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I. Introduction

Due to the growth of energy consumption, in particular of fossil fuels such as oil and gas, the cross-border trade of fossil fuels has increased.[1] International transportation of fossil fuels has been carried out using a wide range of instruments, including both offshore and onshore transmission.[2] The pipeline is a cost-

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[1] *BP Energy Outlook 2030*, BP STAT. REV. OF WORLD ENERGY (BP/Energy Rep., London), Jan. 2011, at 76-77, http://www.bp.com/content/dam/bp/pdf/Energy-economics/Energy-Outlook/BP_Energy_Outlook_Booklet_2011.pdf [hereinafter 2011 Energy Outlook] (noting that the world primary energy consumption has grown by 45% over the past 20 years and will likely grow another 39% over the next 20 years). During the 20th century, the rate of produced and consumed natural gas daily increased. *Id.* at 31. While the use of oil and coal as main fuels has decreased around the world, natural gas has increased. *Id.* at 35. The share of crude oil in the world's energy supply will decline during the two next decades. *See id.* at 29.

[2] *See BP Energy Outlook 2030*, BP STAT. REV. OF WORLD ENERGY (BP/Energy Rep., London), Jan. 2012, at 18, http://www.bp.com/content/dam/bp/pdf/Energy-economics/Energy-Outlook/BP_Energy_Outlook_Booklet-2012.pdf [hereinafter 2012 Energy Outlook] (displaying map of major trade movemements in 2011 throughout the world and a chart containing information about crude and product imports and exports in

effective and relatively safe tool for the transportation of oil and gas.[3] Pipelines are extensively used for terrestrial and submarine transportation of hazardous materials.[4] In addition, there are many offshore pipelines for transporting oil from offshore facilities to coasts.[5] An example is that found in the North Sea.[6] From a technical perspective, cross-border oil and gas pipelines have specific differences. From a legal perspective, however, cross-border oil and gas pipelines are very similar. These similarities and differences will be explored throughout this paper.

Although pipelines are recognized as a safe way to transport petroleum,[7] numerous pipeline accidents have occurred worldwide.[8] Pipeline accidents have caused a significant number of personal injuries, environmental damage, and economic loss because of the types of substances transported by pipelines.[9] The extent and amount of harm varies on a case-by-case basis depending on the location of the pipeline.[10] For example, on July 30, 2004, a transit gas pipeline exploded in the Ghislenghien industrial zone approximately 50 kilometers south of Brussels,

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2011).

3 Georgios A. Papadakis, *Major Hazard Pipelines: A Comparative Study of Onshore Transmission Accidents*, 12 J. LOSS PREVENTION PROCESS INDUSTRIES 91, 91 (1999); *see* 2012 Energy Outlook, *supra* note 2, at 34 (showing that 67.73% of the total amount of global gas exports were transmitted via pipelines).

4 *See* Papadakis, *supra* note 3, at 92 (noting major onshore pipeline accidents which mostly consist of the transmission of hazardous materials).

5 *See id.* at 96 (highlighting how offshore pipelines exist as a method for transporting oil).

6 ØYSTEIN NORENG, THE OIL INDUSTRY AND GOVERNMENT STRATEGY IN THE NORTH SEA 31-34 (1980).

7 Diana Furchtgott-Roth, *Pipelines are Safest for Transportation of Oil & Gas*, MANHATTAN INST. FOR POL'Y RES. 1, 1 (2013), *available at* http://www.manhattan-institute.org/html/ib_23.htm#.U_3ffrywKH0; W. Kent Muhlbauer, *Modeling for Pipelines Risk Assessments*, *in* PIPELINE RULES OF THUMB HANDBOOK: A MANUAL OF QUICK, ACCURATE SOLUTIONS TO EVERYDAY PIPELINE ENGINEERING PROBLEMS 733, 733 (E.W. McAllister ed., 8th 2013); *see also* Margaret T. Okoroduda-Fubara, *Oil in the Persian Gulf War: Legal Appraisal of an Environmental Warfare*, 23 ST. MARY'S L.J. 123, 125-26 (1991) (stating that governments have a responsibility to shape their decisions with prudent care in ways that will protect the environment).

8 Muhlbauer, *supra* note 7, at 733.

9 *See id.* at 733-34; *see* Papadakis, *supra* note 3, at 92.

10 *See* Papadakis, *supra* note 3, at 92 (stating that pipeline failure can be avoided by improving safety measures, but are still possible with aging infrastructure catastrophic failures).

Belgium.[11] That pipeline was transporting Norwegian gas to France from the Belgian landfall of Zeepipe in Zeebrugge.[12] As a result of the accident, 24 people died and more than 120 were injured.[13] In another incident on July 25, 2010, a massive amount of oil was released from a cross-border pipeline located in Marshall, Michigan, causing 840,000 gallons of oil to spill into Talmadge Creek and the Kalamazoo River.[14] As a result of this oil spill, the air, waterways, and wetlands became contaminated, resulting in a noxious and toxic stench and death and injury to wildlife.[15]

Generally, gas presents a higher risk of personal injury, whereas oil presents a higher risk for environmental damage.[16] Although there are various reasons for pipeline accidents, safety and environmental regulations aim to prevent and minimize the risk of accidents and their consequences.[17] Undoubtedly, the applicable legal regime reflects the applicable preventive regulations as well as the compensation regime.[18] A cross-border pipeline implicates multiple legal regimes, which increases the complexity of the applicable legal regime.[19] To understand these complexities we will first explain what is meant by a cross-border pipeline.

For the purposes of this contribution, we consider a pipeline to be "transboundary" when it traverses the border of at least two

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[11] *Rupture & Ignition of a Gas Pipeline*, FRENCH MINISTRY FOR ECOLOGY, SUSTAINABLE DEV. & Energy, 1–2 (Sept. 2009), *available at* http://www.aria.developpement-durable.gouv.fr/wpcontent/files_mf/FD_27681_Ghislengheinv_2004ang.pdf.

[12] *Belgium Gas Line Explosion*, PIPELINES INT'L (Aug. 4, 2004), http://www.pipelinesinternational.net/news/belgium_gas_line_explosion/010021/.

[13] *Rupture & Ignition*, *supra* note 11, at 3.

[14] Anothony Swift et al., *Tar Sands Pipelines Safety Risks* 1, 6 (Nat. Resources Def. Council et al., 2011).

[15] *Id.* at 7.

[16] *See id.* ("One of the potential toxic products of a DilBit explosion is hydrogen sulfide, a gas which can cause suffocation in concentrations over 100 parts per million and is identified by producers as a potential hazard associated with a DilBit spill.").

[17] *Id.* at 3; *see* Muhlbauer, *supra* note 7, at 733.

[18] Paul Stevens, *Cross- Border Oil & Gas Pipelines: Problems & Prospects*, CTR. FOR ENERGY, PETROLEUM, & MIN. L. & POL'Y 1, 20 (2003) ("[A] cross-border pipeline must operate between differing legal and regulatory regimes.").

[19] *See id.*

countries.[20] However, in some cases, the pipeline only passes from an inlet country to an output country, whether terrestrial, such as the Iran-Turkey Gas Pipeline,[21] or subsea, such as the Russia-Turkey Gas Pipeline (Blue Stream).[22] In other cases, a pipeline traverses producer, transit, and consumer countries.[23] Usually, the cross-border pipeline will be the subject that determines the applicable regulatory regime.[24] If a cross-border pipeline involves a transit country, the transit country or countries will be included in the project.[25] For example, the Baku-Tbilisi-Ceyhan (BTC) Oil Pipeline departs from Azerbaijan, passes through Georgia as transit country, and reaches its final destination, the Ceyhan Oil Marine Transport Terminal in Turkey.[26]

A cross-border pipeline is subject to different regulatory regimes since it stretches beyond national borders and is categorized as a grid-bound transport system.[27] A grid-bound transport system means that any accident in a section of the

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20 Herbert Smith Freehills, *UK: International Law Regime of Tranboundary Pipelines*, MONDAQ (Oct. 11, 2002), http://www.mondaq.com/x/18195/international+trade+investment/International+Law+Regime+of+Transboundary+Pipelines.

21 Elin Kinnader, *Turkish—Iranian Gas Relationship: Politically Successful, Commercially Problematic*, OXFORD INST. FOR ENERGY STUD. 1, 7 (2010) (stating that Turkey imports almost all of its natural gas resources by pipeline from Iran).

22 A. Konoplyanik, *Russian Gas to Europe: From Long-Term Contracts, On-Border Trade and Destination Clauses to . . . ?*, 23 J. ENERGY & NAT. RESOURCES L. 282, 299 (2005).

23 Paul Stevens, *Transit Troubles: Pipelines as a Source of Conflict*, CHATHAM HOUSE REP. 1, 1 (2009), *available at* https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/r0309_pipelines.pdf.

24 *See* Sergei Vinogradov, *Cross-Border Pipelines in International Law*, 14 NAT. RESOURCES & ENV'T. 75, 75 (1999) (discussing two approaches to cross-border pipelines, the traditional and comprehensive approach).

25 *See* Stevens, *supra* note 23, at 1-2 (stating that there are no jurisdictions to manage transit pipeline agreements because they are separate sovereign entities).

26 *See* S. Frederick Starr & Svante E. Cornell, *The Baku-Tpilisi-Ceyhan Pipeline: Oil Window to the West*, CENT. ASIA-CAUCASUS INST. SILK RD. STUD. PROGRAM 1, 61-118 (2005), *available at* http://www.silkroadstudies.org/BTC.htm (discussing the implications of the Baku-Tbilisi-Ceyhan Pipeline for Azerbaijan, Georgia and Turkey in separate chapters).

27 *See* Steven M. Kramer & Bret A. Sumner, *Electric Reliability in North America: Cross-Border Implications*, 14 NAT. RESOURCES & ENV'T. 81, 81 (1999) ("It is important to recognize that maintaining a reliable North American electric grid requires cross-border cooperation among the United States, Canada, and Mexico.").

pipeline would disrupt the whole chain.[28] Parties to a cross-border pipeline prefer to rely on regulatory regimes that ensure security of constant supply.[29] In addition, transboundary impacts of a cross-border pipeline accident should not be underestimated because of the lack of overarching regulations or a less advanced regulatory regime. Obstacles may arise either for the prevention of accidents or the compensation of victims.[30]

Most of the cross-border pipelines are constructed and operated by Multinational Corporations (MNCs).[31] As host states, MNCs usually sign separate contracts with all states involved in a cross-border pipeline project for the construction and operation of the proposed pipeline.[32] Accordingly, environmental and safety regulations are often provided through contractual arrangements, as opposed to the application of national and local regulations.[33] This raises the question of how MNCs under such arrangements can be held responsible for full compliance with environmental regulations and for the protection of environmental interests. Therefore, the true effectiveness of cross-border pipeline regulations is highly dependent upon having an effective and overarching international regime.[34]

The cross-border character of a pipeline, and the fact that safety regulations are often provided on a contractual basis in a project, raises questions concerning not only the applicable preventive regulations and their enforcement, but also the

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28 *See* Rafael Leal Arcas, *Energy Transit Activities: Collection of Intergovernmental Agreements of Oil and Gas Transit Pipelines and Commentary,* ENERGY CHARTER SECRETARIAT KNOWLEDGE CTR. 1, 7 (2014).

29 *See* Stevens, *supra* note 23, at 22 ("Governments pursue their national interests, and these may differ.").

30 *See* Helena Montiel et al., *Historical Analysis of Accidents in the Transportation of Natural Gas*, 51 J. HAZARDOUS MATERIALS 77, 88-89, 91 (1996) (suggesting that there may not be enough available data to provide information on victims).

31 Lea Hanakova, Accountability of Transnational Corporations Under International Standards 5 (July 1, 2005) (unpublished LLM thesis, University of Georgia Law) (on file with Digital Goods, University of Georgia Law).

32 *Id.*

33 *See id.* at 5-6.

34 *See* Sergei Vinogradov, *Challenges of Nord Stream: Streamlining International Legal Frameworks and Regimes for Submarine Pipelines, in* GERMAN YEARBOOK OF INT'L LAW: JAHRBUCH FÜR INTERNATIONALES RECHT 241, 248 (Universität Kiel. Institut für Internationales Recht ed., 2009).

compensation regime.[35] Different jurisdictions are involved in the case when damage results from a transboundary pipeline and this may raise compensation difficulties for victims.[36] The damage may be imposed de facto[37] on the local community instead of on the polluter.[38] Exposing the potential polluter to damages is an important component of victim compensation and provides incentives for the prevention of the harm.[39]

From an economic perspective, operators should have incentives to follow an optimal level of care.[40] Even when literature suggests that public regulation may be the primary instrument for environmental and safety risks,[41] there may be an important supplementary role for liability rules as well. For the purpose of this contribution, we analyze the regulatory framework for the prevention of environmental and safety hazards in cross-border pipelines.

The crucial question at the core of this article is whether the current structure of the legal regime applicable to cross-border pipelines provides effective incentives for the prevention of safety and environmental risks. Although we recognize that liability rules will have an important supplementary effect in providing those incentives, liability rules and compensation are matters outside the scope of this contribution. Thus, we focus on the environmental and safety regime applicable to cross-border pipelines.

Using a law and economics framework, Section II provides an

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35 *See* Hanakova, *supra* note 31, at 6.

36 *See* XUE HANQIN, TRANSBOUNDARY DAMAGE IN INTERNATIONAL LAW 6 (2003) (suggesting that countries may disagree on compensation for victims given that damage affecting more than one country is not "caused by human activities alone").

37 *See* John Warren Kindt, *International Environmental Law & Policy: An Overview of Transboundary Pollution*, 23 SAN DIEGO L. REV. 583, 587 (1986) ("Polluters realize that it is uneconomical to bear the costs of polluting when those costs can be shifted to another party or simply dumped onto the general public.").

38 Thomas W. Merill, *Golden Rules for Transboundary Pollution*, 46 DUKE L.J. 931, 932 (1997).

39 *See* Michael Faure & Gerrit Betlem, *Applying National Liability Law to Transboundary Pollution: Some Lessons from Europe & The U.S.*, MAASTRICHT U. FAC. OF L. 1, 2 (2009).

40 *See* Stevens, *supra* note 23, at 62, 68; *see also* Muhlbauer, *supra* note 7, at 733.

41 *E.g.*, Steven Shavell, *Liability for Harm Versus Regulation of Safety*, 1 (Nat'l Bureau of Econ. Res., Working Paper No. 1218, 1983).

overview of the potential risks cross-border pipelines can create, such as personal injury, environmental damage, and economic losses. Section III sketches the applicable international legal regime to cross-border pipelines. Section IV critically evaluates the safety and environmental regulations applicable to cross-border pipelines, arguing that there are serious flaws in the current structure of the regulatory regime. Section V concludes.

II. Cross-Border Pipeline Risks

Although pipelines are considered relatively safe compared to other modes of transporting hydrocarbons, the risk of accidents and their after-effects should not be underestimated.[42] A detailed analysis of the reported accidents could give valuable insights concerning reasons why particular preventive measures failed, the type of damage incurred, and how the damage is compensated.[43] Thus, in assessing the effectiveness of the regulations that aim to prevent such accidents with cross-border pipelines, it is important to first address and analyze some of the cross-border pipeline accidents that have occurred in the past.[44]

While numerous cross-border pipeline accidents have occurred, the exact number is difficult to ascertain.[45] Indeed, data on pipeline accidents are mainly gathered by national and international agencies.[46] Hence, oil and gas pipeline accidents have been prepared at the international and regional level.[47] Thus, for a better understanding of the potential risks related to pipelines,

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42 Lucia Citro & Roberta Valentina Gagliardi, *Risk Assessment of Hydrocarbon Releases by Pipelines*, 28 CHEM. ENGINEERING TRANSACTIONS 85, 85 (2012) (It.), *available at* http://www.aidic.it/cet/12/28/015.pdf.

43 *See* Montiel et al., *supra* note 30, at 78-81; *see also* Peter Burgherr & Stefan Hirschberg, *Severe Accident Risks in Fossil Energy Chains: A Comparative Analysis*, 33 ENERGY 538, 538-39 (2008) (Switz.) (suggesting that major accidents are more likely to be reported and that there are a variety of failures contributing to accidents during the transportation of oil and gas via pipelines).

44 Montiel et al., *supra* note 30, at 78 (noting the importance of studying the origin of accidents through historical analysis).

45 *See* RAFAEL KANDIYOTI, PIPELINES: FLOWING OIL AND CRUDE POLITICS 32, 37 (2012).

46 Burgherr & Hirschberg, *supra* note 43, at 539; Montiel et al., *supra* note 30, at 79.

47 *See* HANQIN, *supra* note 36, at 32 (stating that in addition to "international activities, states have also adopted a number of treaties on civil liability for certain ultra-hazardous activities").

some information will be presented based on reports of oil and gas incidents, even if they do not all relate to cross-border accidents.

It is important to stress the distinction between accidental and non-accidental damage.[48] Pipeline accidents depend upon the location and the type of pipeline[49] and are the result of a wide range of causes of failure.[50] Accordingly, many indicators influence the number and size of accidents and the associated damage.[51] Pipeline projects have distinctive features compared with other industrial activities,[52] which exacerbates the potential adverse environmental impacts resulting from them.[53] First, each pipeline has considerable length and passes through various sensitive environmental and residential areas creating a continuous risk of an accident alongside a route.[54] Those risks can be related to both external reasons, such as excavation works, as well as internal reasons like corrosion.[55] According to the Energy-Related Severe Accident Database (ENSAD),[56] from 1969 to 1996, the majority of all natural gas accidents involving pipelines were caused by mechanical and impact failures.[57] External causes and human errors accounted for the least number of natural gas accidents involving pipelines (the remainder was unknown).[58]

Moreover, the construction and operation of a pipeline requires following the applicable state of technology, such as laying pipes

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48 *Id.* at 11, 13.

49 *See* Montiel et al., *supra* note 30, at 80-82 (illustrating through diagrams that a variety of factors are considered when analyzing the cause of a pipeline accident).

50 *Id.* at 79, 85-87.

51 W. KENT MUHLBAUER, PIPELINE RISK MANAGEMENT MANUAL: IDEAS, TECHNIQUES, AND RESOURCES 246 (3d ed. 2004).

52 *See* Burgherr & Hirschberg, *supra* note 43, at 543.

53 *See* DAVID D. KEMP, EXPLORING ENVIRONMENTAL ISSUES: AN INTEGRATED APPROACH 200-01 (2004); Stefan Hirschberg et al., *Severe Accidents in the Energy Sector: Comparative Perspective*, 111 J. OF HAZARDOUS MATERIALS 57, 64 (2004) (Neth.).

54 *Id.* at 200.

55 *Id.*

56 *Risk Assessment: Comparative Risk Assessment and the ENSAD Database*, PAUL SCHERRER INST., http://www.psi.ch/ta/risk-assessment (last visited October 2, 2014) (providing a comprehensive collection of severe energy related accidents).

57 Hirschberg et al., *supra* note 53, at 64.

58 *See id.*

in a trench.[59] These actions, apart from the potential risks of a pipeline's spillage and explosion, can endanger sensitive environmental areas.[60] Finally, the types of substances that are transported through the cross-border pipelines may be categorized as hazardous substances.[61] A wide range of environmental and safety regulations has been envisaged to minimize the risks of such accidents and any after effects.[62] Therefore, while risks may be mitigated through higher safety standards, application of such standards may lead to higher prices.[63]

Natural gas, which is under high-pressure in cross-border pipelines, is flammable and has a high potential of explosion.[64] Even as a result of a small spark, a ruptured natural gas pipeline may explode and lead to a high number of personal injuries as well as property and environmental damage.[65] Oil spills, which may also occur as a result of an oil pipeline failure, can pollute the marine and land environment.[66] Oil pipelines as well as gas pipelines may readily ignite, causing an explosion with a high number of casualties.[67] Thus, some regulatory bodies have classified gas[68] and oil pipelines[69] as hazardous activities due to

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59 KEMP, *supra* note 53, at 200.

60 *Id.* at 200-01.

61 UNITED NATIONS, *Recommendations on the Transport of Dangerous Goods* (2011), *available at* http://www.unece.org/fileadmin/DAM/trans/danger/publi/unrec/rev17/English/Rev17_Volume1.pdf (detailing a list of hazardous substances).

62 *See* HANQUIN, *supra* note 36, at 19, 30-32 (discussing the "existing international regimes relating to accidental damage caused by ultra-hazardous activities").

63 RAFAEL KANDIYOTI, *supra* note 45, at 33 ("[U]ltimate safety can be an expensive state.").

64 *See* Vladimir Stevanović, *Security of Gas Pipelines Security and Reliability of Damaged Structures and Defective Materials, in* SECURITY & RELIABILITY OF DAMAGED STRUCTURES & DEFECTIVE MATERIALS 253, 254 (Guy Pluvinage & Aleksandar Sedmak eds., 2009) (Serb.).

65 *See id.* at 257 (stating that once the spark was initiated, other explosions succeeded).

66 KEMP, *supra* note 53, at 200; *see* Hirschberg et al., *supra* note 53, at 64.

67 R. DENYS, PIPELINE TECHNOLOGY: PROCEEDINGS OF THE 3RD INTERNATIONAL PIPELINE TECHNOLOGY CONFERENCE, BRUGHES, BELGIUM, MAY 21-24, 2000 (2000).

68 Directive 2012/18/EC, of the European Parliament and of the Council of 4 July 2012 on the Control of Major-Accident Hazards Involving Dangerous Substances, amending and subsequently repealing Council Directive 96/82/EC, 2012 O.J. (L 197) 19 [hereinafter Parliament Directive].

69 United Nations Convention on Environmental Impact Assessment in a Transboundary Context, app. I, Feb. 5, 1991, 1989 U.N.T.S. 310 [hereinafter U.N.

their chemical and physical features.[70] For a realistic and comparative insight on oil and gas pipeline accidents, a short report of some pipeline accidents, gathered on the basis of three different databases, is introduced in Table 1. Due to a lack of adequate information about incurred environmental damages and economical losses, Table 1 displays only the number of accidents and personal injuries. As indicated in Table 1, a considerable number of oil and gas pipeline accidents occurred during the last two decades with a high number of personal injuries.[71]

Convention].

[70] *See* Parliament Directive, *supra* note 68; U.N. Convention, *supra* note 69.

[71] Details of the environmental damage and the economic losses related to those pipeline accidents could only be provided on a case-by case-basis.

Table 1: Comparative Data About Oil and Gas Pipeline Accidents in the US, Europe, and a Severe Accidents Category

	ENSAD (Only pipeline severe accidents with more than five fatalities) 1970-2005		**The US** (Based on the US Department of Safety) 1992-2011		**The EU Western Countries** The EGIG[72] for the onshore gas pipelines (1970 to 2010) & The CONCAWE[73] for the onshore oil pipelines (1970 to 2010)	
Energy Chain	Accidents	Fatalities	Accidents	Fatalities	Accidents	Fatalities
Oil (hazardous liquids)	30 (approximately)	2500 (approximately)	5574	41	478	14
Natural Gas	197	2970	4691	340	1249	Not clear

The remainder of this section describes oil and gas pipeline accidents and their associated damage. Each subsection examines the potentially adverse impacts of oil and gas pipeline accidents from a theoretical point of view by focusing on personal injury,

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[72] *See generally, About EGIG*, EGIG, http://www.egig.eu/about-egig (last visited Oct. 1, 2014) (explaining that the European Gas Pipeline Data Group (EGIG) is a corporation that was established in 1982 with six European gas transmission system operators to gather data on the unintentional releases of gas in their pipeline transmission systems). The EGIG is extended to a group with fifteen major gas transmission system operators in Western Europe and is the owner of an extensive gas pipeline-incident database. *Id.*; *see also Gas Pipeline Incidents: 8th Report of the European Gas Pipeline Incident Data Group*, EGIG (2011), http://www.egig.eu/uploads/bestanden/96652994-c9af-4612-8467-9bc6c2ed3fb3.

[73] *See generally, About Us*, CONCAWE, https://www.concawe.eu/content/default.asp?PageID=545 (last visited Oct. 1, 2010) (explaining that CONCAWE has collected spillage data on European cross-country oil pipelines with particular regard to spillages volume, cleanup and recovery, environmental consequences and causes of the incidents since 1963); *see also CONCAWE Reports*, CONCAWE, http://www.concawe.be/content/default.asp?PageID=569 (last visited Sep. 3, 2014) (maintaining a list of monthly CONCAWE reports).

environmental damage, and economic losses. Recent examples of cross-border pipeline accidents are then presented as case studies. From a legal point of view, oil and gas pipelines have similarities, but from a technical point of view, they also have differences.[74]

A. Gas Pipeline Risks

Gas pipeline accidents can cause personal injuries, large economic losses, and environmental damage.[75] Construction defects and corrosion tend to be the cause of small rupture holes, but it is ground movement that creates great rupture hole sizes.[76] The impact of such an explosion is dependent upon the various sizes of rupture holes, but the explosions have the potential to do catastrophic damage, leading to serious personal injuries and property damage.[77] From an economic perspective, a secure supply of energy, in particular of natural gas, is very important.[78] Any interruption of secure gas flow would be very costly for stakeholders.[79] Because interruptions can be so costly, not only is the initial security of supply important, but restoration of gas pipelines is likewise critical. Natural gas is transported under high pressure and is a non-storable commodity, a so-called "network bound energy carrier."[80] Consequently, if any part of a pipeline is unable to operate and no alternative means of transportation is available, the interruption of flow reduces the security of supply

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74 David J. Ramberg, The Relationship Between Crude Oil & Natural Gas Spot Prices & Its Stability Over Time (June 2010) (unpublished Master's thesis, Massachusetts Institute for Technology).

75 Anderson J. Brito & Adiel T. de Almeida, *Multi-Attribute Risk Assessment for Risk Ranking of Natural Gas Pipelines*, 94 RELIABILITY ENGINEERING & SYS. SAFETY 187, 187 (2009) (Bra.).

76 *Id.* at 256.

77 *Id.* at 254.

78 *See* PHILIP ANDREWS-SPEED & PETER D. CAMERON, SECURITY OF INTERNATIONAL OIL AND GAS: CHALLENGES AND RESEARCH PRIORITIES 2-3 (2006); *see also* Hellmuth Weisser, *The Security of Gas Supply—A Critical Issue for Europe?*, 35 ENERGY POL'Y 1, 1-2 (2005) (discussing the supremacy of gas energy to oil).

79 *See* PAUL STEVENS, CROSS BORDER OIL AND GAS PIPELINES: PROBLEMS AND PROSPECTS 92 (2003) (discussing the Sonatrach Gas Pipeline where involved parties share the costs involved with any interruption of Sonatrach's production in Algeria).

80 *See* Henryk Faas et al., *European Security: A European Perspective*, ENERGY SECURITY: INT'L & LOCAL ISSUES, THEORETICAL PERSPECTIVES, & CRITICAL ENERGY INFRASTRUCTURES 9, 16 (2011).

through the entire chain of the pipeline.[81]

Moreover, "the restoration of gas supplies, once reconnected, is far more complex than for oil."[82] Before reconnecting, a gas engineer must be sure that the pipeline is free from any leaks or air.[83] This is because the presence of either can "result in serious explosions."[84] Moreover, the restoration of gas flow is often lengthy work.[85] Long waits can endanger the security of supply for consumers, who are dependent upon a constant supply of natural gas.[86] Realizing this vital issue, the European Union prescribed specific directives in relation to the security of natural gas supply.[87] Countries must also consider the economic impacts of the construction of cross-border gas pipelines for neighboring countries, even if the pipeline itself does not pass through their territory.[88] Finally, environmental damage, such as air, water, and soil pollution can occur as a result of a gas pipeline accident as

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81 *See* JOHN HANDMER & STEPHEN DOVERS, HANDBOOK OF DISASTER POLICIES AND INSTITUTIONS: IMPROVING EMERGENCY MANAGEMENT AND CLIMATE CHANGE ADAPTATION 25-26 (2nd ed. 2012) (discussing how a pipeline explosion in Australia resulted in a halt on the transport of gas throughout the area, only allowing limited supplies of gas to top priority facilities such as hospitals).

82 *See* PAUL STEVENS, TRANSIT TROUBLES: PIPELINES AS A SOURCE OF CONFLICT 12 (2009).

83 *Id.* at 12.

84 *Id.*; *see also Explosion Kills Two Engineers Working on West Africa Gas Pipeline*, GHANAWEB (October 31, 2012), http://www.ghanaweb.com/GhanaHome Page/NewsArchive/artikel.php?ID=254924.

85 *See Ghana Gas Pipeline Delayed to April-Minister*, REUTERS (Sept. 19, 2013, 7:09 AM), http://www.reuters.com/article/2013/09/19/ghana-gas-pipeline-idUSL5N0 HF1LS20130919.

86 *E.g.*, Emmanuel Arma-Kofi Buah, Minister for Energy and Petroleum, Meet the Press 2013 Ministry of Energy and Petroleum (July 4, 2013) (reporting that gas supply has been halted for several months); *Ghana Gas Pipeline*, *supra* note 85; JOHN HANDMER & STEPHEN DOVERS, HANDBOOK OF DISASTER POLICIES AND INSTITUTIONS: IMPROVING EMERGENCY MANAGEMENT AND CLIMATE CHANGE ADAPTATION 25-26 (2nd ed. 2012) (explaining how facilities, for example hospitals, that depend on natural gas suffered during a halt in gas flow).

87 *See* Council Directive 2004/67, Measures to Safeguard Security of Natural Gas Supply, 2004 O.J. (L 127) 92; *see also* Directive 2003/55, Concerning Common Rules for the Internal Market in Natural Gas, 2003 O.J. (L 176) 57.

88 *See Nord Stream Ensures Unrestricted Access to Polish Ports,* NORD STREAM (March 5, 2010), http://www.nord-stream.com/press-info/press-releases/nord-stream-ensures-unrestricted-access-to-polish-ports-337/ (discussing Poland's concerns with possible adverse effects the construction of the Nord Stream Gas Pipeline would have on sea traffic and safety in Polish ports).

well.[89] A leak in a gas pipeline emits chemicals into the air resulting in air pollution.[90] A leak occurring in a submarine gas pipeline adversely affects water and marine wildlife.[91]

While three theoretical risks—personal injury, economic loss, and environmental pollution—are associated with gas pipeline accidents, the actual reported damage is what accurately reflects the destructive nature of cross-border pipeline accidents.[92] For this purpose, a few recent examples of cross-border pipeline accidents are provided in Table 2. Table 2 shows that the theoretical risks identified can emerge as actual damage in the event of a cross-border pipeline accident. This does not mean all pipeline accidents will result in personal injury, economic loss, and environmental damage.[93] However, how damage is assessed and reported can depend on the applicable law and the place in which the accident occurs.

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[89] *See generally*, U.S. BUREAU OF LAND MGMT., DRAFT ENVIRONMENTAL IMPACT STATEMENT: PROPOSED 1979 OCS OIL AND GAS LEASE SALE 470 (proposed 1978) (discussing air pollution and effects of pollution on water and marine wildlife); Vladimir Stevanović, *Security of Gas Pipelines*, SECURITY & RELIABILITY OF DAMAGED STRUCTURES & DEFECTIVE MATERIALS 253, 256 (2009); STANISLAV A. PATIN, ENVIRONMENTAL IMPACT OF THE OFFSHORE OIL AND GAS INDUSTRY 220-23 (Elena Cascio trans., 1st ed. 1999) (explaining impacts on marine environments as well as air pollution); KEMP, *supra* note 53.

[90] *See, e.g.*, U.S. BUREAU OF LAND MGMT., *supra* note 89, at 470 (discussing the various forms of gas that can be released during a gas pipeline break); PATIN, *supra* note 89; KEMP, *supra* note 53.

[91] *See* PATIN, *supra* note 89 (discussing how the release of gas from seepage in gas-bearing structures under water can result in water pollution).

[92] *See* Stevanović, *supra* note 89, at 256-57 (recounting a chemical accident in Russia where a petroleum gas leakage for several days caused a spark from a train to ignite the gasses, thereby resulting in an explosion that left 462 people dead and 706 others injured).

[93] *Id.* at 256 (discussing a pipeline accident in New Jersey that resulted in injury to individuals and property destruction and economic loss for the state, but makes no mention of environmental pollution).

Table 2: Recent Examples of Cross-border Gas Pipeline Accidents

Description of Pipelines	Causes of Accidents	Place of Accident & Date	Concerned Countries	Personal Injuries	Damage to the Enviro-nment	Losses in the Economy
A transit gas pipeline in Ghislenghien[94]	Leakage and explosion	Belgium 2004	Norwegian Belgium; France	24 fatalities More than 120 injured	N/A	100 million euro
The Iran-Turkey Gas Pipeline[95]	Sabotage by Kurdish separatists	Eastern part of Turkey, October 2012	Iran; Turkey	28 injured	N/A	N/A, supply was stopped for a short time
The Baku-Tbilisi-Erzurum Gas Pipeline[96]	Not clear	Eastern part of Turkey, October 2012	Azerbaijan; Georgia; Turkey	None	N/A	N/A, supply was stopped for a short time
The West African Gas Pipeline[97]	Ship anchor ruptured the pipeline	August 2012 (a break in the gas pipeline in	Nigeria; Togo; Benin; Ghana	-	A large but unclear amount of natural	Flow was stopped for nearly one year, shortfall of

94 *See Rupture & Ignition*, *supra* note 11.

95 *See Explosion Rock's Iran's Gas Export Pipeline in Turkey,* PRESSTV (Oct. 22, 2012), http://www.presstv.ir/detail/2012/10/22/268050/blast-hits-iran-gas-pipeline-in-turkey/.

96 *See Explosion Hits Baku-Tbilisi-Erzurum Gas Pipeline; Cause Unknown,* AZERNEWS (Oct. 4, 2012), http://www.azernews.az/oil_and_gas/44402.html.

97 *See West Africa Gas Pipeline Explosion: Ghanian President Urges Nigeria to Intervene*, CITIZEN ONLINE (Dec. 12, 2012), http://thecitizenng.com/happening-now/west-africa-gas-pipeline-explosion-ghanian-president-urges-nigeria-to-intervene/.

		Togo)[98]			gas leaked into the sea	300 megawatts of power production only in Ghana
	Restoration works on the line	December 2012 (an accident in Aboadze, Ghana)		2 fatalities		

B. Oil Pipeline Accidents

Similar to gas pipeline accidents, oil pipeline accidents have the potential to cause serious personal injury, economic loss, and environmental damage. However, the extent of the harm resulting from oil pipeline accidents differs from that of gas pipelines because of the distinctive features of each substance.[99] The remainder of this subsection describes the potential risks resulting from oil transport through pipelines. This description is complemented with a few recent examples of cross-border oil pipeline accidents, as shown in Table 3.

Oil can be extremely destructive due to its rapid movement across water.[100] It is this feature of oil that allows it to cause widespread damage.[101] Another dangerous feature of oil is its flammability, which can lead to explosions causing serious personal injury and property damage.[102] Oil is also highly toxic to

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98 *See West African States Unhappy with WAPCo*, GHANAWEB (March 29, 2013), http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=269411.

99 *See* EKPEN JAMES OMONBUDE, CROSS-BORDER OIL AND GAS PIPELINES AND THE ROLE OF THE TRANSIT COUNTRY: ECONOMICS, CHALLENGES AND SOLUTIONS 16 (2012) (explaining the technical differences in gas and oil pipelines).

100 *See* MERVIN FINGAS, OIL SPILL SCIENCE AND TECHNOLOGY 196 (MERVIN FINGAS ed., 1st ed. 2011); *see also* MAX BLUMER, *Scientific Aspects of the Oil Spill Problem*, 1 B.C. ENVTL. AFF. L. REV. 54, 56 (1971), *available at* http://lawdigitalcommons.bc.edu/ealr/vol1/iss1/4.

101 *Id.* at 56.

102 *See* BENJAMIN K. SOVACOOL, *The Costs of Failure: A Preliminary Assessment of Major Energy Accidents, 1907–2007*, ENERGY POL'Y 36, 1802-20 (2008).

ingest and can lead to serious health problems in humans.[103] Therefore, the risk of harm from contamination can cause serious personal injuries.

Also, similar to gas pipelines, interruptions in oil pipelines can have a strong economic impact. Since oil is not transported under high-pressure and is a storable commodity, the problem of interruption and security of supply is less of an issue than with natural gas. However, interruptions of oil flow in cross-border pipelines can still lead to high costs for stakeholders.[104] Furthermore, cleanup costs should not be underestimated.[105] Though oil pipelines have differing qualities from gas pipelines, the economic impact of oil pipeline accidents is still severe.

Disasters involving oil may be viewed as catastrophic oil spills that pollute the oceans. In fact, "[m]ajor oil spills . . . are one of the most serious problems of pollution from maritime transport activities."[106] However, oil pipeline ruptures are also extremely destructive to the environment and wildlife.[107] The toxicity of oil is not just a problem for humans, but for wildlife as well.[108] Furthermore, the damage to wildlife can last from several years to the entire lifetime of the organism.[109]

Oil vapors can also, to some extent, be hazardous to the marine environment and its wildlife.[110] Moreover, leakage of oil from a buried pipeline creates a major health risk for the quality of

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103 *See* MAX BLUMER, *supra* note 100, at 54, 56 (discussing how exposure to oil can cause cancer in humans).

104 *See* MAMUKA TSERETELI, *The Impact of the Russia-Georgia War on the South Caucasus Transportation Corridor,* JAMESTOWN FOUNDATION 13 (2009) (discussing the economic loss Turkey experienced during a period of oil suspension).

105 *See* Dagmar Schmidt Etkin, Environmental Research Consulting, Presentation at the Arctic and Marine Oilspill Program Technical Seminar: Worldwide Analysis of Marine Oil Spill Cleanup Cost Factors (June 2000).

106 *See* JEAN-PAUL RODRIGUE, CLAUDE COMTOIS & BRIAN SLACK, THE GEOGRAPHY OF TRANSPORT SYSTEMS 279 (2006).

107 *See* Max Blumer, *Scientific Aspects of the Oil Spill Problem*, 1 B.C. ENVTL. AFF. L. REV. 54, 56 (1971), *available at* http://lawdigitalcommons.bc.edu/ealr/vol1/iss1/4.

108 *Id.* at 55-57 (explaining the dangers of oil exposure to marine life).

109 *Id.* at 56.

110 *See* JENNIFER ANNE HILL, OIL SPILLS AND MARINE WILDLIFE: GUIDELINES FOR A RESPONSE PLAN FOR THE ISLE OF MULL, THE HEBRIDEAN WHALE AND DOLPHIN TRUST 38 (1999) (explaining how mammals that must periodically surface may be exposed to vapors created by oil when exposed to the atmosphere).

groundwater.[111] Thus, both marine and land environments are exposed to the potentially adverse effects of oil pipeline accidents.

Table 3: Recent Examples of Cross-border Oil Pipeline Accidents

Name of the Pipeline	Cause of the Accident	Year & Place	Involved States	Environmental Pollution & Personal Injury	Property Damage & Economic Losses
Unecha-Ventspils Pipeline [112]	N/A	2007 Latvia; Belarus	Belarus; Russia; Latvia	(1) Spillage of 100 tons of diesel fuel when Russian pipeline burst in Belarussina River, flowing into Latvia. (2) Some of the spilled diesel fuel polluted a 15 km stretch of the Ulla River[113]	(1) Interruption of the flow (2) Approximately €440,000 costs of cleanup actions
Société du Pipeline Sud-Européen (SPSE)[114]	Break in a liquid hydro-carbon pipeline	2007 France	Switzerland; France; Germany	5,400 m3 of crude oil was discharged over a 5-hectare land area amidst the nature reserve	€50 million related to consequences of this leakage, with tens of millions devoted to

111 *See* IGOR S. ZEKTSER, GROUNDWATER AND THE ENVIRONMENT: APPLICATIONS FOR THE GLOBAL COMMUNITY 84 (Lorn G. Everett ed., 2000).

112 *See Belarus Environment Ministry Assessing Damage of Unecha-Ventspils Pipeline Leak*, SENNO REGIONAL EXECUTIVE COMMITTEE (Apr. 23, 2007), http://www.senno.vitebsk-region.gov.by/en/news/region?id=64.

113 *Pipeline Ruptures in Belarussian River*, MOSCOW TIMES (Mar. 27, 2007), http://www.themoscowtimes.com/sitemap/paid/2007/3/article/pipeline-ruptures-in-belarussian-river/198152.html.

114 FRENCH MINISTRY FOR SUSTAINABLE DEVELOPMENT, LESSONS LEARNT FROM INDUSTRIAL ACCIDENTS 12 (2011), *available at* http://impel.eu/wp-content/uploads/2012/03/brochure_gb_impel2011.pdf.

					environmental restoration
Enbridge Oil Pipeline	A rupture of the crude oil pipeline [115]	2010 Michigan, US	United States; Canada	(1) Over 800,000 gallons of oil spilled into Michigan, the Kalamazoo River, and adjacent areas (2) Oil polluted wildlife habitat and resulted in the closure of a large swath of the river to boaters and anglers	(1) About $800 million only for cleanup actions (2) 150 families permanently evacuated from their homes[116]
Kirkuk-Ceyhan Oil Pipeline [117]	A terrorist attack	2010 Turkey	Turkey; Iraq	Two people were killed and one injured	N/A; interruption of supply for short run

C. Pipelines Safety and Standards

There is a wide range of environmental and safety standards envisaged by international, national, and private organizations to mitigate the risk of oil and gas pipeline accidents. Even still, pipeline accidents occur everywhere in the world. A few recent cross-border oil pipeline accidents are presented above in Table 3. Pipelines, similar to other industrial activities, are not completely

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[115] EPA, OIL SPILL: ANSWERS TO FREQUENTLY ASKED QUESTIONS 1 (2010), *available at* http://www.epa.gov/enbridgespill/pdfs/enbridge_fs_20100812.pdf.

[116] Elizabeth McGowan & Lisa Song, *'Keystone Kops' Bungling Led to Costliest U.S. Pipeline Spill*, BLOOMBERG (July 24, 2012, 12:39 PM), http://www.bloomberg.com/news/2012-07-24/-keystone-kops-bungling-led-to-costliest-u-s-pipeline-spill.html.

[117] *Energy News Update: Two Killed in Turkish Oil Pipeline Explosion*, IRAQ ENERGY INSTITUTE (Aug. 11, 2010), http://iraqenergy.org/news/?detailof=523&content=Two-Killed-in-Turkish-Oil-Pipeline-Explosion-.

accident-free. As Rafael Kandiyoti states, minimizing the number of accidents can satisfy public concerns to some extent.[118] The safety of pipelines, however, can only be achieved by paying an expensive price,[119] which not all operators may be inclined to pay.[120] Pipeline accidents occur as a result of various failures. As the literature suggests, human misconduct is the leading cause of pipeline accidents.[121] Indeed, most of the accidents above occurred because of technical failures, poor maintenance, or external impacts and were therefore preventable.[122] For instance, many oil pipeline spills in Nigeria were the result of low quality safety standards and poor maintenance by MNCs.[123] According to post-Soviet Russian statistics, the rate of pipeline accidents is seven times greater with Russian pipelines than with European pipelines, a discrepancy which is largely attributable to lax control and enforcement.[124] There were also accusations concerning poor maintenance of the Trans-Alaska Pipeline by BP, which led to several oil leaks in 2006.[125] This report suggested further that BP economized on the maintenance of the Trans-Alaska Pipeline.[126] Using the same line of reasoning, there is a considerable tendency for polluters to externalize their costs to local communities when the costs of compensating the victims are lower than the costs of complying with safety regulations.[127] As a result, we can conclude that the choice of standards and of enforcement mechanisms plays a vital role in minimizing oil and gas related accidents.

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118 KANDIYOTI, *supra* note 45, at 32.

119 *Id.*

120 *Id.* at 33.

121 BURGHERR & HIRSCHBERG, *supra* note 43, at 8.

122 *See also* Papadakis, *supra* note 3; *see generally* BURGHERR & HIRSCHBERG, *supra* note 43 (identifying human misconduct and technical failures as principal causes of pipeline accidents).

123 Joshua P. Eaton, *Nigerian Tragedy, Environmental Regulation of Transnational Corporations, and the Human Right to a Healthy Environment*, 15 B.U. INT'L L. J. 261, 268 (1997).

124 V.D. Cherniaev et al., G.A. Vdovin, E.M. Yassin & E.R. Stravrovsky, *Oil Transportation*, *in* OIL INDUSTRY OF THE FORMER SOVIET UNION - RESERVES, EXTRACTION AND TRANSPORTATION 222 (N. Boksernan et al., eds., 1998).

125 KANDIYOTI, *supra* note 45, at 36.

126 *Id.*

127 *Id.* at 47.

III. Cross-Border Pipelines: The Legal Regime

There is no one particular international law instrument, such as a multi-lateral treaty, dealing exclusively with transboundary oil and gas pipelines.[128] There are, however, some multi-lateral and bilateral agreements that are relevant to cross-border pipelines.[129] Most of the rules that determine the applicable legal regime to a given cross-border pipeline can be found in such bilateral or multi-lateral agreements that have been entered by the states concerned, specifically in the case of transit pipelines.[130] In other cases, cross-border pipelines are commissioned through commercial contracts among oil and gas companies, including state-owned companies, e.g., the Nord Stream Gas Pipeline.[131] There are also some cross-border pipelines that are commissioned via state contracts. This type of contract is entered between a host state and investors or operators (private parties).[132] Since there is no uniform international legal regime, each cross-border pipeline has its own specific legal framework. The details of such a framework are determined by the corresponding agreement, thereby giving rise to the particular cross-border pipeline.

The relevant international and regional conventions are not exclusively focused on cross-border pipelines. First, we will discuss cross-border pipeline agreements, as they are the most important source of law on this topic. Next, we will examine the following relevant international conventions: the Energy Charter Treaty, the United Nations Convention on the Law of the Sea, and the Convention on Environmental Impact Assessment in a

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128 *See* Vinogradov, *supra* note 34, at 75.

129 *Id.* at 76.

130 *See, e.g.*, Foreign and Commonwealth Affairs, Transmission of Natural Gas through a Pipeline between the United Kingdom of Great Britain and Northern Ireland and the Kingdom of the Netherlands, 2005, Cm. 6675, art. 2 (Neth.) [hereinafter Framework Agreement 2005]; Agreement Relating to the Transportation of Petroleum Via the Territories of the Azerbaijan Republic, Georgia and the Republic of Turkey through the Baku-Tbilisi-Ceyhan Main Export Pipeline art. 2, Nov. 18, 1999 [hereinafter Agreement Among the Azerbaijan Republic, Georgia and the Republic of Turkey].

131 T. Koivurova & I. Polonen, *Transboundary Environmental Impact Assessment in the Case of the Baltic Sea Gas Pipeline*, 25 INT'L. J. MARINE & COASTAL LAW 151, 156–57 (2010).

132 *See, e.g.*, The Convention of Establishment between the Republic of Cameroon and the Cameroon Oil Transportation Company (COTCO), 1998, Law 97–16 [hereinafter COTCO Convention].

Transboundary Context.

A. Cross-Border Pipeline Agreements

Each cross-border pipeline has its distinct characteristics, given that there are different parties with disparate interests.[133] Consequently, distinctive regulatory regimes have been implemented for both existing and planned pipelines, with the agreements governing pipelines taking one of two general forms: framework agreements or *ad hoc* agreements.[134] The first group establishes a general set of rules and regulations concerning the construction and operation of the cross-border pipelines between two states within a framework agreement, e.g., the Norway-UK Agreement.[135] The latter group deals only with the construction and operation of a specific cross-border pipeline.[136] An example of an *ad hoc* agreement is the West African Gas Pipeline (WAGP).[137] Cross-border pipelines can be classified as either offshore or onshore pipelines, depending on the geography they traverse; from a technical point of view, onshore and offshore cross-border pipelines have distinctive features and consequently need to be regulated differently, especially in terms of environmental regulations.[138] However, whether the pipelines concerned are offshore or onshore, most cross-border pipeline agreements usually employ a similar structure and are formulated on the basis of established models. For the purposes of this Note, bilateral and multilateral cross-border pipeline agreements are

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133 *See* Stevens, *supra* note 23, at 1–2 .

134 *Compare* Foreign and Commonwealth Affairs, Cross-Boundary Petroleum Co-operation, 2005, Cm 6792 (Nor.) [hereinafter Framework Agreement 2007] (setting out broader agreements concerning the sharing of petroleum resources generally), *with* Framework Agreement 2005, *supra* note 130 (narrowing the scope of the agreement to focus on a particular pipeline project).

135 *E.g.*, Framework Agreement 2007, *supra* note 134, art. 2.

136 Framework Agreement 2005, *supra* note 130, art. 2.

137 *See generally About the Pipeline*, WEST AFRICAN GAS PIPELINE COMPANY (2014), http://www.wagpco.com/index.php?option=com_content&view=article&id=122&Itemid=84&lang=en (describing the West African Gas Pipeline as a natural gas pipeline supplying gas from Nigeria's Escravos region of the Niger Delta area to Benin, Togo and Ghana). The intergovernmental agreement was concluded between the countries in interest in 2003. *Id.*

138 *See generally* J.C. Bugler, *Pipeline Safety Regulation*, *in* MAJOR HAZARDS ONSHORE AND OFFSHORE II (Norbert Gibson ed., 1995) (discussing the differences between onshore and offshore pipelines).

divided into *ad hoc* agreements and framework agreements.

1. Cross-Border Pipeline Ad hoc Agreements

For purposes of this section, cross-border pipelines will be subdivided into two categories: transit and non-transit pipelines. Non-transit pipelines are constructed for the purpose of transporting oil and gas from one country, the supplier, to another country, the consumer. Such a cross-border pipeline could be a submarine, as is the case with the Interconnector Pipeline connecting the UK to Belgium;[139] or terrestrial, such as the Iran-Turkey Gas Pipeline.[140] In this type of arrangement, the ownership of both the pipeline and the gas flowing within it is transferred from one state to the other at the border.[141] By contrast, a transit pipeline starts in a supplier country, passes through a transit country or transit countries and ends in a consumer area.[142] An example of a transit pipeline is the Druzhba Oil Pipeline, which runs from Russia to Europe.[143] Each transit pipeline agreement has at least three parties in interest, each located in a different sovereign entity.[144] In some cases, the transit state may also be a purchaser of the oil and gas transported through the pipeline as is, for example, the case with the South Caucasus Gas Pipeline.[145] Parties concerned in a transit project usually conclude an *ad hoc* agreement for commissioning a cross-border pipeline.[146] *Ad hoc* agreements are also common when the parties merely plan to construct one pipeline.[147]

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139 *See generally* MARK FUTYAN, THE INTERCONNECTOR PIPELINE: A KEY LINK IN EUROPE'S GAS NETWORK (2006) (describing the role of the Interconnector pipeline in connecting British and European gas networks).

140 *See Kinnader, supra* note 21.

141 *See* Stevens, *supra* note 23, at 1.

142 *Id.*

143 FRASER CAMERON, THE POLITICS OF EU-RUSSIA ENERGY RELATIONS 28 (2010).

144 *See* Stevens, *supra* note 23, at 1–2.

145 *See* Host Government Agreement Between and Among the Government of Georgia and State Oil Company of the Azerbaijan Republic, BP Exploration Limited, Totalfinaelf E&P Caucasian Gas SA, LUKAgip N.V., Naftiran Intertrade Co. Limited, Statoil Azerbaijan, Turkish Petroleum Overseas Company Limited art. 4, Apr. 17, 2002 [hereinafter Host Agreement 2002] (conferring upon Georgia the right to divert five percent of the pipeline's annual gas flow).

146 *See generally* Stevens, *supra* note 23 (describing the nature of cross-border pipeline relations between nations).

147 *Id.*

a. The Interconnector Model

Some authors suggest that there are two models of cross-border pipeline *ad hoc* agreements: the interconnector model and the unified model.[148] In the interconnector model, each section of a pipeline falls under the jurisdiction of the state over whose territory it passes and is governed by that state's national law.[149] Usually, the interconnector system connects each national segment of a pipeline at the borders of relevant states.[150] In other words, the ownership of the pipeline and of the gas or oil is transferred to another state at the border.[151] Several cross-border pipeline agreements have been constructed according to the interconnector system.[152]

In the interconnector model, the safety and environmental regulations of pipelines fall under the jurisdiction of the applicable national law.[153] Therefore, each segment of a pipeline would be regulated according to different applicable laws. As a result, these model agreements do not deal with safety and environmental regulations directly. The only matter that is indirectly related to safety is the security of guaranteeing a constant supply. As the anecdotal evidence above illustrates, the constant supply of gas and oil can be interrupted as a result of an accident. This interruption in turn endangers the security of a constant supply, in the case of gas pipelines in particular.[154] An accident in any segment of a pipeline can threaten the interests of all stakeholders. Thus, in order to ensure the uninterrupted flow of energy, the indemnification of the interruption losses is often embedded in the intergovernmental arrangement, as a contractual provision.[155] It is

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148 Vinogradov, *supra* note 34, at 75; *see also* Rainer Lagoni, *Pipelines*, *in* VIII MAX PLANCK ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW 315, 315 (2011).

149 Vinogradov, *supra* note 34, at 75; Framework Agreement 2005, *supra* note 130; *see also* FUTYAN, *supra* note 139, at 22.

150 Vinogradov, *supra* note 34, at 75.

151 *See* KINNANDER, *supra* note 21, at 7-8 .

152 *See generally* FUTYAN, *supra* note 139 (explaining that in projects such as the Interconnector pipeline, a unified entity owns the overall length of the pipeline and the gas on both sides of the border).

153 Vinogradov, *supra* note 34, at 75.

154 OMONBUDE, *supra* note 99, at 4.

155 TSERETELI, *supra* note 104, at 13 (demonstrating if the pipeline should be damaged and closed because of any failure of the State Authorities, such as protecting the pipeline and its facilities, the government must compensate for such damage

of note that the international or regional obligations of the states concerned may be recalled for the construction or the operation of such pipelines.[156] In other words, the states concerned might have already committed to comply with other regional or international treaties. In such cases, they may cite such commitments in relation to those in the text of cross-border pipeline agreements.[157]

b. The Unified Model

The unified model establishes an overarching legal framework for the entire length of a pipeline.[158] In this model, cross-border pipelines are constructed based on uniform regulations.[159] The Energy Charter Treaty Conference recommended this model through two model agreements: intergovernmental and host governmental agreements.[160] The intergovernmental agreement is an agreement under international law concluded by and among all states concerned, including transit states.[161] The host governmental agreement is concluded between a host state—concerning the development, construction, and operation of a pipeline—and foreign investors—governing the respective rights and obligations of the foreign investor.[162] In this type of arrangement, a consortium of multinational companies usually acts as an operator over the entire length of the pipeline.[163] Thus, the

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according to Articles 10, 11 & 12 of the Host Government Agreement Between and among The Government of the Republic of Turkey and investors). A PKK (Kurdish separatists) attack on the BTC pipeline on Aug. 5, 2008 in the Turkish section of the pipeline, transporting 850,000 barrels/day of Azeri-Chirag-Guneshli (ACG) oil and Shah-Deniz condensate, costing Turkey $300,000 a day and oil exports were immediately suspended thereafter. John C.K. Daly, *Turkey and the Problems With the BTC*, JAMESTOWN FOUNDATION (Aug. 13, 2008, 12:00 AM), http://www.jamestown.org/single/?tx_ttnews%5Btt_news%5D=33887&no_cache=1#.VDIH7SldUjA.

156 *See* Framework Agreement 2005, *supra* note 130, art. 2 (acknowledging the rules of international law concerning the protection of the environment from pollution, including those reflected in Part XII of the United Nations Convention on the Law of the Sea).

157 *Id.*

158 Vinogradov, *supra* note 34, at 75.

159 *Id.*

160 *See* The Energy Charter Treaty, Dec. 17, 1994, 2080 U.N.T.S. 95 (revised in 2004) [hereinafter The Energy Charter Treaty].

161 *See, e.g.*, Host Agreement 2002, *supra* note 145.

162 *Id.*

163 *See* Catherine Redgwell, *Contractual and Treaty Arrangements Supporting*

operator implements uniform regulations over the cross-border pipeline, notwithstanding the potential conflicts with national and local regulations of the host state.[164] By applying the unified regulatory model in all member states, the problem of applying different standards to one pipeline no longer arises. Generally, the states concerned have two different ways of implementing a unified regulatory model. They may either adopt the application of uniform regulations, thus excluding the enforcement of local and national regulations,[165] or give priority to the enforcement of national regulations.[166] Consequently, the measure of public participation in the construction of a proposed cross-border pipeline will differ depending on which of the two mechanisms is employed.

The unified regulatory regime may apply just one legal system to the entire pipeline.[167] However, since a unified regulatory regime can also imply the exclusion of the application of local regulations, conflicts often arise.[168] Nation states, if their bargaining power allows it, will seek to apply their own national law to protect local interests.[169] On the other hand, investors will

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Large European Transboundary Pipeline Projects: Can Adequate Human Rights and Environmental Protection Be Secured?, in ENERGY NETWORKS AND THE LAW: INNOVATIVE SOLUTIONS IN CHANGING MARKETS 102, 107 (Martha M. Roggenkamp et al., eds., 2012).

164 We will discuss this issue in detail *infra* Chapter IV.

165 *See* Host Agreement 2002, *supra* note 145, art. 12 (stating that safety and environmental regulations decreed in the agreement text were given priority over local and national environmental and safety regulations).

166 *See, e.g.*, Christian Plüss, Gunthard Niederbäumer & Rolf Sägesser, *Risk Assessment of the Transitgas Pipeline*, 45 PIPES & PIPELINES INT'L 33, 34 (2000) (illustrating the case of the North Sea-Italy Transit Gas Pipeline where the transit state, Switzerland, implemented its own local regulations on the pipeline because its federal environmental protection law requires a risk assessment before construction of new pipelines).

167 Vinogradov, *supra* note 34, at 77 (referring to a pipeline between Great Britain, Ireland, and Belgium as similar to most pipelines because there is no single regime for the pipeline and instead, jurisdiction is divided at the border of the states' continental shelves); *see also* Stevens, *supra* note 23, at 14 (2009); *see also* Redgwell, *supra* note 163, at 117.

168 *See generally* Stevens, *supra* note 23; *see also* Redgwell, *supra* note 163, at 117.

169 RICHARD B. KUPREWICZ, GENERAL OBSERVATION ON THE MYTH OF A BEST INTERNATIONAL PIPELINE STANDARDS 9 (2007) (applying national law depends on the existence of national regulations in relation to the construction and operation of oil and gas pipelines).

undoubtedly prefer to implement uniform codes of conduct rather than applying fragmented government regulations. As a consequence of allowing each state to apply its own regulations, the thickness of the pipe or the depth at which it has to be buried could theoretically differ.[170]

c. The Choice

The choice of a particular model (interconnector or unified) has important consequences for the applicable legal regime. A transit pipeline can be owned or leased by a shipper of oil and gas, or can be owned by a state-owned company.[171] When a transit pipeline is owned by a transit state, the regulatory regime is similar to the intergovernmental system.[172] As argued formerly, each segment of a pipeline falls under the jurisdiction of the respective state, whereas a new regulatory regime may appear when a shipper of gas owned or leased the transit pipeline.[173]

This played a role in the TransMed Pipeline, which is a gas pipeline that stretches from Algeria to Italy with transit via Tunisia.[174] In this project, Sonatrach, a state-owned Algerian company, constructed the Algerian segment of the pipeline. Eni, a state-owned Italian company, constructed the transit segment, including the Tunisian section and Sicily channel in the Mediterranean Sea.[175]

2. Cross-Border Pipeline Framework Agreements

Some countries, particularly neighboring states such as the US and Canada, have a high amount of energy trade.[176] Countries even share oil and gas fields, as do the UK and Norway.[177] In order to maximize the related industrial benefits, these countries

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170 *Id.* (explaining how appropriate thickness of a transit pipeline is calculated).

171 *See* Konoplyanik, *supra* note 22, at 282.

172 *Id.* at 298–99.

173 *Id.* at 299.

174 *Id.*; *see also* STEVENS, *supra* note 23, at 10.

175 STEVENS, *supra* note 23, at 19; *see also* Konoplyanik, *supra* note 22, at 299.

176 John Bishop Ballem, *International Pipelines: Canada-United States,* 18 CANADIAN Y. B. OF INT'L L. 146, 146–47 (1980).

177 Martha M. Roggenkamp, *Petroleum Pipelines in the North Sea: Questions of Jurisdiction and Practical Solutions*, 16 J. ENERGY NAT. RESOURCES & ENVTL. L. 92, 92 (1998).

have several cross-border pipelines for gathering and transporting oil and gas with framework agreements of general applicability.[178] Basically, terms of general applicability mean that all terms, including environmental and safety standards, can be applied to all transboundary pipelines between the respective states.[179] However, as state practices have shown, this does not necessarily exclude further bilateral agreements between the respective parties.[180] Framework agreements can be used for both onshore and offshore pipelines, however, it should be emphasized that the probability of transboundary pollution is much higher in offshore pipelines than in the case of onshore pipelines due to the fluidity of the marine environment.[181] Thus, such pollution following of water circulation patterns may travel through a shared watercourse among riparian states.[182] For that reason, offshore pipelines often require different arrangements. Moreover, the contents and structure of such framework agreements may also differ, depending upon the interests of the parties involved. In some arrangements, only general rules are decreed in the text of the agreement.[183] Accordingly, safety and environmental regulations have not been articulated in the text of the agreement and are to be developed by other possible means that are elaborated by the agreements such as an *ad hoc* consultation group, etc.[184] For instance, in Article IV of the US-Canada Transit Pipelines Treaty 1977, safety and environmental regulations of transit pipelines are subject to regulations established by the appropriate governmental authorities having jurisdiction over the respective pipelines.[185] Therefore, the type of standards, EIA procedures, inspection mechanisms, and even mutual consultation were not determined by the agreement and should be specified by other possible

178 *Id.* at 100.

179 *Id.*

180 *Id.* at 101; *see, e.g.*, Ballem, *supra* note 176, at 155 (explaining that Canada and the U.S. signed a pipeline framework agreement, the Pipeline Transit Treaty in 1977, which was thereafter followed by the Northern Natural Gas Pipeline agreement, which specifically deals with one project).

181 Roggenkamp, *supra* note 177, at 98.

182 *Id.*

183 Vinogradov, *supra* note 34, at 76.

184 Roggenkamp, *supra* note 177, at 108.

185 *See, e.g.*, Ballem, *supra* note 176, at 158–59.

instruments.[186]

Interestingly, in some of the framework agreements, although environmental and safety regulations are basically determined by the authorities having jurisdiction over the pipeline, an adaptation of common safety and environmental standards is allowed under the terms of such agreements.[187] The parties involved have the duty to share all the relevant information, granting permission to officials of another state for the physical access to any infrastructure relating to the cross-border pipeline at all stages.[188]

In sum, states with a large amount of hydrocarbon trade via pipelines are likely to create framework agreements that determine general terms of construction and operation of the pipeline while other material terms such as environmental and safety standards are determined through further agreements or other commercial arrangements.[189] This model has also been used for inter-field[190] pipelines such as the Norway-UK pipeline.[191] Given the complexity of the regulatory regime in the transit pipelines, however, this model has yet to be applied to transit pipelines.[192]

As mentioned earlier, most framework agreements hold that environmental and safety regulations should be determined by the state with sovereignty rights over the pipeline.[193] It is also possible for the states involved to prescribe a uniform set of environmental and safety rules for the entire length of the cross-border pipeline between two states.[194] However, establishing a general set of rules for all cross-border pipelines generalizes the scope of the agreement. One should keep in mind that each pipeline may have different technical and legal features depending upon whether oil

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186 *Id.*

187 *E.g.*, Framework Agreement 2007, *supra* note 134.

188 Framework Agreement 2005, *supra* note 130.

189 Vinogradov, *supra* note 34, at 77.

190 Roggenkamp, *supra* note 177, at 95.

191 *Id.*

192 Vinogradov, *supra* note 34, at 78 ("Compared to submarine pipelines, on-land cross-border pipelines, which remain entirely within national territories of different states, do not enjoy similar status in international law. Some general conventions may apply to these pipelines either by analogy, or if the states concerned decide so.").

193 *Id.* at 77; *see, e.g.*, Framework Agreement 2007, *supra* note 134, at 9-10.

194 *But see* Vinogradov, *supra* note 24, at 77 (describing that jurisdiction is divided at the border of the states' continental shelves in the pipeline between Great Britain, Ireland, and Belgium and that this is "[i]n common with most pipelines").

or gas is transported, for example. Consequently, only a limited number of issues can be addressed through general terms in a framework agreement.[195] As a result, a framework agreement always needs to be complemented by a specific agreement, protocol, or commercial contract so as to lessen potential aftereffects of accidents.[196]

B. International and Regional Instruments

While there are no specific international or regional environmental agreements dealing specifically with the construction and operation of cross-border pipelines or the regulation of environment and safety relating to cross-border pipelines,[197] there are a number of international and regional treaties that are relevant for safety and environmental aspects of cross-border pipelines such as the United Nations Convention on the Law of the Sea 1982 (UNCLOS),[198] the Energy Charter Treaty,[199] and the Convention on Environmental Impact Assessment in a Transboundary Context 1991 (the Espoo Convention).[200] Most of those instruments have a more general character and address transboundary pollution.[201] To some extent, their provisions can also be extended and applied to cross-border pipelines.

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195 *Id.* at 76–77.

196 *Id.*

197 *Id.* at 75 ("Whereas other areas of international transport and communications—maritime and river navigation, railroad, automobile or civil aviation—have been the subject of extensive regulatory efforts at the multilateral level, the same cannot be said about international oil and gas pipeline transport.").

198 United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 3 [hereinafter UNCLOS].

199 The Energy Charter Treaty, Dec. 17, 1994, 2080 U.N.T.S. 95 [hereinafter Energy Charter].

200 Convention on Environmental Impact Assessment in a Transboundary Context, Feb. 5, 1991, 30 I.L.M. 800 (1991) [hereinafter Espoo].

201 UNCLOS, *supra* note 198, art. 207–12; *see also* Energy Charter, *supra* note 199 at 3; *see also* Espoo, *supra* note 200, at 3 ("The Parties to this Convention . . . [are] determined to enhance international co-operation in assessing environmental impact in particular in a transboundary context.").

1. The United Nations Convention on the Law of the Sea 1982 (UNCLOS)

a. Generally

Offshore pipelines are subject to regulations under the United Nations Convention on the Law of the Sea 1982 (UNCLOS).[202] UNCLOS includes regulations for the construction and operation of submarine pipelines aimed at protecting the marine environment and preventing transboundary pollution.[203] In addition, UNCLOS briefly covers liability issues in the case of offshore pipeline accidents.[204] According to UNCLOS, submarine pipelines can theoretically be laid in territorial water, in the exclusive economic zone (EEZ), the continental shelf, and in the high seas.[205]

b. The Right to Lay Pipelines

Roggenkamp[206] categorizes offshore pipelines beyond the territorial maritime border of the coastal state into three groups: intra-field, inter-field, and transportation pipelines.[207] Intra-field pipelines link the offshore field with the production installation.[208] Inter-field pipelines connect a number of fields or installations.[209] According to Roggenkamp, considering inter-field pipelines as part of offshore installations entails meeting certain criteria, and, therefore, not all inter-field pipelines can necessarily be categorized as such.[210] Transportation pipelines, however, connect offshore installations to the coast or, in some instances, a terminal on the coast of another state.[211] Offshore pipelines can be characterized as an integral part of offshore installations or they can be recognized as transportation pipelines for jurisdictional purposes.[212] Each of these groups has distinctive features under

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202 UNCLOS, *supra* note 198, at 25.

203 *Id.* at 106.

204 *Id.* at 61.

205 *Id.*; *see also* Roggenkamp, *supra* note 177, at 95.

206 Roggenkamp, *supra* note 177, at 95.

207 *Id.*

208 *Id.*

209 *Id.*

210 *Id.* at 96.

211 Roggenkamp, *supra* note 177, at 92.

212 *Id.* at 92-93.

UNCLOS. According to Article 79 of UNCLOS, transportation pipelines that may pass through the continental shelf and EEZ of other states have a *sui generis* character under international law.[213] While coastal states cannot impede their construction, the delineation of the course for laying such pipelines on the continental shelf is subject to the consent of coastal states.[214] Moreover, a coastal state can ask for additional safety and environmental regulations in order to protect existing installations and the marine environment on its continental shelf and in the EEZ.[215] The pipeline's operator may also be obligated to act under the law of a source country, place of registration, or another jurisdiction.[216] For instance, in some countries such as Norway, the nation's own regulations should be applied to the entire length of pipelines that originated from that nation, regardless of where they are laid.[217] The construction of a submarine pipeline within the recognized territory of a coastal state subjects the pipeline to the coastal state's national laws.[218] Articles 58 and 79 of UNCLOS detail the guidelines for pipelines in the EEZ and on the continental shelf.[219] Article 58 of UNCLOS determines the rights and duties of states in the EEZ.[220] This Article recognizes the right of all states to lay submarine pipelines in the EEZ.[221] Further, it asserts that all states shall have due regard to the rights and duties of coastal states and shall comply with the laws and regulations adopted by coastal states.[222]

Therefore, an operator of a pipeline shall comply with the regulations of the respective coastal state, regardless of any other regulations that may also govern the pipeline.[223] Similarly, Article 79 of UNCLOS emphasizes the right of all states to lay submarine

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213 *See* Vinogradov, *supra* note 34, at 22.

214 UNCLOS, *supra* note 198, art. 79.

215 *Id.* art. 79(2).

216 Roggenkamp, *supra* note 177, at 100-01.

217 *Id.* at 101.

218 UNCLOS, *supra* note 198, art. 58(3).

219 *Id.* arts. 58, 79.

220 *Id.* art. 58.

221 *Id.* art. 58(1).

222 *Id.* art. 58(3).

223 *Id.*

pipelines on the continental shelf.[224] However, this right is limited as coastal states have the right "to take reasonable measures for the exploration of the continental shelf, the exploitation of its natural resources and the prevention, reduction and control of pollution likely resulting from pipelines."[225] Furthermore, it is expressly stipulated that laying a pipeline on the continental shelf is subject to the consent of coastal states.[226] However, a coastal state may not impede laying or operating such pipelines on its continental shelf for the aforementioned reasons.[227]

Tullio Treves argues that under UNCLOS, conflicts can arise between the freedom to lay cables and pipelines in the EEZ and on the continental shelf, and, on the other hand, the recognized rights and jurisdiction of coastal states.[228] One could, for example, claim that a coastal state could, de facto through the conditions which it imposes concerning the delineation of the course of the pipeline, deny or impede the laying of the particular pipeline.[229] Such conflicts have occurred in practice.[230] Conflicts arose, for example, between Norway and Denmark concerning the safety requirements to be applied in the case of the Ekofisk-Emden pipeline in the Danish section, where Denmark was the transit state.[231]

On the other hand, UNCLOS allows all states to lay submarine pipelines on the seabed beyond the continental shelf.[232] Both land-locked and coastal states enjoy this right.[233] However, UNCLOS does not grant sovereignty rights over the area where a pipeline is

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224 UNCLOS, *supra* note 198, art. 79(1).

225 *Id.* art. 79(2).

226 *Id.* art. 79(3).

227 *Id.* art. 79(5).

228 *See* Tullio Treves, *The International Tribunal for the Law of the Sea and the Oil and Gas Industry*, SECOND INTERNATIONAL OIL AND GAS CONFERENCE – MANAGING RISK – DISPUTE AVOIDANCE AND RESOLUTION 10–11 (2007) (noting that many pollution disputes can be settled throuh proceedings before domestic tribunals or private international arbitration); *see also* Roggenkamp, *supra* note 177, at 105-06 (discussing, for example, the conflict between Norway and Denmark concerning safety requirements of the Ekofisk-Emden pipeline in the Danish section as a transit state).

229 Roggenkamp, *supra* note 177.

230 *Id.* at 106.

231 *Id.*

232 UNCLOS, *supra* note 198, art. 112.

233 *Id.*

laid.[234] As a result, on the high seas, contrary to the continental shelf, states cannot impede the construction of new pipelines under the pretense of protecting existing pipelines in the area.[235] Rather, states planning to install new pipelines should take reasonable measures not to damage existing pipelines.[236] Nevertheless, since pipelines in the high seas do not yet exist, the issue is not a focal point of this research.

c. Environmental Regulations

UNCLOS contains relevant rules concerning cross-border pipelines.[237] In this respect, a distinction can be made between the duties of the coastal states for the prevention of accidents under their jurisdiction and the responsibilities of the respective states for the prevention of transboundary pollution. Article 145 of UNCLOS holds that a related authority shall adopt appropriate regulations for the prevention, reduction, and control of pollution and other hazards to the marine environment in the high seas, including both the land-based pipelines and pipelines connected to the offshore facilities and installation, unless other arrangements had been prescribed.[238]

In addition, Articles 207 and 208 of UNCLOS aim to protect the marine environment.[239] The Articles distinguish between land-based pipelines and pipelines connected to an offshore installation, and have different rules applicable to both.[240] Article 207 contains general rules for land-based pipelines.[241] Land based pipelines are used to transport hydrocarbons from one coast to another.[242] One such example, the Nord Stream Gas Pipeline, passes between Russia and Germany through the Baltic Sea.[243] Article 208

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234 Vangah Francis Wodie, *The High Seas*, *in* INTERNATIONAL LAW: ACHIEVEMENTS AND PROSPECTS 885, 893 (Mohammed Bedjaoui ed., 1991).

235 *Id.*

236 UNCLOS, *supra* note 198, arts. 113-14.

237 *Id.* arts. 87, 112-13.

238 *Id.* art. 145.

239 *Id.* arts. 207-08.

240 *Id.*

241 *Id.* art. 207.

242 Alexander Lott, *Marine Environmental Protection and Transboundary Pipeline Projects: A Case Study of the Nord Stream Pipeline*, 27 MERKOURIOS-UTRECHT J. INT'L & EUR. L. 55, 56 (2011).

243 *Id.*

concerns offshore activities under the jurisdiction of coastal states, including industrial installations.[244] As we mentioned earlier, inter-field pipelines (between different oil fields) are assumed to be an integral part of offshore installations and hence are not considered transportation pipelines (rather as a part of the offshore installation).[245] Article 207 obliges states to comply with internationally recommended rules and standards.[246] Article 208 is, however, much more flexible and provides coastal states with the discretionary power to adopt appropriate regulations.[247] Article 207 thus addresses transportation pipelines, whereas Article 208 deals with inter-field and intra-field pipelines.[248]

Both articles mention the duty to establish and follow regional standards and procedures aimed at the prevention, reduction, and control of pollution of the marine environment.[249] According to Article 207, in establishing regional standards, states should take into consideration the specific characteristics of the area, including the regional features and economic capacity for establishing regional rules.[250] The importance of these regional considerations becomes apparent when neighboring coastal states convene to establish regional standards and each asserts its own opinion regarding varying levels of protection.[251] Hence, this problem can arise in the case of transportation pipelines (Article 207) but not for inter-field and intra-field pipelines.[252] The latter are in principle subject to the domestic regulations of coastal states.[253] In the same line of reasoning, Yoshifumi Tanaka argues that under UNCLOS, the obligations of states to prevent pollution from land-

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244 UNCLOS, *supra* note 198, art. 208.

245 Roggenkamp, *supra* note 177, at 95.

246 *See* PHILIPPE SANDS & JACQUELINE PEEL, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW 373 (2012) (arguing that because the provisions of Article 207 have been followed by regional and global instruments the article now reflects customary international law).

247 UNCLOS, *supra* note 198, art. 208 (requiring further that Articles 60 and 80, which deal with offshore installations on the continental shelf and in the EEZ, are to be followed).

248 *Id.* arts. 207-08.

249 *Id.*

250 *Id.* art. 207(4).

251 *Id.*

252 *Id.* arts. 207-08.

253 UNCLOS, *supra* note 198, art. 208.

based sources (Article 207) prove less demanding than those concerning sea-bed sources which are subject to the national jurisdiction of the coastal state (Article 208).[254] Article 207 states are merely required to "take into account" internationally agreed regulations, whereas Article 208 stipulates that the states adopt laws and regulations which shall be no less effective than international rules and standards.[255] Article 206 of UNCLOS recognizes the right of a coastal state to assess the potential impacts of activities falling within its jurisdiction that might cause substantial or significant changes to the marine environment.[256] The Convention emphasizes several times the deference to the coastal states for their own environmental regulations on the continental shelf.[257] Thus, it could be stressed that all activities, including innocent passage and other legitimate conduct within the continental shelf and the EEZ of a coastal state, are governed by the environmental and safety regulations of that state.[258]

In order to prevent transboundary pollution, Article 194 of UNCLOS details some measures to prevent and control pollution of the marine environment.[259] According to the first paragraph of this article, states individually or jointly shall take necessary measures to prevent, reduce, and control pollution of the marine environment from any source by using the best practicable means in accordance with their capabilities.[260] This article indirectly considers transboundary pollution as it suggests that states harmonize their policies and take steps to ensure that they do not cause environmental damage to other states.[261] Although this

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254 Yoshifumi Tanaka, *Regulation of Land-Based Marine Pollution in International Law: a Comparative Analysis Between Global and Regional Legal Framework,* 66 ZEITSCHRIFT FUER AUSLAENDISCHES OEFFENTLICHES RECHT UND VOELKERRECHT [HEIDELBERG J. OF INT'L LAW] 535, 543 (2006).

255 *Id.*

256 *Id.* at 566-68 (listing several regional instruments containing the obligation of undertaking the EIA for contracting parties, including Article 7(1) of the 1992 Helsinki Convention, Article 6 of the 1992 OSPAR Convention, and Article VIII(1) of the 1990 Kuwait Protocol to the Kuwait Regional Convention for the Protection of the Marine Environment Against Pollution from Land-Based Sources).

257 YOSHIFUMI TANAKA, THE INTERNATIONAL LAW OF THE SEA 129 (2012).

258 UNCLOS, *supra* note 198, art. 206.

259 *Id.* art. 194.

260 *See* Tanaka, *supra* note 254, at 542 (proposing that this article covers both land and sea based activities).

261 UNCLOS, *supra* note 198, art. 194(2).

article does not mandate joint cooperation, the recognition of such collaboration can be considered the first step toward the transboundary environmental impact assessment that was created following the Espoo Convention in 1991, and which will be discussed below.[262]

The second paragraph of Article 194 outlines the duties of States to prevent transboundary pollution resulting from activities under their jurisdiction.[263] Further, Article 195 acknowledges the possible transfer of pollution from one state into other states.[264] According to this article, states shall not directly or indirectly transfer damages or hazards from one area to another.[265] This article generally identifies transboundary pollution and the states' obligations to prevent transboundary pollution that could potentially result from that accident.[266] Nevertheless, states have the discretion to regulate the methods and instruments used to prevent this transboundary pollution from occurring.[267] However, deference to each nation's laws should be complemented by setting appropriate regional environmental standards.[268] Otherwise, the inconsistencies of the regulations might disrupt the ecological balance of the marine environment due to the application of different standards.[269] In such cases, an adjacent state may implement a lower quality type of standard concerning the prevention of environmental pollution. As a result, some challenges may emerge among neighboring states due to the lack of a comprehensive environmental framework. This is the classic example of a transboundary externality: in the absence of an international regulatory regime, states may reap the benefits from economic exploration of pipelines and externalize harm to their

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262 *See infra* ch. 3, sec. B, pt. 3.

263 UNCLOS, *supra* note 198, art. 194(2).

264 *Id.* art. 194(3).

265 *Id.* art. 194.

266 *Id.*

267 *Id.*

268 *Id.* art. 194(1).

269 Alexander Korshenko & Alvin Gasim Gul, *Pollution of the Caspian Sea*, *in* THE CASPIAN SEA ENVIRONMENT 109 (Aleksey N. Kosarev ed., 2005) (describing the Caspian Sea as the world's largest inland sea with a unique ecosystem that has been threatened by oil and gas activities, including the exploitation and production by some costal states). In the absence of marine environmental standards, some states might externalize pollution cost by applying lower quality standards). *Id.*

neighbors.[270] For instance, the oil company, BP, has oil exploration and extraction activities in the Azerbaijan section of the Caspian Sea.[271] Iran claims that these exploration and extraction activities caused pollution in Iranian marine coastal waters and that a complaint will be filed with international tribunals if pollution in the Caspian Sea by BP continues.[272]

Article 213 of UNCLOS aims to enforce the aforementioned Article 207. The Article mentions that states shall take other measures necessary to implement applicable international rules and standards established through competent international organizations or diplomatic conferences to prevent, reduce, and control pollution of the marine environment from land-based sources.[273] However, since this article does not make clear which precise enforcement mechanisms are preferred, enforceability of Article 213 of UNCLOS is doubtful.[274]

In sum, it can be held that UNCLOS not only emphasizes the importance of pollution resulting from offshore pipelines, but also highlights the transboundary impact and duties of respective states, not only coastal states, to prevent such pollution by adopting internationally recommended standards. Moreover, UNCLOS takes into account the problem of applying double standards to a pipeline and its aftereffects. This problem was addressed by focusing on regional features and economic capacities of the respective states.

d. Conclusion

The obligations contained in UNCLOS are vague and imprecise. As a result, UNCLOS leaves many ambiguities or simply suggests states to draft regulatory solutions without any

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270 UNCLOS, *supra* note 198, art. 213.

271 *See generally* Korshenko & Gul, *supra* note 269.

272 *See Iran Likely to Sue Azerbaijan for Polluting Caspian Sea*, FARS NEWS AGENCY (Jan. 28, 2013), http://www.payvand.com/news/13/jan/1243.html.

273 UNCLOS, *supra* note 198, art. 213.

274 For instance, in The MOX Plant Case (Ireland v. United Kingdom), Ireland invoked Article 213 for the implementation of standards established through competent international organizations or diplomatic conferences. NATALIE S. KLEIN, DISPUTE SETTLEMENT IN THE UN CONVENTION ON THE LAW OF THE SEA 150-52 (2005). However, the UNCLOS Tribunal pointed out the flexible terminology adopted by UNCLOS and then argued that most of the provisions of Part XII (Protection and Preservation of the Marine Environment) are in the nature of soft law. *Id.*

precise suggestions.[275] UNCLOS does not impose an express obligation on states to establish a regional framework or harmonize standards and other measures in order to prevent transboundary pollution.[276] Accordingly, a pipeline operator might lay an offshore pipeline in the jurisdiction of a state with less effective regulations and enjoy the state's advantages.[277] In addition, although transboundary pollution is recognized as a source of conflict, UNCLOS does not prescribe a clear duty for the States to regulate and prevent such pollution from all sources, including pipelines.[278] When UNCLOS was drafted, it was considered an important step due to its rules on the delineation course of the pipelines and distinction of different types of pipelines with distinct governance regimes.[279] However, the main goal of UNCLOS was not the regulation of offshore pipelines. Therefore, its provisions remain very general. Due to the increasing number of planned and already constructed offshore pipelines, the creation of a new international framework that also accounts for regional needs may be necessary.

2. The Energy Charter Treaty

The Energy Charter Treaty (the "ECT") is an international treaty established in 1994 to develop international cooperation in the energy sector, including trade, transit, investments and energy efficiency.[280] Article 7 of the ECT is dedicated to transit issues in which oil and gas pipelines are expressly regarded as means of energy transport.[281] Although the ECT is an international agreement that establishes a multilateral framework for cross-

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275 Maki Tanaka, *Lessons from the Protracted MOX Plant Dispute: A Proposed Protocol on Marine Environmental Impact Assessment to the United Nations Convention on the Law of the Sea*, 25 MICH. J. INT'L L. 337, 356 (2003).

276 *Id.*

277 *See id.*

278 *Id.*

279 *See generally* Ricardo Pereira, *The Exploration and Exploitaton of Energy Resources in International Law, in* ENVIRONMENTAL AND ENERGY LAW 199 (K. Makuch & R. Pereira eds., 2012) (arguing that UNCLOS gives further control to coastal states).

280 *See generally* Energy Charter, *supra* note 199.

281 *Id.* art. 7(b) (describing "Energy Transport Facilities" as consisting of high-pressure gas transmission pipelines, high-voltage electricity transmission grids and lines, crude oil transmission pipelines, coal slurry pipelines, oil product pipelines, and other fixed facilities specific for handling energy materials and products).

border cooperation in the energy industry, namely pipelines, the rights and obligations of Member Parties under international law are not affected.[282] Hence, the regulations of the ECT have to be implemented by its signatory states to the extent that the ECT does not derogate from other rules of international law or from existing bilateral or multilateral agreements of the Member States in a specific pipeline project.[283] Additionally, it is worth mentioning that the main body of the ECT does not regulate the construction and operation of cross-border pipelines.[284]

a. Article 19 ECT

Most ECT regulations deal with investment, trade, and transit issues, (issues that are not a focal point of this paper). Nonetheless, Article 19 of the ECT embraces the environmental aspects of energy transportation.[285] This article contains the duties of the Contracting Parties to strive to minimize harmful environmental impacts occurring within the energy sector, either within or outside its area.[286] Interestingly, this article stresses the need to act in an economically efficient manner.[287] In the main

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282 *Id.* ("Nothing in this article shall derogate from a Contracting Party's rights and obligations under international law including customary international law, existing bilateral or multilateral agreements, including rules concerning submarine cables and pipelines.").

283 *See id.*

284 Richard Happ, *The Nord Stream Pipeline: Settlement of Disputes Under the Energy Charter Treaty?*, *in* GERMAN YEARBOOK OF INTERNATIONAL LAW: JAHRBUCH FÜR INTERNATIONALES RECHT 341, 344 (Universität Kiel. Institut für Internationales Recht ed., 2009).

285 Energy Charter Treaty, *supra* note 199, art. 19.

286 *Id.*

287 *See id.*

> Art.: (1) In pursuit of sustainable development and taking into account its obligations under those international agreements concerning the environment to which it is party, each Contracting Party shall strive to minimize in an economically efficient manner harmful Environmental Impacts occurring either within or outside its Area from all operations within the Energy Cycle in its Area, taking proper account of safety. In doing so each Contracting Party shall act in a Cost-Effective manner. In its policies and actions each Contracting Party shall (j) promote international awareness and information exchange on Contracting Parties' relevant environmental programmes and standards and on the implementation of those programmes and standards; (k) participate, upon request, and within their available resources, in the development and implementation of appropriate environmental programmes

body of the ECT, only Article 19 provides specific recommendations regarding safety and environmental regulations.[288] As we will discuss later, Article 19 explicitly expresses leading principles of international environmental law, such as the polluter pays principle, sustainable development, and the precautionary principle.[289] However, not only is Article 19 non-binding,[290] but according to Articles 26 and 27 of the ECT, compulsory dispute settlement under the ECT does not include pre-investment regulatory obligations.[291] Hence, this contribution will mainly examine Article 19 of the ECT. Additionally, the Secretariat of the Energy Charter Treaty has suggested two model agreements, which we will discuss and analyze. The discussion of Article 19 and the proposed model agreements provide useful insights into cross-border pipeline safety and environmental regulations considered by the ECT.

> in the Contracting Parties. (2) At the request of one or more Contracting Parties, disputes concerning the application or interpretation of provisions of this article shall, to the extent that arrangements for the consideration of such disputes do not exist in other appropriate international fora, be reviewed by the Charter Conference aiming at a solution. (3) For the purposes of this Article: (a) "Energy Cycle" means the entire energy chain, including activities related to prospecting for, exploration, production, conversion, storage, transport, distribution and consumption of the various forms of energy, and the treatment and disposal of wastes, as well as the decommissioning, cessation or closure of these activities, minimizing harmful Environmental Impacts; (b) "Environmental Impact" means any effect caused by a given 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 interactions among these factors; it also includes effects on cultural heritage or socio-economic conditions resulting from alterations to those factors; (c) "Improving Energy Efficiency" means acting to maintain the same unit of output (of a good or service) without reducing the quality or performance of the output, while reducing the amount of energy required to produce that output; (d) "Cost-Effective" means to achieve a defined objective at the lowest cost or to achieve the greatest benefit at a given cost.

Id.

288 Energy Charter Treaty, *supra* note 200, art. 19.

289 *See id.*

290 ROSEMARY LYSTER & ADRIAN BRADBROOK, ENERGY LAW AND THE ENVIRONMENT 59 (2006); *see generally* Waelde, Thomas & Kolo, *Environmental Regulation, Investment Protection and Regulatory Taking in International Law*, 50 INT'L & COMP. L.Q. (2001).

291 *See* Clare Shine, *Environmental Protection Under the Energy Treaty Charter*, *in* THE ENERGY CHARTER TREATY: AN EAST-WEST GATEWAY FOR INVESTMENT AND TRADE 520, 536 (Thomas W. Waelde ed., 1996).

The primary aim of Article 19 is cost-effective sustainable development.[292] To further this purpose, the article recognizes the precautionary principle and the polluter pays principle as fundamental rules for the prevention and compensation of transboundary damage.[293] Article 19 highlights the importance of market-oriented pricing concerning environmental costs and the benefits of the energy cycle.[294] Further, similar to UNCLOS, the article recommends cooperation in the field of internationally compatible environmental standards for the energy sector.[295] In addition, Article 19 emphasizes the promotion of public awareness and development of transparent assessment at an early stage prior to decision-making procedures and subsequent monitoring due to the importance of disclosing information concerning energy–sector activities and their environmentally adverse impacts.[296]

For a better understanding of Article 19 of the ECT, its obligations can be summarized as follows: each contracting party shall (1) strive to minimize in an economically efficient manner harmful environmental impacts from occurring, (2) take precautionary measures to prevent or minimize environmental degradation, (3) co-operate in the field of international environmental standards, (4) promote public awareness of the environmental impacts of energy systems, and (5) promote international awareness and information exchange in contracting parties' relevant environmental programs and standards and on the implementation of those programs and standards.[297]

Interestingly, in principle, all the prescribed duties mentioned under Article 19 are also applicable to cross-border pipelines.[298] For a better understanding, they are analyzed case by case. Article 19 suggests the importance of acting in an environmentally sound and efficient manner as one of its main rules.[299] In fact, many countries mandate the evaluation of harmful impacts of the

292 *See* Energy Charter Treaty, *supra* note 199, art. 19.

293 *See id.*

294 *Id.*

295 *Id.*

296 *Id.*

297 *Id.*

298 *See generally* Energy Charter Treaty, *supra* note 199, art. 19.

299 *See id.*

construction and operation of a proposed cross-border pipeline,[300] and some international and regional instruments regulate it as a binding duty.[301] Hence, it can be held that an environmental impact assessment can be used as one of the instruments for the evaluation of environmentally adverse impacts prior to the decision-making, according to Article 19 of the ECT.[302]

Emphasizing international environmental standards[303] can be helpful for the standardization of environmental and safety regulations applicable to cross-border pipelines. This emphasis may help to avoid the implementation of double standards over a pipeline and the associated side-effects of such double standards.[304] The promotion of public awareness and participation in the decision-making process are valuable instruments for preventing conflicts of interest between operators and local communities.[305] Whenever public information about such projects and their harmful effects on the environment increases, the possibility of externalizing the pollution cost to local communities will decrease.[306]

b. Model Agreements for Cross-Border Pipelines

The Secretariat of the Energy Charter Treaty prepared some model agreements for facilitating complex cross-border projects.

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300 *See, e.g.*, Directive 2011/92, of the European Parliament and of the Council of 13 December 2011 on the Assessment of the Effects of Certain Public and Private Projects on the Environment, 2011 O.J. (L 26) 11 (2012).

301 *See, e.g.*, United Nations Convention on Environmental Impact Assessment in a Transboundary Context, Feb. 25, 1991, 1989 U.N.T.S. 310.

302 Directive 2011/92, art. 2.; *see* Energy Charter Treaty, *supra* note 199, art. 19.

303 International environmental standards are a broad and vague concept that can be defined in different ways. As S.S. Olson states, there is too much divergence at the international level to have harmonized environmental standards. S.S. OLSON, INTERNATIONAL ENVIRONMENTAL STANDARDS Handbook 6, 135 (1999). If environmental standards merely constitute a technical code of conduct, it is more meaningful to refer to internationally compatible standards. This definition refers to those standards that are mainly applied by states, whether they are produced by international agencies such as the International Standardization Organization (ISO) or by national organizations such as the ASTM (American Society of Testing and Material) as well as by private institutes such as Det Norske Veritas (DNV). *Id.*

304 *See id.*

305 D.K. ANTON & D.L. SHELTON, ENVIRONMENTAL PROTECTION AND HUMAN RIGHTS 312-14 (2011).

306 *Id.*

Due to the importance of cross-border pipeline arrangements, two model agreements have been prepared in relation to oil and gas cross-border pipelines. These model agreements are referred to as the Intergovernmental Agreement (IGA) and the Host Governmental Agreement (HGA).[307] The contents of such a model are not binding for the parties to the ECT.

The IGA is an international treaty under international law.[308] This model agreement recommends each state establish safety and environmental standards that are internationally compatible and acceptable and at least as stringent as the World Bank Group Environmental, Health, and Safety Standards and Guidelines.[309] The recognition of those internationally recommended standards for cross-border pipelines is an important step towards the harmonization of environmental and safety regulations.[310] However, the World Bank Group standards encompass a wide range of standards, including those applicable to oil and gas pipelines.[311] These standards are more general types of the safety and environmental regulations.[312] The standards do not, however, contain very precise prescriptions concerning the technical features with which a cross-border pipeline should comply.[313] Hence, it might be argued that these standards need to be complemented by other required technical or safety standards. Moreover, the reference to internationally compatible and acceptable environmental and safety standards is rather vague and

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307 *See infra* Sec. IV (discussing the function of those model agreements).

308 *See* Redgwell, *supra* note 163, at 106.

309 ENERGY CHARTER SECRETARIAT, MODEL INTERGOVERNMENTAL AND HOST GOVERNMENT AGREEMENTS FOR CROSS-BORDER PIPELINES ART. 10 (2007), *available at* http://www.encharter.org/fileadmin/user_upload/document/ma-en.pdf.

310 *See id.*

311 *Environmental, Health, and Safety Guidelines*, INTERNATIONAL FINANCE CORPORATION: WORLD BANK GROUP, http://www.ifc.org/wps/wcm/connect/554e8d80488658e4b76af76a6515bb18/Final++General+EHS+Guidelines.pdf?MOD=AJPERES (last visited Sep. 9, 2014).

312 For instance, in relation to distribution gas pipelines, the standards refer to international standards for structural integrity and operational performance. *See Environmental Health and Safety Guidelines on Gas Distribution Systems*, INTERNATIONAL FINANCE CORPORATION: WORLD BANK GROUP (Apr. 30, 2007), http://www.ifc.org/wps/wcm/connect/9c6e3d0048855ade8754d76a6515bb18/Final+-+Gas+Distribution+Systems.pdf?MOD=AJPERES.

313 *See id.*

invites different interpretations.[314]

According to a study of a few IGAs, most IGAs do not directly deal with safety and environmental regulations.[315] In some cases, IGAs only refer to general terms or to HGA's.[316] Since only HGA's provide more specific information on environmental and safety standards, we will now turn to those agreements.

The HGA is a model for an agreement between a host state and investors.[317] This model is not considered an international treaty under the 1969 Vienna Convention on the Law of Treaties.[318] On the basis of the HGA, the agreed environmental and safety standards shall be set forth in the Appendix of said agreement.[319] Theoretically, these standards should be selected based on the consent of parties.[320] In practice, these standards are mostly chosen based on the relative bargaining power of the parties involved.[321] According to the HGA model, the host government should agree with the standards that are set forth in the Appendix and should consent to any action taken by operators.[322] Furthermore, participating parties of HGAs often give priority to provisions decreed by an HGA over national or local regulations.[323]

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314 *See id.*

315 *See, e.g.*, Agreement Among the Hellenic Republic, the Republic of Turkey and the Italian Republic Concerning the Development of the Turkey-Greece-Italy Gas Transportation Corridor, July 26, 2007.

316 *See, e.g.*, Agreement Among the Azerbaijan Republic, Georgia and the Republic of Turkey, *supra* note 130.

317 ENERGY CHARTER SECRETARIAT, *supra* note 309.

318 If only one party to an agreement is a state and another party or parties are private actors, the agreement cannot be considered an international treaty. *See* Redgwell, *supra* note 163; *see also* Anglo-Iranian Oil Company Case (U.K. v. Iran), 1952 I.C.J. Rep. 93 (July 22, 1952).

319 *See* ENERGY CHARTER SECRETARIAT, *supra* note 309, art. 16.

320 *Id.*

321 *See infra* Sec. IV (discussing the importance of the bargaining power of the parties involved).

322 ENERGY CHARTER SECRETARIAT, *supra* note 309, art. 16.

323 For instance, in the South Caucasus Gas Pipeline, according to the host governmental agreement, safety and environmental regulations decreed in the text of the agreement were given priority over the local and national environmental and safety regulations. *See* Host Government Agreement Between and Among the Government of Georgia and State Oil Company of the Azerbaijan Republic, BP Exploration (Azerbaijan) Limited, Totalfinaelf E&P Caucasian Gas SA, Lukagip N.V., Statoil Azerbaijan a.s., Naftiran Intertrade Co. (NICO) Limited, Turkish Petroleum Overseas Company Limited, Apr. 17, 2002, art. 12 [hereinafter Host Government Agreement

Those model agreements are categorized within the scope of soft law instruments and the application of them is non-binding for Contracting Parties.[324] However, since the ECT model agreements have been implemented in several cross-border pipeline projects and are going to be applied to new projects by Contracting Parties, it is interesting to look more closely at this model agreement. We will do so by selecting one particular case study. It concerns the safety and environmental regulations contained in the agreement concerning the South Caucasus Gas Pipeline ("SCP").[325] The SCP was constructed according to the terms of the ECT and the mentioned model agreements.[326] The SCP transfers natural gas from Azerbaijan as a producer country, traverses Georgia as a transit country, to reach the final destination in Turkey as a consumer country.[327] The HGA between Georgia and investors for the construction and operation of the SCP was concluded in London in 2002.[328]

In Article 12 of the SCP HGA, it was clearly mentioned that applicable environmental and safety standards and practices for the project shall be set forth in Appendix 4 and shall be applicable, notwithstanding any conflicting standards and practices otherwise required by the Georgian law.[329] According to Appendix 4, technical and environmental standards are regulated separately.[330] Selection, implementation, monitoring, and inspection of those standards are primarily duties of the operator in charge.[331] The Government of Georgia can determine a representative on its

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Between and Among The Government of Georgia and State Oil Company of the Azerbaijan Republic]; *see also id.* app. 4.

324 *See* ENERGY CHARTER SECRETARIAT, *supra* note 309, introductory note ¶ 30.

325 Host Government Agreement Between and Among The Government of Georgia and State Oil Company of the Azerbaijan Republic, *supra* note 323.

326 *See generally id.*

327 *See id.* art. 12.

328 *Id.*

329 *Id.; see* Redgwell, *supra* note 163, at 106 (stating that standards which are set forth in the HGA explicitly prevail over any standards applicable according to domestic law).

330 *See* Host Government Agreement Between and Among The Government of Georgia and State Oil Company of the Azerbaijan Republic, *supra* note 323, app. 4 (separating technical standards and environmental standards into paragraphs 2 and 3).

331 *Id.* app. 4 ¶ 1.1(i).

behalf.[332] The Government's representative has the right to inspect the SCP under certain conditions.[333] The Government representative shall have the right to observe (by submitting a prior notice before inspecting) on the condition that he does not interfere in the application of safety rules.[334]

Interestingly, in Appendix 4 of the SCP HGA, a large number of technical standards are mentioned, including technical standards from the US, the UK, as well as other international technical standards.[335] The operator can select each type of standards, based on its own discretion.[336] In addition, the operator has the right to use other Western standards in cases where the specified technical standards are silent or incompatible.[337]

In relation to environmental and safety standards, as was suggested by the IGA model referred to above, the World Bank environmental standards should be implemented by Member Parties as minimum standards.[338] In the case of the SCP HGA, environmental standards should be implemented that are compatible with such standards that are generally observed by the international community with respect to comparable natural gas pipeline projects, but not lower than those applicable in the UK.[339] However, there are a few exceptions mentioned to the application of those regulations:

(1) Environmental standards other than those which establish a liability can be implemented;
(2) Those standards should not include the regulatory administrative structures or procedures;
(3) If those standards are not compatible with the specific technical standards of this agreement, the SCP participants shall follow those standards and practices which are

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332 *Id.* art. 2 ¶ 2.2.

333 *Id.* app. 4 ¶ 1.2.

334 *Id.*

335 *See* Host Government Agreement Between and Among the Government of Georgia and State Oil Company of the Azerbaijan Republic, *supra* note 323, app. 4 ¶¶ 2.1-2.2 (discussing technical standards in several countries).

336 *Id.* app. 4 ¶ 2.1 (stating that SCP participants determine the relevant technical standard).

337 *Id.*

338 *See id.* app. 4 ¶ 3.

339 *Id.* app. 4 ¶ 2.2.

compatible; and

(4) If any authority with jurisdiction over the pipeline enacts such environmental standards which are in a different form or more stringent, those standards shall not be subject to the project.[340]

As described in the above paragraphs, the technical and environmental regulations that were mentioned in the SCP HGA's Appendix encompass a wide range of regulations emanating from different countries in the world.[341] These standards should basically be selected and enforced by the operator.[342] Defining and implementing those standards in the manner proposed by the SCP HGA has some pros and cons. The advantages can be summarized as follows:

(1) The operator has better knowledge, thus, he/she can choose the most appropriate regulations;

(2) The state cannot put pressure on operators by requiring extra environmental regulations (regulatory taking);[343] and

(3) Incorporating high quality standards into the agreement underlines the obligations of parties to protect the environment.

This can be considered a step ahead compared with many investor-state agreements, which notably narrow the scope of the application of the domestic law of the host states, but also do not include any specific environmental commitments.[344]

However, this kind of arrangement also has a few potential disadvantages or at least ambiguities. For instance, although a

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340 *Id.* app. 4 ¶ 2.7.

341 *See infra* sec. 4.

342 Host Government Agreement Between and Among the Government of Georgia and State Oil Company of the Azerbaijan Republic, *supra* note 323, app. 4.

343 As literature and arbitration cases have indicated, environmental regulations of the host state aiming to intervene in an investment are considered a risk to foreign investment. M. SORNARAJAH, THE INTERNATIONAL LAW ON FOREIGN INVESTMENT 77-78, 110-11 (Cambridge University Press, 3d ed. 2010) (highlighting foreign investment issues due to state regulation of human rights and environmental concerns and the clash between protection of the environment and protection of foreign investment).

344 Some agreements do not expressly set out environmental and safety standards. Instead they require operators to carry out investment projects in accordance with technical and safety standards prevailing in the petroleum industry. *See, e.g.*, COTCO Convention, *supra* note 132; *see generally* Lorenzo Cotula, *Reconciling Regulatory Stability and Evolution of Environmental Standards in Investment Contracts: Towards a Rethink of Stabilization Clauses*, J. WORLD ENERGY L. & BUSINESS 158, 158-179 (2008).

wide range of technical standards was prescribed as permitted codes, the distinctive features of each of these technical standards were not taken into account.[345] Further, although a wide range of technical standards was listed, it was not clear which of them was principal or auxiliary.[346] Hence, monitoring and inspecting those standards becomes an impossible task for public authorities. In addition, environmental standards were not accurately defined in the text of the agreement.[347] The agreement only refers to vague notions such as "other Western standards," or refers to environmental standards "not lower than those applicable in the UK."[348] As a result, the choice of applicable technical, safety, and environmental standards is, to some extent, subject to the discretion of the operator.[349] Monitoring and inspecting by public authorities therefore becomes extremely difficult.[350] Moreover, if environmental and safety standards are not clear, this will also create difficulties for victims to obtain compensation based on liability, if they should prove that the operator violated applicable environmental and safety standards.[351] This presupposes at least that there is no ambiguity as far as applicable safety standards are concerned.

In sum, the ECT model agreements have several functions in the interaction between the parties, allowing them to create a cross-border pipeline agreement. The goal of those model agreements is to elaborate uniform regulations over the entire length of the pipeline.[352] Furthermore, by referring to the World Bank regulations as the minimum safety level, those model

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345 *See generally* Richard B. Kuprewicz, *General Observations On the Myth of a Best International Pipeline Standard*, ACCUFACTS INC. (March 31, 2007), http://pstrust.org/docs/best_standard_report.pdf (reviewing differences between technical standards of pipelines).

346 *See generally id.* (reviewing differences between technical standards of pipelines).

347 *See generally* Host Government Agreement Between and Among the Government of Georgia and State Oil Company of the Azerbaijan Republic, *supra* note 323.

348 *Id.* app. 4 ¶¶ 2.1–2.2.

349 *See id.* app. 4, Code of Practice.

350 *See id.*

351 *See id.*

352 *See generally* ENERGY CHARTER SECRETARIAT, *supra* note 309 (discussing the model agreements).

agreements, to some extent, aim at ensuring a minimum quality of the applicable standards.[353] The problem, however, is that there is a large degree of discretion given to the operators in relation to those standards.[354] This discretionary power may impede an effective application of safety standards or it may hinder a proper inspection by public authorities.[355] It is questionable to what extent the ECT and its associated model agreements can provide an effective tool for preventing damage resulting from cross-border pipelines.[356]

3. The Convention on Environmental Impact Assessment in a Transboundary Context (Espoo, 1991)

a. Working of the Espoo Convention

The Convention on Environmental Impact Assessment in a Transboundary Context (the "Espoo Convention") is a regional convention under the auspices of the United Nations Economic Commission for Europe.[357] Due to the rapid increase of transboundary environmentally harmful activities, the Espoo Convention set up obligations of Contracting Parties to assess environmentally adverse impacts of certain hazardous activities and to consult affected states prior to decision-making.[358] According to Neil Craik, only the Espoo Convention and the Protocol on Environmental Protection to the Antarctic Treaty formulate detailed requirements for transboundary EIAs.[359] Large diameter oil and gas pipelines are included in the list of the

353 *See id.* app. 4 ¶ 3.1 (requiring SCP participants to conform to World Bank environmental standards).

354 *See id.* app. 4., Code of Practice.

355 *See id.*

356 *See infra* Sec. IV.

357 Espoo, *supra* note 200, Preamble.

358 Before the adoption of the Espoo Convention, several steps had been taken to implement transboundary EIAs. These steps were initiated in 1972 with the United Nations Conference on the Human Environment in Stockholm and were followed by the UNCLOS. *See* Wiek Scharge, *The Convention on Environmental Impact Assessment in a Transboundary Context, in* THEORY AND PRACTICE OF TRANSBOUNDARY ENVIRONMENTAL IMPACT ASSESSMENT 29, 29–30 (Kees Bastmeijer & Timo Koivurova eds., 2008).

359 NEIL CRAIK, THE INTERNATIONAL LAW OF ENVIRONMENTAL IMPACT ASSESSMENT 101 (2008).

hazardous activities in Appendix I of the Espoo Convention.[360] Thus, the terms of the Espoo Convention are applicable to cross-border pipelines as well. Cross-border pipelines are even considered complex activities under the Espoo Convention.[361] Strategic environmental assessments are therefore required.

The main aim of the Espoo Convention is to prevent, reduce, and control adverse transboundary impacts (Article 2).[362] For this purpose, an environmental impact assessment of such activities is mandated prior to granting permission to execute those activities.[363] For a better understanding, we will briefly introduce the procedure to be followed in the case of a transboundary environmental impact assessment according to the Espoo Convention.[364]

Basically, a state of origin (a contracting party that envisages to undertake particular activities in its jurisdiction) should submit required information about possible transboundary impacts to an affected state (a contracting party likely to be affected by the transboundary impact of a proposed activity) and to the public in the area likely to be affected.[365] According to Article 3, a state of origin must inform an affected state no later than when it informs its own public.[366] A state of origin shall also provide possibilities for making comments or objections on the proposed activity by affected states and their public.[367] In other words, as Koivurova & Polonen explain, the Espoo Convention requires Contracting

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360 U.N. Convention on Environmental Impact Assessment in a Transboundary Context, *supra* note 301, app. 1 ¶ 8.

361 Exchange of Good Practices, Large-Scale Transboundary Projects, Application of the Espoo Convention to Complex Activities, Note by the Secretariat, U.N. Economic Comm'n for Eur., on its 12th mtg. at ¶ 3(a), ECE/MP.EIA/WG.1/2009/4 (May 11-13, 2009) [hereinafter UN Economic and Social Council].

362 MARIE-LOUISE LARSSON, THE LAW OF ENVIRONMENTAL DAMAGE: LIABILITY AND REPARATION 140 (1999). Meanwhile, this Convention, and particularly Article 2, does not pose any duty to prevention of transboundary harm. CRAIK, *supra* note 359, at 103.

363 *See id.* at 140.

364 *See generally* Espoo, *supra* note 200, arts. 1-20 (laying out the procedure to be followed in case of a transboundary environmental impact assessment).

365 *See id.* art. 2, ¶¶ 2, 6.

366 For countries that have no scoping procedures, there will be some problems in complying with Article 3 of the Espoo Convention because a state of origin may find out transboundary adverse impacts of proposed activities after its own public participation. *See generally* Scharge, *supra* note 358, at 39-40.

367 *See* Espoo, *supra* note 200, art. 2, ¶ 5.

Parties to conduct a national environmental impact assessment that also includes the observation and participation of the potential affected foreign actors.[368]

Under the Espoo Convention, an affected party also has an active role.[369] The transboundary EIA will only be continued if an affected state intends to participate in the transboundary EIA procedure.[370] However, when an affected party intends to participate, it should submit obtainable information relating to the possible adverse impacts of the proposed activity under its jurisdiction.[371] After such exchange of information, and by gathering the observations of the affected public concerning the proposed activity, the state of origin shall finally decide about granting the project or not.[372] During the consultation period, according to Article 5 of the Espoo Convention, the state of origin can also consider the possible alternatives, including the no-action option.[373]

Indeed, the Espoo Convention follows the same procedure as was suggested by UNCLOS and by the ECT for the establishment of the EIA prior to the decision-making procedure. The Convention provides for a transboundary environmental impact assessment process, which should be undertaken prior to granting the project, by focusing on the affected states and their local communities.[374] To analyze the application of the Espoo Convention to cross-border pipelines in practice, the EIA of the

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368 Koivurova & Polonen, *supra* note 131, at 153.

369 *See* Espoo, *supra* note 200, art. 3, ¶¶ 3-4.

370 Koivurova & Polonen, *supra* note 131, at 153 (stating that the affected state must confirm its willingness to participate in the transboundary EIA procedure).

371 When there exists disagreement between parties in relation to significant adverse impacts of non-listed proposed activities, the Convention provides the parties with general criteria, including size, location, and effects to assist in determining the environmental significance of non-listed activities. However, the wording of the Convention, by referring to the fact that parties "may" consider those criteria to determine environmental adverse impacts of proposed non-listed activities, leaves a gap for an accurate examination of those criteria. *See* John Woodliffe, *Environmental Damage and Environmental Impact Assessment, in* ENVIRONMENTAL DAMAGE IN INTERNATIONAL AND COMPARATIVE LAW: PROBLEMS OF DEFINITION AND VALUATION 133, 140 (Michael Bowman & Alan Boyle eds., 2012).

372 *See* Espoo, *supra* note 200, art. 6, ¶ 2.

373 *See id.*, art. 5.

374 *See generally id.* (laying out the transboundary environmental impact assessment process).

Nord Stream Gas Pipeline, which was done in accordance with provisions of the Espoo Convention, is examined as a case study.

b. The EIA in the Nord Stream Gas Pipeline-case

The Nord Stream Gas Pipeline (NSGP) is a 1,220 kilometers long transmission offshore natural gas pipeline (two parallel lines).[375] This pipeline crosses the exclusive economic zones of Russia,[376] Finland, Sweden, Denmark and Germany, as well as the territorial waters of Russia, Denmark, and Germany.[377] The NSGP transfers Russian gas to Germany.[378] Although some debates were raised in relation to the inclusion of the NSGP under the Espoo Convention,[379] the competent authorities of Germany, Denmark, Sweden, Finland, and Russia, as states of origin (since the NSGP passes through their jurisdictions), unanimously concluded in a meeting on April 19, 2006, that the NSGP Project falls under Article 3 of the Espoo Convention.[380] It is noteworthy that the course of constructing the NSGP primarily falls under UNCLOS. The reason is that it concerns, as mentioned, an offshore natural gas pipeline in the exclusive economic zone of the states of origin. We mentioned above that according to Article 79 of the UNCLOS, laying such pipelines on the continental shelf is subject to the consent of the coastal states.[381] However, as mentioned before, the UNCLOS does not explicitly specify the duty to apply an EIA.[382]

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375 *Fact Sheet: The Nord Stream Pipeline Project*, NORD STREAM (Aug. 2014), http://www.nord-stream.com/press-info/library/ (follow the "Nord Stream Pipeline Project" hyperlink).

376 The Russian Federation has signed but not yet ratified the Espoo Convention. *See Convention on Environmental Impact Assessment in a Transboundary Context*, U.N. TREATY CONVENTION, https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-4&chapter=27&lang=en (last visited Oct. 15, 2014). But with regard to the Nord Stream Project, Russia is acting as a Party of Origin to the extent possible under its legislation. *See* BENDIK SOLUM WHIST, NORD STREAM: NOT JUST A PIPELINE 7 (Fridtjof Nansen Inst. 2008). Hence, for the purpose of this article the term "Parties of Origin" as used herein shall include the Russian Federation.

377 See *Fact Sheet: The Nord Stream Pipeline Project*, *supra* note 375.

378 *Id.*

379 Koivurova & Polonen, *supra* note 131, at 158.

380 *Espoo Report Chapter 3: Legal Framework and Public Consultation*, NORD STREAM 62 (Feb. 2009), https://www.nord-stream.com/press-info/library/?pk=73 (follow the "Espoo Report Chapter 3: Legal Framework and Public Consultation" hyperlink).

381 UNCLOS, *supra* note 198, art. 79.

382 *Id.*

Its references to determining environmental impacts[383] are rather vague and unclear and, at a minimum, do not include an explicit obligation to conduct a transboundary EIA.[384]

To obtain the permission from the mentioned states, the Nord Stream Company, as an operator, was involved in extensive consultations with each of the countries concerned (as states of origin), to be certain that the NSGP fully complied with the respective national legislation.[385] In addition to those five nations, the NSGP may affect Estonia, Latvia, Lithuania, and Poland as affected states; however, no segment of the NSGP falls under their jurisdiction.[386] Therefore, these four states, as affected states, were also part of the consultation process.[387] In conformity to the provisions of the Espoo Convention, each of the states of origin as well as the Russian Federation opened its EIA procedure to all the states of origin and affected states.[388] The involvement of that many states and parties of course increased the level of complexity of the EIA of the project.[389]

Various types of documents both at the national as well as at the international level were prepared by the Nord Stream Company and translated into all affected nations' languages in view of the public participation.[390] The public in the origin and affected states, including governmental authorities and non-governmental actors, provided documents and sent comments concerning the EIA of the project.[391] Eventually, the final EIA report was prepared and submitted to the states of origin to obtain their permission.[392] All permits to begin construction were received by February 2010 from the states of origin.[393]

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383 *Id.* art. 194.

384 *See* Alexander Lott, *Marine Environmental Protection and Transboundary Pipeline Projects: A Case Study of the Nord Stream Pipeline*, 27 MERKOURIOS-UTRECHT J. INT'L & EUR. L. 55, 61 (2011).

385 *Id.* at 62.

386 *Id.*

387 *Id.*

388 *Id.*

389 *Id.*

390 *See* Lott, *supra* note 384, at 62.

391 *See id.* at 60.

392 *See id.* at 62.

393 *See id.* at 68.

The EIA of the NSGP has been considered by many authors as a model way of how a transboundary EIA may be applied under the Espoo Convention.[394] However, there are also a few critical points concerning the transboundary EIA procedure in the NSGP. One of the main criticisms related to the fact that the EIA report inadequately examined alternative routes of the NSGP.[395] This was an issue for one of the states of origin (Finland), one of the affected states (Estonia); the European Parliament; and, finally, for the Espoo Secretariat.[396]

Originally, Finland, as a state of origin, after receiving the second EIA report, notified the Nord Stream Company about its concerns in relation to the lack of studying the alternative routes of the NSGP near the Russian island of Gogland and the route in the South of the Gulf of Finland (Estonian Section).[397] But the Nord Stream Company informed Finland that after consultation with the Russian authorities, the Company did not intend to investigate a possible alternative route in the territorial waters of Russia.[398] Since Russia is not a member of the Espoo Convention, it could easily decline permitting a feasibility study in its own territorial waters.[399] Moreover, the Espoo Convention articulates that an alternative route could only be examined in the jurisdiction of the states of origin (Article 5).[400] In addition, the request of the Company to conduct seabed studies in Estonia's Exclusive Economic Zone was rejected by the Estonian authorities.[401] The legal basis of that rejection by Estonia could, to some extent, be considered questionable under UNCLOS.[402]

The second contentious issue was raised by the European Parliament in publishing the European Parliament Resolution on

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394 *See* Koivurova & Polonen, *supra* note 131; *see also* Vinogradov, *supra* note 34, at 248.

395 *See* Koivurova & Polonen, *supra* note 131, at 169.

396 *Id.*; *see also* UN Economic and Social Council, *supra* note 361.

397 *See* Koivurova & Polonen, *supra* note 131, at 169.

398 *The NSGP Environmental Impact Assessment Report*, NORD STREAM, http://www.nord-stream.com/press-info/library/?q=environmental+impact+assessment+report&category=&type=&page=6&country= (last visited July 16, 2013).

399 *See id.*

400 *See* Espoo, *supra* note 200, art. 5.

401 *See* Lott, *supra* note 384, at 61.

402 Vinogradov, *supra* note 34, at 261.

the Environmental Impact of the Planned Gas Pipeline in the Baltic Sea to Link Up Russia and Germany.[403] This resolution reflects environmental concerns in relation to the construction and operation of the NSGP by emphasizing the inadequacy of the environmental impact assessment.[404] Those concerns contained a wide range of environmental and strategic issues.[405] The European Parliament resolution *inter alia* referred to a lack of adequate descriptions of the environmental conditions in the Baltic Sea, a lack of a precise examination of the agricultural and industrial emissions polluting the Baltic Sea, the need to evaluate them in proportion with the possible environmental threats caused by the NSGP, and the lack of attention to the potential threats to the security of the NSGP and possible alternative routes (not limited to the states of origin and, including onshore routes).[406]

As mentioned, according to the Espoo Convention Protocol, the cross-border pipelines are listed as a complex large-scale project.[407] This Protocol mandates that parties run a strategic environmental assessment for complex activities.[408] The Secretariat of the Espoo Convention underlined the strategic dimension of cross-border pipelines and the necessity of conducting a strategic environmental assessment for the NSGP.[409] However, as Koivurova & Polonen correctly state, focusing on the duty of states of origin to conduct the SEA, the Member Parties of the Espoo Convention cannot mandate that a company conduct a strategic environmental assessment.[410] Hence, it is in principle a duty of the states of origin to conduct the SEA by themselves.[411]

Generally, the Espoo Convention is considered to be one of the more progressive regional environmental instruments aimed at the

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403 Resolution on the Environmental Impact of the Planned Gas Pipeline in the Baltic Sea to Link Up Russia and Germany, EUR. PARL. DOC. ¶¶ 10, 17, 20, 22, 24, 25, 25, 33 (0614/2007 and 0952/2007) (2008) [hereinafter European Parliament].

404 *Id.*

405 *Id.*

406 *Id.*

407 Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context, U.N. Econ. Comm'n for Eur. Annex I, U.N. DOC. ECE/MP.EIA/2003/2 (May 21, 2003).

408 *Id.* art. 4.

409 *See* UN Economic and Social Council, *supra* note 361.

410 *See* Koivurova & Polonen, *supra* note 131, at 179.

411 *See id.*

prevention of transboundary environmental impacts, which is also applicable to cross-border pipelines.[412] The EIA of the NSGP was conducted in an innovative manner as a large-scale project which came under the application of the Espoo Convention.[413] However, notwithstanding the fact that conducting an EIA with respect to this NSGP project is certainly to be considered a positive, a variety of comments can still be made.

First, the case of the NSGP project shows that the Espoo Convention can only be correctly implemented in practice if all states concerned, including the states of origin and the affected states, are members to the Espoo Convention. Otherwise a proper application of the EIA to proposed cross-border pipelines may not be achieved. For instance, in the case of the NSGP project, the affected states were members of the Espoo Convention and hence participated in the EIA process, but not in the final decision-making process with respect to the NSGP.[414] Some of the affected states seriously criticized the effectiveness of the EIA on the project.[415] In this particular case the main problem was obviously the fact that a decision on the pipeline was finally made in Russia, which is not a member to the Espoo Convention.[416] As a result, in those cases where some states (or even just one state) are not members to the Convention, the states may externalize pollution costs to other states concerned and vice versa.

Second, according to Article 5 of the Espoo Convention, possible alternative routes for the proposed projects can only be suggested in states of origins' territories.[417] As the cases of

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412 Mari Koyano, *The Significance of the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) in International Environmental Law: Examining the Implications of the Danube Delta Case*, 26 J. INT'L. ASS'N. FOR IMPACT ASSESSMENT 299, 299 (2008).

413 *See* Koivurova & Polonen, *supra* note 131, at 180; *see also* Lott, *supra* note 384, at 62.

414 *See The NSGP Environmental Impact Assessment Report*, *supra* note 398.

415 *Nord Stream Baltic Sea Pipeline Assessments Breach EU Laws, Estonian Environmental Groups Alert European Commission*, ESTONIAN FUND FOR NATURE, http://www.elfond.ee/en/news/896-nord-stream-baltic-sea-pipeline-assessements-breach-eu-laws-estonian-environmental-groups-alert-european-commission (last visited July 16, 2013); *Nord Stream Faces More Obstacles*, NEWEUROPE ONLINE (May 5, 2009), http://www.neurope.eu/article/nord-stream-faces-more-obstacles.

416 *See The NSGP Environmental Impact Assessment Report*, *supra* note 398.

417 Espoo, *supra* note 200, art. 5.

Estonia and Russia, as affected state and non-member state, indicated, an alternative route for the affected parties may be more environmentally sound than in the state of origin.[418] Moreover, according to the EU Parliament, all possible alternative routes for the construction of such pipelines, in particular the terrestrial route, should be taken into consideration by the decision-makers.[419]

Third, one commentator suggested the elaboration of joint EIA procedures.[420] The joint EIA, as Francisco M. Hernández suggests, can improve public participation and avoid conflicts in integrating different EIAs for the specific project.[421] This observation can be applicable if all the states concerned agree with the establishment of a joint EIA, instead of applying their national regulations separately.[422] Otherwise, as was the case in the NSGP, each state will evaluate the EIA reports only based on their own national regulations.[423]

Fourth, in accordance with Articles 3, 4, and 5 of the Espoo Convention, the EIA report should be published by the state of origin.[424] This provides an appropriate opportunity for the affected state governments, as well as for local communities and NGOs, to make comments on the proposed project.[425] The state of origin that finally decides to grant the proposed project should take into consideration commented observations during the decision-making procedures.[426] However, the only mechanism adopted by the Espoo Convention to ensure the contribution of the commented observations in an appropriate manner is to afford legal recourse only for the affected states, and not for the local communities to challenge the final EIA report.[427] As a matter of fact, some authors

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418 *See* Koivurova & Polonen, *supra* note 131, at 169.

419 *See* European Parliament, *supra* note 403.

420 *See* Francisco M. Hernández, Analysis of the Espoo Convention as Applied to Mega Projects: The Case of Nord Stream 37 (May 2008) (unpublished Master of Science thesis, Lunds Universitet) (on file with author).

421 *See id.*

422 *Id.*

423 *See The NSGP Environmental Impact Assessment Report, supra* note 398.

424 *See* European Parliament, *supra* note 403, arts. 3-5.

425 *See id.*

426 *See* Espoo, *supra* note 200, art. 6.

427 *See id.* art. 15.

also dispute the quality of the EIA under the Espoo Convention in the case of the Nord Stream Gas Pipeline.[428] These concerns were mostly aimed at the reliability of the gathered data.[429] Nevertheless, no legal mechanism is suggested for dealing with those issues under the Espoo Convention.[430]

Of course we do realize that those observations may sound slightly naïve. In practice, cross-border pipeline projects represent large economic and thus, unavoidably, political interests. Those interests may often outweigh the pure environmental interests that are at stake in such a project as well.

IV. Evaluation of Safety and Environmental Regulation of Cross-Border Pipelines

As indicated in previous sections, cross-border oil and gas pipelines have been hypothesized to pose a range of potential damage. This damage can be classified as transboundary damage. Accordingly, given the legal frameworks applicable to cross-border pipelines described in section II, a wide range of regulations can be applicable to those pipelines, at least in principle.[431] The question that arises is how effective those regulations are for the prevention of transboundary and transnational damage? To answer this question, this section tries to analyze the effectiveness of the mentioned regulations to prevent such damage. In this respect, we will not examine detailed technical standards (also because they are often laid in agreements between parties which remain confidential). However, based on the construction of the regulatory framework as sketched in section III, we will formulate a few sources of concern regarding the effectiveness of this regulatory framework as far as its ability to adequately prevent environmental harm and promote safety is concerned.[432]

One of the aims of the environmental conventions discussed in section III is to minimize environmental pollution (in particular

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428 *See* Koivurova & Polonen, *supra* note 131, at 173.

429 *Nord Stream Assessment Seriously Underestimates Environmental Consequences of the Baltic Sea*, WORLD WIDE FUND FOR NATURE (May 7, 2009), http://wwf.panda.org/?uNewsID=163682.

430 *See generally* Espoo, *supra* note 200 (suggesting no legal mechanism).

431 *See supra* Sec. II.

432 *See supra* Sec. III.

transboundary pollution).[433] As a result, in the first subsection of this section, the effectiveness of those conventions for the prevention of transboundary pollution in the case of cross-border pipelines is considered by using a few examples.

In applying the unified model, safety and environmental standards are mainly chosen by an operator in charge.[434] The operators in charge should enforce these regulations, which can be derived from international standards, private standards (trade-association standards and self-regulations), or even national standards of other states.[435] In fact, the public authorities of host states are only entitled to monitor this process in a narrow scope.[436] To an important extent this amounts to self-regulation[437] or, as it is sometimes referred to, private environmental governance.[438] The question arises whether this application of private standards, or at least standards that a private MNC chooses to comply with, adequately incorporates the potential externalities created by cross-border pipelines. In other words, as Kandiyoti argues, given two distinctive modes of operation of the same companies in different countries, there are some concerns in relation to protecting the environment by multinational corporations.[439] The second subsection will analyze the potential problems that may result from such a model.

A. Transboundary Damage

As we already argued, the transportation of oil and gas via cross-border pipelines may result in transboundary damage.[440] Usually this transboundary damage will take the form of

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433 *See id.*

434 *See infra* Subsec. B.

435 *See id.*

436 *See id.*

437 *See generally* Roger Van den Bergh, *Towards Efficient Self-Regulation in Markets for Professional Services*, *in* EUROPEAN COMPETITION LAW ANNUAL 2004, THE RELATIONSHIP BETWEEN COMPETITION AND THE LIBERAL PROFESSION (Claus-Dieter Ehlermann & Isabela Atanasiu eds., 2006).

438 *See generally* Michael P. Vandenbergh, *Private Environmental Governance*, (Vanderbilt Law & Econ., Working Paper No. 13-10, 2013), *available at* http://ssrn.com/abstract_ID=2237515.

439 Kandiyoti, *supra* note 45, at 38.

440 *See supra* Sec. IV.

environmental pollution.[441] The economic basis for this transboundary damage is that polluters externalize harm to others (in this case across-the-border), thus not internalizing pollution costs.[442]

In a typical transboundary pollution case, a state of origin might decline to exercise more stringent regulations on the local industry when benefits would be obtained by other states.[443] Additionally, an affected state often suffers from a lack of information about the adverse impacts of such activities.[444] Even with this information, affected states may have some obstacles for the establishment of litigation against polluters and eventually for the enforcement of the decision in the source state.[445] As a consequence, a state of origin uses the benefits of the polluting activity and externalizes pollution costs to an affected state.[446] The affected state bears the costs of pollution but does not enjoy the benefits of such activities in most cases.[447]

In the literature, as well as at the policy level, various instruments have been suggested to deal with the problem of transboundary pollution.[448] The goal of those instruments is to force polluters in the source state to internalize the externality

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441 *Id.*

442 *See* John Warren Kindt, *International Environmental Law and Policy: An Overview of Transboundary Pollution*, 23 SAN DIEGO L. REV. 583, 591–92 (1986).

443 *See* Thomas W. Merrill, *Golden Rules for Transboundary Pollution,* 46 DUKE L.J. 931 (1997).

444 RENÉ LEFEBER, TRANSBOUNDARY ENVIRONMENTAL INTERFERENCE AND THE ORIGIN OF STATE LIABILITY 32 (1996).

445 *See id.*

446 *See id.*

447 *See id.*

448 For instance, the OECD Council Recommendations on Principles Concerning Transfrontier Pollution, adopted in 1974: After tipping its hat in the direction of the Stockholm Declaration, "the Council urged that transboundary pollution disputes are resolved on the basis of what is called a "principle of non-discrimination." Under this principle, the source states should agree to control transboundary pollution to levels considered acceptable in comparable circumstances in the source state itself, and should agree to afford the same rights in judicial and administrative proceedings to persons in an affected state as to persons in the source state. *See Recommendation of the Council on Principles Concerning Transfrontier Pollution*, 14 November 1974, Organization for Economic Co-Operation and Development, C (74)224, *available at* http://acts.oecd.org/Instruments/ShowInstrumentView.aspx?InstrumentID=12.

caused through their polluting activities.[449] For the purposes of this study it is important to stress that transboundary pollution can of course result from both onshore and offshore pipelines.[450] In fact, as we identified above, only a few international and regional conventions deal with the prevention of transboundary pollution resulting from cross-border pipelines, namely UNCLOS and the ESPOO Convention.[451]

1. Transboundary Pollution Under UNCLOS and the Espoo Convention

We showed that questions could be asked regarding the effectiveness of UNCLOS as an instrument to prevent transboundary pollution. According to Article 194 of UNCLOS, in order to prevent transboundary pollution of the marine environment, states should ensure that activities under their jurisdiction do not cause damage to other states and to their environment.[452] In Article 195, transboundary pollution, which might result from pipeline accidents, is identified and, as a consequence, states are obliged to prevent such transboundary pollution.[453] However, as the text of these two articles shows, the extent to which transboundary pollution will be prevented by effective legal instruments is in fact left to the discretionary power of the polluter states.[454] These states, nonetheless, have obligations pursuant to Articles 194 and 195, which are further developed by Articles 207 and 213.[455]

Article 213 holds that states shall take other measures necessary to implement applicable international rules and standards established through competent international organizations or diplomatic conferences to prevent, reduce, and control pollution of the marine environment from land-based sources.[456] This article establishes a duty for states to regulate

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449 *See id.*

450 *See supra* Section IV.

451 *See supra* Section III.

452 *See* UNCLOS, *supra* note 198.

453 *Id.*

454 *Id.*

455 *Id.*

456 As mentioned, these provisions mostly fall under the domain of soft law. *See*

transboundary pollution. However, as Alan E. Boyle correctly argues, UNCLOS does not determine the content and extent of laws and regulations to be adopted by states.[457] In addition, international rules and standards are vague concepts and should be clarified precisely.[458] International standards encompass various types of standards of different dimensions and levels.[459]

Under UNCLOS, if a state is the owner of a pipeline, the state should comply with internationally compatible standards in order to prevent marine pollution.[460] If the owner of the pipeline is a multinational corporation or if the pipeline is a transit one, which needs to obtain an authorization of host states,[461] the authorizing states shall apply such regulations as compatible with the international standards for the prevention of marine pollution. However, in some cases, an adjacent state may have a different level of regulations, particularly with regard to the threshold for marine environmental pollution.[462] Consequently, the problem may arise that double standards are applied with respect to the same environmental component.[463] Further, as Boyle notes, the "States' obligation is only to 'take account of' internationally agreed rules and standards, but not necessarily to adopt them."[464] Thus, in practice, states still retain wide discretion in the way they

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KLEIN, *supra* note 274, at 150-52.

457 Alan E. Boyle, *Marine Pollution Under the Law of the Sea Convention*, 79 AM. J. INT'L L. 347, 347 (1985).

458 E.G. HINKELMAN, DICTIONARY OF INTERNATIONAL TRADE 572 (8th ed. 2008); G. MORGAN & R. WHITLEY, CAPITALISMS AND CAPITALISM IN THE TWENTY-FIRST CENTURY 168 (2012).

459 *Id.*

460 Boyle (1985) argues that compatible standards may refer to international conventions already established at the time, aiming at the control of vessel pollution. International conventions include: International Convention for the Prevention of Pollution of the Sea by Oil (London Convention), Adopted on 12 May 1954, and entered into force on 26 July 1958; and the International Convention for the Prevention of Pollution from Ships (MARPOL) Adopted on 1973 (Convention), 1978 (1978 Protocol), 1997 (Protocol - Annex VI); entered into force on 2 Oct. 1983 (Annexes I and II). *See* Boyle, *supra* note 457, at 352. Problems still remain since, not one international convention has established safety standards with respect to cross-border pipelines.

461 UNCLOS, *supra* note 198, art. 79.

462 D. ALEXANDER & R.W. FAIRBRIDGE, ENCYCLOPEDIA OF ENVIRONMENTAL SCIENCE 398 (1999).

463 Q.N. MENG, LAND-BASED MARINE POLLUTION: INTERNATIONAL LAW DEVELOPMENT 33 (1987).

464 Boyle, *supra* note 457, at 354.

regulate pollution.

According to Articles 207 and 208 of the UNCLOS, states shall endeavor to harmonize their policies for the prevention of marine pollution at the appropriate regional level.[465] Putting an emphasis on the importance of harmonizing standards, particularly by focusing on regional characteristics may be an effective means for meeting a developing country's needs. It is a valuable approach in order to avoid implementing double standards for regulating transboundary pollution. Nevertheless, in examining states' practice, most of these regional agreements in relation to the protection of the marine environment do not specifically establish such standards and rules.[466] It can be held that to an important extent this obligation to strive for the harmonization of policies with respect to the prevention of marine pollution has remained an empty shell.[467]

As a corollary, it can be argued that under the terms of UNCLOS, states are obliged to prevent transboundary pollution, which might also result from cross-border pipelines. However, they can apparently do so at their own discretion. This may lead to the implementation of double standards in a marine body by coastal states. In addition, under UNCLOS states are not obliged to inform affected states about adverse impacts of hazardous projects.[468] Therefore, the possibility of transboundary pollution resulting from cross-border pipelines remains under UNCLOS.[469]

2. The Example of the Blue Stream Gas Pipeline

As we mentioned, there is no adequate published data concerning the damage that results from cross-border pipelines.

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465 UNCLOS, *supra* note 198, arts. 207-08.

466 For instance, according to Article 18 of the Framework Convention for the Protection of the Marine Environment of the Caspian Sea (Tehran Convention, 2003), Contracting Parties are obliged only to cooperate in formulating standards. However, no standards have been established so far. *See* Framework Convention for the Protection of the Marine Environment of the Caspian Sea, Nov. 4, 2003, 44 ILM 1 (2005).

467 Of course one may hold that "the OSPAR Convention is an example" of the cooperation for establishing regional standards. *See* Rainer Lagoni, *Regional Protection of the Marine Environment in the Northeast Atlantic Under the OSPAR Convention of 1992, in* THE STOCKHOLM DECLARATION AND LAW OF THE MARINE ENVIRONMENT 183, 198 (Myron H. Nordquist, John Norton Moore & Said Mahmoudi eds., 2003).

468 *See* UNCLOS, *supra* note 198.

469 *Id.*

However, just to illustrate the problem, we can refer to the Blue Stream Gas Pipeline (BSGP), which is a cross-border pipeline that falls under the scope of UNCLOS.[470] The BSGP is designed for the export of up to 16.0 billion cubic meters of gas each year.[471] This 1,250 km long gas pipeline traverses a 373 km onshore section (Russian Federation), a 398 km offshore section across the Black Sea (Russian territorial water and continental shelf plus Turkish continental shelf and territorial water), and a 444 km onshore section from Samsun to Ankara (Turkey).[472] The segment of the international water is 340 km long or 87% of the entire marine segment.[473]

The Black Sea is one of the semi-closed marine bodies, only connected with the Mediterranean Sea through the Bosphorus Strait.[474] Due to its particular ecological circumstances, many studies claim that the Black Sea is in critical condition and highlights the threats that might exacerbate the sensitiveness of this area.[475] The BSGP has two distinctive sections: one that falls under the law of the coastal states and a second that is subject to international law.[476] In the onshore sections and territorial waters of Russia and Turkey, the BSGP was constructed under the jurisdiction of Russian and Turkish laws.[477] The BSGP's section that is located on the continental shelves of Russia and Turkey is subject to UNCLOS.[478] Thus, UNCLOS can be applied to the international part of the pipeline.[479]

It is important to mention that neither the Russian Federation[480]

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470 *See* Nikolai Grishin, *Environmental Impact Assessment of a Transboundary Pipeline in the Black Sea Region (Legal and Environmental Aspects),* Ecoterra Environmental Assessment Agency, ECE/ENHS/NONE/2005/8 10 (2005).

471 *Id.*

472 *See id.*

473 *Id.*

474 *Id.*

475 *Id.*

476 *See* Laurence P. Mee, *The Black Sea in Crisis: A Need for Concerted International Action*, 21 J. HUM. ENV'T 27 (1992); *see also* J.W. Redman et. al., *Petroleum and PAH Contamination of the Black Sea, in* 44 Marine Pollution Bulletin 48 (2002).

477 *See* Mee, *supra* note 476, at 27; *see also* Readman et al., *supra* note 476, at 48.

478 *See* Mee, *supra* note 476, at 27; *see also* Readman et al., *supra* note 476, at 48.

479 *See* Grishin, *supra* note 472.

480 *Id.*

nor Turkey is a member to the Espoo Convention. Hence, neither Turkey nor Russia is obliged to conduct a transboundary EIA.[481] However, an EIA for the pipeline concerned was conducted by the pipeline's operator according to Russian national law.[482] This EIA has also been performed in accordance with Article 123 of UNCLOS.[483] Of course, UNCLOS does not contain any obligation to conduct a transboundary EIA.[484]

The EIA for this particular project has been undertaken by the operator.[485] This was Gazprom, a Russian stated-owned company.[486] According to the EIA Report, the impacts of the pipeline on the ambient air and water (gas leakage and corrosion) should be negligible in most conditions and would only be significant in a few conditions.[487] It is not clear whether the affected states have been informed about the results of the EIA or not.[488]

On the other hand, an independent report, which was submitted by an NGO,[489] had some critical observations concerning the EIA of the BSGP. This report examined the technical and environmental impacts of the construction and operation of the BSGP.[490] According to the mentioned report, owing to the depth

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481 *Id.*

482 *Id.*

483 Article 123 of UNCLOS stipulates that States bordering an enclosed or semi-enclosed sea should cooperate with each other in the exercise of their rights and in the performance of their duties with regard to the protection and conservation of the marine environment. *See* UNCLOS, *supra* note 198, art. 123.

484 *See generally id.* (providing that non-members do not have an obligation to conduct a transboundary EIA).

485 *See* Grishin, *supra* note 470.

486 *See id.*

487 The habitat and livelihoods of coastal populations could be affected by a pipeline accident, due to, for example, a rupture near the coast or a rupture caused by a landslide. The theoretical predictions in the feasibility study allow for the possibility of fire and explosive hazards. On the submarine section of the pipeline, losses to the fishing industry are put at US $ 29,800 during the construction phase (at 1996 prices) and US $ 259,500 a year during operation. Payment for atmospheric pollution during the construction phase was put at 503,200 rubles (at 1996 prices) and for a possible accidental discharge of methane, at 7.28 million rubles. *Id.*

488 *See id.*

489 *See* Antonio Tricarico, *Oil in the Caspian*, ECA WATCH (Sep. 2001), *available at* http://www.eca-watch.org/problems/oil_gas_mining/caspoil/bluestream.html.

490 *Id.*

and ecological circumstances of the Black Sea, any leakage resulting from the BSGP may contaminate water deeper than 100 to 200 meters.[491] The geological characteristics of the Black Sea seabed might be sufficient for the destruction of the pipeline.[492] This could be caused by earthquakes or by other reasons.[493] Gas breakthrough from the pipeline will lead to emissions of high amounts of compressed gas into the water mass and then into the atmosphere, which could endanger the water and sediments.[494] These threats might affect the Russian, Ukrainian, Turkish, and Georgian coasts.[495] Finally, the report asserts the inadequacy of the EIA, which was conducted by the beneficiary operator and under its own regulations.[496]

3. Lessons Learned

A lesson that can be learned from the BSGP project, regardless of verifying the authenticity of those reports, is that UNCLOS is not able to deal adequately with these types of projects.[497] Since the states of origin do not have any express obligation or responsibility to consult with affected states about the environmental impacts of such projects, they may undermine the environmental interests of the affected states.[498] This issue may appear in two forms: first, the states of origin might underestimate transboundary risks of such activities; second, even when they do recognize the potential transboundary risks of such activities, they are not obliged to consult the affected states under UNCLOS.[499]

Of course the Espoo Convention would apply to this situation.[500] On paper the impact from transboundary pollution resulting from a cross-border pipeline could be reduced as a result of the transboundary EIA.[501] This is due to the fact that the Espoo

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491 *Id.*

492 *See id.*

493 *See id.*

494 Tricarico, *supra* note 489.

495 *See id.*

496 *Id.*

497 *See supra* Sec. IV, Subsec. 2.

498 *See id.* Subsection 1.

499 *Id.*

500 *See generally* Espoo, *supra* note 200.

501 *See id.* arts. 2.

Convention forces states of origin to notify and consult with affected states prior to making a decision concerning the construction of a cross-border pipeline.[502] Unfortunately, in assessing the effectiveness of the Espoo Convention, there are doubts regarding its ability to achieve the aim of preventing transboundary pollution.

First, it should be mentioned that applying the Espoo Convention only works well in practice when all littoral states of a marine body participate in the EIA procedures. Otherwise, similar to the NSGP's EIA, which is discussed in Section II, such an incomplete EIA opens the door for transboundary pollution.[503] Second, according to the provisions of the Espoo Convention, alternative routes for the construction of a cross-border pipeline can be suggested only within the territory of a state of origin; the Espoo Convention does not require considering alternative routes beyond the state of origin's territory, even if those alternative routes would be more environmentally sound.[504]

Third, the Espoo Convention does not oblige the state of origin to stop the proposed activity on the basis of adverse transboundary environmental impacts.[505] The Espoo Convention only forces a state of origin to take into consideration adverse transboundary impacts within its decision-making procedures; therefore, the Espoo Convention, to a large extent, reflects the domestic EIA laws of the state of origin.[506] As a result, the Espoo Convention enables the public of the affected party to have access to the domestic EIA procedures to the same extent as local residents of the state of origin.[507] Thus, the substantive effectiveness of the transboundary EIA is highly dependent upon the effectiveness of the domestic EIA.[508]

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502 *See id.* arts. 2-3.

503 *See supra* Sec. II.

504 For example, although in a feasibility study south of Gogland Island (the Russian territory) was suggested by Finland as a better route, the developer in the Nord Stream Gas Pipeline's EIA procedure did not accept that Russia did not grant such permission. Koivurova & Polonen, *supra* note 131, at 169.

505 *See* Phoebe N. Okowa, *Procedural Obligations in International Environmental Agreements,* 67 BRIT. Y.B. INT'L. L. 275, 288 (1997).

506 John H. Knox, *The Myth And Reality Of Transboundary Environmental Impact Assessment,* 96 AM. J. INT'L L. 291, 291 (2002).

507 *See id.*

508 *See id.*

Since other international instruments are lacking, a state of origin can still externalize pollution costs to affected states.[509] Of course, one could hold that a state of origin could equally be affected by the adverse impact from the cross-border pipeline. Hence, it will undoubtedly also have some incentives to attend to the safety of the cross-border pipeline. However, the problem is that the state of origin enjoys the benefits of the project and may hence be more inclined to regard those benefits and disregard the ensuing environmental harm. For the affected states, the problem is not only that they suffer from transboundary environmental pollution, but also that they do not enjoy the same benefits from the project.[510]

B. Applicable Standards to Transboundary Pipelines

Cross-border oil and gas pipelines are multi-billion dollar projects that require a high amount of investment, technological knowledge, and equipment.[511] Thus, the proposed pipelines are often attained by cooperation of MNCs.[512] As noted, applying environmental regulations to cross-border pipelines is strongly related to the legal framework that governs the project.[513] In considering the unified model agreements, which are regulated under the ECT, an operator should apply a uniform set of regulations containing technical, safety, and environmental standards to the entire length of a pipeline.[514] The operating companies of such pipelines are mainly joint ventures[515] or international consortiums[516] that are constituted by the participation of MNCs and state-owned companies. The applicable regulations—which can be self-regulations, trade association codes, or even national standards of the other

509 *See Infra* Sec. 3, Subsec. b.

510 *See id.*

511 *See Infra* Sec. 1 [Introduction].

512 *See id.*

513 *See id.*

514 *See Infra* Sec. 2 [The Energy Charter Treaty]; *see Infra* Section 1, Subsection b [the Unified Model].

515 *See, e.g.*, THE WEST AFRICAN GAS PIPELINE COMPANY, http://www.wagpco.com /index.php?option=com_content&view=article&id=46&Itemid=78&lang=en (last visited July 22, 2013).

516 *See, e.g.*, *Company Profile*, NORD STREAM GAS PIPELINE COMPANY, http://www.nord-stream.com/about-us/ (last visited July 22, 2013).

states[517]— are usually selected by an operator and written in the respective agreement. In addition, in some cases, even the EIA of a proposed pipeline, which is conducted by independent international consulting firms, might not be subject to the affirmation of a host state.[518]

Considering the unified model of cross-border pipelines, in which the entire length of a pipeline is operated uniformly in different states, applying uniform standards to the entire pipeline seems reasonable.[519] It is presumed that the operator in charge has better information on optimal safety standards.[520] Hence, applying a desired set of standards suggested by the operator can ensure the stable running of the project.[521] This set of regulations should finally be confirmed by host states as a set of uniform standards through relevant agreements.[522] According to the ECT, the technical and environmental regulations, which should be agreed to by all participants and described in the annex, should be internationally compatible and acceptable standards that are at least as stringent as the World Bank Group.[523] Nevertheless, a question arises regarding what the specific relationship is between the standards laid down in the agreement and the domestic regulations of the host states.

The answer to this question depends upon the status of the applicable regulations in the unified regime. Generally, the applicable law to cross-border pipelines in the unified model can be divided into two categories: (1) an operator is required to comply with the domestic regulations of a host state, and (2) an MNC involved in the project is excluded from complying with environmental and safety regulations of a host state by establishing

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517 In the case of South Caucasus Gas Pipeline, American and British national standards and trade associations' standards have been agreed upon as technical and environmental standards. *See* Host Governmental Agreement Between and Among the Government of Georgia and State Oil Company of the Azerbaijan Republic, *supra* note 323, app. 4.

518 *See id.*

519 *See supra* Sec. 1, Subsec. b [the Unified Model].

520 *See id.*

521 *See generally* Mark B. Baker, *Private Codes of Corporate Conduct: Should the Fox Guard the Henhouse?*, 24 U. MIAMI INTER-AM. L. REV. 399 (1993) (providing arguments in favor of applying private codes of conduct by MNCs).

522 *See id.*

523 *See* Energy Charter, *supra* note 199, at 22.

a contractual clause in the host governmental agreement.[524]

The first possibility is, therefore, that the operator has to comply with the host states' safety and environmental regulations.[525] To the extent that those domestic regulations are effective, they could give the operator incentives to internalize pollution costs.[526] In that case, the host state should also monitor the pipeline.[527] Effectively, this would mean that the same regulations apply to both domestic projects and a cross-border pipeline. One example is the new Swiss section of the North Sea-Italy Pipeline (Transitgas pipeline) that was commissioned in 2003.[528] In that case, the federal environmental protection law of Switzerland, as a transit state, was applied to the pipeline.[529] Therefore, before the construction of a pipeline, a risk assessment was conducted based on the safety regulations of the transit country, Switzerland.[530] As a result, the route for the unacceptable zone was changed into a tunnel and for intermediate zones, preventive measures, such as increasing the pipeline depth of cover and concrete slab, and covering and increasing pipeline thickness, were applied in order to minimize the risks of an accident and of pollution.[531] The aforementioned mechanism can be enforced effectively when a host state has the capacity to

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524 *See, e.g.*, *The Pipeline System*, TRANSITGAS AG., http://www.transitgas.org/EN/pipeline.aspx (last visited September 12, 2013) (illustrating an example of operators acting in compliance with domestic regulations of the host state); *see, e.g.*, Host Governmental Agreement Between and Among the Government of Georgia and State Oil Company of the Azerbaijan Republic, *supra* note 323 (showing an example of a host governmental agreement).

525 *See The Pipeline System*, *supra* note 524.

526 *See id.*

527 *See id.*

528 In 1974 the 164-kilometer Transitgas Pipeline, the Swiss section of the North Sea-Italy pipeline, was officially put into service. In 1997, due to the increasing demand for natural gas in Italy, the Italian natural gas company SNAM SpA decided to expand the complete transport system. This new section was commissioned in 2003 and includes 185 kilometer of thirty-six inch and forty-eight inch pipelines. At present, the Transitgas Pipeline system consists of 292 kilometers from two parallel lines, which cross Switzerland from north to south. *See generally The Pipeline System*, *supra* note 524.

529 *Id.*

530 *Id.*

531 Christian Plüss, Gunthard Niederbäumer and Rolf Sägesser, *Risk Assessment of the Transitgas Pipeline*, 45 PIPES & PIPELINES INT'L 33 (2000).

adequately regulate the suggested pipelines and monitor enforcement of those regulations, which is likely not the case for all host states.[532]

Applying standards prescribed by the agreement and exempting or freezing the domestic law of the host state is more complex. Many cross-border pipeline agreements between host states and investors contain a uniform set of regulations in the annexes of the agreements, but compliance with domestic regulations is excluded.[533] Freezing clauses are also common in such agreements.[534] For instance, environmental and safety regulations were frozen for the entire forty-year period of the Baku-Tbilisi-Ceyhan (BTC) pipeline agreement.[535] Additionally, according to the HGAs that were settled under the ECT, a wide range of the technical codes and environmental standards are described in the annex of relative agreements.[536] As shown above,[537] the operator in charge has a discretionary power to implement such regulations, as occurred with the South Caucasus Gas Pipeline and the BTC oil pipeline.[538] Furthermore, in such cases, the operator is usually largely exempted from compliance with local environmental regulations by invoking the particular contractual clause.[539] As a result, the role of the host state in protecting the public interest and, more particularly, environmental interests is largely undermined.[540]

Although host states still have the right to monitor safety and

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532 Christopher P.M. Waters, *Who Should Regulate the Baku-Tbilisi-Ceyhan Pipeline?*, 16 GEO. INT'L ENVTL. L. REV. 403, 407 (2004).

533 *See e.g.*, Host Governmental Agreement Between and Among the Government of Georgia and State Oil Company of the Azerbaijan Republic, *supra* note 323, app. 4.

534 Redgwell, *supra* note 163, at 106.

535 *See* Waters, *supra* note 532.

536 *See e.g.*, Host Governmental Agreement Between and Among the Government of Georgia and State Oil Company of the Azerbaijan Republic, *supra* note 323, app. 4 (explaining technical codes and environmental standards).

537 *See Infra* Sec. III.

538 *See* Host Governmental Agreement Between and Among the Government of Georgia and State Oil Company of the Azerbaijan Republic, *supra* note 323, apps. 4, 5.

539 *See generally* Waters, *supra* note 532, at 403, 404 (arguing that the formulation of agreements between host governments and oil companies allows the oil companies to bypass adherance to local regulations).

540 *See generally id.* (arguing that the formulation of agreements between host governments and oil companies allows the oil companies to bypass adherance to local regulations).

environmental regulations as regulated in the agreement and may have the right to monitor the enforcement of the regulation with which the operator should comply, the host state may be confronted with a variety of difficulties in exercising this monitoring task. In examining the effectiveness of this model, three elements can be considered: substances and quality of these standards, enforcement mechanisms, and public participation.

These standards are widely considered as stringent and internationally compatible.[541] For example, the BTC and SCP pipelines' standards should be as stringent as EU standards.[542] Hence, standards chosen by operators are of sufficiently high quality to satisfy critics.[543] Some view internationally compatible and acceptable standards as well known regulations, but developing countries as host states generally have less stringent oil and gas pipeline regulations than developed countries.[544] Furthermore, host state governments do not properly enforce regulations.[545] Thus, implementing international standards will protect environmental interests better than local regulations. This observation might be correct to the extent that it deals with the quality of regulations, but there are some doubts concerning the effectiveness of monitoring and enforcing the mentioned regulations.[546] Self-regulations, trade association codes, and national standards are usually complemented by requiring public monitoring, public enforcement, and other complementary environmental enforcement mechanisms.[547]

First, as previously described, a wide range of regulations

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541 Redgwell, *supra* note 163, at 109.

542 Due to the criticisms which arose in relation to unclear external references to safety standards envisaged in the BTC pipeline agreement in 2003, the host states and the BTC Company issued a Joint Statement to explain this ambiguity. They explicitly mentioned that safety standards should not be less stringent than relevant standards applicable to comparable projects in the Netherlands. They also added Austrian standards as a basis for mountainous or earthquake-prone areas. *Id.*

543 *See id.*

544 *See* Waters, *supra* note 532, at 405.

545 *See* Eaton, *supra* note 123, at 282.

546 *See* Waters, *supra* note 532, at 405; Eaton, *supra* note 123, at 282.

547 For example, in the United States an abundant number of environmental and safety regulations complement trade-association codes of conduct. *See, e.g.*, The Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, Pub. L. No. 112-90 (2012).

might be provided in the agreement.[548] Additionally, the reference to the regulations described in the agreements might be ambiguous and unclear.[549] For example, the agreements may refer to "international standards and practices within the petroleum pipeline industry" or "international gas pipeline industry for comparable projects."[550] As a consequence, there can be uncertainty concerning meaning and interpretation of such phrases.[551] The operator is allowed to select its own standards.[552] Accordingly, monitoring compliance with standards becomes very difficult for the host states public authorities or other independent watchdog organizations.[553] The enforcement of regulations is mainly the responsibility of the operator.[554] Hence, if the public authorities sought to inspect the pipeline, they must give prior notification[555] and monitor compliance with the agreed standards rather than their own domestic regulations. Since these environmental and safety regulations have not been established by the public authorities of the host state, the host state may not be familiar with the applicable standards.[556] Lacking information regarding the contents and precise meaning of those standards can make effective monitoring very difficult.[557]

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548 For instance, in the SCP HGA with Georgia, twenty-six technical standards were prescribed and the possibility of using other western standards was reserved. *See* Host Governmental Agreement Between and Among the Government of Georgia and State Oil Company of the Azerbaijan Republic, *supra* note 323, app 4.

549 *See id.*

550 *Id.* This wording contains a wide range of standards. *See* Alexandra S. Wawryk, *International Environmental Standards in the Oil Industry: Improving the Operations of Transnational Oil Companies in Emerging Economies*, 1.1 OIL, GAS & ENERGY L. INTELLIGENCE (2003) (discussing the meaning and dimension of international standards and practices within petroleum industries).

551 *See* Wawryk, *supra* note 550.

552 *See Infra* Sec. 1, Subsec. b [the Unified Model].

553 *See id.*

554 *See id.*

555 *See generally* Host Governmental Agreement Between and Among the Government of Georgia and State Oil Company of the Azerbaijan Republic, *supra* note 323 (noting several requirements for notifications before pipe inspections).

556 Natalie L. Bridgeman & David B. Hunter, *Narrowing the Accountability Gap: Toward a New Foreign Investor Accountability Mechanism,* 20 GEO. INT'L ENVTL. L. REV. 187, 195 (2008).

557 The lack of human, financial, and institutional resources in host states often leads to ineffective monitoring and enforcement. *Id.* Additionally, the lack of technical information of host states in relation to MNCs activities is highlighted in another study.

In this case, an environmental and safety regulatory regime is effectively established by the regulation created or selected by the MNC. Authorities of the host state may have great difficulty in obtaining adequate information on the applicable standards and compliance.[558] This problem might appear in the case of cross-border pipelines when the uniform regulatory regime has been applied to a pipeline with limited accessible information for the public authorities.[559]

Thus, if a MNC was exempted from compliance with the environmental and safety regulations of a host state on the basis of a contractual clause, some questions concerning the effectiveness of such a regulatory regime can be asked. These internationally compatible standards should be enforced properly and monitored by the public authorities in charge. If public monitoring is not possible, compliance with regulations by the MNC becomes questionable. Moreover, the issue is not only one of inappropriate enforcement. Often the MNC may de facto choose its own private standards.[560] It is well known that those private standards are not always set in the public interest since the MNC is primarily interested in profit maximizing.[561] Even if the MNC set high quality safety standards without a guarantee of an appropriate enforcement and monitoring, the effective control of transboundary environmental pollution cannot be guaranteed.[562]

For the uniform set of regulations like in the SCP project, the EIA, the risk assessment, and the emergency response plan shall be prepared by independent consulting firms under contract by the

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See M.A. BADERIN & M. SSENYONJO, INTERNATIONAL HUMAN RIGHTS LAW: SIX DECADES AFTER THE UDHR AND BEYOND 527 (2010).

558 *See generally* X. Wu, *Pollution Havens and the Regulation of Multinationals with Asymmetric Information,* 3 CONTRIBUTIONS IN ECON. ANALYSIS & POL'Y 1 (2004). (PINCITE?)

559 *See, eg.*, Waters, *supra* note 532, at 415 (asserting that in the BTC pipeline, the Environment Ministry of Georgia criticized BP's EIA, accusing BP of giving little weight to risks endangering the Bajori protected area presented as a route of the pipeline to the Environment Ministry).

560 *See generally* Baker *supra* note 521 (providing arguments in favor of applying private codes of conduct by MNCs).

561 KEMA IROGBE, EFFECTS OF GOBALIZATION IN LATIN AMERICAN AFRICA AND ASIA: A GLABL SOUTH PERSPECTIVE 15 (2014); *see also* E. Morgera, Corporate Accountability in Inernational Environmental Law 5-9 (Oxford University Press, 2009).

562 *See* Hanakova, *supra* note 31.

operator.[563] The host state authorities can only approve the EIA and other assessments that have been prepared in accordance with the terms of the relevant agreement and not according to the domestic regulations of the host state.[564] A uniform EIA to the entire length of a pipeline will help avoid tensions in integrating distinct EIA reports for the same project in different countries.[565] Nevertheless, local communities' concerns should not be underestimated.[566] Since the local communities in affected states can participate in the EIA procedure as well, their participation can guarantee that at least the environmental concerns of the affected states are taken into account.[567] Additionally, public participation in EIA procedures should be accompanied by access to justice through the courts or other relevant administrative bodies, as some regulatory instruments such as the EU directive on EIA[568] mandated. Otherwise, the comments presented by the public can be ignored.

The importance of this issue is highlighted by drawing attention to the terms of the Espoo Convention, which requires the participation of all states concerned in the EIA procedure.[569] This procedure, which is also compulsory for cross-border pipelines, provides realistic insight into the necessity of concerned states' participation.[570] Accordingly, the respective states can scrutinize the EIA report based on their own environmental regulations and can ask for more information about adverse impacts of the project.[571] Meanwhile, if a respective state has no right to

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563 *See* Host Government Agreement Between and Among The Government of Georgia and State Oil Company of the Azerbaijan Republic, *supra* note 323, app. 4.

564 *Id.*

565 Hernández, *supra* note 420, at 46.

566 *See generally* Bridgeman & Hunter, *supra* note 556 (suggesting a new mechanism with the participation of local communities to narrow the gap of accountability of MNCs).

567 *See generally id.* (suggesting a new mechanism with the participation of local communities to narrow the gap of accountability of MNCs).

568 Directive 2011/92, of the European Parliament and of the Council of 13 December 2011 on the Assessment of the Effects of Certain Public and Private Projects on the Environment, 2011 O.J. (L 26) art. 11.

569 *Nord Stream Environmental Impact Assessment Documentation for Consultation under the Espoo Convention*, NORD STREAM 61-92 (Feb. 2009), https://www.nord-stream.com/press-info/library/ (search document title and download).

570 *Id.*

571 *Id.* at 62.

scrutinize and confirm the EIA and similar reports, the state may not meet its environmental obligations properly.[572]

In addition, doubts exist about the reliability of EIAs that are carried out by international firms due to repeat–player situations with particular large MNCs.[573]

In conclusion, when a uniform set of regulations is prioritized over national regulations, applying a unified regulatory model makes it difficult for host states to control the conduct of MNCs.[574] Furthermore, when public authorities lack adequate information about the adverse impacts of such projects and are not able to monitor the application of such regulations appropriately, an operator may maximize its own interests rather than public interests.[575]

In addition, many commentators doubt the accountability of MNCs with regard to effective protection of the environment.[576] In that case, a uniform regulatory regime without participation of public authorities will increase possible contamination problems and public health risks.[577] This article has noted potential flaws in the regulatory model applicable to cross-border pipelines. The current model strongly relies on industrial operators selecting a set of different standards, which may equally include private standards. This reliance raises important questions concerning the ability of public authorities to adequately monitor compliance with those standards. Whether this gives rise to ineffective safety standards in practice is an issue, although beyond the scope of this article.

However, it is striking that in an area such as cross-border transport of oil and gas, which potentially can and does cause both serious personal and environmental damage, there is a strong reliance on operators' ability to choose their own optimal

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572 *See id.*

573 *See, e.g.*, PATRICK MCCULLY, SILENCED RIVERS: THE ECOLOGY AND POLITICS OF LARGE DAMS 55 (Zed Books Limited, 2001).

574 *See* discussion *supra* [earlier within this section].

575 *See id.*

576 E. MORGERA, CORPORATE ACCOUNTABILITY IN INTERNATIONAL ENVIRONMENTAL LAW 25 (Oxford University Press, 2009); *see e.g.*, Michael Anderson, *Transnational Corporations and Environmental Damage: Is Tort Law the Answer*, 41 WASHBURN L. J. 399 (2002).

577 *See Infra* Sec. 1, Subsec. b [the Unified Model].

standards. Since operators will primarily strive for profit maximization, there are doubts that adequate internalization of risks caused by transboundary pollution will take place in a model where adequate public enforcement is lacking.

V. Concluding Remarks

Cross-border oil and gas pipelines play an important role in the global energy trade.[578] Parties involved in such projects typically seek to avoid political and economic turbulence in transporting oil and gas via pipelines.[579] Parties involved try to prevent pipeline accidents and, in the case of an accident, try to minimize incurred harm by the most appropriate means.[580] In addition, parties involved are not eager to publish the details of accidents when they are not obliged to do so.[581] Meanwhile, according to published data, cross-border pipelines have led to a lower number of accidents compared to cross-country pipelines.[582] Nevertheless, accidents are still widespread, imposing personal injuries on victims, environmental damage, and economic losses.[583]

It is striking that there is no international convention specifically dealing with safety standards for cross-border pipelines or compensation of harm that results from cross-border pipeline accidents. The international community has instead incorporated regulations into multilateral and bilateral agreements by formulating a few model agreements.[584] As the current international framework stands, regulations on the safety of cross-border pipelines consists of private agreements between various operators and governments, which provides the parties involved the discretionary power to apply particular safety and environmental standards.[585]

The law and economics theory adopted in this contribution holds that operators will maximize their own utility and, as industrial operators, their own profits. In the absence of legal

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578 *See Infra* Sec. I.

579 *See id.*

580 *See id.*

581 *See id.*

582 *See* Papadikis, *supra* note 3.

583 *See id*; *see also* Muhlbauer, *supra* note 7.

584 *See Infra* Subsec. b. [Model Agreements for Cross-Border Pipelines].

585 *See id.*

rules, environmental costs may be externalized.[586] Currently, existing conventions, such as UNCLOS[587] and the Espoo Convention,[588] do not sufficiently guarantee externalization of transboundary pollution via cross-border pipelines. The creation of a more appropriate international legal framework with clear and harmonized safety and environmental standards is needed. This legal framework should allow public authorities to effectively enforce compliance, thus preventing the externalization of pollution costs to local communities across borders.

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586 *See id.*

587 UNCLOS, *supra* note 198.

588 *See* Espoo, *supra* note 200.