport natural gas from Russia to Germany through the Baltic Sea crossing waters of Russia, Finland, Sweden, Denmark, and Germany. Poland, Latvia, Estonia and Lithuania are also directly involved in the assessment process of *Nord Stream*.

This thesis seeks to examine the Espoo Convention applicability in regards to mega projects. Although there has been some research about the Espoo Convention implementation (e.g. Hilden 2001), no research about Espoo Convention and mega projects have been done. The relevance of this study (and recommendations) is based on the fact that there has been a sharp increase of size and frequency of major infrastructure projects in the last decades (Flyvbjerg 2003, p.3). Moreover, it would not be unlikely that a project that causes

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<sup>2</sup> The Espoo Convention will be also referred simply as "Espoo".

transboundary impacts would be a mega project. Finally, the problem of mega projects is not addressed in the Convention, the Espoo Guidelines or in the SEA protocol.

## 1.2 Research Aims and Objectives

The aim of the thesis is to explore the applicability of the Espoo Convention to the mega projects and recommend improvements to enhance such applicability.

These are the thesis' specific objectives:

1. Explore the Espoo Convention mechanisms, and intentions.
2. Explore the features of 'mega projects', especially in a transboundary context.
3. Explore the extent to which the Espoo mechanisms can work in application to mega projects.
4. Examine the applicability of SEA in a transboundary context to mega projects.
5. Recommend measures to improve Espoo Convention applicability.

The aforementioned aim and objectives could be translated into the following research questions:

General research Question: Is the Espoo Convention adequate to assess mega projects?

Specific research questions:

1. What are the Espoo Convention mechanisms?
2. What are the characteristics of mega projects that could interfere with the Espoo Convention applicability?
3. How is the assessment process of mega projects being carried out in the context of the Espoo Convention?
4. What are the difficulties of applying the Espoo Convention to mega projects?
5. Are the Espoo Convention's objectives being achieved when assessing mega projects?
6. What changes are needed to the Espoo Convention to improve its application to mega projects?

## 1.3 Thesis Scope

This research does not intend to assess the environmental impacts of the mega projects; the focus is on the Espoo Convention mechanisms and their implementation. It does not intend to analyze the strategic issues in itself either. Regarding the EIA reports, it will only be evaluated some of their aspects needed in the research. The intention is to describe mega projects and their strategic dimensions to analyze the Espoo Convention applicability. Finally, the difficulties in Espoo Convention applicability will be addressed only if they are due to a complexity generated by mega projects, i.e. difficulties typical from major projects.

## 1.4 Methodology

The thesis will follow a qualitative research strategy with the intention to carry out an exploratory research. No quantitative research has been done and there are not well developed theories in the field of Espoo Convention's application. There is also a lack of number of cases available necessary to conduct a quantitative research. Accordingly, following Bryman (2004, p.401) the thesis' methodological outline starts from research questions that guides the systematic collection of data, which will be analyzed through the research process, aiming to contribute with new concepts in the field.

One of the reasons to choose a case study research design, in which one mega project is analyzed in depth, is the intention to include contextual conditions. As Yin (2003, p.13) explains this conditions could be highly relevant to the phenomenon of study. The same author states that case study is a good design to use for contemporary events, and when behaviours are not under control.

The research method is the review of documentation. This technique to collect the data was chosen because almost all the information required to answer the research questions were available in official documents. Other information needed, not included in the official Espoo process, was obtained through contacts with stakeholders.

The needed data was obtained from different type of documents: reports; EU policies, Acts and Communications; bilateral and multilateral agreements; official letters; press releases; stakeholders' comments; Espoo Convention, its guidelines and SEA protocol; and Nord Stream reports. The sources of data were relevant stakeholders (e.g. governmental environmental agencies, developer, NGOs, political parties, UNECE, etc.); Espoo and mega projects researchers; EIA practitioners; libraries; and the internet.

One of the requirements of the Espoo Convention is to make the information easily accessible. Following this requirement all the official documents regarding the Espoo process<sup>3</sup> are available online through the web pages of corresponding authorities of the countries involved and Nord Stream. This documentation include 33 formal letters sent by authorities responsible to coordinate the Espoo process in each country, 216 letters with stakeholder's comments from the nine countries involved, seven reports prepared by Nord Stream presented to the authorities, and other documents prepared by the countries' authorities.

Nord Stream is a unique case that provides a suitable context to answer the research questions. It is unique because it fulfils the characteristics of a mega project, directly involves nine countries, is linked to an

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<sup>3</sup> The expression "Espoo process" refers to the process (or part of it) defined by the Espoo Convention; starting with the *Notification* and finalizing in the *transmittal of final decision*. The process is detailed in section 3.4.

extremely important EU issue (energy), and there are variety of politics influencing the project. Although Nord Stream has not yet been implemented it is a good project to analyze because it has been under assessment, even before the Espoo process started, for several years. The application of the Espoo process to Nord Stream began in November 2006. Since then, dozens of Espoo meetings and hearings have been held, and the framework of assessment under the Espoo process was defined. That is why at this stage of the Nord Stream Espoo process there is enough material to explore the Espoo applicability to mega projects.

The fact that Nord Stream is currently under assessment facilitates the accessibility to information and the communication with the stakeholders. During the research key stakeholders involved in Nord Stream's Espoo process have been contacted (see appendix I for details): UNECE Espoo Secretariat; Nord Stream Communications Manager; the Company (Ramboll) in charge of the EIA reports elaboration; points of contact for the Espoo process in Germany, Sweden and Finland; Swedish Ministry of Environment; Swedish Environmental Protection Agency; Swedish Parliament; and researchers involved in the Espoo Convention and mega projects studies.

## 1.5 Thesis outline

The chapters will follow the order and logic of the thesis objectives. Chapter two defines the theoretical framework which provides the structure to do the analysis and relates the present research with the concepts currently developed in the field. In chapter three the Espoo Convention's aims, objectives and mechanisms are described (objective 1 and research question 1). Chapter four explores the Nord Stream project and its characteristics, focusing on the stakeholders and its strategic dimension (objective 2 and research question 2). In chapter five the Nord Stream Espoo process is described and the difficulties in its implementation are identified (objective 3, and research questions 3 and 4). Chapter six analyzes how the difficulties in the application of Espoo mechanisms interfere with the achievement of Espoo objectives (objective 3, and research question 5) in light of the concepts developed in the theoretical framework, and the applicability of SEA to mega projects (objective 4). In the final chapter, conclusions and recommendations are presented (objective 5, and research question 6).

## 2 Theoretical Framework

In this chapter the theoretical framework is developed with which the applicability of the Convention will be analyzed. The concepts and ideas presented will create the framework to analyze the information provided in chapters three (*Espoo Convention*), four (*Mega Projects*), and five (*Nord Stream Espoo process*). The analysis is presented in chapter six (*Discussion*). Furthermore, the theoretical framework has the purpose of relating the research with the concepts developed in the field.

## 2.1 Espoo Convention and International Law

Sovereignty of states has three principal implications: jurisdiction over a territory, duty of non intervention in the area of exclusive jurisdiction of other states, and the dependence of obligations arising from treaties. The sovereignty means that states alone have the competence to take decisions in respect to the natural resources and the environment of their territory. Nevertheless, this structure does not co-exist comfortably with natural systems interrelationship which does not respect political borders. An activity within one state's territory can have consequences in another state. Ecological interdependence "explains why cooperation and development of international environmental standards are increasingly indispensable: the challenge for international law in the world of sovereign states is to reconcile the fundamental independence of each state with the inherent and fundamental interdependence of the environment" (Sand 2003, p.13-14).

International environmental laws, like the Espoo Convention, serve as the principal framework for cooperation among countries to protect the local, regional and global environment. The function of public international law is "to provide a framework within which the various members of the international community may cooperate, establish norms of behaviour, and resolve their differences" (Sands 2003, p.12).

## 2.2 Espoo Convention assumptions

International environmental laws have mechanisms to achieve their objectives. Part of the effectiveness of the Espoo Convention relies on some assumptions about these mechanisms. Three of these assumptions are detailed below.

In the case of public participation mechanisms, there is an association between public participation and environmental performance and transparency. The Aarhus Convention on Public Participation reflects this point: "in the field of the environment, improved access to information and public participation in decision-making enhance the quality and the implementation of decisions...". The Convention also implies that public participation will "further the accountability of and transparency in decision-making..." (Aarhus Convention 1998). Accordingly, public participation would encourage the inclusion of environmental issues in decision making; and transparency would also have positive influences. This would contribute to protect the environment.

Another assumption in the Espoo Convention is that problems can be solved through a rational model, i.e. rationality will lead to good decision-making. This is evident with the adoption of the EIA process as the Convention's underlying functional framework. EIA bases were established following a rationalist approach (Jay et al. 2007), in which a technical evaluation would provide objectivity to decision making (Owens et al.

2004, cited in Jay et al. 2007). According to this view, the purpose of EIA is to provide scientific information about environmental consequences, without considering if this information will be taken into account or how it will be considered (Cashmore et al. 2004). However, as Cashmore et al. (2004) concluded it is not likely that decisions taken in a political arena could be truly rational.

Within the EIA field it is increasingly recognized that subjectivity (e.g. of politics) also should be accepted as part of the process and not only scientific knowledge. Wilkins (2003) sees subjectivity as a “positive attribute” of the EIA process, considering subjectivity unavoidable due to politicized evaluations, among other things. The author argues that the stakeholders’ values and beliefs play an important role in the EIA process. He states that the values play a direct role in developing a position in the project assessment, especially when there is not enough knowledge about the environment (which is often the case). Jey et al. (2007) also question the objectivity in EIA and see the process as a combination of facts and values. He adds that the underlying interests of decision makers, being the users of the information provided by the EIA, have great influence in their decisions.

Finally, in the Espoo Convention it is also assumed that addressing environmental issues early in the planning process will improve the project’s final environmental performances. In its preamble the Convention clearly express the “need to give explicit consideration to environmental factors at an early stage in the decision-making process...” (Espoo Convention 1991). Moreover, this concept is also stated by the IAIA (1999), which establishes as one of the principles to achieve EIA objectives that the EIA process should be applied “as early as possible in decision making”.

The description of a simple conceptual model relating the Convention’s assumptions, mechanisms, and objectives will help to understand why the Convention could not have success (figure 1).

The applicability of the Espoo Convention to mega projects will be assessed in light of the achievement of its aims and objectives (desired results), which are in general terms the aims and objectives of international environmental laws. In the logic of the Convention, mechanisms are created following the assumptions. If these mechanisms are applied correctly the Convention objectives would be fulfilled. Therefore, the desired results will be achieved if assumptions are correct and the mechanisms are correctly applied (figure 1, point 1). Following this reasoning, if the mechanisms are not applied correctly in certain situations it could be assumed that the Convention objectives will not be achieved (figure 1, point 3).

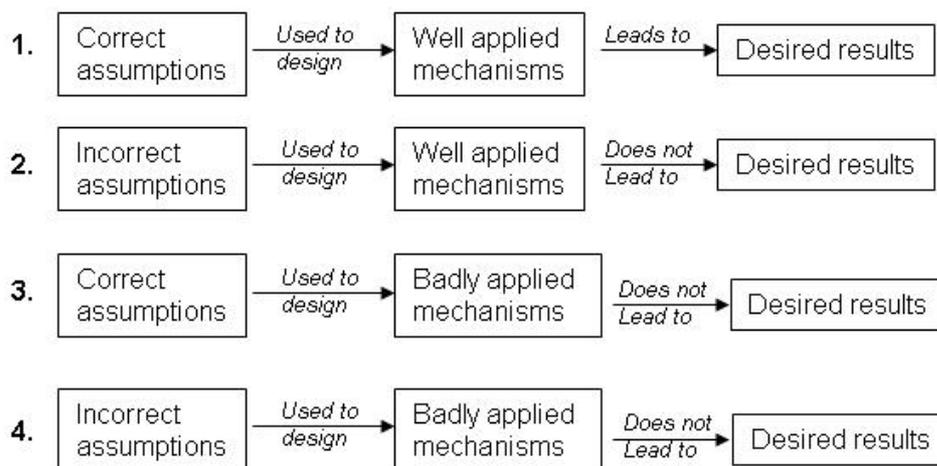


Figure 1. Relation between Convention's assumptions, mechanisms and objectives.

The model shows one possible way to achieve desired results and three possible ways to fail. Adapted from Margoluis et al. (1998).

On the other hand, mechanisms proposed by the Convention may not be suitable to achieve its objectives. This could be the case if the mechanisms were elaborated under wrong assumptions (figure 1, points 2 and 3). In this case, even if the mechanisms are applied correctly the Convention objectives would not be achieved. An example of the last situation could be that a Convention mechanism does not take into account a necessary aspect to achieve a Convention objective.

It is important to make clear that the purpose of the thesis is not to validate or reject the conceptual model presented in figure 1. The conceptual model is shown with the only intention of illustrating the position of mechanisms into the context of the Convention's logic.

### 2.3 Mega Projects

First of all, it has to be noted that a generally and widely applied definition of mega projects does not exist. As Flyvbjerg (2008) mentioned, the US\$ 1 billion limit proposed by the US Federal Highway Administration to differentiate mega projects from smaller projects may not be sufficient to define mega projects. The same author points out that the definition of a mega project depends on the context; a US\$ 500 million project could be considered a small project for a big city but for a small town this same project can be seen as a mega project.

The mega projects complexity is better understood by considering their characteristics. According to Sykes (1990) mega projects generally have the following characteristics:

- They are owned by the government, or a consortium of private companies, or a mixture of them.

- Due to their significant impacts on the economy and environment the government is involved even if it is not one of the owners.
- They take a long time to be finished. The construction could take more than 4 years, after a period of three or more years for research and authorization.
- They usually are of public interest because of their high socioeconomic and environmental impacts. This gives them a political relevance.
- They have a major impact on markets.
- In the case of transnational mega projects there are additional complications (several governments, language and cultural differences). For mega projects involving two countries these are “serious complications”. For more than two countries the complications are “very serious”.

Flyvbjerg (2005) and Bruzelius et al. (2002) added these mega project characteristics:

- They are “inherently risky due to long planning horizons and complex Interfaces”.
- There are several actors with conflicting interests in decision making.
- Almost always there is misinformation about benefits, costs and risks.
- Long life time of projects.

As the research deals with the “strategic dimension” of mega projects it is necessary to clarify this expression. Mintzberg et al. (1998; quoted in Cherp et al. 2007) have shown that strategy is a broad concept meaning, for example, a “formal plan” for the Planning School, a “personal perspective” for the Entrepreneurial School or a “specific position” for the Environmental School. The discussion of its meaning is beyond the thesis scope. For the purpose of this research the strategic dimension and the strategic decisions are related to:

- The different views regarding the final purpose of projects and other key decisions (such as location).
- The project’s influences on politics and political influences over the project.
- The link between project and policies.

On the other hand, the “project level” or the project dimension embraces:

- The issues related with the direct intervention on the biophysical environment.
- Decisions regarding the project design (e.g. materials and small changes in location).

## 2.4 Conclusion

The first relevant idea in this chapter is the creation of international environmental law to enhance the cooperation among countries to resolve potential environmental conflicts. The Convention's mechanisms to carry out this cooperation are elaborated under certain assumptions: public participation improves decision making; rationality provides objectivity to decision making; and early planning improves project environmental performances. Then to assess the Convention applicability to mega projects it should be taken into account the difference between a failure in the assumptions and a failure in the application of the mechanisms. In chapter 6 (Discussion) the assumptions and concepts explained in this chapter will be revisited with the information provided in chapters 3, 4 and 5. Finally, a definition of mega projects and strategic dimension is provided to be able to characterize Nord Stream and its strategic dimension.

## 3 Espoo Convention

In order to be able to analyze the Espoo Convention applicability to mega projects it is necessary to know in depth its objectives, mechanisms, and the process by which they function. They are examined in this chapter together with the Convention's origin and performance, its scope and administrative structure. The present chapter seeks to fulfil the thesis' first objective and to answer the first research question.

### 3.1 Origins

The initiatives that gave origin to the Espoo Convention could be traced to the beginning of the 1970s when transboundary impacts concerns came on stage. The first formal international expression of these concerns was the Stockholm Declaration in 1972 in which principle 21 declares that states should ensure that activities within their jurisdiction do not cause damage to the environment of other states. However, it was not until 1987 that the first work about transboundary EIA took place when a UNEP group of experts elaborated the principles of transboundary EIA (Connelly 1999).

Although transboundary EIA was controversial because of sovereignty issues, in the Warsaw Seminar on Environmental Impact Assessment, in 1987, it was recommended to develop a framework agreement on EIA in a Transboundary Context. This was the beginning of the negotiations that were influenced by a favorable political environment interested in enhancing western and eastern countries cooperation (Connelly 1999). From its beginnings the proposed framework to deal with transboundary impacts of projects was the EIA process, which had already existed for almost two decades (in Europe) applied to impacts within national jurisdiction.

From 1988 to 1990 the United Nations Economic Commission for Europe (UNECE) organized six meetings to negotiate the creation of what later would be the Espoo Convention. In these meetings were defined important issues like the public participation; the definition of terms; if the Convention would apply only for projects or also policies, plans and programmes; the determination of impacts significance; the possibility to reject a project if it has significant impacts; and the nature of the meeting of the parties and the role of the Espoo Secretariat (Connelly 1999). The Convention was signed in February 1991 in Espoo, Finland, and entered into force in 1997. Forty one countries have ratified the Convention so far<sup>4</sup>.

At the moment the Convention is only open to the 56 States Members of the UNECE, but it was proposed to make it accessible to any other United Nations Member State. This change is proposed in the “first” Espoo amendment. The Convention has other proposals of changes: the “second” amendment and the inclusion of the SEA protocol. None of them have entered into force yet (UNECE 2008<sup>a</sup>). However, many countries have expressed their willingness to ratify the amendments and the SEA protocol (UNECE 2008<sup>b</sup>).

Although the Espoo Convention is one of the most important legislations about transboundary impacts, it regulates only transboundary impacts generated by specific projects. Transboundary impacts from other sources are considered in other international environmental law, for example, the Convention on Long-range Transboundary Air Pollution (1979) and the Convention on Early Notification of a Nuclear Accident (1986). There are also three UNECE Conventions that refer to the Espoo Convention and many other global agreements that require EIA to assess transboundary impacts (UNECE 2006).

### 3.2 Objectives

The general aim of the Espoo Convention is to “ensure environmentally sound and sustainable development” through the prevention, reduction and control of significant adverse transboundary environmental impacts<sup>5</sup> from proposed activities. More specific objectives are to “enhance international co-operation in assessing environmental impact in particular in a transboundary context”, and “to give explicit consideration to environmental factors at an early stage in the decision-making process” (Espoo Convention 1991). The last mentioned objective recalls the concept of prevention, a core value in EIA.

In line with the Convention, the objective of EIA, the Convention’s principal mechanism, is to ensure that environmental factors are considered in decision making of development proposals and to anticipate, avoid,

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<sup>4</sup> The countries that ratified the Convention are called parties or members of the Convention.

<sup>5</sup> The Convention defines environmental impacts in a broad sense meaning “any effect caused by a proposed activity on the environment including human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; it also includes effects on cultural heritage or socio-economic conditions resulting from alterations to those factors” (Espoo Convention 1991).

minimize or offset environmental impacts of these proposals; this will lead to promote development that is sustainable and optimizes resources use (IAIA 1999). According to Connelly (2008<sup>a</sup>), the strongest motivation for the Espoo Convention was the application of the already working EIA framework to assess transboundary impacts and to prevent conflicts between countries.

Other intention that motivated the Espoo Convention was the cooperation between eastern and western countries in relation to EIA (Schrage 2008). As Connelly (1999) pointed out one of the drivers to create the Convention was the “growing desire for cooperation between eastern and western countries”. This is logical giving the fact that the integration of the so-called countries in transition was one of the major concerns of UNECE, the key organism behind the Convention, after the Cold War (UNECE 2008<sup>c</sup>).

### 3.3 Mechanisms

In order to achieve its objectives, the Convention established certain mechanisms or measures. In this section the Espoo mechanisms and the process they work into are presented with some detail, based on the Espoo Convention text (Espoo Convention 1997) and guidelines (UNECE 2006), and documents from the Meetings of the parties to the Convention. The Espoo process is divided into several stages, which are presented in the next sub-sections following the flow chart depicted in figure 2.

#### 3.3.1 *Initiation of the Espoo process*

The formal initiation of the Espoo process starts with a “Notification” (described in 3.4.2.), but in practice there are some activities that have to be carried out before. One general aspect is that stakeholders (government, NGOs, general public, etc.) should be informed about the Convention and its mechanisms in order for them to be able to identify potential Espoo cases and report them to the authorities.

Another step previous to the notification is the screening stage, in which it is determined if a project is subject to be assessed under the Espoo Convention. The “Appendix I” of the Convention shows a list of activities for which a Notification should be sent to a potentially *affected party*<sup>6</sup>. For those activities with potentially transboundary impacts not listed in “Appendix I” there are general criteria to determine the environmental significance of activities in “Appendix III”. The parties of the Convention also decided the designation of a “Point of Contact” in each *concerned party*<sup>7</sup>, which is the governmental agency (and officers) in charge of receiving and sending the information between countries.

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<sup>6</sup> According to the Convention an *affected party* is the country likely to be affected by a transboundary impact of a proposed activity. Several countries could be affected parties simultaneously.

<sup>7</sup> According to the Convention *concerned parties* are the Party/ies of origin and the affected party/ies.

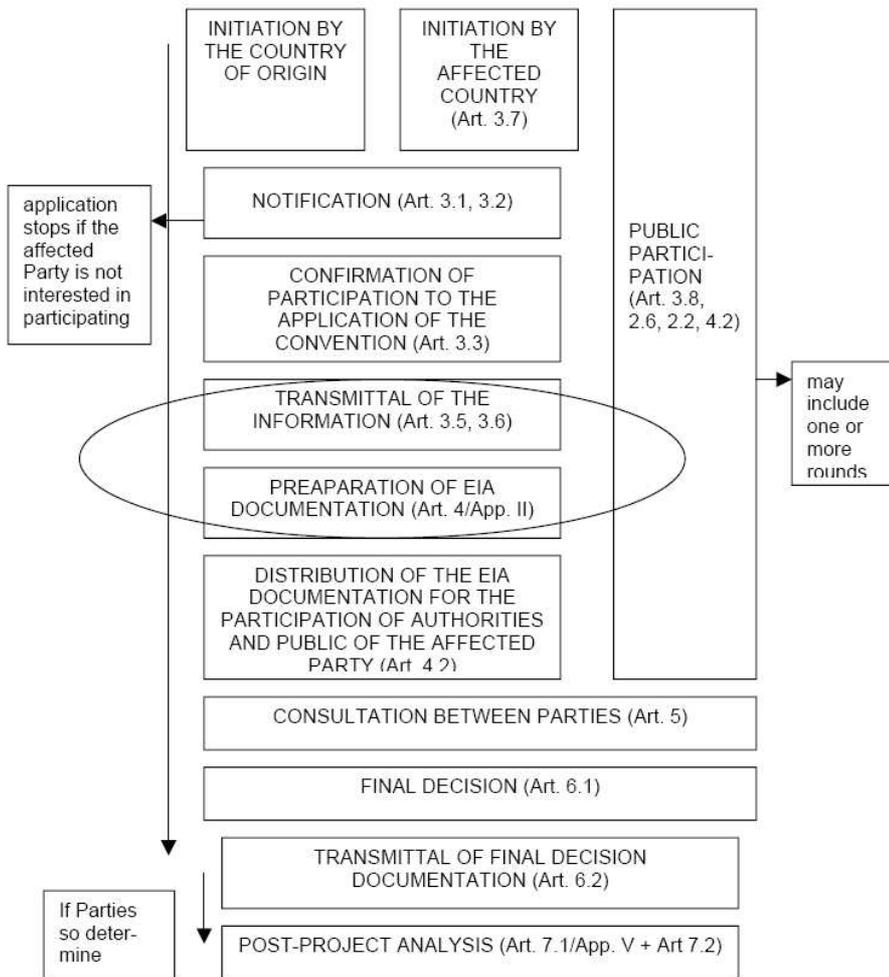


Figure 2. Flow chart of the Espoo Convention assessment process (extracted from UNECE 2006).

### 3.3.2 The Notification and transmittal of information (Article 3)

For activities likely to cause transboundary impacts, the *party of origin*<sup>8</sup> should notify the affected party through the “point of contact”. The “Notification” is the formal starting point of the Espoo process. The Notification should be sent as early as possible and not later than when the public in the party of origin is informed about the EIA process. When parties of the Convention are simultaneously parties of origin and affected parties, reciprocal notifications should be sent.

The Notification contains information of the proposed activity and available information about potential transboundary impacts. The affected country should inform the party of origin whether it intends to

<sup>8</sup> According to the Convention a *party of origin* is the country under whose jurisdiction a proposed activity is planned to take place. Several countries could be party of origin simultaneously.

participate in the EIA process. If the affected party does not intend to participate in the EIA process the application ends. If the affected party intends to participate in the EIA process the application of the Espoo Convention continues with further exchange of information. Other information might be sent in a second contact during this stage if the affected party requires it, namely relevant information about the EIA procedure and possible adverse transboundary impacts.

Concerned parties shall ensure that the general public potentially affected by the proposed activity is informed and is given the possibility to comment or object the project. General public comments or opinions should be transmitted to the party of origin. Once the notification (and transmittal of information) stage is done, the preparation of EIA documents starts.

### *3.3.3 Preparation of the EIA documentation (Article 4)*

The EIA documentation basically contains the description of the proposed activity, the alternatives, the environment likely to be affected, the potential environmental impacts, and the mitigation measures<sup>9</sup>. The minimum information required for the EIA documentation is specified in the Appendix II of the Convention. The party of origin should send the EIA documentation to the affected party. Concerned parties should arrange the distribution of the documentation to the authorities and the general public in the affected party. Comments from the party of origin authorities and public regarding the EIA documentation should be submitted to the party of origin before the final decision is made.

### *3.3.4 Consultation between parties (Article 5)*

Before taking the final decision the party of origin should enter into consultations with the affected party concerning the potential transboundary impacts and measures to mitigate them. Concerned parties should agree on the timing of consultation, issues to be addressed, who is participating in the consultations, roles of different stakeholders, and means to be used in the consultation.

### *3.3.5 Final decision (Article 6)*

The final decision of approval is taken by the party of origin and should be based on the results of the EIA process and the EIA documentation. It should be specified how comments of affected party authorities and

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<sup>9</sup> The Environmental Impact Assessment documentation is comprised of the reports/s that contain/s the information required in the Convention's Appendix II plus additional information provided. It can also be referred as to "EIA report".

general public were taken into account. The party of origin should provide the affected party the final decision with the reasons on which it was based.

### 3.3.6 *Other issues*

The Convention (Article 7) includes a post-project analysis with its objectives (Appendix V) although is not mandatory. The parties decide if a post-project analysis will be carried out and under which conditions.

Bilateral and multilateral agreements are important instruments to enhance co-operation among members of the Convention (promoted in Article 8 and appendix VI). These agreements are not mandatory but are seen as a way to improve then Convention's effectiveness. The agreements could be established to define specific issues of the Convention application (e.g. about criteria for deciding what is a significant impact; setting up a joint body; public participation; consultation between the concerned parties; and arranging translations).

Finally, the Convention encourages carrying out research programmes to improve the impact assessments among other things (Article 9); and also establishes a Settlement of Disputes mechanism (Article 15 and Appendix VII) to solve problems of interpretation or application of the Convention.

## 3.4 Scope

The Espoo Convention is mandatory just for projects. However, a Strategic Environmental Assessment (SEA) protocol was proposed to be added to the Convention (not entered into force yet). This protocol will make mandatory for the parties to evaluate the environmental consequences of Plans and Programmes and to the extent appropriate to policies and legislation. This will enable the consideration of environmental issues in earlier phases of decision-making and provide public participation in them.

## 3.5 Administration

The Convention is administrated by the UNECE Espoo Convention Secretariat, which is comprised of the following bodies (UNECE 2008<sup>d</sup>):

- *Meeting of the Parties*: it is the main body that takes decisions about the reviewing of policies and methodological approaches to EIA; information exchange; seeking the services of competent international bodies for advice in methodological and technical aspects to achieve the purposes of the Convention; and adopting proposals of amendments.
- *Working group on EIA*: it is a subsidiary body of the Meeting of the parties established to assist it in implementing the Convention.

- *Implementation Committee*: established to control and assist the parties regarding their fulfilment of the Convention obligations.
- *Inquiry Commission*: It is a non permanent Commission established ad-hoc to arbitrate in case a Party requires it.
- The Convention includes also a Bureau, and a meeting of the Signatures to the Protocol.

The parties of the Convention have decided to carry out ‘Reviews of the implementation of the Convention’. Information regarding the implementation is obtained through a questionnaire filled out by the parties (and other signatories’ non-parties). The questionnaire covers different aspects of the Convention. So far, one review was finished in 2003 and the second review is being done now.

### 3.6 Performance

The Convention application has increased since its entry into force (UNECE 2003; UNECE 2007). The last implementation assessment reflected that most of the members have applied the Convention several times during the 2003-2005 period (UNECE 2007, p.34). For example, during this period Sweden has had 16 Espoo cases; Spain 2; Switzerland 8; United Kingdom 2; Poland 10; Netherlands 30; and Lithuania 6 (information obtained from each of the country implementation reports available at UNECE 2008<sup>e</sup>). On the other hand, some countries have not had practical application (e.g. Greece, Armenia, Azerbaijan and Canada).

The most common activities subject to Espoo process were thermal and nuclear power stations, motorways, express roads, and railways (UNECE 2008<sup>b</sup>). Some examples of projects under Espoo process, besides those selected for this research, are the Baltic Gas Interconnector involving Germany, Sweden and Denmark; the bridge over the Danube River between Bulgaria and Romania; and the undersea gas pipeline between Croatia and Italy.

According to the Espoo Convention members its implementation has had generally good results in preventing, reducing or controlling possible significant transboundary environmental impacts (UNECE 2007, p.36); nevertheless, this is not supported by specific studies. On the other hand, some weaknesses have been found in the last implementation review. These are some of the aspects that need to be improved: the public was not sufficiently encouraged to participate, problems with language translations; delays in sending information; and the content of notifications and final decisions did not comply with the correspondent articles (UNECE 2007, p.24). As it can be seen from this description problems detected were not critical ones, i.e. the Convention works properly and would only need some minor improvements.

The Espoo Convention has had other effects than those intended in their objectives. As Hilden et al. (2001) pointed out the Convention has influenced the development of EIA systems in countries that did not have it, and also served as a model for other transboundary EIA agreements (Connelly 1999).

### 3.7 Conclusion

It took several years of negotiations to create the Espoo Convention. The increasing concern about transboundary impacts made it possible. The final aim of the Convention is to contribute to a sustainable development through international cooperation and inclusion of environmental aspects in decision making. The Convention application has been increasing since it entered into force and has had relatively good results. The main mechanisms of the Convention intended to achieve its objectives are summarized as follows:

- *Obligation to carry out an EIA procedure.* EIA should be undertaken before decision making is done and it is applied to project level.
- *Consultations among countries.* Consultations should occur along the whole Espoo procedure in different moments (notification, preparation of the EIA documentation, consultations on the Basis of the EIA documentation, final decision, post-project analysis).
- *Public participation.* Public participation in both the affected party and the party of origin should be facilitated during the whole Espoo process.
- *Bilateral and Multilateral agreements.*
- *Settlement of disputes.*

The application of these mechanisms to Nord Stream is showed in chapter 5, after the description of Nord Stream in the next chapter.

## 4 Mega projects

As was stated in the problem formulation (chapter 1) the complexity or distinctive characteristics of mega projects could make difficult the application of Espoo mechanisms, those were described in the previous chapter. These difficulties could be generated by two main issues mentioned in the introduction: the number of stakeholders involved and the strategic dimension of mega projects. In the present chapter the Nord Stream mega project will be described (thesis's objective 2), focusing

on the two mentioned aspects. This will help to answer the second research question. The details of the Espoo process for the project are presented in chapter 5.

#### 4.1 Nord Stream

*Nord Stream* is a pipeline project with the objective of transporting natural gas from Russia (Vyborg) to Germany (Greifswald) through the Baltic Sea (figure 3). It will have an extension of 1200 km with a cost of 7.4 billion Euros, according to the last recalculation done by Nord Stream in March 2008 (Nord Stream 2008<sup>a</sup>). The project is intended to provide 27.5 billion cubic meters per year (bcm/yr) in the first phase planned to be finished by 2011, and an additional 27.5 (bcm/yr) in a second phase in a parallel pipeline planned to be completed by 2013<sup>10</sup> (Nord Stream 2006<sup>a</sup>; Nord Stream 2008<sup>b</sup>). This amount of gas would contribute to cover an important percentage of the additional European Union (EU) gas needs in the future. Nord Stream is currently being assessed under the Espoo Convention.

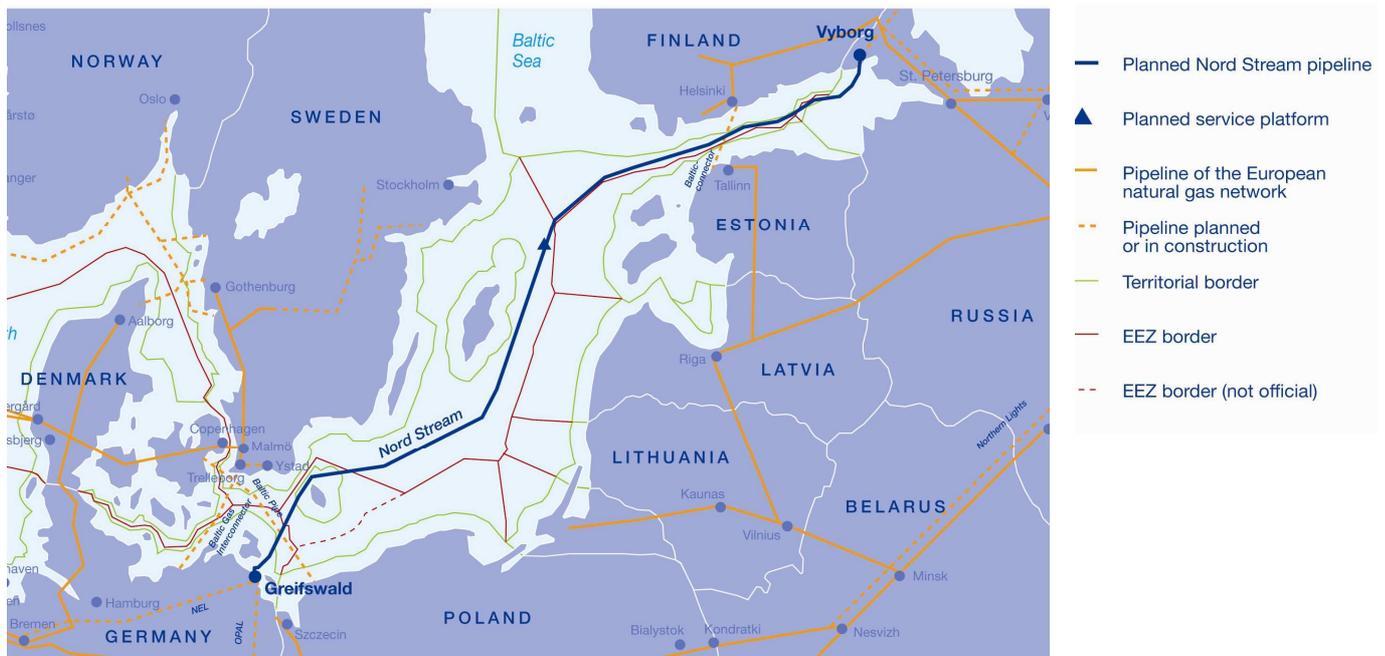


Figure 3. Nord Stream pipeline route through the Baltic Sea. Extracted from Nord Stream (2008<sup>d</sup>).

Discussions about building a pipeline through the Baltic Sea started in 1993 and the first feasibility studies were done in 1997. However, it was not until 2005 when Russia and Germany signed an agreement to construct the pipeline<sup>11</sup> that the project took relevance (Larsson 2006, p.18).

<sup>10</sup> The deadline for the second phase is still uncertain (it was originally planned for 2012).

<sup>11</sup> At that moment the project name was “North European Gas Pipeline (NEGP)” changed to *Nord Stream* in 2006.

The gas to be supplied by Nord Stream will come from Yuzhno-Russkoye oil and gas field, and later fields in Yamal Peninsula, Ob-Taz bay and Shtokmanovskoye will be added (Nord Stream 2008<sup>c</sup>), all situated in Russia. The Nord Stream project does not include the inland pipeline sections from the gas fields to the Baltic Sea and from the Baltic Sea to its final destination. A maintenance platform originally planned to be located in the Swedish's EEZ, which generated some controversy, was cancelled in April 2008.

Nord Stream<sup>12</sup> is one of the 122 gas projects of common interest in the Trans European Energy Network guidelines (EU 2006). This guideline determines which projects are eligible to receive EU funding for feasibility studies (EC 2008).

#### 4.1.1 Stakeholders

At state level the stakeholders<sup>13</sup> participating in the Espoo process are those whose waters are crossed by the pipeline. Nord Stream will cross the Exclusive Economic Zone (EEZ) and the territorial waters of five countries: Russia, Finland (only the EEZ), Sweden (only the EEZ), Denmark, and Germany (figure 3). Four other Baltic countries are directly involved in the Espoo process: Estonia, Latvia, Lithuania and Poland (Nord Stream 2008<sup>b</sup>). Governmental agencies in each of the nine countries are the points of contact through which the information is transmitted.

Other stakeholders are the Nord Stream owners. Nord Stream headquarters is located in Switzerland and has four shareholders: OAO Gazprom (51% stake) from Russia; BASF/Wintershall (20%) and E.ON Ruhrgas AG (20%) from Germany; and Nederlandse Gasunie (9%) from the Netherlands. The four are public companies owned either by the state or private investors. Nord Stream is governed by a Shareholder Committee, whose Chairman is Gerhard Schröder, the former Federal Chancellor of Germany.

Nord Stream has signed agreements to sell the gas to the following companies: Dong Energy, Denmark (1 bcm/yr); E.ON Ruhrgas, Germany (4 bcm/yr); Gaz De France, France (2,5 bcm/yr); Gazprom Marketing & Trading, UK (4 bcm/yr); and Wingas, Germany (9 bcm/yr) (Nord Stream 2008<sup>b</sup>).

Several governmental agencies (state and municipal authorities), NGOs, research institutions and general public have participated in the firsts stages of the Espoo process in 2006 and 2007 (table 1). Their interests are broad, from jurisdiction matters to concerns about the project environmental impacts. More details about stakeholders concerns is given in 4.1.3 and 4.1.4.

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<sup>12</sup> The actual name of the project selected as project of common European interest is "North European gas pipeline: Russia, Baltic Sea, Germany".

<sup>13</sup> *Stakeholders* embrace all the individuals, organizations, or institutions involved (affected, interested, or related in some way) in the project.

Stakeholder Country	Governmental Agencies	NGOs	Research institutions	Private persons
Denmark	8	----	----	----
Estonia	9	2	3	3
Finland	33	13	3	4
Germany	23	9	3	----
Latvia	1	1	----	----
Lithuania	1	----	----	----
Poland	1	----	----	----
Russia	1	----	----	----
Sweden	33	10	2	1
<b>Total</b>	<b>110</b>	<b>35</b>	<b>11</b>	<b>8</b>

Table 1. Number of stakeholders that have written formal letters commenting about Nord Stream in the first and second public consultations. The 164 different stakeholders have sent 216 letters.

#### 4.1.2 Scale

Due to the geographical size of the project, it could have influences on the whole Baltic Sea, i.e. in the nine countries with coasts along the Baltic Sea mentioned before. Besides the physical influences, the project could also have influence on the EU energy status and political aspects.

#### 4.1.3 Environmental issues

Based on a an stakeholders comments' review of Pelkonen et al. (2007) the main environmental impacts will occur during the pipeline construction due to dredging, trenching, filling and blasting activities. The consequent sediments removal and dispersion, which are highly polluted, plus the seabed modifications could have effects on fishes, benthic fauna and marine mammals.

Several conservation areas in the Baltic Sea are crossed by the pipeline (WWF 2007) and also coastal protected areas may be affected. Fishing activities will be affected during the construction and operation phase due to restrictions to fishing in safety zones along the pipeline. Finally, one of the major concerns well-known by Nord Stream and stakeholders, is the presence of a great amount of munitions dumped in the

bottom of the Baltic Sea after the World Wars I and II. This poses a risk to activate mines or chemical weapons during the pipeline installation.

#### *4.1.4 Strategic Dimension of Nord Stream*

The discussions around the strategic dimension (see the definition on Section 1.3.) of Nord Stream have been more than evident in the last years. The top authorities from involved countries have had long discussions and disagreements about Nord Stream. Besides the discussions around environmental issues in the Baltic Sea, broader topics like EU energy policies and European integration were touched. The following sections describe strategic issues reflected in stakeholders' comments during the Espoo process plus those from analysts' reports. The comments from stakeholders were done in the context of the two public participation opportunities held so far; they have sent 216 letters (letters are accessible from Nord Stream 2008<sup>e</sup>). The opinions and positions expressed in next sections were obtained from these letters (unless otherwise referenced).

##### 4.1.4.1 Political and economic issues

Energy is a “hot” issue nowadays in Europe, and, as was mentioned in 4.1, Nord Stream will have great influence on the EU energy future. Security of energy supply is one of the challenges stated in the EU energy policy (CEC 2007). Nord Stream has generated different opinions among the countries involved regarding security of supply. Some argue that Nord Stream will increase the energy security for Germany and EU because it will add a new gas route avoiding other countries' territories in which some existing conflicts could risk the gas supply. Others argue that the new gas connection with Russia will increase EU dependence on this country (Cameron 2007), consequently giving it the possibility to use the energy supply as a tool to impose political positions (Larsson 2007; Prokarelia 2007).

There are other issues behind the Russian decision to build the pipeline through the Baltic Sea. With Nord Stream, Russia will be independent from transit countries like Ukraine, Poland or Belarus. This gives Russia a geopolitical advantage and would reduce the transit fees from already existing pipelines in Poland and Ukraine (Cameron 2007). According to Poland, bypassing the country would give Russia the possibility to cut off the gas supply to Poland without compromising the supply to Germany. For Germany, Nord Stream would avoid any problem coming from the relation between Russia and transit states or from some transit states that could cut the gas supply (Larsson 2007). In relation to this point, Riley (2008) mentioned that there were suspicions of gas theft in some transit countries.

Riley (2008) anticipates an economic unfeasibility for Nord Stream. He argues that in a liberalized market, Nord Stream would be too expensive to compete with pre-established land pipelines.

The selection of the pipeline location alternatives (onshore – offshore) is closely related with political issues, so it is presented here within the strategic dimension. The necessity to consider other inland pipelines (e.g. Jamal-Europe and Amber pipelines) as an option to Nord Stream was raised by the following stakeholders: Estonian Ministry of Environment, Finnish Ministry of Trade and Industry, WWF, Friends of Earth, Lithuanian Ministry of Environment, Polish Ministry of Environment, Swedish EIA centre, Swedish Environmental Protection Agency, Swedish Defense Research Agency, Swedish Green Party, and five Swedish Municipalities. In the same line, the choice of the pipeline route within the Baltic Sea could be influenced by political reasons.

According to Larsson (2007, p.62) Nord Stream has avoided the EEZ of some Baltic countries even if this causes a much longer pipeline. He also argues that a more direct course through the avoided countries could prevent some risks with lanes. The Swedish Defence Research Agency also mentioned that “it is very obvious” that the selected route carefully avoids the Estonian EEZ. For this Agency, the current planned pipeline course represents the political interests of Russia and Germany. Finally, Pelkonen (2007, p. 9) pointed out that political issues have influenced the public discussions on the environmental impacts of the project.

#### 4.1.4.2 EU energy policies

The relation of Nord Stream with the EU policies was also an important issue mentioned by the stakeholders. The Finnish Ministry of Industry and Trade commented that the project will have a great impact on the whole EU, and specifically on the development of the gas market. The Swedish Defense Research Agency mentioned the possibility for Nord Stream to have a negative impact on the liberalization of gas market. On the same line, the Polish Ministry of Environment highlighted the necessity of considering the strategic impacts of Nord Stream over the EU energy policy and foreign policy. WWF and the Swedish EIA Centre pointed out that in a long term perspective Nord Stream could affect the transition to renewable energies. In relation to EU energy targets, the Swedish Green Party and WWF have commented that various ways of achieving these targets should be presented and not only the proposed pipeline.

There were also concerns about the EU climate policies from several stakeholders. The Swedish Green Party and the National Board of Housing, Building and Planning claimed that it should be stated how the project

will influence the EU climate policies targets in a long run. The Swedish Defence Research Agency added that the effect over power industry should be considered. The Green Party said that it could not be taken for granted that the gas delivered by Nord Stream will replace coal and oil power. The County Administrative Board of Skåne (Sweden) stated that the pipeline project is not in line with the EU and Swedish objective of fossil fuels reduction. Finally, the Finnish Ministry of Trade and Industry pointed out that Nord Stream is not considering other Baltic gas connections.

#### 4.1.4.3 European integration

Larsson (2007) highlights that Nord Stream is not a common European project since the project is against several European states. Nord Stream clearly was not a project that came from the consensus of all EU members. Only Germany, UK and the Netherlands support the project, with rejections of Estonia, Latvia, Lithuania, Poland (plus Belarus and Ukraine outside the EU). Sweden, Finland and Denmark have no clear position about it. The bilateral decision between Russia and Germany jeopardizes the regional stability, producing frictions between some states (Larsson 2007). Along the same line, the Finnish Green Party has stated that the pipeline does not benefit the whole EU.

Some stakeholders have also commented about this EU integration issue, referred to in the EU energy policy as a call for a common approach to energy (CEC 2007). For example, the Finnish Ministry of Foreign Affairs mentioned the inclusion of other Baltic Sea energy interests in the project planning. He added that the way Nord Stream is being conducted has a negative impact on the integration of EU energy policies. In relation to this, the Swedish Defence Research Agency stated that Nord Stream is not a common EU project because there are at least 6 EU countries (Poland, Estonia, Latvia, Lithuania, Finland and Sweden) with a negative or skeptical view in the project.

## 4.2 Conclusion

In this chapter some of Nord Stream's characteristics that matches with the Mega Project's definition in 2.3. were shown, e.g, governments are involved, they are of a public interest, and planning process and construction takes a long time to be finished. Nord Stream involves a great number and diversity of stakeholders even in the first phases of assessment. The difficulties that could be generated by this factor will be identified in chapter 5, and how this aspect influences the applicability of the Espoo Convention will be analyzed in chapter 6.

The second point to highlight in the present chapter is that the impacts of Nord Stream clearly go beyond the physical environment affected by the pipeline infrastructure. Political and economic issues, the relation with EU policies, and the EU integration are topics of relevance for several stakeholders. Nord Stream's strategic dimension embraces the Strategic Dimension's criteria given in 2.3., namely, different stakeholders' views regarding the project final purpose, project's influences on politics and political influences over the project, and the link between project and policies. In chapter 5 it will be shown how the Espoo process deals (or does not deal) with this Nord Stream's strategic dimension.

## 5 Assessment of Mega projects in the context of the Espoo Convention

Having devoted the last two chapters to describing the Espoo Convention and the Nord Stream project, respectively, in this chapter the Convention application to the Nord Stream case will be explored. It will be shown through the interaction among countries and stakeholders in the context of the Espoo process, which started in November 2006 with the Notification and is currently in progress. This will help to answer the third research question regarding the Espoo process of Nord Stream. In the second part of this chapter, the difficulties in the application of the Convention will be identified; it is an attempt to answer the fourth research question. At the same time, this task will help to explore (in the next chapter) the extent to which the Espoo mechanisms can work in application to mega projects (the thesis' third objective).

### 5.1 Espoo process

The Espoo process started in November 2006 when each of the *parties of origin* notified the *affected parties* about the Nord Stream project. The parties of origin are the ones whose waters are crossed by the pipeline, namely Russia<sup>14</sup>, Finland, Sweden, Denmark and Germany. The affected parties are the countries potentially affected by the project. In this case, all the countries with coasts along the Baltic Sea are potentially affected countries (see figure 3). Therefore, all the parties of origin plus Poland, Latvia, Lithuania, and Estonia are affected countries. A particularity of this type of transboundary projects<sup>15</sup> is that there are countries that are simultaneously parties of origin and affected parties.

Together with the Notification letters the *Project Information Document* (PID), and other documents elaborated by Nord Stream, was distributed. In the PID, Nord Stream presented general information about the project, project justification, alternatives, regulatory context, baseline of the project area, impacts to be

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<sup>14</sup> Although Russia has not ratified the Espoo Convention it accepted to act as a Party of origin following the Convention requirements as this is possible according to its legislation.

<sup>15</sup> Transboundary projects are those projects which cross the states borders.

studied, EIA methodology, mitigation measures, project schedule, and EIA documentation content. These documents were available for the general public in each of the concerned countries from the end of November 2006 to the end of January 2007. During this period comments from the public were received by each of the countries authorities.

In February 2007 all of the concerned parties (parties of origin plus affected parties) responded to the notification letter saying that they wished to participate in the EIA process. Therefore, from that moment, the nine countries mentioned above were involved in the process. In the responses each country added the comments received from its public. In total 131 letters with comments were received from different stakeholders from the nine countries (see table 1).

In October 2007 Nord Stream prepared an additional report called “Status of the Nord Stream pipeline route in the Baltic Sea” (Nord Stream 2007). As the first report presented, the PID, contained a preliminary proposal about the pipeline route, there was a need for adjustments and modifications as there were more investigations. In November 2007, each party of origin sent a letter to the other concerned parties asking for comments about the status of the pipeline route document. The public from each country had the opportunity to make comments about the status of the pipeline route document until about the middle of January 2008. There were 85 letters from different stakeholders mentioning, among others, these concerns: interference with navigation, potential risks of anchoring and ship sinking, damage to cultural heritage (shipwrecks), presentation and justification of other onshore and Baltic Sea alternatives, and lack of scientific research.

At the time of writing Nord Stream is preparing the EIA documentation (or EIA report)<sup>16</sup>. Parties of origin have agreed to require a different EIA report for each party of origin following their own national EIA legislation, and one Transboundary EIA report for the whole project. The transboundary EIA report will be translated to the nine countries’ languages, but not the National EIA reports. The authorities in Denmark required from the beginning the inclusion of the whole pipeline extension assessment in the EIA report to be submitted in this country. So, in the Danish case the Transboundary EIA report will be submitted instead of a particular EIA report. Sweden first required a National EIA report, but later followed the Danish steps, i.e. only a Transboundary EIA report will be submitted in Sweden.

The decision for the pipeline approval will be taken by each of the five parties of origin, i.e. each country will take the decision on the pipeline’s section on their own territory (or EEZ). Therefore, the pipeline could not be approved if one of the parties of origin do not approve “its” section.

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<sup>16</sup> The EIA report is being prepared by the Danish international engineering company *Ramboll* for Nord Stream.

For the elaboration of the EIA reports Nord Stream is following the requirements in the Espoo Convention and national EIA legislations. Besides this, Nord Stream has taken into account the comments and opinions from the authorities to define the EIA report contents. Only Germany and Finland<sup>17</sup> have prepared and given Nord Stream specific terms of reference<sup>18</sup> for the elaboration of the corresponding EIA reports.

So far, Nord Stream has only submitted the national EIA report for Sweden in December 2007. The Swedish authorities considered that the information submitted was incomplete and decided to require, as mentioned before, a Transboundary EIA report (Swedish Ministry of Environment 2008). The rest of the EIA reports were initially scheduled to be submitted by April 2008, but they were postponed because in one of the Parties of origin's meetings it was decided that major changes should be done to the preliminary Transboundary EIA report presented by the developer. Once the EIA reports have been submitted another period for public participation will take place to give the stakeholders the opportunity to comment on these reports. This will not happen before June 2008 (Abromeit 2008).

Several meetings have been held among the Nord Stream Company, parties of origin and affected parties since April 2006 to the present. Several public hearings have taken place in each of the countries of origin and affected countries. Nord Stream has also organized events such as seminars, press conferences, and exhibitions in each of the nine concerned countries (Nord Stream 2008<sup>f</sup>).

In January 2008 there was a public hearing at the Committee of petitions in the European Parliament petitioned by two environmental organizations (Polish and Lithuanian respectively). It is important to remark that strategic issues had a central role in the hearing; the two themes discussed were "The Energy, Industry and the Strategic Dimension of the Nord Stream Pipeline" and the "Environmental impact of the Nord Stream Pipeline" (European Parliament 2008). In this meeting several progress reports were presented with the latest information about the project and its environmental assessment process.

Some of the countries involved in the Nord Stream Espoo process have previously established, as it is suggested by the Convention, bilateral agreements, namely Estonia with Latvia and Finland, Germany with Poland, and Poland with Lithuania. These agreements enlarge the provisions of the Convention in order to facilitate its implementation through additional requirements or arrangements. As an example in the Estonian-Finish agreement there is a provision to form a "commission on EIA" with members of both countries which has an advisory role. According to this agreement the party of origin should submit the EIA documentation to the commission.

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<sup>17</sup> The Finnish terms of reference summarize what have been said by stakeholders.

<sup>18</sup> According to the European Commission, the "terms of reference" define the content and scope of the environmental reports to be submitted to the competent authority (EC 2001). The terms of reference are not mandatory, but recommended by the EC.

## 5.2 EIA report

In Chapter 2 it was briefly described the required content of the EIA report according to the Espoo Convention. In this section it will be described what has been proposed by Nord Stream as the EIA report content. Although the EIA report is not finished yet, it is possible to know their scope and content from the preliminary documents and presentations. The content of the EIA report is important in light of the thesis objectives to analyze how the strategic dimension of the project is assessed.

Information about EIA scope can be found in the PID, the first document presenting the Nord Stream project. One of the objectives of this document was “to identify the impacts (at an early stage) that are most likely to be significant and that require investigations during the EIA studies” (Nord Stream 2006 <sup>a</sup>). The impacts to be studied were only those related with the direct physical influences of the pipeline (e.g. impacts on ship traffic, human safety, water quality, flora, fauna, and surface sediments). This is clear in the “delimitation of impact area” section in the PID, where it is stated that the “impact area” is defined by the width of the corridor in which the pipeline will be installed (Nord Stream 2006 <sup>a</sup>).

In another document prepared by Nord Stream in 2006 before the notification, the scope of the assessment was limited, as the PID, only to the marine environment and landfalls in Germany and Russia (Nord Stream 2006 <sup>b</sup>). In January 2008, Nord Stream presented in the European Parliament a document describing the progress of the EIA report. The report presents the data to be collected and the methodologies to be applied for the assessment of relevant impacts. It also included the table of contents of the Transboundary EIA report. This document confirmed the EIA scope presented in 2006; the environmental assessment is focused on physical effects of the pipeline infrastructure on, for example, sediments, navigation, cultural heritage, and munitions (Nord Stream 2008<sup>b</sup>).

In relation with the scope of the EIA, the national EIA reports to be submitted in Russia, Finland and Germany will cover (in detail) only the section of the pipeline in the countries' own territory, or EEZ. The Transboundary EIA report to be submitted in the five parties of origin will cover the whole pipeline project, but with less detail than national EIA reports (Schultz 2008). The terms of reference prepared by Germany, in which defines guidelines for the elaboration of the national EIA report, focuses on the direct impacts on the marine and landfall zones (BHS 2007).

### 5.3 Difficulties in the Espoo application

Having described the Espoo process for Nord Stream focusing on the EIA report scope, in the next subsections the main difficulties found along the process will be presented. The difficulties are related with the EIA process, public participation, and early planning. These difficulties will be analyzed in chapter six relating them to the concepts developed in the theoretical framework. They will also serve to answer the fifth research question regarding the objectives of the Convention.

#### 5.3.1 *Espoo and EIA processes*

The decision to prepare three national EIA reports for Finland, Russia and Germany and one Transboundary EIA report (or Espoo EIA report) generates some problems in the integration of these documents. First, in the countries where the national EIA report is to be submitted, with the assessment only on one section of the pipeline, there will be a lack of information to correctly assess the total impact of the pipeline. The assessment of the rest of the pipeline will be provided in the Transboundary EIA report, but this report is less detailed, leading to a problem of integrating both reports. For the countries receiving only the Transboundary EIA report (Sweden and Denmark) there will be a lack of detail because the Transboundary EIA report is only a general assessment.

Regarding the lack of complete environmental information it is worth mentioning that the inland sections of the pipeline (in Russia and Germany) are not being assessed in this Espoo process. This would also lead to problems in the assessment of the actual project's impacts.

The content and scope of the EIA reports is a crucial issue in order to make a sound environmental assessment. As was detailed in section 5.2 the EIA reports will not include Nord Stream's strategic issues detailed in section 4.1.4. This is not explicitly required in the Convention (see section 3.4.3); nevertheless, these strategic factors are relevant to assess the actual environmental impact of the project. Strategic aspects that have been discussed for a number of stakeholders throughout the Espoo process since it began to date will not be included in the EIA reports. This could lead to an inappropriate assessment of environmental impacts.

Another difficulty in the preparation of the EIA reports is the lack of unified terms of reference. Some countries have elaborated specific terms of reference and others have not. Terms of reference are crucial because they define the content and scope of the EIA reports, and they serve as a framework to evaluate the

EIA reports. Moreover, as there is a Transboundary EIA report for the whole project its terms of reference should be elaborated jointly by the five parties of origin.

As there are five parties of origin and nine affected parties (including the five parties of origin), the EIA documentation submitted in each party of origin has to be accessible for comments to the other eight countries' stakeholders; therefore, the authority of each party of origin has to consider the comments and opinions from their own country's stakeholders and from the other eight countries. This, in addition to the fact that in some countries there is one EIA report and in others there are two, could make the process problematic.

Having four different EIA reports also increases the problem with language translations. In the preliminary consultations there have already been complaints about the translations. The Estonian Ministry of Foreign Affairs and the Ministry of Environment pointed out that the translations presented by Nord Stream is sporadically "unclear and even misleading" and asked for better translations for the EIA reports (Estonian Ministry of Foreign Affairs 2006<sup>a</sup>; Estonian Ministry of Environment 2008).

Another problem with the translations is the fact that the national EIA reports will not be accessible for all stakeholders because they will not be translated to every language. Only a translation of the summary of national EIA reports will be accompanying the transboundary EIA report. Additionally, translations of every stakeholder comment from each of the nine countries involved will have to be done. This would mean the necessity to translate a great number of letters to nine languages. Considering that in preliminary consultation stages there were more than 200 letters, it is expected that more comments will be submitted for the EIA reports revision.

There is also a problem with the role of parties of origin. Usually, parties of origin are the proponents of projects. However, in the case of Nord Stream although there are five parties of origin only two of them (Russia and Germany) are the actual proponents. Sweden, Denmark and Finland are "transit" countries as no pipeline connections are planned for those countries. This could pose some dilemmas for the transit countries because they are responsible for the project, but do not benefit from it (see point 5.3.4). Moreover, Nord Stream Company is located in Switzerland.

The way it was decided to carry out the Espoo process with different EIA reports and a "split" approval decision also poses difficulties for decision making. It is still not clear up to now how the decision about the Transboundary EIA report will be taken. For some countries it will be the only EIA report to be submitted, for others will complement the national EIA report. Some questions remain to be answered: What is the role of the Transboundary EIA report? Which would be the valid EIA report? What would happen if the

Transboundary EIA is approved but not some of the national EIA reports, or vice versa? It is clear that having individual EIA reports for the same project interferes with a good environmental assessment and also with the decision-making. Regarding this issue WWF Germany mentioned that it is not good to present different EIA reports. The NGO stated that this “divided approach will cause additional efforts and raise the complexity for those who have to assess the project as a whole” (WWF 2007).

### *5.3.2 Public Participation and transparency*

From the beginning of the Nord Stream Espoo process the public has had easy access to every document regarding the process. As was mentioned before, there were several public hearings, and all the documentation was available on the internet. However, there was not any public participation when main decisions about the pipeline construction were done; for example, when Germany and Russia signed the contract to construct the pipeline or when it was decided to build it offshore. Cameron (2007) has mentioned the fact that transparency has increased during the process: lack of transparency at the beginning and more transparency during the EIA process, once important issues were already decided.

Public participation could be undermined due to the amount of EIA reports. Stakeholders will have to read the Transboundary EIA report and the national EIA reports from Finland, Russia and Germany. As stated by WWF Germany this situation adds complexity for stakeholders willing to comment on the project. Moreover, the transboundary EIA report will be available in all the languages, but not the national EIA reports. This would keep the other countries’ stakeholders from reading the detailed national EIA reports.

### *5.3.3 Early planning*

As was referred in the theoretical framework one of the assumptions in the Convention is that the consideration of environmental issues in early planning would lead to a better environmental performance. In this sub-section difficulties regarding this aspect are addressed. In the case of Nord Stream, the main decisions taken in the early stages of the planning process were the location of the pipeline and the necessity to provide gas to Europe through a pipeline. As will be discussed in further detail in the next chapter, these decisions could have a great influence on the environmental impacts of the project, and also on the achievement of Espoo objectives.

Regarding the pipeline location there is a difficulty in incorporating real alternatives in the Espoo (or EIA process). Nord Stream does not address the onshore alternatives in their EIA reports; the EIA process only

considers the possible routes within the Baltic Sea. As Pelkonen et al. (2007) pointed out, national authorities and the public have criticised the lack of genuine alternatives, i.e. alternatives that considers the onshore gas transportation. The planning process and decision-making about Nord Stream started even before the agreement to construct the pipeline between Germany and Russia in 2005. The Espoo process started at the end of 2006. The decision about the pipeline location (onshore-offshore) was not taken under the formal framework of the Espoo and EIA process. Therefore, the consideration of environmental issues was not assured.

Furthermore, the inclusion of environmental issues was also not assured when the decision to construct the pipeline was made. This decision was taken before the Espoo process started; and it was based on the argument of Europe's gas needs. Although the gas needs are justified by Nord Stream in its reports (Nord Stream 2006<sup>a</sup>), it is not part of the formal discussion in the Espoo and EIA process. Besides the problem of the environmental issues consideration, this poses a difficulty for those stakeholders who do not agree with this justification because there is no a "formal forum" to discuss it.

The Swedish Defense Research Agency (2007, p. 10) has criticised the origin of some figures used by Nord Stream to calculate the future EU gas needs in order to justify Nord Stream. Moreover, this Agency has stated that the scenario chosen by Nord Stream to predict the gas supply and demand in the EU might not be adequate. Based on the same World Energy Outlook 2006 report used by Nord Stream, this Agency argues that another scenario presented in the same report is "more realistic" and gives a 12.4 % (= 90 bcm) less gas need for the EU. This issue is of a great relevance because it is related with the very justification of the project, and ultimately with the environmental impacts of it.

#### *5.3.4 Decision making*

Although decision making is not one of the points to be discussed in detail in this thesis it is worth mentioning some difficulties that could arise in the case of Nord Stream. The Swedish Defence Research Agency (2007) has analyzed how political issues could influence the decision of Sweden to approve or not approve the project. According to this Agency the pipeline will not bring benefits for Sweden in terms of the "environment, security policy, economic benefit or defence". Nevertheless, a "no" to the project could bring Sweden other problems. First, Russia could interpret an environmental motivated decision as a political decision. Secondly, other Baltic states could also be unhappy with a Swedish support of a route through these states even if it is motivated by environmental reasons. Finally, a rejection could have a negative consequence with other countries that have good relations with Russia (as Germany and France).

## 5.4 Conclusion

This chapter has shown the complexity of the Espoo process even in its first stages, and also the complications that could come in the future. More characteristics of mega projects' (defined in 2.3.) were found in Nord Stream, namely, it could have major impact on (energy) market, complications could arise when more than two countries are involved, and there are several actors with conflicting interests.

It is important to point out that the EIA reports will only address the direct physical impacts of the pipeline on the marine environment. The EIA report content described will serve to analyze the treatment of strategic issues in next chapter. It is clear that environmental issues are formally present in the EIA process, but strategic issues are not included.

Difficulties found in the Nord Stream Espoo process could be summarized as follows:

- *EIA process*: Lack of EIA reports integration could lead to a partial assessment. Strategic dimension is not included in EIA reports, what could lead to an inappropriate assessment of environmental impacts. Not unified terms of reference. The number of countries plus the number of EIA reports could make the transmittal of documentation problematic. Bad translations could interfere with public participation and the project assessment. Parties of origin are not the actual proponents what creates confusion about countries' roles and responsibilities. Project approval could be confusing because it is not clear the role of each EIA report.
- *Public participation*: no public participation at early stages of decision making. Public participation could be undermined due to the amount of EIA reports.
- *Early planning*: the consideration of environmental issues was assured neither in the decision to construct the pipeline nor in the decision to build it offshore.
- *Decision making*: environmental issues could be taken aside due to political reasons.

These difficulties will be associated with mega project characteristics presented in chapter 4. The difficulties will be also analyzed in chapter 6 in light of the theoretical framework and the Convention objectives.

## 6 Discussion

This chapter analyzes the findings of chapters 3, 4, and 5 in light of the concepts provided in the theoretical framework. This discussion will lead to achieve the research objectives three and four, namely to explore to what extent the Espoo mechanisms can work for mega projects, and to examine the applicability of the SEA

protocol to mega projects. At the same time, the fifth research question, which refers to the Espoo objectives, will be answered.

## 6.1 Espoo Convention applicability

As was explained in chapter 2, the applicability of the Convention will be assessed in light of the achievement of its objectives. Following the illustrative model presented in figure 1 (Chapter 2), which relates the respective Espoo assumptions, mechanisms, and objectives, their interaction will be discussed in the context of their actual application to the Nord Stream case.

This section is organized as follows: firstly, it will be first discussed if the main Espoo Objectives (identified in chapter 3) are being achieved and which are the causes that hinder their achievement; then, it will be analyzed if the mechanisms to achieve these objectives are adequate considering the difficulties in their application (described in chapter 5); finally, the assumptions behind the mechanisms will be discussed, and if they might be correct in the context of the Nord Stream Espoo process. The following sections will attempt to relate Espoo objectives, mechanisms, and assumptions and the mega projects characteristics that interfere in their interrelation.

An implicit assumption regarding Espoo objectives is that achieving the particular Espoo objectives (discussed below in 6.1.1. and 6.1.2.) will contribute to achieve the Espoo's final aim, which is "to ensure environmentally sound and sustainable development". Therefore, this final aim may not be achieved if particular objectives are not achieved.

### 6.1.1 *Espoo objective: enhance international cooperation*

The first Espoo objective (identified in chapter 3) to analyze is "to enhance international cooperation". As was explained in chapter 2 cooperation among countries is not only an Espoo objective, but also one of the reasons for its existence. In the context of Espoo Convention, and the International Environmental Law, this cooperation is aimed to protect the environment. International cooperation is closely linked with another Espoo objective: prevent conflicts between countries. The latter would not be achieved without achieving the former.

International cooperation would be difficult to achieve if a country does not agree with the very aim of the project, or the alternative to achieve this aim, as is the case for some countries involved in the Nord Stream's

Espoo process. In order for this objective to be achieved, countries should have the possibility to formally discuss about the final aim of the project; especially, taking into account that the project will have an impact on the whole EU energy situation. The Espoo process as is currently established does not provide the necessary framework to assess the final aim of mega projects. This is important in the case of mega projects because of their strategic dimension. Different alternatives for mega projects could mean to make major changes in the project, for Nord Stream would be an onshore route or another way to provide energy to EU.

Another big conflict in addressing international cooperation, and related with the previous point, would be the impossibility to discuss strategic issues. Countries are concerned about several strategic factors (described in 4.1.4.) and the impossibility to formally discuss them would generate discontent for these countries. In 4.1.4.3 was also shown that Nord Stream, as it is being presented, would go against a European integration, and therefore, against international cooperation.

International cooperation could also be diminished due to public participation difficulties for other countries' stakeholders. In a mega project like Nord Stream, with so many countries involved public participation is affected by problems in translations and the number of EIA reports. If the public cannot participate adequately, the authorities of these countries could have a bad predisposition to cooperate due to the public pressure.

The Espoo mechanisms that could lead to achieve international cooperation are the communication among countries through the transmittal of information, participation of affected parties in the EIA process, and participation of affected parties' stakeholders.

As was shown earlier, transmittal of information was in some cases difficult due to language problems. Problems with translations were identified in other smaller projects, but in the case of Nord Stream it is promoted by the amount of stakeholders and different languages. On the other hand, communication among countries was fluent; several meetings have been held among countries involved and Nord Stream. Communication through official letters and informal ways was also good. The Espoo mechanisms worked relatively well in this case.

The EIA process does not consider different countries' viewpoints about strategic issues, for example, the issue about EU energy needs. This is related with what Nord Stream will finally do, provide energy to the EU. Countries participation in the EIA process does not guarantee the possibility to discuss this relevant issue because the EIA process does not formally contemplate it. It is worth noticing that strategic issues were not assessed either when Nord Stream was included as a project of common interest in the Trans European Energy Network guidelines. The EIA process (mechanism) was applied correctly in general terms; countries

are participating, but relevant issues are not included in the formal Espoo process. Consequently, the assumption that EIA (and its rationality) would lead to better environmental decisions may not be true in this case because the impacts related with strategic issues are not being evaluated.

The participation of other countries' stakeholders is affected by the amount of EIA reports to be assessed. The own countries' EIA reports will be available, but the public will have only partial access to the other countries' national EIA reports. The public thus should have to participate several times, and analyze several documentations. The Convention contemplates the elaboration of joint EIA reports (through bilateral or multilateral agreements), which would facilitate public access to information, but leaves the decision to the countries to do it or not. The Espoo mechanism (agreements) to solve this problem is not being well applied in this context. Public Participation could also be affected as not all the stakeholders' comments will be translated. Public participation (mechanism) has had some problems in its implementation because of the translations. In this case, the problem is in the mechanism implementation.

#### *6.1.2 Espoo objective: incorporation of environmental issues in decision making*

Another important Espoo objective is the incorporation of environmental issues in decision making; additionally, the Convention seeks to incorporate them in an early stage. This objective is being partially achieved since the EIA reports will reflect the major environmental concerns expressed by the stakeholders. However, some problems could prevent the achievement of this objective. Although the public participation was relatively successful helping to address environmental issues, various difficulties mentioned for public participation could interfere in some way with the incorporation of environmental issues, since the public often pressure authorities to consider environmental issues.

Other factors that could impede the achievement of the objective under analysis are that governments will not have the complete information of environmental issues in other countries, and that the inland environmental impacts will not be considered in the decision to approve Nord Stream.

Even if some environmental aspects of Nord Stream would be considered in the EIA reports, there is risk for them not being considered in the final approval decision due to political interests (see 5.3.4.). As was mentioned in 6.1., subjectivity (e.g. political interests) could "replace" EIA reports' scientific information in the final decision.

The lack of environmental issues incorporation could impede the achievement of another Convention's objective: *prevention, reduction and control of significant adverse transboundary environmental impacts*. As

was highlighted environmental issues were not contemplated for the important strategic decisions made at early stages, and the public could not participate at that stage. This objective could also be difficult to achieve with lack of real alternatives. An adequate impacts assessment of the onshore and offshore options could prevent significant impacts by choosing the better environmentally option.

The EIA process would be the mechanism to incorporate environmental issues in decision making, and public participation, included in the EIA process, is one of the key measures to bring environmental issues in decision making. The EIA process is also supposed to bring environmental issues in an early stage.

As was shown the EIA reports consider the environmental issues since the Espoo process began. However, the lack of EIA reports integration could lead to a partial assessment of environment impacts. Detailed information about other countries' environmental impacts will not be available; in other cases (those that require only the transboundary EIA report) there will not be detailed information even for the pipeline section in its waters. Authorities and the public would not have the complete environmental information. Consequently, the incorporation of environmental issues in decision making would be partial. As a result, the assumption that EIA process (and its rational model) would bring objectivity (i.e. environmental issues) to decision making would be incorrect in this situation.

The most important decisions about Nord Stream were done before the Espoo (and EIA) process started. The decision to construct the pipeline and to do it through the Baltic Sea was not based on environmental aspects. Strategic factors were the base to take these decisions, and the EIA process does not contemplate the assessment of these strategic factors. Therefore, even when the EIA process would be done correctly, important decisions about the project would not contemplate environmental issues. Accordingly, it could be stated that the EIA process would not lead to incorporate environmental issues in early decision making, which would lead according to an Espoo assumption to a better project's environmental performance. The EIA process would not seem to be the adequate in this case.

For the same reason stated in the previous paragraph, the general public could not participate in early stages of decision making. Although several hearings have been held, and documents are available, the general public cannot discuss about the final purpose of Nord Stream or its location (offshore-onshore). According to one of the Espoo assumptions, public participation improves decision making; however, in this case public participation exists, but it is carried out too late. Therefore, the mechanisms of public participation (public hearings, accessibility to information) are working well in Nord Stream case, but it will not improve decisions taken before the Espoo process started.

Could Espoo and EIA processes be blamed for the lack of early public participation? In the case of Nord Stream, could Public Participation be even allowed in early stages? Would public participation in early stages lead to enhance the quality of decisions regarding environmental aspects? At this regard, Noteboom et al. (2003; cited in Cherp et al. 2007) mentioned the “Paradox of timing” dilemma, which states that impact assessment is “either too late or too early”. If stakeholders take part from the first stages, participation could be too early because the problem will be redefined and changed.

The Nord Stream Espoo process is not assessing the complete pipeline project. It is only assessing the Baltic Sea section. The general public will not have the possibility to comment on the inland sections, and authorities will not be able to assess their impacts. Again the public is participating, but has no access to comment on the whole project. It is the same for the authorities; they would only approve a “partial” project. The Convention does not provide the mechanisms to require the assessment of the complete project, which could lead to incomplete environmental information to take the approval decision.

According to the Convention, the *Final Decision* should be based on the findings in the EIA documentation and should take into account stakeholders’ comments. Nord Stream Espoo process shows that the provision of scientific information is the core of the EIA reports, and according to the Espoo assumptions this would provide objectivity to decision making. However, although scientific information is present, it could be relegated due to political issues (as shown in 5.3.4.). In relation to this, the Swedish Defense Research Agency (2007, p.27) stated:

“It would of course be unfortunate to approve on incorrect grounds an alternative that was not the best possible from an environmental perspective, or to approve it because that alternative was the one which suited Russia and Germany best from a purely political perspective”.

This is a broad and recognized problem in EIA practice (Jey et al. 2007); the more politics and interests are at stake the more possibilities to have high influence on decision making. As referred in chapter four, this is the case for mega projects like Nord Stream.

Lack of unified terms of reference could lead to “miss” some environmental issues on the EIA reports, what would cause the absence of them in the decision making. Lack of definition of each EIA report’s role could also generate problems for the decision making. Hence: to which EIA report should the final decision be based on? These aspects add doubts about to what extent the EIA process, the principal Convention’s mechanism, could provide objectivity (i.e. sound environmental information) to decision making.

As was shown in 5.3.3., no real alternatives are analyzed in Nord Stream Espoo process. Alternatives are restricted to the narrow definition of the Nord Stream’s objective: to build a pipeline through the Baltic Sea

to transport gas from Russia to Germany (Nord Stream 2006<sup>a</sup>). The narrow definition of the objective does not leave the possibility to analyze different options, for example, an onshore pipeline. This is not an exclusive problem of Nord Stream assessment. Hildén et al. (2001 p.544) identified that the lack of presentation of alternatives is very common in the Espoo processes. Notwithstanding, due to the magnitude of Nord Stream, in this case the options would define in which countries would the pipeline be laid, or even if the gas could be transported in another way. The lack of alternatives affects the environmental performance of the project. The EIA process contemplates the analysis of alternatives, but the implementation of this mechanism is not working for Nord Stream assessment.

More can be said about the Nord Stream final purpose. Westerlund (1992; cited in Markus et al. (2003, p.103)) distinguished the objective and the subjective purpose of a project. The objective purpose is the most fundamental reason, in the case of Nord Stream would be to provide gas to EU. The subjective purpose could be the developer's objective to earn money. In relation with this, it is worth reproducing the developer (Nord Stream) expressions in one of the official hearings in Estonia (Estonian Ministry of Environment 2006<sup>b</sup>, p.3):

*Arvo Ukleika:* Is it a project of European Union or between Russia and Germany? If it is EU project, then in what extent the EU is supporting the realization of the project?

*Developer:* This is not EU or Russian-German project. This is a business project of three big companies and at the moment we are in negotiations for involving fourth company. We wish to realize the Nord Stream project and we also hope to profit from it.”<sup>19</sup>

The previous reference is in line with what was mentioned in chapter 2 regarding the subjectivity in EIA. The EIA process usually does not contemplate developers' economic benefits as an aspect to trade-off with environmental aspects. Therefore, EIA would not be adequate to address this dilemma. The assumption that rationality provides objectivity to decision making would not be the case in this situation.

## 6.2 Mega projects, EIA, and SEA

Strategic dimension is one of the most relevant characteristics of mega projects. It was shown how Nord Stream's strategic issues are not addressed in the EIA and how this could lead to a poor project environmental performance. In this section will be discussed how this strategic dimension could be addressed, considering the SEA protocol proposed to be incorporated in the Espoo Convention.

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<sup>19</sup> The Developer refers to three companies because the hearing took place before *Nederlandse Gasunie* joint Nord Stream. *Arvo Ukleika* is one of the stakeholders participating at the hearing.

As was mentioned before, SEA seeks to carry out an environmental assessment of plans and programmes, which are in a higher planning level compared to projects<sup>20</sup>. An application of SEA to mega projects would make it possible to formally assess strategic issues and would also allow public participation in earlier stages of decision making. Nevertheless, even if SEA entered into force, the problem of mega projects strategic issues will still be unsolved. Mega projects have an important strategic dimension, but they are neither plans nor programmes; therefore, SEA would not apply for them.

Sheate et al. (2005, p.32) have identified a potential overlap between EIA and SEA for large infrastructure projects, what could happen with a project like Nord Stream. These authors showed an example in Denmark in which the strategic issues were considered at project level (for a power plant). For this case, the relation between the project and the overall Danish energy policy, and whether the alternatives to be analyzed should be only within the county border (broadening the alternatives options) was assessed. In this regard, Markus et al. (2003) have assigned to the Öresund Bridge mega project, linking Denmark and Sweden, characteristics of policies or plans.

If mega projects would “fit” into a SEA framework, the final purpose of Nord Stream could be questioned. SEA could be utilized to question the problem definition before addressing the problem solving (Wallington et al. 2007, p.575). In the Nord Stream case the question to address would be how to fulfill the EU energy demand (final aim) and not how to build a gas pipeline across the Baltic Sea. The first approach will question how much energy is needed, what type of energy is needed, which energy source is the best one. The answers to these questions should lead to a decision of how to achieve the final aim. Doing this, the SEA would make possible to analyze the projects’ final aim and, therefore, consider a broader range of alternatives to achieve it (Steinemann 2001). In regard to this issue, Sheate et al. (2005, p. 7) highlighted that in SEA more emphasis is placed in the assessment of alternatives related with the plan or programmes’ objectives; while in the EIA process a mere outline of main alternatives is required.

The problem of alternatives, project aims, and the EIA scope in the case of Nord Stream was clearly described by Larsson (2007, p.7):

“Natural gas is indeed an environmentally better option than coal, but modern coal plants may be better than traditional gas power stations and renewable energy is even better for the environment. Nord Stream will sustain fossil fuel usage in Europe and there are thus environmental concerns that lie outside the legal space of an Environmental impact assessment (EIA) process”.

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<sup>20</sup> It is worth to mention that even Nord Stream is “promoted” at policy level (see 4.1.) there has not been a SEA at that level.

Finally, the SEA-EIA overlap is a problem already identified at the EU Directive level, so it could be solved for EU countries. However, as the Convention includes other countries than the EU members and intends to be open to any UN member, the Convention itself should address this problem.

### 6.3 Research Limitations and further research

The selection of a “unique” project as a case study has drawbacks when it comes to generalize the research results. Although Nord Stream is a good case of mega project it is fair to mention that Nord Stream is the biggest project evaluated so far under the Espoo Convention in terms of number of countries involved. Nord Stream involves 9 countries, while the majority of Espoo processes had so far involved two countries, some three, and exceptionally four.

Another potential inconvenience is that the research is analyzing an Espoo process not finished yet. Some of the difficulties identified to likely happen for Nord Stream could be solved in the future. Additionally, it is not easy to determine if some of the difficulties found are exclusive to mega projects. They could be also attributed to smaller projects. Finally, some Espoo objectives could be fulfilled even with incorrect assumptions and/or badly applied mechanisms, but this possibility was not included in this research.

More research should be done about the Espoo assumptions. In this research the Espoo assumptions were taken as a framework to analyze Espoo mechanisms applicability to mega projects. However, these assumptions should be tested. The relation between the particular Espoo objectives and its general aim should also be studied. In this thesis only the achievement of particular objectives (that contribute to the achievement of the Espoo’s final aim) was studied. Finally, more research would be needed regarding the assessment of strategic decisions in a formal process, simply because strategies could arise from an informal process (Cherp et al. 2007).

### 6.4 Conclusion

In this chapter it was shown that some Espoo mechanisms are not adequate to contribute the achievement of the Espoo objectives in the context of the Nord Stream Espoo process; either because of problems in their implementation or incorrect assumptions. Therefore, they would not be applicable for mega projects like Nord Stream. The following tables summarize the discussion showing the relation between Espoo objectives, Espoo mechanisms, and mega project characteristics.

<b>International cooperation may not be achieved because of:</b>	<b>Espoo Mechanisms related with the objective</b>	<b>Mega project characteristics affecting the applicability</b>
No formal framework to discuss project's final aim (and alternatives).	Countries participation in the EIA process.	Strategic Dimension (of the final aim) and number of countries involved.
No formal framework to discuss strategic factors.	Countries participation in the EIA process.	Strategic Dimension (different countries viewpoints).
Difficulties in public participation.	Public participation-Transmittal of information – EIA process.	Number and variety of stakeholders involved.

*Table 2.* Relation between International cooperation objective, Espoo mechanisms, and mega project characteristics.

<b>Incorporation of environmental issues in decision making may not be achieved because of:</b>	<b>Espoo Mechanisms related with the objective:</b>	<b>Mega project characteristics affecting the mechanism applicability:</b>
Incomplete environmental information.	EIA process (EIA reports not integrated, not assessing the inland section, no terms of reference).	Number of stakeholders (different languages, different EIA processes requirement) and size of the project.
Decisions taken before EIA process	EIA process (no environmental issues in early decision making)	Strategic Dimension.
Difficulties in public participation.	Public participation. No participation in early decisions and in the inland section.	Strategic dimension and size of the project.
Political interests relegate environmental aspects.	EIA process.	Strategic dimension.
Lack of alternatives	EIA process (no alternatives for project aim).	Strategic Dimension (very different alternatives).

*Table 3.* Relation between Incorporation of environmental issues in decision making objective, Espoo mechanisms, and mega project characteristics.

Finally, it was also shown that in order of SEA to be able to be applied to mega projects, it is necessary to create a new category for this type of projects.

## 7 Conclusions and recommendations

Mega projects involve several countries with their corresponding stakeholders as governmental agencies, NGOs, scientific community, and general public. Mega projects have impacts at regional, national or even global scale. Finally, political and economic factors can have a dominant role in the assessment and decision making of mega projects. Because of these special features, mega projects are not necessarily suitable for assessment within the current Espoo Convention framework.

The Espoo Convention has good objectives and intentions, but the way to achieve them could be a problem for mega projects like Nord Stream. Some mechanisms work partially, e.g. they work to address direct physical impacts, but not strategic issues; and in mega projects strategic issues are as important as environmental ones. They have such relevance that they were discussed in the European Parliament. Moreover, decisions about strategic aspects will have environmental consequences. The Nord Stream's environmental performance will be different if the pipeline would be build onshore, and this was a strategic decision.

It was also shown that even applying the mechanisms in a correct way, they could not address the problems caused by mega projects. Mega projects generated difficulties that did not occur in the previous 10 years of implementation. This could be due to the number of countries involved. The Convention might not be prepared to deal with so many countries.

Some mechanisms are not applicable for mega projects, but this is because mega projects are in a way more than projects. SEA could be applied to address strategic dimension, but Nord Stream is neither a plan nor a programme. Therefore, mega project's strategic issues would be difficult to handle in the present Espoo Convention framework.

One of the main reasons for the Convention's creation was the necessity for international cooperation. However, the Convention may not be giving countries the possibility to discuss all different views (or strategies), which could lead to a lack of integration. After all, cooperation is essential in order to manage projects inserted in natural systems that do not respect political borders.

The Convention was referred to be successful by the parties. This might be true in certain contexts; but for an adequate applicability to mega projects there is still a lot to be learnt. In relation to this, the present research provides the first study about Espoo Convention and Mega projects with new findings and concepts that could contribute to the Convention improvement. There is a difficult trade-off between environment and

political or economic aspects; but the first step to address this dichotomy is to include both in the discussion. Consequently, the special characteristic of mega projects might make them to need different mechanisms.

It is important to underline that the Convention is nowadays being applied in the EU context. What would happen when the Convention became a global Convention? In the EU the EIA systems are more homogenous because they follow the EU Directives, and even in this case there were problems with the elaboration of EIA reports. How these mechanisms will work in countries with more heterogeneous EIA systems? At the same time, the Convention could promote the creation of EIA systems in countries that do not have it as it was the case for some the European countries.

Finally, it is imperative to mention that the problems the Espoo Convention could face for mega projects, does not weaken it; on the contrary, it is an opportunity for improvement. The Espoo Convention has a short but intense history in which international cooperation and environmental protection have been achieved along dozens of project assessed. Moreover, the Convention has an administrative structure through which a periodical revision is done, taking the experiences of the past Espoo implementations. These opportunities alongside the favorable structure will allow for the future improvement of the Convention, provided that obstacles and mistakes of the Convention itself are recognized.

## 7.1 Recommendations to the Espoo Convention

In order to fulfill the last specific objective, and answer the sixth research question, in the last section some ideas to overcome the difficulties found in the application of the Espoo Convention to mega projects are proposed:

- *Consider strategic issues in Mega projects formal assessment.* The entry into force of SEA would not solve the problem. Strategic views of different stakeholders could be formally incorporated for mega projects EIA assessments.

- *Incorporate in the EIA process the possibility to assess the final aim, and require the assessment of alternatives to achieve the final aim.* It should be required to incorporate in the EIA documentation the environmental impacts of the final aim of the project, for Nord Stream would be the impacts of transport of gas, i.e. the provision of energy to EU. Incorporation of alternatives to achieve the final aim, for Nord Stream it would be different ways to provide energy to the EU, or even transport gas to the EU.

- *Incorporate unified terms of reference.* When two or more countries are parties of origin, the EIA documentation should follow the terms of reference jointly elaborated by all the parties of origin.
- In relation to the previous point, when there is more than one party of origin, *the EIA report should be elaborated jointly.* This recommendation was made also by Hilden (2001) and Connelly (2008<sup>b</sup>). This would improve public participation as there would be fewer documents (reducing translation problems); it would also avoid conflicts in integrating different EIA reports for the same project.
- *Joint approval.* An special committee could be formed in order to take the decision to approve the project. This would avoid problems of partial approvals.
- *Assessment of the whole project.* Nord Stream is only a part of the whole pipeline, in the Nord Stream Espoo process is not being considered the inland section of the pipeline in Russia and Germany.
- The Convention is silent regarding the possibility of rejecting a project. It would help to have explicitly stated in the Convention at least *the possibility to reject a project if the activity is not environmentally feasible* (this is acknowledged in Astorga Gatgens 2003, p. 39).

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