

Marine Environmental Protection and Transboundary Pipeline Projects: A Case Study of the Nord Stream Pipeline

Alexander Lott

Keywords

Nord Stream, Submarine Pipelines, Baltic Sea, UNCLOS, Espoo Convention, Transboundary EIA, Marine Scientific Research, Marine Pollution, Marine Environmental Protection.

Abstract

The Nord Stream transboundary submarine pipeline, significant for its impact on the EU energy policy, has been a heavily debated issue in the Baltic Sea region during the past decade. This is partly due to the concerns over the effects that the pipeline might have on the Baltic Sea as a particularly sensitive large marine ecosystem.

This manuscript focuses on the issue from the viewpoint of the UNCLOS legal framework and its related treaties. It thus illustrates some of the more polemical topics arising in modern law of the sea and environmental law, eg limitations on the freedom to lay submarine pipelines, the scope and boundaries of marine scientific research, the obligation to consider alternatives in the course of an EIA. In broader terms, this manuscript presents an explanatory study of matters mostly related to sustainable development, the precautionary principle and the ecosystem approach.

Author Affiliations

LLM student in Public International Law at the Utrecht University School of Law.

Merkourios 2011 – Volume 27/Issue 73, Article, pp. 55-67.

URN: NBN:NL:UI:10-1-100933

ISSN: 0927-460X

URL: www.merkourios.org

Publisher: Igitur, Utrecht Publishing & Archiving Services

Copyright: this work has been licensed by the Creative Commons Attribution License (3.0)

I. Introduction

Nord Stream, the longest long-distance gas transmission pipeline (1224 km), is due to start operating in 2011.¹ It enables the export of natural gas from the Russian Arctic to meet increasing² European Union demand.³ Nord Stream's shareholders are Gazprom of Russia (51%), Wintershall and E.ON Ruhrgas of Germany (both 15,5%), Gasunie of the Netherlands (9%) and SUEZ of France (9%).⁴ Besides the terrestrial pipelines in Russia and Germany,⁵ the project includes submarine gas lines from Vyborg to Greifswald.⁶

The Nord Stream project has raised a number of issues concerning its impact on the region's energy security and geopolitics. Hence it is worthy of mentioning that the current analysis focuses on the project from the viewpoint of international legal regulation, on which until recently independent studies were deficient.⁷

The main topics of the present study are, firstly, whether coastal States have the right to subject the laying of a transboundary submarine pipeline in their Exclusive Economic Zone (EEZ) or on their continental shelf to their permission. Secondly, the criteria for the right of refusal to grant a permit for conducting sub-sea surveys in a coastal State's EEZ, as in the example of Estonian incidents. Thirdly, the precedential transboundary environmental impact assessment (EIA) for the Nord Stream project is analysed in order to assess the project's conformity with the obligation to consider alternatives in its transboundary EIA.

II. The general rights and obligations under the relevant maritime zones in respect of the laying of pipelines in the Baltic Sea

The Nord Stream project has a transboundary impact on the coastal countries of the Baltic Sea: Denmark, Germany, Poland, Russia, Lithuania, Latvia, Estonia, Finland and Sweden. Each of the aforementioned states is a party to the 1982 United Nations Convention on the Law of the Sea (LOSC).⁸ Under Article 58(1), the freedom⁹ to lay submarine pipelines in the coastal State's EEZ is granted along with other internationally lawful uses of the sea related to this freedom, eg actions associated with the operation of the pipeline.

Additionally, the freedom to lay submarine pipelines on a continental shelf is granted under Article 79(1) of the LOSC. As all of the Baltic Sea lies within 200 nautical miles (nm) from the coast,¹⁰ Nord Stream is subject to both Part V of the LOSC (concerned with EEZ) and Part VI of the LOSC (dealing with continental shelf-related issues).

The course of the Nord Stream pipeline runs along the territorial seas of Russia, Germany and Denmark¹¹ and the EEZ of Sweden and Finland in addition to the EEZ of the three aforementioned states.¹² It was an advantage to the project that due to the narrowness of the Gulf of Finland,¹³ the outer limit of the territorial sea of Finland and Estonia had been established with the aim to never reach closer than 3 nm to the maritime boundary between the two States.¹⁴ Thereby the territorial sovereignty of either of the States in that area was excluded and instead a six-mile wide EEZ was created to maintain free passage.¹⁵

1 The pipeline comprises of two lines: the planned commissioning of the first pipeline is in 2011, whereas the second line is due to start operating in 2012.

2 R Götz, 'The Nord Stream Pipeline: The Energy Policy Background' (2009) 52 German Yearbook of International Law 233.

3 'Fact Sheet: The Nord Stream Pipeline Project' (January 2011) 1 <<http://www.nord-stream.com>> accessed 19 March 2011.

4 'Fact Sheet: Nord Stream Financing' (2011) 1 <<http://www.nord-stream.com>> accessed 13 May 2011.

5 The laying of the overland section in Russia commenced in 2005 followed by the same process in Germany.

6 S Vinogradov, 'Challenges of Nord Stream: Streamlining International Legal Frameworks and Regimes for Submarine Pipelines' (2009) 52 German Yearbook of International Law 256.

7 See the introductory note to 'Symposium: The Nord Stream Pipeline: Legal, Economic and Environmental Issues' (2009) 52 German Yearbook of International Law 232.

8 See 'Chronological list of ratifications' <<http://www.un.org>> accessed 19 March 2011.

9 Subject to certain limitations discussed below.

10 AG Oude Elferink, *The Law of Maritime Boundary Delimitation: A Case Study of the Russian Federation* (Martinus Nijhoff 1994) 169.

11 Nord Stream had to by-pass the disputed area close to Polish border. Thus, Denmark offered the use of its territorial sea. See Vinogradov (n 6) 286.

12 T Koivurova and I Pöhlönen, 'Transboundary Environmental Impact Assessment in the Case of the Baltic Sea Gas Pipeline' (2009) 52 German Yearbook of International Law 299.

13 The Gulf of Finland is a 285 nm long inlet which in many sections is less than 24 nm wide with bordering countries Russia to the East, Finland to the North, Estonia to the South.

14 Oude Elferink (n 10) 176.

15 E Karm, 'Environment and Energy: The Baltic Sea Gas Pipeline' (2008) 39 Journal of Baltic Studies 99, 107.

This has a particular importance to the Nord Stream project as otherwise its construction would have been subject to the explicit consent of either of the coastal States and the respective domestic regulations.¹⁶ Although it has been argued that the possibility of the closure of the Gulf of Finland may not be excluded,¹⁷ it could take effect only if Estonia and Finland after prior 12 months notice would decide to broaden their territorial sea to 12 nm, thereby amending the 1996 agreement on the boundary line.¹⁸ However, this is unlikely to happen as it would consequently in accordance with Art 2 of the LOSC, *inter alia*, cause the closure of the strategically important overflight route for Russian military aircraft en route to the Russian exclave Kaliningrad Oblast between Poland and Lithuania.¹⁹ Therefore, free passage in the Gulf of Finland remains intact making it possible to lay submarine pipelines in the passageway of the 6 nm-wide EEZ subject to Part V and VI of the LOSC.

III. The applicability of the concept of artificial installations and structures to submarine pipelines

In order to further specify the applicable legal regime for the Nord Stream pipeline it is important to note that Nord Stream, as a long-distance gas transmission pipeline, should be distinguished from the pipelines that constitute an integral part of offshore exploitation operations (intra or inter-field pipelines) for which a different legal regime applies.²⁰

Intra-field pipelines connect two or more installations within a geographically limited area, whereas inter-field pipelines connect installations in different States.²¹ Importantly, both of them are part of the installation and thus fall under the scope of Articles 60 and 80 of the LOSC which relate to artificial islands, installations and structures.

Although ‘installations’ and ‘structures’ are undefined in the LOSC it is clear that according to the terms of Article 60(1)(b) they have to have an economic purpose; proposals to make all installations subject to Article 60 were rejected at UNCLOS III.²² Thus, the terms ‘installations’ and ‘structures’ cover ‘facilities to be constructed to take advantage of all economic resources in and on the seabed, and in and above the water column’,²³ eg renewable power generation facilities, fish aggregation devices and pipelines which are integrally connected to the exploitation installations.

Nord Stream, however, has no direct significance for the exploitation of natural resources. Hence it falls outside the scope of Articles 60 and 80 of the LOSC and may not be regarded as an artificial installation or structure. Nevertheless, as a transit pipeline passing through maritime zones which fall under the jurisdiction of the Baltic Sea littoral States, its construction is governed to a great extent by the regime of public international law.²⁴

Subsequently, it needs to be considered whether the littoral States of the Baltic Sea, parties to the LOSC, have in their power the legal right of subjecting the laying of the Nord Stream pipeline in their EEZ to their permission.

IV. Coastal State’s permission as a precondition for the laying of pipelines in its EEZ

Under Article 56(2) of the LOSC a coastal State in its EEZ ‘shall have due regard to the rights and duties of other States and shall act in a manner compatible with the provisions of this Convention’. Therefore, the freedom to lay submarine pipelines provided in Article 58(1) and 79(1) of the LOSC may not be impeded.²⁵ However, Article 79(3) of the LOSC provides that: ‘The delineation of the course for the laying of such pipelines on the continental shelf is subject to the consent of the coastal state.’ This clearly provides a limitation on the freedom to lay submarine pipelines as it is subjected to the consent of a coastal State. It constitutes a right for a coastal State to influence the delineation process on its continental shelf, both inside and outside the limits of the EEZ but does not provide the coastal State with the right to prohibit *in toto* the laying of the pipeline.

16 Vinogradov (n 6) 276.

17 I Gawlowicz and P Laski, ‘Russian-German North Gas Pipeline in View of Public International Law’ (2006-2008) 28 Polish Yearbook of International Law 152.

18 Agreement on the Boundary of the Maritime Zones in the Gulf of Finland and in the Northern Part of the Baltic Sea (Finland-Estonia) (signed 18 October 1996, entered into force 7 January 1997) No 33549 <<http://untreaty.un.org>> accessed 19 March 2011.

19 DR Rothwell and T Stephens, *The International Law of the Sea* (Hart Publishing 2010) 282. Unlike Article 87 of the LOSC which grants the right of overflight over the EEZ for military aircraft, Article 2 of the LOSC in combination with international customary law prohibits any such acts.

20 In distinction with the long-distance gas transmission pipelines a coastal State has enforcement and prescriptive rights with regard to intra- and inter-field pipelines: Articles 208 and 214 of the LOSC.

21 Vinogradov (n 6) 252.

22 Rothwell and Stephens (n 19) 91.

23 *ibid.*

24 Vinogradov (n 6) 255.

25 *North Sea Continental Shelf Cases (Federal Republic of Germany/Denmark; Federal Republic of Germany/Netherlands)* [1969] ICJ Rep 3, para 65.

See B Kwiatkowska, *Decisions of the World Court Relevant to the UN Convention on the Law of the Sea: A Reference Guide* (Martinus Nijhoff 2010) 223.

However, subject to Article 192 of the LOSC States have the obligation to protect and preserve the marine environment.²⁶ According to Article 56(1)(b) of the LOSC a coastal State has in its EEZ jurisdiction with regard to ‘the protection and preservation of the marine environment’. Hence States have to take all necessary measures to prevent, reduce and control pollution of the marine environment from any source in accordance with Article 194(1) of the LOSC.

Furthermore, under Article 194(3) these measures have to include those designed to minimise to the fullest possible extent ‘pollution from other installations and devices operating in the marine environment’. Thus under Article 79(2) of the LOSC the coastal State may not impede the laying or maintenance of such pipelines,²⁷ but this is ‘[s]ubject to its right to take reasonable measures for ... the reduction and control of pollution from pipelines’.

Therefore, under the LOSC States parties have the right, by implementing the necessary domestic legislation, not to grant a permit for the construction of a submarine pipeline in their EEZ or on their continental shelf if the former constitutes a hazard to the marine environment.²⁸ However, no international legal instrument is established that would provide standards for prevention, reduction and control of marine pollution from pipelines. Thus, due to the lack of harmonised rules that would provide guidelines for States acting under Article 79(2) of the LOSC, it is a matter of interpretation whether the measures taken satisfy the threshold criterion of reasonableness in order to be lawful.

V. Marine scientific research in the context of seabed studies on the pipeline route

In addition to the coastal State’s right to deny a permit for the laying of a submarine pipeline in its EEZ it needs to be considered whether a coastal State has the right to withhold its consent in connection with projects that concern scientific investigations in its EEZ. In relation with the Nord Stream pipeline these projects are carried out in the context of surveying and assessing the marine environment in the Baltic Sea which is a precondition for, *inter alia*, conducting an EIA and surveying the suitability of the seabed for the laying of pipelines.

Firstly, the question whether such investigations may be classified as a marine scientific research under Part XIII of the LOSC has to be addressed. The LOSC does not provide a definition for marine scientific research. Thus, its scope has been subject to different interpretations. For example, it has been argued that:

[Seabed studies] must be viewed as an “internationally lawful use” of the sea related to the exercise of high-seas freedoms in the EEZ, such as those “associated with submarine cables and pipelines,” as provided for in Article 58(2) UNCLOS.²⁹

Accordingly it is suggested that research in the context of a right to lay pipelines should be distinguished from the general concept of marine scientific research as without the right to conduct seabed studies the freedom to lay pipelines cannot be carried out.

However, traditionally marine scientific research is understood as having the following meaning: ‘[A]ny form of scientific investigation, fundamental or applied, concerned with the marine environment, ie that has the marine environment as its object ... [including] subsoil or seabed in the marine environment’.³⁰ Hence it essentially includes all forms of scientific investigations.³¹ Moreover, it may be subdivided into four categories: physical oceanography, chemical oceanography, marine biology and, finally, marine geology and geophysics.³² The marine environment studies in relation to the Nord Stream project may be classified as falling mostly under the latter category as they are primarily concerned with sediments and topography of the seabed, including its physical properties.

26 No definition for the term ‘marine environment’ is included in the LOSC. See MJ Kachel, *Particularly Sensitive Sea Areas: The IMO’s Role in Protecting Vulnerable Marine Areas* (Springer 2008) 65.

27 This could be interpreted as a prohibition on a coastal State to impose unreasonable conditions for laying a pipeline in the waters under its jurisdiction if a withheld of consent conflicts its own legislation or if the State refuses to approve any route at all.

28 S Klumbyte, ‘Environment Protection: Pipelines’ in U Karpen (ed), *Maritime Safety – Current Problems of Use of the Baltic Sea* (Nomos Publishers 2005) 68, 75.

29 Vinogradov (n 6) 284.

30 Rothwell and Stephens (n 19) 321.

31 AHA Soons, *Marine Scientific Research and the Law of the Sea* (Kluwer Law and Taxation Publishers 1982) 121-124. The *travaux préparatoires* of the 1982 LOSC and in particular the results of UNCLOS III indicate that States either did not include in their proposals for the definition of ‘marine scientific research’ any indication of the nature of the research or excluded merely activities aimed directly at the exploitation of marine resources which are not designed to increase man’s knowledge and not conducted for peaceful purposes.

32 *ibid* 6.

Of particular importance in addressing the scope of marine scientific research is its distinction between 'fundamental' and 'applied' scientific research. In that regard:

The former refers to scientific research intended to add to the sum of human knowledge about the world, regardless of its application, whereas the latter refers to research undertaken primarily for specific practical purposes. Marine scientific research in principle covers both kinds of scientific research.³³

Thus, applied scientific research includes physical seabed investigations carried out for, *inter alia*, military or commercial purposes,³⁴ eg the laying of submarine pipelines, even when it is conducted without the intent of publishing the results.³⁵

Thus with due respect to differing views the present author maintains that scientific investigations carried out in the marine environment in the context of the freedom to lay pipelines should be regarded as applied scientific research which fall under the scope of Part XIII of the LOSC.

Subsequently, the question whether a coastal State has the right to deny a permit to foreign vessels to conduct marine scientific research in its EEZ is addressed in the form of an illustrative example of an incident in 2005 that occurred in connection with the Nord Stream project in the Estonian EEZ.

VI. The overriding rule of Article 246(2) LOSC in light of the Estonian-Russian incident in 2005

In 2005, allegedly illegal research in Estonia's EEZ was carried out by Russian vessels. The Russian ship *Pjotr Kotsov* was found by the Estonian Coast Guard conducting research without Estonia's prior authorisation and it neglected the orders given to it by the Coast Guard.³⁶ Russian officials afterwards confirmed its vessels' (*Pjotr Kotsov* and *Jakov Smirnitski*) research activities on the planned route of the Nord Stream pipeline.³⁷ However, they argued that as the research was conducted outside the territorial waters of Estonia it did not call for any authorisation.³⁸

Under Part XIII of the LOSC, the general right to conduct marine scientific research is provided in Article 238. This right is further confirmed in Article 242(1) of the LOSC which calls for international co-operation for peaceful purposes in this field. Additionally, Article 242(2) of the LOSC provides that States shall offer to other States a reasonable opportunity to obtain information which is necessary to prevent and control damage to the health and safety of persons and marine environment.

However, coastal States have under Article 56(1)(b)(ii) exclusive jurisdiction with regard to marine scientific research in their EEZ which is subject to specific rules set forth in Article 246 of the LOSC. Thus, Article 246(2) of the LOSC provides the 'overriding rule'³⁹ according to which marine scientific research in the EEZ and on the continental shelf is always subject to the consent of the coastal State. Hence under Part XIII of the LOSC the Russian vessels' marine scientific research activities in 2005, conducted in the Estonian EEZ, were in breach of the law of the sea as no prior consent from the Estonian authorities was sought. The Russian authorities' contention that the research activities in the Estonian EEZ were lawful as the vessels were situated outside the territorial sea of Estonia is in that regard not grounded.

In the next chapter, a coastal State's right to refuse permission to conduct marine scientific research in its EEZ is explored in the context of an incident between Estonia and Russia in 2007.

VII. Article 246(5) LOSC in view of the Estonian-Russian incident in 2007

The course of the Nord Stream pipeline in the Finnish EEZ follows its outermost sections, thus closely bordering Estonia's EEZ. In 2007 the Finnish authorities had requested the Nord Stream consortium to conduct surveys on the Estonian side of

33 *ibid.*

34 Except resource exploration as it is governed by a different legal regime.

35 Soons (n 31) 7. In that context it is noteworthy that the Nord Stream consortium published the results of the research activities which were included in the project's transboundary EIA.

36 P Paleri, 'Coast Guards of the World and Emerging Maritime Threats' (Special Edition, 2009) *Ocean Policy Studies* 165, <<http://www.sof.or.jp/en>> accessed 14 May 2011. See also R Kagge and T Sildam, 'Vene laev tabati Eesti vetest uurimistöötl' *Postimees* (Tallinn, 11 November 2005).

37 T Sildam, 'Venemaa tunnistas Eesti majandusvetest uurimist' *Postimees* (Tallinn, 28 November 2005).

38 Paleri (n 36) 185.

39 Rothwell and Stephens (n 19) 327.

the Gulf of Finland for the possible re-routing of the pipeline due to geological and environmental considerations.⁴⁰ Hence the consortium requested permission from the Estonian authorities to conduct a seabed survey in the Estonian EEZ.

The government of Estonia rejected the application and the decision was not challenged by the States most interested in the project, ie Russia and Germany. Instead, they eventually received the consent from the government of Finland to use its EEZ for the pipeline route.⁴¹ Nevertheless, the lawfulness of the Estonian government's decision should be analysed further in light of the LOSC.

Estonia's rejection of the Nord Stream consortium's application to conduct sub-sea surveys in its EEZ raises the question of whether its position was in conformity with Article 246(3) of the LOSC. It stipulates that coastal States shall, in normal circumstances, grant their consent for marine scientific research projects performed by other States in their EEZ or on their continental shelf and such consent shall not be delayed or denied unreasonably. In considering whether normal circumstances apply it has to be determined, *inter alia*, that the research activities 'do not relate to the seismic or other explorations',⁴² they are in accordance with the LOSC, for the benefit of mankind and for peaceful purposes, carried out with appropriate scientific methods and means, have due regard for the protection and preservation of the marine environment and do not interfere unjustifiably with other legitimate uses of the sea.⁴³

However, under Article 246(5) of the LOSC coastal States may in their discretion withhold their consent to the conduct of such research projects if the project is related to one of the following actions which are relevant to consider in connection with the Nord Stream project. Notably, in that regard the subparagraphs of Article 246(5) of the LOSC have to be interpreted restrictively as they constitute exceptions from the general rule.

Firstly, Article 246(5)(a) of the LOSC provides a legal basis for Estonia's refusal if the Nord Stream project is of direct significance for the exploration and exploitation of natural resources under Estonia's jurisdiction. According to the official statement of the government of Estonia, '[b]ecause the results of drilling work on the continental shelf will give information about Estonia's natural resources and their possible use, the Estonian government has the right to reject the research application'.⁴⁴ The distinction between exploration activities,⁴⁵ for which a different legal regime applies, and marine scientific research for data collecting activities of natural phenomena is based on the motivations for undertaking the activities.⁴⁶ The investigation activities conducted in relation to the Nord Stream project may be regarded as marine scientific research as they were not carried out for the purpose of economic utilisation of the natural phenomena, although their results can be relevant for the exploration or exploitation of natural resources.

Hence the question whether the submarine surveys were of direct significance for the exploration and exploitation of natural resources (either living or non-living) is at the core of the dispute in terms of Article 246(5)(a) of the LOSC. Particularly due to the imprecise formulation of subparagraph (a), arguments in favour of both parties to the dispute may be found. However, the burden of proof lies with the coastal State.⁴⁷ At first glance the authorities of the coastal State have the discretionary right in interpreting the term 'direct significance'.⁴⁸ Yet, on the contrary, the coastal State does not possess the right to determine whether a particular scientific research activity falls under the scope of the subparagraphs of 246(5): this determination has to be based on objective facts in accordance with Article 248 and 251 of the LOSC.⁴⁹ Hence, in occasions when the discretion may be exercised, it might fall short of legitimacy and thus constitute an abuse of rights in terms of Article 300 of the LOSC. The formulation 'direct significance' under Article 246(5)(a) of the LOSC has been generally understood to imply that:

[T]he results of the research in question must have their own, intrinsic value from the point of view of exploration or exploitation and that it is not enough that the research results are only remotely significant (eg, research results

40 Koivurova and Pölonen (n 12) 313.

41 Vinogradov (n 6) 261.

42 *Eritrea/Yemen (Phase I)* (Arbitration Tribunal) (2001) 40 ILM 900, para 407. See Kwiatkowska (n 25) 266.

43 M Gorina-Ysern, *An International Regime for Marine Scientific Research* (Transnational Publishers Inc 2003) 315.

44 Vinogradov (n 6) 261.

45 Soons (n 31) 171. The term 'exploration' is undefined in the LOSC but generally it is understood as including 'data collecting activities concerning natural resources conducted specifically in view of the exploitation (ie economic utilization) of those natural resources'.

46 *ibid.*

47 Soons (n 31) 170.

48 Article 246(5) of the LOSC: 'Coastal States may however *in their discretion* withhold their consent ...' (emphasis added).

49 Soons (n 31) 170.

which can *become* useful from this point of view when they are combined with other data to be collected).⁵⁰

Thus, scientific studies which can ‘reasonably be expected to produce results permitting to locate resources, to assess them, or to monitor their status and availability for commercial exploitation’⁵¹ and the significance of which is at least of some importance falls under the scope of Article 246(5)(a) of the LOSC. The decision whether a particular activity meets this threshold is often bound up with technical details and means of the investigation activity.

Significantly, under Article 264 and 297(2)(a) of the LOSC, disputes concerning marine scientific research are subject to an automatic exception to compulsory dispute settlement.⁵² However, it has been argued that Russia could have used, under Article 297(2)(b) of the LOSC, its right to challenge the Estonian authorities’ refusal in 2007 to grant the permit to conduct hydrographic surveys in its EEZ.⁵³ Yet, the fact that Russia failed to refer Estonia to compulsory conciliation may be regarded on the other hand as an indication of its tacit consent to the Estonian position. Notably, although in essence State parties to the LOSC are permitted under Annex V, Section 2 to the LOSC to refer such disputes to compulsory conciliation, the authoritative award of the conciliation is legally still non-binding.

Secondly, Article 246(5)(b) provides, *inter alia*, the right of refusal if the project involves the introduction of harmful substances into the marine environment. However, unlike the environmental impact of the laying of the pipeline in the Baltic Sea and its operational mode, the seabed survey does not involve introducing harmful substances into the marine environment.

Thirdly, under Article 246(5)(c) coastal States may withhold their consent if the project involves the construction of artificial installations and structures. However, as analysed above, Nord Stream falls outside the scope of the regime of artificial installations and structures under the LOSC and no *ad hoc* artificial installations or structures were involved in the research activities.

Finally, a State’s refusal to grant permit for conducting sub-sea surveys in its EEZ would be grounded under Article 246(5) (d) if the project would have been inaccurately documented in the information dossier presented. Yet, purportedly the documents provided to the Estonian government were accurate.

To conclude, whereas in 2005 the Russian vessels conducted marine scientific research in the Estonian EEZ in breach of Article 246(2) of the LOSC, the lawfulness of the Estonian authorities’ rejection of the Nord Stream consortium’s application to conduct scientific research in its EEZ in 2007 is subject to different interpretations in light of Part XIII of the LOSC. The latter may be regarded as a consequence of the imprecise formulation of Article 246(5)(a) of the LOSC.

Marine scientific research is intertwined with environmental impact assessment as it provides the necessary data for its subsequent assessment. In the next chapter, the precedential Nord Stream project’s EIA is scrutinised to better understand the role an EIA has in States’ deliberations on whether to grant a permit for laying submarine pipelines in their EEZ.

VIII. The applicable EIA procedure to the Nord Stream pipeline project

A. *The relevant legal framework*

A variety of treaties are relevant with regard to the Nord Stream project from the viewpoint of marine environmental protection.⁵⁴ In addition, the Voluntary Guidelines on Biodiversity-inclusive Impact Assessment⁵⁵ of the Convention on

50 *ibid* 171.

51 *ibid*.

52 Rothwell and Stephens (n 19) 326.

53 Vinogradov (n 6) 283-285.

54 C Redgwell, ‘Fundamental International Environmental Law Questions relating to the Baltic Sea Pipeline’ (The Nord Stream Pipeline: Legal, Economic and Environmental Issues conference, Kiel, 21 February 2009). Presentation available at <<http://www.internat-recht.uni-kiel.de/veranstaltungen/pipeline-conference/beitraege/Redgwell.pdf>> accessed 20 March 2011. Eg 1982 LOSC, 1992 Convention on Biological Diversity, 1992 Helsinki Convention, 1996 London Protocol, 1991 Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas, 1972 World Heritage Convention, 1998 Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, 1994 Energy Charter Treaty and Protocol on Energy Efficiency and Related Matters.

55 UNEP/CBD/COP/8/27/Add.2 (2006).

Biological Diversity and Principle 17 of the Rio Declaration⁵⁶ as non-binding instruments further reflect the customary nature of the obligation to undertake an EIA in circumstances where proposed activities are likely to have a significant adverse impact on the environment.

In line with the precautionary principle an EIA has to be carried out 'at an early stage and prior to decision'⁵⁷ in order to forestall a potential risk of an accident to occur.⁵⁸ This means that with regard to submarine pipelines preventive measures, eg an EIA, have to be taken 'even when there is no conclusive evidence to prove a causal relation between inputs and their effects [on the marine environment].'⁵⁹

The current analysis is focused on the 1991 Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention). Each Baltic Sea littoral State has ratified the Espoo Convention, except Russia which is a signatory State. Nevertheless, in 2006 Russia agreed to act as a party of origin to the extent possible under its legislation in relation to Nord Stream.⁶⁰ That was crucial as even though the LOSC and the 1992 Helsinki Convention are applicable to the Nord Stream project, 'they do not contain specific obligations that are suitable for organizing transboundary EIA'.⁶¹ In particular, '[A]rticle 206 of the [LOS] Convention gives only few indications of this scope and content'⁶² which has been also confirmed by the International Court of Justice in the recent *Pulp Mills* case.⁶³

Moreover, Article 206 of the LOSC does not include any obligations or further steps that States have to take subsequent to receiving the results of such assessments besides publishing the report in accordance with Article 205 of the LOSC. Yet, it is clear that under Article 194(1) of the LOSC States are required to take further action in occasions when the EIA indicates that the project has adverse effects in order to prevent, reduce and control pollution of the marine environment. Therefore, the Espoo Convention has a particular significance in providing the specific requirements that States have to fulfil in such circumstances in order to ensure that they do not act in breach of Part XII of the LOSC.

B. *The EIA procedure under the Espoo Convention*

Under the EIA regime of the Espoo Convention, the Nord Stream project has five parties of origin (Russia, Finland, Sweden, Denmark and Germany) and nine affected parties (including additionally Poland, Lithuania, Latvia and Estonia).⁶⁴ Due to the complexity of the EIA procedure and the large number of affected parties and parties of origin, an innovative approach was adopted in connection with the Nord Stream project.

Namely, by establishing the international coordination meetings (comprising of the representatives of all nine affected parties), they ensured that the Nord Stream consortium conducts an environmental impact statement for the entire Nord Stream pipeline in addition to the traditional assessment of the individual sectors on the basis of national EIA legislation.⁶⁵ The national Espoo contact points were responsible for ensuring that the assessment of the entire project fulfilled the minimum technical requirements of the Espoo Convention.⁶⁶

However, only the national authorities of the five parties of origin (Russia, Germany, Finland, Sweden and Denmark) had the right to decide whether to grant or withhold their permission for the project in regard to their territorial sea and/or EEZ. That decision depended on whether the EIA concerning the sector of the pipeline under the jurisdiction of the particular

56 A/CONF.151/26(Vol I) (1992).

57 Article 19(1)(i) of The Energy Charter Treaty (signed 17 December 1994, entered into force 16 April 1998) 2080 UNTS 100 (1994 Energy Charter Treaty). Notably, in 2009 Russia withdrew from the Treaty.

58 *New Zealand v France Nuclear Tests* (Order) [1995] ICJ Rep 288, paras 5, 34-35. For precautionary principle in general see: WTO, *European Communities – Measures Concerning Meat and Meat Products (Hormones) – Report of the Appellate Body* (16 January 1998) WT/DS26/AB/R and WT/DS48/AB/R, paras 120-125.

59 Article 3 of the Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (opened for signature 27 November 1996, entered into force 24 March 2006) 36 ILM 1 (1996 Protocol). All five parties of origin of the Nord Stream project are parties to the 1996 Protocol.

60 'Chapter 3: Legal Framework and Public Consultation' in 'Nord Stream Espoo Report' (2009) 62 <<http://www.nord-stream.com>> accessed 20 March 2011.

61 Koivurova and Pöhlönen (n 12) 301-302.

62 'Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area' (1 February 2011) ITLOS/Advisory Opinion, para 149.

63 *Pulp Mills on the River Uruguay (Argentina v Uruguay)* [2010] ICJ Rep (20 April 2010), para 205.

64 Vinogradov (n 6) 267.

65 Koivurova and Pöhlönen (n 12) 305-306.

66 *ibid* 308.

State was in accordance with its national EIA legislation and the corresponding rules.⁶⁷ By February 2010 all five parties of origin had granted their final permission for the laying of the Nord Stream pipeline in their waters.⁶⁸

During the early stage of the national EIA procedures, the national authorities could have required the Nord Stream consortium to evaluate alternatives for implementing the Nord Stream pipeline under the jurisdiction of each coastal State. Yet, it is not a strict obligation to consider all locational alternatives as the Appendix II(b) of the Espoo Convention is limited to reasonable alternatives.

Thus, in accordance with the Espoo Convention, each party of origin has to determine which alternatives are to be examined within its jurisdiction, including land-based alternatives.⁶⁹ However, no such requests were made during the scoping phase of the assessment. Hence, subsequently it became difficult to argue for the States concerned that the environmental impact statement for the entire Nord Stream pipeline was incomplete because it did not take into account land-based alternatives.⁷⁰

Nevertheless, the European Parliament⁷¹ and some of the affected States⁷² criticised the transboundary EIA because the alternatives for the project's route were supposedly not studied sufficiently. Additionally, it has been pointed out that the origin parties could have asked the consortium in their meeting in April 2006 'to make a broader international study and comparison of alternatives between land-based and sea-based routing alternatives.'⁷³ Thus, it would have arguably been more in accordance with the object and purpose of Appendix II(b) of the Espoo Convention which states that reasonable alternatives to the proposed project have to be included in the EIA documentation.

As considered above, under the LOSC the Baltic Sea littoral States had the right to deny the permit for constructing a long-distance gas transmission pipeline in their EEZ or on their continental shelf. This chapter indicated that the decision of whether to grant such a permit was to a great extent related to the outcome of the relevant EIA procedures. The subsequent analysis is focused on the question of whether from the viewpoint of marine environmental protection it would have been reasonable for the concerned States to refuse to give their permission to the Nord Stream project in support of an alternative onshore route.

IX. The prospect of a land-based alternative to the Nord Stream submarine pipeline in view of the principle of sustainable development and precautionary principle

A. *The sensitiveness of the Baltic Sea marine environment*

The Baltic Sea is the world's largest body of brackish water with a mean depth of 54 meters.⁷⁴ Due to its semi-enclosed nature,⁷⁵ shallow entrance in the Kattegat (23 metres) and a threshold depth in the deepest channel near the Swedish coast of merely 20 metres,⁷⁶ the complete renewal of water in the Baltic Sea takes 20-30 years.⁷⁷ These general factors, in combination with cold water,⁷⁸ are the main causes of the particular sensitiveness of the Baltic Sea marine environment. Due to its role as the final reservoir of pollution in the whole Baltic Sea catchment area where a population of about 85 million people live,⁷⁹ the state of the Baltic Sea has been described as disastrous.⁸⁰ Notably, however, its environmental situation has slightly improved in some fields.⁸¹

67 *ibid* 307.

68 'Fact Sheet: The Nord Stream Pipeline Project' (January 2011) 1 <<http://www.nord-stream.com>> accessed 20 March 2011.

69 Koivurova and Pölonen (n 12) 313.

70 *ibid* 312.

71 European Parliament, Resolution A6-0225/2008.

72 Ministry of the Environment of Estonia, Response 13-3-1/07/57953 (2008) <<http://www.ymparisto.fi/download.asp?contentid=80150&1an=fi>> accessed 20 March 2011.

73 Koivurova and Pölonen (n 12) 323.

74 G Alexandersson, *The Baltic Straits* (Martinus Nijhoff 1982) 10.

75 LOSC, art 122.

76 Alexandersson (n 74) 12.

77 M Fitzmaurice, *International Legal Problems of the Environmental Protection of the Baltic Sea* (Martinus Nijhoff 1992) 3.

78 Alexandersson (n 74) 17. Finland is the most completely ice-blocked country in the world; winters in relation to the Baltic Sea are classified as severe when more than 200,000 of the 420,000 km² of the Baltic Sea and its approaches (to the Skaw-Grimstad line) are frozen. The only decade since 1830 without any winter in the severe category was 1930-1939. Several times throughout the past century the Baltic Sea has frozen completely.

79 P Ehlers, 'Marine Environment Protection – the Baltic Sea Example' in P Ehlers, E Mann-Borgese and R Wolfrum (eds), *Marine Issues: From Scientific, Political and Legal Perspective* (Kluwer Law International 2002) 94.

80 Fitzmaurice (n 77) 33.

81 Ehlers (n 79) 94, 104.

In 2004 the IMO Assembly designated the Baltic Sea as a particularly sensitive sea area (PSSA) as a response to a request from eight Baltic Sea littoral States (Sweden, Finland, Estonia, Latvia, Lithuania, Poland, Germany and Denmark).⁸² The designation of the Baltic Sea as a PSSA did not increase the competence of the littoral States, nor alter the applicable law.⁸³ However, it is indicative of the applicability of Article 194(5) of the LOSC to the fragile ecosystem of the Baltic Sea as this provision may be regarded as the legal basis for PSSAs.⁸⁴

Numerous submarine pipelines have been laid in the North Sea, including so far the world's longest underwater pipeline *Langeled*, without a considerable discussion on environmental impacts. However, although the proponents of the Nord Stream make this analogy, in regard to the Nord Stream project the comparison is misleading for numerous ecological, hydrographical and geographical reasons which by-pass the fundamental differences between the two seas.⁸⁵ In addition to geographical factors, eg depth of the seas and openness to the Atlantic Ocean, various anthropogenic sources of pollutants have to be taken into consideration.

B. *Anthropogenic sources of pollutants in the Baltic Sea in view of the impact of the Nord Stream pipeline on the marine environment*

Article 1(1)(4) of the LOSC and Article 2 of the 1992 Helsinki Convention provide the definition for the pollution of the marine environment. Under its terms the Nord Stream pipeline introduces a variety of pollutants in the Baltic Sea.⁸⁶ Significantly, the transboundary EIA conducted by the Nord Stream consortium has allegedly missed some fundamental information in that regard.⁸⁷

The Nord Stream pipeline traverses main shipping routes of the Baltic Sea.⁸⁸ Yet, the actual pipeline is susceptible to damage from a ship's anchor or trawling nets resulting possibly with blowouts which may be explosive.⁸⁹ It has been noted that anchor damage and related accidents⁹⁰ have accounted for 90 per cent of the pollution related to pipelines.⁹¹

The scientific certainty regarding the behaviour of hydrocarbon gases in the natural waters and especially their impacts on water organisms, populations, and ecosystems is very limited. Thus, subsequent to accidental drilling blowouts in the Sea of Azov in 1982 and 1985, researchers found a causal effect between the release of large amounts of natural gas and mass fish mortality.⁹² This implies that the precautionary principle should have particular significance in risk assessments in connection with projects such as the Nord Stream. The transboundary EIA conducted by the Nord Stream consortium, however, concluded that the issue is not problematic.⁹³

82 O Lindén et al, 'PSSA in the Baltic Sea: present situation and future possibilities' (Monograph/Research Brief, World Maritime University, Malmö, July 2005-December 2007) 5 <http://www.balticmaster.org/media/files/general_files_706.pdf> accessed 21 March 2011.

83 R Lagoni, 'Marine Environmental Protection and Scientific Research in the Baltic Sea Area – an Appraisal' in U Karpen (ed), *Maritime Safety - Current Problems of Use of the Baltic Sea* (Nomos, Baden-Baden 2005) 120.

84 M Detjan, 'The Western European PSSA-Testing a unique international concept to protect imperilled marine ecosystems' (2006) 30 *Marine Policy* 442, 447.

85 BS Whist, 'Nord Stream: Not Just a Pipeline - An analysis of the political debates in the Baltic Sea region regarding the planned gas pipeline from Russia to Germany' (Report, Fridtjof Nansen Institute 2008) 42 <<http://www.fnii.no/>> accessed 20 March 2011.

86 Koivurova and Pöhlönen (n 12) 299-300. Eg re-suspension of sediments as a result of seabed interventions, the effect of commissioning and de-commissioning of the pipeline on fish stocks and fisheries, key wintering and staging sites for a large variety of waterfowl and harbour porpoise population, covered by the Natura 2000 sites under the EU Habitats Directive, detonations of wartime munitions dumped into the seabed and the seabed disturbance in locations where dumped chemical weapons might be located.

87 G Norén, 'CCB Statement on the Nord Stream Gas Pipeline ESPOO EIA report and Proposals for requirements to mitigate environmental impact of the gas pipeline' (Coalition Clean Baltic, 22 May 2009) 1-2 <http://www.ccb.se/documentsCCBStatementNordStreamFinal_000.pdf> accessed 21 March 2011. Eg content of hazardous substances in the seabed under 5 cm depth subject to excavation works.

88 Vinogradov (n 6) 259.

89 Karm (n 15) 105.

90 *ibid.* Eg in 1980 a ship's anchor damaged a pipeline in the North Sea causing an oil spill and in 1986 a spill occurred due to a pipeline valve failure as a consequence of pressure changes.

91 Klumbyte (n 28) 68. Notably, coastal States may establish reasonable safety zones around artificial installations and structures in accordance with Article 60(4) of the LOSC. Additionally, under Article 60(7) of the LOSC artificial installations and structures may not be constructed if it would cause interference to the use of recognised sea lanes essential to international navigation. This applies *mutatis mutandis* to the continental shelf under Article 80 of the LOSC. However, as noted above the legal regime of artificial installations and structures does not apply to the Nord Stream submarine pipeline.

92 Karm (n15) 107.

93 'Nord Stream Espoo Report: Non-Technical Summary' (February 2009) 36 <<http://www.nord-stream.com>> accessed 13 May 2011. 'A release of gas resulting from such a rupture could have impacts of minor consequence on most resources or receptors extending to moderate in the case of fish, marine mammals and nature conservation areas. The risk assessment has shown that the probability of occurrence is low and as result the significance of such impacts is low.'

Additionally, as a consequence of an excess of nutrients in the Baltic Sea algae has grown rapidly, commensurately depleting the oxygen levels.⁹⁴ The process of oxygen depletion in the marine environment nearest to the seabed has resulted in the effect of marine desertification.⁹⁵ It has particular relevance in the context of the Nord Stream pipeline as natural gas composes of up to 97% of methane that has a low rate of solubility, especially in sea water and areas with deficiency of oxygen.⁹⁶ Hence the Baltic Sea would be particularly vulnerable to any gas blowouts or leakages from the Nord Stream pipeline.

Notably, the project has been heavily criticised as the transboundary EIA does not provide any information on the number of explosives⁹⁷ and their locations in the Russian waters nor the impacts of the blasting operations that started under unclear conditions.⁹⁸ The transboundary EIA concluded that the risk that such conventional weapons pose to the marine environment in connection with the Nord Stream project is insignificant.⁹⁹

C. *The impact of the dumped chemical munitions to the Nord Stream project*

In addition to conventional weapons dumped in the Baltic Sea, vast amounts of Germany's unused chemical warfare was sunk in the sea in disabled ships subsequent to the Second World War.¹⁰⁰ Out of the 230 000 tons of chemical warfare dumped in the Baltic Sea and in the Danish Straits, two dumping sites are located in the immediate vicinity of the Nord Stream pipeline,¹⁰¹ embracing an estimated 55 000 tons of chemical munitions.¹⁰² In addition, a confidential USSR document including information about quantities and types of chemical munitions dumped from 1946 to 1976 was revealed in 1992, according to which the Red Baltic Sea Fleet had dumped 356 872 tons of chemical ammunition in the Baltic Sea, pointing out dumping sites in the Gulf of Finland close to the pipeline route.¹⁰³ However, Russia has not confirmed this information.¹⁰⁴

The transboundary EIA of the Nord Stream consortium did not include in its risk assessment these vast amounts of chemical agents allegedly dumped in the Baltic Sea by the USSR's navy after 1947, which raises the question of scientific uncertainty.¹⁰⁵ In this connection it is also notable that the transboundary EIA has been heavily criticised because it has supposedly not taken into account the precautionary principle that would be of particular relevance in light of the stable leakages of the chemical warfare agents in the marine environment during the next decades.¹⁰⁶

94 Rothwell and Stephens (n 19) 340.

95 Fitzmaurice (n 77) 34.

96 Karm (n 15) 107.

97 JDA Tarasov, 'The Making of Empires: Russia's gas-exporting pipelines v Nabucco' (2011) 4 *Journal of World Energy Law and Business* 77, 79. It is estimated that in the aftermath of the First and Second World War over 85 000 mines were placed in the Baltic Sea, half of them found by now. See also 'Nord Stream and Munitions in the Baltic Sea' (September 2010) 3 <http://www.nord-stream.com/fileadmin/Dokumente/1__PDF/3__Background_Infos/Munitions/Nord_Stream_White_Paper_Munitions_eng.pdf> accessed 21 March 2011.

98 Norén (n 87) 5.

99 'Nord Stream Environmental Impact Assessment Documentation for Consultation under the Espoo Convention – Nord Stream Espoo Report: Key Issue Paper Munitions: Conventional and Chemical' (February 2009) 67 <<http://www.nord-stream.com>> accessed 21 March 2011 (hereinafter 'Nord Stream Espoo Report').

100 Karm (n 15) 102. 'Not all the munitions were disposed of this way; some ships broke down prior to reaching their designated area, and boxes and crates containing weapons were reportedly tossed overboard en route. For example, wooden crates containing weapons were found washed ashore on the Swedish coast. Munitions are thus believed to be scattered throughout the Baltic Sea.' See also PO Granbom, 'Dumped Chemical Ammunition in the Baltic: A Rejoinder' (1994) 25 *Security Dialogue* 109: 'There are no technical or financial possibilities to find all dumped chemical ammunition in the Baltic because this has been spread over vast areas.'

101 'Nord Stream Espoo Report' (n 99) 8.

102 AW Krohn, 'The Challenge of Dumped Chemical Ammunition in the Baltic Sea' (1994) 25 *Security Dialogue* 93, 96.

103 Granbom (n 100) 107.

104 *ibid.* See also 'Final Report of the ad hoc Working Group on Dumped Chemical Muniton (HELCOM CHEMU)' (16th Meeting of the Helsinki Commission, March 1995) 1 <<http://www.helcom.fi/>> accessed 20 March 2011.

105 S Marr, *The Precautionary Principle in the Law of the Sea* (Martinus Nijhoff 2003) 25.

106 Norén (n 87) 1. '[The precautionary approach] crucially require[s] the utilization of worst case assumptions in cases of uncertainty. Instead, Nord Stream tries to predict impacts in these uncertain cases on the basis of being likely to occur in the eyes of Nord Stream's consultants who, as it is implicit in those cases, simply do not know what is going to happen. This clearly does not meet the requirements of an EIA and is especially poor performance in the context of Nord Stream's own stipulation of an aspired precautionary approach.'

Significantly, as the chemical warfare agents' containers corrode¹⁰⁷ a stable leakage occurs with mustard gas having the most extreme character on the marine environment.¹⁰⁸ The rate of its leakage peaks in about 125 years after dumping.¹⁰⁹ The long term effects of the chemical munitions dumped in the Baltic Sea are unknown and it is unclear whether these toxic substances might eventually find their way into the human food chain.¹¹⁰

Although the prevailing opinion is that the catastrophe scenario with regard to the sudden emission of large quantities of chemical warfare agents is unlikely to occur,¹¹¹ it is evident that the stable and growing cumulative effect due to the corrosion of the chemical warfare agents' containers in next hundred years places a heavy burden on the marine environment of the Baltic Sea.¹¹² Moreover, it has been stressed that as a result of the hydrographical conditions in the Baltic Sea even 'a relatively small environmental change may cause severe unbalance to a whole ecosystem'¹¹³ and hence 'additional stress by pollutants is of great importance to such an environment.'¹¹⁴

D. The transboundary EIA and the final decision on the proposed activity in view of general principles of environmental law

Taking into account the former considerations, the Nord Stream pipeline raises a variety of questions in regard to its impact on the Baltic Sea. In the occasion of natural gas blowouts or leakages it would result in a cumulative and long-lasting adverse effect on the fragile marine environment. Moreover, once the pipeline starts leaking, its repair takes a long time since it is subject to certain actions, eg loading or diving that might also be affected by severe weather conditions.¹¹⁵

Therefore, it is striking that these considerations, by-passing precautionary principle¹¹⁶ and ecosystem approach,¹¹⁷ were neglected in the transboundary EIA. Hence it is questionable whether the transboundary EIA was conducted with 'prudence and caution'¹¹⁸ necessary 'to prevent serious harm'¹¹⁹ and 'to avert further deterioration'¹²⁰ of the marine environment of the Baltic Sea, contradicting Article 3(2) of the 1992 Helsinki Convention.

The obligation to protect the large marine ecosystem¹²¹ of the Baltic Sea, to conserve natural habitats and biological diversity, to protect ecological processes and to take all appropriate measures to promote the ecological restoration and the preservation of its ecological balance are set forth in Articles 3(1) and 15 of the 1992 Helsinki Convention. In addition, according to Article 123 of the LOSC Baltic Sea littoral States shall endeavour to coordinate management and environmental protection in the Baltic Sea area. With that regard and in relation to the fragile ecosystem of the Baltic Sea as evidenced by the designation of the Baltic Sea PSSA in 2004, the coastal States have to take necessary preventive measures under Article 194(5) of the LOSC. Arguably, the inclusion of the land-based alternative of the submarine pipeline in the EIA procedure of the Nord Stream project would have constituted appropriate means in meeting these obligations.

107 M Fitzmaurice, 'Hazardous Substances and the Baltic Sea' in DC Caron and HN Scheiber (eds), *The Oceans in the Nuclear Age: Legacies and Risks* (Martinus Nijhoff 2010) 87. The actual stage of this process is impossible to assess, however the netted chemical munitions have been mostly in state of complete corrosion.

108 Granbom (n 100) 107. The two dumping sites (East of Bornholm and South-East of Gotland) which the Nord Stream pipeline route passes consist of more than 60% mustard gas, 20% adamsite, chloroacetophenone, 'Cyclone B' and 20% arsenic containing substances other than adamsite.

109 *ibid.* The speed of ambient stream is the most important factor that affects the corrosion. Estimations range from 24 (Gotland dumping site) to 256 tons per year (Bornholm dumping area).

110 Krohn (n 102) 99. See also Granbom (n 100) 108. See also K Kern, M Joas and D Jahn, 'Governing a Common Sea: Comparative Patterns for Sustainable Development' in M Joas, D Jahn and K Kern (eds), *Governing a Common Sea: Environmental Policies in the Baltic Sea Region* (Earthscan 2008) 196. Dioxin in fish is already a health risk to humans as medical authorities recommend that salmon and Baltic herring (17 cm long or longer) should not be eaten more than twice a month.

111 Fitzmaurice (n 107) 87.

112 Granbom (n 100) 105.

113 Fitzmaurice (n 77) 32.

114 *ibid.*

115 Klumbyte (n 28) 67.

116 Kachel (n 26) 60. See also *The MOX Plant (United Kingdom v Ireland)* (Order of 3 December 2001) ITLOS Reports 2001, paras 33-43.

117 R Lagoni, 'Marine Protected Areas in the Exclusive Economic Zone' in A Kirchner (ed), *International Marine Environmental Law: Institutions, Implementation and Innovations* (Kluwer Law International 2003) 164. See also Vinogradov (n 6) 288.

118 *Southern Bluefin Tuna Cases (New Zealand v Japan; Australia v Japan)* (Order of 27 August 1999) ITLOS Report 1999, para 77.

119 *ibid.*

120 *ibid.* 80.

121 Rothwell and Stephens (n 19) 464.

Furthermore, it is noted in Article 19(1) of the 1994 Energy Charter Treaty that States should ‘minimize in an economically efficient manner harmful Environmental Impacts’. In that respect it is notable that the land-based alternative through Latvia, Lithuania and Poland would have been only slightly longer or even shorter¹²² in distance than the off-shore pipeline, cheaper¹²³ and less hazardous to the environment.

Thus, taking into account the cost-effective approach as stipulated in Article 19(1) of the 1994 Energy Charter Treaty, the land-based alternative would have arguably been more in accordance with the principle of sustainable development as it would have effectively combined economic efficiency with environmental considerations.¹²⁴ Hence the land-based alternative may be regarded as a reasonable alternative in terms of Appendix II(b) of the Espoo Convention and consequently should have been included in the Nord Stream project’s EIA documentation.¹²⁵ However, the transboundary EIA neglected¹²⁶ the question of a land-based alternative. That explains why the main criticism to the Nord Stream project’s EIA derived from the Espoo Convention Secretariat.¹²⁷

X. Conclusion

Nord Stream as a long-distance gas transmission pipeline cannot be regarded as an artificial installation or structure and thus falls outside the scope of Articles 60 and 80 of the LOSC. Significantly, coastal States have the right to withhold their permission for the laying of submarine pipelines in their EEZ or on their continental shelf under Article 79(2) and thus essentially impair the freedom to lay submarine pipelines granted in Articles 58(1) and 79(1) of the LOSC. That provided the legal basis for the corresponding discretionary right that the parties of origin possessed in relation to the Nord Stream project. In that respect eventually all five parties of origin gave their consent to the laying of the Nord Stream submarine pipeline in their waters.

Significantly, the Nord Stream project raised the question whether seabed studies and investigations of the marine environment for the purpose of laying a submarine pipeline may be classified as marine scientific research under Part XIII of the LOSC. With respect to differing views the present author maintains that fundamental and applied marine scientific research embraces essentially all forms of scientific investigations, including the commercial ones conducted not for the purposes of exploration or exploitation, eg the laying of submarine pipelines.

In that regard, coastal States normally grant their consent for marine scientific research projects conducted by other States in their EEZ or on their continental shelf in conformity with Article 246(3) of the LOSC. However, States may under Article 246(5) of the LOSC in their discretion withhold such permission. As illustrated by the Estonian refusal in 2007 to grant its permit to the Nord Stream consortium, such a discretionary right may be subject to conflicting interpretations.

Finally, the precedential transboundary EIA conducted by the Nord Stream consortium demonstrated the importance of including all reasonable alternatives, as provided in Appendix II(b) to the Espoo Convention, in the assessment in order to safeguard an indisputable acceptance to a proposed project. The present author maintains that in determining whether a particular alternative should be considered as reasonable and subject to Appendix II(b) of the Espoo Convention, the alternative’s cost-effectiveness, the ecosystem approach, the precautionary principle and the principle of sustainable development may be regarded as the principal indicators. Based on these criteria and taking into account the sensitiveness of the Baltic Sea marine environment the land-based alternative of the Nord Stream submarine pipeline should have been included in the transboundary EIA documentation. ■

122 Ministry of Trade and Industry of Finland, Statement No 32/880/2006, 2.

123 Tarasov (n 97) 80. See also Whist (n 85) 19-21. See also Norén (n 87) 10.

124 Kachel (n 26) 56. See also *Gabcikovo-Nagymaros Project (Hungary v Slovakia)* [1997] ICJ Rep 7, para 140.

125 In strict terms it is not an obligation under Articles 6(1) and 6(2) of the Espoo Convention for the parties of origin to choose for the best environmental alternative. However, it is evident that due account of the outcome of the EIA procedure has to be taken in the final decision on the proposed activity.

126 ‘Chapter 6: Alternatives’ in ‘Nord Stream Espoo Report’ (2009) 320 <<http://www.nord-stream.com>> accessed 21 March 2011. Note that during the 1997-1999 feasibility study the off-shore route was considered to be the most feasible in comparison with other possible alternatives. However, this judgment has been subject to criticism as noted above. Thus, the author maintains that in light of the possible superficial nature of the 1997-1999 feasibility study in that connection the matter of the feasibility of the land-based alternative should have been subject to further investigation in the transboundary EIA.

127 Koivurova and Pölonen (n 12) 319. See also UN Doc ECE/MPEIA/WG.1/2009/4 (2009), para 13. Notably, the Espoo Convention Secretariat introduced a new concept, ie ‘strategic element’, in the EIA framework, which they claimed to be essential factor for conducting an EIA in cases of ‘complex activities’, eg large-scale energy projects concerning several countries. Accordingly, the strategic dimension comprises of elements such as geopolitical issues, economic, energy and climate policies, regional integration and relations between States which all have to be taken into consideration in the EIA documentation.