



University of Southampton

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**Incentivising the adoption of a global liability regime for
transboundary harm from offshore oil and gas incidents**

by

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Thesis for the degree of Doctor of Philosophy

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Abstract

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In June 2017, Heads of States convened in New York to uphold their “strong commitment” to ensure the sustainable use of oceans, seas and marine resources.¹ This direction is by no means novel. The sovereign right of States to exploit natural resources located under the seabed within their jurisdiction has traditionally been counterbalanced by their general obligation to protect and preserve the marine environment and to prevent transboundary harm to neighbouring States.

This thesis examines how the integration of the precautionary principle within the obligation of States to prevent transboundary harm from offshore activities under their jurisdiction contributes in the development of international environmental law to align with established international policy objectives. It advances that this integration refines the procedural and substantive facets of the obligation so as to require States to adopt one or more liability regime(s) dealing with such harm. Ultimately, it purports to present a legal argument in support of a policy action which adequately balances the aforesaid obligation and the sovereign right of States to exploit natural resources offshore. In doing so, it contributes towards the attainment of sustainable development.

¹ UNGA Res 71/312 (6 July 2017), Our ocean, our future: call for action, UN Doc A/Res/71/312.

Table of Contents

Abstract.....	i
Table of Contents.....	iii
Research Thesis: Declaration of Authorship.....	vii
<i>Acknowledgments</i>	ix
Key abbreviations	xiii
I- Introduction	1
II- Methodology	23
III- Global <i>status quo</i> of the current liability regimes, and the roots of a possible way forward	29
1. Analysis of the existing instruments dealing with liability from offshore pollution.....	31
A- Global Conventions	31
B- Regional Instruments	37
C- National Legislation.....	48
2. Legal underpinnings of a prospective global liability regime applicable to damages from offshore activities	60
A- Strict liability.....	61
B- Limitation of liability	65
C- Channelling and apportionment of liability	68
D- Mandatory financial security.....	71
E- Other elements	72
IV- The obligation of States to prevent transboundary harm from offshore incidents under their jurisdiction	77
1. The legal underpinnings of a “primary obligation” the breach of which could be relied upon to invoke State responsibility.....	78
2. Complexities attached to the invocation of the breach of the obligation to prevent transboundary harm from offshore activities.....	83
A- The standard of fault required for a breach by a State of its obligation to prevent transboundary harm from “hazardous” and “ultra-hazardous” activities .	83
B- The imprecision of the due diligence standard	94

V-	Regulation of safety and environmental protection in offshore activities across the globe and prospects of a global rapprochement in the field.....	115
1.	Overview of global regulator regimes of offshore oil and gas activities ..	117
A-	The United States Offshore Regulatory Regime	117
B-	The Norwegian Petroleum Regulatory Regime.....	121
C-	The UK Offshore Health and Safety Regulatory Regime	126
D-	The Australian Offshore Regulatory Regime.....	131
E-	The Offshore Safety Directive (EU)	136
F-	Regulation through State-owned companies	143
2.	Discussion: implausibility of consistent State practice to support the existence of customary international law defining the content of the obligation of States to prevent transboundary harm	150
A-	Findings and reflections	150
B-	Prospective international safety regime for offshore activities?	153
VI-	The precautionary principle and its relevance to the prevention of transboundary harm from offshore incidents.....	189
1.	The precautionary principle operating within a principled system of rules	190
2.	Which uncertainties are relevant for the invocation of the precautionary principle?	197
3.	Which threshold should be crossed for the precautionary principle to be invoked to guide the regulation of risks of transboundary harm from offshore incidents?	205
VII-	Support behind the reliance on the precautionary principle to delimit the obligation to prevent transboundary harm from offshore incidents	222
1.	General academic support behind the reliance on the precautionary principle	222
2.	Case-law	226
VIII-	The precautionary principle: a principle of international law affording solutions for the management of the risks of transboundary pollution from offshore incidents	245
1.	The role of the precautionary principle within risk regulation: risk assessment v. risk management	246
2.	The precautionary principle's role within the assessment of environmental risks posed by offshore activities.....	256
A-	The international obligation to assess the risks of transboundary harm from activities within States' jurisdictions through TEIA	256

B- Potential integration of the precautionary principle within TEIA	263
3. The precautionary principle's role in the management of the risks of transboundary pollution from offshore activities.....	281
A- Liability regimes as precautionary measures	281
B- Could TEIA support the decision to adopt one or more liability regime(s) applicable to transboundary pollution from offshore activities?	286
IX- Conclusions	297
Appendix I – Failed attempts to draft a global liability regime regulating the offshore industry	1
Appendix II- Developments of the International Law Commission (ILC) Works on Liability.....	5
Appendix III – Strategic Environmental Assessment.....	9
Bibliography	1

Research Thesis: Declaration of Authorship

Print name: Wassim Dbouk

Title of thesis: *Incentivising the adoption of a global liability regime for transboundary pollution from offshore oil and gas activities*

I declare that this thesis and the work presented in it is my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
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5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. Parts of this work have been published as: Michael Tsimplis and Wassim Dbouk, 'Performance-based Regulation and the Development of International Regulatory Uniformity in Offshore Oil and Gas Operations' in Günther Handl and Kristoffer Svendsen (eds) *Managing the Risk of Offshore Oil and Gas Accidents* (Edward Elgar Publishing 2019)

Signed

Mr Wassim Dbouk

Date: 31 October
2019

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To Zako...

Key abbreviations

[‘ALARP’]: As low as reasonably practicable
[‘BPR’]: Best Practices and Recommendations
[‘CtAu’]: Competent Authority
[‘ILC Articles on Prevention’]: Draft Articles on the Prevention of Transboundary Harm from Hazardous Activities
[‘EAP’]: Environment Action Programme
[‘EIA’]: Environmental Impact Assessment
[‘ELD’]: Environmental Liability Directive
[‘EMP’]: Environmental Management Plan
[‘EMS’]: Environmental Management System
[‘ECJ’]: European Court of Justice
[‘HSEP’]: Health and safety and environmental protection
[‘Draft Articles on State Responsibility’]: ILC Draft Articles on Responsibility of States for Internationally Wrongful Acts
[‘Draft Principles on Allocation of Loss’]: ILC Draft principles on the allocation of loss in the case of transboundary harm arising out of hazardous activities
[‘ICJ’]: International Court of Justice
[‘ILC’]: International Law Commission
[‘IMO’]: International Maritime Organization
[‘ITLOS’]: International Tribunal for the Law of the Sea
[‘NOC’]: National Oil Company
[‘OPOL’]: Offshore Pollution Liability Agreement
[‘OSD’]: Offshore Safety Directive
[‘OPA’]: Oil Pollution Act 1990
[‘SEMS’]: Safety and Environmental Management System
[‘SC’]: Safety Case
[‘SMS’]: Safety management system
[‘SEA’]: Strategic Environmental Assessment
[‘SDG’]: Sustainable Development Goal
[‘TEIA’]: Transboundary EIA
[‘UNCLOS’]: United Nations Convention on the Law of the Sea
[‘UNEP’]: United Nations Environment Programme
[‘WTO’]: World Trade Organization

I- Introduction

Crude oil is still the primary source of energy for the modern global economy. Within the oil and gas mining industry, the role of extracting oil and gas from reserves located beneath the Earth's oceans ['offshore activities'] is key.¹ In that sector, improved economic conditions, new technologies and exhaustion of shallow offshore resources stimulated the expansion of exploration and exploitation operations into virgin areas calling for drilling at constantly greater depths, commonly referred to as "deepwater drilling".² As forecasts indicate a steady increase of deepwater exploration and exploitation in various offshore regions of the world, and prospects of important discoveries of new areas have emerged (notably in West Africa and the East Mediterranean), it appears that the rush to deepwater offshore oil and gas activities is mounting.³

¹ Offshore drilling in the Gulf of Mexico produces nearly a third of the United States' total production of crude oil. See Clifford Kraus, 'Accidents Don't Slow Gulf of Mexico Drilling' *New York Times* (New York, 23 April 2010) A17. According to EUROSTAT and the petroleum national authorities, in 2012 the Offshore Crude Oil Production of EU-28 corresponded to almost 9% of the Gross Petroleum Products Consumption. See 'Offshore Oil and Gas Production in Europe' <<https://euoag.jrc.ec.europa.eu/node/63>> accessed 23 October 2019.

² Deepwater drilling corresponds to offshore drilling at depths of more than 125 m. Deepwater production has increased 25% between 2005 and 2015. The increase is even more apparent in relation to ultra-deepwater production. See the statistics developed by the United States Energy Information Administration: Matthew Manning, 'Offshore Oil Production in Deepwater and Ultra-Deepwater is Increasing' <<https://www.eia.gov/todayinenergy/detail.php?id=28552>> accessed 23 October 2019; see also Emil Attanasi, Philip Freeman and Jennifer Glovier, 'Statistics of Petroleum Exploration in the World Outside the United States and Canada Through 2001' (US Geological Survey, Reston, Virginia 2007) <<https://pubs.usgs.gov/circ/1288/c1288.pdf>> accessed 22 December 2016 at 14 and 18.; See also, Laura Wood, 'Deepwater Activity Statistics - New Discoveries Worldwide Driving Deepwater E&P Activity and Demand for Semisubmersibles and Drillships' (*Research and Markets*, 18 June 2013) <<http://www.prnewswire.com/news-releases/deepwater-activity-statistics---new-discoveries-worldwide-driving-deepwater-ep-activity-and-demand-for-semisubmersibles-and-drillships-211945511.html>> accessed 22 December 2016.

³ See for example, Chris Lo, 'Timeline: Game-Changing Gas Discoveries in the Eastern Mediterranean' (*Offshore Technology*, 13 December 2017) <<https://www.offshore-technology.com/features/timeline-game-changing-gas-discoveries-eastern-mediterranean/>> accessed 11 July 2018; see also 'Deepwater Drilling – Next Major Source of Oil Growth' (*Seeking Alpha*, 9 January 2017) <<https://seekingalpha.com/article/4035313-deepwater-drilling-next-major-source-oil-growth>> accessed 26 August 2019, exploring the potential for deepwater drilling in various regions in the world, and predicting a 250% increase in deepwater production by 2030.

However, the economic and social benefits of these activities are counterweighted by the social cost of the concurrently increasing severity of the environmental risks they create.⁴ Recent accidents on offshore platforms in various regions have led to disastrous environmental harm, sometimes “caused in the territory of or under the jurisdiction or control of a State other than the State of origin” [hereinafter ‘transboundary harm’],⁵ most notably the Deepwater Horizon and Montara blowouts.⁶ Thus, the risk of environmental harm⁷ from catastrophic

⁴ It was once thought that “the rate of serious accidents will probably remain essentially constant with evolutionary improvements in equipment and procedures being balanced by a move into deeper waters and more hostile environments”; see Don Kash, Irvin White and others, *Energy under the oceans: a technology assessment of outer continental shelf oil and gas operations* (Norman: University of Oklahoma Press, 1973) at 117. Moreover, it is noteworthy that deeper drillings lead to higher blowout pressure which in turn leads to higher blowout frequency and risks causing the spilling of greater amounts of oil into the marine environment, see ‘The probability of an offshore accident’ (*Officer of the Watch*, 6 August 2013) <<https://officerofthewatch.com/2013/08/06/the-probability-of-an-offshore-accident/>> accessed 12 February 2016.

⁵ ILC Draft Articles on the Prevention of Transboundary Harm from Hazardous Activities, ‘Report of the International Law Commission on the Work of its Fifty Third Session’, Yearbook of the International Law Commission, 2001, vol. II, Part Two, submitted to the General Assembly as a part of the Commission’s report covering the work of that session (A/56/10), Art.2(c).

⁶ In August 2009, the Montara blowout within the Australian Exclusive Economic Zone (EEZ) led to a major oil leak the repercussions of which were felt Indonesian coastal communities with estimate losses piling up to \$1.5 billion/year. See George Roberts, ‘Australian Oil Disaster ‘Costing Indonesians Billions’ (ABC News, 26 July 2012) <<http://www.abc.net.au/news/2012-07-26/australian-oil-disaster-costing-indonesians-billions/4155474>> accessed 23 October 2019. More recently, in 2010, the Deepwater Horizon incident in the Gulf of Mexico caused one of the worst oil spills in history, which resulted in a Mexican class action lawsuit being filed against BP (the operator) claiming costs for clean-up of Mexican waters and compensation for damage caused to marine life, see Nina Lakhani, ‘BP Faces Mexican Class Action Lawsuit over Deepwater Horizon Oil Spill’ (*The Guardian*, 11 December 2015) <https://www.theguardian.com/environment/2015/dec/11/bp-gulf-oil-spill-mexico-lawsuit-deepwater-horizon?CMP=share_btn_link> accessed 3 May 2018.

⁷ The challenges surrounding the clear definition of environmental harm are acknowledged but exceed the scope of this thesis. For an overview see Michael Bowman, ‘The Definition and Valuation of Environmental Harm: an Overview’ in Michael Bowman and Alan Boyle (eds) *Environmental Damage in International and Comparative Law: Problems of Definition and Valuation* (OUP 2002); see also Marie-Louise Larsson, ‘Legal Definitions of the Environment and Environmental Damage’ [1999] 38 Scandanavian Studies in Law 155. For the purposes of this study, we are adopting the definition of “pollution of the marine environment” as broadly provided for in the United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 397 [‘UNCLOS’], namely that it corresponds to “the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living

deepwater offshore incidents is present across the globe, and its potential transboundary character gives it an international dimension.

These accidents flagged important regulatory gaps within the industry, both in relation to the safety and environmental protection from operations,⁸ and to the liability and compensation arrangements in case of transboundary harm.⁹

resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities”, UNCLOS, Art. 1. (4).

⁸ These are self-evident as safety regulations continue to fail in preventing accidents on offshore platforms. Offshore accidents continue to be reported even in recent years, for an overview see Kristel De Smedt and Hui Wang, ‘Offshore-Related Damage: Facts and Figures’ in Michael Faure (ed) *Civil Liability and Financial Security for Offshore Oil and Gas Activities* (Cambridge University Press 2017) 2.3-2.4. See also Bio by Deloitte, ‘Civil Liability, Financial Security and Compensation Claims for Offshore Oil and Gas Activities in the European Economic Area’, Final Report prepared for the European Commission, DG Energy (Brussels, 14 August 2014) <https://ec.europa.eu/energy/sites/ener/files/documents/BIO_Offshore%20Civil%20Liability_Revised%20Final%20Report%20%2831102014%29.pdf> accessed 5 May 2018 [‘Deloitte Liability Report’] at 178.

⁹ As yet, there is no global civil liability regime that deals with such pollution which would compensate victims for personal injuries or economic loss. See *Oil Spill Cost Study - OPOL Financial Limits*, Joint Study Commissioned by OPOL and Oil and Gas UK (2012) <<http://oilandgasuk.co.uk/wp-content/uploads/2015/04/Oil-spill-cost-study-120531.pdf>> [‘Oil Spill Study’], 66. See Chapter III for an overview of the non-existence of adequate liability regimes/instruments dealing with the issue of pollution from offshore activities. Indeed, to date, victims of the Montara incident have been left to bear the loss they have suffered themselves. For example, Indonesian seaweed farmers allegedly suffering financial loss and property damage as a result the Montara oil spill have filed a class action in the Federal Court of Australia seeking compensation for damage they have suffered on 3 August 2016. The incident occurred on 21 August 2009, almost 7 years before the suit was filed, causing leakage for 74 days at a rate of 400 to 1,500 barrels of oil per day. And a claim by the Indonesian government against PTTEP Australasia (the operator) on the grounds that pollution spread to its waters and caused damage was rejected by the latter on the basis of lack of sufficient scientific evidence. See Sharmini Murugason, ‘Cross-Border Pollution from Offshore Activities’ (2011) *Standard Bulletin: Offshore Special Edition* <<http://www.standard-club.com/media/1557899/cross-border-pollution-from-offshore-activities.pdf>> accessed 23 October 2019; ‘Montara Oil Spill Class Action’ <<https://www.mauriceblackburn.com.au/current-class-actions/montara-oil-spill-class-action/>> accessed 23 October 2019; Tim Henry, ‘A Thai Oil Firm, Indonesian Seaweed Farmers and Australian Regulators. What Happened after the Montara Oil Spill?’ (*Mongabay*, 14 February 2017) <<https://news.mongabay.com/2017/02/a-thai-oil-firm-indonesian-seaweed-farmers-and-australian-regulators-what-happened-after-the-montara-oil-spill/>> accessed 23 October 2019; and ‘Montara Oil Spill’ (*Revolvy*) <https://www.revolvy.com/topic/Montara%20oil%20spill&item_type=topic> accessed 23 October 2019.

Another notable example is the frequent oil spillage occurring over the past few decades in the Nigerian Delta. See generally Adati Ayuba Kadafa, ‘Oil Exploration and Spillage in the Niger Delta

However, inconsistently with the trend of the international community to develop treaty law in response to the occurrence of environmental disasters (frequently referred to as the “post-disaster syndrome”),¹⁰ discussions surrounding the suitability of the international framework currently regulating the industry have gone in vain. Instead, and in line with the rejecting stance taken by the International Maritime Organization [‘IMO’] in response to the Indonesian proposal for the development of a global liability regime dealing with harm from offshore oil and gas incidents [the ‘Indonesian Proposal’],¹¹ the global approach has, to date, been under the auspices of the United Nations Environment Programme [‘UNEP’] Regional Seas Programme.¹² Despite the latter having facilitated the development of conventions, protocols and action plans in various regions, these merely aim to establish cooperation among contracting States with regard to the particularities of each region.¹³ Within this context, the safety and

of Nigeria’ (2012) 2:3 Civil and environmental research <[http://pakacademicsearch.com/pdf-files/eng/453/38-51%20Vol%202.%20No%203%20\(2012\).pdf](http://pakacademicsearch.com/pdf-files/eng/453/38-51%20Vol%202.%20No%203%20(2012).pdf)> accessed 3 March 2017

¹⁰ Philippe Sands, Jacqueline Peel, Adriana Fabra and Ruth MacKenzie, *Principles of International Environmental Law* (3rd edn, Cambridge University Press 2012), 23.

¹¹ IMO, Report of the Legal Committee on the Work of its Ninety-Ninth Session, LEG 99/14 (24 April 2012); see also Iveta Stefankova, ‘International Regulation v. National Regulation on Offshore Oil Exploitation: the USA as an Example’ [2013] 3 ELSA Malta review 126, 131-133; Brij Dimri, ‘Offshore Platforms: a Legal Overview in Indian Ocean Perspective’ [2013] 9 Maritime affairs: journal of the National Maritime Foundation of India 80, 99-100.

¹² Established by a decision of the Governing Council of the UNEP in 1973, Action Plan for the Human Environment: Programme Development and Priorities, Decision 1, § III (12)(e)(iv), (June 22, 1973).

¹³ Michael Faure, Liu Jing and Wang Hui, “A Multilayered Approach to Cover Damage Caused by Offshore Facilities” [2015] 33 Virg Env L.J 356, 373. For example, Art. 3 of the Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil (adopted 14 October 1994, entered into force 24 March 2011) UN Reg. no. I-48454 [‘Barcelona Protocol’] imposes an obligation on contracting States to take either individually or through the international cooperation “all appropriate measures to prevent, [...], pollution in the Protocol Area resulting from activities” in function of inter alia “the best available techniques, environmentally effective and economically appropriate”. Art. 27 creates an obligation to cooperate in formulating “appropriate rules and procedures for the determination of liability and compensation for damage resulting from the activities dealt with” in the Protocol. These efforts for the strengthening of regional agreements on safety of offshore oil and gas activities lead to a rather unsatisfactory *status quo* where several risks are highlighted, notably the risk of “inappropriate, fragmented or inexistent regulations, leading to a protection of the environment at different speeds”, a risk of “non-implementation of national and/or regional agreements if States’ capacities are not strengthened” and a risk of “regulation by private norms only”, see Julien Rochette, Matthieu

environmental protection from offshore oil and gas activities, and, to a much lesser extent, compensation arrangements for harms caused by offshore incidents, have mainly been addressed at national level by States hosting the industry. This is consistent with the provision under UNCLOS that the sovereign right for States to explore and exploit natural resources in their territorial seas,¹⁴ their exclusive economic zones,¹⁵ and their continental shelves,¹⁶ should be “pursuant to *their environmental policies* and in accordance with their duty to protect and preserve the marine environment” (emphasis added).¹⁷ The most obvious exceptions to this *national* approach is evident in the [imperfect] development at European level of a framework dealing with these aspects, and the industry’s development of a liability regime applicable to harms from offshore oil and gas operations conducted in the North Sea. The latter regime arguably demonstrates the pressure which social responsibility could have on the industry to submit itself, to preserve the continuity of its activities, to binding rules of compensation for the potential environmental harm they risk causing. Problematically however, environmental policies and social responsibility are intrinsically and ultimately, until they are converted into legally *binding* international rules, matters falling under the scope of the exercise by States of their sovereignty over their respective territories. Consequently, the development of safety and environmental regulations and of liability regimes applicable to offshore oil and gas activities has been inconsistent across the globe, thus sanctioning accordingly inconsistent risk-averting behaviours from operators of offshore platforms worldwide.¹⁸

In parallel, the development of international environmental law has also been particularly stimulated by the growing broad awareness of the international

Wemaër, Lucien Chabason and Sarah Callet, ‘Seeing Beyond the Horizon for Deepwater Oil and Gas: Strengthening the International Regulation of Offshore Exploration and Exploitation’ [2014] 1/14 IDDRI SciencPo, 27 [‘IDDRI study’].

¹⁴ UNCLOS, Art. 2(1).

¹⁵ UNCLOS, Art. 56(1)(a).

¹⁶ UNCLOS, Art. 77(1).

¹⁷ UNCLOS, Art. 193.

¹⁸ Refer to Chapters III and V.

community of the imperatives of environmental protection and sustainable development since the 1970s.¹⁹ This awareness is traceable in renowned international policy declarations and agendas, most notably the Stockholm and Rio Declarations,²⁰ Agenda 21²¹ and the 2030 Agenda for Sustainable Development.²² The Stockholm and Rio Declarations consisted of an enumeration of Principles of, *inter alia*, international environmental governance, setting the course for the subsequent consistent development of binding international environmental law. Specifically, the Rio Declaration focused on Principles forming the basis of the overarching policy of sustainable development. It was then supplemented by action plans to be taken by States (among other public actors) as contained in the aforementioned non-binding Agendas.

In this regard, the 2030 Agenda for Sustainable Development set 17 “integrated and indivisible”²³ Sustainable Development Goals [‘SDGs’] reflecting the aspirations of the international community in relation to all socio-economic development till 2030. Of particular relevance is Goal 14: “Conserve and sustainably use the oceans, seas and marine resources for sustainable development”. Referring to the International Court of Justice’s [‘ICJ’] understanding of sustainable development, this Goal revolves around the manner in which oceans, seas and marine resources are to be used to reconcile the possibly concurrent objectives of economic development and protection of the environment.²⁴ Indeed, Heads of States had stressed the role which the use of

¹⁹ Sustainable development is now recognised as an “international legal concept”, see Sands *et al.*, note 10, 218; see also *Gabčíkovo-Nagymaros* (Hungary v Slovakia) Judgment, ICJ Reports 1997 [‘*Gabčíkovo-Nagymaros*’] [140].

²⁰ Declaration of the UN Conference on the Human Environment (Stockholm), UN Doc A/CONF/48/14/REV.1 [‘Stockholm Declaration’]; Declaration of the United Nations Conference on Environment and Development (Rio de Janeiro), UN Doc A/CONF.151/26 (vol. I) [‘Rio Declaration’].

²¹ UN Conference on Environment and Development, Agenda 21: Programme of Action for Sustainable Development (Rio de Janeiro), UN GAOR, 46th Sess., Agenda Item 21, UN Doc A/Conf. 151/26 (1992).

²² UNGA Res (21 October 2015), Transforming our World: the 2030 Agenda for Sustainable Development, UN Doc A/RES/70/1.

²³ *Ibid*, para 55.

²⁴ See *Gabčíkovo-Nagymaros* [141].

oceans could have in economic growth through its potential contribution to “poverty eradication, sustained economic growth, food security and creation of sustainable livelihoods and decent work” while simultaneously recognising the need to address the potential impacts of such use through the protection of biodiversity and the marine environment.²⁵ Consistently, paragraph 14.1 of the 2030 Agenda provides that in order for Goal 14 to be reached, States should aim to “prevent and significantly reduce marine pollution of all kinds”, and paragraph 14.c acknowledged the importance of the implementation of international law “as reflected in the United Nations Convention on the Law of the Sea” for ensuring the conservation and the sustainable use of oceans. This is a clear reflection of the intersection of international environmental *law* and *policy* on the subject.

Indeed, the Principles contained in the Stockholm and Rio Declarations are, at least initially, regarded as elements of *soft law* which, through their varying specific purposes, converge in encouraging the prevention and anticipation of harm to the environment from human activities. In doing so, they contribute in guiding towards the achievement of the aforementioned objective.²⁶ Most notably, Principle 21 of the Stockholm Declaration, which was then reiterated in Principle 2 of the Rio Declaration providing that States are responsible to “ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of jurisdiction”, i.e. the “no-harm” principle;²⁷ the principle of cooperation of States in the development and implementation of international environmental law;²⁸ the principle of preventive action [the ‘principle of prevention’];²⁹ the polluter-pays principle;³⁰ the principle of common but differentiated responsibility;³¹ and the precautionary

²⁵ UNGA Res 288 (11 September 2012), The future We Want, UN Doc A/RES/66/288, para 158.

²⁶ See Sands *et al.*, note 10, 29 ff and 41 ff.

²⁷ Discussed in Chapter IV-1.

²⁸ See for example Rio Declaration, Principles 5, 7, 9, 12, 13, 14, 24 and 27; Stockholm Declaration, Principle 22 and 24.

²⁹ Stockholm Declaration, Principle 7.

³⁰ Rio Declaration, Principle 16.

³¹ Stockholm Declaration, Principle 11, 23; Rio Declaration, Preamble, Principle 7, 11, 15.

principle,³² are all traceable in many of the Stockholm and Rio Declaration Principles. Moreover, Principle 17 of the Rio Declaration sets a policy approach of environmental impact assessment to be adopted by States where projected activities under their jurisdiction present the risk of causing significant detrimental consequences on the environment.

Within this context, we have witnessed, since the Stockholm and Rio Declarations, a surge in the elaboration and adoption of numerous international treaties and in works in the field of environmental protection reflecting the implementation of global environmental policy.³³ For the purposes of our discussion, notable examples include: UNCLOS; the International Law Commission's ['ILC'] Draft Articles on State Responsibility;³⁴ the ILC's Draft Articles on the Prevention of Transboundary Harm from Hazardous Activities ['ILC Articles on Prevention'];³⁵ and the Convention on Environmental Impact Assessment in a Transboundary Context.³⁶ Nevertheless, insufficient ratification by signatory States meant that efforts for the adoption of a global treaty dealing with liability for damage resulting from offshore oil and gas activities have been unsuccessful.³⁷

³² Rio Declaration, Principle 15; for the purposes of this study, and despite abundant literature on the subject, the precautionary *principle* and the precautionary *approach* (commonly used in legal writings across the Atlantic) are assumed to be equivalent, and are thus used interchangeably.

³³ See generally Sands *et al.*, note 10, 33 ff.

³⁴ ILC Draft Articles on Responsibility of States for Internationally Wrongful Acts, 'Report of the International Law Commission on the Work of its Fifty Third Session', Yearbook of the International Law Commission, 2001, vol. II, Part Two, submitted to the General Assembly as a part of the Commission's report covering the work of that session (A/56/10) ['Draft Articles on State Responsibility']

³⁵ ILC Draft Convention on the Prevention of Transboundary Harm from Hazardous Activities, 'Report of the International Law Commission on the Work of its Fifty Third Session', Yearbook of the International Law Commission, 2001, vol. II, Part Two, submitted to the General Assembly as a part of the Commission's report covering the work of that session (A/56/10).

³⁶ Convention on Environmental Impact Assessment in a Transboundary Context (adopted 25 February 1991, entered into force 10 September 1997) 1989 UNTS 309 ['Espoo Convention'].

³⁷ Convention on Civil Liability for Oil Pollution Damage resulting from Exploration for and Exploitation of Seabed Mineral Resources (adopted 1 May 1977, not yet in force) 16 ILM 1451 ['CLEE']. The Convention has been signed by six States, namely: Germany, the Republic of Ireland, the Netherlands, Norway, Sweden, and the UK. According to Art. 20 thereof, it shall enter into

That being said, some of the principles of *soft law* contained in the Declarations have developed to be established by international judges and prominent scholars in the field as obligation-creating norms of customary international law. For our purposes, notable examples are the no-harm principle;³⁸ and the obligation of States to assess the potential environmental impact of risk-creating activities planned within their jurisdiction.³⁹ The binding force of others however, most notably the precautionary principle,⁴⁰ remained unsettled despite the habitual reference thereto in the preambles of many international environmental treaties. Importantly, the no-harm principle, central to the imperative of environmental protection against transboundary harm, is supplemented by the less established latter principles.⁴¹

This hardening of the law bears considerable weight for the potential invocation of the responsibility of States for the environmental harm inflicted on neighbouring States from activities under their jurisdiction, as a successful such invocation rests upon the establishment of a breach by source States of one (or more) of their obligations of international law.⁴² It follows that, theoretically speaking, the breach of a State, under the jurisdiction of which offshore oil and gas activities are being undertaken, of an obligation derived from the no-harm duty incumbent upon it, exposes it to the potential invocation of its responsibility by affected victim States. This process is however hampered by the latter duty's lack of specificity, vital for ascertaining the expected behaviours of States in attempting to satisfy it. In fact, it rests upon the "due diligence" concept which entails that States are required under international law to take all the *appropriate* measures to prevent transboundary harm. However, legal analysis of the concept

force for States having ratified it on the ninetieth day following such ratification. To date, none have done so.

³⁸ Refer to Chapter IV-1; UNCLOS, Art. 194.2.

³⁹ Refer to Chapter VIII-2.A; UNCLOS, Art. 206.

⁴⁰ Refer to Chapter VI.

⁴¹ Jacqueline Peel and David Fisher, 'International Law at the Intersection of Environmental Protection and Disaster Risk Reduction' in Jacqueline Peel and David Fisher (eds) *The Role of International Environmental Law in Disaster Risk Reduction* (Brill Nijhoff 2016), 6.

⁴² Refer to Chapter IV-1.

of due diligence acknowledges its variable nature in accordance with the degree of the risk of harm posed by the hazardous activities in question,⁴³ which makes the no-harm duty overly flexible, and renders the determination of the specific measures which States are expected to adopt towards achieving it challenging.⁴⁴ In turn, the ensuing ambiguity arguably encourages States to permit riskier offshore oil and gas activities under their jurisdiction, prioritising economic growth to the detriment of adequate environmental protection, and thus moving away from sustainable development.

More specifically, the appropriate measures incumbent upon States broadly relate to the policies they adopt and to the resulting legal infrastructure they implement in managing the transboundary risks created by hazardous activities within their jurisdiction. In that regard, the sovereign right of States to exploit natural resources pursuant to their national environmental policies is tempered as the development of international environmental law and policy places them under the umbrella of the duty to prevent transboundary harm. Accordingly, and as hinted at above, States hosting offshore oil and gas activities have naturally developed their safety and environmental protection regulations applicable to the industry. These have been subject to review, and in many instances, important revisions, following major incidents on offshore platforms leading to catastrophic human and environmental consequences.⁴⁵ Moreover, a trend to adopt liability regimes internalising the costs of the detrimental consequences of offshore oil and gas incidents to the operators of offshore platforms (as creators of the risk in question), and operating in parallel to existing health, safety and environmental protection regulations, is traceable among developed States hosting offshore activities⁴⁶ and in the works of the ILC.⁴⁷ Furthermore, and conceding to the challenges of ascertaining the specific substantive obligations stemming from the no-harm principle, legal analysis surrounding the no-harm requirement relied on

⁴³ Refer to Chapter IV-2.

⁴⁴ Ibid.

⁴⁵ Refer to Chapter V.

⁴⁶ Refer to Chapter III-1

⁴⁷ Appendix II.

supplementary legal principles to move towards its proceduralisation.⁴⁸ For example, States have internationalised their national policy of prior environmental impact assessment of risk-creating-activities proposed within their jurisdiction. This policy direction was followed by the development and entry into force of global⁴⁹ and regional⁵⁰ treaties prescribing the duty, and the recognition thereof by the ICJ as a norm of customary international law.⁵¹ However, considerable confusion still clouds the particularities of such assessment. In fact, the ICJ ruled that its scope and content are not specified under general international law and must be left to the determination of each State, and settled for prescribing that it should be conducted with due diligence.⁵² Thus, the role which the proceduralisation of the no-harm principle plays in defining the content of the obligations which it imposes upon States remains limited, and reliance on other supplementary principles for these purposes is all the more justifiable.

In this regard, the precautionary principle is also relevant for the interpretation of the no-harm duty incumbent upon States. The latter comes into play in situations where science cannot afford decision-makers with sufficient certainty, surrounding the potential detrimental consequences of an activity, to allow them to adopt appropriate risk-averting-measures.⁵³ The principle, more commonly referred to across the Atlantic as an *approach*, constitutes one of the pillars of EU law,⁵⁴ and is referred to in the preambles of numerous environmental treaties and

⁴⁸ International Law Association Study Group on Due Diligence in International Law – Second Report (July 2016) <<http://www.ila-hq.org/index.php/study-groups?study-groupsID=63>> accessed 28 February 2019 [‘ILA Study Group on Due Diligence’], 3.

⁴⁹ Most notably the ESPOO Convention.

⁵⁰ For example Barcelona Protocol, Art. 5, 21, and Annex IV.

⁵¹ *Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Judgment) [2010] ICJ Rep 14, [‘*Pulp Mills*’] [205].

⁵² *Ibid.*

⁵³ Principle 15 of the Rio Declaration reads: “[...]. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation”.

⁵⁴ Consolidated Version of the Treaty on the Functioning of the European Union [2012] OJ C 326/47, Art. 191.2.

in inter-State disputes before international courts and tribunals.⁵⁵ Relatively less-established than the no-harm principle, its legal status as a stand-alone norm of customary international law and its specific implications remain debatable. Nevertheless, recent developments of international environmental law highlight the role which the principle could play in the management of risk-creating-activities through its integration within an established body of *binding* rules. In this regard, the Seabed Dispute Chamber of the International Tribunal for the Law of the Sea [‘ITLOS’]⁵⁶ produced an advisory opinion, adopted unanimously in 2011, whereby, citing its relevance for the interpretation of Art. 194.1 and Art. 194.2 of UNCLOS, it pronounced in broad terms that “the precautionary approach is also *an integral part* of the general obligation of due diligence”.⁵⁷ One year later, the participants at the United Nations Conference on Sustainable Development (Rio +20), in the political (non-binding) outcome document produced following the Conference which prescribed the practical measures to be taken for the purposes of implementing the sustainable use of the oceans and their resources, committed to “effectively apply an ecosystem approach and the precautionary approach *in the management, in accordance with international law*, of activities having an impact on the marine environment” (emphasis added).⁵⁸ Thus, analysis of the developments of the law surrounding the obligation of States to prevent transboundary harm from activities under their jurisdiction is relevant for the implementation of the global policy direction supporting reliance thereon in the management of risks of harm to the marine environment.

Of course, experience has shown that offshore oil and gas operations certainly fall under category of activities having an impact on the marine environment.

⁵⁵ Discussed in Chapter VII.

⁵⁶ An independent judicial body established by UNCLOS to adjudicate disputes arising out of the interpretation and application of the Convention.

⁵⁷ Advisory Opinion of the Seabed Dispute Chamber of the International Tribunal for the Law of the Sea on the “Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area”, Advisory Opinion of the 1st of February 2011, case no.17 [‘ITLOS Advisory Opinion’] [131].

⁵⁸ The Future We Want, note 255, para 158.

However, uncertainty surrounds whether the consequences of incidents on board offshore platforms would be *significant* and *transboundary* in nature.⁵⁹ For example, recent oil spills from incidents on board offshore platforms in the North Sea have been no more than local in their effects.⁶⁰ Indeed, numerous factors must be examined before we could speak of any accurate description of the predicted significance of transboundary environmental harm potentially resulting from offshore oil and gas incidents. Problematically, the scientific techniques conventionally employed to perform such examinations are in themselves marked with limitations, and include inherently inaccurate methods such as assumption making, hypothesis setting and impact modelling. Therefore, the extent of the detrimental consequences of offshore oil and gas incidents cannot be accurately predicted, and thus, decision-makers are faced with the dilemma of operating in the dark as they attempt to employ appropriate risk-averting-measures.

In light of the foregoing, and as experts in the field and international judges support a role for the precautionary principle in defining the content of the no-harm duty incumbent upon States,⁶¹ this thesis explores *how* the principle operates within a pre-established principled system of environmental rules designed to oblige States to prevent the occurrence of significant transboundary harm from offshore activities under their jurisdiction. It argues that the principle interacts with the obligation of States to assess the transboundary impacts of activities under their jurisdiction, and mandates that States err on the side of caution through accounting for worst-case scenarios as supported by plausible

⁵⁹ An analysis of the level of environmental protection applicable to transboundary harm is conducted in Chapter VI. This corresponds to the applicable threshold the crossing of which triggers the invocation of the no-harm duties incumbent upon States. In short, only *significant* transboundary harm is prohibited under international environmental law.

⁶⁰ Fiona Harvey, 'Oil Spill Investigation Begins as Shell Plugs North Sea Leak' (*The Guardian*, 22 August 2011) <<https://www.theguardian.com/environment/2016/oct/03/bp-platform-leaks-95-tonnes-oil-into-north-sea>> accessed 12 September 2019; Adam Vaughan, 'BP Platform Leaks 95 Tonnes of Oil into North Sea' (*The Guardian*, 3 October 2016) <<https://www.theguardian.com/environment/2011/aug/22/shell-north-sea-oil-leak>> accessed 12 September 2019.

⁶¹ Refer to Chapter VII.

indications in conducting such assessment (procedural facet of the no-harm duty). It is then advanced that the information made available for States following such impact assessment approach would be vital for determining the appropriate measures which States would arguably be expected to adopt to prevent the occurrence of significant transboundary harm (substantive facet of the no-harm duty). In other words, the precautionary principle would contribute towards the sustainable use of the oceans through indirectly mandating that States optimise environmental protection to correspond with the highest degree of risk posed by offshore activities under their jurisdiction as signalled by scientific *indication* (as opposed to *conclusive evidence*). The argument is then tied to existing theories of law and economics advancing that liability regimes, making polluters pay for the potential harms they cause, incentivise the latter to adopt optimal levels of care in their operations. The latter theories, and the abovementioned trend in developed States to adopt liability regimes in parallel to regulations for safety and environmental protection from offshore activities within their jurisdiction, are thus relied upon to advance that such approach from States in their management of the risks created by these activities is a cost-effective, efficient, and expected behaviour to satisfy their no-harm duties as refined via the precautionary principle. In that sense, the development of the law as argued in this thesis further limits the manner in which States sovereignly exploit natural resources offshore, as it influences the environmental policies which they are expected to adopt to protect against harm to other States and their marine environment. In turn, and bearing in mind the operation of the law of State responsibility, this development entails that failure by States to meet this expected behaviour exposes them to plausible allegations by neighbouring States of their breach of an international obligation. This would hopefully encourage the elaboration by States of relevant liability regimes either nationally, regionally or internationally. That being said, on the one hand, the risks of significant transboundary harm from offshore incidents are arguably similar irrespective of the jurisdiction under which offshore activities are being conducted, and on the other hand, uniformity in liability rules applicable to offshore oil and gas operations across the globe brings

about increased practicality for operators active in various regions of the world.⁶² Therefore, the elaboration of a global such regime appears to be most sensible.⁶³

In light of all of the above, the research question is as follows:

“Could the application of the precautionary principle stimulate the development of a global liability regime dealing with transboundary harm from offshore incidents under State jurisdiction?”

In order to provide a comprehensive and well-supported answer to this question, this thesis firstly purports to analyse and synthesise the *status quos* in three interconnected fields, namely: (1) the obligation of States to ensure that no transboundary harm resulting from offshore activities under their jurisdiction occurs, (2) liability regimes affording compensation for oil pollution damage resulting therefrom, and (3) the regulation by States of safety of operations/environmental protection in offshore oil and gas activities. The objective is to demonstrate how the existing lack of definition of the content of the obligation of States to prevent transboundary harm from offshore activities under their jurisdiction paves the way for the management of the risks posed thereby

⁶² Chapter III demonstrates the promising prospects of a global uniformity in liability rules applicable to the industry.

⁶³ The scope of the liability regime stimulated by the argument made under this thesis is debated at length in academic literature, and therefore would not be examined. See for example David Caron, ‘Liability for transnational pollution arising from offshore oil development: a methodological approach’ [1983] 10 Ecology Law Quarterly 641; Thomas Merrill, ‘Golden Rules for Transboundary Pollution’ [1997] 46:5 Duke LJ 931; Shane Bosma, ‘The Regulation of Marine Pollution Arising from Offshore Oil and Gas Facilities – an Evaluation of the Adequacy of Current Regulatory Regimes and the Responsibility of States to Implement a New Liability Regime’ [2012] 26 A&NZ Mar LJ 89; Thomas Gehring & Markus Jachtenfuchs, ‘Liability for Transboundary Environmental Damage: Towards a General Liability Regime?’ (1993) 4 EJIL 92; Nick Gaskell, ‘Compensation for Offshore Pollution: Ships and Platforms’ in Malcom Clarke (ed), *Maritime Law Evolving* (Hart Publishing 2013); Jacqueline Allen, ‘Global Oil Stain – Cleaning up International Conventions for Liability and Compensation for Oil Exploration/Production’ [2011] 25:1 Aust. and NZ Mart. L. J 90; IDDRI Study, 30; Alan Boyle, ‘International Law and the Liability for Catastrophic Environmental Damage - Introductory Remarks’ [2011] ASIL Proceedings 423, 427; Robin Churchill, ‘Facilitating (Transnational) Civil Liability Litigation for Environmental Damage by Means of Treaties: Progress, Problems, and Prospects’ [2002] 12:1 YB Intl Env. L 3, 5; Peter Cameron, ‘Liability for Catastrophic Risk in the Oil and Gas Industry’ [2012] I.E.L.R. 207; Alexandra Wawryk and Katelijin Van Hende, ‘Civil Liability for Spills From Oil Rigs: the Development of Bilateral and Regional Principles’ [2015] Lloyd’s MCLQ 216.

through the adoption of capricious regulations, inadequate for dealing with situations of scientific uncertainty, without there being a compelling need for them to implement any mechanism ensuring that operators are made liable to compensate for the transboundary harms they could cause. In other words, the ambiguity surrounding (1) leads to unsatisfactory *status quos* in relation to (2) and (3). This conclusion would highlight the repercussions which the development of the concept of due diligence as advanced by ITLOS could have on the manner in which States purport to satisfy their obligation to prevent transboundary harm. The findings pertaining to (2) and (3) would also be used to comparatively analyse the prospects of a global harmonisation in the respective fields in question, essential for the discussions in the subsequent sections of this thesis. This comparative study will reveal that such prospects are strong in relation to (2) and very weak in relation to (3).

The rest of the thesis focuses on the relevance and on the manner in which the precautionary principle could be integrated within the obligation of States to prevent transboundary harm from offshore incidents under their jurisdiction. To this end, it analyses the conditions which must be met for the principle to be validly invoked and relied upon by States in their management of the risks of such incidents, and advances that it applies both at the risk assessment and risk management stages. Thus, it primarily focuses on the principle's interactions with the obligation of States to diligently inform themselves of the potential impacts of hazardous activities under their jurisdiction, as supported by the analysis of primary sources and renowned guideline documents on the subject. Thereafter, and acknowledging that the substantive measures which States are expected to adopt in satisfying their no-harm obligation must be proportionate to the degree of risks at hand, it confirms the inadequacy of the *status quos* tackled in previous sections, and argues that the latter obligation could be effectively (as supported by theories of law and economics and trends in the developed States and the works of the ILC) and realistically (in light of the conclusion of the abovementioned comparative study) satisfied through the implementation of an "indirect" precautionary measure, namely the adoption of one or more liability

regime(s) providing for specific rules for compensation for such pollution should it occur.

As hinted at above, this study aspires to overcome existing hurdles in the application of the law of State responsibility, as it aims to afford predictability to potential allegations as to whether source States have committed a “wrongful” act in failing to satisfy their international obligations. Thus, this thesis finally advances that placing the argued development in the law within the context of the law of State responsibility could contribute in stimulating States to adopt a global liability regime (or at least national such regimes) dealing with transboundary pollution from offshore incidents.

In accordance with the aims and objectives of this study, chapter (III) of this thesis examines the global *status quo* of the current liability regimes applicable to harms from offshore oil and gas activities, and the features which could underpin a prospective global regime dealing therewith. For these purposes, it analyses such regimes as adopted on the global, regional, and national levels, establishes their underdevelopment and inadequacies, and dissects their main common features to support an argument for the good prospects of a potential global rapprochement in the field.

Having demonstrated the shortcomings in relation to liability provisions applicable in the field, the remaining parts of this thesis would focus on advancing an argument based on the analysis of developments in the law surrounding the obligation of States to prevent transboundary harm; and on the policy approaches embraced by States in their regulation of the transboundary risks posed by offshore activities within their jurisdiction. Accordingly, Chapter (IV) focuses on the legal rules underpinning the obligation of States to prevent transboundary harm, highlights the relevance of the latter obligation to the invocation of the responsibility of States within the context of this study. It then demonstrates how the imprecision of the due diligence concept currently makes it arguably impossible for potential victim States to establish fault on behalf of source States hosting offshore oil and gas activities. In the process, it analyses the scarce

clarification on the concept as afforded by international case-law and academic literature commenting upon it, notably with regard to its relevance to the substantive and procedural facets of the no-harm duty.

Chapter (V) then comparatively examines the developments in the regulatory approaches adopted by various oil and gas producing States pertaining to health and safety and environmental protection ['HSEP'] from offshore activities under their jurisdiction. It reveals that, developed States have consistently moved from prescriptive regulation to performance-based regulation, while developing States, exploiting their offshore oil and gas resources via State-owned companies, still largely rely on the former type of regulation. Importantly, the analysis of the aforementioned move to performance-based regulation was commonly prompted by incidents on board offshore facilities leading to major human and environmental disasters. In that sense, and as a minimum, the measures adopted in developing States could arguably be regarded as inconsistent with the most recent views on their effectiveness to prevent the risk of transboundary harm from offshore activities under their jurisdiction. This Chapter further argues that fundamental discrepancies underlie the regulatory approaches adopted in developed States, thus making the prospective global rapprochement in the field ever more difficult to perceive. Ultimately, this Chapter confirms that the conclusions reached in Chapter (IV) leave States with an unconstrained discretion in setting their own environmental policies, problematically allowing them to emphasise on economic growth without due consideration to sustainable development.

Emphasising on the developments in the law surrounding the obligation of States to prevent transboundary harm from activities under their jurisdiction, the final three Chapters of this thesis revolve around the role which the precautionary principle could play in influencing the behaviour expected by States purporting to satisfy their no-harm duties. Thus, Chapter (VI) begins by presenting an overview of the principle, explaining its operation within a principled-system of binding environmental rules from which it derives its prescriptive force. It then goes on to analyse the conditions which must be met for the principle to be validly invoked,

and examines the principle's relevance for the management of the risks of transboundary harm from offshore incidents. For this end, particular attention is placed on the scientific uncertainty justifying precautionary action and on the applicable environmental threshold the crossing of which such action would aim to prevent. This analysis concludes that scientific uncertainty is established where the information surrounding the question of whether offshore incidents would have significant transboundary impacts is *unavailable* and/or lacks *quality* for an accurate description and understanding of the overall risk at hand. It advances that such uncertainty exists where one attempts to examine the various components of the risk of offshore incidents. As for the question of the determination of the environmental threshold relevant to the question of whether the precautionary regulation of transboundary harm from offshore incidents is required, focus is placed on the analysis of various sources of international law to ascertain the *chosen level of protection* embraced by States in relation to transboundary harm. It concludes that transboundary harm must be *significant* for such threshold to be crossed, and that this condition depends on the case-by-case factual examination of the circumstances at hand. Combining the aforementioned two elements, the Chapter concludes that the applicable threshold cannot be dissociated from the existing degree of uncertainty attached to the scientific assessment of the potential effects of offshore oil and gas activities. Setting the scene for the subsequent Chapters, it advances that the application of the precautionary principle within such assessment supports the contention that the aforesaid threshold is deemed to be crossed.

Building-up from Chapter (VI)'s establishment that the conditions for the invocation of the precautionary principle for the management of the risks of transboundary harm from offshore incidents are met, Chapter (VII) reviews and analyses the support behind the reliance thereon within this context. To that end, both academic literature and case-law on the subject are discussed and scrutinised. This reveals, on the one hand, that there exists a strong support for a mutually beneficial role for the principle in its interplay with other norms of international environmental law; and on the other hand, that common

denominators could be found in the positions taken by various international courts and tribunals pertaining to the repercussions of its invocation. Specifically, the Chapter concludes by advancing that the latter generally recognise a particular role for the principle within international environmental law, and that the combined reading of various international rulings suggest an interplay between the principle and the procedural obligation of States to conduct environmental impact assessments ['EIA'] with regard to offshore activities, without requiring States to establish that risk-creating activities under their jurisdiction would not lead to a crossing of the applicable environmental threshold in question (commonly referred to as 'reversal of the burden of proof').

Thus, starting from the analysis of the role which the precautionary principle could play within the obligation of States to assess the risk of transboundary harm from hazardous activities under their jurisdiction, Chapter (VIII) examines how its integration within the obligation of States to prevent transboundary harm equally defines the substantive measures they are expected to adopt in their management of the risks of such harm emanating from offshore activities under their jurisdiction. It begins by arguing that States commonly satisfy the former of these obligations through conducting transboundary EIAs ['TEIA'], before proceeding to examine how the principle could apply in the various stages of the process. Specifically, the principle's integration within the screening, scoping, and impact studies stages is considered, relying for these purposes on international guidelines and on the analysis of treaties imposing an obligation on signatory States to conduct EIAs. The study concludes that such integration entails that the subjectivity exercised at the various stages of EIAs is applied with the purpose of ensuring that concerns of the crossing of set environmental thresholds, which would not have been identified through conventional EIA, are perceived to be present *despite* the obscurity caused by uncertainty surrounding them. Thus, the principle mandates that States would *err on the side of caution* in conducting TEIAs, taking the relevant uncertainties and limitations in scientific evidence into account. In doing so, States would become better informed of the potential impacts of worst-case-scenario incidents on board offshore facilities under their

jurisdiction. The remainder of the Chapter then argues that, in light of the interconnection between the severity of the risks at hand and the measures expected to be adopted by States in their regulation thereof, and reiterating the trend followed in developed States and the works of the ILC to the effect that liability regimes are relied upon in the management of the risks of harm from offshore activities, such regimes constitute appropriate indirect precautionary measures ensuring the diligent compliance by States of their substantive no-harm duties. The argument is further supported by existing theories of law and economics, discussed in this Chapter, advancing that liability regimes incentivise proponents of risk-creating activities to adopt optimal levels of care in their operations.

In sum, the argument made under this thesis purports to translate the recent developments in the law surrounding the obligation of States to prevent transboundary harm from offshore activities under their jurisdiction into a policy recommendation to States yet to adopt a liability regime specifically tailored to deal with transboundary harms resulting therefrom. As hinted at above, it is suggested that a global liability regime would ensure a more consistent level of environmental protection across the globe, and is thus regarded as more favourable. It is also advanced that the elaboration of such regime would better reflect the global policy direction towards sustainable development, as offshore oil and gas activities would be better regulated without being prohibited. The aforementioned points, as well as analyses surrounding the particular features of such prospective global regime constitute essential elements left for future research on the subject.

II- Methodology

The methodology adopted in this thesis broadly falls under what is referred to as “doctrinal research”.⁶⁴ This methodology is dominating in the field of legal research design,⁶⁵ and revolves around “studying the law using reason, logic and argument” through concentrating on “the primacy of critical reasoning based around authoritative texts”.⁶⁶ It is a distinct research method specifically suited for legal scholarship, and thus must not necessarily be explained nor classified within any broader framework for research methods.⁶⁷ It is wide in scope, which makes researchers relying thereon susceptible of having adopted a “vague” approach.⁶⁸ However, this feature also makes it a necessary common denominator for the research methodology adopted in various legal research and writing genres.⁶⁹

Doctrinal research consists of a two-part process: (1) locating the sources of the law, and (2) interpreting/analysing the content of these sources.⁷⁰ The first stage includes a review of the literature on the topic. It is important as it involves the following steps: (1) selecting research questions; (2) selecting bibliographic or article databases; (3) choosing search terms; (4) applying practical screening criteria; (5) applying methodological screening criteria; (6) doing the review; and

⁶⁴ See generally, Terry Hutchinson and Nigel Duncan, ‘Defining and Describing What We Do: Doctrinal Legal Research’ [2012] 17(1) Deakin L. Rev. 83; Christopher Mccrudden, ‘Legal Research and the Social Sciences’ [2006] L. Quar. Rev. 632, 633-635; Paul Chynoweth, ‘Legal Research’ in Andrew Knight and Les Ruddock (eds) *Advanced Research Methods in the Built Environment* (Wiley-Blackwell 2008) 32.

⁶⁵ Ibid, 85.

⁶⁶ Mccrudden, note 64, 916.

⁶⁷ Hutchinson and Duncan, note 64, 916. Although they have attempted to classify it within the traditional *quantitative/qualitative* categorisation, and have found that it presents aspects of both without directly falling entirely under any of the two. See pages 116-117.

⁶⁸ Ibid.

⁶⁹ In this regard, Chynoweth has noted that “[s]ome element of doctrinal analysis will be found in all but the most radical forms of legal research”, see Chynoweth, note 64, 31.

⁷⁰ Hutchinson and Duncan, note 64, 110-112.

(7) synthesising the results.⁷¹ It also more widely involves a localisation of primary sources of law relevant to the topic of research, including legislation, regulations and case-law.⁷² The second stage involves the use of various “tools” for interpreting/analysing the outcomes of the first stage. These encompass “*stare decisis* and its complexities” and “common law devices which allow lawyers to make sense of complex legal questions”.⁷³ Thus, in the process of this second stage, legal researchers rely on the logics of deduction, induction, analogy, legal formalism, etc. This suggests that it is wrong “to describe the process of legal analysis as being dictated by a ‘methodology’” as “[t]he process involves an exercise in reasoning and a variety of techniques are used, often at a subconscious level, with the aim of constructing an argument which is convincing according to accepted, and instinctive, conventions of discourse within the discipline”.⁷⁴ The methodology followed in this thesis reflects this two-step process of doctrinal research. The first stage is evident in the literature review performed throughout, a part of which identified legal principles (such as the no-harm, the preventive and the precautionary principles), theories (such as the theory of State responsibility, and that of the economic incentives created by liability regimes on the behaviour of risk-creators), case-law (such as the *Pulp Mills* Decision and the ITLOS Advisory Opinion), as well as the opinions expressed in the literature by prominent academics on various issues relating to separate aspects of this research. It is also reflected in my localisation of the legislation and regulations relevant to safety and environmental protection from offshore activities and the liability regimes (when existent) in force in various oil-producing States. The second stage is executed through the adoption of the aforementioned techniques to interpret/analyse the material identified in the first stage. For example, a deductive reasoning, described as “the process of applying a rule of Law to a

⁷¹ Arlene Fink, *Conducting Research Literature Review: From the Internet to Paper* (Sage Publications, 2nd ed, 2005) cited in Michael McConville and Wing Hong Chui (eds), *Research Methods for Law* (Edinburgh University Press 2007) 22–3.

⁷² Hutchinson and Duncan, note 64, 110.

⁷³ Irene Baghoomians, ‘Thinking Like a Lawyer: A New Introduction to Legal Reasoning, by Frederick Schauer’ [2009] 31(3) *Sydney Law Review* 499, 499.

⁷⁴ Chynoweth, note 64, 34–35.

factual situation”,⁷⁵ is employed when trying to submit the risks of transboundary pollution from offshore activities to the application of the rules dictated by the precautionary principle. In other words, the precautionary principle (constituting the “general rule of law” in the elements of deductive reasoning) requires a certain legal outcome (mandates a different approach to risk analysis and risk management which in turn requires the adoption of precautionary measures that could well be implemented through legislation) when its application is triggered. A deductive logic comes into play when the risks of transboundary pollution are argued to trigger the application of the precautionary principle therefore becoming subject to the approaches it mandates. This technique is also inherent to the argument made on the basis of the law of State responsibility, as it is argued that, on the one hand, the breach of States of their international obligations triggers the coming into play of secondary rules, and that on the other hand international obligations under the preventive/no-harm principles as refined by the precautionary principle are breached by the majority of States under the current *status quo* of liability and regulatory regimes. Moreover, an inductive logic, described as “the reasoning from specific cases to a general rule”,⁷⁶ is also relied upon when reviewing the status of the precautionary principle as a source of international law. For example, the ongoing efforts by oil-producing States to adopt and rigorously review their regulatory regimes in relation to HSEP from offshore activities is analysed as “specific” cases which serve a “general rule” of a precautionary approach to the risks which these activities create. This could present an argument in favour of the status of the precautionary principle as a general principle of international law. Analogy, which involves “locating similar situations [...], and then arguing that similar cases should be governed by the same principle and have similar outcomes”⁷⁷ is also relied upon, notably when analysing the legal underpinnings of a prospective liability regime dealing with transboundary pollution from offshore activities. Analogy particularly comes into play when instruments implementing liability regimes in relation to hazardous-

⁷⁵ Ibid, 32.

⁷⁶ Ibid, 33.

⁷⁷ Hutchinson and Duncan, note 64, 111.

activities comparable to offshore oil and gas activities are analysed. Furthermore, legal formalism, described as the “verbal manipulation of the available sources of Law, in the belief that the answer to most legal problems can be found in the underlying logic and structure of the rules if only this can be discovered”,⁷⁸ underlies the analysis of why the precautionary principle could constitute an approach aiming to solve the issues resulting from the transboundary nature of pollution from offshore activities through its interactions with other sources of law.

This being said, the methodology followed in this research does not merely focus on issues of “legal coherence” (often described as “black-letter law” or “doctrinal legal analysis”)⁷⁹ nor does it strictly adopt an “internal” approach to legal analysis.⁸⁰ External factors to the text of the law, such as its social, historical and economic contexts are also referred to and taken into account. This edges the methodology towards interdisciplinary research which entails a change in the epistemological nature of the research from “that of internal enquiry into the meaning of the Law to that of external enquiry into the Law as a social entity”.⁸¹ This is particularly the case where the effectiveness of liability and regulatory regimes in incentivising higher levels of care and environmental protection in offshore activities are evaluated.

Moreover, it must be noted that the methodology followed involves both “applied” and “pure” legal research. The latter is research about “academic knowledge about the operation of the law”, whereas the former concerns “knowledge of the same

⁷⁸ Chynoweth, note 64, 34.

⁷⁹ Mccrudden, note 64, 633-634.

⁸⁰ Described as “the analysis of legal rules and principles taking the perspective of an insider in the system” which attempts to “understand how [...] various elements fit together, to attempt to draw out the patterns of normative understanding” or permits the researcher to attempt to argue that “this or that is the ‘best’ solution to a particular problem” see Ibid. Moreover, Mccrudden cited David Ibbeston who has written that “[i]ts sources are predominantly those that are thrown up by the legal process: principally statutes and decided cases, supplemented where possible with lawyers’ literature expounding the rules and occasionally reflecting on them”.

⁸¹ Chynoweth, note 64, 30. As an example, author mentioned that: “this might involve, [...], an evaluation of the effectiveness of a particular piece of legislation in achieving particular social goals or an examination of the extent to which it is being complied with.”

kind which has been produced with a particular purpose in mind” with an aim to “facilitate a future change, either in the Law itself, or in the manner of its administration”.⁸² “Pure” legal research is obviously employed when analysing the operation of the law of State responsibility, the examination of the applicable regulatory regimes in various States, the meaning and significance of various sources of law, the reasoning of judicial decisions, etc. On the other hand, “applied” legal research is evident where the precautionary principle is relied upon to delimit the international obligations incumbent upon States with a view to motivate the adoption of a global liability regime dealing with transboundary pollution from offshore incidents; thus fitting the methodology used under “law reform research”/“law in context”/“socio-legal research” category (as opposed to “fundamental research”).⁸³ In this sense, this approach is consistent with “problem-based” doctrinal research methodology, as the development of the law through the reliance on the precautionary principle aims to find solutions for the issues exposed in this thesis. The aforementioned methodology includes the following steps: “(1) assembling relevant facts; (2) identifying the legal issues; (3) analysing the issues with a view to searching for the Law; (4) reading background material; (5) locating primary material; (6) synthesising all the issues in context; (7) coming to a tentative conclusion”,⁸⁴ all while not constraining the researcher to find a concrete answer for the identified legal issues.⁸⁵ This thesis is largely based on such approach, while taking into account the methodological features discussed above. It advances, at the one hand, that the international obligations incumbent upon States should be developed in light of the precautionary principle, and on the other hand, that the most appropriate way for States to satisfy these obligations is through the elaboration of a global liability regime. This argument, taken as a whole, contributes to answering the issues posed under this thesis.

⁸² Ibid, 31.

⁸³ Ibid.

⁸⁴ Hutchinson and Duncan, note 64, 106.

⁸⁵ Ibid, 107.

Summarising the above, the approach adopted for the completion of this thesis follows the “doctrinal research” methodology, which is common to various legal research and writing genres. It involves a two-stage process, and relies on techniques for the interpretation/analysis of the law. However, as this thesis aims to develop the law in a particular direction, and aspires to provide solutions for the issues it poses, the approach adopted therein more narrowly falls under the “law reform research”/“problem-based” doctrinal research category.

III- Global *status quo* of the current liability regimes, and the roots of a possible way forward

In the broadest terms, and legally speaking, civil liability refers to the situation where a wrongdoer is required by law to pay damages to repair harm(s) it has caused to a victim. Accordingly, civil liability *regimes* ['liability regimes'] correspond to the framework within which such situations unfold. Traditionally, these regimes were regarded as part of the realm of private law.⁸⁶ By contrast, international environmental law generally falls within the category of public law. However, on the one hand, the lines imposing this *summa divisio* are generally growing blurry;⁸⁷ and on the other hand, we have specifically witnessed the elaboration and adoption, at regional and global levels, of international treaties expanding national regimes and imposing civil liability on private actors for environmental harms they cause.⁸⁸

Arguably, this rapprochement was encouraged by the embracement by the international community of principles of international environmental law and policy,⁸⁹ most notably, the polluter-pays principle.⁹⁰ The current view of the principle expressly calls for making polluters "liable".⁹¹ Therefore, the entry into force of numerous international treaties containing liability-for-polluters provisions could be seen as a token of success of the marriage between law and policy in the field. In other words, the polluter-pays principle, as a public policy tool, was well received within the legal field and instigated the development of one of the main sources of international law, namely, treaties. Another principle of law and policy which might also be relevant for the abovementioned

⁸⁶ Lucas Bergkamp, *Liability and Environment* (Kluwer Law International 2001) 471 ff.

⁸⁷ Ibid.

⁸⁸ This is to be distinguished from international State liability (referred to in Appendix II below).

⁸⁹ See for example OECD, Recommendation of the Council on Guiding Principles concerning International Economic Aspects of Environmental Policies, adopted 26 May 1972; OECD, Recommendation of the Council on the Implementation of the Polluter-Pays Principle, adopted 14 November 1974; the Rio Declaration (Principle 16).

⁹⁰ For a discussion on the development of what the principle entails, see Bergkamp. Note 85, 15 ff.

⁹¹ Ibid.

rapprochement is the precautionary principle. In fact, authors have traditionally discussed multiple objectives of liability law, including deterring injurers from causing harm *ab initio*.⁹² These objectives, inspired by an economic analysis of liability regimes, support the contention that the precautionary principle also contributes in calling for the elaboration and adoption of liability regimes in the management of the uncertainties of risk-creating-activities.⁹³ However, despite the embracement of the precautionary principle by the international community as a policy to prevent environmental harms,⁹⁴ its role as a principle of international environmental law remains unclear.⁹⁵ The principle's capacity to mandate the adoption of liability regimes dealing with transboundary harm from offshore oil and gas incidents will be touched upon throughout this thesis.

Within this context, this Chapter aims to explore the *status quo* of the current liability regimes across the globe which potentially provide for compensation rules for damage caused by offshore oil and gas incidents. It will include an overview of such instruments (1), as well as a synthesis of the literature dissecting principles upon which [a] prospective [global] liability regimes[s] on the subject could be developed (2). The first section aims to reveal, on the one hand, a trend amongst developed countries with strong offshore oil and gas activities to provide for specifically-tailored liability systems dealing with potential pollution resulting therefrom; and on the other hand, that this trend is far from being universal as shortcomings exist in the current global *status quo* in at least two aspects. The second section shows that, subject to the development of the obligations incumbent upon States under international law as argued in this thesis, a high level of consensus among academic writings exists surrounding the pillars upon which liability regimes could be based.

⁹² Ibid, 70.

⁹³ We will return to this point in Chapter VIII-3.A

⁹⁴ The principle is discussed in detail in Chapters VI and VII.

⁹⁵ This is discussed in Chapters VI; VII and VIII.

1. Analysis of the existing instruments dealing with liability from offshore pollution

Apart from a listing and brief explanation of the functioning of liability regimes that currently exist (whether in force or not) and deal with the subject of this study, two main issues will be highlighted. First, the inadequacy and shortcomings of these instruments will be commented upon. Second, it is argued that even where such instruments exist, significant discrepancies in their conditions, their operation and their implementation are evident. These two problems thus flag the shortcomings of existing liability regimes and their lack of uniformity across the globe. And in light of the discussion surrounding the role of liability regimes in incentivizing higher standards for safety and environmental protection from the part of operators,⁹⁶ the aforementioned problems contribute in the adoption of discrepant such standards globally. That being said, this analysis would simultaneously reveal that developed States, i.e. the USA and the European States exploiting natural resources in the North Sea, have adopted liability regimes dealing specifically with potential pollution from the offshore oil and gas activities conducted within their jurisdictions. These are highly regarded in literature; some authors considered them as successful “prototypes” which could be replicated in other regions in the world.

Based on their scope of application, the abovementioned instruments can be categorized as follows: (a) global conventions; (b) regional instruments; and (c) national legislation. A further sub-category can be invoked in function of the public or private nature thereof.

A- Global Conventions

These include, mainly: (i) UNCLOS; (ii) the International Convention on Oil Pollution Preparedness, Response and Co-operation [‘OPRC’];⁹⁷ and (iii) the

⁹⁶ See Chapter VIII-3.

⁹⁷ International Convention on Oil Pollution Preparedness, Response and Co-operation (adopted 30 November 1990, entered into force 13 May 1995) 503 UNTS 51 (OPRC)

International Convention for the Prevention of Pollution from Ships
[‘MARPOL’].⁹⁸

a- UNCLOS

Codifying pre-existing customary international Law, UNCLOS recognises and gives legal stature to the principle of State sovereignty through its embracement of the right of States to exploit natural resources under their jurisdiction or control⁹⁹ pursuant to their respective environmental policies.¹⁰⁰ However, and by application of the same principle, it also restricted this right. It achieved this purpose firstly through imposing an overarching general obligation on States to protect and preserve the marine environment.¹⁰¹ It denotes the measures that States shall take, either individually or collectively as appropriate, that are meant to face the ever-growing risk of pollution of the marine environment¹⁰² and that are “necessary to prevent, reduce and control” such pollution from any source¹⁰³ including pollution from “installations and devices used in exploration or

⁹⁸ International Convention for the Prevention of Pollution from Ships (adopted 2 November 1973, entered into force 10 February 1983, not entered into force without the 1978 Protocol) 1340 UNTS 184 (MARPOL 73/78).

⁹⁹ In their respective territorial sea (UNCLOS, Art. 2), EEZ (UNCLOS, Art. 56), continental shelf (UNCLOS, Art. 77). UNCLOS also provides for the regulation of activities in the Area (Part XI).

¹⁰⁰ UNCLOS, Art. 193. That is pursuant to the “sovereign right” recognised to coastal States “for the purposes of exploring and exploiting, conserving and managing the natural resources [...] and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds” (UNCLOS, Art. 56) and the exclusive right given to them to “authorize and regulate drilling on the continental shelf for all purposes” (UNCLOS, Art. 81).

¹⁰¹ Ibid, Art. 192.

¹⁰² “Marine Pollution” is defined under UNCLOS Art. 1 as “the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities”.

¹⁰³ UNCLOS, Art. 194.1. The obligation to take those measures, although being general and common to all signatory States, is nevertheless differentiated in that it takes into account “the best practicable means at their disposal” and is in accordance with “their capabilities”. It is understood that this standard applies equally to all measures invoked under s. 1 of Part XII. This wording, coupled with others such as “minimize to the fullest possible” used in Art. 194.3 demonstrate the qualified terminology used in delimiting the obligation imposed on States, suggesting that it is one of diligent conduct rather than an absolute duty to prevent harm.

exploitation of the natural resources of the seabed and subsoil”.¹⁰⁴ Secondly, although conceding the right of signatory States to pollute their own areas (given the reality that pollution may still occur despite Art. 194.1 measures being properly taken), and being aware that such pollution may spread beyond jurisdictional borders, it binds them to the “no-harm” principle¹⁰⁵ pursuant to which they must take measures to ensure that activities within their jurisdiction or under their control do not cause transboundary pollution damage to other States and their environments (and should such measures fail, to take all necessary measures to prevent operational or incidental¹⁰⁶ pollution spreading beyond their jurisdiction).¹⁰⁷

In view of guaranteeing its effective application, UNCLOS provides that the non-fulfilment by States of their international obligations discussed above entails their responsibility in accordance with the rules of international law.¹⁰⁸ Nevertheless, a combined reading of Art. 235, coupled with the fact that the obligations imposed on States are confined to measures they are required to adopt (an obligation of conduct as opposed to one of result), suggests that “protection and preservation of the marine environment”¹⁰⁹ does not encompass compensation for pollution damage or obligations pertaining to remediation of the environment. Indeed,

¹⁰⁴ UNCLOS, Art. 194.3.(c).

¹⁰⁵ See Chapter IV-1.

¹⁰⁶ UNCLOS, Art. 194.2 “Pollution arising from incidents or activities”.

¹⁰⁷ Ibid. Note that UNCLOS does not go as far as imposing an absolute obligation (an obligation of result) not to cause transboundary damage, rather it settles for requiring measures being taken to prevent it (an obligation of conduct). A bold analysis of the Article suggests that States have a right to cause transboundary damage provided that all necessary measures are taken.

¹⁰⁸ UNCLOS, Art. 235.1. It must be noted that it was not until 2001 that the International Law Commission adopted the Draft Articles on Responsibility of States for Internationally Wrongful Acts. In resolution 56/83 of 12 December 2001, the General Assembly took note of the Articles and commended them to the attention of Governments without prejudice to the question of their future adoption or other appropriate action. It further requested the Secretary-General in resolution 59/35 of 2 December 2004 to invite Governments to submit their written comments on any future action regarding the Articles as well as to prepare an initial compilation of decisions of international courts, tribunals and other bodies referring to the articles and to invite Governments to submit information on their practice in this regard. Thus, despite evident progress in the codification of international law on the subject of State responsibility, it is yet to acquire full legal authority.

¹⁰⁹ UNCLOS, Part XII (title).

UNCLOS imposes no such obligation upon States should environmental damage occur despite the relevant preventive and control measures being taken. Rather, Art. 235.2 merely imposes an obligation on them to “ensure that recourse is available in accordance with their legal systems for prompt and adequate compensation or other relief” in respect of pollution damage caused by persons under their jurisdiction.

In fact, generally speaking, UNCLOS has been described as an “umbrella treaty” in a sense that it embraces more specific treaties negotiated elsewhere and merely imposes cooperation efforts in their absence.¹¹⁰ Thus, UNCLOS falls short of imposing a liability regime on its own. Furthermore, it must be remembered that a major player-State in the offshore oil and gas industry, namely the USA, did not ratify UNCLOS, and therefore is not strictly bound by the obligations contained under its provisions.

Academic writing in support of the abovementioned observations is preponderant; to name a few: while recognising the role of UNCLOS in establishing a “general international framework” with respect to prevention of marine pollution resulting offshore oil and gas activities, Kashubsky noted that it merely encourages coastal States to develop national laws without setting well-defined standards to be followed.¹¹¹ Similarly, Faure, Hui and Wang, labelling the Convention as the “constitution of the seas” due to the general legal framework it contains pertaining to sea-related activities, noted that “the most important provisions” therein are those dealing with the right of States to explore and exploit natural resources under their jurisdictions (as opposed to those imposing a duty on those States to protect and preserve the environment and to ensure that prompt and adequate compensation for potential victims is available).¹¹²

¹¹⁰ Rebecca Bratspies and Anastasia Teletsky, ‘Marine Environmental Law: UNCLOS and Fisheries’ in Alam, Bhuiyan, Chowdhury and Tegara (eds) *Routledge Handbook of International Environmental Law* (Routledge 2013) 260.

¹¹¹ Mikhail Kashubsky, ‘Marine Pollution from the Offshore Oil and Gas Industry: Review of Major Conventions and Russian Law (Part I)’ [2007] 152 *Maritime Studies* 1, 3.

¹¹² Michael Faure, Jing Liu and Hui Wang, ‘Analysis of Existing Legal Regimes’ in Michael Faure (ed) *Civil Liability and Financial Security for Offshore Oil and Gas Activities* (Cambridge University Press 2017), 82-83.

Reiterating the abovementioned UNCLOS obligations, Sundaram emphasized that these have not been successfully relied upon in any action brought against a coastal State.¹¹³ However, he analysed the ITLOS Advisory Opinion, discussed in Chapter VII of this thesis, in which he believed the Chamber defined the “extent of the sponsoring State’s liability for the failure of an entity it has sponsored to comply with UNCLOS 1982” to highlight a further general obligation incumbent upon States thereunder.¹¹⁴ In his opinion (which is consistent with our views expressed below), the Opinion’s analysis of UNCLOS entails that sponsoring States are under an obligation to ensure that contractors comply with the obligations under the Convention, and that “measures ensuring this must be incorporated in the State’s legal system”.¹¹⁵ In his opinion, this suggests that “a State sponsoring such activities in the ‘Area’ may be held liable to pay compensation if it fails to carry out its responsibilities under UNCLOS with due diligence and a third party were to suffer damage as a result.”¹¹⁶ Nevertheless, he still noted that the Opinion omits to specify the amount and sufficiency of compensation payable to the affected party and omits to provide for financial security requirements for sponsored contractors.¹¹⁷ As discussed below, the aforementioned obligation referred to by Sundaram requires further delimitation as the measures which States must take to satisfy their obligation to “ensure” compliance by sponsored entities are not straightforwardly defined. Finally, to further support his argument, Sundaram referred to the IMO’s Secretariat Note on “Information relating to Liability and Compensation for Oil Pollution Damage resulting from Offshore Oil Exploration and Exploitation” which despite referring to the provisions of UNCLOS discussed above, concluded that they do not create an international liability and compensation regime.¹¹⁸

¹¹³ Jae Sundaram, ‘Offshore Oil Pollution Damage: in Pursuit of a Uniform International Civil Liability Regime’ [2016] 28 Denning Law Journal 66, 74.

¹¹⁴ Ibid, 75.

¹¹⁵ Ibid, 77.

¹¹⁶ Ibid.

¹¹⁷ Ibid.

¹¹⁸ Ibid.

b- The International Convention on Oil Pollution Preparedness, Response and Co-operation

The OPRC applies to offshore Mobile Drilling Units (MODUs), production platforms and include both fixed and floating structures¹¹⁹ involved in the exploration, production, loading and unloading of oil.¹²⁰ It mainly provides, as its name indicate, for the establishment of national, as well as regional systems for oil pollution preparedness and response (which arguably falls under the category of mitigation),¹²¹ and does not deal with matters of prevention (strictly speaking) or liability. As this thesis focuses on the measures to be adopted by States in their *ex ante* prevention of the risks posed by offshore oil and gas activities under their jurisdiction, the OPRC loses much of its relevance and therefore will not be analysed further. Nevertheless, looking for a silver lining in an unsatisfactory situation, Kashubsky wrote that in light of the absence of any specific convention dealing therewith, the OPRC “is probably the most important international legal document that regulates pollution of the marine environment resulting from offshore oil and gas activities”.¹²²

c- The International Convention for the Prevention of Pollution from Ships

Although applying mainly to ships, MARPOL also applies to fixed or floating platforms when they are in mobile configuration.¹²³ However, the Convention omits to address many operational aspects of offshore activity and fails to establish a liability regime for damage resulting therefrom.¹²⁴ In this regard, Art. 2 defines the term “discharge” and specifically excludes a “release of harmful substances directly arising from the exploration, exploitation and associated

¹¹⁹ OPRC, Art. 3.

¹²⁰ Ibid, Art. 2(4).

¹²¹ Ibid, Art. 6.

¹²² Kashubsky, note 111, 5.

¹²³ MARPOL, Art. 2.

¹²⁴ Edgar Gold, Aldo Chircop and Hugh Kindred, *Essentials of Canadian Law Series: Maritime Law* (Irwin Law 2003) 710.

offshore processing of sea-bed mineral resources”.¹²⁵ This is further reiterated in the reading of the provisions contained in Annex I of the Convention.

B- Regional Instruments

These include (i) public treaties such as the Convention for the Protection of the Marine Environment of the North-East Atlantic [‘OSPAR Convention’],¹²⁶ the Barcelona Convention¹²⁷ and Protocol,¹²⁸ and the EU regime applicable to offshore activities; and (ii) private arrangements like the Offshore Pollution Liability Agreement [‘OPOL’]. The objective of this sub-section is to review the literature commenting on these instruments with focus on the discrepancies which exist between the regimes they provide for. Other notable mentions include: the Kuwait Convention,¹²⁹ the Helsinki Convention,¹³⁰ Nordic Convention¹³¹ and the Baltic Convention.¹³²

a- Public Instruments

The OSPAR Convention is frequently referred to by academics examining the subject of the existing liability regimes dealing with pollution from offshore activities. Their writings reveal a unanimous opinion about the important role of the Convention in protecting and preserving the marine environment against the adverse effects of human activities in the North East Atlantic region. The Convention’s express adoption of the precautionary principle and the polluter-pays principle and its provision for the use of best available techniques and best environmental practice and clean technologies are also consistently spotted by

¹²⁵ MARPOL, Art. 2 (3) (ii).

¹²⁶ Convention for the Protection of the Marine Environment of the North-East Atlantic (adopted 22 September 1992, entered into force 25 March 1998) 2354 UNTS 67

¹²⁷ Convention for the Protection of the Mediterranean Sea against Pollution (adopted 16 February 1976, entered into force 2 December 1978) 1102 UNTS 27.

¹²⁸ See note 13.

¹²⁹ Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution (adopted 24 April 1978, entered into force 30 June 1979) 1140 UNTS 133.

¹³⁰ Convention on the Protection and Use of Transboundary Watercourses and International Lakes (adopted 17 March 1992, entered into force 6 October 1996) 1936 UNTS 269.

¹³¹ Convention on the Protection of the Environment (adopted 19 February 1974, entered into force 5 October 1976) 1092 UNTS 279.

¹³² Convention on the Protection of the Marine Environment of the Baltic Sea (adopted 22 March 1974, entered into force 3 May 1980) 1507 UNTS 166.

writers on the subject.¹³³ However, it does not provide for clean-up or liability for oil spills from offshore platforms.¹³⁴ Thus, in our discussion, OSPAR is reduced to another example of non-provision for such, this time at regional level.

Another highly regarded regional convention, namely the Barcelona Convention and its Offshore Protocol, attempts to deal with the liability matters in question. However, it falls short from comprehensively doing so. Within its geographical scope, the Convention provides for contracting States to “take all appropriate measures” to protect the marine environment against the threats of pollution resulting from the exploration and exploitation of the continental shelf and subsoil.¹³⁵ In relation to liability, the Offshore Protocol requires that contracting-States “cooperate as soon as possible in formulating and adopting appropriate rules and procedures for the determination of liability and compensation for damage resulting from the [offshore] activities”.¹³⁶ However, until such cooperation is achieved, it echoes UNCLOS and imposes a broad obligation for States to “take all measures necessary to ensure that liability or damage caused by activities is imposed on operators, and they shall be required to pay prompt and adequate compensation”.¹³⁷ Moreover, it further requires from contracting-parties to “take all measures necessary to ensure that operators shall have and maintain insurance cover or other financial security of such type and under such terms as the Contracting party shall specify in order to ensure compensation for damage caused by the activities covered by [the] Protocol”.¹³⁸ The shortcomings of such provisions are twofold: on the one hand, the cooperation provided for has still not, to date, produced a framework dealing with liability matters which is harmonized across the Mediterranean; and on the other hand, and as found by

¹³³ Faure, Liu and Wang, note 112, 87-88; Kashubsky, note 111, 6; Bosma, note 63, 93; Sandy Luk and Rowan Ryrie, ‘Legal Background Paper: Environmental Regulation of Oil Rigs in EU Waters and Potential Accidents’ (2010) ClientEarth <<https://www.documents.clientearth.org/wp-content/uploads/library/2010-06-22-environmental-regulation-of-oil-rigs-in-eu-waters-and-potential-accidents-ce-en.pdf>> accessed 5 May 2018, 3.

¹³⁴ Ibid.

¹³⁵ Barcelona Convention, Art. 7.

¹³⁶ Offshore Protocol, Art. 27.

¹³⁷ Ibid.

¹³⁸ Ibid.

the Deloitte Liability Report,¹³⁹ the “vast majority of [States within the European Economic Area, including Mediterranean States] either do not recognise pure economic loss, have not adopted a liberal approach to claims for it, or do not have a specific liability system for claims from pollution from an offshore oil and gas incident”.¹⁴⁰ Moreover, the Report found that liability for traditional damage from offshore activities is generally dealt with in these States by “civil codes, laws on obligations, laws on wrongs, and the common law”, which are (apart from jurisdictions where legislation impose strict liability for claims for traditional damage) designed for land-based incidents rather than for imposing liability for harm from pollution from offshore oil and gas accidents.¹⁴¹ Additionally, in many States, only “direct” claims are recognised, thus reducing the prospects of success for claims brought by businesses that are indirectly affected by pollution damage.¹⁴² It found that the legislation covering liability in many States, including those in Croatia, Cyprus, France, Greece, Italy and Malta, provide for a fault-based standard of proof, constituting a “significant obstacle to claims for pure economic loss”.¹⁴³ Thus, Pereira found that the regime governing liability for offshore pollution under the Barcelona Protocol remains underdeveloped.¹⁴⁴ Gaskell, on the other hand, commented that this might be due to the language in which regional conventions are drafted (generally that of public international law as opposed to the more precise private law provisions of the Convention on Civil Liability for Oil Pollution Damage¹⁴⁵ [‘CLC’]).¹⁴⁶

¹³⁹ See note 8.

¹⁴⁰ Ibid, 175.

¹⁴¹ Ibid, 177.

¹⁴² Ibid, 182.

¹⁴³ Ibid.

¹⁴⁴ Ricardo Pereira, 'Pollution from Seabed Activities' in Attard, Fitzmaurice, Gutierrez and Hamza (eds) *The IMLI Manual of International Maritime Law: Vol III. - Marine Environmental Law and Maritime Security Law* (Oxford University Press 2016) 95, 125.

¹⁴⁵ International Convention on Civil Liability for Oil Pollution Damage (adopted 29 November 1969, entered into force 19 June 1975; being replaced by 1992 Protocol adopted 27 November 1992, entered into force 30 May 1996) 973 UNTS 14097.

¹⁴⁶ Gaskell, note 63, 89.

On the European level, and in line with the European Parliament Decision of 22 July 2002 laying down the Sixth Environment Action Programme ['EAP'] and its successor,¹⁴⁷ the European legislator adopted the European Marine Strategy Framework Directive¹⁴⁸ ['EMSFD'], which sets an objective for Member States to take relevant measures to achieve and maintain “good environmental status” in the marine environment by 2020.¹⁴⁹ Consistently, the EMSFD contributes towards that goal through purporting to ensure the sustainable use of the seas and the conservation of marine ecosystems.¹⁵⁰ In this regard, it must address “all human activities that have an impact on the marine environment”.¹⁵¹ Recital (7) of the Offshore Safety Directive ['OSD']¹⁵² described the EMSFD as “the environmental pillar of the Integrated Maritime Policy”. It recognised the seriousness and urgency in addressing a significant risk pertaining to offshore activity: that relating to “major” offshore oil and gas incidents;¹⁵³ arguably understandably so as their effects could be viewed as most significant. Accordingly, broadly speaking, the purpose of the OSD is to reduce as far as possible the risks and effects of major offshore accidents through extending the provisions of the Environmental Liability Directive ['ELD']¹⁵⁴ to offshore activities in the renewable energy zone and continental shelf¹⁵⁵ as well as through setting common standards for European Union Governments in relation to offshore safety and environmental management, to the regulation of offshore activities and to measures aiming at limiting their consequences should they nonetheless occur.¹⁵⁶ However, although it has established a liability regime and

¹⁴⁷ Seventh EAP

¹⁴⁸ European Parliament and Council Directive 2008/56/EC of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) [2008] OJ L164/19.

¹⁴⁹ EMSFD, Art. 1.

¹⁵⁰ EMSFD, Recital 4.

¹⁵¹ EMSFD, Recital 5.

¹⁵² Council Directive 2013/30/EU of 12 June 2013 on safety of offshore oil and gas operations and amending Directive 2004/35/EC [2013] OJ L 178/67; discussed in Chapter V-1.E.

¹⁵³ OSD, Recitals (4) and (5).

¹⁵⁴ Council Directive 2004/35/CE of 21 April 2004 on environmental liability with regard to the prevention of environmental damage [2004] OJ L 143/56.

¹⁵⁵ OSD, Recital (58), amending the definition of “water damage” as set out in the ELD.

¹⁵⁶ OSD, Art. 1 and Recital (2).

raised awareness of environmental damage amongst Member States, the ELD's implications as an instrument for the protection of the marine environment fell far short from realising their full potential.¹⁵⁷ The latter aimed at establishing a “framework of environmental liability based on the ‘polluter-pays’ principle, to prevent and remedy environmental damage”,¹⁵⁸ and adopts a strict-liability standard for hazardous activities listed in its Annex III. However, a study thereon has found that its limitation in scope particularly in relation to its definition of “environmental damage” (which excludes relevant types of damage like personal injury, damage to property or economic loss and requires a problematic threshold of significant adverse effects of hazardous activities),¹⁵⁹ its administrative approach¹⁶⁰ (which does not bestow upon private parties a “right of compensation as a consequence of environmental damage or of an imminent threat of such damage”),¹⁶¹ and the important “escape clauses” it contains (referred to as the “state-of-the-art defence”),¹⁶² significantly reduce its efficiency.¹⁶³ In summary, due to its limitations, the ELD does not effectively expose potential polluters to liability for pollution caused by potential offshore incidents, and the OSD is merely concerned with the regulation and the setting of safety standards in offshore oil and gas operations.

Indeed, there exists preponderant academic writings highlighting the ineffectiveness of the ELD in establishing a comprehensive legal framework for liability for pollution from offshore activities across Europe. Apart from the aforementioned observations, Luk and Ryrie have referred to the further difficulty

¹⁵⁷ Kristel De Smedt, ‘The Environmental Liability Directive: the Directive that Nobody Wanted – Part I: A Reflection on Achievements and Challenges of the ELD Pending its REFIT Evaluation’ [2015] 23:5 Environmental Liability Law Practice and Policy 167.

¹⁵⁸ ELD, Art. 1.

¹⁵⁹ Ibid, Art. 2; Recital 14.

¹⁶⁰ Ibid, Art. 11.

¹⁶¹ Ibid, Art. 3(3).

¹⁶² Ibid, Art. 8(4).

¹⁶³ See Bio Intelligence Service, ‘Study on ELD Effectiveness: Scope and Exceptions’, Final Report Prepared for the European Commission (2014) <<https://op.europa.eu/en/publication-detail/-/publication/bfd25e5a-bbfc-4ddb-98b7-6e332c24e7c6>> accessed 31 October 2019; see also, Commission, ‘Commission Staff Working Document REFIT Evaluation of the Environmental Liability Directive’ SWD(2016) 121 final.

to satisfy the “incredibly hard to establish” damage thresholds required to trigger liability under the ELD.¹⁶⁴ Moreover, and in relation to transboundary pollution from offshore activities, Baughen pointed out the uncertainty surrounding the authority of the Competent Authority [‘CtAu’] appointed by a given Member State (as required by the ELD) in ordering remediation measures in respect of environmental damage felt in other Members States, and that present in the opposite scenario where remediation measures are contemplated in respect of environmental damage felt within that Member State’s jurisdiction from offshore activities undertaken in another Member State.¹⁶⁵ Recognising that neither the ELD nor the OSD have dealt with these scenarios, he speculated that “the Competent Authority in the Member State where the environmental damage occurs would take remediation measures itself and then seek to reclaim the costs from the operator/licensee in the other Member State”.¹⁶⁶ De Smedt also noted that the varying ways in which the ELD was transposed into the existing legal systems of Member States lead to considerable differences with regard to important elements of the ELD regime.¹⁶⁷ Therefore, on the one hand, the liability regime created by the ELD is deficient in many ways, and therefore falls far from being satisfactory; and on the other hand, there is currently no uniformity among the liability provisions applicable to pollution from offshore activities adopted in various European States.

b- Private (industry) instrument: OPOL

Another notable and fundamentally different regional agreement relevant to liability for pollution from offshore activities is OPOL. OPOL is a private agreement between operators in the oil and gas sector that entered into force on the 1st of May 1975 and was intended as an interim measure to provide a liability regime in the wait of the entry into force of the CLEE.¹⁶⁸ It imposes strict liability

¹⁶⁴ Luk and Ryrie, note 133, 11; see also Simon Baughen, ‘Environmental Damage and UK Offshore Operations: Uncertain Liabilities in Deep Waters’ [2016] 28 J. Env. L. 497, 503.

¹⁶⁵ Ibid, 502.

¹⁶⁶ Ibid.

¹⁶⁷ De Smedt, note 157, 176.

¹⁶⁸ See note 37.

on operators of offshore facilities¹⁶⁹ and an obligation on parties to establish and maintain their financial responsibility.¹⁷⁰ The financial limits imposed are reviewed on a regular basis, most recently in October 2010 following the Deepwater Horizon incident. In case of a party's failure to answer a claim under OPOL, the OPOL Association shall undertake an investigation to determine whether other Members are required to contribute towards such payment.¹⁷¹ This presents the important advantage of eliminating possible limitations of compensatory rights derived from the risks of insolvency of the responsible parties, particularly present for small and medium sized enterprises.¹⁷² The UK Government considered the regime satisfactory with regard to achieving its aims particularly where an operator defaults on paying clean-up costs associated with a given incident.¹⁷³ As another indication of its success, OPOL now has 122 member,¹⁷⁴ and is vastly relied upon in the UK regime.

The literature examining OPOL has generally recognised it as a positive example of liability regimes dealing with pollution from offshore activities, notably transboundary pollution. Caron argued that OPOL could appropriately be relied upon in the development of liability regimes dealing with pollution damage, either through a “‘public’ prospective settlement agreement analogous” thereto, or through its transposition in other regions of the world.¹⁷⁵ Moreover, the UK government's embracement of OPOL as an appropriate regime is constantly

¹⁶⁹ OPOL, Clause IV.

¹⁷⁰ Ibid, Clause II.C.2; Rules of the Offshore Pollution Liability Association Limited (OPOL Rules), effective as of 1 April 2016, Art. 2.2.

¹⁷¹ OPOL Rules, Art. 4.3.

¹⁷² Faure, Jing and Hui, note 13, 416, arguing that a small to medium sized enterprise as opposed to a multinational oil company like BP, would have gone bankrupt following a disaster of the magnitude of the Deepwater Horizon.

¹⁷³ Clare Feikert-Ahalt, 'Oil Spill Liability and Regulatory Regime: United Kingdom' (*Library of Congress*, June 2010) <<https://www.loc.gov/law/help/oil-spill-liability/uk.php>> accessed 7 December 2016; Offshore Pollution Liability Association Limited, Home <<http://www.opol.org.uk>> accessed 31 October 2019.

¹⁷⁴ OPOL, *Report and Financial Statements for the Year Ended 31 December 2013*, (26 June 2014) <<http://www.opol.org.uk/downloads/Report%20and%20Financial%20Statements%20-%20December%202013.pdf>> accessed 2 November 2019, 2.

¹⁷⁵ Caron, note 63, 675.

recalled by authors.¹⁷⁶ This is made evident by the requirement by the Department of Energy and Climate Change ['DECC']¹⁷⁷ for the operators of offshore facilities within the UK's jurisdiction to be members of OPOL. Nevertheless, the OPOL regime is not free from criticism, particularly in relation to its scope of application, the damages recoverable thereunder, its limitation of operator liability, its claim settlement provisions, and its interaction with other heads of claims. The aforementioned issues will be briefly discussed below.

In relation to its scope of application, OPOL does not apply to offshore facilities of "designated State[s]" located in the Baltic and Mediterranean Seas. This potentially leads to complexities stemming from different regimes being implemented within States like France.

Looking at the damages recoverable under OPOL, Baughen noted that OPOL's definition for "remedial measures" entails that the costs of "compensatory or complementary remediation of environmental damage under the ELD" are not recoverable. Moreover, following OPOL's definition for "pollution damage", it does not include claims for personal injury/death, nor damage from dispersants used to treat a discharge of oil.¹⁷⁸ Similarly, Faure, Liu and Wang focused on OPOL's requirement for recoverable damage to be "direct" and on the debate under UK law surrounding the separation between "direct" losses and "indirect or consequential" losses to conclude that, in the UK, it is "debatable" whether compensation for economic losses resulting from pollution following an offshore incident is possible,¹⁷⁹ and that claims for economic loss would depend upon the circumstances of each case.¹⁸⁰ Thus, they agreed with the criticism by the House of Commons' Energy and Climate Change Committee against the lack of clarity in relation to the definition of "direct damage" under OPOL.¹⁸¹ In the same course

¹⁷⁶ Faure, Liu and Wang, note 112, 100 ff; Baughen, note 164, 508; Sundaram, note 113, 98.

¹⁷⁷ Which became part of the Department for Business, Energy & Industrial Strategy in July 2016.

¹⁷⁸ Baughen, note 164, 509.

¹⁷⁹ Faure, Liu and Wang, note 112, 106

¹⁸⁰ Ibid, 105.

¹⁸¹ See House of Commons – Energy and Climate Change Committee, 'UK Deepwater Drilling – Implications of the Gulf of Mexico Oil Spill – Second Report of Session 2010-11' (December 2010) Volume I

of thinking, the Deloitte Liability Report noted that the fact that OPOL “provides for claims for *some* pure economic loss” (emphasis added) constitutes one of its benefits. On the other hand, the Oil Spill Study provided that OPOL covers direct economic loss akin to the type recoverable under the CLC.¹⁸² Baughen spotted the ensuing confusion and suggested that OPOL could be improved with “a clarification that its definition of ‘pollution damage’ equates to that in the CLC”.¹⁸³

As for limitation of liability¹⁸⁴ and OPOL’s co-existence with other heads of claims, and looking at the UK regime under OPOL, Baughen flagged the potential confusion and uncertainty that might arise should a claim be made against an operator of a MODU without prior recourse to OPOL. The complexity arises since, in such scenario, the operator would arguably be able to limit its liability under the London Convention [‘LLMC’],¹⁸⁵ which will hamper claims against the operator in excess of the overall OPOL limit, and will entail that recourse would have to be made against the licensee instead.¹⁸⁶ However, Faure, Liu and Wang noted that, taking account on the one hand that OPOL does not preclude claimants from relying on other heads of claim in respect of losses which exceed the limits it imposes or those falling outside its scope, and on the other hand that the LLMC does not apply to offshore facilities, liability for operators of facilities within the UK jurisdiction is unlimited beyond the OPOL limit.¹⁸⁷ Baughen’s opinion differs. He noted that claimants seeking redress through other heads when the OPOL liability limits are reached constitutes one “big problem”. In his opinion, it is not the case because Clause VII of OPOL, providing that payments made under it are

<<https://publications.parliament.uk/pa/cm201011/cmselect/cmenergy/450/450i.pdf>> accessed 8 May 2018 [‘ECCC UK Deepwater Drilling’], 26, providing for concern that “the OPOL provisions only cover direct damage and also that the precise definition of “direct damage” is unclear”.

¹⁸² See note 9, [7.3].

¹⁸³ Baughen, note 164, 510.

¹⁸⁴ The US\$250 million limit imposed under OPOL was assessed in the ECCC UK Deepwater Drilling, 24-26. However, the Oil Spill Study had found that, in relation to UK well operations, only in a limited number of cases could clean-up and compensation results in claims exceeding this limit.

¹⁸⁵ Convention on Limitation of Liability for Marine Claims (adopted 19 November 1976, entered into force 1 December 1986) 1456 UNTS 221.

¹⁸⁶ ECCC UK Deepwater Drilling, 24-26.

¹⁸⁷ Faure, Liu and Wang, note 112, 107.

“in full settlement of *all* [...] Claimant’s claims [...]”, bars such actions.¹⁸⁸ Indeed, and as Faure, Liu and Wang noted, the liability for offshore incidents in the UK can be “threefold”: liability under OPOL, liability based on statutes and model clauses, and liability based on tort.¹⁸⁹ However, it is submitted that claimants enjoy the freedom of relying on any of the aforementioned heads in respect of damage they have suffered, and liability may indeed be unlimited under some. Nevertheless where claimants choose to rely on OPOL, and benefit from the advantages of straightforwardly applying a strict-liability standard of fault and the assurance of the financial capacity of operators and of payment of claims thanks to the mutual-guarantee of operators, they must also suffer the disadvantages derived from Clause VII thereof.

With regard to the settlement of claims, it must be noted that OPOL provides for disputes arising thereunder to be settled by arbitration under the rules of the International Chamber of Commerce by one or more arbitrators.¹⁹⁰ However, recognising the advantages of arbitration, most notably its feature of being speedier than litigation, Faure, Liu and Wang noted that compensation to victims will still not be “immediate”, as OPOL is not a fund. On the other hand, Baughen suggested that a concern in the application of OPOL results from the fact that the Contracts (Rights of Third Parties) Act 1999 referred to in Clause XIII impedes claimants from initiating arbitral proceedings against operators, and that OPOL thus operates “in honour only”.¹⁹¹

Adding to the examination of OPOL’s pros and cons, Faure and Liu pointed out several other elements in their own evaluation of the mechanism it embraces. In their view, the advantages include: the fact that OPOL provides for strict liability for operators to compensate pollution damage; the channelling of liability towards the operator (thus making discussions in relation to attribution of liability unnecessary); the limitation of liability is substantial; the fact that OPOL

¹⁸⁸ Baughen, note 164, 510.

¹⁸⁹ Faure, Liu and Wang, note 112, 101.

¹⁹⁰ OPOL Agreement, Clause IX.

¹⁹¹ Baughen, note 164, 510.

does not deprive claimants from their right to sue for damages not covered under it; the financial guarantees thereunder; and the mutual risk-sharing it provides for between its members. On the downside, they listed the following shortcomings: OPOL is not a fund, and thus its role is relatively limited; the types of damages covered under it are confined to pollution damage defined as “direct” loss or damage by contamination resulting from discharge of oil (doubts as to whether economic losses would be covered); OPOL has a voluntary character, and it is only a prerequisite for obtaining licenses in the UK, thus where this is not the case, no guarantee that financial coverage is available is afforded by the voluntary character of OPOL; the limitation of liability might prove insufficient in some cases; OPOL has never been resorted to in practice; it has a limited geographical scope; *etc.*¹⁹²

Therefore, despite presenting itself as a successful prototype possibly setting a benchmark for the satisfaction of States of their UNCLOS-like treaty obligations to ensure that recourse is available for potential victims of damage caused by offshore activities under their jurisdiction, OPOL still suffers for important deficiencies that, most worryingly, lead to uncertainties.¹⁹³ Nevertheless, it seems that the criticisms advanced against it could be labelled as “potential areas for improvement”. To say the least, OPOL reflects the policy approach, favoured by both the industry and North Sea States embracing it within their respective legal frameworks, according to which a liability regime appropriately-tailored to deal with pollution from offshore incidents operates in parallel to existing safety and environmental protection regulations in place.¹⁹⁴ However, to this day, OPOL remains the only agreement of its kind.

¹⁹² Michael Faure and Jing Liu, ‘Pooling Mechanisms for Offshore Liability’ in Michael Faure (ed) *Civil Liability and Financial Security for Offshore Oil and Gas Activities* (Cambridge University Press 2017), 208-210.

¹⁹³ Sundaram, note 113, 100. Sundaram thus concluded that “[t]he only option that law provides for any oil pollution damage is a tort action against operators and other tortfeasors”.

¹⁹⁴ The latter are discussed in detail in Chapter IV.

C- National Legislation

Consistently with the provision under UNCLOS that the sovereign right for States to explore and exploit natural resources under their jurisdiction should be “pursuant to *their environmental policies* and in accordance with their duty to protect and preserve the marine environment”, States with strong offshore oil and gas presence have attempted adopt and implement legal infrastructures to manage the transboundary risks created by hazardous activities within their jurisdiction. Certainly, these States are directly concerned with the environmental risks posed by such activities, as their effects are foremost local before potentially becoming transboundary.

Thus, it is relevant to examine the liability provisions as adopted in oil producing States. Within this context, this sub-section includes a focused analysis of the USA liability regime and a literature review of studies conducted to compare those in place in various States.¹⁹⁵ Once again, the aim is to highlight on the one hand the unsatisfactory infrastructure to deal with issues of compensation, and on the other hand the lack of uniformity in the regimes adopted globally.

a- The US civil liability regime under the Oil Pollution Act

The US regime presents satisfactory and balanced approach to managing risks posed by offshore activities and dealing with their repercussions. It is highly regarded by commentators that they have gone as far as recommending it as a prototype for a prospective global regime.¹⁹⁶ In that sense, it is arguably comparable to the North Sea regime, and reflects a common approach adopted in the developed oil producing States, in different regions in the world.

¹⁹⁵ The decision to focus the analysis on the example of the USA regime is based on: 1) the regime generally being regarded as a positive example of managing offshore oil and gas operations; 2) availability of studies and literature on the topic (as compared with those relating to other major oil producing States like the Kingdom of Saudi Arabia and Venezuela).

¹⁹⁶ See for example, James Boyd, ‘Compensation for Oil Pollution Damages: The American Oil Pollution Act as an Example for Global Solutions?’ in Michael Faure and James Hu (eds), *Prevention and Compensation of Marine Pollution Damage* (Kluwer Law International, The Netherlands, 2006) 138; See also Sundaram, note 113; for opposing view see Kenneth Murchison, ‘Liability under the Oil Pollution Act: Current Law and Needed Revision’ [2011] 71:3 Louisiana law review 917, 925.

Eleven million gallons of oil spilled into the coastal waters of Alaska following the Exxon Valdez disaster in 1989 drew the limited reach of the Clean Water Act to the Congress and instigated it to enact the Oil Pollution Act 1990 ['OPA'].¹⁹⁷ Using the words of the District Court of Virginia, "OPA provides a comprehensive scheme for the recovery of oil spill clean-up costs and the compensation of those injured by oil spills".¹⁹⁸ OPA adopts a liability regime that is broad in scope: it applies to oil pollution damage arising from offshore facilities and MODUs¹⁹⁹ as well as to damage resulting from vessel-source incidents; it provides that an "offshore facility" is a "facility of any kind, located in, on or under any of the navigable waters of the US and subject to US jurisdiction".²⁰⁰ It broadens the definition of "oil" to include it in any kind or in any form.²⁰¹ And it applies beyond territorial waters to the US EEZ.²⁰² In relation to offshore facilities, the responsible party ['RP'] is defined as the "lessee or permittee" as opposed to the "owner or operator"²⁰³ of an offshore platform. It requires RP to establish and maintain evidence of financial responsibility.²⁰⁴ Strict liability is imposed on RP of an offshore platform,²⁰⁵ who would face liability for removal costs and damages resulting from a spill. Liability for damages is however limited (for an offshore facility incident the limit is \$75 million);²⁰⁶ but when damage costs exceed the RP's liability cap, the pollution costs are covered by the Oil Spill Liability Trust Fund ['the Fund'] which has several sources of revenue.²⁰⁷ Moreover, RP are

¹⁹⁷ Ibid, 917; Pub. L. No. 101-380, 104 Stat. 484 (1990).

¹⁹⁸ *Nat'l Shipping Co. of Saudi Arabia v. Moran Mid-Atl. Corp.*, 924 F. Supp. 1436, 1447 (E.D. Va. 1996).

¹⁹⁹ OPA, s. 1001(18).

²⁰⁰ Ibid, s. 1001(22).

²⁰¹ Ibid, s. 1001(23).

²⁰² Cameron, note 63.

²⁰³ Ibid, s. 1001(32)(C)

²⁰⁴ Ibid, s. 1016(e); Hui Wang and Michael Faure, 'Civil Liability and Compensation for Marine Pollution -Lessons to be Learned for Offshore Oil Spills' [2010] 8;3 Oil, Gas and Energy Law Journal 1; Boyd, note 196, 138.

²⁰⁵ Ibid, s. 1002(a).

²⁰⁶ Liability for removal costs (as opposed to damages) in the case of a spill from an offshore facility is unlimited. Ibid, s. 2704(a)(3).

²⁰⁷ Wang and Faure, note 204; for the Fund's sources of revenue see Ronen Perry, 'The Deepwater Horizon Oil Spill and the Limits of Civil Liability' [2011] 68 Wash L R 1, 57.

entitled to seek either reimbursement from the Fund for payments exceeding the limitation of liability or full reimbursement if one of the defences to liability apply.²⁰⁸ However, limitation of liability is in any case dependent upon the RP's conduct: it is only applicable in case of ordinary negligence or lack of fault. Gross negligence or wilful misconduct, when established, not only eliminates the cap but also deprives the RP from its reimbursement rights.²⁰⁹ A RP's liability may also be unlimited where it fails to report an incident, provide requested cooperation in connection with removal activities, or comply with an order of the President.²¹⁰ Another important feature of OPA is that it provides for joint and several liability rather than channelling liability to a particular entity.²¹¹ Interestingly, damages recoverable under OPA encompass injury to real or personal property including consequential economic loss and loss of profits or impairment of earning capacity arising from injury to property or natural resources.²¹² Arguably, in doing so OPA extended liability for damage beyond the rules of general maritime law²¹³ to cover pure economic loss,²¹⁴ and thus supersedes *Robins Dry Dock and Repair*.²¹⁵

In sum, OPA, paired with other environmental law instruments, provides a comprehensive federal framework for oil spill liability. It contains two important "saving clauses" which, apart from the cases of gross negligence of the RP, might lead to unlimited liability for oil pollution damage. On the one hand, State law

²⁰⁸ OPA, s. 2708, 2713(b)(1)(B).

²⁰⁹ Ibid, s. 2712(b).

²¹⁰ Ibid, s. 2704(c)(2).

²¹¹ Wang Hui, *Civil Liability for Marine Oil Pollution Damage: a Comparative and Economic Study of the International, U.S. and Chinese Compensation Regime* (Kluwer Law International 2011) 209.

²¹² OPA, s. 2702(b)(2); See House Conference Report No. 101-653, 101st Cong., 2d Sess. 103 (1990), providing as an example that "a fisherman may recover lost income due to damaged fisheries resources, even though the fisherman does not own those resources."

²¹³ Andrew Davis, 'Pure Economic Loss Claims Under the Oil Pollution Act: Combining Policy and Congressional Intent' [2011] 45 Colum. J. L. & Soc. Probs. 1, 3.

²¹⁴ Perry, note 207, 53.

²¹⁵ *Robins Dry Dock and Repair Co. v Flint* (1927) 275 U.S. 303.

statutory²¹⁶ and common law liability²¹⁷ might apply in addition to OPA;²¹⁸ on the other hand, s. 2751(e) provides that OPA “does not affect admiralty and maritime law”,²¹⁹ which in turn, though with different requirements, allow courses of action with regard to negligent or intentional conduct leading to pollution damage.²²⁰

On the downside, a number of criticism could still be advanced against the US regime. To mention a few, first of all, a number of prerequisites for compensation from the Fund exist; most importantly that the claims must be brought first against the RP.²²¹ Even where the prerequisites are met, its per-incident payment for removal costs and damages is still limited.²²² A limit which, on the one hand is considered sufficient for the majority of claims for compensation for damage suffered but inadequate to answer those resulting from catastrophes of the Deepwater Horizon’s magnitude, and on the other hand risks being significantly reduced by payments of removal costs.²²³ Secondly, the evident discrepancy in State statutes and the scale of grounds available for claims under common law, admiralty and maritime law, causes complications and inconsistencies in the claim filing process.²²⁴ And thirdly, OPA’s wide scope and the types of damages it encompasses creates the possibility of, where no grounds for unlimited liability

²¹⁶ A notable example of state statutes which allow claimants to recover pollution damage on top of that which is recoverable under OPA is the Florida Pollution Discharge Prevention and Control Act; whereas the Louisiana Oil Spill Prevention and Response Act, which precludes it in s. 30.2451.

²¹⁷ Common law doctrines such as public nuisance and negligence can thus additionally be invoked by claimants.

²¹⁸ OPA, s. 2718(a).

²¹⁹ Thomas Schoenbaum, ‘Liability for Damages in Oil Spill Accidents: Evaluating the USA and International Law Regimes in the Light of Deepwater Horizon’ [2012] 24:3 JEL 395, 401. Schoenbaum defines admiralty and maritime law as “a body of federal common law applied by both federal and state courts exercising admiralty jurisdiction” and considers that the requirements for maritime law claims are distinct from those under OPA, thus theoretically defeating limitation to damages recoverable under the US regime.

²²⁰ See generally, Thomas Schoenbaum, *Admiralty and Maritime Law* (5th ed, Westgroup 2011) ch 5.

²²¹ OPA, s. 2713(a).

²²² Internal Revenue Code, s. 9509(c)(2)(A) sets the per-incident limit to \$1 billion. However, the Energy Policy Act of 2005 Pub. L. No. 109-58, 119 Stat. 594, 1058–1059, 1361, has increased the limit to \$2.7 billion.

²²³ Perry, note 207, at 58.

²²⁴ Schoenbaum, note 219, at 406.

applies, “diluting” the compensation amount available to the mass of claimants.²²⁵

Examining some of the (preponderant) literature surrounding the US regime under OPA, the following observations are made, with view to pinpoint deficiencies and particularities therein:

- Commenting on the types of damages recoverable under OPA, Sundaram wrote that it is “clear” that it has “expanded the damages that can be claimed for oil spills beyond those previously available under US federal laws”.²²⁶ Faure, Liu and Wang, citing Boyle, noted the innovation in OPA’s inclusion of damages to natural resources, which deals with a “global need – restoration of damaged ecological services and acknowledgement that natural resources have significant real economic value that need to be included in the calculation of damages”.²²⁷ Schoenbaum’s analysis, based on a comparison between OPA and the IMO international regime applicable to vessels, noted the wide scope of application of OPA, notably its coverage of spills of oil “of every kind and in any form”.²²⁸ With respect to recoverable damages, he reiterated the damages recoverable under OPA and categorised them as damages giving rise to claims for “response, prevention and clean-up; damages to property and consequential damages; and certain losses of earnings”. Nevertheless he noted that claims for economic losses and for environmental damages are treated “very differently” under each regime.²²⁹ Particularly, he questioned whether OPA allows recovery of damages for pure economic loss, and noted that the problematic provision is s. 2702 (b)(2)(E), which provides for recovery of “damages equal to the loss of profits or impairment of earning capacity due to the injury, destruction, or loss of real property, personal property, or natural

²²⁵ David Segal, ‘Should the Money Go where the Oil Didn’t?’ *New York Times* (New York, 24th October 2010) BU1

²²⁶ Sundaram, note 113, 80.

²²⁷ Faure, Liu and Wang, note 112, 139-140.

²²⁸ Schoenbaum, note 219, 398.

²²⁹ *Ibid*, 402-403.

resources”.²³⁰ He reasoned that the wording of the aforementioned section, omitting the “ownership requirement”, must be interpreted as revealing Congress’ intention to supersede the *Robins Dry Dock*²³¹ rule in its respect. Thus, he found that the requirements for claiming pure economic loss thereunder are that the “damage suffered by the claimant must be proximately caused by the actual or threatened discharge of oil” and that “the claimant’s lost profits or lost earning capacity must be caused, *in addition*, by injury, destruction or loss of property or natural resources” (emphasis added).²³² In line with Schoenbaum’s reasoning, Perry noted that “OPA does not clarify which classes of claimants are covered” by the same subsection.²³³ He asserted that the “conventional view” is in favour of OPA completely superseding *Robins Dry Dock*, but that even then, claimants may have to satisfy a proximate cause test. On the other hand, he noted that there are judicial precedents opposing such views.²³⁴ Moreover, Goldberg, again wondering about the class of persons entitled to recover under s. 2702(b)(2)(E), reasoned that a permissive interpretation thereof would open the door for a “universe of potential [...] claimants”.²³⁵ Therefore, basing his analysis on the use of the terms “due to” in the section in question, he argued that OPA limits the universe of valid claims thereunder.²³⁶ More particularly, he weighed the fact that non-owners are eligible to claim under s. 2702(b)(2)(E) and the condition that such claims must be in relation to damages caused by damage to, or loss

²³⁰ Ibid, 411.

²³¹ This case instituted the “exclusionary rule” which aims at reducing the extent of liability to prevent undue punishment or over-deterrence. It is the authority which provided that in order to recover for a maritime casualty, the plaintiff must suffer physical damage to some property in which it has a “proprietary interest. See Perry, note 207.

²³² Ibid.

²³³ Ibid, 52.

²³⁴ Ibid, 53.

²³⁵ John C.P. Goldberg, ‘Liability for Economic Loss in Connection with the Deepwater Horizon Spill’ (2010) DASH <<http://lawprofessors.typepad.com/files/goldberg-report-on-economic-loss-liability-11-22-10.pdf>> accessed 10 May 2018, 12. He noted that this is due to “each claimant who suffers an economic

setback because of a spill will probably pass on a portion of that setback to other persons and entities dependent on that claimant for business”

²³⁶ Ibid, 16.

of, property or natural resources against each other. Therefore he concluded that the section's "'due to' clause imposes a second-layer causation requirement on top of the initial 'result from' requirement set by s. 2702(a)".²³⁷ This merely highlights that confusion surrounds the question of whether and to what extent does OPA expand liability to cover pure economic loss. The risk of the validity of the arguments above is that the wide array of damages covered under OPA might have negative consequences for claimants. As pointed-out by Perry, taking the limited financial capacities of RP into account, "liability for relational economic losses may forestall full recovery for injuries to physical interests that may be deemed more worthy of legal protection", thus, "each victim may end up with compensation for a very small fraction of his or her loss, making the costly process futile".²³⁸ On the other hand, both Faure, Liu and Wang, and Schoenbaum have noted complications attached to quantifying damages to natural resources.²³⁹

- Commenting on the fact that OPA does not pre-empt State legislation, numerous authors have noted that the liability rules applicable in many States may be divergent from each other and from those contained in OPA. This is the case notably when they impose higher liability limits, or even unlimited liability. In this regard, Schoenbaum has noted discrepancies in the liability rules in force in Florida and in Louisiana.²⁴⁰ Faure, Liu and Wang mentioned the States of Alaska, California, North Carolina and Rhode Island as examples of those adopting strict and unlimited civil liability for clean-up costs, natural resources damage and private losses caused by oil pollution.²⁴¹ They deemed that the non-pre-emption of State laws affords claimants with additional compensation. However, they wondered whether the combination of unlimited liability and financial responsibility in States contributes to better cost internalization and better safety.²⁴² Perry, rates this non-pre-emption

²³⁷ Ibid, 16-17.

²³⁸ Perry, note 207, 63.

²³⁹ See generally Faure, Liu and Wang, note 112, 140-141, and Schoenbaum, note 219, 413.

²⁴⁰ Ibid, 401.

²⁴¹ Faure, Liu and Wang, note 112, 143.

²⁴² Ibid, 143-144.

negatively. He assessed the conflicting views surrounding whether it entails that pure economic loss in excess of OPA may be recovered under State legislation imposing unlimited liability. These vary between those arguing that OPA allows State law to extend liability beyond general maritime law and also *Robins Dry Dock*, those arguing that in light of existing case-law on the subject, pure economic loss cannot be claimed for under State law in excess of OPA, and those arguing against the constitutionality of OPA's delegation of power to States.²⁴³ In his opinion, allowing States to impose unlimited liability renders one of OPA's "most significant feature[s]", namely liability caps, meaningless.²⁴⁴

- With regard to the financial security provisions under OPA, Faure, Liu and Wang interestingly spotted that the amounts for financial responsibility for offshore facilities provided for are not tied with the liability limits it sets in respect of claims for damages that may arise therefrom. Therefore, it is possible that claims for damages within the liability cap would be negatively affected by the prospects of the RP's insolvency.²⁴⁵
- One notable particularity of the OPA regime is that it provides for joint and several liability where there are multiple RPs. This entails that each one of them is answerable for the entire amount of damage claimed following an oil spill. Faure, Liu and Wang considered this to be a "significant difference" to the IMO international regime applicable to pollution from tankers.
- Complexities surrounding claims procedures in the US regime have also been the subject of academic criticism. In this respect, Schoenbaum argued that the multitude of laws that could be invoked by both claimants and RP due to the non-pre-emption of State legislation under the OPA regime coupled with the US federal system complicate the process of filing claims for oil pollution damage.²⁴⁶ Looking at the Deepwater Horizon example, he noted that "over

²⁴³ Perry, note 207, 61.

²⁴⁴ Ibid, 65.

²⁴⁵ Faure, Liu and Wang, note 112, 148. Of course, claimants could in such scenarios present their claim to the Fund.

²⁴⁶ Schoenbaum, note 219, 406.

one hundred thousand claims were filed in state and federal courts in at least five different states”.²⁴⁷

- Finally, having examined the situations under OPA with regard to claims for punitive damages, Perry commented on its failure to set the “proper limit on liability in light of all relevant factors”.²⁴⁸ In his opinion, OPA’s non-embracement of punitive damage is in principle “reasonable”,²⁴⁹ as it allows more victims to recover for their actual loss “not by allowing a few successful claimants to obtain a windfall while leaving all other victims uncompensated”.²⁵⁰ However, he believed that the extent of liability should depend on the relative gravity of the wrong, rather than, through the application of a “dichotomous rule”, liability becoming unlimited as soon as the RP is guilty of more than mere negligence, or even in case of “technical and petty” violation of the applicable federal safety, construction or operating regulations.²⁵¹ Thus, “gross negligence, recklessness, malice, *etc.* are treated equally”.²⁵² This led Perry to conclude that OPA “is less sensitive to this concern in cases of gross negligence, recklessness, and willful misconduct. While the extent of liability for ordinary negligence under the Act is clear-cut, liability for more serious wrongdoing is truly openended. There are neither limits nor guideposts, so the ultimate scope of liability is utterly unpredictable.”²⁵³

In light of the foregoing, it is safe to conclude that, in Perry’s words, OPA “represents a commendable step”,²⁵⁴ and that, in Sundaram’s words, it “may provide useful/credible inputs into any working draft”.²⁵⁵ Despite its imperfections, the liability regime it adopts exemplifies the adoption by States of

²⁴⁷ Ibid, 407.

²⁴⁸ Perry, note 207, 64

²⁴⁹ Ibid. Perry reasoned that in certain scenarios the award of punitive damages might be useful in “very rare cases in which removing liability caps is insufficient”.

²⁵⁰ Ibid, 62.

²⁵¹ Ibid, 64.

²⁵² Ibid, 63-64.

²⁵³ Ibid, 65.

²⁵⁴ Ibid.

²⁵⁵ Sundaram, note 113, 108.

a liability regime in respect of damage from offshore oil and gas incidents under their jurisdiction, particularly having regard to its ability to afford legal backbone to the multitude of claims resulting from the Deepwater Horizon disaster. Nevertheless, as will become clearer in the discussion below, the US regime is far from universal.

b- Lack of uniformity in liability regimes across the globe

This sub-section reviews key literature revealing discrepancies in the liability regimes applicable to damage resulting from offshore activities as adopted in various States. This literature review will also aim to highlight the inexistence of adequate liability regimes in numerous States. The conclusions on the aforementioned points would thus reinforce arguments for the need of the development of a uniform, global liability regime, particularly in light of the development of the international obligations incumbent upon States as argued in this thesis.

Faure, Liu and Wang have conducted a comparative study of the liability regimes in force in a number of developed oil-producing States, namely: the UK, Norway, Denmark, the USA, Australia and Canada.²⁵⁶ This comparison, shows that “in *most countries* with a strong offshore petroleum interest, there is at least a national regime on civil liability” (emphasis added).²⁵⁷ Thus, they have recognised that such regimes could well not exist at all in other States. They more specifically added that “there are only a few legal systems where liability resulting from offshore related activities is expressly addressed”.²⁵⁸ Nevertheless, confining their study to the aforementioned States, they made the following observations: to some extent, there are common grounds among the liability regimes in questions with regard to (a) the basis of liability being strict; (b) liability being imposed on the licensee/operator; (c) the provision for joint and several liability in case of multitude of tortfeasors; (d) the provision for some requirement for proof of financial capacity of the operator/licensee (even if the amounts thereof is not

²⁵⁶ Faure, Liu and Wang, note 112, 166-171.

²⁵⁷ Ibid, 166.

²⁵⁸ Ibid, 167.

specified in “most jurisdictions” and left to be determined on a case-by-case basis).²⁵⁹ On the other hand, discrepancies exist, notably in relation to: (a) whether compliance with regulations exempts defendants from assuming liability (for example authors mentioned that Australian law on the subject is “vague” which if interpreted in a certain way “could lead to the situation that compliance with regulation may be used as a legal defence”);²⁶⁰ (b) causation, as authors have noted that “most statutes examined are silent on the causation issue” despite the general view that it is the occurrence of an incident which triggers liability; (c) limitation of liability, as “most countries examined” do not provide for a limitation of liability, unlike States like the USA (taking into account the debate about whether State legislation could still provide for unlimited liability, and the conditions for the cap to be removed under OPA; moreover remembering that removal costs are unlimited under OPA) and Canada; (d) claims settlement, as authors have noted that, examining the specific compensation mechanisms in each national system, apart from the strict-liability standard and compulsory financial guarantee, “useful instruments” to provide rapid compensation to victims are difficult to find.

On the other hand, the Deloitte Liability Report referred to above,²⁶¹ examined the liability regimes in twenty European States in light of their adequacy to answer claims for compensation for harm caused by offshore incidents. It is noteworthy that the Report discussed at some length that such regimes are only adequate if they provide for liability for pure economic loss (and an appropriate system ensuring compensation thereof). This is mainly the case having regard that in the “vast majority of claims for traditional damage from pollution from an offshore oil and gas incident are, indisputably, for pure economic loss”.²⁶² Interestingly,

²⁵⁹ Ibid, 170-171.

²⁶⁰ Ibid, 170.

²⁶¹ See note 6.

²⁶² Deloitte Liability Report, 175. Pure economic loss is defined in the Report as “loss in the absence of bodily injury or property damage, that is, claims for lost revenue that does not result from bodily injury to the claimant or property owned by the claimant.” See page 51. Examples of such loss are the losses by businesses in the tourism industry due to loss of profit as a result of lack of customers

having examined the legislation in the States subject of its study, the Report found that “they either do not recognise pure economic loss, have not adopted a liberal approach to claims for it, or not have a specific liability system for claims from pollution from an offshore oil and gas incident”.²⁶³ Therefore, it concluded that many claims for damages from offshore activities in these countries will likely fail.²⁶⁴ Furthermore, the Report noted that only Norway’s legal system provides for liability for compensation in respect of fisheries in the event of pollution from offshore oil and gas incidents. Other States, on the other hand, generally rely “*solely, or to a large extent*”, on Civil Codes, Laws on Wrongs, and common law.²⁶⁵ Some States, like Cyprus and Greece, seem to recognise liability for pure economic loss under contractual agreements between licensees/lessees and the State. However, such systems are weakened by the hurdle of claimants being third parties to such agreements, and therefore depending on the State to undertake action on their behalf.²⁶⁶ Moreover, and importantly, the Report found that even in States where pure economic loss is recognised, important discrepancies persist. In this regard, the Report noted that the “extent to which claims for loss of income, and other pure economic loss claims are covered differs widely” as the approaches adopted in States vary between liberal, conservative and intermediate, with “variations in it”. Therefore it concluded that claims for pure economic loss would in fact ultimately be dependent upon the applicable laws in the jurisdiction in question.²⁶⁷ Additionally, “other aspects of the tort laws” of States have significant repercussions on the way courts deal with claims for pure economic loss. For example, under the tort laws of many States, only direct claims are covered, thus making it unlikely in such jurisdictions for claims brought by businesses in sectors other than the fisheries sectors to succeed.²⁶⁸ Another

following oils and chemicals having been washed up on beaches. For other examples see pages 56-57 of the Deloitte Liability Report.

²⁶³ Ibid, 175.

²⁶⁴ Ibid.

²⁶⁵ Ibid, 179.

²⁶⁶ Ibid.

²⁶⁷ Ibid, 182.

²⁶⁸ Ibid.

notable discrepancy concerns the fact that in many States, liability for damages resulting from offshore activities is subject to a fault-based standard, thus requiring claimants to prove the responsible party's negligence. The Report cited Bulgaria, Croatia, Cyprus, France, Greece, Ireland, Italy, Latvia, Malta and Romania, as examples of States imposing such standard.²⁶⁹ In light of the foregoing, it concluded that, in the States in question, "the result is, basically, that application of the polluter pays principle to offshore oil and gas operations is severely limited".²⁷⁰ For the purposes of our discussion, this study confirms the contentions aimed at in this sub-section, namely that the liability regimes in force in many States are not adequate to answer compensation claims for damage resulting from offshore incidents, and that major discrepancies exist in the regimes adopted worldwide. On the other hand, Faure, Liu and Wang's work confirms the trend among developed States with strong offshore presence to adopt some form of liability regime specifically tailored to deal with claims for harm resulting from offshore oil and gas incidents. In light of the foregoing, the current *status quo* entails that (1) no real incentive on creators of risks in offshore operations to adopt optimum safety standards is created in States failing adopt an adequate liability regime; and (2) even where such regimes exist, the existing discrepancies in the field accommodate varying safety standards for offshore operations worldwide.

The conclusions reached in this sub-section reinforce the argument calling for the elaboration of a global uniform regime setting minimum standards and containing elements essential for its proper and adequate functioning. The prospects of the elaboration of such global instrument are examined in the following sub-section.

2. Legal underpinnings of a prospective global liability regime applicable to damages from offshore activities

This section aims to synthesise the literature analysing the features deemed essential and most efficient in a liability regime designed to deal with offshore oil-

²⁶⁹ Ibid.

²⁷⁰ Ibid, 185.

and-gas-related-harms. It purports to show that the prospects of the development of a global such regime are by far higher than the elaboration of an instrument harmonizing regulation of safety across the globe, particularly having regard that general consensus exists in relation to fundamental elements/features which could potentially form its underpinnings. Ultimately, this affords the infrastructure for the contention that States have sufficient guidance – through reliance on “successful” prototypes and on the consensus on the fundamental features of liability regimes - on how they could satisfy their obligation to prevent transboundary harm from offshore incidents through the elaboration and adoption of one or more liability regimes.

The approach followed in this section will involve an individual analysis of the literature surrounding the aforementioned elements. These will include: (1) the principle of strict liability; (2) the question of limitation of liability; (3) the question of channelling and apportionment of liability; (4) mandatory financial security provisions; (5) and other elements (encompassing the relationship between liability regimes and regulations; jurisdictional issues; and damages covered under liability conventions).

A- Strict liability

The principle of strict liability is traditionally contrasted from fault-based liability (or negligence). Strict liability entails that the responsible party may be exposed to claims without claimants having to prove fault on its behalf (although causation must still be established). It is also distinguished from absolute liability, which allows no limitations or exemptions. Thus, as put by Vicuña, “strict liability operates on the basis of the objective fact of harm, generally involving an obligation of result, and also allows for appropriate exemptions and limits”.²⁷¹ The question is whether such standard of fault is appropriate for a liability regime applicable to offshore operations. This sub-section demonstrates the academic agreement behind the reliance on a standard of strict-liability.

²⁷¹ Francisco Orrego Vicuña, ‘Responsibility and Liability for Environmental Damage under International Law: Issues and Trends’ [1998] 10 *Georg. Int’l. Env’tl. L. R.* 279, 286.

The general trend followed in national and international instruments applicable to liability for environmental damage appears to be relevant as damages from offshore activities could readily fall under it. Moreover, the examination of the specific application of the standard to the offshore industry merits scrutiny.

In this regard, Vicuña noted that “the main trend of current international practice points in the direction of strict civil liability being the preferred standard under such [instruments]”.²⁷² He then went on to express his support for this “trend” as it circumvents the difficult burden of proof requiring potential claimants to establish fault and its subjective intentionality, and offers a “more solid ground for building an effective environmental regime”.²⁷³ Moreover, he noted that the exemptions provided for in environmental regimes will normally be compatible with their objectives,²⁷⁴ citing exemptions based on armed conflict, terrorism or natural disaster and intentional or gross negligence of third parties as examples commonly adopted in international environmental regimes.²⁷⁵ Albeit, he insisted that such exemptions must be interpreted narrowly, in order to preserve the significance of the liability regime which contains them.²⁷⁶ Furthermore, Vicuña was of the view that a negligence rule is difficult to reconcile with the principle that insurance only covers “unforeseeable damages, fortuitous events or other unintentional elements”, and that thus a strict liability rule is more appropriate.²⁷⁷ Disagreeing with the aforementioned, it is submitted that the negligence rule is based on proof of fault, and that fault only falls outside the elements covered by insurance if wilful misconduct is established, which is the exceptional scenario.

This “trend” was also traced by Churchill, who argued that the way for civil liability treaties to overcome complexities attached to proof of fault by the defendant has typically been through the provision for its strict liability.²⁷⁸ He

²⁷² Ibid.

²⁷³ Ibid.

²⁷⁴ Ibid, 296.

²⁷⁵ Ibid, 296-297.

²⁷⁶ Ibid, 298.

²⁷⁷ Ibid, 290.

²⁷⁸ Churchill, note 63, 33-34.

noted that this approach has encouraged settlement of claims without judicial recourse (thus saving time and expenses) in the context of the CLC, and thus favoured reliance thereon.²⁷⁹ He further argued that strict liability incentivises better risk management.²⁸⁰ Moreover, he justified the fact that “all the treaties” provide for scenarios where the responsible party would be entirely exempt from liability based on grounds of fairness.²⁸¹

Boyle has also noted that the general choice of strict liability is an “invariable feature” in international liability conventions.²⁸² In support of such standard, he referred to the fact that it would afford certainty to judicial proceedings (as judges will not be asked to set standards of reasonable care against which liability is assessed), and to the unfairness underpinning burdening plaintiffs with having to prove fault from the part of operators of risk-creating activities which were initially allowed “only because of [their] social utility”, particularly where the victims are in countries not benefiting from the harmful activities in question.²⁸³ Moreover, he recognised that international treaties provide for exemptions from liability, albeit with difference in “detail and degree”.²⁸⁴

On the other hand, despite noting arguments in favour of environmental strict liability regimes (notably: that they help internalize costs of pollution and implementing the polluter-pays principle; that they incentivise compliance with environmental protection standards; and that they constitute a “back-up system” where regulatory arrangements fail in protecting against environmental harm), Brunnée noted that evidence in favour of their practical utility is lacking.²⁸⁵

²⁷⁹ Ibid.

²⁸⁰ Ibid.

²⁸¹ Ibid, he noted that “[m]ost, although possibly not all, of the exceptions to strict liability will generally be thought to be justifiable because it is unfair to make the defendant liable for matters over which she or he had no control”.

²⁸² Alan Boyle, ‘Globalising Environmental Liability: the Interplay of National and International Law’ [2005] 17:1 Journal of environmental law 3, 13.

²⁸³ Ibid.

²⁸⁴ Ibid, 14.

²⁸⁵ Jutta Brunnée, ‘Of Sense and Sensibility: Reflections on International Liability Regimes as Tools for Environmental Protection’ [2004] 53 Int’l & Comp. L.Q. 351, 365-366. She noted that some studies suggested that “strict liability regimes have no statistically significant effect on

Nevertheless, she also noted that some assessments suggest that “liability regimes can serve an incentive function only when the likelihood that responsible parties will actually pay for damages is sufficiently high” and that, in the view of some, “the liability limitations in most international regimes may actually have the reverse effects, removing incentives to take stricter prevention measures”.²⁸⁶ Moreover, she is of the view that “conceptual similarities” are “emerging” among existing liability regimes, and that they are “issue-specific”, thus calling for new regimes to provide for solutions that are “tailor-made to their particular concerns”.²⁸⁷

De Smedt, Wang and Faure, basing their analysis on core principles of “efficient and fair compensation” and on an economic analysis of the law, and assuming that “the goal of accident Law is the minimization of the total sum of accident costs”,²⁸⁸ compared the effectiveness of the fault-based standard of negligence and the standard of strict liability in the particular context of liability from offshore activities. Their analysis involved a comparison of the effectiveness of these standards in incentivising higher levels of care, as this would in turn lead to minimizing the expected accident cost. They noted that it is the conventional view that both negligence and strict liability rules incentivize potential polluters to take efficient levels of care.²⁸⁹ Nevertheless, they were of the view that strict liability is

polluter behaviour”. Furthermore, commenting on their role of affording victims of pollution damage with appropriate mechanisms for compensation, she noted that liability regime’s potential “depends on the circumstances”.

²⁸⁶ Ibid, 365.

²⁸⁷ Ibid.

²⁸⁸ These being namely the principle that “no matter how compensation is organized, the incentives for preventing damage caused by offshore incidents should always remain intact”; the principle of “risk differentiation” (incentivizing all those who contributed to the creation of the risk to prevent/reduce it and/or mitigate the damage the principle whereby “a solution should be introduced at the lowest administrative cost possible”; and the principle under which a “competitive market solution may be preferred to a bureaucratic intervention by government”. See Kristel de Smedt, Hui Wang and Michael Faure, ‘Towards Optimal Liability and Compensation for Offshore Oil and Gas Activities’ in Michael Faure (ed) *Civil Liability and Financial Security for Offshore oil and Gas Activities* (Cambridge University Press 2017), 306-307.

²⁸⁹ In relation to the negligence rule, they noted that “[s]pending more on care will reduce the probability that an accident may occur”. And thus, “requiring the injurer to spend more on care is efficient as long as the marginal costs of care are lower than the additional benefit in reduction of

more favourable in the particular context of liability for damage from offshore activities, as risks pertaining thereto fall under the “unilateral accident model” where “only the behaviour of the injurer influences the accident risk”,²⁹⁰ and taking account that such a rule presents the advantage of incentivizing injurers to adopt optimal activity levels in additions to taking efficient care.²⁹¹ Their analysis appeared to accommodate the traditional exemptions of liability usually contained in liability regimes, as they insisted that “it remains important to add a defence to take into account the victim’s behaviour as well”.²⁹² They further reinforced their position in favour of the application of a strict liability standard by arguing that the liability regime imposed under the CLC applies “*mutandis mutandis* to offshore related liability risks”, and by referring to the embracement of this standard in the legislation of notable oil-producing countries.²⁹³

B- Limitation of liability

Commenting on this element, Vicuña noted that its inclusion in regimes has frequently been a subject of debate during their negotiations, and that many do ultimately provide for it.²⁹⁴ This led him to assert that it is “advisable that reasonable limits be provided [...] under environmental regimes”.²⁹⁵ He further supported his stance by arguing that such limitation actually helps finding a balance between the conflicting objectives of achieving effective protection and of avoiding excessive financial burdens on responsible parties.²⁹⁶ Nevertheless, he recognized the risk of placing a cap on the polluter’s liability in leading to partial payment of compensation, and suggested that this disadvantage could be dealt with through the provision for another layer of liability from which victims could benefit, based either on insurance arrangements, the establishment of a

the expected loss”. Ibid, 309. With regard to strict liability, they noted that it will “lead to optimal incentives for care taking for the polluter because taking efficient care will minimize the expected accident costs which the potential polluter has to bear under a strict liability system”. Ibid, 310.

²⁹⁰ Ibid, 311.

²⁹¹ Ibid, 312.

²⁹² Ibid.

²⁹³ Ibid.

²⁹⁴ Vicuña, note 271, 288.

²⁹⁵ Ibid.

²⁹⁶ Ibid.

compensation fund, or even subsidiary State liability.²⁹⁷ However, his reasoning is seemingly flawed in that it only addresses the potential issue from a victim's perspective without having due regard to the application of the "polluter-pays" principle, thus raising doubts as to the necessity of achieving the latter.

Examining the existing liability regimes, Churchill noted that all civil liability treaties provide for limitation of the polluter's liability, with the exception of the Lugano Convention.²⁹⁸ He further noted that such limitation generally depends on the behaviour of the defendant, as its wilful misconduct results in the liability cap being removed. He justified this position based on several grounds: first, he noted the argument (based on an element of justice) applicable with regard to maritime transport whereby shipowners are seen as performing a function which is necessary and beneficial for society, thus meriting some sort of protection, which in turn encourages "scrupulous ship owners" to continue performing this function.²⁹⁹ Second, he reasoned that the limitation of liability makes it possible for potential polluters to purchase insurance cover in relation to the risks attaching to their activities. Third, echoing Vicuña's observations, he considered that such limitation is a "*quid pro quo* for strict liability" and that its inclusion in liability regimes has been essential for their elaboration.³⁰⁰ Therefore he admittedly concluded that "it has to be said that arguments for limited liability are based more on political, policy, and practical considerations than on issues of principle and the needs of victims".³⁰¹ This is somewhat consistent with Boyle's view according to which the benefits accorded to claimants under liability regimes are counterweighed by limitations of liability which have not always been "realistic".³⁰² That being said, Churchill has importantly noted that, unlike shipowners, oil companies can generally better afford unlimited liability, are in fact best placed to bear the costs of damages resulting from their activities, and

²⁹⁷ Ibid, 289.

²⁹⁸ Churchill, note 63, 34-35.

²⁹⁹ Ibid, 35.

³⁰⁰ Ibid, 36.

³⁰¹ Ibid, 36-37.

³⁰² Boyle, note 282, 12.

have not been discouraged from seeking to conduct their activities in jurisdictions conditioning the grant of licenses to do so to their exposure to strict and unlimited liability, like Norway.³⁰³

The aforementioned point made by Churchill coincides with the reasoning followed by De Smedt, Wang and Faure, who, again through an economic analysis of the law, strongly oppose the provision for financial caps in relation to liability for pollution from offshore activities. Their arguments could be summed as follows: (i) unlike Vicuña, they focused on the disadvantage of liability caps in relieving polluters from full exposure to the social costs of its activities, and therefore the imperfect implementation of the polluter-pays principle;³⁰⁴ (ii) reiterating Vicuña's concerns, they highlighted the negative repercussions such cap would have on victims' prospects to receive full compensation for the damages they suffered; (iii) the limitation of the polluter's liability has a direct effect on the level of care it invests in conducting its activities, as it would only invest as far as its liability is capped (referred to as "under-deterrence" of operators); (iv) such cap would provide the industry with an indirect "subsidization"; and (v) that such limitation has not in fact been suggested by stakeholders from both the offshore and insurance industries during their "many interviews" with authors.³⁰⁵

Thus, it could be argued that, despite the conventional view in favour of limitation of liability in liability regimes for environmental damage, and taking account of economic considerations, of core principles such as the polluter-pays principle and of the generally stronger financial position of oil companies in comparison with stakeholders in other industries, a tailor-specific convention applicable to pollution from offshore activities might call for the provision of the unlimited liability of responsible parties. In any case, this element's effectiveness is, as we will see, directly tied with that relating to mandatory financial security.

³⁰³ Churchill, note 63, 36.

³⁰⁴ De Smedt, Wang and Faure, note 288, 317-318.

³⁰⁵ Ibid, 318.

C- Channelling and apportionment of liability

These two elements fall under the wider objective of attribution of liability, a matter which basically deals with identifying who, among the entities involved in the causing of the compensable damage in question, should be held liable for payment of compensation.

In this regard, Vicuña expressed that the trend in existing treaties on environmental law is to seek to reach “a greater number of entities which can be legitimately requested to participate in the payment of full compensation and reparation of damage”.³⁰⁶ He further noted that channelling of liability involves assigning primary liability to operators, and that it constitutes a usual expression of the aforementioned trend.³⁰⁷ Moreover, he asserted that, “in the context of major consortia participating in complex and expensive international projects” (under which offshore exploration and exploitation activities could fall, particularly having regards the transnational nature of the risks of pollution they pose), some sort of joint and several liability [‘JSL’] “will always be available”.³⁰⁸ In his opinion, JSL presents the advantage of sharing the burden of liability among the various players involved in the creation of the risk.³⁰⁹ Whereas the concept of “product liability”, extending liability for environmental to manufacturers of defective equipment, has not been frequently adopted in treaties on environmental Law.³¹⁰

Churchill has also noted the general trend in treaties to provide for channelling of liability through one owner, citing shipowners (in the context of the CLC) and the operator of a nuclear facility (in the context of the Paris Convention)³¹¹ as

³⁰⁶ Vicuña, note 271, 290.

³⁰⁷ Ibid.

³⁰⁸ Ibid.

³⁰⁹ Ibid.

³¹⁰ Ibid.

³¹¹ Paris Convention on Third Party Liability in the Field of Nuclear Energy (adopted 29 July 1960, entered into force 1 April 1968) 13706 UNTS 329, as amended by the Additional Protocol of 28 January 1964, by the Protocol of 16 November 1982 and by the Protocol of 12 February 2004 [‘Paris Convention’].

examples for such provision.³¹² Assessing this model of liability, he noted that, from a victim's perspective, it presents the advantage of simplifying the claiming process for damages suffered, as the defendant is easily identified and cannot evade from liability by shifting it onto others.³¹³ From an insurance perspective, he further noted that channelling liability eliminates complexities attached to overlapping insurance coverage, and thus contributes in reducing the burden on the insurance market.³¹⁴

Contrary to the opinions of Vicuña and Churchill, Boyle was of the view that, despite channelling of liability featuring in “most of the liability conventions [...] it is by no means a universally accepted principle”.³¹⁵ To support his statement, he looked at the provisions for attribution of liability in notable instruments, and noticed how while some only provide for channelling of liability (like the CLC), others provide for JSL (like the 2001 Bunker Fuel Convention) or both elements (like the conventions applicable to liability from nuclear damage, notably the Paris Convention, the Brussels Convention on Nuclear Ships, the Vienna Convention on Civil Liability, and the Brussels Convention on Maritime Carriage of Nuclear Material). Moreover, he noted that in some conventions, like those dealing with the transboundary movement and disposal of waste, “no single operator is liable at all stages”, and liability is continuously shifted among various players depending on the waste's journey.³¹⁶ Assessing the role of channelling of liability, he recognised the benefits it brings to victims, and reasoned that the rule's *raison d'être* lies in the fact that the party to whom liability is channelled is deemed to be in the best position to exercise “effective control” over the activity in question.³¹⁷ However, he criticised this approach for being “too simplistic” in some scenarios, as in the case in the Bunker Fuel Convention where there could be several “owners” or “operators” involved.³¹⁸ Thus, he reasoned that, in such

³¹² Churchill, note 63, 33.

³¹³ Ibid, 38.

³¹⁴ Ibid.

³¹⁵ Boyle, note 282, 14.

³¹⁶ Ibid.

³¹⁷ Ibid.

³¹⁸ Ibid.

scenarios, JSL is more advantageous in that it allows claimants to sue the most solvent of the potential defendants, or to spread the burden of liability among them, while nevertheless presenting the risk of making it more difficult to know which one to sue.³¹⁹ Thus, it follows from Boyle's reasoning that there exists no uniformity in liability conventions in relation to the applicable rule with regard to attribution of liability, and that the choice of the appropriate rule would depend on the particularities of the risk and parties involved.

Commenting on the subject, De Smedt, Wang and Faure, reiterated the arguments presented by previous authors (notably the criticism against channelling of liability). However, providing an economic-analysis perspective of channelling of liability, they argued against its efficiency.³²⁰ They argued that a direct consequence thereof would be to disincentivise other players involved to exert sufficient levels of care in their operations.³²¹ Nevertheless, they purported that this disadvantage could be circumvented in the offshore oil and gas industry through contractual arrangements between the parties involved, whereby operators of facilities (generally being in a strong bargaining position) could ensure that right of recourse is available for them against the contractors actually responsible for the damage caused.³²² Alternatively, they suggested the reliance on the concept of "economic channelling" instead, which entails that sub-contractors would still remain liable for their wrongdoings (thus preserving the incentive for them to act with due care), but mandating that operators take insurance covering both the potential liabilities of all players involved in the creation of the risk in question (thus preserving the advantage of relieving the insurance market).³²³ With regard to JSL, De Smedt, Wang and Faure noted that it presents the "general rule in all cases where more than one tortfeasor is involved", and acknowledged the advantages such rule presents to victims.³²⁴

³¹⁹ Ibid, 14-15.

³²⁰ De Smedt, Wang and Faure, note 288, 314.

³²¹ Ibid.

³²² Ibid.

³²³ Ibid, 314-316.

³²⁴ Ibid, 316-317.

Nevertheless, they also noted that, on the one hand, it might prove inefficient where one of the tortfeasors becomes insolvent, making recourse against it by other tortfeasors (now exposed to increased liability for damages they did not cause) impossible; and on the other hand, it causes potential complexities as it requires all parties involved to purchase insurance covers.³²⁵

Therefore it appears that a tailor specific approach could also be reached in relation to the matter of attribution of liability for damages caused from offshore activities. This is with due regard to the particularly strong bargaining power of oil companies operating them, allowing them to either circumvent issues relating to legal channelling of liability, or to contractually provide for economic channelling arrangements.

D- Mandatory financial security

Commenting on the CLC, and citing Billah, Sundaram noted that its provision for mandatory insurance cover “contributes hugely to its success”, as it ensures that adequate compensation would be paid to victims.³²⁶ Thus he suggested that national legislation make provisions to the effect of conditioning the grant of licences on the proof of the financial security capacities of operators.³²⁷ On the other hand, Vicuña was of the view that the provision for limitation of liability significantly affects the operator’s prospects of obtaining insurance cover for the risks of its activities, as “unlimited liability is also difficult or most expensive to insure”.³²⁸ Churchill further added that insurance is usually required to cover the limits (or most of) of the operator’s liability.³²⁹ He reasoned that this presents the evident advantage for victims as it ensures that they will receive compensation for their claims made within the limits of the insurance coverage.³³⁰

In the opinions of De Smedt, Wang and Faure, the rationale behind the provision for mandatory financial security is to protect against the possibility of the liable

³²⁵ Ibid, 317.

³²⁶ Sundaram, note 113, 101.

³²⁷ Ibid, 103.

³²⁸ Vicuña, note 271, 289.

³²⁹ Churchill, note 63, 33;35.

³³⁰ Ibid, 35.

party's insolvency.³³¹ However, Jost has argued that so far as financial security is not made mandatory, injurers would only be incentivised to purchase insurance cover to the extent of the value of their own assets, particularly where the extent of potential damage largely exceeds them.³³² De Smedt, Wang and Faure adopted this approach, and concluded that providing for mandatory financial security presents "better results than with insolvency", as absent such provision, operators will only be incentivized to invest in levels of care accordingly to the value of their assets.³³³ Moreover, they suggested that, should financial security be made mandatory, taking out of insurance coverage presents the additional advantage of insurers positively influencing the assured's behaviour (through imposing contractual conditions and setting adequate premiums).³³⁴ They argued that this could in turn ensure that the effect of injurers externalising harm, through engaging in activities which risk causing harm exceeding the value of their assets, would be avoided (as opposed to the externalisation of harm through burdening society with the costs of their harm).³³⁵ Finally, authors have made the interesting observation that financial security provisions must adopt a "flexible approach" and not be entirely dependent upon the insurance market, as that would lead to the undesirable outcome where "insurers would become *de facto* licensors of the industry".³³⁶

E- Other elements

A number of other elements usually contained in conventions implementing liability regimes in respect of environmental harm have been the subject of academic scrutiny, a brief description thereof will be made in this sub-section.

³³¹ De Smedt, Wang and Faure, note 288, 331.

³³² Peter-J Jost, 'Limited Liability and the Requirement to Purchase Insurance' [1996] 16 Int'l R. L. Ec. 259. Jost's overall argument is that "the externalities due to the injurers' lack of assets may be alleviated, if insurance coverage is mandatory".

³³³ De Smedt, Wang and Faure, note 288, 331.

³³⁴ Ibid, adopting views adopted by Jost and Skogh. See Goran Skogh, 'Mandatory Insurance: Transaction Costs Analysis of Insurance' in B. Boukaert and G. de Geest (eds.), *Encyclopedia of Law & Economics, Volume I. Civil Law and Economics* (Cheltenham and Northampton: Edward Elgar 2000), pp. 521–37.

³³⁵ De Smedt, Wang and Faure, note 288, 331.

³³⁶ Ibid, 332.

First, in relation to the relationship between liability regimes and regulations, De Smedt, Wang and Faure have noted that “in most legal systems”, compliance by tortfeasors with the regulatory requirements (representing the minimum level of care required) does not exempt them from liability (referred to as “regulatory compliance defence”).³³⁷ However, they noted that judges’ roles are made easier where such requirements are violated, as it would entail the existence of at least an element of fault, upon which claimants could rely, thus making the victim the “enforcer of safety regulation”.³³⁸ This relationship is then relied upon by authors to conclude that liability regimes play alongside safety regulation, an “important role” in incentivising operators to take “optimal preventive measures”.³³⁹ Of course, as previously discussed, non-compliance with regulatory requirements also leads in some jurisdictions (notably the USA), to the removal of the statutory cap on the tortfeasor’s liability, a situation it will certainly aim to avoid. In fact, Churchill referred to “encouraging compliance with regulatory measures” as one of the “policy objectives” of civil liability treaties.³⁴⁰ He asserted that, despite the limited occurrences where such treaties actually embrace a relationship between compliance with regulatory requirements and the extent of the defendant’s liability (mentioning only the Basel Protocol as an example), there is a “good case” for arguing that they ought to provide that compliance with the former would lead to the limitation of the latter.³⁴¹ This arguably reinforces the validity of the trend adopted in developed oil-producing States whereby safety and environmental protection from offshore activities is administered through concurrent regulatory and liability regimes.

Second, and as far as jurisdictional issues are concerned, Churchill pointed out that all civil liability treaties provide for claims to be brought before the courts of the State where damage has occurred, and that the applicable law is either that

³³⁷ Ibid, 327.

³³⁸ Ibid.

³³⁹ Ibid.

³⁴⁰ Churchill, note 63, 39.

³⁴¹ Ibid.

provided for in the treaty or that of the national law of the State of the forum.³⁴² Furthermore, treaties usually provide for the mutual recognition of judgements in the all States adhering thereto, thus ensuring their effective enforcement.³⁴³

Third, and with regard to damages covered under civil liability treaties, Churchill generally observed that the schemes for compensation adopted in all civil liability treaties are “broadly similar”.³⁴⁴ Focusing his attention on the damages which could typically be recovered thereunder, he noted that they include personal injury, damage to property, damage to the environment, and (particularly in more recent treaties, and although with small variations), loss of income/profit “deriving from an economic interest in any use of the environment as a result of the impairment of the environment as well as the costs of measures to prevent damage to the environment or to restore an impaired environment”.³⁴⁵

In sum, this review of the literature surrounding some of the core elements of civil liability treaties applicable to environmentally harmful activities reveals that, despite the evident need to tailor them to the particularities of the activities they purport to regulate, important common features are detectable. This suggests that a consensus upon the features essential for the establishment of a liability regime applicable to damage from offshore incidents is, although depending upon policy considerations, realistically attainable. This assertion is further reinforced by the fact that an attempt in that direction has previously been successful when the CLEE was adopted. Therefore, despite the discrepancies in the current *status quo* exposed in section (1), there is relatively good potential for a uniform application of liability rules covering damages resulting from offshore incidents as inspired by the most advanced trends in the field and the lessons learned from the policies of developed States. Arguably, and in light of our discussion in sub-section VIII-3.A surrounding the effectiveness of liability regimes in incentivising precaution, this could ultimately contribute towards the homogenous satisfaction by States of

³⁴² Ibid, 37.

³⁴³ Ibid.

³⁴⁴ Ibid, 32.

³⁴⁵ Ibid, 32-34.

their obligation to prevent transboundary pollution from offshore activities within their jurisdiction as argued in this thesis.

IV- The obligation of States to prevent transboundary harm from offshore incidents under their jurisdiction

Despite the good prospects of the elaboration of one or more liability regimes dealing with harms from offshore oil and gas incidents following the regulatory trend of developed countries, attempts to develop a global instrument dealing therewith have, to date, failed.³⁴⁶ This Chapter aims to demonstrate how the imprecision of the international obligation of States to prevent transboundary harm from offshore activities presents itself as a principal hurdle at the root of the aforementioned unsuccessful attempts. More specifically, it is submitted that the underdevelopment of this obligation precludes the definition of the behaviour expected from neighbouring States in the management of risk-creating activities under their jurisdiction; and that, consequently, the motivation of the international community to elaborate one or more liability regime(s) dealing with potential transboundary harm from offshore incidents is severely weakened. This takes due regard of the operation of the law of State responsibility, which will be referred to throughout this Chapter. The latter's conclusions are vital for the discussions in the subsequent parts of this thesis. Most importantly, Chapter V will demonstrate how the current regulatory approaches in various oil-producing States and the development of industry best practice in the field of safety and environmental protection cannot afford reliable guidance in defining the international obligation in question. The remainder of the thesis would then look at how the integration of the precautionary principle within this obligation, as suggested by ITLOS, could afford a ground-breaking analysis of the behaviour it requires from source States in the management of the risks created by offshore oil and gas activities under their jurisdiction. Ultimately, it is advanced that the development of this obligation as argued in this thesis would stimulate international motivation in favour of the adoption of one or more liability regimes dealing with transboundary harms from offshore incidents.

³⁴⁶ See Appendix I.

This international obligation incumbent upon States broadly finds its legal basis in the combination of two principles of international environmental law (and the sources of international law embracing them), namely the no-harm and preventive principles, which will be discussed in section (1). However, deeper focus will be made to the reasons calling for the development of this obligation as argued in this thesis. These will be reviewed where the complexities attached to the invocation of a breach thereof are analysed in section (2).

1. The legal underpinnings of a “primary obligation” the breach of which could be relied upon to invoke State responsibility

The argument discussed in this section is strongly tied with the process and the prospects of the invocation of State responsibility for its failure to prevent transboundary pollution from offshore activities under its jurisdiction. Thus, it seems sensible to provide an overview of the aforesaid concept and its potential application within the context of our study.

The international feature of transboundary pollution naturally gave rise to inter-state conflicts brought before international arbitral tribunals or the ICJ.³⁴⁷ Within this context, State responsibility is defined as “the principle by which States may be held accountable in inter-state claims under international law”.³⁴⁸ Accordingly, the ILC’s Draft Articles on State Responsibility, which are seen as a codification of customary international law on the subject,³⁴⁹ are concerned with “the general conditions under international law for the State to be considered responsible for wrongful actions or omissions (generally referred to as “primary obligations”), and the legal consequences which flow therefrom” (the general conditions for responsibility and the legal consequences thereof are referred to as

³⁴⁷ See case-law and arbitrations discussed below.

³⁴⁸ Patricia Birnie and Alan Boyle, *International Law & the Environment* (2nd edn, 2002 OUP) 181.

³⁴⁹ See generally Allen Pallet, ‘The ILC’s Articles on State Responsibility for Internationally Wrongful Acts and Related Texts’ in James Crawford, Alain Pellet and Simon Olleson (eds) *The Law of International Responsibility* (OUP 2010) 87.

“secondary rules”).³⁵⁰ Art. 2 of the ILC Draft Articles on State responsibility provides that an act of a State is “wrongful” when it constitutes a breach of its obligations under international law,³⁵¹ providing that such act is also attributable to that State.³⁵² In that scenario, “secondary” obligations include the obligation on the contravening State to “make full reparation for the injury caused by the internationally wrongful act”.³⁵³ With regard to international obligations, Art. 38 of the Statute of the ICJ identifies five sources of international law from which they derive, namely treaties between States, customary international law derived from State practice, the general principles of law recognized by civilised nations, the judicial decisions and the writings of “the most highly qualified publicists”.³⁵⁴ The complexities attached to the application of this aforementioned process with particular focus on the context of our study are discussed in the following section.

A notable and widely recognised rule of customary international law relevant to transboundary pollution (which is also regarded as a general principle of law) is the duty of States under the no-harm principle not to cause damage to the

³⁵⁰ ILC, ‘Report of the Working Group on international liability for injurious consequences arising out of acts not prohibited by international law’ UN Doc A/CN.4/L.284 and Corr.1, para 24; Quentin-Baxter, *Preliminary Report on International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law*, [1980] 2 YBILC (pt. 1) UN Doc A/CN.4/344 and Add.1 and 2, paras 20-25. Draft Articles on State Responsibility, general commentary, para (4)(c); general commentary on the Draft Articles on State Responsibility, para (1); Boyle, note 63.

³⁵¹ That is even where it is in compliance with its internal law. Draft Articles on State Responsibility, Art. 4.

³⁵² Ibid, Art. 2.

³⁵³ Ibid, Art. 31(1); *Chorzow Factory* case, [1928] P.C.I.J. Reports, Ser. A, No. 17, 47-48 providing that “reparation must, as far as possible, wipe out the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed”; It must be noted that a further element of “damage” to the affected State must be required in the primary obligation in question for a reparation obligation upon the breaching State to arise. Therefore the content of the primary obligation is of relevance. See Draft Articles on State Responsibility Article 2, paragraph (9).

³⁵⁴ ICJ Statute, <http://www.icj-cij.org/documents/?p1=4&p2=2#CHAPTER_II> accessed 8 November 2019; the list is however not thought to be complete and sources such as the acts of different organs of the United Nations notably the outcome of works of the ILC should not be disregarded. See Christopher Greenwood, ‘Sources of International Law: An Introduction’ (2008) <http://legal.un.org/avl/pdf/ls/greenwood_outline.pdf> accessed 2 September 2018.

environment of States or areas beyond their national jurisdiction.³⁵⁵ It prevents the application of an “absolute” principle of sovereignty and denies the recognition to States of an unconstrained freedom to exploit natural resources.³⁵⁶ It is also apparent in international instruments such as Art. 194.2 of UNCLOS pursuant to which States must take measures to ensure that activities within their jurisdiction or under their control do not cause [transboundary] pollution damage to other States and their environment. The principle has been influential in the development of law and practice in environmental matters.³⁵⁷ Moreover, it has evolved to require States to take appropriate preventive measures to protect

³⁵⁵ David Freestone, ‘The Precautionary Principle’, in Robin Churchill & David Freestone (eds) *International Law and Global Climate Change* (Graham & Trotman 1991) 36; Lothar Gundling, ‘The Status in International Law of the Principle of Precautionary Action’ in D.Freestone & T.Iilstra (eds), *The North Sea: Perspectives on Regional Environmental Co-operation* (Martinus Nijhoff Publisher, 1990) 27-30; Günther Handl, ‘Environmental Security and Global Change: The Challenge to International Law’ [1990] I Y.B. Int’l Env’tl. L. 3, 20-22; Ian Brownlie, *Principles of Public International Law* (7th ed. James Crawford, 2008), 275-285; Patricia Birnie, Alan Boyle and Catherine Redgwell, *International Law & the Environment* (3rd ed. OUP 2009) 143-152.

³⁵⁶ See generally, Nico Swartz, ‘State Sovereignty and Environmental Law’ [2014] 3:8 Eur. J Bus. Soc. Sci 34, 36; also, see generally Nico Schrijver, *Sovereignty over Natural Resources – Balancing Rights and Duties* (Cambridge University Press 1997) 223; Peter-Tobias Stoll, ‘Transboundary Pollution’ in Fred Morrison and Rudiger Wolfrum (eds) *International, Regional, and National Environmental Law* (The Hague: Kluwer Law International 2000), 169-174. He notes that: “[...] the prohibition of transboundary pollution is based on the state interest in the environmental integrity of its territory. Treaty law reflects this notion ... Sovereignty, while creating a right to the environmental integrity of a territory or area at one hand, at the other hand is the very basis of states’ responsibility for the pollution which originates within their territory.”

³⁵⁷ It is embedded in a number of international conventions, see for example: the Vienna Convention on the Protection of the Ozone Layer (adopted 22 March 1985, entered into force 22 September 1988) 1513 UNTS 323; the Montreal Protocol on Substances that Deplete the Ozone Layer (adopted 16 September 1987, entered into force 1 January 1989) 1522 UNTS 3; Convention on the Protection and Use of Transboundary Watercourses and International Lakes; the London Dumping Convention (adopted 29 December 1972, entered into force 30 August 1975) 1046 UNTS 120 and Protocol thereto (adopted 7 November 1996, entered into force 24 March 2006) 36 ILM 1 (1997); the Geneva Convention on Long-Range Transboundary Air Pollution (adopted 13 November 1979, entered into force 16 March 1983) 1302 UNTS 217 [‘Geneva Convention’]; or the Basel Convention on the Transboundary Movement of Hazardous Wastes (adopted 22 March 1989, entered into force 5 May 1992) 1673 UNTS 126; Convention on the Transboundary Effects of Industrial Accidents (adopted 17 March 1992, entered into force 19 April 2000) 2105 UNTC 457; UNCLOS, Art. 192-194; the principle was also influential in UN Resolutions, see for example UNGA Res 2849 XXVI (1971), 2995 XXVII (1972), 2996 XXVII (1972), 3281 XXIX (1974), and UNEP principles, see for example Principles of Conduct in the Field of the Environment Concerning Resources Shared by Two or More States, (1978) UNEP/IG/12/2, Principle 3

the environment,³⁵⁸ thus linking the no-harm principle and the preventive principle.³⁵⁹ In fact, the duty has long-standing roots dating back to the well-known *Trail Smelter Arbitration*³⁶⁰ where Canada was found in breach of the principles and was consequently ordered to take preventive measures to reduce air pollution in the Columbia River Valley caused by sulphur dioxide emitted by zinc and lead smelter plants under its jurisdiction. In relation to State liability (used to refer to its obligation to compensate for the damage it has caused) on the basis of the no-harm principle, Canada was also required to compensate for damage that the smelter had caused mainly to land along the Columbia River valley in the United States. The Tribunal had famously found that “under the principles of international Law, [...], no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence”.³⁶¹ The same principle could equally apply to water pollution by analogy. The no-harm principle was then incorporated in general policy documents, namely Principle 21 of the Stockholm Declaration, and Principle 2 of the Rio Declaration’. Moreover, it was also accepted in the UN General Assembly Resolution 2995 (XXVII) of 15 December 1972. Nevertheless the most prominent authority for it is found in the advisory opinion of the ICJ on the threat of use of nuclear weapons which explicitly stated at paragraph 29 that “the existence of the general obligation of states to ensure that activities within their jurisdiction and control respect the environment of other states or of areas beyond national

³⁵⁸ Pierre Dupuy, 'Due Diligence in the International Law of Liability', in OECD (ed) *Legal Aspect of Transfrontier Pollution* (Paris, 1977) 372; this development of the duty from forming the basis of claims to make reparation for environmental damage (as was the case in the *Trail Smelter Arbitration* mentioned below) to recognizing the duty of States to take preventive action and otherwise to limit, reduce or control activities which present the risk of causing such damage, is apparent in the instruments cited above; see Birnie and Boyle, note 348, 111-12.

³⁵⁹ The “preventive principle” requires States to take action before damage has occurred. See generally, Peter Sands, *Principles of International Environmental Law* (2nd edn, Cambridge University Press 2003) 246-47.

³⁶⁰ *Trail Smelter (United States v Canada)* (1939) 33 A.J.I.L. 182 and (1941) 35 A.J.I.L. 684.

³⁶¹ *Ibid*, 1965. The requirement of “clear and convincing evidence” of damage is inspired by case-law referred to by the Tribunal in the case.

control is now part of the corpus of international Law relating to the environment”.³⁶²

Furthermore, striving for ensuring progressive development of international law, the United Nations General Assembly has, as early as 1977, invited the ILC to conduct a study on “International Liability for Injurious Consequences of Acts Not Prohibited by International Law” [‘ILC works on International liability’] in light of the latter’s progress made on the Draft Articles on State Responsibility.³⁶³ The rationale is that the absence of “wrongfulness” of an act does not prejudice the question of international liability and consequently that of compensation for the damage it causes.³⁶⁴ The ILC works on International liability deal particularly with the obligations States respectively owe to each other pertaining to the use and management of their own territories,³⁶⁵ putting transboundary pollution at the centre of attention.³⁶⁶ In 1997, the Commission decided to subdivide the study into two parts: prevention of transboundary damage from hazardous activities and international liability in case of loss from transboundary harm arising out of hazardous activities.³⁶⁷ Art. 3 of the Draft Articles on the Prevention of Transboundary Harm from Hazardous Activities eventually adopted by the ILC

³⁶² *Legality of the Threat or Use of Nuclear Weapons* (Advisory Opinion) 1996 <<https://www.icj-cij.org/files/case-related/95/095-19960708-ADV-01-00-EN.pdf>> accessed 8 November 2019 [29].

³⁶³ UNGA Res 32/151 (19 December 1977) UN Doc A/RES/32/151, para 7.

³⁶⁴ Draft Articles on State Responsibility, Art. 35 (in Thirty-Second ILC Session Report). For opinions against this distinction see Brownlie, *State Responsibility* (Pt. 1) (Clarendon Press 1983) and Daniel Magraw, ‘Transboundary Harm: the International Law Commission’s Study of International Liability’ [1986] 80 A.J.I.L. 305.

³⁶⁵ See the language repetitively used by the Working Group established to preliminary consider the nature and scope of the topic. See also *Namibia Advisory Opinion* [1971] ICJ Rep. 16 [118], and *Corfu Channel (United Kingdom v. Albania)* ICJ. Reports 1949 4 [22], referring respectively to liability deriving from the physical control of a State over its own territory and the knowledge of the use of its territory.

³⁶⁶ ILC, ‘Report of the Commission to the General Assembly on the work of its thirty-sixth session’ UN Doc A/CN.4/SER.A/1984/Add.1 (Part 2), 77; Draft Art. I originally read: “The present articles apply with respect to activities and situations which are within the territory or control of a State and which give rise or may give rise to a physical consequence affecting the use or enjoyment of areas within the territory or control of any other State.”

³⁶⁷ ILC, ‘Report of the International Law Commission on the work of its forty-ninth session’ (12 May – 18 July 1997) UN Doc A/52/10, para 168; adopted by the UNGA Res 156 A/RES/52/156, para 7.

in 2001³⁶⁸ [‘ILC Articles on Prevention’] constitutes a breakthrough in the development of the linkage of the no harm and preventive principles. It provides that “the State of origin shall take all appropriate measures to prevent significant transboundary harm or at any event to minimise the risk thereof.” Furthermore, the Commission recommended to the General Assembly the drafting of a Convention on the basis of the Draft Articles.³⁶⁹ This being the case, it is now arguably understood that failure of a State to comply with the duties they contain entails its responsibility.³⁷⁰ Offshore oil and gas activities arguably present the risk of causing such harm, and therefore, States must take “all the appropriate measures” to prevent its occurrence.

2. Complexities attached to the invocation of the breach of the obligation to prevent transboundary harm from offshore activities

These complexities stem from two factors. Firstly (A), the applicable standard of fault required to establish a breach by a State of its obligation to prevent transboundary harm from hazardous and ultra-hazardous activities under its jurisdiction is one of *due diligence*. Secondly (B), and in correlation with the first point, that the required due diligence standard is vague and variable in nature.

A- The standard of fault required for a breach by a State of its obligation to prevent transboundary harm from “hazardous” and “ultra-hazardous” activities

Academic literature suggests that the applicable standard of fault required might differ in function of the level of hazard attached to the activities undertaken within a State’s jurisdiction. In this regard, a distinction could be made between “ultra-hazardous activities” [‘UHA’] and other activities (presenting hazards which are not as significant as those in relation to the first category; and thus will be referred

³⁶⁸ ILC, ‘Report of the International Law Commission on the work of its fifty-third session’ (23 April-1 June and 2 July-10 August 2001) UN Doc A/56/10.

³⁶⁹ ILC, note 366, para 97. At its fifty-sixth session, the Assembly expressed its appreciation for the valuable work done on the prevention aspects and requested the Commission to resume consideration of the liability aspects of the topic, UNGA Res 56/82 UN Doc A/Res/56/82, para 3.

³⁷⁰ Working Group on International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law, UN Doc A/CN.4/L.627 [hereinafter “Working Group on International Liability”], para 2. Reproduced by the ILC, see ILC, note 366, para 443.

to as ‘hazardous activities’).³⁷¹ This literature is important to assess since an opinion in favour of a standard of strict liability applicable to the breach by States of their obligation to prevent transboundary harm from offshore activities within their jurisdiction (and therefore the triggering of their international responsibility if the other conditions are met) would render efforts to define that obligation rather pointless, as fault would be established by the mere infliction of transboundary harm (without there being a need to analyse the behaviour of source States). This section thus presents the additional benefit of eliminating this possibility.

In relation to hazardous activities, initial commentaries founded on Principle 21 of the Stockholm Declaration argued that the language it employs clearly supports a conclusion for State responsibility for transboundary damage “in all cases, regardless of the precautions which that State has taken”.³⁷² Such interpretation suggests that State liability to repair transboundary harm it has inflicted onto its neighbours is in fact “absolute”.³⁷³ However, it later became apparent that the preponderant approach under national and international law has been in favour of State responsibility based on fault, which is generally expressed in terms of “due diligence”.³⁷⁴ Strong authorities point towards that direction. Firstly, clear

³⁷¹ Sands, quoting Oppenheim, states that “it is reasonable to conclude that there ‘is probably no single basis of international responsibility, applicable in all circumstances, but rather several, the nature of which depends on the particular obligation in question’. The obligation in question may distinguish between ultra-hazardous activities and other activities”. He justifies this distinction on policy grounds, considering that “dangerous activities are more likely to cause serious environmental damage, and a strict or absolute obligation is more likely to provide an incentive to states to adopt special precautions when engaging in or permitting such activities.” Sands, note 359, 881.

³⁷² See generally, De Aréchaga, *International Law in the Past Third of A Century* (A.W. Sijthoff 1978) 272; See also Pierre Dupuy, ‘International Liability of States for Damage Caused by Transfrontier Pollution’ in OECD (ed) *Legal Aspects Of Transfrontier Pollution* (OECD 1977) 357.

³⁷³ Vicuña, note 271, 286 distinguishes “absolute” liability from “strict” liability in that it “allows no exemptions or limits.” Both however, are invoked merely upon proof of damage and without proof of fault. The terms “in all cases” suggest that this liability applies according to De Aréchaga and Dupuy’s analyses.

³⁷⁴ Ibid, 283-284; see also Boyle, note 282, 7. Boyle argues that even though State responsibility is undoubtedly established in case of transboundary pollution caused in breach of an obligation, as was the case in the *Trail Smelter* Arbitration, State responsibility for transboundary pollution caused by industries will “usually” be based on “breach of an obligation of due diligence in the

opposition was expressed to the idea of strict liability being imposed under Principle 21 of the Stockholm Declaration in the debates within the Preparatory Committee entrusted with the drafting thereof. Instead, negligence was invoked as the prerequisite for State responsibility.³⁷⁵ Secondly, a proper interpretation of the ICJ's case-law supports this conclusion. In fact, with regard to the passage of foreign ships as dealt with by the ICJ in *Corfu Channel*, the Court held that it was Albania's obligation to notify "for the benefit of shipping in general, the existence of a minefield in Albanian territorial waters" and to warn "the approaching British warships of the imminent dangers to which the minefield exposed them".³⁷⁶ Handl thus argued that it was because Albania was at least negligent in doing so when the incident occurred that it was held responsible for the harm incurred and ordered to compensate for it.³⁷⁷ Thirdly, international practice points in the same direction, as it confirms that the standard of fault is the "fundamental test for allocating international liability for transnational pollution in general".³⁷⁸ Moreover, and following the ILC work on the subject, the Draft Articles on State Responsibility discussed above are now regarded as the starting point for

regulation and control of such potentially harmful activities"; Sands, however, finds that the obligations under Principle 21 of the Stockholm Declaration and Principles 2 and 13 of the Rio Declaration do not provide guidance on the standard of fault required. He adds that interpretation of international decisions such as the *Trail Smelter*, the *Corfu Channel*, *Lac Lanoux* and the *Nuclear Tests* cases could support conclusions in favour of international responsibility on the basis of absolute/strict liability or fault-based liability all the same. In his view, therefore, international law remains "inconclusive" on this subject. Sands, note 359, 881. Cf. Jutta Brunnée, 'The Responsibility of States for Environmental Harm in a Multinational Context – Problems and Trends' September [1993] 34:3 *Les Cahiers de Droit*, 827, who claimed that international law does not support an absolute/strict standard and concluded that the standard is there based on fault/negligence.

³⁷⁵ UN Doc A/CONF.48/P.C.12, Ann. 15, para. 65.

³⁷⁶ *Corfu Channel*, 22-23.

³⁷⁷ See Günther Handl, 'State Liability for Accidental Transnational Environmental Damage by Private Persons' [1980] 74 *Am.J.Int'l.L* 525, 537-38.

³⁷⁸ *Ibid*, 539; See also Brunnée, note 374, 835-836. Brunnée claims that "neither international practice nor the scarce precedents permit the conclusion that strict liability is the standard generally applicable to environmental injury". She argued that Art. 235 of UNCLOS broadly referring to "the rules of international law" is reflective of the States reluctance to allow the development of such tendency; see also Birnie, Boyle and Redgwell, note 355, chap.4 section 2, indicating that there is no general consensus in favour for a standard of strict/absolute international liability of States.

analysing the general international law on the responsibility of States.³⁷⁹ In this regard, although the Draft Articles omit to expressly present “fault” as a condition for the invocation of State responsibility, it may be induced in it resting upon the breach of a primary norm. Thus, the “fault” in question would be specifically manifested in such breach, and constitutes an “indirect condition of State responsibility”.³⁸⁰ Additionally, Art. 23 of the Draft Articles presupposes for a State to be in breach of its obligation to prevent the occurrence of a given event that a certain *conduct* precludes the performance thereof.³⁸¹ Furthermore, interpreting Art. 31(1) of the Draft Articles providing for the obligation of States to make full “reparation” for the injury caused by the internationally wrongful act attributable to it, Beckman argued that the wording of the Article entails that a causal link must be established between “the failure of a State to fulfil its obligations and the damage to the marine environment”, and that such link is “a necessary element in establishing liability and cannot be presumed”.³⁸²

In 2010, the ICJ’s decision in *Pulp Mills* clarified the position further. Reaffirming the no-harm/prevention obligation previously embedded in authorities such as *Corfu Channel* and the *Nuclear Weapons* advisory opinion, and reflecting on Art.

³⁷⁹ They have been constantly referred to by international courts and arbitral tribunals and therefore have become an evidence of general international law. See generally, James Crawford, *Brownlie’s Principles of Public International Law* (8th edn, OUP 2012) 540.

³⁸⁰ Nathalie Horbach, ‘The Confusion about State Responsibility and International Liability’ [1991] 4 Leiden JIL 47, 51. Horbach cites the general international duties concerning transboundary pollution as a “good example” for the required indirect element of fault. He reasons that “negligence” or “fault” is a requirement for the obligation of States to prevent transboundary pollution (one of due diligence) to be breached, thus making “fault” a condition for “wrongfulness” and responsibility.

³⁸¹ “When the result required of a State by an international obligation is the prevention, by means of its own choice, of the occurrence of a given event, there is a breach of that obligation only if, by the conduct adopted, the State does not achieve that result.” ILC, ‘Report of the Commission to the General Assembly on the work of its thirty-first session’ UN Doc A/CN.4/Ser.A/1979/Add.1 (Part 2).

³⁸² Robert Beckman, ‘State Responsibility and Transboundary Marine Pollution’ in Shunmugam Jayakumar, Koh, Beckman, and Phan (eds) *Transboundary Pollution: Evolving Issues of International Law and Policy* (Edward Elgar Publishing 2015) 139.

3 of the ILC Articles on Prevention,³⁸³ it confirmed that the obligation is in fact one of *qualified* “conduct” requiring “due diligence” from both parties.³⁸⁴ More recently, the ITLOS Advisory Opinion³⁸⁵ provided, pertaining to the obligation of sponsoring States to “ensure” that the “activities in the Area” conducted by the sponsored contractor are “in conformity” or in “compliance” with the rules to which Art. 139.1, 153.4 and Annex III Art. 4.4 refer,³⁸⁶ that “not every violation of an obligation by a sponsored contractor automatically gives rise to the liability of the sponsoring State.” And that “[s]uch liability is limited to the State’s failure to meet its obligation to “ensure” compliance by the sponsored contractor.”³⁸⁷ Furthermore, ITLOS discussing the repercussions of States’ obligations “to ensure”, clarified at para 110 that “the sponsoring State’s obligation to ‘ensure’ is not an obligation to achieve, *in each and every case*, the result that the sponsored contractor complies with the aforementioned obligations” (emphasis added). In doing so it clearly superseded the early interpretations of the obligations under Principle 21 of the Stockholm Declaration. It went on to state that “rather, it is an obligation to deploy adequate means, to exercise best possible efforts, to do the utmost, to obtain this result. [...] This obligation may be characterized as an obligation ‘of conduct’ and not ‘of result’, and as an obligation of ‘due diligence’”.³⁸⁸ In this regard it must be noted that Art. 194.1 of UNCLOS providing for a general obligation of States to take all measures necessary to prevent, reduce

³⁸³ “A State is thus obliged to use all the means at its disposal in order to avoid activities which take place in its territory, or any area under its jurisdiction, causing significant damage to the environment of another State”, *Pulp Mills* [110].

³⁸⁴ Ibid, [187]. “An obligation to adopt regulatory or administrative measures either individually or jointly and to enforce them is an obligation of conduct. Both Parties are therefore called upon, under Art. 36 [of the Statute of the River Uruguay], to exercise due diligence in acting through the [Uruguay River] Commission for the necessary measures to preserve the ecological balance of the river.”

³⁸⁵ Note 57.

³⁸⁶ Ibid, [103].

³⁸⁷ Ibid, [109]. The Tribunal’s rationale is evident in [112] where it reveals that its reasoning attempts to adopt an intermediate position between the two unsatisfactory situations of making States “liable for each and every violation committed by persons under its jurisdiction” and the “mere application of the principle that the conduct of private persons or entities is not attributable to the State under international law”.

³⁸⁸ Ibid, [110].

and control pollution of the marine environment from *any* source, and Art. 194.2 thereof (which ITLOS expressly referred to in paragraph 113 as an example of the application of the due diligence standard imposed on States) imposing an obligation on States to take all measures necessary to ensure that activities under their jurisdiction or control do not cause transboundary damage, both provide for an obligation “to ensure”. Thus, they must be read in light of the ITLOS reasoning.³⁸⁹ Birnie and Boyle had previously supported such interpretation of the mentioned provisions. They recognised that the due diligence standard entails that States are not made “absolute guarantors of the prevention of harm”.³⁹⁰

All these arguments defeat the view that source-States’ secondary obligation to repair the transboundary harm which emanates from hazardous activities under their jurisdiction is based on a standard of strict liability. On the contrary, an element of fault/lack of due diligence must be established in their conduct. Arguably, this conduct should be interpreted having regards to the content and objectives of the primary norms at play. It is therefore conceivable that, in relation to the obligation of States to prevent transboundary harm from activities within their jurisdiction, “fault” could be induced from the State’s conduct in its regulation of risk-creating activities conducted by private entities.

On the other hand, in relation to UHA, arguments in favour of strict State liability for transboundary pollution resulting therefrom include the fact that the standard had previously received application both on national and international levels. The 1972 Space Liability Convention³⁹¹ provides for absolute liability for the “launching State” in respect of damage caused by its space objects. Moreover, the strict liability standard has been embraced in civil liability regimes in relation to hazardous activities notably in the fields of oil pollution from ships or nuclear activities,³⁹² and national laws of numerous States also provide for the application

³⁸⁹ Beckman, note 382, 141.

³⁹⁰ Birnie and Boyle, note 348, 112.

³⁹¹ Convention on International Liability for Damage Caused by Space Objects (adopted 29 March 1972, entered into force 1 September 1972) 961 UNTS 187 [‘Space Liability Convention’], Art. II.

³⁹² Sands refers to Jenks who supports the idea that the principle of absolute liability is “generally accepted” in relation to nuclear damage. Sands, note 359, 882

of such standard to UHA.³⁹³ Thus, Sands was of the view that “strict liability for ultra-hazardous activities might also be considered a general principle of Law”.³⁹⁴

However, on the one hand, liability provisions forming the basis of inter-State claims such as those contained in the 1972 Space Liability Convention remain very exceptional.³⁹⁵ And generally, besides the fact that liability regimes tend to channel liability to the *private actors* rather than to controlling *States*, specificity in focus and success in the achievement of a satisfactory balance between the competing interests at stake in given industries are regarded as reasons behind the ratification by States and actual entry into force of international treaties akin to the CLC.³⁹⁶ Thus, outside the context of every specific regime, one cannot construe the respective provisions contained in existing convention provisions on liability as *opinio juris* among States which converts international State practice into general principles of international law. In fact, the cases where States have accepted liability for transboundary environmental damage are in themselves exceptional and payment is generally made *ex gratia*.³⁹⁷

Handl’s position was also inclined towards a strict liability standard for State responsibility in relation to UHA. He saw that State practice in their regard points

³⁹³ Ibid. Sands refers to the English law of tort under the *Rylands v Fletcher* rule.

³⁹⁴ Ibid, 881.

³⁹⁵ See the successful claim made by Canada against the USSR in relation to the clean-up of radioactive debris caused by the break-up of a Soviet Satellite over Canadian territory: Peter Sands, *Principles of International Environmental Law I: Frameworks, Standards, and Implementation* (Manchester University Press 1995), 646-648.

³⁹⁶ Anne Daniel, ‘Civil Liability Regimes as a Complementary to Multilateral Environmental Agreements: Sound International Policy or False Comfort?’ (2003) 12:3 RECIEL 225.

³⁹⁷ Notable examples include paragraph 16 of the United Nations Security Council Resolution reaffirming Iraq’s liability under international Law for environmental damage as a result of its invasion and occupation of Kuwait, see UNSC Res 687 (1991) UN Doc S/RES/687; John Briscoe, ‘Iraq’s Defilement of the Gulf Environment and the Damages Awards to Issue’ in Myron Nordquist and John Norton Moore (eds.) *Current Maritime Issues and the International Maritime Organization* (The Hague, Netherlands: Kluwer Law International 1999), 113-127; the *ex gratia* payment by the USA in 1954 of US\$ 2 million to Japanese fishermen in compensation for the damage caused by nuclear tests conducted near the Marshall Islands, see Department of State Bulletin, Washington DC, No. 812/32 (17 January 1955), 90-91. Payment was made “without reference to the question of legal liability”; and the similar payment of GBP 20 million to Australia by the United Kingdom in compensation for damages arising from the nuclear tests undertaken on Australian territory by the UK in the 1950s and 1960s, see Birnie and Boyle, note 348, 494.

to a direction opposite to that in relation to other activities. Thus, echoing the opinions previously expressed by Jenks and Goldie,³⁹⁸ he questioned whether this trend signalled a “specific category of [State] liability that must be accommodated within the overall framework of international liability in which fault, in general, has remained an essential requirement”.³⁹⁹ He relied on the direct assumption of responsibility by States in providing compensation for victims while admitting the limited number of precedents,⁴⁰⁰ on the fact that victims have in other situations claimed compensation from States without alleging fault/negligence on the part of the controlling State, and on the international instruments adopting a strict liability standard as backings for the argument that strict liability for “abnormally dangerous activities exists as a principle of present *general* international Law”.⁴⁰¹ Then, he recognised that in an international system “generally based on fault”, “a special vehicle” is required for loss to be shifted from victims to polluting States.⁴⁰² Starting from a criterion for the application of different standards based on the continuous or accidental nature of transboundary pollution, he concluded that it in fact relates to “the significance of the risk associated with the activity concerned.”⁴⁰³ He then reckoned that the same criterion must apply for a State to be strictly liable for the activities of private actors irrespective of its failure to meet its international obligations.⁴⁰⁴ Thus he concluded that a “special danger”/the posing of an “exceptional risk of transnational pollution” is a “crucial prerequisite to a finding of direct liability” as it could be accommodated in the overall framework of international liability based on fault through the concept of

³⁹⁸ Wilfred Jenks, ‘Liability for Ultra-Hazardous Activities in International Law’ [1966] 117 *Recueil Des Cours* 99, 99-200; Goldie, ‘Liability for Damage and the Progressive Development of International Law’ [1965] 14 *Int’l & Comp.L.Q.* 1189. Jenks and Goldie have consider that strict-liability should apply to cover *all* damages caused by UHA.

³⁹⁹ Handl, note 177, 541.

⁴⁰⁰ Instances of *ex gratia* payments mentioned above.

⁴⁰¹ Handl, note 177, 540-553. General international law as opposed to the “direct” liability of States for the transboundary pollution caused by private actors within their jurisdiction or under their control.

⁴⁰² *Ibid*, 553.

⁴⁰³ *Ibid*. He notes that “the concept that has been resorted to is the ‘abnormally dangerous’ nature of the activity”.

⁴⁰⁴ *Ibid*, 554.

“foreseeability”. In this regard, in his opinion, foreseeability “relates directly to the applicable standard of due diligence” and thus would allow to determine whether the controlling State was at fault.⁴⁰⁵ His position could be summed as affirming that within an international system based on fault, a State’s responsibility would be invoked where it fails to meet the required standard of care that it is *expected* to adopt in function of the “special danger” posed by the risk-creating activity.⁴⁰⁶ This conclusion remains consistent with the developments above in relation to hazardous activities, and received supported by Dupuy as it remains confined within a fault-based standard for State responsibility.⁴⁰⁷ However, Handl advanced his reasoning and attempted to argue that “cases of loss-shifting in which transnational harm is *inherently accidental* and there is no evident failure on the part of the source State to act with due diligence” (emphasis added) can be considered as instances of “liability irrespective of wrongfulness”.⁴⁰⁸ This is consistent with his suggestion of the emergence of customary international law imposing a non-fault standard of liability where the “the risk of harm is transnational in character, major in degree, and unavoidable despite reasonable care” when commenting on the prospects of Mexico’s responsibility following the Ixtoc I incident.⁴⁰⁹ Commenting on the aforementioned, Dupuy argued that, apart from the concept of “force majeure”, a

⁴⁰⁵ Ibid, 556. Applying this test, he argues that “unless the modalities of the private conduct concerned can be termed reasonable, in particular, when assessed against the known and suspected transnational hazards, the state itself will be at fault.”

⁴⁰⁶ In doing so, he departs from the position adopted by Jenk and Goldie exposed above. See also Günther Handl, ‘Liability as an Obligation Established as a Primary Rule of International Law: Some Basic Reflections on the International Law Commission’s Work’ [1985] 16 Netherlands Int’l L J 49, 59. Handl here argues that for State to be considered negligent in its conduct, evidence must indicate that “it had both knowledge of the risk of transnational harm and the ability to act for its avoidance”. With regard to “reasonable foreseeability” he backs his opinion by citing the ILC’s commentary to Art. 23 of the Draft Articles on State Responsibility, pp. 82-3, para 6.

⁴⁰⁷ See *infra* note 410.

⁴⁰⁸ Handl, note 406, 60.

⁴⁰⁹ Handl, ‘The Case for Mexican Liability for Transnational Pollution Damage Resulting from the Ixtoc I Oilspill’ [1979] 2 Houst.J.Int’l.L 229, 234-235. He submitted that if, on the factual findings of the case, the finding of negligence on Mexico’s part, were not established, its liability could be founded on the “nature of offshore drilling operations as abnormally dangerous activities of international concern”. And he relies on the adoption of OPOL as an indication of the abnormally dangerous nature of offshore activities.

notion of “inherently accidental” situations is particularly difficult to elaborate in general international law considering that “accidents arising non-negligently are rather ‘exceptional,’ if not non-existent”.⁴¹⁰ He added that “any attempt at elaborating a general theory of liability based on the qualification of the facts at the origin of the damage is simply misleading”.⁴¹¹ Therefore, he concluded, assessing the existing legal instruments, that conventional regimes imposing strict liability on the “operator” of the activity in question, has been the way for innocent victims to obtain compensation “*without having to prove* that the origin damage was a wrong or a technical negligence”.⁴¹²

Focusing on a reasoning based on the wide adoption of a standard of strict liability in the national laws of various States,⁴¹³ Cates argued that such a rule should be deemed established under customary international law.⁴¹⁴ Her submission is based on the fact that, according to Art. 38 of the Statute of the ICJ, domestic law of States could constitute a basis for customary international law, “if the policies behind the concept are present in the international arena”.⁴¹⁵ She supported the application of a strict liability standard on the basis that, on the one hand, a “high risk of a serious injury exists notwithstanding the use of reasonable care” when

⁴¹⁰ See Pierre Dupuy, ‘The International Law of State Responsibility: Revolution or Evolution?’ [1989-1990] 11 Mich.J.Int’l.L. 105, 115.

⁴¹¹ Ibid, 116.

⁴¹² This conclusion is supported by Brunnée, note 374, 836, who claimed that “only in the context of ultra-hazardous activities is there evidence of the acceptance, albeit within the confines of individual treaties, of strict liability”; see also Michael Mason, ‘Transnational Compensation for Oil Pollution Damage: Examining Changing Spatialities of Environmental Liability’ (2002) 69 LSE Research Online <<http://eprints.lse.ac.uk/570/>> accessed 27 April 2017 and Kyriaki Noussia, ‘Environmental Pollution Liability and Insurance Law Ramifications in Light of the Deepwater Horizon Oil Spill’ (Lectures on Maritime Affairs, Hamburg, 27 October 2010), both arguing in favor of civil liability treaties imposing liability on private actors rather than on States being the “preferred” means for the provision of compensation under international environmental law.

⁴¹³ US law imposing strict liability on one who undertakes an “abnormally dangerous activity” notably in the American Law Institute *Restatement (Second) of Torts*, s. 519; courts jurisprudence on the “abnormally dangerous” concept and the standard of fault they apply; State laws considering the drilling of oil wells on land an “abnormally dangerous activity”; the 1972 Space Liability Convention.

⁴¹⁴ Melissa Cates, ‘Offshore Oil Platforms Which Pollute the Marine Environment: A Proposal for an International Treaty Imposing Strict Liability’ [1984] 21 San.D.L.R. 691, 702.

⁴¹⁵ Ibid.

UHA are being undertaken,⁴¹⁶ thus rendering the question of “due diligence” useless in such scenarios; and on the other hand, that the creator of the risk is the one profiting from the activity and is best-placed to predict and allocate the risk of the loss.⁴¹⁷

This direction in the arguments presented by prominent academics on the subject led some to conclude that there is an emerging principle in international environmental law establishing strict State liability for transboundary damage caused by UHA.⁴¹⁸

It follows from the literature presented above that the debate surrounding transboundary pollution from UHA is more heated than it is in relation to “hazardous activities”. It is submitted that the reading of the ITLOS Advisory Opinion, which as explained above applies to the provisions of Art. 194.1 of UNCLOS relating to pollution of the marine environment *from any source*, and the more recent developments in the ILC works on International liability⁴¹⁹ settle the argument in favour of the application of a fault-based standard in their regard. Thus, it is argued that the inclusion of offshore activities within any of the two categories discussed does not affect the standard of fault required to invoke State responsibility.⁴²⁰ However, as will be discussed below, it affects the level of

⁴¹⁶ Ibid, 703; in this regard she also mentions the preamble of the 1972 Space Liability Treaty providing that: “taking into consideration that, notwithstanding the precautionary measures to be taken by States and international intergovernmental organizations involved in the launching of space objects, damage may on occasion be caused by such objects.”

⁴¹⁷ Ibid.

⁴¹⁸ Bosma, note 63, 94. Bosma also referred to the civil liability regimes imposing a standard of strict liability such as the CLC, the Vienna Convention and the Space Liability Convention. She mentioned national laws adopting the same standard including the *Russian Civil Code*, s. 454, and the French *Code Civil*, Art. 1384; in her view, the rationale behind such development is a combination of the arguments expressed by the academics mentioned above, most notably the “presumed knowledge” by the State concerned of the hazard created by the activity, and its better position to “decide whether or not the benefits of the activity are likely to outweigh its potential costs”.

⁴¹⁹ See Appendix II.

⁴²⁰ Bosma, note 63, adopted the standard invoked by John Kelsen, ‘State Responsibility and the Abnormally Dangerous Activity’ [1972] *British Year Book of International Law* 197, 228, based on which an activity is deemed “abnormally dangerous” (or in other words, “ultra-hazardous”) where “either the probability or magnitude of harm is substantial”. She reasoned that, in light of the

diligence which States are required to abide by in preventing transboundary harm.

B- The imprecision of the due diligence standard

The general confusion of the obligation upon States to take “all appropriate measures” and their obligation to act with “due diligence”⁴²¹ makes the complexities arising from the imprecision of the latter concept easier to perceive. In other words, on the one hand, it is understood that where States take “all the appropriate measures” to prevent transboundary harm from offshore activities, they would be acting with due diligence in ensuring that such harm is prevented; and on the other hand, it is challenging to identify which measures are “appropriate” for this purpose. In this regard, Art. 194.3 of UNCLOS attempted to shed some light on the topic by providing that the “appropriate measures” in question “shall *include*, inter alia, those designed to minimize to the fullest possible extent” (emphasis added) pollution from seabed activities, and further adding “in particular [...] measures for preventing accidents and dealing with emergencies, ensuring the safety of operations at sea, and regulating the design, construction, equipment, operation and manning of such installations or devices”. However, the non-exhaustive and general language used in the wording of the Article leaves ample discretion to source-States in identifying the measures that are appropriate for meeting the targets, which it merely lists. The aforesaid challenge is particularly present in the context of the regulation of the risks of transboundary harm from offshore incidents having regard to the uncertainties which underlay the extent of possible consequences resulting therefrom. This, in turn, has repercussions on defining the expected behaviour from States in the context, and consequently, the possible invocation by victim States of the breach of the obligation in question. Thus, the argument is that the lack of definition of

massive repercussions of the Montara blowout, it is evident that offshore activities are considered as such.

⁴²¹ ILC, ‘Report on the work of its fifty-second session’ (1 May-9 June and 10 July-18 August 2000) UN Doc A/55/10, para 718: “the Special Rapporteur was of the opinion that ‘all appropriate measures’ and ‘due diligence’ were synonymous and that the former was more flexible and less likely to create confusion than inserting a reference to the latter.”

the content of this primary obligation render it inadequate to offer a predictable/consistent invocation of the law of State responsibility, and therefore offer little incentive for States to endeavour to adopt any such measures at all. In the following developments, we will begin by briefly considering the consequences which this deficiency generally causes in inter-State disputes, before moving on to review the literature surrounding the vague nature of the due diligence concept (which, it is submitted, is the main reason for the lack of definition referred to above), and the case-law which is relevant to the delimitation thereof.

On a general note, Caron argued that the establishment of a breach of customary international law is impeded by its “vague and imprecise” nature as a norm of public international law.⁴²² Similarly, Brunnée conceded that this is a common feature in the law of State responsibility, as the legal status and content of “key norms” are ill-defined,⁴²³ which impedes their “usefulness in a litigation context”.⁴²⁴ However, the limited number of precedents of State practice litigation in the realm of inter-State environmental conflicts is offset by the negotiation and adoption of agreements between the States in given conflicts.⁴²⁵ It is in this “second-party control process”⁴²⁶ that customary norms (regardless of their establishment as binding rules of international law) can have a “significant role by setting the terms of the debate”.⁴²⁷ Therefore, given that the law of State responsibility is not strictly implemented through “third-party control” (courts and tribunals),⁴²⁸ customary norms could still constitute the basis for its implementation through voluntary compliance or “second-party control”. This

⁴²² Caron, note 63, 663.

⁴²³ Brunnée, note 285, 354

⁴²⁴ Ibid. Brunnée, in her discussion surrounding other key norms, referred to “sustainable development, common concern, or common but differentiated responsibilities”.

⁴²⁵ See Xue Hanqin, *Transboundary Damage in International Law* (Cambridge University Press 2003) 286.

⁴²⁶ Daniel Bodansky, ‘Customary (and Not So Customary) International Environmental Law’ [1995-1996] 3 *Ind. J. Global Legal Stud.* 105, 116

⁴²⁷ Ibid, 119.

⁴²⁸ Ibid, 116.

further highlights the importance of specificity in their content and of certainty surrounding the obligations they impose.

As hinted at above, the delimitation of the content of the obligation of States to prevent transboundary pollution as derived from the no-harm and preventive principles largely depends on the identification of the “appropriate measures” they are required to take in order to be deemed as acting with due diligence. How does the concept of due diligence naturally cause vagueness and imprecision in the delimitation of this primary obligation in question?

Wondering about the precise content of the primary obligations incumbent upon States, breach of which their responsibility for transboundary environmental harm could be invoked, Scovazzi began his analysis by questioning whether the internationally wrongful character pertains to the transboundary harm itself or to the risk-creating activity.⁴²⁹ In his opinion, it is the first alternative that “seems preferable” as he deemed it simpler and “more in conformity with the need to ensure adequate protection of the environment”.⁴³⁰ In this scenario, he submitted, the hazardous or ultra-hazardous character of the activity concerned is irrelevant to the obligation to provide reparation. Nevertheless, it has an important role to play in determining the due diligence standard that must be complied with as “almost by definition, ultra-hazardous activities must be carried out through the adoption of measures of ‘ultra-prevention’ of harm”.⁴³¹ Examining the threshold for the breach of such obligation, he argued that the preferable solution is one where the obligation to adopt the relevant measures is breached by the mere failure of a State to perform the required conduct (which in turn leads to a “serious” risk of damage), that is irrespective of whether damage in fact occurred.⁴³² However, he admits that it is only where damage occurs that

⁴²⁹ Tullio Scovazzi, ‘State Responsibility for Environmental Harm’ [2002] 12 (1) YBIL 43, 48.

⁴³⁰ Ibid.

⁴³¹ Ibid, 49.

⁴³² Ibid. Scovazzi refers to this threshold as an “obligation of conduct” as contrasted with an “obligation of result”. It is submitted that this assignment is erroneous and causes confusion with the general position on the distinction between the two types. While an obligation of conduct entails that one who is under it would only be in breach thereof if it fails to “deploy adequate means, to exercise best possible efforts, to do the utmost, to obtain” a given result, one’s breach of

an obligation to pay compensation would arise.⁴³³ He reasoned that this solution is more in line with the main objective of international law on the environment, namely the prevention of damage, which is “in itself integrated in the primary rule on the prohibition of transboundary harm”, as opposed to the purpose of affording victims with grounds for compensation for such harm.⁴³⁴

This correlation between the significance of the hazard which risks resulting from a given activity and the appropriateness of the measures to be taken by States to prevent their occurrence has also been contained in the Commentary on Art. 3 of the ILC Articles on Prevention which provided that the “standard of due diligence against which the conduct of the State of origin should be examined is that which is generally considered to be appropriate and proportional to the *degree* of risk of transboundary harm *in the particular instance*” (emphasis added),⁴³⁵ and that “the required degree of care is *proportional to the degree of hazard involved*” (emphasis added).⁴³⁶ Moreover, it has been discussed by the ITLOS in its Advisory Opinion of 2011. The latter referred, in paragraph 117, to a “due diligence” standard for the obligation to ensure, and found that the concept is in fact *variable* as it could change over time or in relation to the activity at stake, suggesting that “the standard of due diligence has to be more severe for the riskier activities”.⁴³⁷

an obligation “of result” is established by the mere proof of the non-attainment of that given result (using the words of the ITLOS in its Advisory Opinion [110]). The purpose of the distinction therefore is that an obligation of “conduct” imposes a higher threshold for a claimant to establish its breach, whereas Scovazzi implies the opposite in his use of the term.

⁴³³ Ibid.

⁴³⁴ Ibid.

⁴³⁵ ILC Articles on Prevention, Commentary on Art. 3, para 11. It further noted that “[f]or example, activities which may be considered ultrahazardous require a much higher standard of care in designing policies and a much higher degree of vigour on the part of the State to enforce them”, and added that “[w]hat would be considered a reasonable standard of care or due diligence may change with time”, thus linking scientific/technological development to the standard in question.

⁴³⁶ Ibid, para 18.

⁴³⁷ ITLOS Advisory Opinion [117].

More recently, Peel scrutinised the application of the established legal principles governing State responsibility to situations of transboundary pollution,⁴³⁸ with particular focus on the example of greenhouse gas pollution leading to harm through climate change. Her analysis is of important value as she looked at elements which she considered to “pose the most complex issues of proof and application” of the general elements of a State responsibility claim for transboundary pollution. This falls within her general assertion that “substantial uncertainty” continues to hamper the practical application of principles of State responsibility to instances of inter-State transboundary pollution.⁴³⁹ Among these elements, Peel importantly identified the aspect of the “standard of care required of a State in acting to prevent transboundary pollution”, which, suggesting that due to the variable nature of the due diligence concept (referring to the ITLOS Advisory Opinion), she observed “remains exceptionally vague”.⁴⁴⁰ Peel focused her analysis of the requisite standard of care on the example of climate change and the principle of common but differentiated responsibility of States to find that an “accurate representation” of the applicable international law on due diligence is one where “it all depends on the circumstances”.⁴⁴¹ A situation which she understandably found frustrating for claimant States.⁴⁴² Nevertheless, she further developed her analysis based on relevant case-law (which are both discussed below), to ultimately conclude that, within this generally unsatisfactory *status quo*, certain factors might now influence the prospects of claims alleging breach of the standard of care required of States to prevent transboundary pollution.⁴⁴³

⁴³⁸ Jacqueline Peel, ‘Unpacking the Elements of State Responsibility for Transboundary Pollution’ in Shunmugam Jayakumar, Tommy Koh, Robert Beckman and Hao Duy Phan (eds) *Transboundary Pollution: Evolving Issues of International Law and Policy* (Edward Elgar Publishing 2015) 51.

⁴³⁹ *Ibid*, 52.

⁴⁴⁰ *Ibid*, 63.

⁴⁴¹ *Ibid*, 65

⁴⁴² *Ibid*.

⁴⁴³ *Ibid*, 68.

In this regard, some guidance on the due diligence concept might be inferred from the jurisprudence of international tribunals. The following is an exposition of decisions of the ICJ ruling on claims concerning detrimental transboundary environmental consequences of activities undertaken under the jurisdiction of the defendant States, and demonstrating its position with regard to the “appropriate measures” which States are expected to adopt to prevent them.

In *Gabčíkovo-Nagymaros*, a case about the termination of a bilateral treaty between Hungary and Czechoslovakia (originally), the ICJ focused its reasoning on customary treaty law (as the Vienna Convention of 1969 on the Law of Treaties was inapplicable to the case) despite the parties’ debate on the obligation not to cause substantive damage to the territory of another State and the precautionary principle as grounds for termination.⁴⁴⁴ Hence, the Court only dealt briefly, as *dicta*, with the importance of a continuous compliance of EIAs with the developments of environmental law where long-term projects entailing environmental risks are planned/realised.⁴⁴⁵

Later in *Pulp Mills*, the Court considered that the obligation to undertake EIA when the activity concerned presents a risk of having significant adverse transboundary impact has, within the context of the obligation of States to protect and preserve the environment and amid a wide acceptance among States of this practice, achieved the status of customary international law.⁴⁴⁶ Moreover, the Court reaffirmed the principle of prevention, previously established in *Corfu Channel* and the Advisory Opinion on the *Legality of the Threat or Use of Nuclear Weapons*, as a customary rule.⁴⁴⁷ The Court relied in its judgment on the interpretation of the bilateral treaty between the two States (the 1975 Statute),⁴⁴⁸

⁴⁴⁴ *Gabčíkovo-Nagymaros* [62].

⁴⁴⁵ *Ibid*, [68].

⁴⁴⁶ *Pulp Mills* [204].

⁴⁴⁷ *Ibid*, [101]. “A State is thus obliged to use all the means at its disposal in order to avoid activities which take place in its territory, or in any area under its jurisdiction, causing significant damage to the environment of another State.” This is consistent with the provisions of UNCLOS discussed above, and thus has the effect of extending the application of the principle to States not party to it.

⁴⁴⁸ Particularly Art. 41 thereof.

on the digest adopted by the Administrative Commission of the River Uruguay (CARU – set up by the virtue of the 1975 Treaty) as well as on the domestic legislation adopted by the parties in relation to their Treaty. The obligations in contention were both procedural (comprising of the obligation to establish CARU, Uruguay’s obligation to inform CARU, Uruguay’s obligation to notify plans to Argentina, and Uruguay’s obligation to conduct EIA in respect of the hazardous activities under its jurisdiction) and substantive (notably the obligation to protect and preserve the aquatic environment and to prevent its pollution as set out under Art. 41 of the 1975 Statute).

The concept of due diligence was relied upon by the Court in its interpretation of the abovementioned sources surrounding the two types of obligations. In relation to the former, it noted that the principle of prevention “has its origins in the due diligence that is required of a State in its territory”, and reiterated the no-harm rule discussed above.⁴⁴⁹ These principles were then relied upon by the Court to provide that the initiation of co-operation between the Parties is a prerequisite for the fulfillment of the obligation of prevention, and that such initiation is made by informing CARU of the particularities of the risks posed by the activity in question.⁴⁵⁰ Accordingly, and based on its understanding that the information which should be provided to CARU at the initial stage of the operations “has to enable it to determine swiftly and on a preliminary basis whether the plan might cause significant damage to the other party”,⁴⁵¹ the Court found that Uruguay was required to inform CARU “as soon as it is in possession of a plan which is sufficiently developed to enable CARU to make the preliminary assessment” even if “the information provided will not necessarily consist of a full assessment of the environmental impact of the project”.⁴⁵² On the facts of the case, Uruguay was found in breach of its procedural obligation.⁴⁵³ (We will not go into the Court’s

⁴⁴⁹ *Pulp Mills*, [101].

⁴⁵⁰ *Ibid*, [102].

⁴⁵¹ *Ibid*, [104].

⁴⁵² *Ibid*, [105].

⁴⁵³ *Ibid*, [110].

discussion surrounding the other procedural obligations, as it did not refer to the due diligence concept in its analysis thereof).

In relation to the substantive obligation under Art. 41 of the 1975 Statute, the Court rejected Argentina's contention that this obligation was one of result, and noted that "the obligation to 'preserve the aquatic environment, and in particular to prevent pollution by prescribing appropriate rules and measures' is an obligation to act with due diligence in respect of all activities which take place under the jurisdiction and control of each party".⁴⁵⁴ Importantly, the Court provided some guidance on what it considers the obligation to act with due diligence entails for States under the jurisdiction of which hazardous activities are being undertaken. In this regard, it found that it requires "not only the adoption of appropriate rules and measures, but also a certain level of vigilance in their enforcement and the exercise of administrative control applicable to public and private operators, such as the monitoring of activities undertaken by such operators, to safeguard the rights of the other party".⁴⁵⁵ Moreover, it further provided that due diligence entails "a careful consideration of the technology to be used by the industrial plant to be established, particularly in a sector such as pulp manufacturing, which often involves the use or production of substances which have an impact on the environment".⁴⁵⁶ However, it must also be noted that the Court observed that "due diligence, and the duty of vigilance and prevention which it implies, would not be considered to have been exercised, if a party planning works liable to affect the régime of the river or the quality of its waters did not undertake an environmental impact assessment on the potential effects of such works".⁴⁵⁷ Thus, the Court appeared to create a link between the satisfaction by States of the procedural obligation to carry out an EIA, and their substantive obligation to prevent transboundary pollution. Thereafter, the Court

⁴⁵⁴ Ibid, [197].

⁴⁵⁵ Ibid.

⁴⁵⁶ Ibid, [223].

⁴⁵⁷ Ibid, [204].

focused its analysis on whether Uruguay failed to exercise due diligence in conducting the EIA in question.

Ruling on the question of whether Uruguay had not complied with the requisite degree of due diligence or that deleterious transboundary damage had in fact occurred as a result of the operation of the mill in question, the Court conceded that “a precautionary approach may be relevant in the interpretation and application” of the provisions of the 1975 Statute but, rejecting Argentina’s contention, it was of the view that it does not operate as a reversal of the burden of proof.⁴⁵⁸ In the circumstances of the case, Argentina failed to present enough evidence, and thus the Court was unable to uphold any claim for compensation in its favour, despite the pulp mills in question posing a risk of transboundary pollution.⁴⁵⁹

It must be noted that the significance of this case for the purposes of our study is limited for a number of reasons. First, the Court founded its jurisdiction upon Art. 60 paragraph 1 of the 1975 Statute, and in doing so restricted its role to the interpretation of the normative provisions thereunder rather than the interpretation of the obligations in question as it perceived them under existing international law. Second, the Court’s clarification that States’ procedural obligation to undertake EIA in respect of hazardous activities under their jurisdiction is hampered by its conceding that their scope and content are not specified under general international law and must be left to the determination of each State “having regard to the nature and magnitude of the proposed development and its likely adverse impact on the environment as well as to the need to exercise due diligence in conducting such an assessment”.⁴⁶⁰ In other words, the Court failed to expand on how the concept of due diligence contributes in delimiting the scope and content of the EIA in question. Moreover, the

⁴⁵⁸ Ibid, [164].

⁴⁵⁹ Ibid, [265]. The case would have been more informative for this discussion had the evidence presented been found sufficient and Uruguay found in breach of Art. 41 of the 1975 Treaty, as the Court would have possibly had the opportunity to clarify its perception of customary international law in the event of occurrence of transboundary environmental damage.

⁴⁶⁰ Ibid, [205].

“appropriate rules and measures” which the due diligence requirement entails in relation to the substantive obligation in question are only refined through the Court’s reference to elements of “enforcement and [...] exercise of administrative control” (referred to by the literature as the “robustness” of the regime adopted – which is discussed below) and “consideration of technology”. This research attempts to explore how the due diligence concept delimits the scope and content of EIA in respect of the risks posed by offshore activities, and to define the content of the substantive obligation which States are accordingly required to abide by.

Commenting on the case, McIntyre focused on the Court’s interpretation of the link between procedural and substantive obligations.⁴⁶¹ He reasoned that the stance adopted by the Court, rejecting Argentina’s contention to the contrary, that the requirements of the said obligations might become “decoupled” meant, as in the case at hand, that the breach by a State of its procedural obligations does not automatically entail a breach of its substantive obligations.⁴⁶² However, this also entails that the satisfaction by that State of the former of these obligations in respect of an activity which presents a risk of causing transboundary damage only means that it has met “the procedural elements of the due diligence standard of conduct required for compliance with its substantive obligations”.⁴⁶³ Therefore, if transboundary damage nevertheless occurs, an examination of whether that State has met its substantive obligations remains decisive.⁴⁶⁴ McIntyre then went on to advance that this approach by the Court suggests that the significance of procedural obligations is twofold “as States must first ensure compliance with procedural obligations per se even where no actual harm occurs but, secondly, where harm does occur, breach of procedural rules will constitute a *key element* in establishing a failure to meet the due diligence standards required under the customary duty to prevent significant transboundary harm. Therefore, compliance with procedural requirements is a *central element* of due diligence for

⁴⁶¹ Owen McIntyre, ‘The Word Court’s Ongoing Contribution to International Water Law: The Pulp Mills Case between Argentina and Uruguay’ [2011] 4:2 Water Alternatives 124.

⁴⁶² Ibid, 137.

⁴⁶³ Ibid.

⁴⁶⁴ Ibid.

the purposes of satisfying substantive duties” (emphasis added).⁴⁶⁵ This analysis puts into perspective the Court’s analysis of the procedural obligation incumbent upon Uruguay, and its delimitation through the concept of due diligence. It follows that the ICJ suggested that the due diligence concept further contains a procedural duty of notification by States, which, within the scope of this discussion, contributes in defining the substantive obligation of States to prevent transboundary pollution from offshore activities.⁴⁶⁶

On the other hand, Peel analysed the Court’s delimitation of the due diligence standard with regard to the relevant substantive obligation in question as suggesting that it entails an examination of the “robustness of the entire regime a State had in place to prevent environmental harm to other States, including aspects relating to administration, monitoring and enforcement”.⁴⁶⁷ Although, and importantly, Peel conceded that the level of “robustness” required is “difficult to determine from the statements of the Court”.⁴⁶⁸ Moreover, and adopting a moderate approach (when compared to McIntyre’s), she argued that the satisfaction of States of certain procedural obligations (like the requirements of cooperation, notification, consultation and prior risk assessment as examples) is of “relevance” to the fulfillment by States of their requirement of due diligence in preventing transboundary harm.⁴⁶⁹ Thus, she suggested that the “robustness” of the regime in place in the source State and its satisfaction of relevant procedural obligations are *factors* which might affect the outcome of a claim for the breach thereby of the standard of care required to prevent transboundary pollution.⁴⁷⁰ However, it is submitted that the “robustness” in question appears to concern the obligation of States to exert vigilance in the enforcement of “appropriate rules and measures” and the “exercise of administrative control applicable to public and private operators”, and does not define the nature/character of the rules and

⁴⁶⁵ Ibid.

⁴⁶⁶ This is consistent with the reading of the Judgement by Alan Boyle, see Boyle, note 63, 424.

⁴⁶⁷ Peel, note 438, 66.

⁴⁶⁸ Ibid.

⁴⁶⁹ Ibid, 67.

⁴⁷⁰ Ibid, 68.

measures in question. Moreover, the difficulty in conducting the “robustness” test as suggested by Peel, and the lack of definition surrounding the scope and content of the procedural obligations of source States, lead to ambiguity which results in uncertainty relating to the content of the substantive obligation of States to prevent transboundary pollution (and thus relating to claims by victims States of breach thereof). The “robustness” test will be discussed further below.

In the joint cases of *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)* and *Construction of a Road along the San Juan River (Nicaragua v Costa Rica)* (Judgment of 16 December 2015) [‘the *Costa Rica v. Nicaragua* case’],⁴⁷¹ reciprocal allegations were made by both parties in relation to the violation of international environmental law. Costa Rica alleged that the dredging works undertaken by Nicaragua on the Lower San Juan River to improve its navigability have been initiated in breach of the procedural obligation to carry out an EIA. Ruling on this contention, the ICJ confirmed *Pulp Mills* and further expanded its application beyond scenarios where the environmental risk in question originates from industrial activities. The Court clarified that the appropriate test to be applied is whether the activity it plans to undertake, irrespective of its type, creates a risk of causing significant transboundary harm.⁴⁷² Moreover, if the EIA confirms such risk, a further obligation to notify and consult in good faith with the potentially affected State in order to mitigate or prevent that risk is also incumbent upon the activity-initiating State.⁴⁷³ In the opinion of Judge Donoghue, both these obligations fall under the more general obligation to exercise due diligence in preventing risks of significant transboundary harm.⁴⁷⁴ On the facts of the case, the Court found that the dredging

⁴⁷¹ Joint cases of *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)* and *Construction of a Road along the San Juan River (Nicaragua v Costa Rica)* (Judgment of 16 December 2015) ICJ Rep 665.

⁴⁷² *Ibid.*, [104]; see discussions in VI-3 and VII-2.

⁴⁷³ *Ibid.*

⁴⁷⁴ *Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)* (Separate judgment of judge Donoghue) [8]-[9], where he concluded that States of origin have an obligation under customary international law to “exercise due diligence in preventing significant transboundary environmental harm”, which is an obligation “of conduct that applies to all phases of a project” including the assessment of impact.

works did not give rise to such risk. Thus, under customary international environmental law, Nicaragua was not in breach of its procedural obligations.

However, and as interpreted by Yotova, the ICJ failed to clarify further the relationship between the two “key environmental principles at hand, namely due diligence being the procedural principle of conduct and the substantive principle of prevention”.⁴⁷⁵ Yotova flagged the existing confusion and disagreement traceable in the Separate Opinions of the Judges ruling on the case. She found that Judge Owada agreed with the abovementioned position adopted by Judge Donoghue, and thought that due diligence (in preventing risks of significant transboundary harm) is a primary legal obligation of conduct under environmental law which is satisfied by the EIA and the duties of notification and consultation.⁴⁷⁶ Judge Dugard (whom Yotova appeared to agree with), on the other hand argued that the duty of States to conduct EIA is “an independent obligation designed to prevent significant transboundary harm that arises when there is a risk of such harm” rather than it being an obligation “dependent on the obligation of a State to exercise due diligence in preventing significant transboundary harm” and concluded that the concept constitutes the “standard of care required” in conducting EIA rather than the obligation itself.⁴⁷⁷ He based this analysis on his conviction that the obligation of due diligence and the obligation to carry out an EIA both “flow” from the overarching principle of prevention and purport to implement it.⁴⁷⁸ Judge Cançado Trindade, Yotova noted, adopted a “middle ground” according to which EIA is seen as separate duty which is founded upon the obligation of due diligence.

It is submitted that according to the varying positions of the judges presented above, the obligation to carry out EIA at least contributes in the satisfaction of the

⁴⁷⁵ Rumiana Yotova, ‘The Principles of Due Diligence and Prevention in International Environmental Law’ [2016] 75:3 Cambridge Law Journal 445, 447.

⁴⁷⁶ *Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)* (Separate judgment of judge Owada).

⁴⁷⁷ *Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)* (Separate Opinion of Judge Ad hoc Dugard) [9].

⁴⁷⁸ Ibid, [7]-[8].

overarching principle of prevention, whether it is an “independent” obligation from that of due diligence or not. However, and in light of the inherent difficulties to define the substantive obligations incumbent upon States, the positions expressed by Judges Donoghue and Owada appear to be more sensible as they accommodate a perception that the obligation of States to carry-out EIAs in the face of risks of significant transboundary harm is regarded as a “proceduralisation” of the due diligence concept.⁴⁷⁹ This, it is argued, is a more favourable interpretation of the law, as it is better oriented towards attributing certainty and predictability to the variable and problematic obligation of due diligence. However, this thesis additionally advances that this “proceduralisation” not only consolidates the obligation of States to be well informed of the potential transboundary impacts of activities within their jurisdiction; it also shapes the substantive obligations which States would accordingly be expected to satisfy.⁴⁸⁰ This approach echoes McIntyre’s comment that “compliance with procedural requirements is a central element of due diligence for the purposes of satisfying substantive duties”. This being said, the delimitation of the scope and content of the EIA in question through the due diligence concept remains to be tackled.

The above-discussed attempts by the ICJ to delimit the concept of due diligence certainly contribute in the clarification of the content of the obligation of States to prevent transboundary pollution from offshore activities. Nevertheless, such contribution remains limited and debatable. Moreover, notwithstanding the added value of the consolidation of the rules the Court referred to, the idea that the procedural obligations like the duty to cooperate, to undertake prior EIA, and to notify and consult with neighbouring States which might be affected by hazardous activities under their jurisdiction, contribute towards the satisfaction of the substantive obligation of States to prevent transboundary damage is not novel, as it had already been provided for in Art. 4, 7, 8 and 9 of the Draft Articles on Prevention.

⁴⁷⁹ See discussion in VIII-2.B

⁴⁸⁰ See discussion in VIII-3.B

To illustrate the insufficiency of the Court's input on the topic thus far, it is worth examining how applying its delimitation of the concept to the scenario of a hypothetical claim in relation to transboundary pollution from an offshore incident is susceptible to lead to complexities and inadequacies. For example, let us assume a scenario where the procedural obligations in question were satisfied by the State under the jurisdiction of which offshore activities were being conducted, and that an incident on board the platform lead to significant transboundary pollution, giving rise to a claim by the victim State for breach of the substantive obligation to prevent such harm. As explained by the abovementioned academic analysis of the relevant case-law, an examination of whether the due diligence requirement in relation to the substantive obligation of prevention had been complied with remains essential. This is where the "robustness" of the regime in place in the source State comes into play. In that respect, Boyle assessed the "robustness" in question in the particular instance of the Deepwater Horizon incident, and found that, had this incident resulted in a claim for failure of the USA to prevent transboundary pollution from the offshore activities under its jurisdiction, "it is hard to imagine a better example of the failure by a State to act with due diligence".⁴⁸¹ This conclusion was relied upon by Peel to contend that "insights can be drawn" from such instances to determine the level of "robustness" in question which the due diligence standard requires of States.⁴⁸² However, it is argued that (1) such assessment by Boyle was mainly based on the Report to the President⁴⁸³ which was made public following the Deepwater Horizon incident and contained a detailed analysis for the failures leading up to it; (2) such report might not be straightforwardly available had the

⁴⁸¹ See Alan Boyle, 'Transboundary Air Pollution: a Tale of Two Paradigms' in Shunmugam Jayakumar, Tommy Koh, Robert Beckman and Hao Duy Phan (eds) *Transboundary Pollution: Evolving Issues of International Law and Policy* (Edward Elgar Publishing 2015) 233, 239-240.

⁴⁸² Peel, note 438, 66.

⁴⁸³ National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, 'Report to the President - Deep Water, the Gulf Oil Disaster and the Future of Offshore Drilling' (2011) <<https://www.gpo.gov/fdsys/pkg/GPO-OILCOMMISSION/pdf/GPO-OILCOMMISSION.pdf>> accessed 2 January 2018 [hereinafter 'Report to the President'].

incident occurred in another jurisdiction; (3) there exists no case-law precedents on the assessment of the “robustness” of a given regime which could afford certainty on the subject; (4) it is easy to imagine scenarios where the examination of the breach of the due diligence standard is not as simple as it was in the Deepwater Horizon incident (as argued by Boyle) as judgments surrounding the appropriateness of the regulations in force, the adequacy of the administrative control measures, the vigilance in enforcement, and even the adoption of industry best practices (elements relied upon by Boyle in his assessment) might be the subject of debate and thus lead to indecision surrounding the hypothetical alleged breach of the due diligence requirement (and consequently of the substantive obligation in question). Therefore, it appears that the “robustness” test carries its own sets of complexities and could only be examined on a case-by-case basis. In that sense, relying thereon moves us away from a harmonised application of the due diligence concept when applied within the obligation of States to prevent significant transboundary harm, and thus fuels the unpredictability in the application of the law of State responsibility resulting from the variable nature of the concept. Conversely, focus on what could constitute preventive “appropriate rules and measures” (the enforcement of which calls upon the “robustness” test) in respect of an industry which arguably presents comparable levels of risks in various regions in the world, could point us towards State best practice in terms of the policy approaches they adopt to meet their obligations under international environmental law. One such potential approach could be the establishment by States of liability regimes providing for rules inspired by existing prototypes in force in the developed regions of the world. Of course, this contention presupposes a development of the rules of international environmental law in light of which such approach would become “appropriate”. This development will be discussed in the subsequent chapters of this thesis.

Another difficulty stemming from the ambiguity surrounding the obligation of States to prevent significant transboundary harm, results from the fact that a purely preventive approach (as will be contrasted with a precautionary approach) mandates measures regulating the *known* risks attached to offshore oil and gas

incidents.⁴⁸⁴ Accordingly, applied to the procedural obligations of States, it is the Health and Safety Executive's [hereinafter 'HSE'] view that "in the offshore industry the hazards and consequences are *well understood* and hence conventional assessment techniques can be used to evaluate the risks" (emphasis added).⁴⁸⁵ On the other hand, applied to the substantive obligation in question, measures were referred to by von Schomberg in his overview of risk management responses corresponding to given risks in function of the state of affairs in science in relation to the latter.⁴⁸⁶ He reasoned that, the exercise of prevention, the minimization of risk, and the application of the as low as reasonably practicable [hereinafter 'ALARP'] principle are examples of regulatory action which are adequate in dealing with risks the effects of which are known/quantifiable.⁴⁸⁷ It is this type of measures which were examined by Boyle in his assessment of the "robustness" of the US regime following the Deepwater Horizon incident. His focus was placed on the evaluation of drilling regulations (and their prescriptive character), on the role of the Minerals Management Service [hereinafter 'MMS'] in exercising adequate administrative control and ensuring compliance with existing regulations, and on the underdevelopment of safety regulations (and their failure to keep up with technological developments).⁴⁸⁸ It is noteworthy that this type of action (irrespective of the "robustness" of the regime which they compose) is reflected in the attempts by States to adopt regimes to regulate safety and environmental protection from offshore activities (discussed in Chapter V). However, despite the growing recognition of the better suitability of performance-

⁴⁸⁴ See for example Arie Trouwborst, *Evolution and Status of the Precautionary Principle in International Law* (Kluwer Law International 2002), 36 ff.; see also Joakim Zander, *The Application of the Precautionary Principle in Practice: Comparative Dimensions* (Cambridge University Press 2010), 14 ff. See discussion in Chapter VI.

⁴⁸⁵ HSE, 'Offshore Installations (Safety Case) Regulations 2005 Regulation 12 Demonstrating compliance with the relevant statutory provisions' Offshore Information Sheet No. 2/2006 <<http://www.hse.gov.uk/offshore/is2-2006.pdf>> accessed 26 February 2018 ['HSE Safety Case Information Sheet'], 7.

⁴⁸⁶ René Von Schomberg, 'The Precautionary Principle and its Normative Challenges' in Elizabeth Fisher, Judith Jones and René Von Schomberg (eds), *Implementing the Precautionary Principle* (Edward Elgar 2006), 40.

⁴⁸⁷ Ibid.

⁴⁸⁸ Boyle, note 481, 239-240.

based regulation for these purposes, the lack of uniformity surrounding the regulatory regimes adopted worldwide and of the normative character of industry best practice and recommendations [hereinafter 'BPR'] hamper the prospects of defining the appropriate standard of technology and regulation entailed by the due diligence requirement through "comparison with standards adopted by other States" as further suggested by Peel⁴⁸⁹ and Boyle.⁴⁹⁰ Nevertheless, and for the purposes of this discussion, what is essential is that the aforementioned regimes fall under the same category of regulatory action, namely that attributable to managing *known* risks.

In light of this ambiguity, and taking into account the reality of the uncertainty surrounding the potential of offshore incidents to cause transboundary pollution (as will be discussed below) the further delimitation of the content of the obligation of States to prevent transboundary pollution from offshore activities under their jurisdiction as argued under this thesis appears sensible.⁴⁹¹ This is particularly the case as (1) the abovementioned regulatory action is argued to be ill-suited/inappropriate to deal with the uncertainty surrounding the risks of transboundary pollution from offshore incidents, and (2) such projected delimitation would entail that States would arguably be satisfying their due diligence requirement under the primary obligation of prevention of transboundary harm if they elaborate and adopt one or more liability regime(s) dealing with such pollution (which presents the additional advantage of relegating the importance of the complex task of assessing the "robustness" of the regulatory regime implemented in the States in question).

Having regard to the unsatisfactory situation underlined above, the ITLOS Advisory Opinion provides significant additional guidance vital for a proper understanding of what the concept of due diligence entails within the context of

⁴⁸⁹ See note 482 and accompanying text.

⁴⁹⁰ Boyle, note 481, 240-241, noting that appropriate standard of technology and regulation entailed by the due diligence requirement is sometimes set through international Conventions, and that in the absence of such internationally agreed standards, "comparison with standards adopted by other States may be a good guide".

⁴⁹¹ Refer to the argument advanced at the end of section VIII-3.B below.

this study. The Opinion was sought on the question of, *inter alia*, the necessary and appropriate measures that a sponsoring State must take in order to satisfy its responsibility under UNCLOS. The Chamber clarified that this reference to States' responsibility was understood as pertaining to their satisfaction of the *primary obligations* in question. For the purposes of this discussion, and taking into account the Chamber's formulation in general terms of its views on the relevant international legal norms and concepts, the relevant primary obligations are those contained under Art. 194.1 and Art. 194.2 of UNCLOS (to which ITLOS made express reference at paragraph 113 of its opinion). This being said, ITLOS focused part of its analysis on the interpretation of the concept of due diligence which in its opinion characterises the obligation of States "to ensure" (which underpins the obligations under Art. 194.1 and 194.2),⁴⁹² and reiterated paragraph 197 of *Pulp Mills* in paragraph 115 of its Opinion.⁴⁹³ As mentioned above, the Opinion further added that due diligence is a "variable concept" which could change in relation to the risk posed by the activity concerned.⁴⁹⁴ It also stated at paragraph 120 that "it has been established that the 'due diligence' obligation 'to ensure' requires sponsoring States to take measures within their legal system and that the measures must be 'reasonably appropriate'." Moreover, the Chamber advanced that, apart from their due diligence "obligation to ensure", sponsoring States must also independently comply with a number of "direct obligations", including "the obligation to apply a precautionary approach".⁴⁹⁵ Importantly, it provided that "compliance with these obligations can also be seen as a relevant factor in meeting the due diligence 'obligation to ensure' and that the said obligations are in most cases couched as obligations to ensure compliance

⁴⁹² ITLOS Advisory Opinion [110].

⁴⁹³ Providing that the obligation of due diligence includes "not only an obligation to adopt appropriate rules and measures, but also a certain level of vigilance in their enforcement and the exercise of administrative control [over]...public and private operators"

⁴⁹⁴ See for example, ITLOS Advisory Opinion [177], providing: "[a]s regards activities in the Area, it seems reasonable to state that prospecting is [...] less risky than exploration activities which, in turn, entail less risk than exploitation"

⁴⁹⁵ Ibid, [121]-[122]. Another example cited by the Chamber is "the obligation to conduct environmental impact assessments".

with a specific rule”.⁴⁹⁶ Thus, the breakthrough in ITLOS’s analysis (it is labelled as such since it is the first time an international tribunal has adopted such position – which was previously contained in the ILC Draft Articles on Prevention, referred to by ITLOS) lies in its statement that “the precautionary approach is also *an integral part* of the general obligation of due diligence [...], *which is applicable even outside the scope of the Regulations*” (emphasis added).⁴⁹⁷ Therefore, it opened the door for the establishment of a general link between the two, allowing the precautionary principle to further determine the contents of the due diligence standard, vital for the definition of the contents of primary obligations contained in UNCLOS. This link becomes even more exciting in light of its conclusion that the States’ responsibility “to ensure” is a “mechanism” through which the rules of the Convention become effective for private actors without them being subjects of public international law.⁴⁹⁸ Thus, there is ground to argue that the international obligation of States to “ensure” that no transboundary harm is caused by offshore activities undertaken under their jurisdiction could be satisfied by effectively influencing operators’ behaviours pertaining to the safety and environmental protection measures they implement; and that failure to do so could constitute a breach of their due diligence obligation and thus entail their international liability (understood by ITLOS as referring to “the consequences of a breach of [a] State’s obligations” – referred to in this thesis as “international responsibility”).⁴⁹⁹

NB: it must also be noted that the concept of common but differentiated responsibility of States could influence the delimitation of the due diligence requirement incumbent upon them in their satisfaction of their obligation to prevent transboundary harm. This concept is widely debated in literature, but will not be tackled in this thesis, mainly because the “appropriate measure” which it aims to argue is best suited for States to abide by their obligation to prevent

⁴⁹⁶ Ibid, [123].

⁴⁹⁷ Ibid, [131].

⁴⁹⁸ Ibid, [108].

⁴⁹⁹ Ibid, [69]-[71].

transboundary pollution from offshore activities is hardly related to their respective stages of technological developments or economic situations.

Hence, the further definition of the expected behaviour of States in their prevention of transboundary harm from offshore activities within their jurisdiction could be achieved through the reliance on the ITLOS analysis of the due diligence concept. However, one would wonder about, on the one hand, the manner in which the integration of a precautionary approach would shape the aforesaid concept; and on the other hand, whether the regulatory approaches for safety and environmental protection in force in oil-producing-States reveal a consistent State practice which could arguably serve the same purpose and therefore make such endeavours pointless. The next Chapter tackles the latter point; the remainder of the thesis explores the former.

V- Regulation of safety and environmental protection in offshore activities across the globe and prospects of a global rapprochement in the field

In this Chapter, the regulatory regimes adopted in various States for the safety and environmental protection from offshore oil and gas activities under their jurisdiction will be examined, with an aim to conclude on whether the approaches currently adopted globally present sufficient commonalities to suggest some sort of uniformity in managing risks pertaining to such activities.⁵⁰⁰ The content of the regulatory regimes adopted in various jurisdictions reflects the exercise by States of their sovereign right to set their own safety and environmental standards. Whatever this choice may be, the degree of success in compliance therewith will, to an extent, be dependent upon the structure in which that regime is shaped.⁵⁰¹ In this regard, the *summa divisio* is split between performance-based and prescriptive-based types of regulation. The former type is characterised by the regulator specifying a certain performance goal while leaving it up to the regulatee to decide how it purports to achieve it; whilst the latter aims at minimizing the risks of operations through the adoption of laws and guidelines prescribing specific (and often detailed and technical) requirements which regulatees must abide by.⁵⁰² However, the industry's roles in regulatory implementation also

⁵⁰⁰ Damages which risk being caused as a result of safety failures in the offshore industry include those which are transboundary in nature, hence the relevance of this Chapter to the overall aim of this thesis. "Regulation" is a concept which is wide in scope compelling the use of abstract terms when referring to it. And despite major developments of it since the 1970s, academic debate persists with regard to its conceptions. See Christel Koop and Martin Lodge, 'What is regulation? An interdisciplinary concept analysis' [2017] 11 Regulation & Governance 95. However, and in accordance with the aims of our discussion, the conception we will be adopting is that advanced by Baldwin *et al* (as referred to by Koop and Lodge), namely regulation as "the promulgation of an authoritative set of rules, accompanied by some mechanism [...] for monitoring and promoting compliance with these rules", and it will be looked at in respect of its function of lowering risks of accidents inherent to offshore activities having a potential of causing major spills with transboundary effect.

⁵⁰¹ In this regard it has been noted that "regulatory standards are, [...], only effective if they are enforced", see Brenda Barrett and Richard Howells, 'The Offshore Petroleum Industry and Protection of the Marine Environment' [1990] 2 J. Env'tl. L. 53, 58

⁵⁰² Anne L. Hanson, 'Offshore Drilling in the United States and Norway: A comparison of Prescriptive and Performance Approaches to Safety and Environmental Regulation' [2011] 23

merits scrutiny, as it has become increasingly involved therein through standardizing industry best practices, or through either playing a pro-active role in safety management as regulatee or performing supervisory/oversight functions as regulators.

A comparative analysis of the approaches adopted in countries having a strong presence in the global offshore oil and gas industry coupled with an analysis of the developing role of international best practice standardisation (which could possibly present itself as a method to implement *de facto* “international normativity” in relation to managing the risks posed by offshore activities) will allow the carrying-out of the envisioned examination. A positive answer to the question would imply that the current *status quo* sets an appropriate background for a uniform global approach to risk management of offshore oil and gas activities (including risks of damages presenting a transboundary character), and therefore (1) sheds light on the due diligence standard expected of States in their satisfaction of their obligation to prevent transboundary harm, and (2) reduces the importance of the reliance on the precautionary principle for those purposes. A negative answer, suggesting varying risk management approaches, would however flag a potential for either endeavouring to raise the global standards to a minimum satisfactory level (based on the learnings from past experiences),⁵⁰³ or, where such prospects prove unlikely, entertain an alternative approach to reinforcing predictability in the manner in which States are expected to manage the risks of transboundary environmental harm from offshore activities under their jurisdictions.

Geo. Int'l. L. Rev. 555, 556-557. Hanson adds at page 563 that “a main objective of any prescriptive-based regime is to maintain control and accountability through adherence to very specific rules”.

⁵⁰³ Of course, the effectiveness of regulatory regimes could only be tested with time, however, this discussion will also aim to show that regulatory reforms have been effectuated in a category of States grouping First World countries showing a certain consistent pattern therein, and suggesting a common recognition among them of better end-results to particular types of regulations. It must be noted that “effectiveness” is referred to as the capacity of a particular approach/system to limit environmental accidents, hence its relevance to the matter of transboundary pollution from offshore platforms.

1. Overview of global regulator regimes of offshore oil and gas activities

The national regulatory regimes of seven states (plus a regional Union: the EU) with long established offshore industry are examined here and are analysed primarily with a view of understanding the commonalities and differences in the structure of their regulatory regimes.

A- The United States Offshore Regulatory Regime

The US regulatory regime has been evolving over time.⁵⁰⁴ The most recent modification followed the Deepwater Horizon incident. The overall evolution, as explained below, indicates a move away from prescriptive safety management legislation and towards the development of government oversight over an industry fully responsible for identifying and dealing with all risks, from personal safety issues to dealing with complex catastrophic failures of a well.⁵⁰⁵ The regulatory changes have been effectuated by structural changes in the agencies responsible for exercising the public oversight of the industry.

The realisation that the accommodation of fast technological development requires continuing updating of the corresponding regulatory approach encouraged the aforementioned revisions.⁵⁰⁶ Consequently, the MBNRC recommended, for the MMS, a shift towards the detection of “accident-producing situations” (a risk-based system) rather than merely playing the role of the inspector (ticking off boxes). However, a “combination of world events, politics

⁵⁰⁴ This is a characteristic of the three regulatory systems analysed by Lori S. Benneer, ‘Offshore Oil and Gas Drilling: A Review of Regulatory Regimes in the United States, United Kingdom, and Norway’ [2015] 9:1 Review of Environmental Economics and Policy 2.

⁵⁰⁵ See 30 C.F.R. Oil and Gas and Sulphur Operations in the Continental Shelf, s. 250.1909.

⁵⁰⁶ The Marine Board of National Research Council [‘hereinafter MBNRC’] identified that developments in technologies constantly called for new technical drilling-safety requirements which the MMS, for reasons including declining resources and lack of expertise in personnel conducting inspections, was not prepared to face and thus prevented it from meeting its inspection obligations. It stated at page 561: “The command and control approach simply was not keeping pace with the risks created by new technologies, developments, production activities”; on new technologies demanding greater expertise from the part of the regulator in a prescriptive-based system see Peter J. May, ‘Performance-Based Regulation and Regulatory Regimes’ [2003] 25:4 Law & Policy 381, 387.

and industry opposition prevented this shift from taking place”⁵⁰⁷ until the Deepwater Horizon disaster. The major stages of the evolution of the US system are described below.

Until 1982,⁵⁰⁸ the Interior Department’s Bureau of Land Management and Bureau of Indian Affairs was the agency collecting royalties for mining and drilling on federal and Indian lands, while regulatory control was vested in the U.S. Geological Survey’s Conservation Division. Following underpayment of royalties and theft of oil⁵⁰⁹ the MMS was created primarily for dealing with the issues of receiving payments and increasing site security.

The Deepwater Horizon incident led to an extensive assessment of the operation of the MMS and the redesign of the regulatory structure. The Report to the President characterises unfavourably the prescriptive character of the MMS regulation.⁵¹⁰ It further considers that the roles of the MMS to oversee safety and to increase revenue from offshore exploration were in competition with each other and led to taking greater risks in deeper waters.⁵¹¹ The Report added: “Those increased risks, however, were not matched by greater, more sophisticated regulatory oversight. Industry regularly and intensely resisted such oversight, and neither Congress nor any of a series of presidential administrations mustered the political support necessary to overcome that opposition. Nor, despite their assurances to the contrary, did the oil and gas industry take the initiative to match its massive investments in oil and gas development and production with

⁵⁰⁷ Report to the President, at 70-71. Note though that Bennear, note 504, suggests that the failure to implement these changes in the early 1990s was due to opposition by the industry.

⁵⁰⁸ Before 1969 there was very little regulation (see Bennear, note 504). Following the Union Oil’s Platform A accident and the major shipping oil pollution accidents, the liability regimes changed.

⁵⁰⁹ Fiscal Accountability of the Nation’s Energy Resources, 1982, page xv.

⁵¹⁰ At 68 it stated: “In carrying out its duties, MMS subjected oil and gas activities to an array of prescriptive safety regulations: hundreds of pages of technical requirements for pollution prevention and control, drilling, well-completion operations, oil and gas well-workovers (major well maintenance), production safety systems, platforms and structures, pipelines, well production, and well-control and -production safety training.”. The Report itself gives as reference 30 CFR Part 250 - Oil and Gas and Sulphur Operations in the Outer Continental Shelf, where the bulk of US Regulations could be found.

⁵¹¹ Report to the President, at 64 and 77-78.

comparable investments in drilling safety and oil-spill containment technology and contingency response planning in case of an accident.”⁵¹² It is perhaps appropriate to note here that the Fiscal Accountability of the Nation’s Energy Resources 1982 report which justified the creation of the MMS concluded that the State should perform an oversight role and should not “waste its limited resources on tasks which are industry’s responsibility”.⁵¹³ This was said in the context of collection of payments and fees due. Thirty years later the same message is transmitted by the Report to the President in relation to safety and environmental management.

Following the Deepwater Horizon disaster a number of important changes were made. First the Federal system for the management of minerals was reorganised in 2010 into the Bureau of Ocean Energy Management, Regulation and Enforcement [hereinafter ‘BOEMRE’]. BOEMRE has “‘cradle to grave’ oversight responsibility on oil and gas leasing activities within the Outer Continental Shelf (OCS)”.⁵¹⁴ It is subdivided into three entities, each responsible for one of the three missions previously entrusted to the MMS, namely, the Bureau of Ocean Energy Management [‘BOEM’] which is in charge of leasing activities; the Bureau of Safety and Environmental Enforcement [‘BSEE’] which is responsible for oversight, safety, and environmental protection in offshore energy activities; and the Office of Natural Resources Revenue [‘ONRR’], which handles royalty and revenue management from offshore activities.⁵¹⁵ The separation of these functions resolved the conflicts of interest between revenues and safety of operations. Under this reformed US regime, BSEE is the new federal safety regulator.

The intended shift of the regulatory character to one of oversight has been perhaps the most important novelty within this regulatory development. Subpart

⁵¹² Ibid, at 56.

⁵¹³ Fiscal Accountability of the Nation’s Energy Resources, 1982 page xvi.

⁵¹⁴ Hanson, note 502, 562.

⁵¹⁵ U.S. Department of the Interior, ‘Salazar Divides MMS’s Three Conflicting Missions’ (May 19, 2010) <<https://www.doi.gov/news/pressreleases/Salazar-Divides-MMSs-Three-Conflicting-Missions>> accessed 24 November 2019.

S of the federal offshore regulations⁵¹⁶ requires operators to have a Safety and Environmental Management System [hereinafter 'SEMS'] containing defined elements in accordance with industry-set standards for safety management.⁵¹⁷ Operators are required to develop a comprehensive safety and environmental management program, identifying potential hazards and risk-reduction strategies for every phase of activity, encompassing well design, construction, operation and maintenance, and decommissioning; while BSEE's role is reduced to oversight without being directly engaged in the audit of SEMS reports itself.⁵¹⁸

Another development led to the foundation of the Center for Offshore Safety [hereinafter 'COS'] in March 2011.⁵¹⁹ COS, funded exclusively by the industry, aims at developing forms of self-regulation. Thus it establishes good practice documents in the areas of SEMS, assures that auditors for third party certification are working within their program's objectives, promotes shared learning, outreaches activities and develops metrics for the industry. Two stages can be identified in relation to the SEMS requirements:

Under SEMS I, operators were required to have a SEMS program in effect. This were to be audited by internal or external auditors and the audit report was to be submitted to BSEE by the auditor. SEMS I did not contain any standard auditing templates or forms. Instead COS had developed a SEMS toolkit that operators or auditors could choose to rely on to satisfy their SEMS I duties.⁵²⁰ The SEMS II

⁵¹⁶ 30 C.F.R. s. 250.1900-250.1933 (2013).

⁵¹⁷ Incorporated by reference under s. 30 C.F.R. s. 250.198: the American Petroleum Institute (API) Recommended Practice 75; on the 5th of April 2013 BSEE revised and added new elements to the original SEMS rule [hereinafter 'SEMS I'], 30 C.F.R. s. 250.1902 (2013). Reference will be made to the effects of this revision in the development below.

⁵¹⁸ However, see paragraph V-2.B-a-ii-§§ below explaining how these intentions were not effectively implemented.

⁵¹⁹ Report to the President, 235-39; William Reilly, co-chair of the Commission, emphasised on the need to have an industry institute as a 'co-regulator' in the Gulf as it will possess the necessary funding and expertise which no government entity would be able to match. See Katie Howell, 'Gulf Spill: Oil Industry Needs 'Systemic' Safety Overhaul – Commissioner' *E&E News* (9 November 2010).

⁵²⁰ Jacqueline L. Weaver, 'Offshore Safety in the Wake of the Macondo Disaster: the Role of the Regulator' [2014] 36:2 *Hous J. Int'l L.* 379, 419-420.

regulation created a stronger link between BSEE and COS.⁵²¹ BSEE, now, approves an Accreditation Body [hereinafter ‘AB’] which, in turn, accredits an external Audit Service Provider [hereinafter ‘ASP’]. This external ASP performs the SEMS II audit in accordance with the COS-created auditing protocols and reporting templates and must deliver its report to the operator/lessee who then itself submits it to BSEE. COS is currently the only competent AB. Thus, the US regulatory framework now is “industry self-regulation through third-party audits”/“regulation by third-party verification”.⁵²²

The National Academy of Sciences’ Transportation Research Board report has raised concerns about COS as it is not organized within the American Petroleum Institute [‘API’].⁵²³ Within a system aiming to impose safety management and responsibility on an industry which is in better position than a government to assess the operational risks and the technological development, permitting the industry to set the relevant regulatory standards appears plausible. However it is also arguable that the regulator’s oversight role would be more efficient if the safety audits are done by truly independent bodies as otherwise the development of safety culture may stall if the pressure on safety on the industry is reduced.

B- The Norwegian Petroleum Regulatory Regime

At the time of the Deepwater Horizon accident, the Norwegian and the US regulatory regimes were very different with the US system being primarily prescriptive and without the application of systematic risk management and the Norwegian regulations being primarily performance and risk based.⁵²⁴ The difference in the regulatory character reflected different evolutionary stages and perhaps, as argued by Benneer,⁵²⁵ the different character of the accidents that lead to the regulatory evolution, with those in the US primarily concerned with oil

⁵²¹ Ibid, 422.

⁵²² Ibid.

⁵²³ Transportation Research Board, ‘Special Report 321: Strengthening the Safety Culture of the Offshore Oil and Gas Industry’ (1 October 2016), 5.

⁵²⁴ Det Norske Veritas, ‘OLF/NOFO - Summary of Differences between Offshore Drilling Regulations in Norway and U.S. Gulf of Mexico’, Report no/DNV Reg No.: 2010-1220/ 12P3WF5-9 (2010) [hereinafter ‘DNV Report’].

⁵²⁵ See note 504.

pollution while those in the North Sea primarily concerned structural failure of the offshore structures.

However Norway's regulatory system followed a similar evolutionary path to that in the US albeit with different timing. Norway's 1970s petroleum legislation was detailed and prescriptive in both safety and technical solutions.⁵²⁶ This was administered through the Norwegian Petroleum Directorate [hereinafter 'NPD'] established in 1972 as part of the Ministry of Industry, but later (1978) a subordinate of the Ministry of Petroleum and Energy [hereinafter 'MPE']. The NPD's purpose was to manage and oversee oil and gas resource development on the Norwegian Continental Shelf [hereinafter 'NCS']. However, faced with difficulties in keeping up with the developments in the oil and gas sector as well as with dealing with the increasing tension with operators as to the entity responsible for the safety of operations,⁵²⁷ the NPD shifted its philosophy towards performance-based regulation in 1979.⁵²⁸ The 1985 Petroleum Activities Act [hereinafter 'PAA'] implemented new regulations and "reformed the entire regime to be performance-based"⁵²⁹ shifting oversight responsibility from regulator to operator.⁵³⁰

The current regime is organised as follows:⁵³¹ the framework for Norwegian offshore activities is emplaced through legislations relevant to the sector, such as the PAA and the Pollution Control Act [hereinafter 'PCA']. The Government holds the responsibility for executing the provisions under these legislations through

⁵²⁶ Teje Aven and Jan Erik Vinnem, 'On the Use of Risk Acceptance Criteria in the Offshore Oil and Gas Industry' [2005] 90 Reliability Engineering and Sys. Safety 15, 16-17.

⁵²⁷ Petroleum Safety Authority Norway, 'From Prescription to Performance in Petroleum Supervision' (3 December 2010) <<http://www.psa.no/news/from-prescription-to-performance-in-petroleum-supervision-article6696-878.html>> accessed 8 February 2018 [hereinafter 'From Prescription to Performance']; See also DNV Report, 17, highlighting the "passive attitude" developed among companies as a result of the prescriptive approach followed by the NPD.

⁵²⁸ From Prescriptive to Performance, 2; this was also motivated in part by the occurrence of two disasters in 1977 and 1980, see Hanson, note 502, 565; moreover, a commission inquiry report published as a result of the *Kielland* disaster outlined a series of criticisms pertaining to NPD's performances, see From Prescriptive to Performance.

⁵²⁹ Hanson, note 502, 565-566

⁵³⁰ Ibid.

⁵³¹ The Norwegian organisational regime can be visualised in the DNV Report figure 2.1.

various ministries and corresponding agencies and is responsible before the Parliament in doing so. The ministries responsible for executing the various roles within the petroleum policy are the Ministry of Petroleum and Energy [hereinafter 'MPE'], the Ministry of Labour [hereinafter 'ML'], the Ministry of Fisheries and Coastal Affairs [hereinafter 'MFCA'], the Ministry of the Environment [hereinafter 'ME'] and the Ministry of Finance [hereinafter 'MF']. The MPE, responsible for resource management (including the granting of licenses) on the NCS and for overseeing the sector as a whole, is supported by the NPD which relies on its expertise to help with decisions regarding exploration and production based on current regulations. However, the latter has no role within the area of safety, health and environment.⁵³² This task is instead entrusted to the Petroleum Safety Authority Norway [hereinafter 'PSA'], operating under the ML. Moreover, the Climate and Pollution Agency [hereinafter 'CPA'] is in charge of the enforcement of the PCA, and the Norwegian Coastal Administration [hereinafter 'NCA'], operating under the MFCA, is responsible for contingency measures for acute pollution on the NCS.⁵³³ The PSA is considered the “coordinator for development of the petroleum regulations and for monitoring compliance with these regulations”⁵³⁴ and the “regulatory authority for technical and operational safety, including emergency preparedness, and for the working environment” and its regulatory role covers “all phases of the industry, from planning and design through construction and operation to possible ultimate removal”.⁵³⁵ To date, five sets of regulations have been adopted in Norway's offshore petroleum sector in relation to Health Safety and the Environment. Their grouping perhaps indicates the contemporary understanding on safety. The aforementioned regulations are

⁵³² DNV Report, 30.

⁵³³ Ministry Of Petroleum and Energy, 'Facts 2010 - The Norwegian Petroleum Sector' (June 2010) [hereinafter 'MOP Facts 2010'], 22.

⁵³⁴ DNV Report, 13.

⁵³⁵ Ibid, 24.

the Framework Regulations;⁵³⁶ the Management Regulations;⁵³⁷ the Activities Regulations;⁵³⁸ the Facilities Regulations;⁵³⁹ and the technical and operational regulations.⁵⁴⁰

Norway's petroleum regulations are risk-based and place much importance on the imperatives of reducing health and safety and environmental risks.⁵⁴¹ The requirements under the different particular regulations are formulated in general terms⁵⁴² making them applicable interchangeably in other regulations. The "responsible party" is the operator and the other participants in petroleum operations. Importantly, the requirements under the regulations are performance-based/functional⁵⁴³ as they express the performance/result which a product, process or service is expected to achieve and are interpreted collectively in order to best ascertain the standard which the regulations seek to achieve. Moreover, the Regulations contain guidelines (usually including references to industry standards)⁵⁴⁴ providing recommended solutions for fulfilling the

⁵³⁶ Regulations relating to Health, Safety and the Environment in the petroleum activities and at certain onshore facilities (Laid down by Royal Decree of 12 February 2010, last amended 15 December 2017).

⁵³⁷ Regulations relating to Management and the duty to provide information in the petroleum activities and at certain onshore facilities (adopted 29 April 2010, last amended 18 December 2017).

⁵³⁸ Regulations relating to conducting petroleum activities (adopted 29 April 2010, last modified 18 December 2017).

⁵³⁹ Regulations relating to design and outfitting of Facilities, etc. in the petroleum activities (adopted 29 April 2010, last modified 18 December 2017).

⁵⁴⁰ Regulations relating to Technical and Operational matters at onshore facilities in the petroleum activities, etc. (adopted 29 April 2010, last modified 15 December 2016); Petroleum Safety Authority Norway, 'About the HSE regulations' <<http://www.ptil.no/about-the-hse-regulation/category929.html>> accessed 8 February 2018. In addition to those, shipping regulations may be of relevance for Mobile Offshore Drilling Units (MODUs).

⁵⁴¹ See generally for the following discussion the PSA's website, "Regulatory Principles", available at <<http://www.ptil.no/regulatory-principles/category932.html>> accessed 8 February 2018. See also Bennear, note 504, describing them as goal based with significant latitude given to the industry on how the goals can be achieved.

⁵⁴² For a critical analysis see Aven and Vinnem, note 526.

⁵⁴³ DNV Report, 16: "the regulations under the PSA are mainly performance-based with supplementary prescriptive requirements. The performance-based requirements include *common* requirements for all areas and *specific* requirements that relate to specific areas, e.g. requirements on design of drilling equipment etc."

⁵⁴⁴ National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, 'A Competent and Nimble Regulator: a New Approach to Risk Assessment and Management', Staff

requirements thereunder. The responsible party may decide to adopt an alternative solution only if it is possible to document that the standards are met as well as or better than with the recommended guidelines.

The industry-centred approach adopted in Norway is exemplified where the Framework Regulations, requiring risk analysis, indicate that the operator must define safety objectives and risk acceptance criteria for the regulator's approval.⁵⁴⁵ Furthermore, oil companies acting as operators are considered by the PSA to have “an overarching responsibility to ensure that all its contractors and sub-contractors comply with the regulation”.⁵⁴⁶ Thus, an internal control system to offshore operations is implemented.

The PSA retains for itself a wide supervisory role⁵⁴⁷ inclusive of management system audits, verifications, investigations, consents, meetings with the industry, surveys, studies, professional seminars, and development of regulations.⁵⁴⁸ This supervision is performed throughout the petroleum industry life-cycle and applies to all players in the Norwegian oil and gas industry. The PSA considers that its role is to determine “whether the company concerned has accepted its responsibility to operate in an acceptable manner”.⁵⁴⁹ The general oversight role exercised by the PSA in relation to the self-regulation of offshore companies is also reflected in the requirements that the operating companies' responsibility for establishing the necessary contingency planning for oil pollution.⁵⁵⁰

Working Paper No.21, available at <https://repository.library.noaa.gov/view/noaa/84> accessed 9 February 2018 [‘A Competent and Nimble Regulator’] At 12: “Guidance documents refer to codes and standards that are considered acceptable. The regulator has asked industry to develop standards for specific purposes”.

⁵⁴⁴ Framework Regulations, s. 11.

⁵⁴⁵ Ibid.

⁵⁴⁶ Petroleum Safety Authority Norway, ‘What is Supervision’ <<http://www.ptil.no/about-supervision/category888.html>> accessed 9 February 2018 [hereinafter ‘What is Supervision’]; see discussion below.

⁵⁴⁷ Ibid, “supervision embraces much more than audits of offshore facilities and land-based plants. This term refers to all contact between us as the regulator and the regulated object”.

⁵⁴⁸ DNV Report, 25.

⁵⁴⁹ Framework Regulations, s. 7 provides that “the responsible party must ensure compliance with the requirements specified in the HSE legislation”.

⁵⁵⁰ MOP Facts 2010, 22.

The audits conducted by PSA are system-oriented and risk-based and focus is on actual circumstances rather than worst-case scenarios.⁵⁵¹ Data collected is made available to other operators via the PSA website thus facilitating learning and transfer of experience within the sector.⁵⁵² Collaboration with foreign safety regulators and learning from foreign experiences of operators within the field of HSE is also recognised by the PSA as key in improving its regulations and regularly updating them.⁵⁵³

An additional control in the Norwegian system concerns group regulation by companies which jointly hold a licence. These companies are jointly and severally liable to the State for all obligations arising under the license. Thus, the licensees in the “license group” have a collective interest to oversee the work of the operator undertaking the extraction activities.⁵⁵⁴

C- The UK Offshore Health and Safety Regulatory Regime

The developments of the UK offshore regulatory regime have also been marked by reactions to UK and foreign failures in preventing accidents.⁵⁵⁵ Broadly, the current UK regime is consists of three types of legislative instruments, namely: formal acts of the UK parliament, regulations created under the auspices of those acts, and EU directives and regulations.⁵⁵⁶

⁵⁵¹ Ibid.

⁵⁵² Ibid, 26.

⁵⁵³ Ibid.

⁵⁵⁴ Ulf Hammer, ‘Norway: Security of Supply in Liberalized Energy Sectors: A New Role for Regulation’, in Barry Barton, Catherine Redgwell, Anita Rønne and Donald Zillman (eds), *Energy Security, Managing Risk in a Dynamic Legal and Regulatory Environment* (OUP 2004) 327.

⁵⁵⁵ Notably, the Sea Gem inquiry following the Sea Gem collapse in 1965, the Burgoyne Report following the Norwegian Ekofisk Bravo blowout in 1977, the Cullen Report (see infra), as well as a variety of reactions and reassessments of the UK regulatory regime by governmental bodies as well as the industry following the Deepwater Horizon.

⁵⁵⁶ For a list of offshore environmental legislation see ‘Guidance - Oil and gas: offshore environmental legislation’ (Gov.UK) <<https://www.gov.uk/guidance/oil-and-gas-offshore-environmental-legislation>> accessed 23 December 2019; Jeffery Ray, ‘Offshore Safety and Environmental Regimes: a post-Macondo Comparative Analysis of the United States and the United Kingdom’ [2014] 33 Miss.C.L.Rev 11, 28. In relation to the duties under the EU legislation we note the following: according to Oil & Gas UK, “many of the Directive’s requirements are already implemented through the existing Offshore Installations (Safety Case) Regulations 2005 which will be maintained”. See ‘EU Offshore Safety Directive’ (OGUK)

The 1964 Continental Shelf Act asserted the UK's sovereign rights over offshore resources through requiring licencing for all offshore drilling along the UK Continental Shelf from the Secretary of State for Energy. The wordings of Model Clauses⁵⁵⁷ contained in licenses and the onshore regulations⁵⁵⁸ which were the basis for the corresponding offshore regulations⁵⁵⁹ tended to be vague,⁵⁶⁰ and the remedies against breaches thereof limited to the revocation of the license.⁵⁶¹

Reactions to industry incidents led to the Mineral Workings (Offshore Installations) Act of 1971, following the Sea Gem incident,⁵⁶² and the Health and Safety at Work Act of 1974 following the Ekofisk Bravo blowout.⁵⁶³ At this stage, there was a heated debate on whether the responsibility for HSEP should lie with the government or with the industry.⁵⁶⁴ The debate was eventually settled by a

<<https://oilandgasuk.co.uk/EU-Offshore-Safety-Directive.cfm>> accessed 23 December 2019; see also, the Health and Safety Executive Offshore Oil & Gas Sector Strategy 2014 to 2017, 'Delivering the Strategy – What HSE's Regulatory activity will look like' <<http://www.hse.gov.uk/offshore/offshore-delivering-strategy.pdf>> accessed 9 February 2018 ['HSE Delivering the Strategy']; the latter indicates at para 4, regarding the assessment of SC, that "The forthcoming changes associated with the implementation of the revised Offshore Safety Directive 2013/30/EU will require detailed modifications to SC to align with environmental requirements, but the fundamental principles applied will not change".

⁵⁵⁷ Defined by Bennear (*supra* 504) as "standard text that described the conditions of the operating license".

⁵⁵⁸ The Petroleum (Production) Act (repealed Feb. 15 1999).

⁵⁵⁹ The Petroleum (Production) (Continental Shelf and Territorial Sea) Regulations 1964.

⁵⁶⁰ Ray, note 556, 28-29; Bennear, note 504, 7.

⁵⁶¹ *Ibid*; Bennear, note 504, further noted that this measure has never been taken.

⁵⁶² This act practically made the Department of Energy Petroleum Engineering Division ['PED'] the regulating authority in charge of promulgating prescriptive regulations, managing licenses, inspecting installations and enforcing rules. See Bennear, note 504, 8.

⁵⁶³ This Act followed a performance-based approach to regulation, however, it had been weakened by the simultaneous application of the Mineral Workings Act and the role of the PED. It also made the HSE the authority responsible for regulating health and safety matters offshore.

⁵⁶⁴ Clear conflict appears from the comparison between the Sea Gem Inquiry and the Robens Report. The former, while noting the impending inadequacy of prescriptive regulation, eventually recommended that such responsibility must be attributed to the Government and that a comprehensive prescriptive regulatory regime must be developed towards that end. See John Paterson, 'The Significance of Regulatory Orientation in Occupational Health and Safety Offshore' [2011] 38 B. C. Env'tl. Aff. L. Rev. 369, 373. The latter, however, noted that the UK offshore industry must be subject to a "unified structure" within a "more self-regulating system" and criticised prescriptive regulations for being irresponsible and non-adaptive. See Lord Robens, Safety and Health at Work: Report of the Robens Committee, 1972, Cmnd. 5034, at paras 23 and 41. See also Bennear, note 504, 8.

move from prescriptive to performance-based regulation following the Piper Alpha disaster in 1988.⁵⁶⁵ The Cullen report⁵⁶⁶ recommended 106 changes grouped into three categories,⁵⁶⁷ which practically transformed the UK offshore regulatory regime into a goal-setting one as the Parliament implemented them “wholesale”.⁵⁶⁸ This approach put the burden on the operator to “make the case” to the regulator that its activities will be conducted safely, hence the “Safety Case” terminology [‘SC’].⁵⁶⁹ The Cullen Recommendations were brought into force through the Offshore Safety Act 1992 and the Offshore Installations (Safety Case) Regulations 1992, and the separation of enforcement and regulatory functions from revenue functions.⁵⁷⁰

The SC system is now implemented through the Offshore Installations (Safety Case) Regulations 2005 [‘OSCR’] which apply to oil and gas operations in internal waters, and the Offshore Installations (Offshore Safety Directive) (Safety Case etc) Regulations 2015 [‘OSCR 2015’] which apply to oil and gas operations in external waters.⁵⁷¹ Moreover, the prominent bodies involved in the regulation of the offshore industry are the Department for Business Energy and Industrial Strategy [‘BEIS’] which is responsible for developing the environmental regulatory framework for offshore oil and gas upstream activities as well as licensing⁵⁷² and decommissioning of structures; the HSE which is responsible for

⁵⁶⁵ Ibid, 9; Ray, note 556, 30

⁵⁶⁶ Hon. William Cullen, *The Public Inquiry Into the Piper Alpha Disaster* (1990).

⁵⁶⁷ Namely, safety assessment and the regulatory system, prevention and mitigation measures, and evacuation, escape and rescue.

⁵⁶⁸ Ray, note 556, 30.

⁵⁶⁹ Bennear, note 504, 9; Paterson, note 564, 379-381 noting at 380 that the Cullen Report “placed the key responsibility on the *operator*” who would need to show the regulator that risks are minimized; See also Health and Safety Executive, ‘A Guide to the Offshore Installations (Safety Case) Regulations 2005 – Guidance on Regulations’, <<http://www.hse.gov.uk/pUbns/priced/l30.pdf>> accessed 9 February 2018 [‘HSE Guide’], para 2: “The Regulations implement the central recommendations of Lord Cullen’s report on the public inquiry into the Piper Alpha disaster. This was that the operator or owner of every offshore installation should be required to prepare a SC and submit it to HSE for acceptance”.

⁵⁷⁰ Bennear, note 504, 9; Paterson, note 564, 379.

⁵⁷¹ See OSCR 2015, regulation 4(b), providing that these Regulations do not apply “in any case where the Offshore Installations (Safety Case) Regulations 2005(a) apply”.

⁵⁷² Now entrusted to the Oil and Gas Authority, an executive agency under BEIS.

enforcing health and safety legislation; and the Offshore Safety Directive Regulator.⁵⁷³ These bodies aim to oversee the regulatory framework and ensure compliance relevant to the industry.⁵⁷⁴ The Regulations sometimes operate through the development of model clauses, schedules, and, in some cases, confer significant discretionary powers to the Minister of Energy, such as under the Petroleum Licensing (Exploration and Production)(Seaward and Landward Areas) Regulations 2004.⁵⁷⁵

The SC system, reflected the move away from regulation of specific activities and towards looking at the broader safety risks. Thus, under UK law, a performance-based approach is emplaced through SC that are required for all installations operating, or to be operated in UK waters and on the UK Continental Shelf.⁵⁷⁶ A SC “is a document that gives confidence to operators, owners, workers and the CtAu that the duty holder has the ability and means to manage and control major accident hazards effectively.”⁵⁷⁷ In essence the operator/owner has to be persuasive that all the legal requirements under the various instruments are

⁵⁷³ The CtAu responsible for implementing the European Offshore Safety Directive discussed below. See generally: HSE, ‘OSDR – The Competent Authority’ (*HSE.Gov.UK*) <<http://www.hse.gov.uk/osdr/authority/index.htm>> accessed 9 February 2018.

⁵⁷⁴ See note 556 *supra*.

⁵⁷⁵ These model clauses impose obligations upon licensees pursuant to the Petroleum Act 1998; see generally Ray, note 556, 32, discussing relevant obligations referred to in the Petroleum Licensing Regulations.

⁵⁷⁶ the requirement to submit the SC lies on operators for production installations and on owners for non-production installations, HSE Guide para 3; however, the HSE Offshore Oil & Gas Sector Strategy 2014 to 2017, ‘Strategic Context’ <<http://www.hse.gov.uk/offshore/offshore-oil-and-gas.pdf>> accessed 9 February 2018 [‘HSE Strategic Context’] noted at para 5 that considering the fact that operators “employ 85% of the work force” in a given installation, the strategy must aim to ensure that “all those with influence over the conditions to which workers are exposed contribute to ensuring risks are properly controlled”.

⁵⁷⁷ HSE guide, para 7.

complied with. In other words, that it has “identified all major hazard risks,⁵⁷⁸ assessed these risks⁵⁷⁹ and applied suitable measures to control the risks”.⁵⁸⁰

The acceptance of a SC indicates that, in the HSE’s judgment, the arrangements and measures defined in the SC are likely to achieve compliance if implemented as described.⁵⁸¹ In making its decision, HSE is assisted by the Assessment Principles for Offshore Safety Cases [‘APOSC’] which provides a list of principles that must be addressed to ensure the SC contains the “sufficient particulars”.⁵⁸² The HSE’s acceptance does not guarantee that compliance with various legislations and regulations will be achieved by the duty holder. This is rather made by post-acceptance programmes of inspection and enforcement relative to the accepted SC.⁵⁸³

Therefore, under the UK regime, it is the duty holders who are primarily responsible in relation to the implementation and maintenance of the statutory health and safety standards and the regulator exercises a number of supervisory powers to ensure standards are complied with in practice. Hence, the SC system provides an additional regulatory control point⁵⁸⁴ and does not replace the detailed regulatory compliance requirements.

⁵⁷⁸ A competent and Nimble Regulator, 13: ‘the safety case must be presented and defended to a review team at HSE prior to commencement of any activities, where *a major focus is especially on major hazards or (process) safety*’ (emphasis added); for the definition of “major accident” see OSCR, Regulation 2.

⁵⁷⁹ On risk assessment, see HSE Guide, paras 180-181: the evaluation of major accident risks is systematic, dependent on the use of appropriate techniques, and be proportionate to the level of risk and the complexity of the relevant problem. The SC is therefore risk-based and based on existing circumstances rather than worst-case-scenario perceptions.

⁵⁸⁰ HSE Guide, Regulation 12: Management of health and Safety and control of major accident hazards. This includes the preparation of an effective safety management system [‘SMS’] ensuring that the organisational arrangements in place will allow the duty holder to comply with the relevant obligations and arrangements for audits and reporting thereof (OSCR, Regulation 12).

⁵⁸¹ Ibid, para 11.

⁵⁸² OSCR, Regulation 12.

⁵⁸³ HSE Guide, para 11; see also HSE Delivering the Strategy, paras 5-7: HSE inspectors inspect operations to ensure that standards are actually met in practice; inspectors will inform operators of actions necessary to comply with the law and may even prohibit activities; inspectors may also refer failures to comply with the law to the courts.

⁵⁸⁴ A Competent and Nimble Regulator, 14.

D- The Australian Offshore Regulatory Regime

Whether the Australian constitution gives jurisdiction over or ownership of offshore natural resources to the States rather than the federal authority has been resolved in *New South Wales v Commonwealth*,⁵⁸⁵ where the court considered the natural resources as national (rather than State) assets. The 1980 Offshore Constitutional Settlement ['OCS'] has provided exclusive rights to the States in a 3 mile zone of the territorial sea and the seabed. Accordingly, State law applies to these areas whereas federal law applies in areas beyond this zone.

Thus, the offshore petroleum industry in Australia was largely regulated by a mixture of State and Commonwealth sources of law,⁵⁸⁶ notably the Petroleum (Submerged Lands) Act 1967 ['PSLA'] and its State equivalents, the Seas and Submerged Lands Act (SLA).⁵⁸⁷ Cooperative governance arrangements were inserted into the PSLA (Commonwealth) as amended by the OCS which established a "Joint Authority" between the State Ministers as the "Designated Authority" and the commonwealth minister.⁵⁸⁸ Designated Authorities, through their mining departments, were given significant powers in applying operational health and safety requirements (regulatory control) of the adjacent State or Territory concerned within the three nautical mile limit and beyond;⁵⁸⁹ while powers in relation to major economic and resource management decisions were shared between the Designated Authority and the Commonwealth through the Joint Authority mechanism. Therefore, an institutional separation existed between the two sectors.⁵⁹⁰

Australia implemented in 1991 the recommendations of the Cullen Report and moved from a prescriptive to a performance-based approach.⁵⁹¹ This in turn led

⁵⁸⁵ *NSW v Commonwealth* (1975) 135 CLR 337, 416 (Austl.).

⁵⁸⁶ Patrick Brazil and Peter Wilkinson, 'The Establishment of a National Offshore Petroleum Safety Authority' [2005] Australian Resources & Energy L.J 90, 91.

⁵⁸⁷ Seas and Submerged Lands Act 1973 (Cth) pt II (Austl.).

⁵⁸⁸ Brazil and Wilkinson, note 586, 91.

⁵⁸⁹ *Ibid.*

⁵⁹⁰ Terence Daintith and John Chandler, 'Offshore petroleum regulation: theory and disaster as drivers for institutional change' [2017] 39:2 Hous. J. Int'l. L 331, 376.

⁵⁹¹ A Competent and Nimble Regulator, 14.

to the introduction of the Safety Case regime in Australia through Schedule 7 (Occupational Health and Safety) to the PSLA.⁵⁹² Inconsistencies in the application of the regulatory regime and the variety of legal instruments by the different regulators of each State/Territory were identified in a report commissioned by the Commonwealth Minister for Resources⁵⁹³ and which recommended the establishment of a national authority. Consequently, a new independent agency, the National Offshore Petroleum Safety Authority ['NOPSA'] was established on the 1st of January 2005.⁵⁹⁴ Well control and environmental regulation remained with the States/Territories under the Designated Authority arrangements.⁵⁹⁵

In parallel the 1999 Petroleum (Submerged Lands) (Management of Environment) Regulations, applicable to Commonwealth waters were introduced to deal with environmental issues. These required petroleum titleholders to present environmental plans to the Designated Authority demonstrating that environmental risks will be reduced to a level as low as reasonably practicable.⁵⁹⁶ The Commonwealth Minister was also given in 1999 powers over certain matters of national environmental significance, which entailed that any development occurring in Commonwealth waters could be referred to the latter.⁵⁹⁷ Thus, two

⁵⁹² Petroleum (Submerged Lands) (Occupational Health and Safety) Regulations 1993 (Cth) pt 2 (Austl.).

⁵⁹³ An Independent Review Team produced a report in which it had found that "the Australian legal and administrative framework [...] is complicated and insufficient to ensure appropriate, effective and cost efficient regulation of the petroleum industry". See Department of Industry, Science and Resources, 'Future Arrangements for the Regulation of Offshore Petroleum Safety' (September 2001) <<https://www.laohamutuk.org/OilWeb/RDTLdocs/303Conf/Dunster/Refs/16%20DISR%202001.pdf>> accessed 23 December 2019, Appendix B; See also Daintith and Chandler, note 590, 378; Brazil and Wilkinson, note 586, 93.

⁵⁹⁴ Petroleum (Submerged Lands) Amendment Act 2003 (Cth) ss 2, 150XA, 150XB (Austl.).

⁵⁹⁵ Productivity Commission's Research Report, 'Review of Regulatory Burden on the Upstream Petroleum (Oil and Gas) Sector' (April 2009), <<https://www.pc.gov.au/inquiries/completed/upstream-petroleum/report/upstream-petroleum.pdf>> accessed 9 February 2018 ['Review of Regulatory Burden'], 173-175.

⁵⁹⁶ Petroleum (Submerged Lands) (Management of Environment) Regulations 1999 (Cth) s.3 (Austl.), Regulation 11(1)(b).

⁵⁹⁷ Environment Protection and Biodiversity Conservation Act 1999 (Cth) (Austl.) ch 2 pt 3.

distinct sets of approval were required for the initiation of offshore activities⁵⁹⁸ and each was granted by a different authority.

In August 2009, a blowout occurred in the Montara field in the waters between Australia and West Timor. This and the Deepwater Horizon incidents have initiated offshore regulatory development by the Australian government aiming at avoiding future disasters.⁵⁹⁹ An inquiry set up by the Commonwealth Minister resulted in a report recommending that “a single, independent regulatory body should be created, looking after safety as a primary objective, well integrity and environmental approvals”.⁶⁰⁰ The original suggestion was to establish a national petroleum regulator working alongside NOPSA (which was planned to retain its health and safety responsibilities). The new regulator was suggested as having exclusive regulatory responsibility for resource management, pipelines and environmental approvals and compliance.⁶⁰¹

Instead, NOPSA was reconstituted as the National Offshore Petroleum Safety and Environmental Management Authority [‘NOPSEMA’],⁶⁰² with an extended remit including environmental management. A new agency within the Commonwealth Department, the National Offshore Petroleum Title Administrator [‘NOPTA’]⁶⁰³ was also developed to monitor compliance in all aspects of titleholder performance falling outside the competence of NOPSEMA.⁶⁰⁴ NOPSEMA and NOPTA are thus the two main players in Australian Offshore Petroleum regulation under auspices of the amended Offshore Petroleum and Greenhouse

⁵⁹⁸ Daintith and Chandler, note 590, 381.

⁵⁹⁹ See Australian Government, Draft Government Response to the Report of the Montara Commission of Inquiry (2010) <<https://industry.gov.au/resource/UpstreamPetroleum/MontaraInquiryResponse/Documents/response-to-montara-inquiry-report.pdf>> accessed 9 February 2018.

⁶⁰⁰ Commissioner David Borthwick, Report of the Montara Commission of Inquiry (June 2010), <<http://www.iadc.org/wp-content/uploads/2016/02/201011-Montara-Report.pdf>> accessed 9 February 2018, Recommendation 73, 362.

⁶⁰¹ Ibid, Recommendation 74, 362; Review of Regulatory Burden, 248ff.

⁶⁰² Offshore Petroleum and Greenhouse Gas Storage Amendment (National Regulator) Act 2011 (Cth) sch 2 pt 1 (Austl.).

⁶⁰³ Ibid.

⁶⁰⁴ Daintith & Chandler, note 590, 384.

Gas Storage Act 2006 [‘OPGSA’] as they added a “unified regulation of structural integrity and environmental issues to health and safety, via NOPSEMA, along with a single resource of expertise and advice on economic control and resource management matters through NOPTA [...], [which should] contribute to raising average standards of regulatory performance and achieving consistency of regulation around Australia” in commonwealth waters.⁶⁰⁵ The extension of the regulators’ powers to *State waters* depends upon State agreements and therefore different regulatory arrangements can be found.

The OPGSA, the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 [‘the Safety Regulations’], and the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 [‘the Environment Regulations’] are indicative of the regulatory approach, at least at federal level in Australia.

Under the latter, a titleholder having been accepted a plan for an offshore project⁶⁰⁶ must submit an environmental plan for its activity to NOPSEMA before commencing it.⁶⁰⁷ Compliance with the accepted plan is ensured through making it an offence for a titleholder to undertake any activity which is contrary thereto.⁶⁰⁸ The regulator, while making its decision on the environmental plan, looks at the criteria listed under Regulation 10A. These include a demonstration that “environmental impacts and risks of the activity will be reduced to as low as reasonably practicable” [‘ALARP’],⁶⁰⁹ and that “the environmental impacts and risks of the activity will be of an acceptable level”.⁶¹⁰

The titleholder must, in the environmental plan, describe the activity and its potential environment impacts and also “describe the requirements, including

⁶⁰⁵ Ibid, 387.

⁶⁰⁶ Environment Regulations, Regulation 5A. The offshore project proposal must describe details pertaining to the applicant’s identity, to the activities he plans to undertake, to the existing environment that may be affected, etc., as per sub-paragraph (5).

⁶⁰⁷ Ibid, Regulation 9. It is an offence for a titleholder to undertake an activity without there being an environmental plan in force for his activity, see Regulation 6.

⁶⁰⁸ Ibid, Regulation 7(1)(a).

⁶⁰⁹ Ibid, Regulation 10A(b).

⁶¹⁰ Ibid, Regulation 10A(c).

legislative requirements that apply to the activity and are relevant to the environment management of the activity; and demonstrate how those requirements will be met”.⁶¹¹ The environmental plan must also “set environmental performance standards for the control measures [...]; set out the environmental performance outcomes against which the performance of the titleholder in protecting the environment is to be measured; and include measurements criteria that the titleholder will use to determine whether each environmental performance outcome and environmental performance standard is being met”. Thus it is the titleholder of an offshore petroleum activity who must identify and propose ways for ensuring protection of the environment from the risks arising from its activities. The regulator ensures that the goals set by the regulation are in fact met,⁶¹² and maintains discretionary⁶¹³ supervisory power in accepting the proposals of the titleholder.⁶¹⁴

With regard to the Safety Regulations, the SC regime implemented aims at ensuring that the facilities’ design, construction, installation, operation, modifications and decommissioning in Commonwealth waters, as well as the measures and management systems provided for to eliminate identified health and safety risks to persons at or near offshore facilities, comply with standards that are to NOPSEMA’s satisfaction.⁶¹⁵ The operator of a facility must submit a SC to OPSEMA in which it must identify, *inter alia*, various risks associated with the activities that will take place on the facility and include elements that are very similar to those required under the UK regime.⁶¹⁶ The standard of risk control

⁶¹¹ Ibid, Regulation 13(4).

⁶¹² The Environment Regulation expressly sets-out the objectives to be achieved in Regulation 3, notably that the relevant activities be “carried out in a manner by which the environment impacts and risks of the activity will be reduced to as low as reasonably practicable; and carried out in a manner by which the environment impacts and risks of the activity will be of an acceptable level”.

⁶¹³ The criteria to be met in the proposals refer to standards that are not in themselves clearly-defined, yet the Regulator is asked to accept them when it is “satisfied” with them. See for example the reference in Regulation 3 to “as low as reasonably practicable” and “an acceptable level”.

⁶¹⁴ The Regulator is also helped by the fact that references to criminal offenses under the Criminal Code are made throughout the Regulations where the titleholder is in breach of various obligations thereunder.

⁶¹⁵ Safety Regulations, Regulation 1.4.

⁶¹⁶ See Ibid, Regulation Part 2, Division 1.

repeatedly referred to is that of ALARP,⁶¹⁷ while Regulation 2.7 provides that the SC must “specify all Australian and international standards that have been applied, or will be applied, in relation to the facility or plant used on or in connection with the facility [...]”.⁶¹⁸

Therefore, it is the operator’s task to specify the control standards concerning health and safety management on the facility. Nevertheless, NOPSEMA’s overlooks through the “acceptance” or “rejection” process of the SC.⁶¹⁹ Additionally, operators are required to maintain all documents required by the SC in force⁶²⁰ and keep a written audit report of the SC for 5 years after it receives it.⁶²¹ An additional layer of control is afforded to NOPSEMA under Part 3 which enables it to require by written notice that an operator provides a validation, prepared by an “independent validator”,⁶²² in respect of the design, construction and installation of the facility. This validation must satisfy NOPSEMA “to a level of assurance reasonably required” by it that the aforementioned elements incorporate measures that “(i) will protect the health and safety of persons at the facility; and (ii) are consistent with the formal safety assessment of the facility”. Thus the burden of satisfying the regulator is on the titleholder in this respect too.

E- The Offshore Safety Directive (EU)

EU member States have individual national systems of regulation of offshore activities. In response to the Deepwater Horizon catastrophe, the EU developed the OSD which characterises the collective approach taken by the EU member States in that regard. The OSD, not only harmonises the laws of the EU member

⁶¹⁷ Ibid, for the safety assessment of facilities see Regulation 2.5(2)(c); as regards the safety management system of risks to health and safety of persons at or near the facility see Regulation 2.5.(3)(e); for evacuation, escape and rescue analysis see Regulation 2.16(h); for risks of fire and explosion see Regulation 2.17(g); etc.

⁶¹⁸ This is consistent with Regulation 2.5(3)(i) pertaining to the safety management system, as well as Regulation 2.20(2)(b) pertaining to emergency preparedness.

⁶¹⁹ See Safety Regulation, Regulation 2.26

⁶²⁰ Ibid, Regulation 2.47.

⁶²¹ Ibid, Regulation 2.23(c).

⁶²² In case this validator was provided by the operator, Regulation 2.40(5) provides that the latter must satisfy NOPSEMA that the said validator had the necessary competence, ability and access to data (in respect of the matter being validated) ensuring that its independency.

States in this respect but also provides for further international harmonisation as it will become apparent.

The OSD is the outcome of a review of offshore oil and gas operations within the Union launched by the European Commission which resulted in the European Communication of the 13th of October 2010 entitled “Facing the challenge of the safety of offshore oil and gas activities”.⁶²³ The Directive’s main goal is to “reduce as far as possible the occurrence of major accidents relating to offshore oil and gas operations and to limit their consequences”⁶²⁴ through the setting of uniform⁶²⁵ minimum standards for offshore safety and environmental management.⁶²⁶

The OSD complements Directive 94/22/EC⁶²⁷ which harmonised the licencing system and the establishment of a CtAu.⁶²⁸ In the licencing process the CtAu must examine [the licensee/operator’s] capability for ensuring continued safe and effective operations “under all foreseeable conditions”.⁶²⁹ It also adds that the licensee’s exclusive operational rights in a given licensed area must be subject to “continuous expert regulatory oversight by Member States”.⁶³⁰ This administrative structuring is believed to assist in achieving the overall aim of the

⁶²³ Commission, ‘Facing the challenge of safety of offshore oil and gas activities’ COM (2010) 560 final [‘Communication on challenge of offshore activities’]; OSD, Recital (5). The Directive leaves it open for States to impose conditions and requirements pertaining to the exercise of authorized offshore activities for considerations of protection of *inter alia* protection of the environment and safety of installations and of workers (Art. 6.2).

⁶²⁴ Ibid, Recital (2); Art. 1.1.

⁶²⁵ Ibid, Recital (17).

⁶²⁶ Ibid, Recitals (10), (14), (12), (13), (17), (18), (22), (26), (28), (29), (30), (31), (36), (37), Art. 3.4.

⁶²⁷ Council Directive 94/22/EC of 30 May 1994 on the conditions for granting and using authorizations for the prospection, exploration and production of hydrocarbons [1994] OJ L164/3.

⁶²⁸ Ibid, Art. 1 and 3. The authorizations are granted on the basis of defined criteria as per Art. 5, including “the technical and financial capability of the entities”.

⁶²⁹ OSD, Recital (10); Art. 4.

⁶³⁰ Ibid, Recital (12); Art. 21.3.

OSD to attain a standard of incorporating “best regulatory practice” into European domestic offshore regulatory frameworks.⁶³¹

The OSD adopts a goal-setting approach and relies on “thorough risk assessment and reliable management systems” to achieve desirable outcomes.⁶³² Within such approach, operators’ role in contributing in achieving the highest safety standards and environmental protection is central. Accordingly, the SC model already implemented in the UK and Norway is embraced at EU level.⁶³³ Thus, operators and owners are “encouraged to establish effective corporate safety and environmental policies and to give effect to them in a comprehensive safety and environmental management system and emergency response plan” and must also “comprehensively and systematically identify all major accident scenarios relating to all hazardous activities that may be carried out on that installation”, assess their likelihood, consequences, and the measures necessary to prevent them and respond to them should they occur.⁶³⁴ In this regard, Member States are instructed to ensure that operators/owners are required to submit documents establishing that offshore safety and the environment are at an acceptable level. This includes well design, operations, identification of major hazards, emergency response plans, arrangements made for independent verification of safety, etc.⁶³⁵ The aforementioned documents must be submitted to the CtAu and no offshore operation must be undertaken prior to the “major hazards” report being accepted by it.⁶³⁶ Importantly, the responsibility for the safety of offshore operations

⁶³¹ Ibid.

⁶³² Ibid, Recital (25); see also European Parliament – Committee on Industry, Research and Energy, Report on facing the challenges of the safety of offshore oil and gas activities (2011/2072(INI)), Motion for a European Parliament Resolution at paras 3-5. The Report’s Explanatory Statement defines at page 18 ‘safety case’ as a ‘risk-based, site-specific approach which requires operators to demonstrate to the relevant national health, safety and environmental authorities that all risks have been considered and controls implemented’.

⁶³³ This system is described as “best practices in the Union”. See Ibid, Recital (26). See also, Sam Boileau and Danielle Beggs, ‘European Union Offshore Oil and Gas Safety Directive’ [2014] I.E.L.R 3, stating that “much of the OSD content will feel familiar to UK operators” and that “the European Union Parliament recommended that an EU-wide regime should largely reflect the UK model”.

⁶³⁴ Ibid, Recital (26).

⁶³⁵ Ibid, Recitals (29), (30), (35); Art. 11 and Articles referred to thereunder; Annex I; Annex II.

⁶³⁶ Ibid, Art. 11 and 18 (a).

remains with the operator/owner⁶³⁷ who cannot transfer its responsibility to contractors through contractual provisions.⁶³⁸

The Directive, in its Annex III, provides guidance for CtAus when assessing reports on major hazards. It provides that the latter shall undertake a “thorough assessment” of those reports and ensure that, *inter alia*, “the operator or the owner has identified all reasonably foreseeable major accident hazards that apply to the installation and its functions [...]”⁶³⁹ and must assess how “risk reduction measures identified as part of the risk management are intended to be implemented if necessary to reduce risks to an acceptable level”.⁶⁴⁰ The report on major hazards must demonstrate that “all the major hazards have been identified, their likelihood and consequences assessed, including any environmental, meteorological and seabed limitations on safe operations, and that their control measures including associated safety and environmental critical elements are suitable so as to reduce the risk of a major accident to an acceptable level”.⁶⁴¹ The same applies for non-production installations⁶⁴² in addition to a “demonstration that all the major hazards have been identified for all operations the installation is capable of performing, and that the risk of a major accident is reduced to an acceptable level”.⁶⁴³ With respect to a material change to an installation, the amended report on major hazards incorporating the material changes shall contain “sufficient details to fully update the earlier report on major hazards and associated internal emergency response plan for the installation and to demonstrate major hazard risks are reduced to an acceptable level”.⁶⁴⁴

⁶³⁷ Ibid, Recital (27).

⁶³⁸ Ibid, Recitals (11), (13), (36); Art. 3.2.

⁶³⁹ Ibid, Annex III 3(b).

⁶⁴⁰ Ibid, Annex III 3(d).

⁶⁴¹ Ibid, Annex I 2(5).

⁶⁴² Ibid, Annex I 3(5).

⁶⁴³ Ibid, Annex I 3(9).

⁶⁴⁴ Ibid, Annex I 6(3).

The term “acceptable” (in relation to a risk) is defined under Art. 2 as a risk “the time, cost or effort of further reducing it would be grossly disproportionate to the benefits of such reduction” with regard to the best practice risk levels.⁶⁴⁵

These “best practice risk levelz” consequently dictate the acceptable type of “risk reduction measures” as referred to in Recital (14). Arguably these must correlate with the European ALARP standard which highlights the level of protection from risks pertaining to offshore activities which the European Parliament has chosen.⁶⁴⁶

According to Recital (30), ‘best practices’ are defined in “authoritative standards and guidance”, and must be continuously updated having regards to new technologies. Surprisingly, they are not referred to or defined anywhere else in the Directive. While the OSD does not expressly refer to international standards as a matter of its character it is of, at least regional character.

The European Union Offshore Oil and Gas Authorities Group [‘OOGAG’], a forum for the exchange of information and expertise between national authorities, stakeholders and the European Commission on all the issues pertaining to offshore operations major accident prevention and response plans was created in 2012.⁶⁴⁷ Art. 2 of the OOGAG Decision enumerates the tasks of the Group, notably, to “discuss, assist and give its opinion to the Commission, [...], in particular [...] on identifying priorities for preparation of guidance documents, standards and best practices in the oil and gas sector”.⁶⁴⁸ The OOGAG website contains links to prominent national, regional and global practices and standards

⁶⁴⁵ It further adds “In assessing whether the time, cost or effort would be grossly disproportionate to the benefits of further reducing the risk, regard shall be had to best practice risk levels compatible with the undertaking”.

⁶⁴⁶ See Ibid, Recital (14) providing that “operators should reduce the risk of a major accident as low as reasonably practicable, to the point where the cost of further risk reduction would be grossly disproportionate to the benefits of such reduction”. See also Von Schomberg, note 486, 36 arguing that “every nation State has [...] the sovereign right to determine its own level of protection [...] depending on its economic situation and socio-political priorities”

⁶⁴⁷ Commission, ‘Decision on setting up of the European Union Offshore Oil and Gas Authorities Group’ COM (2010) 560 final [‘OOGAG Decision’]

⁶⁴⁸ Ibid, Art. 2.3(a).

which are accessible for CtAus anywhere and serve to be used as guidance to better identify the respective European thresholds.⁶⁴⁹ The OSD itself requires international cooperation with other States undertaking similar operations for the purpose of improving safety.⁶⁵⁰

The Commission's impact assessment accompanying its initial proposal for a Regulation on the safety of offshore oil and gas operations in Europe recognised the adequacy of the SC approach when combined with independent external verification. The industry stressed that for the approach to work, the appropriate regulatory framework and associated experience should be in place, which was not true for all EU member States involved in offshore operations. It was further argued that the "EU should work with those countries individually, to bring standards up".⁶⁵¹ Clearly this realisation in a regional group of developed States can be generalised for the global market. The international transfer of experience, as suggested both in the OSD and in the Australian regulatory system, can be beneficial and improve HSEP. However such transfer of experience would be primarily beneficial for performance-based regulatory systems in which the regulators have the necessary experience to critically analyse and implement suggested changes coming from different technological, environmental and regulatory frameworks.

The use of "blanket approach" to all member States was also criticised suggesting that such an action risks to "inadvertently undermine the effectiveness of the existing regulatory and supervisory regimes in the oil-producing countries, especially around the North Sea".⁶⁵² This was minimised when the Commission's proposal for a Regulation on the safety of offshore operations was, following

⁶⁴⁹ Joint Research Centre, 'EU Offshore Authorities Group – Web Portal' <<https://euoag.jrc.ec.europa.eu/>> accessed 9 February 2018.

⁶⁵⁰ OSD, Art. 33.

⁶⁵¹ Commission, 'Commission staff working paper – results of the public consultation on Improving offshore safety, health and environment accompanying the proposal for a Regulation of the European Parliament and of the Council on safety of offshore oil and gas prospection, exploration and production activities' SEC (2011) 1292 final ['Commission SWP'], 77

⁶⁵² Ibid, 99

opposition by the United Kingdom Government,⁶⁵³ transformed into the Directive.⁶⁵⁴

The OSD provides for third-party/independent verification/inspection.⁶⁵⁵ The responsibility to establish schemes for independent verification lies with the operator/owner.⁶⁵⁶ Furthermore, operator/owners are required to reasonably act upon the advice of the independent verifier.⁶⁵⁷

The OSD goes further than the national regulatory systems discussed in a number of aspects. First it enables “whistle blowers”⁶⁵⁸ to provide information on security to the CtAu confidentially. Second, it strives to ensure transparency by obliging operators to provide relevant information to CtAus and obliging the latter to make such reports publicly available.⁶⁵⁹ Thirdly, it obliges companies registered in any EU Member State which is involved with offshore oil and gas operations outside the EU to report to the Member States on request on the circumstances of any major accident in which such companies have been involved. Fourthly, the OSD obliges Member States to prepare for situation of transboundary incidents involving waters of non-EU States.⁶⁶⁰ Therefore the OSD has elements of a unifying international system based on the SC approach, supported with

⁶⁵³ Oil & Gas UK, ‘Oil & Gas UK Warns Against European Commission Weakening UK's Offshore Safety Regime, (*Oil & Gas UK*, 31 January 2012), <<https://oilandgasuk.co.uk/oil-gas-uk-warns-against-european-commission-weakening-uks-offshore-safety-regime/>> accessed 9 February 2018.

⁶⁵⁴ With the effect that Member States are given the liberty to determine how implement the provisions thereunder within their own national legal systems. As the UK's offshore regulatory approach has, since the Piper Alpha incident, been exemplary of best practices and standards within the EU, (see OOGAG Decision, 34, 64), it was not particularly demanding for the British Government to implement the OSD. See *supra*, note 556.

⁶⁵⁵ See Commission SWP, 83; see also OSD, Recital (31) providing: “In view of the complexity of offshore oil and gas operations, the implementation of the best practices by the operators and owners requires a scheme of independent verification of safety and environmental critical elements throughout the lifecycle of the installation”.

⁶⁵⁶ *Ibid*, Art. 17.1.

⁶⁵⁷ *Ibid*, Art. 17.5.

⁶⁵⁸ OSD, Art. 22.

⁶⁵⁹ OSD, Art. 23 and 24.

⁶⁶⁰ OSD, Art. 10 (where the European Maritime Safety Agency is nominated to lead), Art. 31 (for exchange of information) and Art. 32.

independent verification, but also encompassing administrative organisation on international level.

F- Regulation through State-owned companies

A radically different approach to the regulation of offshore activities can be traced when inspecting the respective structures in place in Malaysia, Venezuela and the Kingdom of Saudi Arabia ['KSA']. As will become apparent in the developments below, this approach is generally marked with a reliance on prescriptive regulation and a confusion of regulatory functions between various players, thus highlighting a strong political influence on safety matters pertaining to offshore activities.

a- Offshore Regulation in Malaysia

Under Art. 2 of the Petroleum Development Act 1974 all rights of ownership exploration and exploitation are irrevocably vested to PETRONAS, a Malaysian corporation. The Corporation is under the direction and control of the Prime Minister. In exchange, it pays a fee to the government. Under the Petroleum Regulations 1974 (as further amended), PETRONAS is also the licensing authority for third-party contractors for upstream petroleum activities, exploration and exploitation.

The main requirements for licensing applicants are set out in the PETRONAS Licencing and Registration General Guidelines.⁶⁶¹ Licencing is required for upstream activities and registration with PETROAS for downstream activities.⁶⁶² The General Guidelines explain that the licencing process is done in two stages. One is at the company level, as companies must involve local shareholders depending on the work undertaken.⁶⁶³ The second level of screening depends on

⁶⁶¹ PETRONAS – Licensing & Local Development Department, 'General Guidelines – Application for PETRONAS License and Registration' (1 June 2017) <<http://www.petronas.com.my/partnering-us/licensing-registration/application-information/Documents/PETRONAS%20Licensing%20and%20Registration%20General%20Guidelines%20%28English%20Version%20%E2%80%93%20As%20at%201%20June%202017%29.pdf>> accessed 9 February 2018 ['PETRONAS General Guidelines'].

⁶⁶² Ibid, s.3.1.

⁶⁶³ They can either appoint a local company as an exclusive agent in Malaysia or incorporate with a local company into a joint venture before applying for licencing.

the Standardised Work & Equipment Category ['SWEC'] for which licencing is sought. The SWEC minimum technical requirements⁶⁶⁴ refer primarily to company characteristics, education and experience for those providing the services. There is nothing indicating an integrated assessment for the service provided. The company has a Health and Safety Policy⁶⁶⁵ dated 2014 which promises that it "shall establish Health, Safety and Environment Management System to ensure continual improvement in HSE management and performance" and that it "shall manage all HSE risks associated with its activities and provide control measures to eliminate or reduce the risks to a level as low as reasonably practicable".

The PETRONAS Procedure and Guidelines for upstream activities is the "one-stop" manual for contractors. This includes the compliance requirements. Thus, contractors are responsible for the development of a Health, Safety and Environment Management System ['HSEMS'] in accordance with PETRONAS standards.⁶⁶⁶ The Guidelines state that "PETRONAS expects the contractor to be self-regulatory in managing HSE aspects which is comply with relevant HSE laws and regulations. In the absence of regulatory requirements, PETRONAS standards, the contractor should apply international standards and best practices."⁶⁶⁷ While this statement indicates an oversight role for PETRONAS in terms of HSEP, it simultaneously implies a preference of the PETRONAS' prescriptive standards over international standards and best practices. Moreover, PETRONAS can conduct inspections at a contractor's site but with a 1 month prior notification.

⁶⁶⁴ Available at <<http://www.petronas.com.my/partnering-us/licensing-registration/application-information/Documents/SWECs%20Minimum%20Technical%20Requirements%20as%20at%2030012018.pdf>> accessed 9 February 2018.

⁶⁶⁵ PETRONAS, 'Towards a Safe and Healthy Work Environment' <[https://www.mymesra.com.my/Health_Safety_and_the_Environment_\(HSE\)-@-HSE_Policy.aspx](https://www.mymesra.com.my/Health_Safety_and_the_Environment_(HSE)-@-HSE_Policy.aspx)> accessed 9 February 2018.

⁶⁶⁶ PETRONAS Procedure and Guidelines for Upstream Activities (PPGUA 3.0), Health, Safety & Environment (Volume 3) (2013) <<https://www.scribd.com/document/333690058/PPGUA-Volume-3-Final-CD>> accessed 9 February 2018, s.1.2.

⁶⁶⁷ Ibid, p.5.

The examination of the available documents, which do not hold the status of legal documents suggests a number of differences when compared with the other regulatory regimes. First, the efficiency of the system depends heavily on the quality of the HSEMS system of the contractor. It appears that the level of scrutiny by PETRONAS on the contractor's HSEMS is not apparent and there is no independent, third party control. In addition the linkage of all activities under one company is likely to create conflicts of interest between financial and safety issues.

b- Offshore Regulation in Venezuela

The structure and functioning of the Venezuelan regulatory regime for offshore petroleum activities, has similarities with the Malaysian regime and significant differences from those petroleum regulatory regimes adopting an open market approach.⁶⁶⁸

The Venezuelan Constitution, in its Art. 302, reserves to the State “the petroleum industry and other industries, operations and goods and services which are in the public interest and of a strategic nature”, for reasons of “national expediency”.⁶⁶⁹ The “monopoly in favour of the Venezuelan State in respect of *all* activities related to hydrocarbons”⁶⁷⁰ is emplaced through the State-owned company: Petroleos de Venezuela S.A. (PDVSA).⁶⁷¹ Private sector entities can only participate through association or operating service agreements.⁶⁷² The election of Hugo Chavez reintroduced, after a period of liberisation of the industry, a requirement of majority PDVSA ownership in all oil projects. There are two main legislative

⁶⁶⁸ See, James D. Fry and ElFadil Ibrahim, ‘Reassessing Venezuela’s organic hydrocarbon law: a balance between sovereignty and efficiency?’ [2013] 6:3 JWELB 234, 236.

⁶⁶⁹ National Constituent Assembly, Constitution of the Bolivarian Republic of Venezuela [‘Venezuelan Constitution’]; for an overview of Venezuela’s earliest hydrocarbons legislation (since 1920), see *Ibid*, 239-240.

⁶⁷⁰ Baker & McKenzie’s Gas Newsletter, March 1999, at 1, referred to by Jay Martin, ‘Venezuela as an Opportunity for Investment in the Petroleum Industry’ [1999] 20 Energy L.J. 325, 328; see also Luis Cuervo, ‘The Uncertain Fate of Venezuela’s Black Pearl: The Petro State and its Ambiguous Oil and Gas Legislation’ [2010] Houston J Int’l L 637, 644–45.

⁶⁷¹ Venezuelan Constitution, Art. 303 providing: “For reasons of economic and political sovereignty and national strategy, the State shall retain all shares of Petroleos de Venezuela, S.A. or the organ created to manage the petroleum industry [...]”.

⁶⁷² Martin, note 670, 328; Cuervo, note 670, 645.

instruments: the Organic Hydrocarbons Law ('OHL'; 2001 amended in 2006)⁶⁷³ and the Gaseous Hydrocarbons Law (GHL) and Regulations (1999 and 2000) applicable respectively to the oil and to the gas industries. This analysis will be limited to the OHL.⁶⁷⁴

The authority in charge with the regulation of hydrocarbon-related activities is the Ministry for People's Power of Oil/Petroleum and Mining in 2012 ['MPPOM'], which is also in charge of resource management matters.⁶⁷⁵ Art. 5 of the OHL sets the primary goal of hydrocarbon activities to be the achievement of an "organic and sustainable development of the nation", while environmental protection and the rational use of resources are reduced to secondary considerations. Art. 19 of the OHL provides for the general duty upon those involved in hydrocarbon activities to abide by the "standards applicable to the best scientific and technical practices available on safety and security and hygiene, environmental protection and rational use of hydrocarbons"; Art. 29 acknowledges that State-owned companies (including PDVSA) shall be governed by their own by-laws as well as by the provisions of the OHL and its Regulations, by the provisions that the National Executive may issue through the MPPOM and "by those in the general law that apply to them". Moreover, the MPPOM is given the authority to inspect the work and activities inherent to hydrocarbon activities,⁶⁷⁶ and it also performs, under the auspices of the National Executive, inspection and control functions reserved to State-owned companies and their subsidiaries, both nationally and

⁶⁷³ Repealing previous dispersed instruments including the 1943 Hydrocarbons Law, the Reversion Law 1971, the Local Market Law 1973, the Nationalization law 1975 and the Automotive Fuels Law 1998.

⁶⁷⁴ An important particular difference between the two respective sectors is that unlike the OHL, the GHL allows 100% ownership of projects pertaining to natural-gas-related activities to nationals and foreigners alike. See Marius Vassiliou, *The A to Z of the Petroleum Industry* (Scarecrow Press 2009) 84. Thus, there exists a lack of regulatory harmonisation in respect of oil and gas activities even within the same State.

⁶⁷⁵ OHL, Art. 8 also provides: "The Ministry is also in charge of carrying out market research, analysis and pricing of hydrocarbons and hydrocarbon products. In this respect, the Ministry of Energy and Oil is the competent entity in the country to act in connection with everything pertaining to the management of hydrocarbons [...]".

⁶⁷⁶ OHL, Art. 8.

internationally.⁶⁷⁷ Nevertheless, licenses by the Ministry of Energy and Mines can only be granted to private entities in respect of hydrocarbon refining activity rights. Thus offshore regulation in Venezuela is controlled by the PDVSA regulations and the application of national laws, creating a prescriptive regulatory environment.

c- The Saudi Arabian Offshore Regulatory Regime

KSA's laws are based on Sharia Law and this holds for the applicable regulatory regime to offshore oil and gas activities.⁶⁷⁸ The Saudi petroleum industry started off by relying on private oil companies before becoming dominated by the State-owned company Saudi Aramco which since its creation plays a pivotal role.⁶⁷⁹ The resources are the property of the State as defined by the Law.⁶⁸⁰ Within a monarchical system, the King is entrusted with the application of the Sharia and

⁶⁷⁷ OHL, Art. 30; See also PDVSA, 'History' <http://www.pdvsa.com/index.php?option=com_content&view=article&id=6541&Itemid=888&lang=en> accessed 9 February 2018.

⁶⁷⁸ Saudi Arabia's Basic Law of Governance ['BLG'], which resembles a State's constitution, confirms the Kingdom's subordination to the rules of the Holy Quran and the *Sunnah* (Sharia). Basic Law of Governance, Royal Order No. (A/91) – 1 March 1992, published in *Umm al-Quara* Gazette No. 3397, Art. 1. "[The KSA's] constitution shall be the Book of God and the *Sunnah* (Traditions) of His Messenger [...]".

⁶⁷⁹ In 1933, KSA's founder King Abdulaziz, granted Standard Oil of California (Socal) exclusive drilling rights for 60 years (concession). This was the first of a series of events which lead first to the creation in 1938 of the Arabian American Oil Company ['Aramco'] and later the take-over of the company by the Saudi Government in 1980 to rename it "Saudi Aramco". This is consistent with the "wave of nationalization" of private oil companies in the Middle East during the 1950s, 1960s and 1970s as explained by Elena Merino Blanco, 'State owned oil companies, North-South and South-South perspectives on investment' in Shawkat Alam, Jahid Hossein Bhuiyan and Jona Razzaque (eds), *International Natural Resources: Law, Investment and Sustainability* (Routledge 2018). On the process of nationalization of Aramco, see Helen Chapin Metz (ed), *Saudi Arabia: A Country Study* (5th edn, Washington D.C. GPO for the library of Congress 1993) 134ff.

⁶⁸⁰ BLG, Art. 14 provides: "All God's bestowed wealth, be it underground, on the surface, or in national territorial waters, on the land or maritime domains under the State's control, all such resources shall be the property of the State as defined by the Law. The Law shall set forth the means for exploiting, protecting, and developing such resources for the benefit, security, and economy of the State."

the State's general policy.⁶⁸¹ Coupled with an investment Law⁶⁸² which prohibits foreign shareholders to obtain a foreign capital investment license from the Saudi Arabian General Investment Authority ['SAGIA'] in respect of activities enumerated in the "Negative list" (which is periodically updated by the Supreme Economic Council),⁶⁸³ oil exploration, drilling and production activities cannot be initiated by foreigners in the KSA.⁶⁸⁴ Their presence must thus be established through contracting opportunities which are made available by Saudi Aramco regarding "a wide range of services" subject to the prequalification of potential contractors.⁶⁸⁵ With regard to the foregoing, Saudi Aramco's In-Kingdom Value Add (IKTVA) program (contributing towards the implementation of Saudi Vision 2030) aims *inter alia* at increasing locally-manufactured energy-related goods

⁶⁸¹ Royal Embassy of Saudi Arabia, 'About Saudi Arabia – Basic System of Governance' <<https://www.saudiembassy.net/basic-system-government-0>> accessed 9 February 2018.

⁶⁸² The Foreign Investment Regulations promulgated by Royal Decree No. M/1 dated 5/1/1421 H. (10 April 2000) and its Rules of Implementation published on 7/6/1423 H. (16 August 2002).

⁶⁸³ Established pursuant to the Supreme Economic Council Regulation promulgated by Royal Order no. A/111 dated 17/5/1420 H. (28 August 1999).

⁶⁸⁴ PWC, 'Doing Business in the Kingdom of Saudi Arabia – a tax and legal guide' (2015) <<https://www.pwc.com/m1/en/tax/documents/doing-business-guides/doing-business-guide-ksa.pdf>> accessed 23 December 2019, 6; Simmons & Simmons in alliance with Hammad & Al-Mehdar Law Firm, 'Doing Business in Saudi Arabia (October 2015)' <<http://www.simmons-simmons.com/en/Regions/Middle-East/~media/B38763DA22534AD688AA2DB5B349B578.ashx>> accessed 23 December 2019, 3; World Trade Organization – Council for Trade in Services, 'Energy Services' (January 2010) S/C/W/311, 11; note however the "exception" to this rule in respect of the exploration and production activities conducted by Saudi Arabian Chevron Inc. (a subsidiary of the U.S. Chevron Corp.) in the onshore Partitioned Zone (which lies between KSA and Kuwait and the resources of which are jointly shared by the two governments) on behalf of the KSA by virtue of an agreement with the Kingdom to operate its 50 per cent interest in the hydrocarbon resources of the Zone. The agreement expires in 2039. See Chevron, 'Saudi Arabia' <<https://www.chevron.com/worldwide/saudi-arabia>> accessed 9 February 2018.

⁶⁸⁵ Saudi Aramco, 'Contracting Opportunities' <<http://www.saudiaramco.com/en/home/suppliers/service-suppliers/service-suppliers-opportunities/contracting-opportunities.html>> accessed 9 February 2018; Saudi Aramco, 'Contractor Registration' <<http://www.saudiaramco.com/en/home/suppliers/service-suppliers/contractor-registration-and-prequalification.html>> accessed 9 February 2018; see for example Reem Shamseddine, 'Saudi Aramco signs engineering and construction deals worth \$4.5 billion' (*Reuters*, 9 November 2017) <<https://uk.reuters.com/article/us-aramco-projects/saudi-aramco-signs-engineering-and-construction-deals-worth-4-5-billion-idUKKBN1D925G>> accessed 9 February 2018.

and services to 70% by 2021,⁶⁸⁶ thus the purchase of such from the local supplier base is prioritized,⁶⁸⁷ notably at the operations level, encompassing facilities operations and field and well services.⁶⁸⁸

The regulatory bodies with oversight and monitoring of petroleum activities are the Ministry of Petroleum and Mineral Resources (MPMR), and the Supreme Council for Petroleum and Minerals (SCPM).⁶⁸⁹ The latter, comprised of members of the royal family, industry leaders and government ministers, fixes the policies for natural resource management (including determination of the size of production and pricing) taking national circumstances and interests into consideration,⁶⁹⁰ and sets Saudi Aramco's general policy.⁶⁹¹

The MPMR, only separated from Saudi Aramco in 2015,⁶⁹² oversees and monitors petroleum exploration and production activities, ensures compliance of the

⁶⁸⁶ The in-Kingdom Total Value Add (IKTVA) Program – A sponsored program of Saudi Aramco (2016) <https://www.iktva.sa/> accessed 9 February 2018; see also Alex Endress, 'Saudi Aramco begins local initiative for suppliers' (*Drilling Contractor*, 2 December 2015) <http://www.drillingcontractor.org/saudi-aramco-begins-local-content-initiative-for-suppliers-37752> accessed 9 February 2018.

⁶⁸⁷ Saudi Aramco, 'Saudi Aramco launches "local content development" supplier initiative' (1 December 2015) <http://www.saudiaramco.com/en/home/news-media/news/IKTVA-PROGRAM.html> accessed 9 February 2018; see also Saudi Aramco, 'Saudi Aramco launches center for contractors and suppliers relations in Riyadh Chamber' (20 March 2017) <http://www.saudiaramco.com/en/home/news-media/news/center-contractors-and-suppliers-relations-riyadh.html> accessed 10 February 2018.

⁶⁸⁸ Saudi Aramco, 'In-Kingdom Total Value Add (IKTVA) Program – Creating Value in the Kingdom' (1 December 2015) <<https://www.iktva.sa/wp-content/uploads/2016/04/IKTVA-FORUM-CREATING-VALUE-IN-THE-KINGDOM.pdf>> accessed 10 February 2018, at 12.

⁶⁸⁹ OpenEI, 'Kingdom of Saudi Arabia Ministry of Petroleum and Mineral Resources' <https://openei.org/wiki/Kingdom_of_Saudi_Arabia_Ministry_of_Petroleum_and_Mineral_Resources> accessed 10 February 2018.

⁶⁹⁰ Statute of the Supreme Council for Petroleum and Mineral Affairs, Royal Order No. A/212 of 27/9/1420H; an unofficial translation of relevant parts of the Statute is available at: <<http://www.saudinf.com/main/c551.htm>> accessed 10 February 2018.

⁶⁹¹ Ibid; the SCPM particularly (1) endorses Saudi Aramco's five-year program for capital future investments, (2) appoints its chairman upon a nomination by the board of directors, (3) appoints an auditor and reviews his report and endorses the company's budget and profit and loss accounts; and (4) decides whether to increase, decrease the capital of the company or allow others to contribute in it.

⁶⁹² 'Saudi Aramco to be separated from the oil ministry' (*The Economist*, 4 May 2015) <<http://country.eiu.com/article.aspx?articleid=583135242>> accessed 10 February 2018.

procedures adopted with the rules of industrial health and safety, and is broadly in charge of planning in the sector of energy and minerals.⁶⁹³ None of the aforementioned bodies issued guidelines or regulations pertaining to setting the HSE standards to be followed in petroleum activities. Some are however produced by Saudi Aramco itself, to which it binds its suppliers.

Within the Saudi petroleum industry, resource management, monitoring and oversight, and compliance with adopted standards appear to be entrusted to different bodies whose performances are strongly linked. This creates not only duplication of functions, but also an “internal environment”, which gives the impression that the regulator acts simultaneously as the policy maker and as an internal audit of the operating company.

2. Discussion: implausibility of consistent State practice to support the existence of customary international law defining the content of the obligation of States to prevent transboundary harm

A- Findings and reflections

The positive analysis of the substance and structural types of various regulatory regimes adopted in different jurisdictions highlighted a number of issues which are related to the distinction between “open access” and “closed-market” systems. There is a distinction between States which manage their offshore resources through a dominating national corporation and those which operate an open system for all petroleum companies. From the “closed-market” category, the Malaysian, Venezuelan and Saudi systems were outlined. Within this type of structure, there is not a clear separation among the entities involved in the regulatory, structural and operational, environmental and financial aspects of offshore oil and gas activities. This is in clear contrast with the separation in tasks in the “open access” systems: in the USA, the co-existence of the multiple aspects

⁶⁹³ Ministry of Petroleum and Mineral Resources, About the Ministry - Ministry's duties <<http://www.meim.gov.sa/arabic/ministry/Pages/strategiesandgoals.aspx>> accessed 10 February 2018. The current Minister of Petroleum and Mineral Resources, Mr Khalid al-Falih, was already chairman of Saudi Aramco at the time he was appointed (after being the company's CEO from 2009 to 2015).

was considered as creating conflicts within the corresponding regulator and has led to the breaking up of the one regulator into distinct agencies;⁶⁹⁴ in Norway, the MPE is in charge of resource management whereas the PSA is responsible for monitoring compliance with various regulations;⁶⁹⁵ in Australia, NOPTA and NOPSEMA are respectively in charge of economic control and resource management, and of the regulation of HSEP.⁶⁹⁶ Moreover, it is noteworthy that the history of regulatory evolution points to accidents in the various regions. The US, the UK, the Norwegian and the Australian regimes were all forced to review their rules following catastrophic accidents. However, the Deepwater Horizon led all of these and other jurisdictions to an unprecedented review of their rules and arrangements. Arguably, this indicates the interconnectivity that now exists in the practices of the international offshore oil and gas companies and the immediate concerns raised when these practices are proven deficient.

In “closed-market” regimes, and as the regulatory standards are generally either directly (where the National Oil Company [‘NOC’] dominates regulatory functions) or indirectly (where the NOC is “confused” with the government and applies its policies) set by NOC based on their internal policies and by-laws (which, as they are placed at the execution end of oil and gas operations, are understandably detailed and prescriptive), HSEP matters are generally dealt with in a prescriptive manner in the NOCs’ dealings with their contractors and/or licensed companies. However, prescriptive regulation had previously been considered inefficient, notably due to its incompatibility with the continuous need of regulations to embrace new technologies vital for implementing improvements in the efficiency and safety of the offshore industry; and the inappropriateness of a “one-size fits all” approach which leaves no flexibility for companies conducting operations in various special circumstances.⁶⁹⁷ This has been counteracted,

⁶⁹⁴ See para 1.A above.

⁶⁹⁵ See para 1.B above.

⁶⁹⁶ See para 1.D above.

⁶⁹⁷ For a general description of the shortcomings of prescriptive-based regulation, see Michael Baram and Preben Lindoe, ‘Modes of Risk Regulation for Prevention of Major Industrial Accidents’ in Preben Lindoe, Michael Baram and Ortwin Renn (eds), *Risk Governance of Offshore Oil and Gas Operations* (Cambridge University Press 2014) 41.

notably in States adopting an “open access” system and within a general tendency to learn from past experiences suggesting a move towards some form of ‘uniformity’, by shifting the role of the regulator to a supervisory one and a reliance on a more favourable approach for regulation, namely performance-based regulation.⁶⁹⁸ Moreover, uniformity in respect of systems monitoring is primarily supported by the needs for efficiency and safety standardisation of the companies involved in offshore oil and gas activities. It is also more effective and cost-efficient, in terms of management, training and familiarisation of staff, to develop one system for the safety management of all installations rather than developing jurisdiction-specific ones. Within the same line of thinking, the obligation to refer to experiences and lessons from other parts of the world, imposed by the obligation under the OSD Directive to report accidents that happened on offshore facilities in non-EU countries contribute towards such harmonisation.⁶⁹⁹ Therefore uniformity is generally also driven by commercial convenience. In this regard, it is potentially facilitated by a move from prescriptive to performance-based regulation as the latter generally affords the prerequisite flexibility under which such rapprochement could flourish. Importantly, if such harmonisation is achieved, the stage could also be set for a

⁶⁹⁸ Ibid, noting that “recognition of these limitations [of prescriptive regulation] has led to the development of what many are convinced is a better pathway to safety, namely a collaboration between government and industry which features co-regulation for the fulfilment of performance-based rules.” Authors add that a number of factors contributed in the development citing: (1) companies’ change of attitude toward the opposition of a “command-and-control” approach; (2) fear of a global competition inciting a move from the industry to more attractive less-stringently regulated jurisdictions; (3) decreased confidence in government regulators to prevent disasters. This change in approach has indeed been highlighted in our discussion above, notably in the UK and Australian regimes (Cullen Report) and the US regime (report of the National Commission on the BP Deepwater Horizon).

Performance-based regulation is seen by many as the most favourable approach to risk governance, see in that regard the abovementioned report of the National Commission on the BP Deepwater Horizon and the Cullen Report. Also see Cary Coglianese, Jennifer Nash and Todd Olmstead, ‘Performance-based regulation: prospects and limitations in health, safety, and environmental protection’ [2003] Admin. L. Rev. 55:4 705, 712, noting that this type of regulation presents the following advantages: (1) it could be used “to address a variety of risks from emissions of pollution to catastrophic events”; (2) “it gives firms flexibility and makes it possible for them to seek the lowest-cost means to achieve the stated level of performance; (3) it could “accommodate technological change and the emergence of new hazards”.

⁶⁹⁹ OSD, Art. 20.

similar approach to risk management in various countries which in turn entails homogenous dealings with risks of environmental damages presenting a potential transboundary character. There is some evidence in the PETRONAS guidelines that shifting in this direction is taking place in Malaysia, however it does not appear to be a complete break from the prescriptive regulatory practice that pre-existed. It is perhaps necessary to note that in States where such shift took place, it has been preceded by radical changes in the regulatory bodies and their character. It is not self-evident that such radical changes can be achieved in a national corporation without overall changes in the law and policy shaping the regulatory system.⁷⁰⁰ Thus the essential question of whether it is plausible that the safety of global offshore oil and gas activities would be regulated under a uniform/harmonised international regime emerges.

B- Prospective international safety regime for offshore activities?

Adding to the aforementioned, fundamental differences in the regulatory systems of States within both categories are common. In the following paragraphs we will expand on these differences to conclude that too many variations mean that international homogeneity with regard to offshore safety is very distant. We will also examine the potential normative role of industry best practices to counter the argument that they afford a “backdoor access” to international “quasi-regulation” of the safety of offshore operations. The developments below will ultimately serve to prove that State practice pertaining to the regulation of risks from offshore activities cannot support an argument in favour of its delimitation of the diligent behaviour expected of States in ensuring that no transboundary harm results

⁷⁰⁰ See Coglianesi, Nash and Olmstead, note 698, 719, noting that despite a tendency towards a shift to performance-based regulation, participants in the discussions at the Regulatory Policy Program’s workshop on performance-based regulation at Harvard University in 2002 (which brought together decision makers from various government agencies and leading researchers in the fields of economics, engineering, law and political science) mentioned factors inhibiting such transition, these factors were: “(1) regulators’ comfort with the existing prescriptive approach; (2) measurement problems; and (3) institutional path dependence due to existing legislation oriented toward a design-based approach.”

therefrom through being relied upon as a defined element of existing customary international law on the topic.

a- Discrepancies within performance-based-reliant “open access” systems

A first set of differences could be identified through a theoretical analysis of the functioning of performance-based regulation. However, others could also be established when looking at the practical implementation of safety regulations within “open access” systems.

i- Theoretical ‘refinements’ of performance-based regulation

It is important to observe that despite a consensus on its general definition and operation, there are several refinements to performance-based regulation which consequently distinguish among different types thereof.⁷⁰¹ One example is the comparison between the regulation of offshore installations’ design in the UK and under the OSD: in relation to the former, regulation 5 of the Offshore Installations and Wells (Design and Construction, etc.) Regulations 1996 provides that the duty holder is under an *obligation to ensure* so far as is reasonably practicable, specific matters, notably that the design of the offshore installation allows it to withstand forces acting on it as are “reasonably foreseeable” and that specific circumstances do not prejudice its integrity. On the other hand, and pursuant to Annex I 1.(4) to the OSD, the content of the design notification to be submitted to the CtAu is comparatively broad. It must include *inter alia* “a demonstration that the concept *contributes* to reducing major hazard risks to an acceptable level” and a description of the design concept and its primary risk control features having regards to the identified major hazard scenarios. Thus, firstly, the UK approach is

⁷⁰¹ Ibid, 708-711. Author argued that despite the general definition of performance-based regulation being that which “specifies the outcome required, but leaves the specific measures to achieve that outcome up to the discretion of the regulated entity”, participants pointed out several refinements to the definition. These refinements were: “(1) the precision of the regulation; (2) the underlying basis for the threshold reflected in the performance standard; (3) the scope of the regulation’s ultimate objective and the location of the rule in the causal chain of events leading to that ultimate objective; and (4) the type of problem the standard aims to solve.”

more tightly specified⁷⁰² as opposed to the loosely-specified OSD standard;⁷⁰³ and secondly, the two approaches reveal the different locations where the performance of the respective standards are placed in relation to the “ultimate objective[s] that motivated the decision to develop the regulation[s]”.⁷⁰⁴

Additionally, it must be borne in mind that, as Coglianese, Nash and Olmstead have noted, “when implemented in the wrong way, or under the wrong conditions, performance-based regulation will function poorly, as will any regulatory instrument that is ineffectively deployed”,⁷⁰⁵ thus one must be wary in assuming that this type of regulation is preferable.⁷⁰⁶ This raises questions surrounding the conditions for its proper functioning. More precisely, what are the difficulties that might be encountered in its implementation?

Prior to answering these questions, a preliminary explanatory note regarding the operation of performance-based regulation must be made. In this regard, Baram and Lindoe wrote that “this mode involves the use of performance-based rules to fulfil essential safety management functions, the delegation of self-regulatory responsibilities to companies for that purpose, the assignment of a supervisory and mentoring role to the government regulator, and a soft approach to ensuring

⁷⁰² And thus, according to a *a contrario* reasoning of Coglianese, Nash and Olmstead statement, provides more guidance and gives less discretion to the regulator and the regulated. Ibid, 710.

⁷⁰³ Which provides “less guidance” and “gives more discretion” to the regulator and the regulated. Ibid, 710.

⁷⁰⁴ The two instruments share a very similar ultimate objective. The OSD’s ultimate objective has been discussed above. In relation to that of the Design and Construction Regulations, see guide HSE, ‘Guide L85 – A guide to the integrity, workplace environment and miscellaneous aspects of the Offshore Installations and Wells (Design and Construction, etc) Regulations 1996 <<http://www.hse.gov.uk/pUbns/priced/l85.pdf>> accessed 23 December 2019, paras 7-11, explaining the interrelationship between the Regulations and the OSCR and the consideration by both of common hazards, notably where the Design and Constructions Regulation deals with the integrity of an installation (para 9). In relation to the divergence between the OSD and the Design and Construction Regulation argued here, the standard to which the relevant provisions of the OSD refer focuses directly on the ultimate objective, hence the multiple references to “major hazards”, whereas the standard referred to by the Design and Construction Regulation focuses on a more narrow objective, namely the integrity of installations. See Ibid.

⁷⁰⁵ Ibid, 708.

⁷⁰⁶ W. Kip Viscusi, *Risk by Choice: Regulating Health and Safety in the Workplace* (1983 Harvard University Press) 129.

compliance”.⁷⁰⁷ As we will begin to look at the conditions for the implementation of performance-based regulation and the potential and existing difficulties in doing so, it will become apparent that all the elements mentioned by Baram in Lindoe are more or less handicapped in reality.

A number of conditions are necessary for the proper functioning of performance-based regulation. First and foremost, there must be a general embracement of this system by both regulators and regulated entities within a suitable economic and legal environment.⁷⁰⁸ Secondly and more technically, actual performance must be measurable, evaluable and verifiable.⁷⁰⁹ This highlights that new and better industry data on performance and performance indicators must be collected by the government,⁷¹⁰ requiring as a prerequisite the integration of highly qualified and independent either internal or external inspectors/auditors preparing such data. Moreover, the regulating body must have the credibility and resources both in capital and in qualified personnel to be in position to analyse and evaluate the increasingly complex data submitted to it.⁷¹¹

Fundamental difficulties arise at many instances when the aforementioned conditions are evaluated. First and foremost, the legal system laying the suitable infrastructure for it to be smoothly implemented is not always favourable.⁷¹² That being said, one difficulty relates to the uncertainty that is inherent to performance-based standards (especially loosely specified standards) which affects the roles of regulators and regulated entities all the same within this system.⁷¹³ Another inconvenience is revealed where the monitoring of regulated

⁷⁰⁷ Baram and Lindoe, note 697, 42.

⁷⁰⁸ Coglianese, Nash and Olmstead, note 698, 719-720.

⁷⁰⁹ Ibid, 712.

⁷¹⁰ Ibid, 718.

⁷¹¹ Ibid, 720.

⁷¹² Ibid, 719.

⁷¹³ Baram and Lindoe, note 697, 43; Coglianese, Nash and Olmstead, note 698, 714, noting that “perhaps the biggest uncertainty is the performance of performance-based standards”; and further elaborating: “regulators are frequently uncomfortable with the discretion inherent in loosely specified performance-based standards [...] [and] regulated entities may be uncomfortable with loosely specified performance standards because they believe such standards give regulators too much discretion with deciding enforcement issues.” Furthermore, scepticism equally arises in

entities' performances practically requires regulators to get so involved that it is "essentially running everything again",⁷¹⁴ stripping performance-based regulation of its "soft approach" to ensuring compliance. Moreover, collection of performance indicators, vital for its measurement,⁷¹⁵ shows further divergence in the implementation of performance-based regulation in different States,⁷¹⁶ and uncovers challenges even in the regulatory system of a first world country like the USA where petroleum activity is preponderant.⁷¹⁷ Even where performance indicators pose no real problems and measurement is made easier, another layer of complexity arises relating to the assessment/judgement of the quality and effectiveness of a facility's performance by the regulating authorities.⁷¹⁸

The discussion above reveals that, irrespective of whether the choice of relying on performance-based regulation is made, complexities lead to conclude that put in

respect of tightly specified performance standards, in relation to which two sets of issues relating to uncertainty were raised, namely that "[they] require a detailed understanding of the dose-response relationships among the precursors and the ultimate objective [...] [which are] sometimes poorly understood", and secondly that performance-based standards are very often not easily measurable, evaluated and verified.

⁷¹⁴ Ibid, 718.

⁷¹⁵ These are necessary for regulators to "for several purposes including notification of actions, immediate and long-term resource decisions and determining success or failure". See Helene Cecilie Blakstad, 'Safety Indicators Used by Authorities in the Petroleum Industry of the United Kingdom, the United States and Norway' in Lindoe, Baram and Renn (eds) *Risk Governance of Offshore Oil and Gas Operations* (Cambridge University Press 2014), 212, referring to a statement by the Head of HSE Offshore Division Steve Walker.

⁷¹⁶ Ibid, Blakstad compares the safety indicators used in the UK, US and Norwegian regulatory regimes and argues that they are "functioning under different conditions, and the use and status of indicators varies between the countries". She adds that "these differences influence the type of indicators the authorities refer to, the climate for cooperation, on indicators, and what kind of information the authorities can require from companies".

⁷¹⁷ Ibid, 222. Blakstad notes that the BOEMRE "provides limited information about safety indicators" and analyses that the "limited use of safety indicators by the U.S regime" is due to BOEMRE's "limited access to information" and to the fact that "the BOEMRE-led U.S regime and U.S law do not require annual updates of the offshore petroleum industry's risk level". This shows that a certain infrastructure is essential for the proper collection of data by the competent authorities, which is certainly not self-evident in every regime; the difficulty in developing adequate performance measures or indicators is also highlighted by Coglianese, Nash and Olmstead, note 698, 721.

⁷¹⁸ Ibid, 719, noting that regulators "find it especially difficult to make the transition from hardware-oriented checklist inspections to inspections that call for them to judge the quality and effectiveness of a facility's performance."

the most optimistic way, living in a world where the risks of offshore oil and gas activities are uniformly regulated under such approach (irrespective of any refinements) is decades away.⁷¹⁹

ii- Practical differences in the implementation of safety regulation in “open access” States

In this paragraph we will look to compare the safety standards and the mechanism adopted in two major “open access” States, namely the UK and the USA, in order to highlight how differently performance-based regulation might be implemented.

§ Safety standards and implementation thereof in the UK

The literature examining the UK offshore safety regime unanimously endorses that duty holders are required under a relatively complex regulatory system to reduce risks to ALARP.⁷²⁰ However, and as Professor Hopkins noted, this requirement is “inherently vague”, and so is the ensuing legal interpretation thereof requiring the adoption of “effective precautions” in the absence of “gross disproportion” in a cost/benefit analysis.⁷²¹ A scrutiny of the legal foundations of

⁷¹⁹ Coglianese, Nash and Olmstead, note 698, 714, noting that “some participants speculated that it may take years (if not a generation or more) for regulators to become accustomed to new discretion, though some participants argued that regulators with more professional training (or higher levels of education) might adapt more quickly.

⁷²⁰ See Andrew Hopkins, ‘The need for a general duty of care’ [2015] Hous.J.Int’l.L. 841; Jennifer Dagg et al. (the Pembina Institute), ‘Comparing the offshore drilling regulatory regimes of the Canadian Arctic, the U.S., the U.K., Greenland and Norway’ (2011) <<https://www.pembina.org/reports/comparing-offshore-oil-and-gas-regulations.pdf>> accessed 23 February 2018, 33; Theophilus Acheampong and Rainer Akumperigya, ‘Offshore risk regulation: a comparative analysis of regulatory framework in Ghana, the United Kingdom and Norway’ [2018] 113 Energy Policy 701, 703; A Competent and Nimble Regulator, 13. It must be noted that the use of the phrase “so far as is reasonably practicable” in UK health and safety law has been the subject of a challenge in front of the European Court of Justice in Case C-127/05 *Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland* [2007] ICR 1393, which it survived. Note also that the use of the ALARP standard varies between jurisdictions, for a comparison between the use of the standard in the UK and in the Netherlands, see Ben Ale, ‘Tolerable or acceptable, a comparison of risk regulation in the UK and in the Netherlands’ [2005] 25:2 Risk Analysis 231.

⁷²¹ Hopkins, note 720, 842-843; the interpretation referred to by Hopkins refers to the analysis of the UK Court of Appeal decision discussed below, see note 724 *infra*.

this standard and of its application and practical implications appears worthwhile.

Having overviewed the general structure of the current UK regulatory system above and established the pivotal role played by the HSE in regulating the UK oil and gas offshore industry, one must now look at the legal sources which it bases itself on in order to, firstly, (1) identify the standards it aims to ensure duty holders satisfy, and secondly (2) to understand the criteria which it relies upon in making its judgements as to whether such standards are actually met. Acts and Regulations form the basis of the aforementioned legal sources,⁷²² however, operational principles and guidance documents⁷²³ as well as case-law⁷²⁴ and “general health and safety law”⁷²⁵ also play an important role in answering the aims of this sub-section.

The Health and Safety at Work etc. Act 1974 (HSWA) is regarded by the HSE as the “principal source of health and safety legislation in Great Britain”,⁷²⁶ a position supported by academic writings, notably by Professor Hopkins who thinks that the ALARP standard finds its “ultimate source” in the said Act.⁷²⁷

⁷²² For a list of the main Acts and Regulations which the HSE uses to regulate the oil and gas industry see HSE, ‘Offshore health and safety law – Regulating the oil and gas industry’ <<http://www.hse.gov.uk/offshore/law.htm>> accessed 24 February 2018.

⁷²³ The HSE publishes legal guidance on Acts and Regulations addressed to stakeholders which help assist with their interpretation and sometimes include references to “approved codes of practice” [‘ACOP’]. For a list of these documents see HSE’s publications, ‘Legal reference’ <<https://www.hse.gov.uk/pubns/books/index-legal-ref.htm>> accessed 24 February 2018. For an explanation on the legal status of these guidance and ACOPs see generally HSE, ‘Legal status of HSE guidance and ACOPS’ <<http://www.hse.gov.uk/legislation/legal-status.htm>> accessed 24 February 2018. Importantly, this document provides that “following the guidance is not compulsory, unless specifically stated” and that ACOP aim to give “practical *advice* on how to comply with the law” (emphasis added), thus giving duty holders the flexibility to “use alternative methods [...] in order to comply with the law”.

⁷²⁴ The key case is *Edwards v The National Coal Board* [1949] 1 KB 704; [1949] 1 All ER 743.

⁷²⁵ HSE list of main Acts and Regulations, note 723.

⁷²⁶ HSE Safety Case Information Sheet, 2.

⁷²⁷ Hopkins, note 720, 842; See also generally, M. Jones-Lee and T.Aven, ‘ALARP – What does it really mean?’ [2011] 96 Reliability Engineering and System Safety 877; J.D. Rimington CB and V.M. Trbojevic, ‘Determination of ALARP in conditions of uncertainty’ (SaRS and SAR-Europe Annual Conference, Edinburgh, May 2000); Sirous Yasseri, ‘The ALARP argument’ (2013) <https://www.researchgate.net/profile/Sirous_Yasseri/publication/274677545_The_ALARP_Argument/links/55250d7b0cf2caf11bfcfcfb.pdf> accessed 26 February 2018; J.R. Inge, ‘The

Indeed, s. 2(1) of the HSWA provides that ‘It shall be the duty of every employer to ensure, *so far as is reasonably practicable*, the health, safety and welfare at work of all its employees’ (emphasis added),⁷²⁸ and the Health and Safety at Work etc. Act 1974 (Application outside Great Britain) Order 2013 (HSWA 2013 Order) extends the former’s application to “any offshore installation and any activity on it” and to activities in connection with an offshore installation within “the territorial sea, a designated area or a gas importation and storage zone”.⁷²⁹ However, and for the purposes of this discussion, the HSWA must be read together with the Offshore Safety Act 1992.⁷³⁰ These Acts are supported by a wide set of Regulations generally requiring either risk assessment, most notably the Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations 1995 (PFEER), or a “compliance demonstration”, most notably the Safety Case Regulations (OSCR 2005 and 2015).⁷³¹ Moreover, the ACOP and guidance documents produced by the HSE, forming “authoritative documented sources of good practice”, must be read in conjunction with the legal requirements applicable to the offshore industry.⁷³² These sources of law, taken

Safety Case, its development and use in the United Kingdom’ <http://safety.inge.org.uk/20071115-Inge2007a_The_Safety_Case-U.pdf> accessed 26 February 2018; John Paterson, *Behind the Mask: Regulating Health and Safety in Britain’s Offshore Oil and Gas Industry* (first published 2000, Routledge 2018) para 5.1.

⁷²⁸ Subsection (2) lists matters to which this duty extends in particular. Importantly, s. 1(3) of the HSWA also provides that ‘For the purposes of this Part risks arising out of or in connection with the activities of persons at work shall be treated *as including risks attributable to the manner of conducting an undertaking, the plant or substances used for the purposes of an undertaking and the condition of premises so used or any part of them.*’ (Emphasis added) Thus, the interrelationship between occupational safety and process safety referred to above is confirmed, see note 1 and accompanying text.

⁷²⁹ HSWA 2013 Order, s. 4(1).

⁷³⁰ The Offshore Safety Act 1992, s.1 provides: “the general purposes of Part I of [the 1974 Act] shall include – [...] b) securing the safety of such installations and preventing accidents on or near them” and more or less extends the purposes of the said Part to all the phases of offshore activities, from construction to decommissioning.

⁷³¹ See HSE Safety Case Information Sheet, at 2. Also note that the Control of Major Accident Hazards Regulations 2015 (COMAH), do not apply to offshore upstream operations, pursuant to Regulation 3(2)(e) which lists exceptions to which the Regulations do not apply. These include: “the offshore exploration and exploitation of minerals, including hydrocarbons”; for the respective extent of application of the two sets of Regulations see note 571 and accompanying text).

⁷³² Philip Mace et al. Clyde & Co LLP, ‘Oil and gas regulation in the UK: overview’ [2017] Practical Law Country Q&A 1, 21; See HSE, ‘Principles and guidelines to assist HSE in its judgments that

as a whole, arguably *inter alia* aim at implementing the ALARP standard in the UK offshore industry.

As explained above, the Safety Case Regulations (1992, 2005, and 2015) marked the legislative development in the UK in line with a change in the ‘safety culture’ in the UK oil and gas industry pursuant to Lord Cullen’s recommendations.⁷³³ Therefore, it seems to be the appropriate starting point in an analysis of the ALARP standard. However, the HSE Guide provides that the OSCR 2015 do not set “standards for the control of major accidents” and that these standards are set in other regulations, notably the PFEER, the DCR [the offshore installations and wells (design and construction etc) regulations 1996], the Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998 (OPRC), as well as the HSWA 1974”.⁷³⁴ These are the standards that the SC “compliance demonstration” requires duty holders to establish compliance with.⁷³⁵

An analysis of the criteria relevant for duty holders to meet the requirements of the aforementioned statutory provisions could also be evidential of the health and safety standards set by the UK government. The OSCR 2015 provide for an obligation for duty holders (licensees and the operators they chose to conduct activities) as well as well operators to have a Safety and Environmental Management System [‘SEMS’]. The SEMS covers all aspects of the duty holder’s

duty-holders have reduced risk as low as reasonably practicable’ <http://www.hse.gov.uk/risk/theory/alarp1.htm#P14_1686> accessed 26 February 2018 [‘HSE ALARP 1’].

⁷³³ See Kathryn Mearns, ‘Values and Norms – A basis for a Safety Culture’ in Preben Lindøe, Michael Baram and Ortwin Renn (eds) *Risk Governance of Offshore Oil and Gas Operations* (Cambridge University Press 2014) 56. Mearns considers that a change in legislation is the less challenging than achieving a real change in ‘safety culture’ which in her opinion is composed of norms, values, attitudes and beliefs. She later notes at 66 that “during the 1990s, the UK oil industry in particular focused its efforts on developing a positive safety culture throughout the whole industry”, referring to the Step-Change in Safety initiative. See <<https://www.stepchangeinsafety.net/>> accessed 26 February 2018.

⁷³⁴ HSE Guide, at 6.

⁷³⁵ HSE Safety Case Information Sheet, at 3; It must also be noted that duty holders are required to make arrangements with contractors ensuring compliance with the aforementioned statutory provisions, pursuant to Regulation 12 of the OSCR 2005 and Regulation 16 of the OSCR 2015.

activity, including those pertaining to HSE,⁷³⁶ it targets risks which are associated with “major accident hazards”.⁷³⁷ This focus on “major accidents” under the Regulations is also apparent where Regulation 8 provides in its paragraph (2) that the particulars of the SEMS must show how the duty holder’s “corporate major accident prevention policy” [‘CMAPP’] is determined and implemented. Importantly, and recalling that the performance-based approach currently adopted in the UK regime is mainly implemented through the SC requirement,⁷³⁸ the particulars contained in the SEMS must be included in the SC prepared by the operator.⁷³⁹ Thus, the legislative and regulatory structure implemented in the UK is so complex that the UK government appears to set a particular framework and leaves it up for duty holders to develop it into specific safety management practices integrated into a SEMS.⁷⁴⁰ Whilst the latter must contain documents describing specific matters, most notably “the organisational arrangements for the control of major hazards”.⁷⁴¹

Of course, even then, ambiguity persists in relation to the arrangements considered “adequate” in controlling major hazards. In this regard, the HSE Guidance documents set minimum requirements, namely that the SEMS must address “matters such as organisational structure, responsibilities, practices, procedures, processes and resources for determining the content of the CMAPP and the arrangements for implementing it, in particular the contents of Schedule 2 and 3.”⁷⁴² Moreover, in order to make it easier and more transparent for the

⁷³⁶ HSE, ‘The Offshore Installations (Offshore Safety Directive) (Safety Case etc) Regulations 2015 – Guidance on Regulations’ <<http://www.hse.gov.uk/pUbns/priced/l154.pdf>> accessed 20 February 2018 [‘HSE OSCR Guide’], 132.

⁷³⁷ Ibid, providing “[...] should be sufficient to manage and control risks associated with major accident hazards”; “Major accident” is defined in OSCR and OSCR 2015, Regulation 2(1). For the purpose of this discussion, it is assumed that transboundary environmental damage is probable in case of a “major environmental incident” (as referred to in subparagraph (e)).

⁷³⁸ See *supra* note 569 and accompanying text.

⁷³⁹ OSCR 2005, Regulation 7(1)(a) and Regulation 8(a); OSCR 2015, Regulation 17(1)(a) and Regulation 18(1)(a).

⁷⁴⁰ See Mearns, note 733, 58.

⁷⁴¹ OSCR 2015, Regulation 8(5)(a); OSCR 2005, Regulation 12(1)(d).

⁷⁴² HSE OSCR 2005 Guide, at 133. The practices integrated into Safety Management Systems include ‘developing health and safety policies, organizing for health and safety, communication

HSE to make judgements as to whether duty holders satisfy their obligations (and to better inform duty holders about what is expected of them), it developed a set of operational guidance documents referred to as “the ALARP guidelines” which contain principles and guidelines significant for that purpose and are inspired by the interpretations of the Courts.⁷⁴³ Going through the forthcoming analysis, it is important to bear in mind that ALARP refers to the “absolute minimum which is permissible” rather than presenting itself as the “goal”.⁷⁴⁴

Accordingly, ALARP is demonstrated where upon the assessment of the risk to be avoided weighed against the sacrifice (in money, time and trouble) involved in taking measures to avoid that risk, no “gross disproportion” exists.⁷⁴⁵ In other words, the “gross disproportion” test [‘GD test’] draws the limit as to what is expected of duty holders in ruling out measures to reduce risks if they involve sacrifice that is grossly disproportionate to the benefits of the risk reduction.⁷⁴⁶ In assessing whether this is the case, other Regulations come into play, notably the PFEER.⁷⁴⁷ The latter, in its Regulation 5(2), describes the mandatory contents

strategies and health and safety auditing and monitoring procedures’, see Means, note 733, 58; see also in general Regulations 8 and 12 of the OSRC 2015 and 2005 respectively.

⁷⁴³ See HSE Safety Case Information Sheet 2006, at 3. These documents are: HSE ALARP 1; HSE, ‘Assessing compliance with the law in individual cases and the use of good practice’ <<http://www.hse.gov.uk/risk/theory/alarp2.htm>> accessed 1 March 2018 [‘HSE ALARP 2’]; HSE, ‘Policy and guidance on reducing risks as low as reasonably practicable in design’ <<http://www.hse.gov.uk/risk/theory/alarp3.htm>> accessed 1 March 2018 [‘HSE ALARP 3’].

⁷⁴⁴ Paterson, note 727, para 5.2, referring to Bainbridge 1993.

⁷⁴⁵ This approach mirrors the reasoning followed in the Court of Appeal in *Edwards v National Coal Board* in which Asquith L.J. found at 712 that: “‘Reasonably practicable’ is a narrower term than ‘physically possible’ and seems to me to imply that a computation must be made by the owner, in which the quantum of risk is placed on one scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time or trouble) is placed on the other; and that if it be shown that there is a gross disproportion between them—the risk being insignificant in relation to the sacrifice—the Defendants discharge the onus on them.”; this analysis of the “reasonably practicable” test was further confirmed in the House of Lords decision *Marshall v Gotham Co Ltd* [1954] AC 360 where it was held that such test “depends on a consideration, in the light of the whole circumstances [...], whether the time, trouble and expense of the precautions suggested are or are not disproportionate to the risks involved, and also an assessment of the degree of security which the measures suggested may be expected to afford.”

⁷⁴⁶ See HSE ALRP 1, ‘Comparison’.

⁷⁴⁷ The interface between the PFEER and the OSCR Regulations is confirmed in HSE, ‘Guide L65 - Prevention of fire and explosion, and emergency response on offshore installations’ <<https://www.hse.gov.uk/pUbns/priced/l65.pdf>> accessed 1 March 2018 [‘HSE PFEER Guide’].

of a process it refers to as “an assessment”, which, as the HSE PFEER Guide explains, “feeds into the safety case”, adding that “in practice, a summary of the assessment carried out under regulation 5 will be part of this demonstration”.⁷⁴⁸ This “assessment” will help define the *level of risk* under consideration, a factor which is proportional to the *degree of sacrifice* required from duty holders when satisfying the ALARP standard.⁷⁴⁹ The *rationale* behind the GD test is that beyond a certain point, measures taken to reduce risk become “increasingly costly to implement” in relation to the benefits they present.⁷⁵⁰ Following the same line of thinking, Tucker LJ provided some guidance in stating that “[t]his shows that in every case it is the risk that has to be weighed against the measures necessary to eliminate the risk” and adding that “[t]he greater the risk, no doubt, the less will be the weight to be given to the factor of cost”.⁷⁵¹ Thus, the UK standard for acceptable risks pertaining to the offshore oil and gas industry involves a cost

10, 14 ff. and 59. Paragraph 18 particularly provides that “Complying with PFEER, and taking account of the practical guidance contained in this book, will facilitate HSE’s or the competent authority’s acceptance of the safety case”. The PFEER, as its name indicates, deals⁷⁴⁷ *inter alia* with major accidents arising from fire and explosion. See HSE PFEER Guide, 18. The HSE PFEER Guide further provides at paragraph 62 ACOP in relation to the steps the “assessment” should involve.

⁷⁴⁸ Ibid, 59. For a guidance on the recommended approaches to Risk Assessment, see HSE, ‘Information Sheet No. 3/2006 – Guidance on Risk Assessment for Offshore Installations’ <<http://www.hse.gov.uk/offshore/sheet32006.pdf>> accessed 9 March 2018 [‘HSE Risk Assessment Information Sheet’]. The Information Sheet notes that “[t]he rigour of assessment should be proportionate to the complexity of the problem and the magnitude of risk” and recommends Semi-quantitative Risk Assessment (following which frequency and severity are approximately quantified within ranges) for risks falling under the ALARP region.

⁷⁴⁹ HSE Safety Case Information Sheet 2006, 5, providing that “the greater the initial level of risk under consideration, the greater the degree of rigour required to demonstrate that risks have been reduced so far as is reasonably practicable.”; See also HSE ALARP 1, stating that “In measuring the risk to be reduced, and the sacrifice involved in measures to achieve that reduction, the starting point should be the present situation.” And adding that “we believe that the greater the risk, the more that should be spent in reducing it, and the greater the bias on the side of safety. This can be represented by a ‘proportion factor’, indicating the maximum level of sacrifice that can be borne without it being judged ‘grossly disproportionate’”; Yasseri, note 727, notes that “[t]he ALARP can only be demonstrated if the risk is properly assessed, understood and the results used to determine controls. If a risk had not been identified, assessed and controlled, it would not be deemed as being managed, even though the risk evaluation might put it in the tolerable area.”

⁷⁵⁰ Jones-Lee and Aven, note 727, 877.

⁷⁵¹ *Edwards v The National Coal Board* [1949] 1 KB 704 [710] (Tucker LJ).

benefit analysis ['CBA'],⁷⁵² and it is only where a scenario where no GD exists that risks become “acceptable”.⁷⁵³

This, in turn, raises the question of what in fact constitutes “gross disproportion”. In other words, what approach does the HSE take in making its judgment as to whether the ALARP standard is met? The HSE ALARP 1 provides some guidance as it states that despite lack of authoritative case-law on the matter, it embraces Tucker LJ’s findings in believing that “the greater the risk the greater the proportion may be before being considered ‘gross’”, and adding that “the extent of the bias must be argued in the light of *all the circumstances*” (emphasis added). Moreover, the HSE’s adopted method(s) in assessing risk reduction action is directly relevant to this question.⁷⁵⁴ In this regard, while it applies common sense *in any case* when comparing risk reduction actions and their costs in order to make judgments as to the formers’ benefits, it also distinguishes between scenarios where costs and benefits could be expressed in monetary terms (where a CBA proves to be a useful tool) and those where such valuation is not practicable (where the HSE relies on qualitative estimates).⁷⁵⁵ However, the HSE further explains that these methods may not always be needed,⁷⁵⁶ notably where good

⁷⁵² See Yasseri, note 727, 1, noting that “the term ‘reasonable practicability’ implies that cost can be taken into account in relation to risk reduction”.

⁷⁵³ Note that the HSE uses a framework for the “tolerability” of risk which includes risks that are unacceptable which are only exceptionally permitted. According to this framework, tolerable risks are the ones that are subject to the ALARP standard. See European Maritime Safety Agency, ‘Risk acceptance criteria and risk based damage stability. Final report, part 1: risk acceptance criteria’ EMSA/OP/10/2013

<<http://www.emsa.europa.eu/damage-stability-study/download/3547/2419/23.html>> accessed 6 March 2018, para 3.2. For example, in relation to fatality risks, the HSE sets a “maximum tolerable level” which, when exceeded, should be reduced regardless of the sacrifice/effort/cost. See Collin Fuller and Luise H. Vassie, *Health and Safety Management: Principles and Best Practice* (Pearson Education 2004) 182.

⁷⁵⁴ See HSE, ‘Reducing risks, protecting people – HSE’s decision-making process’ (2001) <<http://www.hse.gov.uk/risk/theory/r2p2.pdf>> accessed 6 March 2018, 101. See also HSE Risk Assessment Information Sheet, providing that “[p]otential risk reduction measures can be evaluated by a mixture of qualitative and quantitative considerations, as appropriate.”

⁷⁵⁵ Ibid.

⁷⁵⁶ Catherine Menon, Robin Bloomfield and Tim Clement, ‘Interpreting ALARP’ (8th IET International System Safety Conference incorporating the Cyber Security Conference 2013), 1, note that where relevant good practice for a safety measure is not available, the HSE provides guidance based on “first principles”, citing qualitative and quantitative methods as tools to support judgements in relation to the ALARP standard; See also HSE ALARP 1 providing that “in

practices for reducing risks are available.⁷⁵⁷ Indeed, this applies in relation to the offshore oil and gas industry as the application of relevant good practice is regarded by the HSE as “a sufficient demonstration of part (or all) of the risk v. sacrifice computation”.⁷⁵⁸ In fact, the HSE ALARP 1 specifies that where the valuation of safety measures is not possible, the starting point should be “an option which is known to be reasonably practicable (such as one which represents good practice)”. Thus, practically, and from the HSE’s perspectives, duty holders are faced with the task of choosing the right option for dealing with a given safety issue, and it believes that “optimum options” are frequently established in authoritative good practice such as the HSE Guides and industry standards.⁷⁵⁹ Hence it appears that in its implementation of the UK offshore safety regulatory

practice [...], explicit evaluations of risk rarely need to be made in relation to day-to-day hazards. However, duty-holders have to make them where there is no relevant good practice establishing clearly what control measures are required”.

⁷⁵⁷ Ibid. See also Jones-Lee and Aven, note 727, 878. See also Yasseri, note 727, 1, noting that “[So Far as Reasonably Practicable] cannot be pleaded as a defence in a failure to observe good practice, since accepted good practice is, almost by definition, always ‘reasonably practicable’. The SFAIRP defence can only arise where good practice is unclear, or does not fully cover a given situation, or where an inspector is seeking to persuade a duty-holder to move forward from ‘good’ to ‘best’ practice as technology changes.”

⁷⁵⁸ HSE Safety Case Information Sheet 2006, 6. The Information Sheet further provides that “authoritative good practice can be considered to set the risk benchmark, though it does not prescribe the methods by which risks must be controlled” and that “good practice generally represents a preferred approach, however it is not the only approach that may be taken. Where a duty holder wishes to adopt a different approach to controlling risks, and can show that the risks from the proposed approach are similar to that which would have been achieved through adoption of good practice and are ALARP for that approach, they will normally be doing enough to comply with the law.”; Jones-Lee and Aven note that in relation to new safety measures for which good practice has not yet been established, references must be made to “social cost-benefit analysis” when examining whether GD exists. They relied on HSE documents in support of their statement and reinforced it by noting that if the appropriateness of good practice was ever subject to scrutiny, “there would appear to be no realistic alternative but to apply some form of cost–benefit analysis”, see note 727, 878. This is in line with the general tendency in all States to develop good practices and standards and enforce them aiming at ensuring minimum safety standards with room for improvement. See Yasseri, note 727, 2; See also Menon, Bloomfield and Clement, note 756, 1, noting that where relevant good practice exists “a duty holder is required to base his or her ALARP argument on compliance with this”; See also Andrew Hopkins, ‘Risk-Management and Rule-Compliance: Decision-Making in Hazardous Industries’ [2011] 49 Safety Sci. 110, 117-118, tracking the increased reliance of the UK regulator on good practice rather than CBA as demonstration of the ALARP standard.

⁷⁵⁹ HSE ALARP 1, Good Practice.

regime, the HSE further exercises its role in practice through firstly, regularly reviewing industry standards and practice,⁷⁶⁰ and secondly, through ensuring that duty holders adopt good practice which is *relevant* to the safety matters in question.⁷⁶¹

§§ USA

The SC approach adopted in the UK, constituting a vital element in the ‘safety culture’ implemented there, is recognised by American academics as ‘successful’ and constituting ‘best global practice’.⁷⁶² Yet, when the elements making for its success are compared with the US approach to offshore safety,⁷⁶³ two

⁷⁶⁰ On the use of good practice by the HSE and the sources thereof, see HSE ALAR 2. These include “standards produced by Standard-making organisations (e.g. BS, CEN, CENELEC, ISO, IEC)”, some of which have been referred to in the discussion above.

⁷⁶¹ Ibid. One clear example of this role and of the aforementioned discussion about the reliance on approved international standards (in principle) could be found in the HSE Hazardous Installations Directorate (Offshore Division), ‘Technical Policy on Safety Case Assessment relating to Structural Integrity – Providing an Outline of Information Expected to be provided in Safety Cases’ <<http://www.hse.gov.uk/offshore/structural-integrity-assessment.pdf>> accessed 9 March 2018, providing that “[s]ound engineering principles should be used to keep the risk of loss of integrity to a low level. Managing the risk by use of techniques and methods in the ISO Standards for offshore Structures (or equivalent) is used to ensure that no sudden, catastrophic failure is encountered. The use of quantified risk assessment (QRA or other) could be used as a substitute for using sound engineering principles or complying with suitable codes and standards but the limitations and uncertainties of such techniques should be taken into account”, and further listing at page 5 the ISO standards recommended in relation to structural integrity within the context of satisfying the SC requirements. See also HSE, ‘Offshore Information Sheet 4/2006 – Offshore Installations (Safety Case) Regulations 2005, Regulation 13 – Thorough Review of a Safety Case’ (2008) <<http://www.hse.gov.uk/offshore/sheet42006.pdf>> accessed 9 March 2018, providing at 3 that one of the purposes of the thorough review is to “compare the case against current standards, HSE guidance [...] and industry practice for new installations, to evaluate any deficiencies, and to identify and implement any reasonably practicable improvements to enhance safety”.

⁷⁶² Jacqueline L. Weaver, ‘Offshore Safety in the Wake of the Macondo Disaster: Business as Usual or Sea Change? (Part I)’ [2014] 36:1 *Houst. J. Intl. L* 147, 193 and 207.

⁷⁶³ The US SEMS rules have been systematically compared to the UK and Norwegian Safety Case regime by the Ocean Energy Safety Advisory Committee [‘OESAC’] in the letter addressed by its chairman Thomas O. Hunter to the Director of the BSEE James A. Watson on May 17th 2012 <<https://www.bsee.gov/sites/bsee.gov/files/reports/bsee/oesc-april-26-2012-recommendations-to-doi-and-bsee-ltr-from-chair-051712.pdf>> accessed 14 March 2018. [‘2012 OESAC letter’]. The OESAC had been created in January 2011 by US Secretary of Interior Salazar as a government centre for the collaboration of experts from the offshore industry, academics, NGOs, etc., to provide recommendations, among other things, on new offshore safety regulations.

observations must be made for the purposes of this discussion: 1) the US SEMS regime only succeeds in establishing a 'risk management framework' through requiring the identification of major risks and the planning of the management thereof (and therefore falls short from constituting the pillar of a positive 'safety culture');⁷⁶⁴ 2) No general duty to reduce risks ALARP is imposed on operators on the US Continental Shelf ['USCS'], a duty essential for a 'real' SC regime.⁷⁶⁵

This appears to be consistent with the US prescriptive-regulation-attached criticism against SC regulation for sanctioning too much flexibility through empowering employers to determine their own risk acceptance criteria which they then impose on their employees.⁷⁶⁶ In light of the discussion above, and as supported by Professor Hopkins, the direct reliance in the UK SC regime on industry best practice deprives such criticism of its value.⁷⁶⁷

Accordingly, the OESAC formed a Safety Management Systems Subcommittee ['SMS Subcommittee'] to assess the contributing factors to risks of blowouts.

⁷⁶⁴ See Andrew Hopkins, *Safety, Culture and Risk: The Organisational Causes of Disasters* (CCH Australia 2005) 3-4 where he argues that Safety Management Systems are 'virtual' unless they function within an adequate 'safety culture'. Having examined the UK approach to offshore safety, author is of the view that these Systems, when regulated properly prove vital in the establishment of a positive 'safety culture', hence making both elements mutually beneficial. This position is supported by the OESAC which believes that SMSs have the potential of laying the 'foundations for success' of a 'safety culture' within which exploration and production activities should be performed. See Safety Management Systems Subcommittee, 'Presentation to the Ocean Energy Safety Advisory Committee' (7 November 2011) <<https://www.bsee.gov/sites/bsee.gov/files/technical-presentations/safety/sms-subcommittee-presentation-110811.pdf>> accessed 14 March 2018 ['SMS Subcommittee Presentation'], 4.

⁷⁶⁵ Weaver, note 762, 207. According to Hopkins, it is this general duty which explains higher fire protection standards adopted in the UK as compared to those in the US. See Andrew Hopkins, 'Disastrous Decisions: the Human and Organisational Causes of the Gulf of Mexico Blowout' [2012] 5:4 J. World En. L. & B. 366.

⁷⁶⁶ Hopkins, note 720, 844.

⁷⁶⁷ Substantial literature surrounding the HSE's Key Programme 3 ['KP 3'] established to assess asset integrity following concerns that it had flagged relating to the condition of offshore installations inspected between 2000 and 2004 reveals a division of opinions on the effectiveness of the UK Safety Case approach: HSE, 'Key Programme 3, Asset Integrity Programme – a report by the Offshore Division of HSE's Hazardous Installations Directorate' <<http://www.hse.gov.uk/offshore/kp3.pdf>> accessed 15 March 2018. Some authors find that the Report's findings suggesting (i) Safety Cases' failure in preventing cost factors dominating duty holders' decision-making in relation to offshore safety and (ii) the industry's lack of understanding of safety elements (KP 3, 6 and 18), as an indication of the UK approach's lack of success. These authors deduced from the aforementioned that the Safety Case approach is a self-regulatory

Hence, two questions emerge: 1) Why and how is the US ‘safety culture’ underdeveloped in comparison with its British counterpart? 2) What safety standards are followed under the US regulatory regime?

The forthcoming development aims to answer both these questions simultaneously, nevertheless it seems reasonable to start by noting that in its Final Safety Culture Policy Statement⁷⁶⁸ published following comments from oil

system where the industry fails to act consistently with risk assessments. Thus, they argue that the US should not transpose it blindly. See generally Rena Steinzor, ‘Lessons from the North Sea: Should “Safety Cases” Come to America?’ [2011] 38 B.C. Env. Aff. L. Rev. 417, 417 and 444. See also Thomas O. McGarity, ‘When Strong Enforcement Works Better than Weak Regulation: the EPA/DOJ New Source Review Enforcement Initiative’ [2013] 72:4 Maryland L. R. 1204. Both authors argued in favor of stronger enforcement, as a more effective method of ensuring safety through prescriptive regulation backed by a commanding regulator, to underlie the US offshore safety culture. This skepticism has also been adopted by Weaver, note 520, 473, when comparing the UK’s ‘self-regulatory’ Safety Case system with the emerging role of COS (lead by the major oil companies and therefore representing the industry). Some academics took the opposing view, based on a statistical study, that there exists no correlation between stronger enforcement through the increase of inspections and sanctions on the one hand and risk reduction on the other. See Lucija Muehlenbachs et al., ‘The Effect of Increased Group Size and Familiarity on Enforcement and Deterrence’ [2013] Vanderbilt Law and Economics Research Paper No. 13-35. Some authors took a cautious, intermediary position when commenting on the topic, see for example John Paterson, ‘The Significance of Regulatory Orientation in Occupational Health and Safety Offshore’ [2011] 38:2 Boston College Env. Af. L. R. 369, 384 ff. Paterson believed that while the KP 3 report could be indicative of a ‘fatal flaw in the safety case approach’, it might as well suggest, without degrading such approach, the effective role played by the regulator ‘whose attention is appropriately focused’. Thus, disagreeing with the radical view presented by the critics of the SC approach, he concludes that the KP 3 report merely reveals that even within such system, the role of the regulator remains vital, stating at 389 that “a SC regulator must be refocused on ensuring that the industry remains open to the appropriate range of risks faced in the operation of its safety management systems, and does not allow the inevitable concern with cost to blind it to the reality of safety risks”. He later notes that the problems with the implementation of the Safety Case regime as exposed by the KP 3 report persist. See John Paterson, ‘Health, Safety and Environmental Regulation on the United Kingdom Continental Shelf in the Aftermath of the Macondo Disaster’ [2016] 4 LSU J. En. L. and Res. 259, 267, noting that the finding by the Select Committee in 2010 (ECCC UK Deepwater Drilling, see note 181) and by the Maitland Review in 2011 (Geoffrey Maitland, Mick Temple and John Shepherd, ‘Offshore Oil and Gas in the UK – an independent review of the regulatory regime’ (December 2011) <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48252/387_5-offshore-oil-gas-uk-ind-rev.pdf> accessed 16 March 2018) confirm the problems identified in the KP 3 report.

⁷⁶⁸ Department of the Interior – BSEE, ‘Final Safety Culture Policy Statement’ (2013) <<https://www.bsee.gov/sites/bsee.gov/files/bsee-policy-manual-section/internal-guidance/final-safety-culture-statement.pdf>> accessed 20 March 2018.

and gas companies (operators and contractors), industry associations, environmental organisations, and individuals on its Draft Safety Culture Policy Statement, the BSEE reiterated the importance of “a culture that promotes safety and environmental stewardship to a vigorous and respected offshore energy industry”.⁷⁶⁹ Identifying personal and organisational characteristics that are common in such a culture, it listed some which in its opinion “typify a robust safety culture”.⁷⁷⁰ One of these characteristics concerned “hazard identification and risk management’, in relation to which the BSEE explained that it entails that “[i]ssues potentially impacting safety and environmental stewardship are promptly identified, fully evaluated, and promptly addressed or corrected commensurate with their significance”.⁷⁷¹ The inclusion of this characteristic within a “robust safety culture” is consistent with the SMS Subcommittee’s reliance on three “vectors” in its assessment of the US regulatory regime, which included optimizing the SMS needed to develop a safety culture.⁷⁷² Indeed, it is the BSEE’s view that the SEMS II rule is “another step in a series of efforts to further identify, address and manage operational safety hazards and impacts, with the goal of enhancing both human safety and environmental protection on the USCS”.⁷⁷³ However, the SMS Subcommittee, formulating recommendations for consideration by the OESC committee on the optimum safety management system for the USCS and on whether a SC should be integrated within it, had identified critical issues under the SEMS rule that it was of the view that it would ultimately “have to be overhauled”.⁷⁷⁴ The aforementioned issues were grouped

⁷⁶⁹ Ibid, 7.

⁷⁷⁰ Ibid, 8.

⁷⁷¹ Ibid.

⁷⁷² SMS Subcommittee Presentation, 9-10.

⁷⁷³ BSEE, ‘BSEE Completes Final Rule to Further Strengthen Offshore Workplace Safety (SEMS II) (2013) <<https://www.bsee.gov/newsroom/latest-news/statements-and-releases/press-releases/bsee-completes-final-rule-to-further>> accessed 20 March 2018.

⁷⁷⁴ OESAC – Safety Management Subcommittee, ‘Safety Management System Enhancement Recommendation’ (2012) <<https://www.bsee.gov/sites/bsee.gov/files/reports/fact-sheet/ocean-energy-safety-advisory-committee-final-summary-report.pdf>> accessed 20 March 2018 [‘SMS Subcommittee SMS Enhancement Recommendation’], 1. The Subcommittee noted at 2 that “it is the opinion of the subcommittee that the SEMS II regulations, if published as proposed, would have to be overhauled to make them more performance-based which would cause them to conflict

under four headings, most notably “[p]rescriptive regulations and requirements”,⁷⁷⁵ under which the SMS Subcommittee disagreed with the Department of Interior and with the analysis of the US regulatory regime above⁷⁷⁶ finding that the SEMS regulations are in fact not “performance-based standards similar to those used in the North Sea”, but rather prescriptive in nature; which promotes a compliance mentality.⁷⁷⁷ This issue has also been raised by the International Association of Drilling Contractors [‘IADC’] referring to a lack of balance between prescription and goal-setting regulations in relation to operations in the Gulf of Mexico.⁷⁷⁸ Some contended this is because the BSEE fails to grasp the difference between the SEMS and the SC approaches.⁷⁷⁹ In fact, despite the US and North Sea regulatory regimes both falling under the umbrella of performance-based regulation, the SEMS and SC represent a vital difference in the mechanism used for the demonstration of risk management.⁷⁸⁰ This choice of mechanism in turn affects the “organizational culture that reflects the general attitude and approaches to safety and risk management”:⁷⁸¹ while the SC makes

with the original SEMS regulations and delay the critical work on improving the structure of SEMS.”

⁷⁷⁵ Ibid, 4.

⁷⁷⁶ See para 1.A.

⁷⁷⁷ SMS Subcommittee SMS Enhancement Recommendation, 4. The Subcommittee noted that: “Unlike the performance-based regulations found in Norway and in the UK, the Department of Interior elected to prescribe specific items to be addressed, list items that need to be verified, and even specify what records to keep in the current SEMS regulations. If SEMS was truly a performance-based regulation, the Department of Interior would not have needed to use the words “must” and “shall” throughout the regulation”.

⁷⁷⁸ Alan Spackman (Vice President, Offshore Technical & Regulatory Affairs), ‘The IADC HSE Case for MODUs’ (2011) <<https://www.bsee.gov/sites/bsee.gov/files/congressional-testimony/regulations-and-guidance/alan-spackman-110711-oesc-SC.pdf>> accessed 20 March 2018, 13.

⁷⁷⁹ See Weaver, note 520, 462.

⁷⁸⁰ The SMS Subcommittee explained in its Enhancement Recommendation under “Topic #2: Use of performance-based regulation” at 5 that: ‘[b]oth regimes are considered performance-based regimes because the regulator provides independent assurance that the operational and facility risks are properly controlled by challenging the operator’s risk management system and verifying by audit/inspections that the operator has implemented its risk management commitments. The tool or vehicle for demonstrating that the risks are managed in the UK and AU regimes is via a Safety Case.’

⁷⁸¹ Considered by the SMS Subcommittee as the definition of “safety culture”, see OESAC – SMS Subcommittee, ‘Safety Culture Recommendation’ (2012) <<https://www.bsee.gov/sites/bsee.gov/files/reports/fact-sheet/ocean-energy-safety-advisory->

duty holders pro-active by offering them ample flexibility in dealing with safety matters and meeting ALARP safety goals, the prescriptive US SEMS rule presents itself as a “superficial fix” which merely encourages duty holders to meet minimum requirements in the form of specific industry standards (a compliance mentality).⁷⁸² Of course, the successful use of the SC approach relies on the existence of an apt, well-resourced and experienced regulator which assesses it and engages in a constructive dialogue with duty holders.⁷⁸³ The complexity in establishing a “robust safety culture” in the US thus arises in part from the shortcomings inherent to the BSEE and its role as regulator: Professor Weaver saw that the OESAC recommendations sent to BSEE and the DOI⁷⁸⁴ reflected the former’s belief that the US safety regime was based on outsourcing auditing and dialogue to third-party service providers, that it “left the regulator out of any feedback loops or dialogue with industry, both at the front end of submitting a SEMS plan and at the back, post-audit end”,⁷⁸⁵ and that the recommendations gave BSEE “a massive workload” both in safety management and in technology development.⁷⁸⁶ In conclusion therefore, two reasons stand-out in explaining the

[committee-final-summary-report.pdf](#)> accessed 20 March 2018 [‘SMS Subcommittee Safety Culture Recommendation’], 1.

⁷⁸² Ibid, see also at 3: “it is important to note that even when combining the implementation of a safety management system with changes in the organizational structure, including policies and goals one may lower the risk but unless you are able to change the shared values that underlie people’s behavior you are not able to create a sustainable positive change in the safety outcomes”.; see also Prerna Jain, Anne Reese, Dushyant Chaudhari, Ray Mentzer and Sam Mannan, ‘Regulatory Approaches – Safety Case vs US Approach: Is there a Best Solution Today?’ [2017] 46 J Loss Preven Proc Indus 154, 155;

⁷⁸³ Ibid, 155. See also Coglianese et al., note 698, and accompanying text.

⁷⁸⁴ OESAC – Federal Advisory Committee to the Secretary of the US Department of Interior, Final Summary Report (April 2011 – January 2013) <<https://www.bsee.gov/sites/bsee.gov/files/reports/fact-sheet/ocean-energy-safety-advisory-committee-final-summary-report.pdf>> accessed 21 March 2018.

⁷⁸⁵ These third-party service providers are COS-pre-qualified consultants, thus confirming that the US regulatory regime offshore is indeed self-regulated by the industry. Weaver, note 520, noted at 470-71 that “BSEE neither approves the SEMS programs of offshore operators before they begin operations nor does it conduct audits itself. [...] [BSEE’s O]versight seems minimal at this time” and suggested that it is the COS that appears to currently be the “nimble and competent actor that is providing robust supervision over the SEMS audit process now required by BSEE’s regulations”.

⁷⁸⁶ Ibid, 460-461. Weaver further added that: “BSEE was not resourced to do effective audits or to do the essential data collection, analysis, and development of metrics that would allow an

reasons behind the dissimilarity in the US safety culture offshore compared to its North Sea counterpart, namely the abundance of prescriptive requirements, and the incompetence of the regulator and the outsourcing of its role.⁷⁸⁷

§§§ Conclusions

Summing up the findings above, we note the following conclusions:

- 1) The UK standard imposed on duty holders in the offshore industry is that of reducing risks ALARP. The implementation of this standard is not straightforward, as the concept is somewhat vague and needs definition. However, the HSE, relying on various sources, developed guidelines to better clarify the criteria upon which it bases its decisions while exercising its regulatory oversight functions. Thus, when it comes to regulatory implementation, the HSE's oversight role is dual: reviewing and approving industry practices and ensuring duty holders comply with approved practices which are relevant to the safety matter at hand.
- 2) The adoption of the ALARP standard within a SC regime plays a pivotal role in creating a positive and dynamic safety culture which entails on the one hand, that the regulator exercises a genuine oversight function and adopts a 'soft approach to ensuring compliance';⁷⁸⁸ and on the other hand that regulatees are directly and pro-actively involved in the safety management of their offshore activities. The balance struck in this regime is, it is submitted, coherent and logical as it affords the party best placed to manage risks with a sensible amount of flexibility to do so.

assessment of industry-wide risk level trends in the Gulf and the benchmarking of companies' performance". She concluded at 466 that: "[t]hus, BSEE had two enormous peaks to scale as the untiring Sisyphus pushing offshore safety upward: SMS and BAST" and at 469 that "BSEE remains a data-poor agency, comprised largely of inspectors with limited training and checklists to fill out". She concluded that "Audits by third parties with protocols of questions to ask, but no continuous dialogue with an active regulator, would not do the job."

⁷⁸⁷ It must however be noted that some authors are supportive of the US approach to offshore safety and argue that it affords a platform for "continuous learning and improvement", see Charlie Williams, 'Safety and Environmental Management Systems – a Journey of Continuous Learning and Improvement and the Basis of a Safety Culture' (22nd World Petroleum Congress, Istanbul, July 2017). It must however be noted that Williams is an Executive Director for COS.

⁷⁸⁸ As formulated by Baram and Lindoe, note 697.

- 3) The US regulatory approach, performance-based at first sight, is burdened with unbalancing prescriptive provisions and the reliance on the SEMS rules (which leads to different outcomes compared with the SC approach), coupled with important shortcomings attached to the BSEE in its role as Federal regulator. These factors contribute in making the US safety culture offshore underdeveloped as compared to its UK counterpart as it encourages operators on the USCS approach safety matters with a compliance mentality.
- 4) The COS, representing the industry, plays the role of accrediting external auditors and developing industry standards and auditing protocols/reporting templates, is thus seen as somewhat replacing the BSEE in its oversight and regulatory functions.

These differences between two purportedly performance-based regimes both belonging to the “open access” category of States could be attributed to a number of potential underlying causes. An initial interpretation would suggest that the US legislator, following a major disaster which called for the review of offshore safety matters, is simply struggling in transposing a foreign, globally leading approach into the US regulatory regime. However, a more plausible explanation has to take account of the general context surrounding the US offshore industry, notably of the long-standing political conflicting priorities of environmental protection on the one hand and energy production/independence on the other hand, as pointed out by the National Commission on the BP Deepwater Oil Spill.⁷⁸⁹ Putting matters into context could help explain the reasons why BSEE is so abundantly seen as under-experienced or under-resourced and found lacking. It could also justify the establishment of COS and its growing role and why a SC mechanism has not been integrated within the US regime. Nevertheless, and irrespective of the reasons behind these differences, their identification is in itself important for the discussions of this Chapter as it proves even further how aspirations of a global

⁷⁸⁹ Report to the President, 56. These considerations clearly fall outside the scope of our study and will not be examined/interpreted further.

harmonization (or even rapprochement) of offshore safety regulation are very unlikely to be realized.

In light of the discussion above, it is fair to conclude that the choice to adopt a performance-based type of safety regulation does not necessarily presuppose consistent governmental risk management agendas, and that, even where that is the case, its implementation does not straightforwardly lead to well-defined outcomes. Thus, even within the “open access” category of States, no uniformity is verified in respect of the environmental and safety regulation of offshore activities.

b- Discrepancies within “close-market” systems

As pointed out in the analysis of the Venezuelan regime, such differences exist even within the same jurisdiction in relation to hydrocarbons on the one hand and gaseous activities on the other.⁷⁹⁰ This is due to two overarching factors: (1) the type/level of control that the NOC is subject to; and (2) the strategy adopted by the State in search for its own sovereignty/productivity balance. The two factors are of course mutually influential.

In relation to the first factor, one need only look again at the Venezuelan example. As explained above, gaseous activities are subject to a “open access” type of regulation as ownership of projects and natural-gas-related activities are open for foreigners, whereas, primary hydrocarbon activities are exclusively reserved to the State and they are to be conducted only either by corporation fully-owned by the State or corporations where the State has a minimum of 50% of their equity. This has been one of the novelties of the OHL, as the pre-OHL history of PDVSA was considerably different: its policy was from the beginning conflicting with that of the Venezuelan Government from which it was autonomous,⁷⁹¹ and it was technically so advanced that it shaped government policy in respect of hydrocarbon activities.⁷⁹² However, and after the Bolivarian Revolution and the

⁷⁹⁰ See paragraph 1.F-b above.

⁷⁹¹ See Fry and Elfadil, note 668, 246.

⁷⁹² Ibid, 245.

entry into force of the OHL, PDVSA fell “within the firm grip of the state” as “complete intervention” was implemented.⁷⁹³ Thus, the MPPOM now sets PDVSA’s capital expenditure and operating budget, and the company’s board of directors is appointed by the Executive, etc...⁷⁹⁴ This level of State control is comparable with that exercised over Saudi Aramco which controls its own operating revenue, undertakes strategic planning, and deals internally with ensuring compliance with State goals while maximizing the company’s profitability.⁷⁹⁵

As regards the influence of the policy adopted by the State on the regulation of oil and gas activities, a deeper look at the Venezuelan example reveals that the Government’s very divergent policies adopted in respect of hydrocarbons and natural gas dictate the current *status quo* and any future development in the respective sectors. In fact, the Venezuelan Government’s “*laissez-faire*” attitude towards natural gas activities, as opposed to its objectives to assert sovereignty over its hydrocarbon resources meant that the former is regulated within an “open access” unlike the latter.⁷⁹⁶ Moreover, this overall divergence in policy is further clarified when we look at how the US and UK approached the prospects of a “open access” pertaining to oil and gas activity: while formulating their respective hydrocarbon policies, both had found it more appropriate to benefit from the competitiveness between effective and highly productive international oil companies,⁷⁹⁷ and opted to achieve their objectives through taxation and regulation instead of through reliance on NOCs.⁷⁹⁸

⁷⁹³ Ibid, 246.

⁷⁹⁴ Ibid, 248.

⁷⁹⁵ Amy Jaffe and Jareer Ellass, ‘Saudi Aramco: National Flagship with Global Responsibilities’ (2007) The James A. Baker III Institute for Public Policy, Rice University <https://www.bakerinstitute.org/media/files/page/9f100176/noc_saudiaramco_jaffe_ellass_revised.pdf> accessed 18 January 2018, 49-50.

⁷⁹⁶ Fry and Elfadil, note 668, 246-247. In relation to hydrocarbon regulation, authors noted that “the state has taken the view that these are necessary sacrifices to be made so that the developmental targets outlined in Art. 5 of the Organic Hydrocarbons Law can be achieved”.

⁷⁹⁷ Ibid, 238.

⁷⁹⁸ Gerry Corti and Frank Frazer, *The Nation’s Oil: A Story of Control* (1st edn, Springer 1983) 3.

The two factors connect together in that where the NOC's policy is aligned with that of the government, there will be no need for the latter to continuously assert its dominion over the former; rather, as explained above, it opts to give the NOC the flexibility it requires to achieve its full production potential. This in turn allows it to collect most profits in the form of dividends as it remains the sole shareholder of the company. However, where the policies adopted conflict, the State might choose to deploy a rigid control over the NOC, with the accompanying risk of decreased production due to the government's lack of technical and managerial expertise in the industry. It is this under qualification of governments in the oil and gas industry which pushes them to adopt prescriptive types of regulations,⁷⁹⁹ whereas NOCs, just like any other multinational company⁸⁰⁰ and for commercial reasons as explained below, prefer to abide by performance standards.⁸⁰¹

Additionally, significant differences also exist among the regulatory systems of this group of countries despite the apparent uniformity of their adopted approach: it has been found that the degree of prescriptive regulation differs and that, further, even where there is uniform prescriptive practice this does not necessarily reflect equivalent prescriptive standards.

Consequently, it is reasonable to conclude that important factors come into play when safety regulation is sought to be adopted and implemented in the "closed-market" category of States, which, allowing ample discretion in policy-making, make its outcomes inconsistent and unpredictable.

⁷⁹⁹ See para 2.B-a-i above which reinforces this statement through showing the difficult conditions for the implementation of an effective performance-based system.

⁸⁰⁰ Prescriptive types of regulations are seen as more suitable for small oil and gas companies, see Coglianese, Nash and Olmstead, note 698, 712

⁸⁰¹ See Saudi Aramco's suppliers code of conduct, <https://www.saudiaramco.com/-/media/downloads/working-with-us/become-a-supplier/saudi-aramco-supplier-code-of-conduct_en.pdf?la=en&hash=931ED21BF725B82CAEE7C5F0DDC7A66FC7904596> accessed 26 December 2019; the document contains references to the standards followed at the company in various areas including health and safety and hazard identification, risk assessment and risk control. The standards are set in terms of objectives, but the document also contains prescriptive language in the form of guidelines given for the suppliers to follow in order to achieve the relevant standards.

c- Potential normative role of offshore industry Best Practices and Recommendations [‘BPR’]

In parallel to the review and development of offshore oil and gas regulation in numerous States following major disasters, the oil industry, aware of the repercussions of the unacceptable consequences of their activities on the sector’s future, endeavoured to take matters into its own hands by developing BPR. It sought to globalise international best practices and standards and worked on promoting the sharing and exchange thereof.⁸⁰² The aims of both sets of efforts coincide to a large extent as industry BPR also aim at increasing its ability to prevent, limit the consequences of, and respond to risks associated with offshore activities.

Such development is traceable in many jurisdictions: in the USA, API had since 1924 been the entity involved with establishing and maintaining standards for the global oil and gas industry to follow.⁸⁰³ However, and following the Deepwater Horizon disaster, the COS had been formed in 2011. As explained above,⁸⁰⁴ not only is the COS now directly involved in the US regulatory system, it also aims at developing standards to ensure “continuous improvement in safety and offshore operational integrity” and is responsible for, *inter alia*, “the development of good practice documents for the offshore industry in the areas of Safety and

⁸⁰² The oil industry resorted to this approach in light of: (1) its “genuine acknowledgment” of its duty to protect the environment; (2) the continuous pressures from shareholders, interest groups and organizations on it to be more transparent and accountable for the environmental consequences of its activities; (3) its awareness of the inconvenience of being subject to strictly-defined prescriptive standards. See Alexandra S Wawryk, “International Environmental Standards in the Oil Industry: Improving the Operations of Transnational Oil Companies in Emerging Economies” [2002] 20 J.En.Nat.Res 402, 403.

⁸⁰³ By April 2015, and in relation to the prevention of offshore accidents, the API had developed 224 exploration and production standards addressing offshore operations covering “everything from blowout preventers to comprehensive guidelines for offshore safety programs” (these standards are regularly reviewed to ensure they remain updated). This effort has contributed in the development of federal regulation as more than 100 have been incorporated therein. See API, ‘Following Through: How Industry and Government are Improving the Safety of Offshore Energy Development in the Post-Macondo Era’ (April 2005) <http://www.api.org/~media/Files/EHS/Clean_Water/Oil_Spill_Prevention/After-Macondo-report-April-2015.pdf> accessed 26 December 2019.

⁸⁰⁴ See paras 1.A and 2.B.a.ii. §§.

Environmental Management Systems”.⁸⁰⁵ In the UK, Oil and Gas UK, the leading representative body for the UK offshore oil and gas industry established in 2007, contributes through special resources and expertise of its member companies to the development of best practice guidelines aiming at raising professional standards of the industry notably in matters relating to the safe operations of offshore activities.⁸⁰⁶ In Norway, the Norwegian Oil and Gas Association (Norwegian Oil and Gas), an association for oil companies conducting exploration and production activities on the NCS, establishes a number of guidelines in various areas including health and safety and environmental protection.⁸⁰⁷ In Australia, the Australian Petroleum Production & Exploration Association [‘APPEA’], the national body representing Australia’s oil and gas upstream industry, considers continuing improvement of health, safety and environmental performance as one of its principles of conduct, and aims to achieve that through “the application of new technologies and industry practices” and through engaging “constructively with government and industry to develop appropriate principles/objective-based standards”.⁸⁰⁸

Similar efforts have also been undertaken to develop guidelines and standards at region level. Notable examples are, in Latin America, the Regional Association of Oil, Gas and Biofuels Sector Companies in Latin America and the Caribbean [‘ARPEL’],⁸⁰⁹ and in Europe, the European Committee for Standardization

⁸⁰⁵ COS, API RP 75 (*Center for Offshore Safety*) <<http://www.centerforoffshoresafety.org/>> accessed 26 December 2019.

⁸⁰⁶ Oil & Gas UK, Best Practice Guidelines (*OGUK*) <<https://oilandgasuk.co.uk/guidelines/>> accessed 26 December 2019.

⁸⁰⁷ Norwegian Oil and Gas Association, Guidelines (*Norskeolje&gass*) <<https://www.norskeoljeoggass.no/en/Publica/Guidelines/>> accessed 26 December 2019.

⁸⁰⁸ Australian Petroleum Production & Exploration Association, Principles of Conduct (*APPEA*) <<https://www.appea.com.au/about-appea/principles-of-conduct/>> accessed 26 December 2019.

⁸⁰⁹ ARPEL’s strategy includes the reciprocal assistance and exchange of best practices, experiences and knowledge among peers, with the aim of promoting innovation and operational and management excellence through the development of Guidelines, Manuals and Publications. Expert delegates and executives of the region cooperate with the Association’s Technical Committees and Working Groups to, *inter alia*, develop such Publications to be followed by member companies to advance their businesses, and afford training and technical support helping them implement industry best practices. See ARPEL, Strategic Guidelines for Sustainable Energy Development (*ARPEL*) <https://arpel.org/why_partners/> accessed 26 December 2019; ARPEL,

['CEN']⁸¹⁰ and the European Committee for Electrotechnical Standardization ['CENELEC'].⁸¹¹

In relation to the international petroleum offshore industry, guidelines and standards developed by the API⁸¹² or by interstate associations like the International Association of Oil & Gas Producers ['IOGP']⁸¹³ are prominent.⁸¹⁴ Additionally, non-governmental organisations ['NGOs'] and quasi-governmental organizations ['QGOs'] like the International Organization of Standardization

How We Work (ARPEL) <<https://arpel.org/committee/healthand/>> accessed 26 December 2019; <<https://arpel.org/library/publications/search/?title=&types=21>> accessed 26 December 2018.

⁸¹⁰ The CEN is formed by the National Standardization Bodies of European Union Countries in additions to Macedonia, Serbia, Turkey, Iceland, Norway and Switzerland. It publishes standards in various sectors including the oil and gas offshore industry. These standards have the same authoritative value as those ratified through CENELC (see following discussion).

⁸¹¹ CENELEC is a technical organisation responsible for standardization in the electrotechnical engineering field. Collaboration between its members, experts, industry federations and consumers help develop European Standards and Harmonization Documents which aim at promoting technological development and to enhance environmental protection. European Standards relevant to offshore activities are developed by CENELEC or CEN (or jointly by both) based on a consensus between the interests of their members, and most are initiated by industry. They must be implemented at national level by their members, and they prevail over any conflicting national standard. See CENELEC, CENELEC Products (CENELEC) <<https://www.cenelec.eu/standardsdevelopment/ourproducts/index.html>> accessed 26 December 2019. For example, in 2015, 91 standards in relation to various types of machinery were adopted by CENELC and CEN. The two organisations also advised the European Commission concerning the drafting of standardization requests, including in relation to offshore equipment. See CENELC, Annual Report 2015 <https://www.cencenelec.eu/news/publications/Publications/AR2015_1CEN-CENELEC_EN.pdf> accessed 26 December 2019, 16.

⁸¹² See note 803 and accompanying text. See also API, 'The Oil and Gas Industry's Most Valuable Resource' (2014) <http://www.api.org/publications-standards-and-statistics/standards/~/_media/Files/Publications/FAQ/valueofstandards.ashx> accessed 26 December 2019.

⁸¹³ IOGP's members produce 40% of the world's oil and gas, operating across the globe. The Association aims to act on behalf of the world's upstream oil and gas companies to identify good practices and knowledge essential for the improvement of health, safety, environmental, security and social responsibility standards. See IOGP, About Us- Vision, Mission, Objectives (IOGP) <<http://www.iogp.org/about-us/#vision>> accessed 26 December 2019. The international standards published by IOGP are available here: IOGP, International Standards (IOGP Bookstore) <<http://www.iogp.org/bookstore/product-category/international-standards/#0>> accessed 26 December 2019.

⁸¹⁴ Wawryk, note 802, 403.

['ISO'],⁸¹⁵ the International Petroleum Industry Environmental Conservation Association ['IPIECA'],⁸¹⁶ the International Electrotechnical Commission ['IEC']⁸¹⁷ and the Energy Institute ['EI']⁸¹⁸ also play an influential role in developing guidelines applicable to offshore oil and gas operations.

These industry-representing entities' websites contain publications listing standards/good practices which are normally prescriptive in nature,⁸¹⁹ thus reinforcing the argument that they are developed by the industry in an attempt for achieving self-regulation. They aim to achieve globalisation of best practices

⁸¹⁵ ISO is a prominent standardization NGO with memberships of 162 national standard bodies which aims to face global challenges through the development of international standards through bringing together experts from around the globe. It provides numerous standards that apply directly to the offshore oil and gas industry.

⁸¹⁶ IPIECA is a global oil and gas Association with memberships of worldwide oil companies and associations both from the upstream and downstream sectors. Its mission includes "developing, sharing and promoting sound practices and solutions". Good practices pertaining to offshore oil and gas operations are available at the Association's website: IPIECA, Good Practice Offshore (IPIECA) <<http://www.ipieca.org/search-results/?search=good%20practice%20offshore>> accessed 26 December 2019.

⁸¹⁷ IEC is a QGO whose members are National Committees who appoint industry, government, academic and association experts and delegates to participate in the works of the IEC. It develops international standards pertaining to all electrical, electronic and related technologies, and thus are relevant to the offshore oil and gas industry. These are published on the Commission's website and are mainly relevant to electrical installations used in offshore units: <<https://webstore.iec.ch/searchform?q=offshore%20petroleum>> accessed 26 December 2019.

⁸¹⁸ The EI publishes standards and good practices, via its mainly-industry-funded Technical programme, providing the global industry with "cost effective, value-adding knowledge on key current and future issues within the energy sector". EI, Energy Institute Publications (*EI Publications*) <<http://publishing.energyinst.org/about-us>> accessed 26 December 2019. Its offshore safety focus is on "the operation of different installation types and wells and the design and analysis of equipment" aiming at increasing the safety of offshore installations. See EI, Offshore Safety (*EI Publications*) <<http://publishing.energyinst.org/topics/offshore-safety>> accessed 26 December 2019.

⁸¹⁹ See for example IEC standard 61892-1:2015 entitled "Mobile and fixed offshore units – Electrical Installation – Part 1: General requirements and conditions" which contains changes to specific technical requirements, for example: "The voltage tolerance for a DC system has been changed from +10 % to +10 %, -15 %".

and standards through having them adopted by both government regulators⁸²⁰ and industry.⁸²¹

Apart from the development and continuing updating of BPR applicable to offshore oil and gas activities, Associations/Organisations also emphasize the significance of exchange of technologies and knowledge within the wider goal of promoting environmental protection.⁸²² Such exchange is also promoted by the operation of entities particularly established for that purpose such as the OOGAG. A number of aforementioned players fall under the umbrella of the Global Marine Environment Protection ['GMEP'] Initiative,⁸²³ initiated by G20 Leaders as a response to “several high profile offshore drilling accidents”.⁸²⁴

However, and despite the aforementioned abundance in BPR development by an array of bodies at national, regional and international levels,⁸²⁵ they remain voluntary in nature, and afforded for stakeholders as guidelines to facilitate their management of risks.⁸²⁶ Accordingly, the Norwegian Guidelines Regarding the

⁸²⁰ See for example the analysis conducted by the IOGP reflecting the level of incorporation by fourteen countries of standards developed by standard development organisations (SDO) in their regulatory documents: OGP, 'Regulator's use of standards' (March 2010) Report No. 426 ['IOGP Regulators Report'].

⁸²¹ See for example another analysis conducted by the IOGP to determine the level of standardisation used in the industry based on the technical specifications relied upon by eighteen of its member companies: OGP, 'Benchmarking on the use of internal technical specifications and external standards by some oil & gas companies' (2011) Report No. 450 ['IOGP Industry Report'].

⁸²² IOGP's mission specifically includes providing a “forum for sharing experiences, debating emerging issues and establishing common ground to promote co-operation, consistency and effectiveness”, see note 813; ARPEL also emphasizes the importance of the “exchange of best practices and knowledge in discussion forums”. ARPEL, note 809; the same imperative is part of IPIECA's mission, providing for “enhancing and communicating knowledge and understanding”.

⁸²³ G20 Global Marine Environment Protection (GMEP) Initiative On Sharing Best Practices to Protect the Marine Environment, to Prevent Accidents related to Offshore Oil and Gas Exploration and Development, as well as Marine Transportation, and to Deal with Their Consequences <<http://www.g20gmep.org/>> accessed 26 December 2019

⁸²⁴ Other noteworthy organisations producing work related to the GMEP Initiative's objectives are the Organization of the Petroleum Exporting Countries [OPEC] and OSPAR. GMEP, International Organisations <<http://www.g20gmep.org/about/international-organisations/>> accessed 26 December 2019.

⁸²⁵ The list of standardization entities referred to in the discussion above is far from being exhaustive.

⁸²⁶ The term “voluntary” is abundantly referred to by the standardization bodies.

Framework Regulations specify in relation to s. 24 thereof that the “use of recognised standards is *voluntary* to the extent that other technical solutions, methods or procedures can be chosen if the responsible party can document that regulatory requirements will be fulfilled” (emphasis added). Moreover, “best practices” are defined as “a soft law method of addressing social, economic, and environmental challenges by providing exemplary models for future action. They are the activities that have been shown, over time, to be the most effective [...] in a traditional best-practices regime, the regulated entity itself—whether it be public or private—devises a set of practices that it promises to adhere to *voluntarily*”.⁸²⁷ At first sight then, it appears that BPR are merely an example of “soft law”, which arguably deprives them from their binding character and thus greatly hampers the abovementioned purposes sought by the industry.⁸²⁸ Yet, a closer look possibly suggests otherwise, as “soft law” has the potential to transform into “hard law”,⁸²⁹ and a plausible case could be made in that direction in relation to BPRs. In that sense, it could be argued that the frequent and consistent reference to the application and exchange of BPR in national

⁸²⁷ Max Planck Encyclopedia of Public International Law, online resource <<http://opil.ouplaw.com/home/EPIL>> accessed 28 December 2018. The definition adds “Best practices are used to establish standards by operating through horizontal co-operation rather than top-down direction.”

⁸²⁸ For a discussion about the status of “soft law” in international environmental law, see Alan Boyle, ‘Soft Law in International Law-Making’ in Malcolm Evans (ed), *International Law* (OUP 2014) 118-120; see also Wawryk, note 802, 415 stating that “norm is ‘soft’ either when it is not part of a binding regime or when it is contained in a binding instrument but is not stated in obligatory terms”.

⁸²⁹ Ibid 119 providing that “widespread acceptance of soft law instruments will tend to legitimize conduct, and make the legality opposing positions harder to sustain. They may also [...] influence the development and application of treaties or general international law”; Ibid, 417: “Over time, soft law may contribute to the formation of binding international law, either through the incorporation of initially non-binding norms into a treaty, or, when these guidelines, codes, principles are viewed as legally authoritative by a sufficient number of countries over a sufficient length of time, through the creation of customary law. Thus, over time, measures [...] may become standard practices that the international community expects every government to require of oil and gas corporations by law in the future”.

legislations and regulations of many countries,⁸³⁰ and in regional⁸³¹ and international conventions,⁸³² coupled with the reliance thereon by major national and multinational oil companies and their incorporation in their operational and environmental strategies⁸³³ is an interesting step in that direction. Moreover, it could arguably be advanced that the international obligation upon States to ensure that activities undertaken under their jurisdiction or control do not cause damage to the environment entails that they must incorporate/refer to industry best practices in their legislation/regulations to meet the requirements of the obligation of conduct incumbent upon them. In light of the foregoing, it could be

⁸³⁰ For example, in the UK, the HSE refers to ISO standards. HSE, Guidance and Standards (HSE.Gov.Uk) < <https://www.hse.gov.uk/offshore/structuralintegrity.htm> > accessed 26 December 2019; and in Norway, the Guidelines regarding s. 24 of the Framework Regulations recognise standards prepared under the auspices of CEN, CENELEC, ISO, IPA, NORSEK, IEC, and other standardization associations/organisations as “normative”. PSA, Guidelines Regarding the Framework Regulations (Last updated 26 April 2019) <https://www.ptil.no/contentassets/f18375b7184d4cd68fclc733b318b3dc/rammeforskriften_v_eiledning_e.pdf> accessed 28 December 2019. Broader requirements for duty holders to employ “best practices” or “best technologies” or “international standards” are also frequently provided for in national legislations or regulations, see for example Art. 6-1 of the KSA’s General Environmental Regulations and Rules for Implementation [‘GERRI’] requiring duty holders to give an “undertaking” to “employ technology which is internationally evaluated best” prior to the commencement of their activities pertaining to their projects.

⁸³¹ See for example the Barcelona Protocol which provides in Art. 23, entitled “International Rules, Standards and Recommended Practices and Procedures”, that Parties should cooperate to formulate and elaborate standards and recommended practices and “formulate and *adopt* guidelines in accordance with international practices and procedures” (emphasis added). Moreover, subsection 2 of the same article requires States to endeavour to harmonize their laws and regulations with international rules, standards and recommended practices. Subsection 3 creates an obligation on Parties to “endeavour, as far as possible, to exchange information relevant to their domestic policies, laws and regulations”.

⁸³² Art. 197 of UNCLOS creates an obligation upon States to cooperate “on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations” to elaborate and formulate standards and recommended practices and procedures in accordance with their duty to protect and preserve the marine environment.

⁸³³ Aiming at managing its environmental and social impacts, BP refers to “external standards” such as the ISO 14001 environmental management standard. See BP, Managing our Environmental Impact (BP) <<https://www.bp.com/en/global/corporate/sustainability/operating-responsibly/managing-our-environmental-impacts.html>> accessed 28 December 2018; similarly, ExxonMobil incorporate best practices and standards to ensure the safety of all exploration and production activities, notably those outlined by the IOGP. ExxonMobil, Regulation and Best Practices (ExxonMobil) <<http://www.exxonmobil.eu/en-eu/policy/unconventional-gas/environment-and-safety/regulation-and-best-practices>> accessed 28 December 2018.

argued that this industry-standardization-approach somewhat potentially compensates for the lack of uniform global regulation of offshore oil and gas activities, and thus, mirroring the USA regulatory development, the combination of these efforts constitutes an attempt by the industry to impose itself as a partner in the regulation of offshore oil and gas industry.

Nevertheless, such aspirations are strongly weakened by compelling arguments against an existing (or even near-future) “hardening” of BPR into binding legal norms. First, geographical, climate and other exterior conditions differ among regions, which calls for the development of tailor-fit best practices that are most effective in managing the particular risks posed therein.⁸³⁴ This sometimes calls for the need to develop national standards,⁸³⁵ which leads to discrepancy in the practices referred to by regulators across the globe.⁸³⁶ Moreover, the application of international BPR is not consistent enough, as oil companies resort all the same to “internal practise[s]”,⁸³⁷ within an obvious lack of abundance in clear voluntary commitment by them to follow international BPR.⁸³⁸ Furthermore, despite references to BPR in many instruments, the language used remains broad in

⁸³⁴ Art. 6-1 of KSA’s GERRI specifies that the technology used must be “most suitable [...] for the local environment”; Also, Art. 197 of UNCLOS, specifying that the cooperation between States in the development of BRP must “[take] into account characteristics regional features”. This is consistent with the UNEP Regional Seas Program which favours the development of regional Conventions between States, including Conventions for the protection of the marine environment from offshore activities akin to the Barcelona Convention Protocol. See UNEP, Why Does Working with Regional Seas Matter? (*UNEnvironment.Org*) <<https://www.unenvironment.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/why-does-working-regional-seas-matter>> accessed 26 December 2019.

⁸³⁵ It is within this logic that the Norwegian NORSOK standards have been developed. See StandardNo, Petroleum (*Standard.no*) <<http://www.standard.no/en/sectors/energi-og-klima/petroleum/>> accessed 26 December 2019

⁸³⁶ The IOGP Regulators Report found that while 1,348 references to standards were made, 1,140 of them were to different, individual standard titles. And out of these 1,140 different standards, 87% were referenced by one regulator only (see para 1.1 of the Report).

⁸³⁷ Even though BP publicly acknowledged its adoption of “external standards” such as those developed by ISO, it also applies “internal practices” in their operations. BP, note 833.

⁸³⁸ The IOGP Industry Report revealed, at 12, that the eighteen companies examined used more than 5,000 different titles of specifications from 132 SDOs. It is submitted that in order for international BPR to constitute “standard practices” (as put by Wawryk), oil companies must at least commonly, consistently, publically and effectively undertake to abide by them, and that such undertaking be in relation to the same specific sets of international BPR.

character,⁸³⁹ and no specific reference is made to standards developed by any particular international standardization body, leaving States and consequently oil companies operating under their jurisdiction ample discretion in requiring the adoption of particular international BPR.⁸⁴⁰ Thus, the *status quo* of international BPR does not dictate the permitted nor prohibited behaviors of oil companies in their offshore operations, which entails that it lacks the “normative force” vital for their transformation into binding norms.⁸⁴¹ Finally, it must be noted that irrespective of the potential normative value of international BPR, the ineffectiveness or absence of an independent authority/entity in charge of the oversight and monitoring of compliance by oil companies with standards and guidelines referred to in regulations or equally binding standards would considerably reduce the effectiveness of such standards, and consequently to a large extent neutralize their entire purpose. As established already, this is generally the case in “closed-market” systems where the question of abiding by practices/standards is effectively left to the discretion of the NOC itself.

In conclusion, the discussions in this Chapter revealed that it is erroneous to speak of any global uniformity with regard to the regulation by States of HSEP from offshore oil and gas activities within their jurisdictions. That is the case even within the performance-based approach to such regulation, as the structure employed to overview it and the safety culture inherent in States relying thereon are divergent. Moreover, despite industry efforts to develop BPR, they fall short from presenting an alternative solution due to their non-binding character. Therefore, it is far from plausible that there exists State practice in a particular direction, entailing that risks of damages from offshore incidents presenting a transboundary character would be dealt with similarly across the globe, and

⁸³⁹ For example, Art. II of the Protocol Concerning Marine Pollution Resulting from Exploration and Exploitation of the Continental Shelf to the Kuwait Convention for Cooperation on the Protection of the Marine Environment from Pollution similarly provides that Parties must “take into account” the “best available and *economically feasible* technology” (emphasis added).

⁸⁴⁰ See text above on the reference to BPR in regional and international conventions and accompanying footnotes.

⁸⁴¹ On norms and normative effects see Pieter van Dijk, ‘Normative Force and Effectiveness of International Norms’ [1987] 30:9 German Y.B Int’l L., 9, 12-13.

consequently supporting the argument that the content of the no-harm obligation incumbent upon States is already defined.

Thus, it appears that substantial efforts still need to be undertaken at a global level before we can speak of any form of rapprochement in the regulation of HSEP matters for offshore oil and gas activities.⁸⁴² In light of the foregoing, such regulation remains governed by the exercise of States of their sovereignty over their natural resources, using the terms of Art. 193 of UNCLOS, “pursuant to their environmental policies”. Consequently, the same oil and gas companies may operate under wide-ranging national frameworks across the globe. Nevertheless, should such companies operate in States where social responsibility is a legal/moral requirement, it would be very difficult for them to justify significantly different practices on installations simply on the grounds of different national HSE standards. Thus, an alternative approach to reinforcing certainty/predictability in the manner in which States are expected to influence operators’ management of the risks of transboundary environmental harm from offshore activities under their jurisdictions is needed. Hence the paramount value of exploring the reach of ITLOS’s integration of the precautionary principle within the duty of States to act with due diligence in satisfying their reciprocal environmental protection obligations.

⁸⁴² This is in line with IMO’s stance in its response to the Indonesian Proposal discussed in Chapter VIII-3.B.

VI- The precautionary principle and its relevance to the prevention of transboundary harm from offshore incidents

The foregoing discussions led to the following conclusions: 1) the applicable standard in relation to the obligation of States to prevent transboundary pollution from offshore activities is based on fault and expressed in terms of “due diligence” (an ambiguous concept); and 2) the current *status quo* of safety regulation and liability regimes is marked with shortcomings and with a lack of harmonization of standards across the globe, thus fuelling the pre-existing unpredictability of the behaviour expected from States in ensuring that offshore activities within their jurisdictions do not cause transboundary damage. The subject of the remaining Chapters of this thesis is to analyse the role which the precautionary principle could play, as an integral part of the general obligation of due diligence, in defining the “appropriate measures” which could be expected of States in preventing transboundary pollution from offshore activities, and to lay the foundation for an argument according to which one effective such measure is the elaboration and adoption of one or more liability regime(s) dealing with such pollution. In other words, the aim is to argue that the principle could define the obligations upon States to ensure that offshore activities within their jurisdiction do not cause transboundary harm, thus affording clarity to the establishment of fault on their behalf should they fail to comply with them. In turn, this definition would hopefully generate international motivation to endeavour to find a harmonized approach to dealing with the risks of offshore activities, or at least encourage States with offshore oil and gas upstream presence to follow the policy practices in place in the developed States which have learned from previous catastrophes.

The argument is that while the *known* risks of offshore activities could adequately be regulated through risk regulation techniques usually provided for in the regulatory regimes for HSEP in the States under the jurisdiction of which they are being undertaken, and in BPRs, the uncertainty surrounding the scope of the

negative consequences of offshore incidents, particularly surrounding whether these will present a transboundary character, entertain the application of the precautionary principle. It follows that, and taking into account the role which the said principle plays at the risk assessment stage, higher levels of care are required to prevent this particular type of damage. Having regard to the effectiveness of liability regimes in incentivizing optimal levels of care (under certain conditions – which will be discussed in the Chapter VIII-3) and of the trend to rely thereon in the management of the risks of offshore incidents (as discussed in Chapter III), it is then argued that they constitute an “appropriate measure” which States are expected to adopt to prevent transboundary pollution from offshore activities as dictated by the integration of the precautionary principle within the general obligation of due diligence.

Within this context, this Chapter aims to argue *why* and under which conditions does the precautionary principle find its application within the above-described argument. It will first seek to show how, despite significant ambiguity surrounding the principle, its conceptual core operates within a principled system of rules of international environmental law (1). The subsequent discussions will revolve around the “pillars” upon which the principle rests and will look at questions surrounding: the uncertainties that are relevant for its invocation (2), and the threshold the crossing of which triggers its application within the context of this study (3).

1. The precautionary principle operating within a principled system of rules

The precautionary principle revolves around the manner in which science, technology and economy are regulated by governments in the face of uncertainty/limited predictability surrounding the environmental risks posed by potentially deleterious activities/projects. Naturally, the principle calls for *ex ante* action pertaining to the regulation of the activities in question. In this regard, it fundamentally rejects the assumptions that the “assimilative capacity” of the environment could be determined fast enough to allow for sufficient time for the

implementation of adequate and cost-effective *ex post* reductive measures⁸⁴³ and acknowledges that, otherwise, the risk of deleterious consequences will be much higher and potentially irreversible.⁸⁴⁴ Consequently, when examined within an international context, it is traditionally contrasted with the compensatory/post-delictual approach whereby States would compensate for damage after it has occurred.⁸⁴⁵ Nevertheless, the question of whether it dictates certain behaviour(s) from States in their regulation of activities presenting risks of a transboundary character is debatable; the following chapters aim to provide a comprehensive answer to this question.

Academic discussions surrounding the principle generally express its repercussions both on the roles of proponents of risk-creating activities and those of governments/regulators. In this regard, it has been acknowledged as “an approach to risk regulation that shifts the burden of proof on safety”.⁸⁴⁶ In practical terms, this reversal would mean that, prior to their approval, proponents of risk-creating activities would have to satisfy environmental regulators and decision-makers that the uncertainties attached to the activities/projects they plan to undertake will not cause the crossing of given environmental standards/thresholds. Simultaneously, it entails that environmental regulators

⁸⁴³ The idea that the precautionary principle may be explained on economic grounds was introduced in the Preamble to the 1984 Ministerial Declaration of the International Conference on the Protection of the North Sea providing that States are conscious that “damage to the marine environment can be irreversible or remediable only at *considerable expense* and over long periods and that, therefore, coastal states and the EEC must not wait for proof of harmful effects before taking action” (emphasis added); this idea was subsequently referred to in other instruments, see for example the wording of Principle 15 of the Rio Declaration 1992.

⁸⁴⁴ Ellen Hey, ‘The Precautionary Concept in Environmental Policy and Law: Institutionalizing Caution’ [1992] 4 *Georg. Int’l Envtl L.R.*, 303.

⁸⁴⁵ James Hickey and Vern Walker, ‘Refining the Precautionary Principle in International Environmental Law’ [1995] 14 *Virg. Envt’l L.J.* 423, 429. See also James Hickey, ‘Custom and Land-Based Pollution of the High Seas’ [1978] 15:32 *San Diego L. Rev.* 409, 422; see also for example *Corfu Channel* where the ICJ ordered Albania to pay monetary compensation to the UK.

⁸⁴⁶ Noah Sachs, ‘Rescuing the Strong Precautionary Principle from Its Critics’ [2011] 4 *Un.Ill.L.R.* 1285; James Cameron and Juli Abouchar, ‘The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment’ [1991] 14:1 *Boston .Coll. Int’l & Comp. L. Rev.* 112.

are faced with the “dilemma” of taking measures to prevent damage to the environment in light of scientific uncertainty.⁸⁴⁷

It seems reasonable to make several preliminary observations which are essential for fortifying the grounds upon which any argument based on the precautionary principle (in any context) would be made. In this regard, one must note that academic literature has often referred to the principle as ambiguous and ill-defined, thus raising concerns surrounding its legal status and its significance.⁸⁴⁸ This is evident when one attempts to define the principle. In fact, back in 2006, it has been expressed that “no universally accepted canonical formulation of the precautionary principle” exists.⁸⁴⁹ Moreover, different versions of the principle have been developed by academics: traditionally, and looking at the principle’s normative value and its potential to dictate certain behaviours, a distinction is made between a *weak* and a *strong* version of the principle;⁸⁵⁰ others have

⁸⁴⁷ Daniel Bodansky, ‘Scientific Uncertainty and the Precautionary Principle’ [1991] 33:4 *Environment*, 4-5, 43-44; Santillo, Johnston and Stringer, ‘The precautionary principle in practice: a mandate for anticipatory preventive action’ in Carolyn Raffensperger and Joel Tickner (eds) *Protecting Public Health & the Environment: Implementing the Precautionary Principle* (Island Press 1999) 37.

⁸⁴⁸ See for example, Hickey and Walker, note 845, 425, noting in relation to the principle that “uncertainty exists on several interrelated topics: the legal and practical significance of the principle; the obligations assumed by states; the application of the principle to affected businesses; the relation of the obligation to scientific data; and the future shape and content of such a principle.” See also Sachs, note 846, 1296, admitting that a number of key issues pertaining to the principle remain unclear, namely: “the degree of threat that will trigger burden shifting” and “the precise precautionary measures that should be taken”. This has led some authors to strongly criticise the significance which the principle has in mandating any form of action, and in arguing that even when it does, it is marked with arbitrariness and discretion. See generally Cass Sunstein, *Laws of Fear* (Cambridge University Press 2005); Gary Marchant and Kenneth Mossman, *Arbitrary and Capricious: The Precautionary Principle in the European Union Courts* (AEI Press 2004); Per Sandin et al., ‘Five Charges Against the Precautionary Principle’ [2002] 5:4 *Journal of Risk and Research* 288; and Bodansky, *ibid*.

⁸⁴⁹ Per Sandin, ‘A Paradox Out of Context: Harris and Holm on the Precautionary Principle’ [2006] 15 *Cambridge Quar. H.E* 175. Sandin’s earlier work in 1999 where he identified no less than 19 different versions of the principle is frequently referred to by academics in support of this point, see Per Sandin, ‘Dimensions of the Precautionary Principle’ [1999] 5 *Human and Ecological Risk Assessment* 889. See for example Joakim Zander, note 484, 26.

⁸⁵⁰ Sachs, note 846, defined the “strong precautionary principle” as one where precautionary regulation is *mandatory* as a “default response” to “serious risks” where scientific uncertainty exists, whereas he sees that the “weak precautionary principle” merely *permits* decision makers to regulate risks in the face of scientific uncertainty.

distinguished between the *argumentative* and a *prescriptive* versions thereof.⁸⁵¹ Without dwelling in discussions surrounding the ambiguity attached to the principle, it is submitted that reliance on the definition by academics of its “pillars”, namely: 1) the core/essence of the principle (including a prerequisite element of uncertainty);⁸⁵² 2) the threshold for its invocation;⁸⁵³ and 3) the precautionary measures mandated thereby,⁸⁵⁴ is both sufficient and vital for laying down the foundations upon which an argument based on the reliance on the principle could be made to develop the law as argued in this section (even

⁸⁵¹ Sandin, note 849, 177 argued that there are “at least” two versions of the precautionary principle: the *argumentative* versions “are not action prescribing, but principles for what reasons or arguments are valid”, adding that “[t]hey say little more than that arguments from ignorance should not be used”, whereas the *prescriptive* versions “say that, under certain conditions, precautionary measures are prescribed”, and therefore “prescribe actions”. This led Zander to assert that the *argumentative* versions are reminiscing of the *weak* versions of the precautionary principle, whereas the *prescriptive* versions could be linked with the *strong* versions of the principle.

⁸⁵² James Cameron and Juli Abouchar, ‘The Status of the Precautionary Principle in International Law’ in David Freestone and Ellen Hey (eds) *The Precautionary Principle and International Law* (Kluwer Law International 1996) 45; Romeo Quijano, ‘Elements of the Precautionary Principle’ in Joel Tickner (ed) *Environmental Science and Preventive Public Policy* (Island Press 2003) 21; David Freestone and Ellen Hey, ‘Origins and Development of the Precautionary Principle’ in David Freestone and Ellen Hey *The Precautionary Principle and International Law* (Kluwer Law International 1996) 12, 258; James Cameron, ‘The Precautionary Principle in International Law’ in Tim O’Riordan, James Cameron and Andrew Jordan (eds) *Reinterpreting the Precautionary Principle* (Cameron May 2010) 116-132, referring to the “conceptual core of the precautionary principle” and listing three “common elements” to all instruments implementing precaution, namely: “(1) regulatory inaction threatens a non-negligible harm; (2) there exists a lack of certainty as to the cause and effect relationships; and (3) under such circumstances, regulatory inaction is unjustified”.

⁸⁵³ Ibid (Freestone and Hey), 258-259; Von Schomberg, note 486, 36-37, arguing that the risk threshold which must be reached for the precautionary principle to apply corresponds to the “level of protection” sovereignly chosen by States; André Nollkaemper, “What you risk reveals what you value”, and Other Dilemmas Encountered in the Legal Assaults of Risks’ in David Freestone and Ellen Hey (eds) *The Precautionary Principle and International Law* (Kluwer Law International 1996) 81.

⁸⁵⁴ See generally David Freestone and Ellen Hey, ‘Implementing the Precautionary Principle: Challenges and Opportunities’ in David Freestone and Ellen Hey (eds) *The Precautionary Principle and International Law* (Kluwer Law International 1996) 249; See also Adrian Deville and Ronnie Harding, *Applying the Precautionary Principle* (The Federation Press 1997) 37-40; See also Interdepartmental Liaison Group on Risk Assessment, ‘The Precautionary Principle: Policy and Application’ (2002) <<http://www.hse.gov.uk/aboutus/meetings/committees/ilgra/pppa.pdf>> accessed 15 May 2018 [‘ILGRA Paper’]; Hey, note 844, 307.

though the principle is admittedly arguably incomplete to be readily given authoritative value in every given situation). In addition, it seems sensible to note that the ITLOS has adopted in its analysis one specific definition of the principle, namely that contained in Principle 15 of the Rio Declaration. The latter's analysis will be discussed in detail below.

More specifically, it is essential to discuss, albeit briefly, how criticism traditionally advanced against the normative value of the principle could be overcome. In this regard, it has been advanced that the *strong* versions are inconsiderate of the reality that "risks are multiple" and that trade-offs between such risks are potentially fuelled by the measures which the precautionary principle mandates.⁸⁵⁵ Moreover, and somewhat consequently, it has been argued that this leads to the principle prohibiting the very actions it prescribes, thus leading to regulatory paralysis.⁸⁵⁶ More generally, the ambiguity surrounding the principle has been strongly relied upon by academics to argue that it permits too much discretion in its application and therefore leads to arbitrariness. Accordingly it provides no uniform outcomes and thus cannot be seen as providing guidance for action.⁸⁵⁷ Answering such criticism, it must be noted that numerous academics are in favour of a moderate application of the principle, one which leads to positive outcomes and present decision-makers with an important tool for risk-regulation;⁸⁵⁸ while others attempted at refining and reinterpreting

⁸⁵⁵ Thus, precautionary measures mandated by the precautionary principle create new risks. See generally Jonathan Wiener, 'Precaution in a Multirisk World' in Dennis Paustenbach (ed) *Human and Ecological Risk Assessment: Theory and Practice* (John Wiley 2002) 32.4.

⁸⁵⁶ See in general Cass Sunstein, 'The Paralyzing Principle' [2002] 25 Regulation 32; see also Sunstein, note 848, 14, arguing that "the Precautionary Principle in its strongest forms is [...] incoherent; it purports to give guidance, but it fails to do, because it condemns the very steps that it requires. The regulation that the principle requires always gives rise to risks of its own – and hence the principle bans what it simultaneously mandates'.

⁸⁵⁷ See generally Gary Merchant, 'From General Policy to Legal Rule: Aspirations and Limitations of the Precautionary Principle' [2003] 111:14 Env. Health Perspectives 1799; see also Merchant and Mossman, note 848.

⁸⁵⁸ See generally, Gregory Mandel and James Gathii, 'Cost-benefit analysis versus the precautionary principle: beyond cass sunstein's *Laws of Fear*' [2006] Un. Ill. L. Rev. 1037; Luciano Butti, *The Precautionary Principle in Environmental Law: neither arbitrary nor capricious if interpreted with equilibrium* (Giuffrè editore 2007); Sachs, note 846, 690; Paul Stein, 'A Cautious Application of the Precautionary Principle' [2000] 2 Env. L. Rev. 1; Marko Ahtensuu, 'Defending

it.⁸⁵⁹ This academic discussion revolves around the significance and value of the principle, but it has strong repercussions on its status as a norm of international law. In that sense, the debate is also fierce surrounding whether or not it constitutes an international-obligations-creating principle of customary international law.⁸⁶⁰ The argument made takes these heated debates in the literature into account, but adopts a somewhat different direction. In this regard, it must be noted that the common denominators of the multiple formulations of the precautionary principle identified by academics⁸⁶¹ reflect the *weak/argumentative* versions thereof. Importantly, Principle 15 of the Rio Declaration is unanimously regarded as a formulation of the *weak* precautionary principle. It provides: “In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are *threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures* to prevent environmental degradation” (emphasis added).⁸⁶² Arguably, on the one hand this version’s triple negative formulation of the principle presents the disadvantage of failing to effectively prescribe action; however, on the other hand, it escapes the criticisms of even the strongest opposers to the principle.⁸⁶³ Moreover, it is

the Precautionary Principle against Three Criticisms’ [2007] 11 *Trames J. Hum. Soc. Sc.* 366; John Appelgate, ‘The Taming of the Precautionary Principle’ [2002] 27 *Wm. & Mary Env’t L & Pol’y Rev.* 13.

⁸⁵⁹ See generally, Tim O’Riordan, James Cameron and Andrew Jordan, *Reinterpreting the Precautionary Principle* (Cameron May 2001); Deville and Harding, note 854; Hickey and Walker, note 845.

⁸⁶⁰ See generally, Owen McIntyre and Thomas Mosedale, ‘The Precautionary Principle as a Norm of Customary International Law’ [1997] 9 *J. Env’t L.* 221; Zander, note 484, 72-73; Cameron, note 852, 121 ff; Bénédicte Sage-Fuller, *The Precautionary Principle in Marine Environmental Law With Special Reference to High Risk Vessels* (Routledge 2013), 102 ff; Trouwborst, note 484.

⁸⁶¹ See notes 852-854 and accompanying text.

⁸⁶² The wording in italics reflect the core/essential elements of the precautionary principle which are regarded as the common denominator of any version thereof, namely: (1) the existence of a threat of a serious damage; (2) the lack of scientific certainty; (3) unjustification of inaction in such situations.

⁸⁶³ See Sunstein, note 848, 18, commenting on the distinction between the *weak* and *strong* precautionary principle, and noting that “at one extreme are weak versions *to which no reasonable person could object*” (emphasis added); See also Zander, note 484, 72, noting that “[i]n general, relatively widespread international agreement seems to exist on the importance of

submitted that this agreed-upon version of the precautionary principle has an important role to play in its interactions with other well-established rules of environmental law (namely, the obligation of States *to take* “appropriate measures” to prevent transboundary pollution from offshore activities, which reflects a prescriptive rather than an argumentative language), and as such, at least indirectly contributes in prescribing action through shaping the obligations mandated by such rules. This approach received support in the existing literature on the precautionary principle. In this regard, Nollkaemper wrote that “[t]he fact that treaties have formulated the imperative of precaution in terms of a principle certainly supports risk-aversion policies. It directs the development of *more specific obligations*. Ideally, international environmental law should be a *principled system of rules, with specific obligations being based on and consistent with underlying principles*” (emphasis added); and further added that “[t]he fact that the precautionary principle is a principle also means that it does not set forth absolute obligations. Principles serve as guidelines, rather than imposing concrete obligations. [...] Where appropriate, *other principles and legal considerations can be taken into account and result in an outcome other than which could be achieved by the isolated application of the precautionary principle*” (emphasis added).⁸⁶⁴ Moreover, and reflecting on its status as a norm of international law, Boyle noted that the precautionary principle constitutes a norm of *soft* law, but argued that “it is neither necessary nor useful to attempt to turn the precautionary principle into a ‘rule’ of customary international law, or to enshrine it in a binding treaty” as it could readily be relied upon in the interpretation of obligations under existing international law, notably those under UNCLOS.⁸⁶⁵ Furthermore, Trouwborst distinguished between the status of the principle taken as a “contractual obligation” which is “binding for States parties to agreements containing it” and the principle as a “general principle of

acting in a precautionary fashion when dealing with the environment. Thus, a broad definition of the precautionary principle, without direct legal effects, seems to enjoy wider consensus”.

⁸⁶⁴ Nollkaemper, note 853, 80-81.

⁸⁶⁵ Alan Boyle, ‘Further Development of the Law of the Sea Convention: Mechanisms for Change’ [2005] 54 Int’l & Comp. L. Q. 563, 573-574.

environmental protection at the international level” which entails that “its possible applicability to all members of the international community, across the whole range of human activities these carry out or supervise, and in respect of the protection of all aspects of the environment”, and further significantly adding that “characterization of a principle or rule as such is regardless of its status in strictly legal terms”.⁸⁶⁶ Additionally, there is considerable academic literature focused on the interaction between the precautionary principle and other sources of international law (these will be discussed below), thus emphasising its role within “a principled system of rules”.

This being said, it must be noted that this thesis does not aim to examine the general features of the precautionary principle nor the evolution of its status as a norm of international law. Rather, in the elaboration of the argument made under this section, reliance would be placed on the case-law attributing the principle a role in defining the obligation of States to prevent transboundary pollution (and sometimes going as far as recognising it as part of customary international law),⁸⁶⁷ and on the literature commenting/analysing the repercussions of such case-law. Thus, the focus is on the potential *application* of the precautionary principle within the particular context of the obligation of States to prevent transboundary pollution from offshore activities, rather than on the examination of the correctness and the analysis of the case-law invoking that such application is possible. Consequently, it is essential to preliminarily examine the appropriateness of its invocation within the context of this study.

2. Which uncertainties are relevant for the invocation of the precautionary principle?

Traditionally, the invocation of the precautionary principle presupposes the existence of two interconnected elements, namely: the existence and

⁸⁶⁶ Trouwborst, note 484, 34.

⁸⁶⁷ ITLOS Advisory Opinion [135], noting that “The Chamber observes that the precautionary approach has been incorporated into a growing number of international treaties and other instruments, many of which reflect the formulation of Principle 15 of the Rio Declaration. In the view of the Chamber, this has initiated a trend towards making this approach part of customary international law”.

identification of potentially adverse harm of a certain significance/magnitude; and scientific uncertainty surrounding the description of the risk in question.⁸⁶⁸ Clearly, the combined evaluation of both elements is directly relevant to the question of the environmental threshold/standard which the purported invocation of the principle would aim to preserve. This sub-section would however focus on the element of uncertainty which is at the core of the precautionary principle's novelty and traditionally distinguishes it from the preventive principle.

A general definition of the notion of risk must foremost be made. In that regard, risk presented by a given activity is consistently expressed as the significance/magnitude of the potential harm it could cause multiplied by the probability/likelihood of the materialisation of such harm. In that sense, and in its most simplistic formulation, risk is perceived as an expression of the probability of a given activity/project to cause unacceptable negative consequences. This definition also helps explain the distinction between acceptable and non-acceptable risks, the latter of which normally triggering regulatory intervention (see discussion in the following sub-section).

Importantly, it is also understood that, as a minimum, uncertainty justifying precautionary action comes into play in the presence of unknown probabilities,⁸⁶⁹ while complexities such as the multidimensionality and incommensurability of the risk usually influence the element of magnitude.⁸⁷⁰ However, it is also

⁸⁶⁸ Commission, 'Communication from the Commission on the precautionary principle' COM (2000) 1 final, 14. ['EU Communication']; and ILGRA paper.

⁸⁶⁹ David Gee, 'More or less precaution' in European Environmental Agency (ed), *Late lessons from early warnings: science, precaution, innovation* (Luxembourg: Publications Office of the European Union, 2013) 656, where he noted that experience has shown that where impacts were 'likely' but probabilities of their occurrence were 'unknown', the situation is qualified as one of 'uncertainty', and thus precautionary action had been taken.

⁸⁷⁰ Andy Stirling, 'The precautionary principle in science and technology' in O'Riordan, Cameron and Jordan (eds) *Reinterpreting the Precautionary Principle* (Cameron May 2001) 61, 77-78; see also Von Schomberg, note 486, 40, arguing that a risk is unquantifiable and unknown where its *known effects* (magnitude/seriousness is known) are combined with "*unknown or uncertain cause-effect relations, therefore unknown probabilities*" (emphasis added). Von Schomberg considered that in such scenario the invocation of the precautionary principle is justified.

established that uncertainty could equally attach to the potential or scope of the effects of the activity in question, notably in the case of epistemic uncertainty surrounding the risk under examination.⁸⁷¹ Indeed, the “seriousness of potential hazards” is regarded as a relevant element for criteria justifying precautionary action, and applies by analogy to complement the establishment of causality where complex systems risk being impaired.⁸⁷² Moreover, risks are considered to be *known/certain* where through an objective scientific assessment of the risk, the causal relation between the activity/project in question and the potential harm it presents is *clearly established* (not hampered by uncertainties), whereas *unknown/uncertain risks* are those for which science cannot afford a precise description of such relation (due to uncertainties), calling for the risk to be perceived as opposed to being objectively assessed.⁸⁷³

It must be recalled that the risk being examined is that of offshore incidents causing transboundary damage in neighbouring States (scope), which, based on past experiences is a *known* potential effect. However, the probability for its occurrence is not straightforwardly so due to lack of certainty surrounding the cause-effect relations tying many factors to the perceived threat. Consequently, the risk being examined becomes *unknown*. In other words, such uncertainty could have a vital influence on the overall *perception of the risk* (as the risk cannot be validly calculated), and that is irrespective of the degree of the likelihood that the activities in question would cause transboundary harm. This interpretation is reinforced having regard to the ILC’s commentary on “risk of causing significant transboundary harm” where it provided that such risk encompasses “a low probability of causing disastrous transboundary harm or a high probability of causing significant transboundary harm”.⁸⁷⁴ The precautionary principle’s application would anticipate that given uncertainties may well push the risk of

⁸⁷¹ Ibid, 41.

⁸⁷² Gee, note 869, 653.

⁸⁷³ Zander, note 484, 11-15.

⁸⁷⁴ ILC Articles on Prevention, Commentary (1); the qualification of the harm as “disastrous” or “significant” relates to the question of the threshold the crossing of which makes the risk unacceptable, thus calling for regulatory intervention. This will be discussed in the following subsection.

transboundary harm which offshore incidents create into the realm of non-acceptability, and would consequently mandate risk regulation.

Traditionally, academic commentary on the delimitation of the preventive and precautionary principles indicated that *known/certain risks* call for the application of the former, whereas *unknown/uncertain risks* trigger the application of the latter.⁸⁷⁵ Within the context of this study, and in international environmental law in general, both principles are of course relevant for the determination of the measures which States might be expected to adopt to comply with their no-harm-derived duty of due diligence. That being said, acknowledging that uncertainty is inherent to all risks, questions arose as to the type of uncertainties which are relevant for the invocation of the precautionary principle and as to the criteria which may identify them. In this regard, some authors based their analysis upon the applicability of the precautionary principle to the varying “degrees of uncertainty”, while others took a fundamentally different approach by arguing that the precautionary principle has to a great extent absorbed the preventive principle. Importantly, both views recognise a wide scope of application for the former, and favour its application to almost all risks. In doing so, most preventive measures would at least in part be regarded as also precautionary in nature as they are almost always taken in the face of scientific uncertainty. Amongst those adopting the first approach, Zander analysed the applicability of the precautionary principle to degrees of uncertainty established by van Asselt,⁸⁷⁶ and found that the preventive principle only applies to uncertainty expressed in terms of inexactness.⁸⁷⁷ Inexactness is seen as the degree of uncertainty which is closest to certainty, and it represents the possible inaccuracies in measurements and data. Beyond this degree of uncertainty and so far as the situation is not one of ignorance,⁸⁷⁸ Zander found that the precautionary

⁸⁷⁵ See for example Cameron and Abouchar, note 852, 45.

⁸⁷⁶ Marjolein van Asselt, *Perspectives on Uncertainty and Risk : the PRIMA Approach to Decision Support* (Klower, 2000).

⁸⁷⁷ Zander, note 484, 16-17.

⁸⁷⁸ On the distinction between ignorance and uncertainty see Gee, note 869, 654.

principle applies.⁸⁷⁹ Those degrees are uncertainties due to lack of information and uncertainties as a result of conflicting evidence.⁸⁸⁰ Moreover, some authors also argued that uncertainty exists even outside of the assessment of “objective scientific knowledge” and that it could largely be construed having regards to social and political considerations which direct the perception adopted in relation to given information.⁸⁸¹ In fact, Zander’s starting point was his reliance on Lemons, Schrader-Frechette and Cranor’s conclusion that scientific certainty exists where “something can be considered to be 95 per cent certain”.⁸⁸² This led him to conclude that the precautionary principle “can be considered to apply in the spectrum between 0 and 95 per cent certainty”,⁸⁸³ which excludes situations of inexactness (more than 95 per cent certainty) and those of ignorance (0 per cent certainty). This method supports Trouwborst’s argument whereby, analysing the theoretical base of the principles and the references thereto in international instruments, he advanced that the precautionary principle is, in international environmental law, at least the “most developed form” of the preventive principle.⁸⁸⁴ He further contended that the distinction between the two principles rests upon the *degree* of uncertainty surrounding the probability of the risk in question, which would also determine the precautionary *extent* of the measure to be adopted.⁸⁸⁵ Thus, recalling the views of academics before him, he noted that “the precautionary principle teaches preventive action in the face of uncertainty, does not sever it from the main, preventive trunk”.⁸⁸⁶ This trend toward the absorption of preventive action by a wider precautionary approach is also

⁸⁷⁹ Zander, note 484, 16-17.

⁸⁸⁰ Ibid.

⁸⁸¹ See Warwick Gullett, ‘Environmental Impact Assessment and the Precautionary Principle: Legislating Caution in Environmental Protection’ [1998] 5 Aust. J. Env. Manag. 146, 149, referring to Smithson, Wynne, and Dovers and Gullett.

⁸⁸² Zander, note 484, 15.

⁸⁸³ Ibid.

⁸⁸⁴ Arie Trouwborst, *Evolution and Status of the Precautionary Principle in International Law* (Kluwer Law International 2002); Arie Trouwborst, ‘Prevention, precaution, logic and law: the relationship between the precautionary principle and the preventive principle in international law and associated questions’ [2009] 2:2 Erasmus Law Review 105.

⁸⁸⁵ Ibid, 36 ff; Ibid, 118.

⁸⁸⁶ Ibid.

traceable when one analyses the developments pertaining to the EIA process in respect of activities/projects likely to cause significant transboundary damage. This thesis argues that this constitutes a modality by which the precautionary principle delimits the obligation of due diligence expected from States in respect of offshore activities conducted within their jurisdiction; it will be looked at in detail in Chapter VIII.

Which criteria could help identify the uncertainties relevant for the invocation of the principle? As explained above, the risk which this thesis focuses on is uncertain as the predictability of the extent of the damage which could be caused by offshore incidents (which could be key to the determination/anticipation of its significant and transboundary characters) is marked with lacks of knowledge. In other words, the calculation of the probability of significant and transboundary harmful consequences potentially being caused cannot be accurately made based on an objective assessment of the risk and thus falls beyond the category of inexactness. Accordingly, and taking the discussions above into account, the more we move towards an area where this predictability becomes difficult to achieve, the more the precautionary principle would be called into action.⁸⁸⁷ This, in turn, is tied to the question of the evaluation of the level of uncertainty present which the precautionary principle presupposes. In fact, when examined more closely, the condition of the existence of scientific uncertainty contains two sub-conditions, namely: (1) the evaluation of the scientific data available, *which enables* (2) the evaluation of the extent of scientific uncertainty. In this regard, the EU Communication provided that recourse to the principle presupposes “a scientific evaluation of the risk which *because of* the insufficiency of the data, their inconclusive or imprecise nature, makes it impossible to determine with sufficient

⁸⁸⁷ An example could be drawn when one compares the risk which this thesis tackles with the risks of fire and explosion in offshore facilities. Although the latter also accommodate uncertainties, their direct effects are arguably much closer to the spectrum of known risks (assuming that their indirect effects might include the causing of major spilling leading to transboundary pollution). This is so considering that the particular matter of the causing of transboundary pollution from offshore incidents involves the additional factors of oceanographic dynamics and other scientific considerations which are beyond the scope of this study.

certainty the risk in question” (emphasis added).⁸⁸⁸ The UK’s Interdepartmental Liaison Group on Risk Assessment⁸⁸⁹ also provided that the principle should be invoked when “a scientific evaluation of the consequences and likelihoods *reveals* such uncertainty that it is impossible to assess the risk with sufficient confidence to inform decision-making” (emphasis added).⁸⁹⁰ Moreover, European case-law further supports this mechanism as the European Court of Justice [‘ECJ’] advanced that “a correct application of the precautionary principle presupposes, [...], a comprehensive assessment of the risk [...] based on the most reliable scientific data [...]. Where it proves to be impossible to determine with certainty the existence or extent of the alleged risk *because of* the insufficiency, inconclusiveness or imprecision of the results of the studies conducted, the precautionary principle justifies the adoption of restrictive measures, provided they are non-discriminatory and objective” (emphasis added).⁸⁹¹ Therefore, it is submitted that 1) the application of the precautionary principle presupposes the existence of plausible evidence of a causal link between the activity in question and the harm protected against, and 2) the applicable test is one relating to the extent to which the underlying examined scientific data could mislead or hamper the assessment/determination of the risk in question. This embraces Zander’s analysis above pertaining to the inexactness of risks, as it entails that not every inaccuracy in the determination of the risk qualifies as an uncertainty calling for the invocation of the precautionary principle. In fact, and as argued by von Schomberg, the focus should normally be on the “*quality* of the available information”, which he advanced involves an assessment of the type of information which is known or which should be known combined with an assessment of the *necessity* to know this information to make a sound objective judgement.⁸⁹² For example, arguably, the lack of impeccability of measurements/calculations which the category of inexactness accommodates

⁸⁸⁸ EU Communication, 14.

⁸⁸⁹ See note 854.

⁸⁹⁰ Ibid, 6.

⁸⁹¹ ECJ, Case C-333/08 *Commission v France* [2010] ECR I-757 [92]-[93].

⁸⁹² Von Schomberg, note 486, 42.

cannot be seen as a vital information for decision-making, and thus the information available must be regarded as being of sufficient quality; the invocation of the precautionary principle is not justified. Nevertheless, such evaluation depends on the particular risks of the activity/project planned to be undertaken and requires an expertise in the relevant cause-effect relationships in the particular field under which the activity falls. From the offshore petroleum industry's perspective, Aven and Vinnem noted that factors like "the possible occurrence of a blowout, the amount and distribution of the oil spilled on the sea surface, the mechanisms of dispersion and degradation of oil components" might lead to a "lack of understanding" surrounding the consequences of offshore incidents, noting that in such scenarios the precautionary principle proves to be a "useful concept".⁸⁹³

In light of the foregoing, the relevant uncertainties are those which, following an objective scientific evaluation of the available evidence, reveal gaps in knowledge necessary for an adequate understanding of the potential consequences of the risk at hand. For the purposes of this study, it is assumed that the information surrounding the various components of the risk of offshore incidents having significant transboundary impacts is not always readily *available* and/or of *sufficient quality* for an accurate description/understanding of the overall risk to be reached. This situation thus calls for the application of the precautionary principle to guide decision-makers in the face of such uncertainty. Moreover, importantly, the strength of evidence required to justify precautionary action depends upon a number of factors, most notably the applicable objectives of public policy.⁸⁹⁴ The later point revolves around the environmental threshold which such objectives aim to preserve and/or protect against.

⁸⁹³ Ibid, 36-37.

⁸⁹⁴ Gee, note 869, 656.

3. Which threshold should be crossed for the precautionary principle to be invoked to guide the regulation of risks of transboundary harm from offshore incidents?

It would be entirely incorrect to suppose that the precautionary principle could readily be invoked as soon as uncertainty surrounding the risk sought to be regulated is established in the manner discussed above. In reality, the identified uncertainties must also make the question of whether the proposed activity/project presents the risk of breaching environmental standards/thresholds ambiguous/unclear.⁸⁹⁵ Only where that is the case does the precautionary principle mandate that decision-makers err on the side of caution in their regulation of the uncertain risk in question.⁸⁹⁶ But what is a threshold? In the words of Glasson, “*thresholds* refer to discrete points that must be exceeded to begin producing a given effect or result to elicit a response”.⁸⁹⁷ The ultimate “response” we are concerned with here is the adoption of precautionary measures in the regulation by States of the risks of transboundary harm presented by offshore activities within their jurisdiction. But the question remains: within this context, which threshold should be crossed for the invocation of the precautionary principle in the first place?

The developments under this section embrace the approach adopted by von Schomberg when examining the matter. In his opinion, fundamentally, environmental thresholds set by States correspond to their sovereign/political choice of their own levels of protection.⁸⁹⁸ This is in line with Aven and Vinnem’s emphasis on the importance that, within the offshore industry, the perception of the risk in question is assessed against the decision the latter and the authorities

⁸⁹⁵ Von Schomberg, note 486, 37, stating that “[t]he precautionary principle can legitimately be invoked, [...], if there is a threat that this chosen level of protection *could* be violated by particular products or activities” (emphasis added).

⁸⁹⁶ ILGRA, 9.

⁸⁹⁷ John Glasson, ‘Principles and Purposes of Standards and Thresholds in the EIA Process’ in Michael Schmidt, John Glasson, Lars Emmelin and Hendrike Glebron (eds), *Standards and Thresholds for Impact Assessment* (Springer 2008) 4.

⁸⁹⁸ Von Schomberg, note 486, 37-38.

make as to the acceptable levels of risks.⁸⁹⁹ Thus, it is only where the uncertainties surrounding a given risk make it unclear whether the latter is unacceptable when examined against the chosen level of protection that the precautionary principle finds its application.

It is important to understand that this element exists irrespective of any reference to the precautionary principle; the invocation of the latter (and other principles/rules of environmental law) aims to ensure compliance with pre-established thresholds for given risks. This entails that the threshold for the application of the principle would depend on the level of protection chosen against the risks it is invoked to regulate rather than on its formulation in general policy documents akin to Principle 15 of the Rio Declaration. In that sense, the thresholds/standards set pertaining to the emission of certain gasses,⁹⁰⁰ dumping of certain wastes in the ocean,⁹⁰¹ or to the preservation of certain living organisms,⁹⁰² while all susceptible to invoke the precautionary principle, would be expressed in widely different terms from those applicable to risks of transboundary environmental harm from certain projects. Consistently, it is submitted that the choice surrounding the acceptability of risk of transboundary harm from offshore incidents could be found in the analysis of the *principled system of rules* applicable thereto within which the precautionary principle operates.⁹⁰³

⁸⁹⁹ Aven and Vinnem, note 526, 34 (referred to above) in particular noting that “as we consider the risks to be significant; and this type of risk *has been judged* to be significant by the *authorities*” (emphasis added).

⁹⁰⁰ See Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997, entered into force 16 February 2005) 37 ILM 22 (1998), Art. 3 and Annex I.

⁹⁰¹ See MARPOL, Annex II.

⁹⁰² See for example the Convention on Fishing and Conservation of Living Resources of the High Seas (adopted 29 April 1958, entered into force 20 March 1966) 559 UNTS 285, Art. 2, setting sustainability as the threshold to be observed where States seek to yield from living resources in the high seas.

⁹⁰³ In particular the no-harm obligation of States to ensure that activities under their jurisdiction do not cause transboundary damage, and their ensuing obligation to assess the potential transboundary impact of such activities.

Taking the overall focus of this research into account, the search for the relevant threshold would involve a look into its different formulations in various sources of law providing insight as to the perception of the international community on the acceptability of transboundary environmental harm. This must be distinguished from the regulatory thresholds/standards relevant to safety and environmental protection measures adopted by operators across the globe which were confirmed to reflect discrepancies in the sovereign choice by States of the level of environmental protection at national level in respect of the risks posed by offshore activities under their jurisdiction.⁹⁰⁴ Of course, insight as to the chosen level of protection pertaining to transboundary risks from offshore activities might also be sought in the analysis of national laws. However, considering the fact that such risks are inherently international and conforming with the aspirations of this study to explain the integration of the precautionary principle within existing requirements of international law, it is assumed that focus on elements and instruments of international law would present a more accurate description and understanding of the international acceptability of the harm in question. Moreover, considering that transboundary harm assumes that it crosses national borders into the jurisdiction of other States and thus impedes on their sovereignty, the law surrounding pollution/harm to the global commons such as the OSPAR Convention⁹⁰⁵ must not be relied upon in this examination.

Furthermore, recalling the stage at which the precautionary principle is employed in the regulation of risks, a further distinction must also be made between such elements which establish *ex post* obligations upon States to deal with transboundary harm and those which focus on their *ex ante* behaviour to prevent it. Thus, despite their potential applicability within a transboundary context, thresholds set in conventions akin to the OPRC would be misleading to rely on in this analysis.⁹⁰⁶ Conversely, the law surrounding the obligations of States under

⁹⁰⁴ See Chapter V.

⁹⁰⁵ See OSPAR, Art. 1(a) and 2.4.

⁹⁰⁶ OPRC, Art. 2(2) defines “oil pollution incident” as a “discharge of oil [...] which [...] may pose a threat to the marine environment, or to the coastline or related interests of one or more States, and which requires emergency action or other immediate response”. The threshold set here is

the no-harm principle becomes of important relevance. The same could be said about an obligation which derives from the aforesaid principle and aims to implement it, namely that requiring States to assess the transboundary environmental impacts of proposed/planned activities under their jurisdiction.⁹⁰⁷ As Chapter VIII attempts to explore *how* the precautionary principle could be implemented within the obligation of States to act with due diligence in preventing potential transboundary harm from offshore activities under their jurisdiction, it will thoroughly examine the legal basis, particulars and mechanism of the aforementioned preliminary obligation to pre-emptively assess the risks of such harm. However, it is suitable to discuss at this stage the role which thresholds play throughout the various stages of the process conventionally adopted to satisfy such obligation, namely transboundary EIAs. Interestingly, the findings of the analysis of the chosen level of protection as dissected in the law surrounding the no-harm principle reflect those reached when looking at thresholds employed within transboundary EIAs. This further confirms the position whereby EIAs are seen as a means to implement the no-harm principle, and thus serve as a more practical application of a more theoretical rule through its proceduralisation.

A proper analysis of the no-harm principle means that one be wary of the fact that it does not and cannot mandate the prohibition of *all* transboundary harm. This point is universally supported both in academia⁹⁰⁸ and international case-law.⁹⁰⁹

very low, as the threat in question is not qualified and the mere possibility of it occurring is sufficient to make the incident in question cross it. Arguably, the rationale behind this is to incentivise mitigation and response to wider scenarios of oil spills.

⁹⁰⁷ Neil Craik, *The International Law of Environmental Impact Assessment – Process, Substance and Integration* (Cambridge University Press 2008) 209, noting that “[i]n transboundary EIA commitments, th[e environmental] end is to prevent transboundary environmental harm”.

⁹⁰⁸ See for example Hanqin, note 425, 7; Oscar Schachter, ‘The Emergence of International Environmental Law’ [1991] 44:2 *Journal of International Affairs* 45; ILA Study Group on Due Diligence, 2; Ibid (Craik), 60; Owen McIntyre, *Environmental Protection of International Watercourses under International Law* (Routledge 2016) 205; Expert Group on Environmental Law of the World Commission on Environment and Development, *Environmental Protection and Sustainable Development: Legal Principles and Recommendations* (1987), Art. 10; see also Appendix II, most notably footnote 1290 and accompanying text.

⁹⁰⁹ See for example the *Costa Rica v. Nicaragua* case (2015) [119] where the ICJ considered that dredging works in Nicaragua (Lower San Juan River) caused a diversion of water from the

It is further confirmed in the fragmented elaboration of international treaties establishing liability rules for *certain* transboundary harms.⁹¹⁰ Acknowledging this reality, a certain qualification must be applied to the transboundary harm in question in order to tip it over the limits of acceptability. It is precisely in the examination of this qualification that the chosen level of protection could be found. Consistently with the aforesaid, the obligation of States to assess the potential transboundary impacts does not arise in respect of *all* activities under their jurisdiction.

Various terms expressing the magnitude/severity of harm have been adopted and/or referred to in international law aiming at qualifying transboundary harm and shading light on the applicable thresholds for its acceptability. Of course, when the triggered international obligation incumbent upon States involves the prevention/assessment of *risks* of such harm, the element of probability is also brought into the equation. In that sense, it would then become relevant to look at the threshold applicable to the level of probability which must be present for preventive/assessment obligations to be triggered.

Colorado River (in Costa Rica) which affected less than 2% of the water flowing thereto, and accordingly concluded at 120 that this did not constitute a breach of Nicaragua's international obligations.

⁹¹⁰ For example the CLC (Art 1.6; Art 2), the Paris Convention (consolidated version, Art. 1(a) vii; Art. 2(a)), the Space Liability Convention (Art. 2), the Geneva Convention (Art. 1(b)); combined reading of the Convention on Transboundary Effects of Industrial Accidents (adopted 17 March 1992, entered into force 19 April 2000) 2105 UNTS 457, the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, and the Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes and to the 1992 Convention on the Transboundary Effects of Industrial Accidents (adopted 21 May 2003, not in force) providing in Art. 3 that it applies to "damage caused by the *transboundary effects* of an industrial accident on transboundary waters" (emphasis added). However, the definition for transboundary effects is not exactly the same in the conventions to which the Protocol applies to, as the Convention on Transboundary Effects of Industrial Accidents defines them in Art. 1(a) and (d) as those having "*serious effects*" resulting from "an uncontrolled development in the course of any activity involving hazardous substances" whereas that on the Protection and Use of Transboundary Watercourses and International Lakes defines them in Art. 1.2 as those having "*significant adverse effects* [...] resulting from a change in the conditions of transboundary waters caused by a human activity [...]". Nevertheless, this combined reading further establishes that liability for transboundary harm does not encompass every such harm.

However, when one attempts to find the applicable threshold in international treaties implementing the no-harm principle, no guidance could be found in those relating to particular activities or substances, as they generally define their scope of application in the features/particulars of the activities/substances in question.⁹¹¹ Thus, we must turn to the scarce decisions where international bodies have ruled on claims for liability for transboundary damage, namely the *Trail Smelter* and *Lac Lanoux* arbitral awards.⁹¹² Upon this examination, it appears that the arbitral panel in *Trail Smelter* conditioned its sentence upon the transboundary harm in question having “*serious* consequences”.⁹¹³ Somewhat consistently, the panel in *Lac Lanoux* required that the harm caused by the French activities in question to be “*serious* and real”.⁹¹⁴ Further insight as to the development of this threshold is found in the examination of the sources of international law providing for an obligation for States to prevent or assess transboundary harm. In this regard, international conventions have qualified potential/likely transboundary harm triggering the obligations thereunder using terms like “significant”,⁹¹⁵ “serious”,⁹¹⁶ and “substantial”.⁹¹⁷ Moreover, case-law of the ICJ points towards a preference to use the term “significant” within this context.⁹¹⁸ Logically, and as pointed by von Schomberg, reliance on such terms

⁹¹¹ See CLC (Art. 1.1, 1.5, 1.6, and Art. 2) ; OPOL (Clauses 1.5, 1.8, 1.14 and Clause IV); the Basel Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and their Disposal (adopted 10 December 1999, not in force) (Art. 2(b) and 3.1); Vienna Convention on Civil Liability for Nuclear Damage (adopted 21 May 1963, entered into force 12 November 1977) IAEA (Art. 1(f), 1(g), 1(h), 1(k) and Art. 2); etc.

⁹¹² *Lac Lanoux (France v. Spain)* (1957) 12 R.I.A.A 281.

⁹¹³ *Trail Smelter*, 1965.

⁹¹⁴ *Lac Lanoux*, 305.

⁹¹⁵ Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Art. 1.2; Directive of the European Parliament and of the Council 2014/52/EU amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment [2014] OJ L124/2 [‘EU EIA Directive’], Art. 7.1; ILC Draft Articles on Prevention, Art. 2; Convention on Environmental Impact Assessment in a Transboundary Context (adopted 25 February 1991, entered into force 10 September 1997) 1989 UNTS 309 [‘Espoo Convention’], Art. 2.2.

⁹¹⁶ Convention on the Transboundary Effects of Industrial Accidents, Art. 1(d).

⁹¹⁷ Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (adopted 24 November 1986, entered into force 22 August 1990) SPREP [‘Noumea Convention’], Art. 16.2. UNCLOS, Art. 206.

⁹¹⁸ *Pulp Mills* [205]; and *Costa Rica v Nicaragua* [104].

invites confusion as it open up debates on their exact levels.⁹¹⁹ However, in the particular case of the risks of transboundary harm, the ILC specifically established a useful hierarchy of these terms in its commentary on its Draft Articles on Prevention, as it explained that “it is to be understood that ‘*significant*’ is something more than ‘*detectable*’ but need not be at the level of ‘*serious*’ or ‘*substantial*’”.⁹²⁰ In fact, this is consistent with the definition which the UNEP gave to the term “significantly” in its Draft Principles of Conduct, as it provided that it refers to “any appreciable effects [...] and excludes ‘*de minimis*’ effects”.⁹²¹ This hierarchy is further established when one examines the change of terms employed by the ILC in the context of its work on the non-navigational uses of international watercourses from “serious” to “appreciable” and finally to “significant”,⁹²² thus reinforcing the suggestion by academics of a preference to employ the latter of these terms to qualify transboundary harm.⁹²³ This falls in line with the contention by some of a growing appreciation by the international community of the repercussions of environmental harm, “even at low thresholds, since the *Trail Smelter* arbitration”.⁹²⁴ Therefore, within this context, it is safe to regard the reliance by the ILC, in its Draft principles on the allocation of loss in the case of transboundary harm arising out of hazardous activities,⁹²⁵ on the term

⁹¹⁹ Von Schomberg, note 486, 37.

⁹²⁰ ILC Draft Articles on Prevention, Art. 2, Commentary (4). This position was previously suggested by Sanford Gaines, ‘Taking Responsibility for Transboundary Environmental Effects’ [1991] 14 *Hastings Int’l & Comp L. Rev.* 781, 796.

⁹²¹ UNEP: Governing Council Approval of the Report of the Intergovernmental Working Group of Experts on Natural Resources Shared by Two or More States, ILM Vol. 17, No. 5 (September 1978), pp. 1091-1099 [‘UNEP Draft Principles of Conduct’]. It must be noted that these Draft Principles relate to activities undertaken by States with respect to *shared natural resources*. Nevertheless, their relevance stems from the fact that they tackle the risks of such activities causing *transboundary* harm to the environment of other States sharing the same resource.

⁹²² Julio Barboza, ‘Sixth Report on International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law’ (15 March 1990) UN Doc A/CN.4/428, 88-89 and 105.

⁹²³ Craik, note 907, 61; see also K. Sachariew, ‘The Definition of Thresholds of Tolerance for Transboundary Environmental Injury under International Law: Development and Present Status’ [1990] 37 *NILR* 193, 197-198.

⁹²⁴ *Ibid.*

⁹²⁵ Reproduced in YB ILC (2006) vol. II(2) p.59 [‘Draft Principles on Allocation of Loss’]; See also Appendix II for an overview on the ILC works on this liability.

“significant” to qualify transboundary harm as evidence of the latest development surrounding the applicable threshold for transboundary harm.⁹²⁶

However, just like the due diligence concept, the “significant” threshold is variable, and it depends on the circumstances of each case. This reality has been embraced by the ILC, the ICJ, as well as specialists in the field. Thus, in this regard, special rapporteur Rao, justifying the reliance by the ILC on this term to set the applicable threshold, reiterated previous ILC works and admitted that “it is clear that [the threshold] ‘denotes factual and objective criteria and involves a value judgement which depends on the circumstances of a particular case and the period in which such determination is made’”.⁹²⁷ Echoing the variable feature of the due diligence concept, he further added that the reliance on the “significant” threshold entails that “a deprivation which is considered to be significant at one time or in one region may not necessarily be considered to be so at another time or in another region”.⁹²⁸ This interpretation finds support by the ILC in its commentary on its Draft Articles on Prevention where it provided that “a determination [of the term ‘significant’] has to be made in each specific case” and that the detrimental effects caused by the harm in question “must be susceptible of being measured by factual and objective standards”.⁹²⁹ Consistently, Hanqin

⁹²⁶ Ibid, general commentary (7) at 60, providing “to trigger the regime governing transboundary damage, the same threshold [as that applicable in the draft articles on prevention], ‘significant’, that is made applicable in the case of transboundary harm is employed” and principle 1, commentary (2); see also Pemmaraju Sreenivasa Rao, *Third report on the legal regime for the allocation of loss in case of transboundary harm arising out of hazardous activities* [2006] UN Doc A/CN.4/566, 76, showing that some Governments “questioned the decision of the Commission to bring the regime proposed into play *only in the case of significant damage*” (emphasis added), thus suggesting their readiness for the application of an even lower threshold set without any qualification of the potential transboundary harm; and also containing the special rapporteur’s commentary on the issue of threshold as he provided that “States in their mutual relations tolerate some measure of pollution and it is generally perceived that such pollution becomes actionable only if it is significant” and adding that “the threshold of “significant” has gained currency and acceptance in the context of the topic of international liability”; see also Draft Principles on Allocation of Loss, Principle 2, commentary (2), providing that “mutual impacts, so long as they have not reached the level of ‘significant’, are considered tolerable and do not fall within the scope of the present draft principles”.

⁹²⁷ Ibid, at 76.

⁹²⁸ Ibid.

⁹²⁹ ILC Draft Articles on Prevention, Art. 2, Commentary (4).

considered it evident that the severity requirement which attaches to unacceptable transboundary harm involves “a factual enquiry which changes with the circumstances of a given case”;⁹³⁰ and Craik wrote that the term “significant” “is not without ambiguity and will be determined, for the most part, in relation to a specific factual context”.⁹³¹ In fact, the ICJ has, in instances where it had to rule on whether the transboundary harm in question before it met the “significant” threshold, adopted a case-by-case practice/approach to perform such “determination”. For example, in *Pulp Mills*, within the process of ruling on whether or not Uruguay was in breach of its substantive preventive obligations and thus liable to compensate for the harm allegedly inflicted,⁹³² the Court identified a breach of standards for the level of concentration of phosphorus in the river Uruguay as found in Uruguayan legislation (which it deemed applicable). Nevertheless, it also found that “the amount of total phosphorus discharge into the river that may be attributed to the Orion (Botnia) mill is *insignificant in proportionate terms as compared to the overall total phosphorus in the river from other sources*” (emphasis added), and thus concluded that the activity in question did not, on the facts of the case, cause a significant increase in the phosphorus level in the river so as to tip it over the applicable standard.⁹³³ What is also noteworthy here is the fact that the ICJ indeed adopted a “factual and objective” approach in this examination as it compared the increase of phosphorus levels caused by the mill to the introduction thereof from other sources. Later in 2015, the ICJ performed another “determination” when examining the issue of whether substantive obligations concerning transboundary harm were breached by Nicaragua in *Costa Rica v. Nicaragua*. In the affirmative, the Court appeared to be prepared to find Nicaragua responsible for such harm.⁹³⁴ Within this context, the ICJ found that dredging works in Nicaragua (Lower San Juan River) caused a diversion of water from the Colorado

⁹³⁰ Hanqin, note 425, 7.

⁹³¹ Craik, note 907, 61.

⁹³² See *Pulp Mills* [276].

⁹³³ Ibid, [247].

⁹³⁴ *Costa Rica v. Nicaragua* [113].

River (in Costa Rica) which affected less than 2 per cent of the water flowing thereto, and accordingly concluded that this did not constitute a breach of Nicaragua's international obligations.⁹³⁵ Of course, the ICJ cases referred to above would have been much more insightful had the facts thereof were such that the Court had to elaborate on how the harm in question exceeded the threshold of "detectable" as put by the ILC. Instead, they establish that minimal or merely "detectable" harm is not severe enough to qualify as significant, and that the determination of the severity of the harm involves an objective examination of the factual circumstances of the case at hand. In doing so, the importance attached to the use of the "significant" term when setting the threshold applicable to transboundary harm is reduced in practice, as it ultimately strongly depends upon a factual evaluation of the harm at hand.

This approach to the employment of the threshold applicable for triggering reparation obligations as a result of the failure to prevent transboundary environmental harm is equally traceable in relation to procedural obligations incumbent upon States where the proposed activities within their jurisdiction create the risk of causing such harm. As mentioned above, one such obligation which is relevant for the subsequent discussion is the requirement for States to assess the potential transboundary impact of activities under their jurisdiction, an obligation which is usually met through the performance of an EIA procedure. The following discussion will tackle the role which thresholds play at the various stages of this process, most notably the screening and evaluation and assessment of significance of impacts stages.

Broadly speaking, screening consists of the determination of whether specific proposed activities/projects call for the initiation of an EIA process.⁹³⁶ Thresholds come into play at this initial stage of the procedure as they serve as criteria to be relied upon when assessing whether or not the potential impact of the project in

⁹³⁵ Ibid, [119]-[120].

⁹³⁶ See European Commission, 'Environmental Impact Assessment of Projects – Guidance on Screening (Directive 2011/92/EU as amended by 2014/52/EU)' <http://ec.europa.eu/environment/eia/pdf/EIA_guidance_Screening_final.pdf> accessed 26 February 2019, 23

question appears to be of sufficient significance to call for the initiation of the subsequent stages.⁹³⁷ Moreover, and as mentioned above, this threshold also contains an additional element of probability. In that sense, it is erroneous to straightforwardly assume that the obligation for States to assess the transboundary impacts of activities within their jurisdiction arises in respect of *all* such activities posing a threat of causing significant transboundary harm. The question then arises: when is an EIA required?

In fact, the element of severity within this threshold which is universally adopted in the most renowned international treaties on transboundary EIAs as well as in the jurisprudence of the ICJ on the subject is also that of “significant” transboundary harm.⁹³⁸ On the other hand, an examination of the legal basis of the obligation to assess once more reveals discrepancies in the formulations used to express the element of probability in the threshold applicable thereto. Generally, the various formulations could be categorised as requiring either the mere possibility of such significant harm to occur⁹³⁹ or a “likelihood” thereof.⁹⁴⁰

⁹³⁷ Glasson, note 897, 3.

⁹³⁸ See note 915 above EU EIA Directive and Espoo Convention; see also Noumea Convention, Art. 16.2 referring to “substantial pollution of, *or* significant and harmful changes within, the Convention Area” (emphasis added) when providing for the obligation of States to assess the potential effects of projects within their jurisdiction. (The “significant” threshold here is the lowest common denominator, and thus the States’ obligations under the convention are triggered if it is crossed, even if pollution is not “substantial”). The same formulation is adopted in Art. 206 of UNCLOS. In relation to the ICJ case-law, see *Pulp Mills* [204] referring to “significant adverse impact in a transboundary context”; and *Costa Rica v. Nicaragua* [104] referring to the duty of States to assess whether the activity in question presents the “risk of [causing] significant transboundary harm”.

⁹³⁹ UNCLOS, Art. 206, using the formulation “may cause”; ILC Draft Articles on Prevention, Art. 7, using “possible”; the ICJ using “may have” in *Pulp Mills* [204], and a “risk of” in *Costa Rica v. Nicaragua* [104]; ITLOS also partly based its decision to order provisional measures requiring Malaysia and Singapore to establish a group of experts to assess the environmental effects of a reclamation project by Singapore and to recommend mitigation measures upon the fact that “it cannot be excluded” that the project “*may have* adverse effects on the environment”, see *Case Concerning Land Reclamation by Singapore in and Around the Straits of Johor (Malaysia v. Singapore)* (September 4, 2003) ITLOS Case No. 12, Provisional Measures Order, 8 October, 2003 [96]; UNEP Draft Principles of Conduct, Principle 4, using “may”; ASEAN Agreement on the Conservation of Nature and Natural Resources (adopted 9 July 1985, not in force), Art. 14(1), using “may”; etc.

⁹⁴⁰ Rio Declaration, Principle 17; UNEP Goals and Principles of Environmental Impact Assessment, reproduced in Basic Documents of International Environmental Law, Vol. 1, 1992,

The former of these categories is less demanding than the latter, and thus reliance thereon would more readily trigger a State's obligation to assess.

Recalling the ILC's commentary on "risk of causing significant transboundary harm", regard must be made to the potential magnitude of the harm should it materialise. In that sense, the obligation to assess arises both when there exists a "mere possibility" or a "likelihood" of the occurrence of "significant" transboundary harm. The combination by UNCLOS, the ICJ and ITLOS of the "significant" threshold for the magnitude element of the risk at hand and the "mere possibility" of it occurring (probability element thereof) expands the understanding of "significant transboundary harm" beyond the ILC's reading which presupposes the existence of "a low probability of causing disastrous transboundary harm". Moreover, the wording of Art. 206 of UNCLOS submits the triggering of the obligation to States having "reasonable grounds for believing" that the threshold might be crossed. This fuels the debate surrounding the level of discretion recognised to States in assessing whether or not an EIA is required, which was in fact the subject of the contention made by the UK before the ITLOS in the *MOX Plant Case*.⁹⁴¹ While the Tribunal did not pronounce on the merits of this contention, commentary upon it in legal writing was sceptical to the fact that it presents the risk, if taken too far, of depriving the international obligation to conduct EIA of its role to fix the common requirements for assessment.⁹⁴² It is thus advanced that the discretion contained in the Article must be interpreted narrowly.

That being said, recalling the particular focus of this thesis on the risks of transboundary pollution from offshore activities, the lower probability threshold of the mere possibility of the occurrence of significant transboundary harm is arguably readily met simply by acknowledging the transboundary consequences

pp187-190 ['UNEP Goals and Principles of EIA'], Principle 12; see also most notably Espoo Convention, Art. 1(vi) and Art 2.2; and EU EIA Directive, Art. 1.1 and Art. 7.1 all using "likely".

⁹⁴¹ *MOX Plant Case (Ireland v. U.K.)*, Provisional Measures, Order of 3 December 2001, Case No. 10. ['*MOX Plant Case*']; *MOX Plant Case* (Annex VII Tribunal), Counter-Memorial of the United Kingdom, [5.10]-[5.112].

⁹⁴² Craik, note 907, 118.

of previous incidents which have occurred in offshore platforms.⁹⁴³ However, interestingly, even where the law submits the obligation of States to assess the potential impacts of activities under their jurisdiction to such activities being “likely” to cause such harm, the threshold appears to be met in respect of offshore petroleum activities. In fact, both the Espoo Convention and the EU EIA Directive provide for a presumption that certain activities listed in their respective Annexes/Appendixes cross this threshold. In this regard, Appendix I to the Espoo Convention lists “offshore hydrocarbon production” and Annex I of the EU EIA Directive lists “extraction of petroleum and natural gas for commercial purposes where the amount extracted exceeds 500 tonnes/day in the case of petroleum and 500 000 cubic metres/day in the case of gas” as activities benefiting from such presumption.⁹⁴⁴ Nonetheless, it must be noted that the mechanisms according to which the aforementioned presumptions operate are dissimilar. In that respect, the presumption under Espoo is not automatic as it merely entails that the activities listed in its Appendix I fall under it only in “normal circumstances”.⁹⁴⁵ In other words, despite the objective nature of the criterion based on which the presumption is seemingly triggered (namely the inclusion of the activity in question in Appendix I), an element of subjectivity is preserved as the State of origin is left with the discretion not to initiate an EIA procedure in respect of an activity listed in Appendix I. This is confirmed in the wording of Art. 2.2 which provides for the obligation of States to undertake an EIA in respect to “proposed activities listed in Appendix I *that are likely to cause significant adverse transboundary impact*” (emphasis added). Thus, the presumption appears to be subject to a subjective confirmation by the State of origin. Specifically, in the scenario where the latter does not initiate an EIA procedure despite another State considering that it might be affected by a significant adverse transboundary impact of a proposed activity listed in Appendix I, Art. 3(7) requires the States

⁹⁴³ Most notably the Montara blowout.

⁹⁴⁴ Bullets 15 and 14 respectively.

⁹⁴⁵ Timo Koivurova, ‘Transboundary Environmental Impact Assessment in International Law’ in Simon Marsden and Timo Koivurova (eds) *Transboundary Environmental Impact Assessment in the European Union – The Espoo Convention and its Kiev Protocol on Strategic Environmental Assessment* (Earthscan 2011) 19.

concerned to cooperate and discuss “whether there is likely to be a significant adverse transboundary impact”. Should the parties fail to reach an agreement on this issue, the Article further provides that either of them could, in principle, submit the question to an inquiry commission in accordance with the provisions of Appendix IV “to advise on the likelihood of significant adverse transboundary impact”.⁹⁴⁶ The situation is much simpler under the EU EIA Directive as the wording of Art. 4.1 thereof does not allow any margin of discretion for States in respect of the activities listed under its Annex I, and the applicable criterion is entirely objective. In conclusion, even where the applicable threshold of probability is expressed in its most demanding formulation (‘likely’), proposed offshore oil and gas activities within a State’s jurisdiction are in principle initially perceived by the international community as threatening enough to require a pre-assessment of their potential significant transboundary impacts.

Away from the analysis of the probability element of the applicable threshold, this perception is further confirmed in the 1982 UNEP Conclusions of the Study on the Legal Aspects Concerning the Environment Related to Offshore Mining and Drilling within the Limits of National Jurisdiction which provided guidance on the carrying-out of EIA with regard to such activities [‘UNEP Conclusions on Offshore Activities’],⁹⁴⁷ and in the provision for the obligation of States to ensure that potential transboundary impacts are assessed in regional treaties specifically applying to the exploration and exploitation of the continental shelf such as the Kuwait Protocol to the Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution.⁹⁴⁸ This suggests the international community’s conviction that positive action is expected from States in order to prevent the potential detrimental consequences of such activities, first

⁹⁴⁶ For a general overview of the transboundary EIA procedure under Espoo see *ibid*, 19-20.

⁹⁴⁷ UNEP/GC/Dec./10/14VI (1982).

⁹⁴⁸ Kuwait Protocol, Art. IV; See also the Barcelona Protocol, Art. 5 imposing an obligation on States to prescribe that operators of offshore activities include, in their application for the authorization to proceed therewith, at least a “survey concerning the effects of the proposed activities on the environment”, and allowing the CtAu to require an EIA taking into account the nature, scope, duration and technical methods to be employed in the activities in question.

in the form of the assessment thereof, and then in the form of their management of the risks they create.⁹⁴⁹

However, just as the triggering of the responsibility of States for the significant transboundary harm emanating from activities within their jurisdiction (and the creation of reparation obligations) ultimately rests upon an objective examination of the circumstances at hand, the assessment of whether or not the risks posed by the proposed activity made subject to an EIA procedure potentially breach the chosen level of protection comes at the latter stage of the evaluation and assessment of the significance of impacts. Broadly speaking, in between these two stages, the EIA process involves the determination of the information which must be accounted for based on their relevance to the types of impacts that are likely to influence the perception of the risk posed by the project at hand (scoping); a description of the state of the environment prior to the initiation of the project (description of the environmental baseline); and the identification of “key impacts” and the prediction of the magnitude of the changes to the environmental baseline which they might inflict (prediction of impacts).⁹⁵⁰ It is precisely upon this last stage that the evaluation of the *significance* of the potential impacts rests.⁹⁵¹ In practice, the applicable threshold comes into play at this stage by acting as the legal requirement against which the predicted potential impacts are assessed,⁹⁵² and the question could be formulated in terms of the extent to which the projected activity risks breaching such requirement. It follows from the foregoing that within the EIA process, the question of whether the chosen level of protection is breached equally depends upon a *factual examination* of the potential magnitude of the identified impact(s) which the proposed activity might have on the environmental baseline. Consequently, a project which was initially seen as susceptible of causing significant transboundary harm could, upon an appropriate factual examination, be perceived/assessed as less harmful, and as

⁹⁴⁹ The role which the assessment of potential transboundary harm plays in mandating State behaviour based thereon will be discussed in Chapter VIII.

⁹⁵⁰ Ibid, 8-9.

⁹⁵¹ Ibid, 9.

⁹⁵² Ibid. This method of evaluation was described by Glasson as being the “most formal”.

not crossing this very same threshold. In other words, the initial perception of the risk at the screening stage would have to be confirmed at the evaluation of potential impacts stage. This has important repercussions on the role which EIAs play within the overall duty of States to prevent transboundary harm from activities under their jurisdiction as it would influence their expected behaviour in light of the perceived risk in question. This point will be discussed in greater detail in Chapter VIII.

The dependency of the application of the threshold attached to transboundary harm on a case-by-case factual examination of the circumstances at hand moves it away from being clearly defined, and thus a certain uncertainty still surrounds it.⁹⁵³ Ultimately, this uncertainty blurs the decision of whether or not regulatory intervention is required to adequately manage the risks of transboundary pollution from all offshore activities. In light of this reality, we acknowledge Von Schomberg's view that the invocation of the precautionary principle implies a "*delicate interplay* between the choice of *possible* normative standards of acceptability and scientific assessments whether such standards would be violated without regulatory measures" (emphasis added).⁹⁵⁴ Thus, it is important to acknowledge that the lack of clear-cut definition of the applicable threshold (beyond the understanding that significant transboundary harm is one which is more than minimal or detectable) does not constitute a definitive barrier for the invocation of the precautionary principle (or any other regulatory tool). It must be admitted that the question of whether or not the applicable threshold risks being crossed by the initiation of hazardous activities cannot be dissociated from the underlying existing degree of uncertainty attached to the scientific assessment of the potential effects thereof. This suggests that where conventional scientific assessment is incapable of affording unambiguous answers as to whether or not the uncertainties at hand create a risk of the activities in question crossing the applicable environmental threshold, the integration and application of a

⁹⁵³ In this regard, Von Schomberg wrote: "the uncertainty of the science is related to the uncertainty of what still could count as acceptable in terms of health and environmental effects". See Von Schomberg, note 486, 37.

⁹⁵⁴ Ibid.

precautionary approach within such assessment supports the contention that the aforesaid threshold is deemed to be crossed.

The discussions above are certainly interconnected. To summarise, they established that: 1) the precautionary principle operates *ex ante* within a principled system of rules from which it derives its prescriptive force; 2) the pre-required uncertainty for the invocation thereof pertains to the *availability* and *quality* of the information necessary for a proper description/understanding of the potential effects of hazardous activities/projects; 3) within the context of this study, international environmental law requires States to adopt measures for the prevention of *significant transboundary* harm from activities under their jurisdiction in the presence of such uncertainty. Combining these conclusions, it is submitted that the applicable test for the invocation of the precautionary principle is whether the quality of the information available for the scientific assessment of the potential effects of a given activity/project within the jurisdiction of a given State obscures the *ex ante* decision of whether regulatory intervention to prevent significant transboundary harm is necessary. Having regard to the lack of understanding of various factors precluding the accurate description of the transboundary risks posed by offshore oil and gas incidents, it is arguably impossible to appropriately predict whether their occurrence would cross “significant transboundary harm” threshold. Hence the validity of the reliance on the precautionary principle in the management thereof.

VII- Support behind the reliance on the precautionary principle to delimit the obligation to prevent transboundary harm from offshore incidents

In this Chapter, the academic support behind the reliance on the precautionary principle to define the obligation of States to prevent transboundary pollution in general will be first be exposed (1). While (2) will contain a review of the case-law relevant to such role of the precautionary principle and academic commentary thereon.

1. General academic support behind the reliance on the precautionary principle

It must foremost be noted that, the commentary on Art. 3 of the ILC Articles on Prevention reflects the general backing for the reliance on the precautionary principle in defining the concept of due diligence. In that regard, referring to Principle 15 of the Rio Declaration, it noted that the obligation contained under Art. 3 “could involve, inter alia, taking such measures as are appropriate by way of abundant caution, even if full scientific certainty does not exist, to avoid or prevent serious or irreversible damage”.⁹⁵⁵

Furthermore, numerous authors have argued that the precautionary principle has indeed a role in defining the due diligence concept, either through referring directly to its implications on the latter or on its interplay with other principles of international environmental law, most notably the preventive principle. For example, Deville and Harding, answering the question as to why should the precautionary principle be applied, advanced that, from an economic perspective, it is relevant to issues of liability and compensation as corporations and senior officers seek to adopt “appropriate precautionary measures” to demonstrate due diligence to avoid potentially heavy compensations and other consequences.⁹⁵⁶ Moreover, Cameron, having examined the instruments implementing precaution and identified the core elements which are common thereto, advanced that

⁹⁵⁵ ILC Articles on Prevention, Commentary on Art. 3, para 14.

⁹⁵⁶ Deville and Harding, note 854, 17.

“international law can readily absorb these elements in the principle of good neighbourliness”, added that “the duty of a state to prevent environmental harm to a neighbour or to areas beyond national jurisdiction found in the *Trail Smelter Arbitration* [...], can extend to a precautionary duty”, and concluded that “the precautionary principle on the international plane can attach itself to Principle 21 [of the Stockholm Declaration] which is an established customary law rule”.⁹⁵⁷ Furthermore, Chen analysed the *Pulp Mills* decision and ITLOS Advisory Opinion to reflect on the role which the precautionary principle has in the framework of the concept of due diligence.⁹⁵⁸ Chen analysed the opinions expressed by judges in the aforementioned cases as well as the relationships between the precautionary principle and the preventive principle and between the former and the due diligence concept to conclude that “the precautionary principle may help clarify and enrich the obligation of due diligence [...] especially in the circumstance where ‘there is insufficient evidence but... the consequences may be severe and irreversible’”.⁹⁵⁹ Within the same line of thinking, Nollkaemper, seeking to mitigate the absolutist features of [some versions of] the precautionary principle, classified “general due care obligations” as “contextual obligations”, and argued that the absolutism of the precautionary principle is in fact mitigated due to the fact that, in most cases, it has been “incorporated in a general due diligence obligations of prevention”.⁹⁶⁰ In support of his argument, he cited the provision under the OSPAR Convention that States take preventive measures when “there are *reasonable grounds for concern* that the introduction of substances into the marine environment *may cause harm*”.⁹⁶¹

⁹⁵⁷ Principle 21 adopts the no-harm principle; Cameron, note 852, 132-133.

⁹⁵⁸ Ling Chen, ‘Realizing the Precautionary Principle in Due Diligence’ [2016] 25 Dalhousie J. Leg. Stud. 1.

⁹⁵⁹ Ibid, 23.

⁹⁶⁰ Nollkaemper, note 853, 88.

⁹⁶¹ Ibid. Nollkaemper noted the confusion which results from the choice of wording adopted in the OSPAR Convention and suggested that it creates some overlap between the precautionary principle and the preventive principle. In any case, this overlap, at least, reflects an evident interplay between the two; and at most, the absorption of the preventive principle by the precautionary principle.

Nevertheless, neither of the aforementioned authors provided real indication as to how the interconnection they referred to could be achieved. However, some guidance thereon could be inferred from the writings of others. In that regard, Freestone and Hey reiterated the conclusions reached by the Expert Group on Environmental Law of the World Commission on Environment and Development (while commenting on their proposed code of “Legal Principles for Environmental Protection and Sustainable Development”) which called for alertness and precaution going “beyond simple prevention” in situations where there is a “significant risk” of transboundary harm.⁹⁶² This suggests that the precautionary principle expands the application of the preventive principle in respect of the measures which they respectively dictate. Moreover, Freestone and Hey noted that this entails that “the assessment of whether a risk is or is not significant is not a passive obligation”, and that States “should exercise due care or due diligence in its investigations as to whether or not harm is likely to be caused”.⁹⁶³ This suggests that the precautionary principle comes into play at the early stage of risk assessment in refining the attitude of States *vis-a-vis* potential risks within their jurisdictions.⁹⁶⁴ Providing more insight into the role which the precautionary principle might play, Sage-Fuller referred to the principle as a “pre-prevention principle” which requires the adoption of measures at an earlier stage than simple prevention would, when there is a risk of harm but science fails to establish that it will occur.⁹⁶⁵ In this sense, Sage-Fuller believed that the principle could have a “solid legal basis” in UNCLOS through linking it with the prevention principle which is “clearly embedded” therein.⁹⁶⁶ Moreover, he argued that the precautionary principle can be a useful tool for the delimitation of the “more detailed” rules of environmental protection which UNCLOS provides for, most

⁹⁶² Freestone and Hey, note 852, 256.

⁹⁶³ *Ibid*, 256-257.

⁹⁶⁴ This point will be discussed in further detail in Chapter VIII.

⁹⁶⁵ Sage-Fuller, note 860, 68; 76-77. Sage-Fuller is of the general view that “the substance of the precautionary principle should be explored having regard to the other rules and principles of international environmental law, with which the precautionary principle is closely linked, and upon which it exercises an influence”, citing the “principle of prevention of transboundary harm” as one of such principles.

⁹⁶⁶ *Ibid*, 68-71.

notably the obligation to cooperate in the elaboration of rules, standards, practices and procedures for marine environmental protection, and the obligation pertaining to conducting scientific assessments of the marine environment and of risks of pollution.⁹⁶⁷ This is made all the more relevant in light of the author's reliance on the commentaries on Art. 2 and 3 of the ILC Articles on the Prevention,⁹⁶⁸ which in his opinion entail that "a State must investigate possible risks, take legislative and administrative actions to establish procedures of risk management and, most of all, identify the activities that are potentially risky and may fall within the scope of their duty".⁹⁶⁹ Thus, he concluded that "precaution and due diligence are two concepts that can inform each other", as "the principle of precaution can be inserted in the legal framework of due diligence to expand upon and clarify the duties required therein" while "precautionary rules of due diligence, if ascertained, would introduce some certainty as to the substance of the precautionary principle in international environmental Law, at least in the context of the duty of prevention".⁹⁷⁰ This shows the academic support for the potential role of the precautionary principle to shape the due diligence standard in at least two ways: the obligation of States to identify and assess potential risks, and their obligation to take appropriate precautionary measures to manage such risks accordingly. Thus, the stages at which the principle comes into play are broadly identified. Nevertheless, these writings are limited in that they fail to establish *how* obligations are extended/defined when compared to those required under the existing preventive and no-harm principles. Moreover, these writings remain general, and do not specifically refer to the particular invocation of the precautionary principle within the obligation of States to prevent transboundary pollution from offshore incidents.

⁹⁶⁷ Ibid, 69-71.

⁹⁶⁸ The commentary on Art. 3 provide at para 10 that "due diligence is manifested in reasonable efforts by a State to inform itself of factual and legal components that relate foreseeably to a contemplated procedure and to take appropriate measures [...] to address them". And further adds that "[s]uch measures include, first, formulating policies designed to prevent significant transboundary harm or to minimize the risk thereof and, secondly, implementing those policies".

⁹⁶⁹ Sage-Fuller, note 860, 79.

⁹⁷⁰ Ibid, 81.

2. Case-law

The use of the precautionary principle in international environmental case-law has generally been examined in light of the rulings of the ITLOS, the World Trade Organization ['WTO'] Appellate Body, and the ICJ. In relation to the first, the most notable decisions are the *Bluefin Tuna Cases*,⁹⁷¹ the *MOX Plant Case*, and the ITLOS advisory opinion of 2011. In relation to the second, the Reports on the disputes concerning the *EC Measures concerning Meat and Meat Products (Hormones)*,⁹⁷² the *Japan Measures Affecting the Importation of Apples*,⁹⁷³ and the *EC Measures Affecting the Approval and Marketing of Biotech Products*⁹⁷⁴ are of relevant value. In relation to the third, the standout decision is *Pulp Mills*. A review of these cases and of the literature commenting thereon is made in view of examining the potential support for the reliance on the precautionary principle in delimiting the obligation of States to prevent transboundary pollution from offshore activities and the extent of such role. This is done through analysing how international judges and academics have outlined the implications of the invocation of the precautionary principle in international disputes concerning environmental matters.

In relation to the Reports of the WTO's Appellate Body in the disputes concerning the *EC Measures concerning Meat and Meat Products (Hormones)*, the *Japan Measures Affecting the Importation of Apples*, and the *EC Measures Affecting the Approval and Marketing of Biotech Products* it is only submitted that the respective dictums in the aforementioned cases reveal an increasing recognition by the WTO of the precautionary principle as customary environmental

⁹⁷¹ *Bluefin Tuna Cases (N.Z. v. Japan, Aust. v. Japan)*, Provisional Measures, Order of 27 August 1999, Cases Nos. 3 and 4. ['*Bluefin Tuna Cases*'].

⁹⁷² Appellate Body Report, *EC Measures Concerning Meat and Meat Products (Hormones)*, WT/DS26/AB/R & WT/DS48/AB/R (Jan. 16, 1998) (adopted Feb. 13, 1998) ['*EC Measures Concerning Meat and Meat Products (Hormones)*'].

⁹⁷³ Appellate Body Report, *Japan - Measures Affecting the Importation of Apples*, WT/DS245/AB/R (Nov. 26, 2003) (adopted July 20, 2005) ['*Japan - Measures Affecting the Importation of Apples*'].

⁹⁷⁴ Panel Report, *EC Measures Affecting the Approval and Marketing of Biotech Products*, WT/DS291/R, WT/DS291/R, & WT/DS293/R (Sept. 29, 2006) (adopted Nov. 21, 2006). ['*EC Measures Affecting the Approval and Marketing of Biotech Products*'].

international law. However, it omitted to provide any guidance on its framework of application, and thus the Reports will not be discussed further. In *EC Measures concerning Meat and Meat Products (Hormones)*, answering the EU's invocation of the principle and the US's opposition to it forming part of customary international law, the WTO noted that "it is unnecessary, and probably imprudent, [...] to take a position on this important, but abstract, question. We note that the Panel itself did not make any definitive finding with regard to the status of the precautionary principle in international law and the precautionary principle, at least outside the field of international environmental law, still awaits authoritative formulation".⁹⁷⁵ This position was interpreted in academia as a higher readiness of the WTO to recognise the principle as customary international law within environmental matters compared to other areas.⁹⁷⁶ Later, in *Japan Measures Affecting the Importation of Apples*, the Appellate Body reiterated its position in the *Hormones* case, and noted that "the 'precautionary principle' had not yet attained 'authoritative formulation' outside the field of international environmental law".⁹⁷⁷ What is noteworthy is that the Appellate Body, in its reiteration, omitted to include the words "at least" which were contained in its Report on the *Hormones* case. This led academics to conclude that the WTO's support for the application of the precautionary principle to risk assessment as part of customary international environmental law was thus stronger.⁹⁷⁸ Finally, and more recently, in *EC Measures Affecting the Approval and Marketing of Biotech Product*, the WTO again noted that "the legal status of the precautionary principle remains unsettled".⁹⁷⁹ However, it admitted that "provisions explicitly

⁹⁷⁵ *EC Measures Concerning Meat and Meat Products (Hormones)* [123].

⁹⁷⁶ See generally, Agne Sirinskiene, 'The Status of Precautionary Principle: Moving towards a Rule of Customary Law' [2009] 118 *Jurisprudencija* 349, 352-353. See also Daniel Kazhdan, 'Precautionary Pulp: Pulp Mills and the Evolving Dispute between International Tribunals over the Reach of the Precautionary Principle' [2011] 38:2 *Ecology Law Quarterly* 527, 537, supporting such assertion under note 81 and noting that "by limiting the precautionary principle to environmental issues it is simpler to understand which side merits precautionary treatment."

⁹⁷⁷ *Japan Measures Affecting the Importation of Apples* [233].

⁹⁷⁸ Kazhdan, note 976, 538.

⁹⁷⁹ *EC Measures Affecting the Approval and Marketing of Biotech Product* [7.89]. It referred to the separate opinion of Judge Laing in the *Bluefin Tuna Cases* discussed below, who noted that

or implicitly applying the precautionary principle have been incorporated into numerous international conventions and declarations” and importantly added that these “for the most part [...] are environmental conventions and declarations”.⁹⁸⁰ This statement was interpreted by Kazhdan as an “almost explicit” acceptance by the WTO of the status of the principle as customary international environmental law.⁹⁸¹

Looking now at the jurisprudence of the ITLOS, the *Bluefin Tuna Cases* and the *MOX Plant Case (Ireland v. United Kingdom)* both concerned a request by the plaintiffs for a preliminary injunction enjoining the defendants from endangering the environment in the face of uncertainty surrounding the effects of the latter’s actions. Although reference to the precautionary principle was made in the allegations of the parties, it was not expressly relied upon by ITLOS in either of the cases. Nevertheless, the analysis of the Tribunal’s position in these cases is to some extent revelatory of its position with regard to the role of the precautionary principle in environmental matters.

In the *Bluefin Tuna Cases*, Australia and New Zealand sued Japan in relation to the latter’s unilateral increase of the number of southern bluefin tuna it caught (which it claimed to be experimental),⁹⁸² allegedly in breach of a 1993 treaty between the parties, namely, the Convention for the Conservation of Southern Bluefin Tuna.⁹⁸³ In their allegations, Australia and New Zealand contended that Japan was in breach of its obligations under UNCLOS in respect of the conservation and management of Southern Bluefin Tuna, expressly invoking the precautionary principle.⁹⁸⁴ Despite the fact that ITLOS did not equally do so, the

“no authoritative judicial decision unequivocally supports the notion; doctrine is indecisive; and domestic juridical materials are uncertain or evolving”. See notes [7.88].

⁹⁸⁰ Ibid, 7.88.

⁹⁸¹ Kazhdan, note 976, 538.

⁹⁸² *Bluefin Tuna Cases* [73]. Japan contended that the experiment in question aimed to eliminate “the uncertainty within the scientific community over the state of the SBT stock.” See *Southern Bluefin Tuna Cases (N.Z. v. Japan, Austl. v. Japan)*, Provisional Measures, Transcript of Oral Proceedings (19 August, 1999, 10:00 am) [14].

⁹⁸³ *Bluefin Tuna Cases* [45].

⁹⁸⁴ Ibid, [28].

language used in its decision reflects the application of the principle. It expressly referred to the “scientific uncertainty regarding measures to be taken to conserve the stock of southern bluefin tuna”⁹⁸⁵ and examined it against the risk of deterioration of the southern bluefin tuna stock⁹⁸⁶ and the risk of “serious harm”⁹⁸⁷ to the bluefin tuna. Relying on such considerations, ITLOS appeared to apply the precautionary principle in granting the provisional measures in question and enjoining Japan from increasing its total allowable catch despite the inconclusiveness of scientific evidence establishing the risks such increase poses.⁹⁸⁸ In doing so, the Tribunal shed some light on the repercussions of the application of the precautionary principle in international environmental law. In fact, its ruling entailed that it has at least lowered the standard of proof required for the plaintiffs to establish a causal link between Japan’s projected actions and the prospective harm in question. Thus, in its *ex ante* assessment of the situation presented before it, the Tribunal erred on the side of caution in its interpretation of the existing uncertainties, and appeared to apply principle 15 of the Rio Declaration to avoid postponing the adoption of precautionary measures to prevent environmental degradation. In other words, the Tribunal did not expect the plaintiffs to present conclusive evidence in support of their contentions. Of course, its position could be taken further to mean that it entails a reversal of the burden of proof, in the sense that it was now expected from Japan to establish that the uncertainties at hand do not lead to the deterioration of the southern bluefin tuna stock.

Indeed, commentators on the case have quasi-unanimously understood that the Tribunal heavily relied on the precautionary principle in its decision. In this regard, Judge Laing, noted in her separate opinion that “[i]t becomes evident that the Tribunal has adopted the precautionary approach for the purposes of

⁹⁸⁵ Ibid, [79].

⁹⁸⁶ Ibid, [80].

⁹⁸⁷ Ibid, [77].

⁹⁸⁸ Ibid, [89].

provisional measures in such a case as the present”.⁹⁸⁹ Similarly, Judge *ad hoc* Shearer found that “the Tribunal has not found it necessary to enter into a discussion of the precautionary principle/approach. However, I believe that the measures ordered by the Tribunal are rightly based upon considerations deriving from a precautionary approach”.⁹⁹⁰ A similar position was equally adopted by Marr, who saw this instance as falling within recent State practice and *opinio juris*, and thus found it as contributing in presenting “good grounds for arguing that the precautionary approach, in relation to marine living resources, has developed from an evolving norm to an established norm of customary international law”.⁹⁹¹ Nevertheless, Marr also noted the difficulties and uncertainties pertaining to the threshold which needs to be met to trigger environmental action, referring for that purpose to questions surrounding the level of seriousness of the potential harm in question which is required for States to invoke the precautionary approach.⁹⁹² He found that, on the facts of the case, the threshold was easily established as the stock of Southern Bluefin Tuna was “severely depleted” and was at its “historically lowest levels” which raised “serious biological concerns”.⁹⁹³ Certainly, and as discussed in Chapter VI-3, the risk that prospective hazardous activities would cross the applicable environmental threshold is not always straightforwardly established and depends upon the scientific assessment of the risks in question. Importantly, this nevertheless depends upon, on the one hand, the type of the applicable threshold at hand;⁹⁹⁴ and on the other hand, the degree of uncertainty attached to the scientific

⁹⁸⁹ *Bluefin Tuna Cases (N.Z. v. Japan, Aust. v. Japan)*, Provisional Measures, Order of 27 August 1999, Cases Nos. 3 and 4 (Separate Opinion of Judge Laing) [19]. For the purposes of our discussion reference to the precautionary *principle* and to the precautionary *approach* are treated as equal. In Judge Laing’s view, “adopting an approach, rather than a principle, appropriately imports a certain degree of flexibility and tends, though not dispositively, to underscore reticence about making premature pronouncements about desirable normative structures.”

⁹⁹⁰ *Bluefin Tuna Cases (N.Z. v. Japan, Aust. v. Japan)*, Provisional Measures, Order of 27 August 1999, Cases Nos. 3 and 4 (Separate Opinion of Judge *ad hoc* Shearer) [8].

⁹⁹¹ Simon Marr, ‘The Southern Bluefin Tuna Cases: The Precautionary Approach and Conservation and Management of Fish Resources’ [2000] 11 Eur. J. Int’l. L. 815, 826-827.

⁹⁹² *Ibid.*

⁹⁹³ *Ibid.* *Bluefin Tuna Cases* [71].

⁹⁹⁴ See for example the reference in Chapter VIII-2.B-a below to indicative and inclusive thresholds.

assessment of the risks posed by the projected hazardous activities. Thus, the reliance on the precautionary principle does not necessarily rest upon a straightforward establishment of the crossing of applicable thresholds. This is particularly the case in relation to the question of whether risks posed by offshore oil and gas activities could lead to significant transboundary harm, an abstract threshold which depends on a case-by-case scientific examination of the seriousness of potential harm. An examination which could, in itself, be obscured by gaps in knowledge and insufficiency/lack of quality of information. Furthermore, interpreting the Tribunal's reasoning, Kazhdan supported this analysis of the case, advancing that "[b]ased on the idea of precaution, the tribunal thus decided in favor of New Zealand and Australia, despite scientific uncertainty",⁹⁹⁵ and that this "suggests that the precautionary principle had either lowered the burden of proof for the plaintiffs or shifted the burden of proof onto the defendants".⁹⁹⁶

In the *MOX Plant Case*, the UK authorised the commission of a mixed oxide fuel (MOX) plant, next to a nuclear processing site. In response, Ireland initiated Arbitration proceedings before the Permanent Court of Arbitration, raising concerns surrounding the risks of pollution which this authorisation might cause in the Irish Sea.⁹⁹⁷ Ireland simultaneously sought a preliminary injunction from the ITLOS enjoining the UK from initiating the hazardous activity until an arbitral award is issued.⁹⁹⁸ It is noteworthy that Ireland's contention was partly based on its allegation that the activity in question entails a risk of irreparable harm.⁹⁹⁹ Importantly, it further argued that, based on the application of the precautionary principle, England should bear the burden of proving that this activity does not present the risk of causing the aforementioned harm.¹⁰⁰⁰ Answering such claims, the UK advanced that the said risk was "manifestly small",¹⁰⁰¹ and agreed to take

⁹⁹⁵ Kazhdan, note 976, 534.

⁹⁹⁶ Ibid.

⁹⁹⁷ The *MOX Plant Case (Ireland v. U.K.)* (Permanent Court of Arbitration, June 24, 2003)

⁹⁹⁸ *MOX Plant Case* [2].

⁹⁹⁹ Ibid, [68].

¹⁰⁰⁰ Ibid, [71].

¹⁰⁰¹ Ibid, [72], [76].

measures susceptible to reduce it, pending an outcome of the arbitral proceedings.¹⁰⁰² ITLOS, noting that there is insufficient urgency to grant the requested injunction,¹⁰⁰³ ruled in favour of the UK.

This aforementioned lack of urgency arguably influenced the Tribunal's decision as to whether the precautionary principle was relevant at all. However, a deeper examination of the opinions of the judges ruling on the case reveals that the case has little implications on the Tribunal's position *vis-à-vis* the precautionary principle. In fact, the joint declaration of Judges Caminos, Yamamoto, Parl, Akl, Marsit, Eiriksson and Jesus, showed that the Tribunal distinguished the *Southern Bluefin Tuna Cases*, based on the fact that, in the *MOX Plant Case* "the urgency of the situation did not require it to lay down, as binding legal obligations, the measures requested by Ireland".¹⁰⁰⁴ Moreover, Judge Treves noted in his separate opinion that "precautionary considerations" would have been justified had, on the facts of the case, Ireland shown more urgency.¹⁰⁰⁵ This had lead Kazhdan to rightly conclude that the case "does not reflect a changing position [by ITLOS] on the precautionary principle".¹⁰⁰⁶

Importantly, the outcome of the case was influenced by ITLOS finding that the precautionary principle has no application in this case, and, in its reasoning, suggesting that this entailed that the burden of proof was still upon the claimant.¹⁰⁰⁷ It is therefore submitted that, the reasoning on the *Southern Bluefin*

¹⁰⁰² Ibid, [79]. The UK agreed that "there will be no additional marine transports of radioactive material either to or from Sellafield [(the nuclear processing plant)] as a result of the commissioning of the MOX plant", and to postpone any import of MOX fuel for several months. See [78]-[79].

¹⁰⁰³ Ibid, [81].

¹⁰⁰⁴ *MOX Plant Case (Ireland v. U.K.)*, Provisional Measures, Order of 3 December 2001, Case No. 10 (Joint Declaration of Judges Caminos, Yamamoto, Park, Akl, Marsit, Eiriksson and Jesus).

¹⁰⁰⁵ *MOX Plant Case (Ireland v. U.K.)*, Provisional Measures, Order of 3 December 2001, Case No. 10. (Separate opinion of Judge Treves) [8].

¹⁰⁰⁶ Kazhdan, note 976, 536.

¹⁰⁰⁷ *MOX Plant Case* [75]. It provided that it took into consideration the fact that "the United Kingdom argues that Ireland has failed to supply proof that there will be either irreparable damage to the rights of Ireland or serious harm to the marine environment resulting from the operation of the MOX plant" and that, "on the facts of this case, the precautionary principle has no application".

Tuna Cases referred to above is reinforced as it appears that, in the view of ITLOS, the application of the precautionary principle in environmental matters entails a reversal of the burden of proof. However, the discussions below on the ICJ case-law will show that this position is far from being universal. This being said, the *Southern Bluefin Tuna* and the *MOX Plant* cases reveal the support by ITLOS for the invocation of the principle in environmental matters. It is further noted that, in the aforementioned two cases, the plaintiffs sought a particular precautionary measure, namely injunctions enjoining certain activities, and therefore no guidance was given on the specific matter of the delimitation of the obligations of States to act with due diligence. Further guidance on its understanding on the principle's implications is found in its more recent Advisory Opinion of 2011.

The ITLOS Advisory Opinion originated from Nauru's submission of an application for approval of a work plan for exploratory seabed mining activities, and its concern that its financial capacities as a developing country might prove insufficient for it to meet the potential liabilities or costs arising from its sponsorship of a mining entity. Within this context, Nauru proposed that the International Seabed Authority ['ISA'] seeks the opinion of the Seabed Disputes Chamber of ITLOS on the responsibility and liability of a State sponsoring activities in the Area. Accordingly, ISA's council requested the opinion of the Chamber on the questions of, *inter alia*, the legal responsibilities and obligations of States Parties to the Convention with respect to the sponsorship of activities in the Area in accordance with the Convention, and the necessary and appropriate measures that a sponsoring State must take in order to fulfil its responsibility under UNCLOS.¹⁰⁰⁸

Apart from its reiteration of previous findings of the ICJ, notably in *Pulp Mills*, ITLOS advanced the status of the law on the subject of the definition of the concept of due diligence which characterises the obligations of States to “ensure”, for the purposes of this study, “that activities under their jurisdiction or control

¹⁰⁰⁸ As mentioned above, the Chamber clarified that this reference to States' responsibility was understood as pertaining to their *primary obligations* in question, and the obligations relevant to our discussion are those contained under Art. 194.1 and 194.2.

are so conducted as not to cause damage by pollution to other States and their environment”.¹⁰⁰⁹ As mentioned in section IV-2.B above, it achieved this through linking the aforementioned concept with the application of a precautionary approach and, importantly for the developments in this section, through clarifying the framework of the application of the precautionary principle in international environmental matters. It is submitted that advances of the Advisory Opinion should be attributed considerable value taking into account that (1) it has been unanimously adopted (for the first time), (2) nine countries, ISA, the United Nations Educational, Scientific and Cultural Organization [‘UNESCO’], and the International Union for the Conservation of Nature and Natural Resources [‘IUCN’] participated in the oral proceedings before the Chamber, (3) unlike the ICJ, with regard to the composition of the Tribunal, no countries have permanent representatives, which pushed some to conclude that the “weight” of the judges of countries with permanent members on the Security Council “is less likely to be determinant” in the outcomes of its decisions and advisory opinions.¹⁰¹⁰ Thus, Zanella and Cabral thought that “[a]mong the cases analyzed by the ITLOS, and maybe in all the international courts, [the Advisory Opinion] is the most significant”.¹⁰¹¹ On the other hand, Lamotte observed that the opinion “continues a recent trend among international tribunals that have embraced a precautionary approach to international environmental matters, both expressly in its embrace and extension of the precautionary approach, and implicitly in some of the interpretive choices adopted in the advisory opinion”.¹⁰¹² Freestone also highly valued the opinion, labelling it as “historic”.¹⁰¹³

¹⁰⁰⁹ UNCLOS, Art. 194.2.

¹⁰¹⁰ See Kazhdan, note 976, 550.

¹⁰¹¹ Tiago Vinicius Zanella and Ricardo Pereira Cabral, “The application of the precautionary principle in international law: an analysis of the contribution of the international tribunal for the law of the sea” [2017] 14:29 *Veredas do Direito*, Belo Horizonte 229, 247.

¹⁰¹² Russell Lamotte, ‘Introductory note to the international tribunal for the law of the sea: responsibility and obligations of States sponsoring persons and entities with respect to activities in the area (request for advisory opinion submitted to the seabed disputes chamber) [2011] 50:4 *International Legal Materials* 455, 457.

¹⁰¹³ David Freestone, ‘Responsibility and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area’ [2011] 105:4 *The Amer. J. Int’l L.* 755, 759.

Apart from ITLOS' suggested conviction that the precautionary principle has attained the status of customary international law, it made a number of observations which are relevant to the implications of its invocation in environmental matters. In relation to the first point, ITLOS took note of the incorporation of the principle into a "growing number of international treaties and other instruments",¹⁰¹⁴ and noted that this "has initiated a trend towards making this approach part of customary international law".¹⁰¹⁵ The Chamber then further noted that this "trend" is "clearly reinforced" by the reference to the principle in the elements which it had examined in the case at hand.¹⁰¹⁶ Moreover, it interpreted the ICJ's passage in which it provided that "a precautionary approach may be relevant in the interpretation and application of the provisions of the Statute" in light of Art. 31, paragraph 3(c) of the Vienna Convention according to which the interpretation of a treaty should take into account not only the context but "any relevant rules of international law *applicable* in the relations between the parties" (emphasis added).¹⁰¹⁷

Looking at the observations which the Chamber made in relation to the framework of application of the precautionary principle within the general obligation of due diligence, the following remarks are made. (1) ITLOS referred to the formulation of the principle under Principle 15 of the Rio Declaration, taking into account the reference which the latter makes in its second sentence to "serious or irreversible harm" and to the "cost-effectiveness" of the measures aiming to prevent "environmental degradation".¹⁰¹⁸ (2) The interaction between the precautionary principle and the due diligence requirement entails that the obligation of States to take "all appropriate measures" to ensure the satisfaction of their obligations "applies in situations where scientific evidence concerning the scope and potential negative impact of the activity in question is *insufficient* but

¹⁰¹⁴ ITLOS Advisory Opinion [135].

¹⁰¹⁵ *Ibid.*

¹⁰¹⁶ *Ibid.*

¹⁰¹⁷ *Ibid.*

¹⁰¹⁸ ITLOS Advisory Opinion [128].

where there are *plausible indications of potential risks*” (emphasis added).¹⁰¹⁹ Thus the Chamber provided that a disregard by a State of such risks would entail its breach of its obligation of due diligence in question, as it “would amount to a failure to comply with the precautionary approach”.¹⁰²⁰ (3) ITLOS reiterated the findings in *Pulp Mills* and opined that the measures which a sponsoring State must adopt to satisfy their due diligence requirement should be in the form of laws and regulations and the taking of administrative measures,¹⁰²¹ and that these must be “reasonably appropriate for securing compliance by persons under its jurisdiction”.¹⁰²² This last point has already been commented upon when the *Pulp Mills* decision was analysed in section IV-2.B above.

With regard to (1), Zanella and Cabral noted that the element of “serious or irreversible harm” was understandably not elaborated upon nor delimited by ITLOS, and that it thus left it to be examined on a case-by-case basis.¹⁰²³ They also noted that the cost-effectiveness element entailed that the precautionary measures which are mandated by the precautionary principle “must bring more benefits than costs”.¹⁰²⁴ Moreover, they analysed that this reference by the Chamber to the Principle 15 of the Rio Declaration formulation of the principle meant that its invocation, in cases where “the scope and potential negative impact of the activity in question is insufficient but where there are plausible indications of potential risks” is subject to the satisfaction of the elements which Principle 15 contains.¹⁰²⁵ This position was supported by Freestone’s assertion that the Chamber “identified what it termed the ‘legal obligation’ to apply the precautionary approach as found in Principle 15 of the Rio Declaration”.¹⁰²⁶ Commenting on this literature, it is submitted that the element of “serious or irreversible harm” is arguably satisfied in relation to the risks of transboundary

¹⁰¹⁹ Ibid, [131].

¹⁰²⁰ Ibid.

¹⁰²¹ Ibid, [223]-[226].

¹⁰²² UNCLOS, Annex III, Art. 4(4).

¹⁰²³ Zanella and Cabral, note 1011, 249.

¹⁰²⁴ Ibid.

¹⁰²⁵ Ibid, 251.

¹⁰²⁶ Freestone, note 1013, 758.

pollution from offshore activities. This is evident when one looks at the scale of the damage caused by the Deepwater Horizon incident and contemplates the transboundary effects which it could have had had it occurred in a different region of the world (where the States in question are geographically more closely placed to one another), or the transboundary damage which has occurred following the Montara blowout. As for the element of cost-effectiveness, it is argued that the cost of the elaboration of a liability regime (the precautionary measure which this thesis aims to argue is effective in answering the States' obligation to prevent transboundary pollution from offshore activities) is merely that of its negotiation and coming into force/implementation, while the benefits are evident in its effectiveness in incentivising higher levels of care, affording grounds for compensation to victims of transboundary pollution resulting from offshore incidents and meeting internationally-agreed-upon environmental policy objectives. Thus, both elements are arguably satisfied in the context of this study.

In relation to (2), academic commentary was in favour of its interpretation as entailing, at least, a lowering of the burden of proof required from States alleging that hazardous activities undertaken under the jurisdiction of neighbouring States pose a risk of transboundary harm (and at most that the precautionary principle entails a reversal of the burden of proof, and thus requires States under the jurisdiction of which hazardous activities are being undertaken to establish that such activities do not pose the risk of transboundary harm). In this regard, Boyle, wary of the position adopted by the ICJ in *Pulp Mills* on this point, noted that "the function of the precautionary principle in international law is not to compensate for uncertainties or deficiencies in the applicant's evidence. If harm is alleged, it must be proved, to the standard required by international courts, by the party alleging it. [...] What the precautionary approach does, as ITLOS makes clear, is to reduce the standard of proof required in order to establish that an activity poses a risk of harm".¹⁰²⁷ Consistently, Beckman was of the view that, despite the usual assertion that the precautionary principle mandates a reversal

¹⁰²⁷ Boyle, note 481, 244.

of the burden of proof concerning the potential impact of a given activity, the apparent adoption by the Chamber of Principle 15 of the Rio Declaration formulation thereof suggests its support of the ICJ position to the contrary as expressed in *Pulp Mills*.¹⁰²⁸ He viewed that the wording of Principle 15 does not seem to support the position that the precautionary principle entails a reversal of the burden of proof.¹⁰²⁹ Kazhdan, on the other hand, placed the Advisory Opinion within the context of the ITLOS jurisprudence exposed above to assert that, in matters of international environmental law, the Tribunal's position was that the precautionary principle entails either lowering the standards of proof or "potentially even shift[ing] the burden of proof".¹⁰³⁰ Despite the credibility of Kazhdan's assertion, the reality of the position adopted by the ICJ on this point makes it more sensible to embrace the more moderate view expressed by Boyle and Beckman.

That being said, it must be reminded that the Advisory Opinion's passage in question which this point refers to places an obligation on source States to take into account the "*plausible indications of potential risks*" of hazardous activities under their jurisdiction where the "scientific evidence concerning the *scope and potential negative impact*" thereof is "insufficient" (emphasis added). Arguably, this statement by the Chamber is easily linked to another "direct obligation" which it tackled in its opinion and stressed that it constitutes a general obligation under customary international law, namely, the obligation to conduct EIA in respect of hazardous activities under their jurisdiction.¹⁰³¹ This link is traceable having regard to the wording of Art. 206 of UNCLOS which provides: "[w]hen States have reasonable grounds for believing that planned activities under their jurisdiction or control *may* cause substantial pollution of or significant and harmful changes to the marine environment, they shall, as far as practicable, assess the *potential effects* of such activities on the marine environment [...]" (emphasis added). It is submitted that this interpretation clarifies the

¹⁰²⁸ Beckman, note 382, 145-146.

¹⁰²⁹ *Ibid.*

¹⁰³⁰ Kazhdan, note 976, 533.

¹⁰³¹ ITLOS Advisory Opinion [141]-[150].

delimitation by the concept of due diligence (which is now refined through the application of the precautionary principle) of the procedural obligation of States to conduct EIA. Such delimitation is made as, in their assessment of the *potential effects/negative impact* of the activities in question, States are now required to take into consideration the “*plausible indications of potential risks*” where scientific uncertainty surrounds their potential scope. This is consistent with Freestone’s reading of the Advisory Opinion, as he found that it “set the highest standards of due diligence for sponsoring states and endorsed a legal obligation for them to apply precaution and best environmental practices, and to conduct environmental impact assessments”.¹⁰³² Moreover, the Chamber’s clarification that, accordingly, “[a] sponsoring State would not meet its obligation of due diligence if it disregarded those risks”, suggests that it is of the view that the breach of the “direct [procedural] obligation” of conducting EIA, taking account of plausible indications of the risk at hand, entails a breach of the due diligence requirement characterising States’ substantive obligation to “ensure” that, for the purposes of this discussion, “activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment” (as provided for under Art. 194.2 of UNCLOS). In doing so, ITLOS explained how the obligation to conduct such EIA is “read as a relevant factor for meeting the sponsoring State’s due diligence obligation”.¹⁰³³

Combining the remarks made in the abovementioned two paragraphs, this practically entails that victim States, in their allegation of a breach by source States of their obligation to prevent transboundary pollution from offshore activities, would be required to prove that the latter, in their assessment of the risk which activities under their jurisdictions pose, and despite the insufficiency of the scientific evidence surrounding their scope and potential negative impact, had failed to take “plausible indications” of such risks into account. In other words, the standard of proof required from claimant States in establishing that a risk of significant transboundary harm attaches to a certain hazardous activity is

¹⁰³² Freestone, note 1013, 759.

¹⁰³³ ITLOS Advisory Opinion [142].

now tied to the “plausible indications” that such risk would potentially be realised (in light of existing uncertainties), as opposed to requiring these States to present conclusive evidence on the cause/effect relationship which the activities in question create. It is further submitted that the requirement of States to take all appropriate measures to ensure their satisfaction of their substantive obligation will to a large extent be influenced by the aforementioned delimitation. As explained above, when commenting on the ICJ jurisprudence on the due diligence concept,¹⁰³⁴ the examination of the satisfaction by States of this substantive obligation remains decisive where the procedural obligations relevant thereto have been satisfied. The following sub-section is relevant to the interaction of the precautionary due diligence requirement with the aforementioned procedural and substantive obligations, and its repercussions on the obligation of States to prevent transboundary pollution from offshore activities within their jurisdiction.

In contrast, the ICJ has only briefly expressly referred to the precautionary principle in its decision in *Pulp Mills*. It provided that “while a precautionary approach may be relevant in the interpretation and application of the provisions of the Statute, it does not follow that it operates as a reversal of the burden of proof”.¹⁰³⁵ This position, which the Court makes clear,¹⁰³⁶ has been reiterated by academics to compare the implications which the Court and ITLOS respectively attach to the application of the precautionary principle.¹⁰³⁷ However, the question remains whether, based on the approach it adopted in the case, the Court at least required a lowered standard from Argentina in proving the significance/scope of the risks which Uruguay’s activities posed (without reversing it) where scientific uncertainty contravenes the clear establishment thereof. In other words, the

¹⁰³⁴ See in particular McIntyre’s passages referred to in notes 461-465 and accompanying texts.

¹⁰³⁵ *Pulp Mills* [164].

¹⁰³⁶ It is also traceable in the earlier decision of the ICJ in *Gabdikovo-Nagymaros*, as the Court noted at 42 that “the dangers ascribed to the upstream reservoir . . . remained uncertain” and that “serious though these uncertainties might have been they could not, alone, establish the objective existence of a ‘peril’ in the sense of a component element of a state of necessity”. And that, in light of such uncertainty, the burden of proof still rested upon Hungary despite Slovakia being the State which would create a risk of environmental harm. See *Gabdikovo-Nagymaros* [41]-[43].

¹⁰³⁷ See generally Kazhdan, note 976; see also Zanella and Cabral, note 1011.

question is whether common grounds could be found in the positions adopted by the two international bodies, grounds which could then arguably be the Law pertaining to the role which the precautionary principle plays in international environmental matters.

In this regard, Birnie, Boyle and Redgwell, commenting on the standard of proof in allegations relating to environmental matters, were of the view that the standard of “clear and convincing evidence” is too high and ill-suited, having regard to the complexities and uncertainties which underlay the environmental impacts which given activities might entail.¹⁰³⁸ This standard is traditionally contrasted with the lower standard of proof based on the “balance of probabilities”, which instead depends on establishing the facts that seem most *likely* to be true.¹⁰³⁹ Similarly, in his separate opinion delivered in the *Pulp Mills* decision, Judge Greenwood, noted the varying standards of proofs applicable in criminal and civil cases (proof beyond reasonable doubt in relation to the former and proof only on a balance of probabilities in relation to the latter).¹⁰⁴⁰ He was also of the view that the applicable standard of proof depends upon the seriousness of the allegations made.¹⁰⁴¹ Thus, basing his analysis on the varying degrees of seriousness of allegations relating to the crime of genocide and those relating to the environmental obligations assessed in *Pulp Mills* (which he still labelled “serious”), he asserted that the case at hand falls “squarely within the category of cases which calls for a lower standard of proof”.¹⁰⁴² He further backed his position on the reality that “the nature of environmental disputes is such that the application of the higher standard of proof would have the effect of making it all but impossible for a State to discharge the burden of proof”.¹⁰⁴³ Therefore, agreeing with the Court on the fact that Argentina failed to satisfy its burden of

¹⁰³⁸ Birnie, Boyle and Redgwell, note 355, 154.

¹⁰³⁹ *Ibid.*

¹⁰⁴⁰ *Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Separate opinion of Judge Greenwood) [25].

¹⁰⁴¹ *Ibid.*, examining the high standard of proof required in allegations relating to the crime of genocide, and comparing it to “less grave allegations”.

¹⁰⁴² *Ibid.*, [26].

¹⁰⁴³ *Ibid.*

proof, he importantly concluded that it was “required to establish the facts which it asserted only on the balance of probabilities (sometimes described as the balance of the evidence)”.¹⁰⁴⁴ However, it must be noted that the majority of the Court did not expressly tackle this subject, and, a deeper examination of its evaluation of Argentina’s contentions reveals that it did not adopt a lowered standard of proof. This position was spotted and analysed by Kazhdan as he noted that the Court failed to refer to the precautionary principle when ruling on the evidentiary matters in the case,¹⁰⁴⁵ and required Argentina to satisfy the high standard of “clear”, “convincing” or “conclusive” evidence.¹⁰⁴⁶ Thus, Boyle and Harrison were of the view that the Court’s assessment of the evidence submitted to it in the case was “retrogressive” as it revealed its adoption of the standard which the arbitral tribunal had applied in the *Trail Smelter*, namely that according to which harm should be established by “clear and convincing evidence”, without having due regard to the developments of international environmental law which have occurred since the arbitration.¹⁰⁴⁷

This being said, the Court recognised that the obligation of States to undertake EIA “where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context” is now a requirement under general international law which the interpretation of the obligation to protect and preserve the environment must be made in accordance to (but also recognised that general international law does not delimit the scope and content of such EIA).¹⁰⁴⁸ Having regard to the precautionary nature which EIA present,¹⁰⁴⁹ Kazhdan thought it “paradoxical” that, in the same decision, the ICJ

¹⁰⁴⁴ Ibid.

¹⁰⁴⁵ Kazhdan, note 976, 545, referring to paras 180, 228, 250, 254, 257, 259, 262 and 265 of *Pulp Mills*.

¹⁰⁴⁶ Ibid, referring to paras 189, 228, 225, 257, 259, 262, 264, and 265 of *Pulp Mills*.

¹⁰⁴⁷ Alan Boyle and James Harrison, ‘Judicial Settlement of International Environmental Disputes: Current Problems’ [2013] 4 *Journal of International Dispute Settlement* 245, 268-269.

¹⁰⁴⁸ *Pulp Mills* [204]-[205].

¹⁰⁴⁹ As will be discussed in the following Chapter. See also ILC, ‘Report of the International Law Commission on the work of its fifty-second session’ (May 1-June 9 & July 10-Aug. 18, 2000) UN Doc GAOR A/55/10 (SUPP), noting at 716 that “the Special Rapporteur [of the ILC] pointed out

simultaneously rejected that the precautionary principle entails a reversal of the burden of proof and required States to take “a precautionary approach via environmental impact assessments when there is a serious environmental risk”,¹⁰⁵⁰ and attributed such contradiction to the ICJ’s “institutional interests” and to “practical considerations”.¹⁰⁵¹ At least, this ICJ position surrounding EIA could be combined with the ITLOS integration of the precautionary principle within the due diligence concept. This approach accommodates a link between EIA and the precautionary principle which we will discuss in more depth in the following Chapter.

Moreover, the Court’s recognition that “a precautionary approach may be relevant in the interpretation and application of the provisions of the Statute”, which has been relied upon by ITLOS in its 2011 Advisory Opinion in its identification of a “trend” towards recognising the precautionary principle as a norm of customary international law, suggests that it does not fundamentally oppose a reliance thereon in environmental matters. In fact, it appears that the ICJ has distinguished the recognition of the relevance of the precautionary principle from the question of shifting of the burden of proof. However, given that the judgment was in the view of some “based on extremely technical aspects of the bilateral agreement [in question] – [...] – and not on the broad application of the precautionary principle”,¹⁰⁵² it is difficult to ascertain its real position on how the latter could be invoked in international environmental matters before the ICJ.

In light of the foregoing, and with regard to the topic of this thesis, it is submitted that a common ground between the examined positions adopted by the international bodies discussed in this section could be found in the interplay between the precautionary principle and the procedural obligation of States to conduct EIA with regard to offshore activities within their jurisdiction, without applying a shift in the burden of proof. An interplay which, as mentioned above,

that, in his view, the precautionary principle was already included in the [...] environmental impact assessment, and could not be divorced therefrom”.

¹⁰⁵⁰ Kazhdan, note 976, 547.

¹⁰⁵¹ Ibid.

¹⁰⁵² Zanella and Cabral, note 1011, 240.

could in turn help ascertain the contents of the substantive obligation of States to prevent transboundary pollution from such activities. The following Chapter specifically looks at how the precautionary principle could achieve the aforementioned purposes.

VIII- The precautionary principle: a principle of international law affording solutions for the management of the risks of transboundary pollution from offshore incidents

Having examined *why* the precautionary principle is relevant to the issue of transboundary pollution from offshore activities (Chapter VI), and having analysed the support and boundaries for the reliance thereon to regulate the risks of such pollution (Chapter VII), this Chapter aims to describe *how* the principle could be used to find appropriate solutions for the issues raised by this thesis. Specifically, it tackles the following question: *how* could the precautionary principle form an integral part of the general due diligence requirement for States to prevent transboundary harm from offshore activities under their jurisdiction? Of course, regards must be made to the conclusions reached on the position of international courts surrounding the repercussions of the reliance on the principle in the context of inter-State environmental disputes; including that it entails a lowering (rather than a reversal) of the burden of proof incumbent upon claimants in establishing that given projects/activities present the risk of causing significant transboundary harm. Ultimately, discussions in this Chapter purport to settle the complexities attached to the invocation of a breach of the obligation to prevent transboundary pollution from offshore activities within a State's jurisdiction (discussed in Chapter IV.2) and thus to afford more predictability in the Law applicable to inter-state claims and/or diplomatic negotiations stemming from the occurrence of events leading up to such consequences.

Considering the strong reliance in the argument made under this section on the implications of the interference of the precautionary principle within the obligation of States to assess the potential transboundary impacts of activities under their jurisdiction, a preliminary question arises surrounding whether the principle applies at both the risk assessment and risk management stages (1). Thence, the following sub-sections would respectively deal with the principle's

role within the assessment of environmental risks (2), and its role at the risk management stage (3).

1. The role of the precautionary principle within risk regulation: risk assessment v. risk management

Before jumping into discussions surrounding the applicability of the principle at both the risk assessment and risk management stages, a brief overview of “risk regulation” and the perception thereof that would be adopted in this Chapter further delineates its relevance in the context of this study. In this regard, Hutter enumerated four broad perspectives on regulation.¹⁰⁵³ Amongst them, the perspective which is based on the “crucial feature” of regulation to “[attempt] to control risks”,¹⁰⁵⁴ namely regulation as the control of risk.¹⁰⁵⁵ This perspective is directly relevant to the concept of due diligence discussed in Chapter IV as it embraces the risks created by hazardous industries and emphasises on States’ “organised responses” to control them.¹⁰⁵⁶ The precautionary principle is relevant within this general overview of risk regulation as, as put by Hutter, “relatively simple discussions of harm have been replaced by increasingly sophisticated discussions of risk and uncertainty”.¹⁰⁵⁷ Moreover, although proper regulation in the sense adopted here will eventually be measured in relation to States’ response to control risks of hazardous activities, it is noteworthy that it preliminarily presupposes an analysis of such risks. In this regards, Hood further elaborated that the assessment and management of risks constitute the two components of risk analysis,¹⁰⁵⁸ while, from an international law perspective, Zander considered that these components are joined by risk communication to form the three phases of risk regulation.¹⁰⁵⁹ More specifically, Pollak advanced that risk assessment is perceived as the “scientific component of risk regulation”, whereas risk

¹⁰⁵³ Bridget Hutter, ‘Risk, Regulation, and Management’ in Peter Taylor-gooby and Jens Zinn (eds) *Risk in Social Science* (OUP 2006) 203.

¹⁰⁵⁴ Ibid, 204, referring to Hood, Rothstein and Baldwin.

¹⁰⁵⁵ Ibid.

¹⁰⁵⁶ Ibid.

¹⁰⁵⁷ Ibid, 206.

¹⁰⁵⁸ Ibid.

¹⁰⁵⁹ Zander, note 484, 17 ff.

management is looked at as the “policy component” thereof.¹⁰⁶⁰ In fact, generally speaking, risk assessment involves the process of identifying risks and assessing both elements thereof, namely probability and severity; whereas risk management involves the process of “evaluating regulatory actions and selecting among them”¹⁰⁶¹ in response to assessed risks in order to keep them in line with environmental thresholds/standards.¹⁰⁶² Interestingly, acknowledging the deficiencies of scientific knowledge (and therefore of the uncertainty of risks), Pollak found that risk assessment must rely on conventions and *professional judgements* which “reflect not only scientific knowledge but also *policy judgements* and *cultural values*” (emphasis added).¹⁰⁶³ The argument presented in this Chapter is rooted in the role which the precautionary principle plays in influencing judgements within the context of risk assessment (i.e. the perception of the risk at hand) in line with the international environmental policy directions reflected upon throughout this thesis (e.g. sustainable development and the protection and preservation of the marine environment), and on the latter’s findings’ repercussions on what is expected from States at the risk management stage.

Examining the aforesaid within the context of this study, the starting point must be the statement made in the ITLOS Advisory Opinion according to which the precautionary principle is seen as “an integral part of the general obligation of due diligence”.¹⁰⁶⁴ Then, looking at the interpretation of State obligations to act with due diligence, insight could be sought from the commentaries on the ILC Draft Articles on Prevention, according to which the due diligence standard entails *both* that States, on the one hand, take “appropriate measures to *identify* activities

¹⁰⁶⁰ Robert Pollak, ‘Government Risk Regulation’ [1996] 545:1 *Annals of the American Academy* 25

¹⁰⁶¹ National Research Council, *Risk Assessment in the Federal Government: Managing the Process* (National Academy Press 1983) 18.

¹⁰⁶² These points will be touched upon and reinforced at different occasions in the subsequent discussions.

¹⁰⁶³ Pollak, note 1060.

¹⁰⁶⁴ ITLOS Advisory Opinion [131].

which might involve [a risk of significant transboundary harm]”¹⁰⁶⁵ and *inform* themselves of “factual and legal components that relate foreseeably to a contemplated procedure”;¹⁰⁶⁶ and, on the other hand, to *take measures* to “prevent significant transboundary harm or at any event to minimize the risk thereof”.¹⁰⁶⁷ This is of course, also reflected in the discussions above surrounding the interactions between the procedural and substantive facets of the obligation to prevent transboundary harm. Read together, the aforementioned statements entail that there is at least potential for the precautionary principle to interfere within both components of risk analysis pertaining to transboundary pollution from offshore activities. This part is consistent with a renowned Communication from the EU Commission on the precautionary principle, which aimed at clarifying when and how the principle applies.¹⁰⁶⁸ The Communication provided that the precautionary principle comes into play in the framework of risk analysis, and particularly in the context of risk management,¹⁰⁶⁹ although rejecting that it is triggered at the risk assessment stage.¹⁰⁷⁰ Despite the credibility of the EU Communication, the position it adopts is far from universal.¹⁰⁷¹ Strong support exists in favour of the precautionary principle playing a role both at the risk assessment and risk management stages. For example, the ILGRA produced a paper outlining policy guidelines on the precautionary principle,¹⁰⁷² where it elaborated, *inter alia*, on “how a risk-based approach can continue to be followed when the scientific uncertainty is such that conventional risk assessment cannot in itself determine the level of risk” (thus how the precautionary principle could

¹⁰⁶⁵ ILC Draft Articles on Prevention, Commentary, Article 3, commentary (10).

¹⁰⁶⁶ *Ibid.*

¹⁰⁶⁷ *Ibid.*, Art. 3; and Art. 3, commentary (10).

¹⁰⁶⁸ EU Communication, see note 868.

¹⁰⁶⁹ *Ibid.*, 12.

¹⁰⁷⁰ *Ibid.*

¹⁰⁷¹ See for example Science for Environment Policy (2017) *The Precautionary Principle: decision making under uncertainty*. Future Brief 18. Produced for the European Commission DG Environment by the Science Communication Unit, UWE, Bristol. <<http://ec.europa.eu/science-environment-policy>> accessed 12 March 2019, 4, providing that “the Communication is just one account of the precautionary principle; others can be found in different legal contexts. Even within EU law, the precautionary principle is highly malleable and performs many different functions”.

¹⁰⁷² ILGRA Paper, see note 854.

help avoid situations of “false-negatives”).¹⁰⁷³ According to the ILGRA paper, a risk-based approach and reliance on scientific advice are mandated by the precautionary principle in situations where scientific uncertainty impedes risk assessments due to lack of information.¹⁰⁷⁴ Hence, the application of the precautionary principle entails that “assumptions” are made about the potential consequences of risk-creating activities, leading to the establishment of “credible scenarios” on the basis of which risk assessment and risk management would proceed.¹⁰⁷⁵ The paper added that, “where possible, the range should include the most likely and worst case scenarios”.¹⁰⁷⁶ However, it maintained that the establishment of “scenarios” should be principled and based on “considered judgement”, providing that “in particular: the assumptions made about consequences and likelihoods should err on the side of caution and so seek to avoid harmful effects if things go wrong; but the bias towards caution should be tempered by application of the principles of good regulation, particularly proportionality and consistency in the assumptions made and the risk management measures selected”.¹⁰⁷⁷ The EU Communication stance is also inconsistent with the combined reading of *Pulp Mills* and the Advisory Opinion mentioned in the previous Chapter, according to which there exists a link between the precautionary principle and the obligation to conduct EIA.

The role which the precautionary principle could play at the risk assessment and risk management stages has also been highlighted in academia. Notably, acknowledging the fact that risk assessments are not well-suited for situations where we are “much less certain about the outcomes”, Harding and Deville have noted that they are “not a substitute for a precautionary approach” and that “a

¹⁰⁷³ Ibid, 5.

¹⁰⁷⁴ Ibid, 9.

¹⁰⁷⁵ Ibid.

¹⁰⁷⁶ Ibid. This somewhat echoes the developments in the approach adopted in the US regulatory regime for safety and environmental protection from offshore activities. See Michael Tsimplis and Wassim Dbouk, ‘Performance-based Regulation and the Development of International Regulatory Uniformity in Offshore Oil and Gas Operations’ in Günther Handl and Kristoffer Svendsen (eds) *Managing the Risk of Offshore Oil and Gas Accidents* (Edward Elgar Publishing 2019) 21 ff.

¹⁰⁷⁷ Ibid.

precautionary approach can be taken in risk assessment”.¹⁰⁷⁸ Moreover, a similar conclusion might be reached by analogy when one assesses Santillo and Johnston’s analysis of how the precautionary approach adopted in the OSPAR Convention deals with the uncertainties inherent to the release of hazardous substances into the marine environment.¹⁰⁷⁹ Santillo and Johnston highlighted that the hazardous substances which OSPAR applies to have the potential to cause severe and irreversible effects to the marine environment, while at the same time they remain “very difficult to evaluate in practical terms, impossible to control”. They concluded that the Strategy with regard to Hazardous Substances (OSPAR, 1998) thus implements the precautionary principle in requiring the cessation of all releases of such substances into the marine environment.¹⁰⁸⁰ Clearly, their conclusion revolves around the question of the precautionary measures which would be decided at the risk management stage; however, the analogy with regard to the assessment of risks in the face of uncertainty is nevertheless noteworthy. Santillo and Johnston further looked at the general shortcomings inherent to risk assessment. In this regard they cited uncertainty, indeterminacy and ignorance as “major issues that must be addressed within risk assessment” and found that these issues lead to complexity, ambiguity, but most importantly lack of consideration for “precaution at a fundamental level”, which ultimately hampers risk management decisions.¹⁰⁸¹ Authors therefore significantly concluded that, within this context, “the precautionary principle is a higher-order paradigm that guides the decision-making process from problem identification through to action, and not simply a management tool to be invoked when a risk assessment identifies substantial residual uncertainties”.¹⁰⁸²

Therefore, within the overall process of the regulation of the risks posed by offshore activities, and taking into consideration the conclusions reached in

¹⁰⁷⁸ Deville and Harding, note 854, 18.

¹⁰⁷⁹ David Santillo and Paul Johnston, ‘Is There a Role for Risk Assessment within Precautionary Legislation’ [1999] 55 Human and Eco. Risk Ass.: an Int’l J. 923, 927.

¹⁰⁸⁰ *Ibid.*

¹⁰⁸¹ *Ibid.*, 929.

¹⁰⁸² *Ibid.*, 928.

Chapter VII and the discussions above, it is submitted that the precautionary principle is triggered and produces its effects (the measures it mandates) both at the risk assessment and risk management stages. Interestingly, the outcomes of the former provide the infrastructure vital for the potential invocation of the principle at the latter stage. In other words, for example, the principle finds no application at the risk management stage if an accurate description of the risk is reached at the risk assessment stage.¹⁰⁸³ Hence, it is essential to examine the operation of the principle at the aforementioned stage in more detail.

Reiterating the discussion in Chapter V.2 above, and taking account of the conclusions reached in Chapter V.3 in relation to the applicable environmental threshold which environmental rules aim to preserve, two conditions are conventionally expected to be met for the principle to be invoked, namely: 1) the identification of potential adverse effects, and 2) a scientific evaluation of the risk revealing that uncertainties/lacks in knowledge prevent an accurate description of the risk, and thus preclude decision-makers from making sound/informed decisions. In relation to the former, the ILGRA report explains that there should be “good reason, based on empirical evidence or plausible causal hypothesis, to believe that harmful effects might occur”¹⁰⁸⁴ whereas the EU Communication simply requires the identification of “potentially negative effects”.¹⁰⁸⁵ Nevertheless, it must be highlighted that the ILGRA further provided “even if the likelihood of harm is remote”.¹⁰⁸⁶ The potential adverse effect in question here are the detrimental transboundary consequences of offshore incidents within a given States’ jurisdiction. As explained in Chapter VI.3, this condition is generally readily met with regard to such activities as they are presumed to be likely to cause significant transboundary damage and an assessment of their transboundary impacts is generally required under various instruments of international law.

¹⁰⁸³ As discussed in Chapter V.2 above, explaining the trigger for the invocation of the precautionary principle, the EU Communication and the ILGRA Report respectively refer to the condition that the scientific evaluation of the risk in question reveals that it cannot be determined “with sufficient certainty” and “with sufficient confidence to inform decision-making”.

¹⁰⁸⁴ ILGRA Report, 6.

¹⁰⁸⁵ EU Communication, 14.

¹⁰⁸⁶ ILGRA Report, 6.

Moving on to the second condition, it must foremost be noted that the “decision” in question at the risk assessment stage revolves around the sound/informed evaluation of the potential adverse effects of the planned activity/project.¹⁰⁸⁷ Logically, such evaluation is in fact based on the prior description of the risk in question. However, an examination of the manner in which gaps in knowledge and uncertainties impair the quality of the information indispensable for such description of the risk might reveal that they preclude the latter from being sufficiently accurate for the purposes of the “decision” to be reached at the risk assessment stage. Having regard to the discussions in Chapter V.2 on the gaps in knowledge surrounding the risks posed by offshore oil and gas activities, the abovementioned second condition for the invocation of the precautionary principle is met. In light of the foregoing, conventional risk assessment might be misleading for decision-makers to rely on at the risk management stage. Thus, they would ultimately arguably hamper the quality of the given State’s regulation of the risk in question. Certainly, in such scenario that State’s compliance with its due diligence requirement to prevent transboundary pollution from offshore activities within its jurisdiction is questioned. This is particularly the case having regard to the ILA Study Group on Due Diligence’s comment (inspired by Koskenniemi) that due diligence “can be seen as a technique of proceduralisation, deferring controversial inquiries as to the content of substantive rules regulating wrongdoing to less controversial questions relating to *informed decision-making and process*. Rather than posing answers to questions of breach, due diligence instead tends to inquire whether States have taken reasonable and appropriate steps to avoid or mitigate injury to other States” (emphasis added).¹⁰⁸⁸

Arguably, one “reasonable and appropriate” step which might be expected from States in the scenario described above would be to rely on the invocation of the precautionary principle at the risk assessment stage. In this regard, the EU Communication initially provided that uncertainties are dealt with at this stage

¹⁰⁸⁷ The particulars of the international obligation to assess will be discussed in more detail in the following sections.

¹⁰⁸⁸ ILA Study Group on Due Diligence, 3.

through the incorporation of “prudential aspects” such as analogies,¹⁰⁸⁹ before admitting that in situations where “the scientific data are not sufficient to allow one to apply these prudential aspects in practice, i.e. [...] where cause-effect relationships are suspected but have not been demonstrated” “decision-makers face the dilemma of having to act or not to act”.¹⁰⁹⁰ More eloquently, the ILGRA instead advanced that the application of the precautionary principle in such context entails making assumptions and establishing credible scenarios in order to ensure that risks are not carelessly underestimated.¹⁰⁹¹

This approach has also received support in academic literature, in this regard Stirling categorized risks according to the state of knowledge surrounding them (encompassing “strict state of risk”, “ambiguity”, “uncertainty” and “ignorance”) and argued that it is only where a “single reductive picture of ‘risk’ is reached through the aggregation of different potential outcomes thereof multiplied by their respective probabilities (made possible thanks to “past experience or scientific models”)¹⁰⁹² that “the conventional techniques of risk assessment offer a scientifically rigorous approach”.¹⁰⁹³ Beyond this category of risk, Stirling found that the reductive techniques of risk assessment are “not applicable”,¹⁰⁹⁴ “irrational, unscientific and potentially misleading”¹⁰⁹⁵ as in relation to the other categories of risk, “attempts to assert a single aggregated picture of risk are neither rational nor ‘science-based’”.¹⁰⁹⁶ He rather argued that, beyond the strict state of risk, the precautionary principle could constitute a “complement to risk assessment”.¹⁰⁹⁷ His approach to the role which the principle plays at that stage

¹⁰⁸⁹ EU Communication, 14, citing “relying on animal models to establish potential effects in man” and “using body weight ranges to make inter-species comparisons” as an examples of the incorporation of “prudential aspects”.

¹⁰⁹⁰ *Ibid.*

¹⁰⁹¹ ILGRA Report, 9 ff.

¹⁰⁹² Which he described as the “formal condition of risk”.

¹⁰⁹³ Andrew Stirling, ‘Risk, precaution and science: towards a more constructive policy debate’ [2007] 8:4 EMBO reports 309, 310.

¹⁰⁹⁴ *Ibid.*

¹⁰⁹⁵ *Ibid.*, 311.

¹⁰⁹⁶ *Ibid.*, 310.

¹⁰⁹⁷ *Ibid.*, 313.

will be discussed in the following section; however, Stirling's comment upon the implications of such reliance thereon are noteworthy for the purposes of the current discussion. Referring to the EU Communication, he particularly found that such implications "refute the often-repeated injunction—even at the highest levels of policymaking (CEC, 2000)—that precaution is relevant to risk management but not risk assessment",¹⁰⁹⁸ and further added that "the point is that insisting that precaution relates only to risk management entirely misses its real value in highlighting more diverse ways to gather relevant knowledge".¹⁰⁹⁹ Similarly, acknowledging the differing nature of EIAs (looked at as a method for risk assessment) on the one hand and the precautionary principle on the other hand; specifically that that the former is "is a procedure prior to decision-making" and the latter is "potentially a rule to inform or govern decision-making", Gullett found that the two are "complementary", before going on to examine how the principle would be integrated within the EIA process under Australian law.¹¹⁰⁰ Stirling and Gullett's approaches fall within a broader understanding that, having regard to the uncertainties about future environmental effects of given projects/activities,¹¹⁰¹ EIA are at least inherently partly precautionary measures. This is supported in academic literature,¹¹⁰² and expressed in the Opinions of Judges at the ICJ.¹¹⁰³ In turn, this understanding falls within the general view surrounding the role/purpose which the precautionary principle and EIAs play in

¹⁰⁹⁸ Ibid.

¹⁰⁹⁹ Ibid.

¹¹⁰⁰ Gullett, note 881, 148.

¹¹⁰¹ See discussion in Chapter VI.2 above, particularly note 785 and accompanying text.

¹¹⁰² See generally James Cameron, 'The precautionary principle core meaning, constitutional framework and procedures for implementation' (Precautionary Principle Conference, Institute of Environmental Studies, the University of New South Wales, Sydney, 20-21 September 1993), 36; Bruce Stedman and Teresa Hill, 'Introduction to the special issue: Perspectives on sustainable development' [1992] 12:1-2 EIA Rev 1, Jonas Ebbesson, *Compatibility of International and National Environmental Law* (Kluwer Law International 1996) 253; David Lawrence, 'The need for EIA theory-building' [1997] 17:2 EIA Rev 79; Jaye Ellis, 'Overexploitation of a Valuable Resource? New Literature on the Precautionary Principle' [2006] 17:2 Eur. J. Int'l L. 445, 448; Kazhdan, note 989, 547.

¹¹⁰³ See for example *Gabčíkovo-Nagymaros* (Hungary v Slovakia) Judgment, ICJ Reports 1997 (Separate Opinion of Vice-President Weeramantry) 113, referring to EIA as "a specific application of the larger general principle of caution".

the integration of environmental considerations within decision-making processes¹¹⁰⁴ and the common contribution of both in implementing sustainable development.¹¹⁰⁵

It follows from the foregoing that, within the overall objective of risk regulation, it is entirely conceivable for the conditions for the invocation of the precautionary principle to be met as early as the risk assessment stage. Furthermore, in light of the purpose of EIAs in informing sound decisions surrounding the preventive/mitigation measures aiming at regulating the risks posed by planned activities/projects, the shaping thereof through the integration of the precautionary principle could consequently also afford decision-makers with a wider array of alternatives when compared to conventional assessment. It follows that the precautionary principle potentially finds its application both at the risk assessment and risk management stages.

¹¹⁰⁴ See for the precautionary principle, Trouwborst (2002), note 484, 35 (footnote 21 and accompanying text); in relation to EIA see Sands, note 395, 657.

¹¹⁰⁵ In relation to the role which the precautionary principle plays in implementing sustainable development, see Cameron and Abouchar, note 852, 12 providing that the precautionary principle mandates that decision makers “enable economic progress and yet still protect and nurture a richly diverse and viable environment”; see also Bergen ECE Ministerial Declaration on Sustainable Development, Bergen, 16 May 1990, which provides that “in order to achieve sustainable development, policies must be based on the precautionary principle”; see also the common denominator of mindfulness of long term economic and social sustainable development in the European Action Programmes [‘EAP’], Preamble to the EC 5th EAP entitled “Towards Sustainability” which refers to the EC Declaration of Heads of State and Government’s call for an action programme to be realized “on the basis of the principles of sustainable development, preventive and precautionary action and shared responsibility”. See also 6th and 7th EAP. “Stable environment” (7th EAP, Recital 8.) and the “prudent use of natural resources” (6th EAP, Recital 6) are targeted areas the regulation of which serves this overarching purpose of the Community’s EAPs; see also the Report of the World Summit on Sustainable Development (2002), A/CONF.199/20 [‘WSSD’], para 109(f); see also UN Conference on Sustainable Development (2012), A/CONF.216/L.1 [‘Rio+ 20 Summit’], para 158.

On the role of EIA in implementing sustainable development see generally Nicholas Robinson, ‘The UN SDGs and Environmental Law: Cooperative Remedies for Natural Disaster Risks’ in Jacqueline Peel and David Fischer (eds) *The Role of International Environmental Law in Disaster Risk Reduction* (Leiden: Brill/Nijhoff 2016) 301; see also WSSD paras 19(e), 36(c), 62(h), 96(d), and 135; see also Rio+ 20 Summit para 168; see also the recitals to the Espoo Convention and to the EU EIA Directive.

2. The precautionary principle's role within the assessment of environmental risks posed by offshore activities

In light of the ongoing academic debate surrounding the status of the precautionary principle as a norm of customary international law, and having regard that the argument made under this thesis rests upon the principle operating within a *principled system of rules* of environmental law,¹¹⁰⁶ it appears sensible to explore foremost the international obligation of States to assess the risks of transboundary harm from activities within their jurisdiction ['obligation to assess'] within which the precautionary principles potentially operates (A). Subsequently, an argument is presented in favour of the potential integration of the principle within the conventional method used to satisfy the obligation to assess, namely transboundary EIAs ['TEIA'] (B).

A- The international obligation to assess the risks of transboundary harm from activities within States' jurisdictions through TEIA

The proceduralisation of the due diligence requirement shaping the obligation of States to prevent transboundary pollution from activities within their jurisdiction is at the root of any development made surrounding their obligation to assess. The passage produced by the ILA Study Group referred to above and the ILC Commentary on its Draft Articles on Prevention directly support this statement.¹¹⁰⁷ Accordingly, such proceduralisation entails that, when a source State's due diligence is contested, the debate encompasses whether it had made "reasonable efforts" to "inform itself of factual and legal components that relates foreseeably to a contemplated procedure" based on which it had taken appropriate steps to prevent significant transboundary harm. In practice, potentially affected States prefer to invoke the breach of this procedural obligation, rather than the substantive obligation to avoid such harm.¹¹⁰⁸ For

¹¹⁰⁶ See Chapter VI.1.

¹¹⁰⁷ See note 1088 and accompanying text; see ILC Draft Articles on Prevention, Art. 3, Commentary (10) providing that "due diligence is manifested in reasonable efforts by a State to inform itself of factual and legal components that relates foreseeably to a contemplated procedure and to take appropriate measures in timely fashion to address them".

¹¹⁰⁸ Craik, note 907, 7.

example, claims surrounding the breach by defendant States of their procedural obligation to conduct EIAs have been made in the *MOX Plant Case*, *Pulp Mills*, and the *Costa Rica v. Nicaragua* case, etc. This is mainly due to the imprecision of the due diligence concept and the lack of elaboration on what constitutes an appropriate substantive measure.¹¹⁰⁹ In that sense, such proceduralisation contributes towards the objective of prevention/reduction of transboundary harm in that it affords an element of consistency through ensuring that certain considerations are taken into account in substantive risk-mitigating decisions (and thus allows for “highly contextualized decision-making”).¹¹¹⁰ Such understanding of the procedural facet of the due diligence requirement protects it from the criticism against its limited role within environmental governance structure.¹¹¹¹ In fact, enumerating the several related functions of EIAs, Sands noted that “[f]irst, it should provide decision-makers with information on the environmental consequences of proposed activities [...]. Second, it requires decisions to be influenced by that information [...]”.¹¹¹² The interaction between the two facets of the due diligence requirement will be discussed in more detail in section 3 below.

It must be noted that, enshrined in treaty and State practice as well as consistently referred to in international decisions as constituting a requirement under customary international law, EIAs are assumed to constitute a mechanism allowing States to satisfy their expected requirement of reasonableness in informing themselves of the potential impacts of activities within their jurisdiction.¹¹¹³ This approach makes unnecessary the debate surrounding

¹¹⁰⁹ See Chapter IV.2.B; in this regard Craik, *ibid*, wrote that “the [substantive] obligation [to avoid marine pollution] is couched in such abstract terms that a determination as to legality can only be made with reference to a known context”.

¹¹¹⁰ *Ibid*, 75-76.

¹¹¹¹ *Ibid*, 5. This criticism is based upon the fact that EIA do not require “as a matter of legal obligation, decision-makers to reach outcomes that reflect the substantive rules of the international instrument in which the EIA commitment is found”, *ibid*.

¹¹¹² Sands, note 395, 657.

¹¹¹³ UNEP, ‘An Introduction to Environmental Assessment’ (2015) <<http://www.ecosystemassessments.net/resources/an-introduction-to-environmental-assessment.pdf>> accessed 18 March 2019 [‘UNEP Introduction to EA’], 23, looking at EIAs as one

whether or not the carrying out of an EIA in respect of offshore activities planned within the source States' jurisdiction is established in State practice and accompanied by *opinio juris* so as to regard it as a specific requirement under customary international law.¹¹¹⁴ Instead, treaty and State practice providing for the performance of EIAs is regarded as evidence for the reasonableness of the reliance thereon to satisfy an established rule of environmental law, namely the obligation to assess.¹¹¹⁵ Such approach would also contribute in reinforcing the establishment of the latter obligation, and therefore dispense from having to further look into its supporting legal foundation. Importantly, EIAs are made the subject of the subsequent study having regard to the practice being relatively more established than other mechanisms through which States might be expected to satisfy their obligation to assess.¹¹¹⁶

Within this context, and focusing on demonstrating the possible integration of the precautionary principle within the obligation to assess, subsequent discussion will revolve around the law surrounding EIAs with reference to their role in ensuring environmental protection. This will encompass the description of EIAs appropriate for satisfying the obligation to assess; in particular, the questions of defining EIAs and an exposition of their functions. This will form the basis of the discussion in section B surrounding the minimum requirements which make them valid for the purposes of satisfying the obligation to assess.

Domestically, EIAs were first introduced as a legal requirement in the USA under the US National Environmental Policy Act of 1969.¹¹¹⁷ It was then followed by its adoption at State and National levels in Australia notably in the Environmental

of many other mechanisms to implement the obligation to assess; ILC Draft Articles on Prevention, Art. 7 providing that EIAs is *one* mechanism for the assessment by source States of the possible transboundary harm caused by activities authorized within their jurisdiction.

¹¹¹⁴ For a discussion on this point, see Koivurova, note 945, 23 ff.

¹¹¹⁵ The combined reading of Art. 5 and of paragraphs (5) and (6) of the commentary of the ILC on Art. 3 of its Draft Articles on Prevention suggest that States are left with considerable discretion in terms of the legislative and administrative steps which they consider reasonable/appropriate for them to inform themselves of the environmental consequences of activities within their jurisdiction. See Craik, note 907, 63-64.

¹¹¹⁶ See for example the discussion on Strategic Environmental Assessments in Appendix III.

¹¹¹⁷ 42 U.S.C. §4331 et seq.

Protection (Impact of Proposals) Act 1974. Since then, they have been progressively incorporated in a “very large number of national legal systems”.¹¹¹⁸ This trend at national level inspired the recognition thereof as a specific requirement under various binding and non-binding sources of international law since the 1972 Stockholm Conference on the Human Environment.¹¹¹⁹ Although, certainly, domestic and international EIAs diverge in their *raison d'être* (i.e. the substantive outcomes they seek), as the latter is more directly relevant to the international duties of prevention of environmental harm and of cooperation in transboundary situations.¹¹²⁰ But what is an EIA and what makes it a relevant tool for implementing environmental protection?

Not surprisingly, various definitions have been advanced attempting to capture the essence of EIAs. Interestingly, none of the international or regional treaties providing for an obligation to perform them provide a comprehensive definition thereof; nevertheless, unlike Strategic Environmental Assessments ['SEAs'],¹¹²¹ authors have generally defined them in consistent terms. For example, Tromans defined EIA as “a procedure which serves to provide information about the likely impacts of proposed projects on the environment, [...]”.¹¹²² Koivurova referred to it at its minimum as “a government-controlled procedure involving the public within which scientific assessments are conducted of the potential environmental impacts of a proposed activity that may be environmental harmful” and added “its goals include improving the quality of information so decision-makers can make better decisions from the viewpoint of the environment, raising the level of public participation in relation to environmental protection”.¹¹²³ Whereas the UNEP Guidelines in its Introduction to EA referred to it as a “systematic process that

¹¹¹⁸ Sands, note 395, 657.

¹¹¹⁹ UNEP Introduction to EA, 5.

¹¹²⁰ Simon Marsden, *Strategic Environmental Assessment in International & European Law* (Earthscan 2008) 50 ff; see also Craik, note 907, 132 noting that “[i]n addition to [...] procedurally oriented differences, international law also presents a distinct substantive context for EIA commitments”.

¹¹²¹ See Appendix III.

¹¹²² Stephen Tromans QC, *Environmental Impact Assessment* (2nd ed, Bloomsbury Professional 2012) 1.

¹¹²³ Koivurova, note 945, 15.

seeks to identify and evaluate the potential environmental consequences, impacts (and to a lesser extent the social and economic impacts also) and effects of a proposed project, such that information can be provided to decision-makers and other stakeholders in order to minimise, mitigate, or eliminate altogether, any adverse potential impacts arising from the proposed development project”.¹¹²⁴

Noticeably, these definitions all converge in their description of the *functions* of EIA. In this regard, Sands summarised them as he defined it as a “process that produces a written statement to be used to guide decision-making, with several related functions”, before proceeding that it “should [first] provide decision-makers with information on the environmental consequences of proposed activities [...]. Second, it requires decisions to be influenced by that information. And, third, it provides a mechanism for ensuring the participation of potentially affected persons in the decision-making process”.¹¹²⁵ It must be emphasised at this stage that, for the purposes of this discussion, the first two of these functions are directly relevant to the definition of the behaviour expected of States to comply with their procedural due diligence requirement, whereas the third function is more closely tied to issues of governments’ accountability, transparency and responsiveness *vis-à-vis* their citizens and thus fall outside the scope of the study.¹¹²⁶ In support of the first limb of the aforesaid statement, Wood further explained that “[i]n principle, EIA should lead to the abandonment of environmentally unacceptable actions and to the mitigation to the point of

¹¹²⁴ UNEP Introduction to EA, 23; see also UNEP, Environmental Impact Assessment and Strategic Environmental Assessment: Towards an Integrated Approach (2004) <<https://unep.ch/etu/publications/textONUBr.pdf>> accessed 18 March 2019 [‘UNEP EIA and SEA Report’], where it referred to EIA/SEA as “structured approaches for obtaining and evaluating environmental information prior to its use in decision-making in the development process.”

¹¹²⁵ Sands, note 395, 657; somewhat similarly, see Barbara Carroll and Trevor Turpin, *Environmental Impact Assessment Handbook: A Practical Guide for Planners, Developers and Communities* (Thomas Telford, 2nd edn, 2009) 1, concluding that “[t]he process identifies the potential significant effects on the environment and develops appropriate options for their mitigation”.

¹¹²⁶ The most notable international treaty in this regard is the UNECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (adopted 25 June 1998, entered into force 30 October 2001) 2161 UNTS 447 [the ‘Aarhus Convention’].

acceptability of the environmental effects of proposals which are approved. [...] It should be emphasised that EIA is not a procedure for preventing actions with significant environmental impacts from being implemented. Rather *the intention is that actions are authorised in the full knowledge of their environmental consequences*. [...] This is why the mitigation of environmental impacts is so central to EIA: decisions on proposals in which the environmental effects have palpably been ameliorated are much easier to make and justify than those in which mitigation has not been achieved” (emphasis added).¹¹²⁷ This view of the role of EIAs is favourable in that it appears to strike a balance between the authorisation of potentially hazardous activities and the accounting for environmental considerations,¹¹²⁸ and thus makes the process readily fall into place within the competing rights and duties of source States to exploit natural resources within their jurisdiction while ensuring the protection of the marine environment of neighbouring States. This explains Sands’ reference to EIA as a “technique” for implementing international environmental law principles and rules. However, for EIAs to serve this purpose, they must accommodate the potential *transboundary* impacts of the activity in question, and thus the process is referred to as a TEIA.¹¹²⁹ This inter-State nature of TEIAs entails that they are generally best provided for in international treaties, most notably the Espoo Convention and the EU EIA Directive (Art. 7).¹¹³⁰ That being said, the requirement to conduct TEIAs has also been contained in an array of non-binding instruments, most notably in the ILC Draft Principles on Prevention (Art. 7) and the UNEP Goals and Principles of EIA (Principle 12),¹¹³¹ and consistently referred

¹¹²⁷ Christopher Wood, *Environmental Impact Assessment: A Comparative Review* (Longman 1995) 13.

¹¹²⁸ In line with the principles of cooperation and good neighbourliness that are frequently referred to as “key principles” underlying transboundary EIAs. See Simon Marsden and Timo Koivurova, ‘Introduction’ in Simon Marsden and Timo Koivurova (eds) *Transboundary Impact Assessment in the European Union: The Espoo Convention and its Kiev Protocol on Strategic Environmental Assessment* (Earthscan 2011) 4.

¹¹²⁹ See Koivurova, note 945, 15 ff.

¹¹³⁰ See also, for a specific application to offshore activities, the Barcelona Protocol, Art. 26.

¹¹³¹ See also UNEP Draft Principles of Conduct, Principle 5 and the UNEP Conclusions on Offshore Activities.

to as a requirement of customary international law by international courts/tribunals. Of course, as mentioned in Chapter VI-3, an obligation to conduct an EIA in respect of offshore activities within a State's jurisdiction is specifically provided for in multilateral and regional treaties and protocols; thus, as such, it is regarded as a conventional mechanism through which States would satisfy their obligation to assess in respect of these activities.

In fact, in the offshore industry, it is common for a designated authority within a given State to be in charge of the authorisation of upstream activities under its jurisdiction by an operator.¹¹³² This is usually done via the granting of licenses.¹¹³³ Evidence of such practice is referred to in Chapter V when looking at the approaches followed by States in their regulation of the industry, as well as in the Protocols specifically applying to offshore activities, most notably the Barcelona and Kuwait Protocols. Importantly, it is also conventional that the granting of such licenses is dependent upon the applicant operator assessing the potential detrimental consequences of its planned activities (including through EIAs) and submitting such assessment to the relevant authority.¹¹³⁴ This practice falls into place within the newly introduced comprehensive definition of the EIA process in the EU EIA Directive.¹¹³⁵ However, international disputes over EIA, most notably surrounding whether it is required for the project in question and surrounding the scope and content of the EIA report/statement prepared (its validity) reveal a lack of common-ground understanding pertaining to the process' minimum

¹¹³² UNEP Conclusions on Offshore Activities, 6-7.

¹¹³³ See ILC Draft Principles on Prevention, Art. 7, Commentary (5).

¹¹³⁴ See Kuwait Protocol, Art. IV.1(a) providing: " and Art. 5.1(a) of the Barcelona Protocol; UNEP Conclusions on Offshore Activities 6.(2).

¹¹³⁵ See EU EIA Directive (2014), Art. 1(2)(g) providing that "'environmental impact assessment' means a process consisting of (i) the preparation of an environmental impact assessment report by the developer, as referred to in Art. 5(1) and (2); (ii) the carrying out of consultations as referred to in Art. 6 and, where relevant, Art. 7; (iii) the examination by the competent authority of the information presented in the environmental impact assessment report and any supplementary information provided, where necessary, by the developer in accordance with Art. 5(3), and any relevant information received through the consultations under Art. 6 and 7; (iv) the reasoned conclusion by the CtAu on the significant effects of the project on the environment, taking into account the results of the examination referred to in point (iii) and, where appropriate, its own supplementary examination; and (v) the integration of the CtAu 's reasoned conclusion into any of the decisions referred to in Art. 8a".

requirements. In this regard, the integration of the precautionary principle within the TEIA process potentially mutually benefits both elements as it recognises a prescriptive feature for the latter as derived from the obligation to assess, whilst simultaneously defining the content of the aforesaid obligation.

B- Potential integration of the precautionary principle within TEIA

As rightly pointed out by the ILC, “most existing international conventions and legal instruments do not specify the content of assessment”.¹¹³⁶ This was later reiterated by the ICJ in *Pulp Mills* where it observed that general international law does not “specify the scope and content of environmental impact assessment”.¹¹³⁷ However, some guidance could still be found in a number of binding and non-binding instruments. With regard to the formers, for example, the Espoo Convention lists in its Appendix II the minimum information which must be included in EIA documents it requires; and the EU EIA Directive does the same in its Annex IV. Amongst the latter, the most notable are the UNEP Goals and Principles of EIA, the International Association for Impact Assessment’s Principles of Environmental Impact Assessment Best Practice,¹¹³⁸ the UNEP EIA and SEA Report,¹¹³⁹ and, more specifically to the subject of this study, the UNEP Conclusions on Offshore Activities. Moreover, guidelines have been developed at national level aiming to afford more consistency in the fulfillment of EIA duties.¹¹⁴⁰

¹¹³⁶ ILC Draft Articles on Prevention, Art. 7, Commentary (6).

¹¹³⁷ *Pulp Mills* [205].

¹¹³⁸ IAIA\P-F\Principles (1999) <https://www.iaia.org/uploads/pdf/principlesEA_1.pdf> accessed 20 March 2019 [‘IAIA Best Practice’]

¹¹³⁹ Chapter 3.

¹¹⁴⁰ See for example, in the UK, BEIS, BEIS Offshore Petroleum Regulator for Environment and Decommissioning -The Offshore Petroleum Production and Pipelines (Assessment of Environmental Effects) Regulations 1999 (as amended) – A Guide (September 2017) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/644775/OPRED_EIA_Guidance_-_130917.pdf> accessed 20 March 2019 [‘BEIS Guide’].

These instruments reflect the different stages of the EIA process, which are also abundantly discussed in academia.¹¹⁴¹ A comprehensive dissection of these stages could be found in Chapter 3 of the UNEP EIA and SEA Report, entitled “Principles and Elements of EIA Good Practice”. The latter listed the stages as follows: screening and preliminary EIA studies, scoping and preparation of terms of reference, EIA work and impact studies, mitigation and the environmental management plan, the EIA report, the review of EIA report, and impact management and monitoring. The subsequent developments will not attempt to comment upon each of these elements; instead, they would focus on the role which the precautionary principle could play at these various stages of the process. Within this context, and although references would be made to existing instruments (treaties, case-law, guidelines), the intention is not to assert the *status quo* of the law surrounding EIA; rather, such references are used as evidence of a possible structured and justified integration of the precautionary principle within the process. Of particular relevance to the discussion are the screening (a), scoping (b), and impact studies stages (c).

a- Screening

Screening has been defined and briefly discussed in Chapter VI-3 above. Examining how the precautionary principle is integrated at this stage, one could begin by examining the Barcelona and Kuwait protocols. These instruments don't provide for an automatic triggering of the obligation to conduct an EIA (or obligation to assess); instead, they refer to the screening stage and acknowledge the role for the CtAu to make the initial judgment of whether an EIA is required for the offshore activities in question.¹¹⁴² Conversely, the EU EIA Directive and the Espoo Convention provide for a presumption in favour of the triggering of the requirement to conduct EIAs in relation to certain offshore activities. This is explained by the fact that the screening stage in the Barcelona/Kuwait Protocols

¹¹⁴¹ See for example Craik, note 907, 132 ff and Glasson, note 897, 8 ff.

¹¹⁴² Kuwait Protocol, Art. IV.1a) and b) ; Barcelona Protocol, Art. 5.1(a) providing that “the competent authority *may, in the light of the nature, scope, duration and technical methods employed in the activities and of the characteristics of the area*, require that an environmental impact assessment be prepared” (emphasis added).

relies on *indicative thresholds*, whereas those employed in the EU EIA Directive/Espoo Convention are *inclusive*.¹¹⁴³ Thus, for example, in accordance with Annex I.14 of the EU EIA Directive, the criterion to look at to identify whether or not an EIA is required is whether the amount of petroleum and natural gas extracted for commercial purposes “exceeds 500 tonnes/day in the case of petroleum and 500 000 cubic metres/day in the case of gas”. On the other hand, with regard to activities not listed in Annex I (or Appendix I for the Espoo Convention), and somewhat similarly to the screening stage as provided for in the Barcelona/Kuwait Protocols, a number of criteria are taken into account in a case-by-case examination of whether the applicable threshold is crossed, and therefore whether an EIA is required. These are generally similarly referred to in the various instruments on EIA, and usually take into account, amongst other factors, the size, location and scope of the planned activity.¹¹⁴⁴

Importantly, uncertainties might play a vital role within this examination, in relation to each of the criteria taken into account. For example, it could not straightforwardly be assumed that having regard to the fact that the project in question is located near the waters falling under the jurisdiction of a neighbouring State that such project is likely to cause significant transboundary damage. This is a direct and logical consequence of a case-by-case examination at this stage which is merely guided by the broad objectives set out in the treaties embodying EIA commitments. Thus, the Espoo Convention, directly and specifically aiming to develop anticipatory policies and to implement the prevention, mitigation and monitoring of significant adverse environmental impact “in general and more specifically in a transboundary context”,¹¹⁴⁵ mandates that such aims would be of

¹¹⁴³ See Glasson, note 897, 11. Inclusive thresholds are defined as those “above which all projects will normally require an EIA”; whereas indicative thresholds “use a variety of criteria (often related to project size) to determine whether an EIA is required”.

¹¹⁴⁴ Espoo Convention, Art. 2.5 and Appendix III; EU EIA Directive Art. 4.2 and Annex III; UNEP EIA and SEA Report, 46 citing the “sensitivity of location”, the “sensitivity of potential impact receptors”, the “possible duration and reversibility of the impacts”, and the “likelihood of associated or secondary development” as “some important aspects and issues” relevant for screening.

¹¹⁴⁵ Espoo Convention, Recitals.

important relevance where screening criteria are examined. An obvious disadvantage of merely relying on such broad objectives is that it allows States ample discretion in evaluating the criteria in question, thus affording fertile ground for inter-State dispute on the subject. However, despite the involvement of political considerations throughout the EIA process and notably at the screening stage, expert and scientific evidence acquires a political dimension where such considerations are already agreed upon through the setting of the relevant broad environmental goals.¹¹⁴⁶ In this regard, Craik noted that “in circumstances where the central dispute is over how to implement shared goals, science can provide authoritative solutions, in the sense that they too provide a persuasive basis for justifying actions”, and adding that “such authoritativeness of scientific processes lies in the acceptance that some questions admit of right answers or, at least, better answers, that there is a group of experts who can determine these better answers”.¹¹⁴⁷ In fact, the setting of the criteria relevant for the screening decision in international instruments and guidelines delimits the scope of the role which science could play at this stage as it would be restricted to reaching conclusions on factual outcomes within the confinements of the said criteria. In doing so, science *prima facie* limits decision-makers’ discretion at this stage as they would have to justify their decisions against scientifically-supported expert evidence.

However, it is prudent to recognise the limitations of science and its inability to afford definite answers to environmental issues.¹¹⁴⁸ In this regard, Stirling wrote

¹¹⁴⁶ For a clear example on the scientific character of EIAs see EU EIA Directive, Art. 5.3; IAIA Best Practice, 2.4; see also UNEP EIA and SEA Report, 42.

¹¹⁴⁷ Craik, note 907, 217; Karin Bäckstrand, ‘Civic Science for Sustainability: Reframing the Role of Experts, Policy-Makers and Citizens in Environmental Governance’ [2003] 3 Global Env’tl Politics 24, 27 noting “[a]n underlying premise is that scientific knowledge and practices operate inside rather than outside of politics. A key question is what counts as credible, authoritative and legitimate expert knowledge. Instead of taking shared understanding and scientific consensus at face value, the purpose is to unravel the process by which actors come to share common worldviews. Science and politics are in this vein indistinct realms with fluid boundaries subject to negotiations”; see also Daniel Bodansky, ‘The legitimacy of International Governance: A coming Challenge for International Environmental Law’ [1999] 93 American Journal of Int’l Law 596, 622-623.

¹¹⁴⁸ See Stirling, notes 1093-1096 above and accompanying text.

that “[i]n political terms, a quantitative expression of risk or a definitive expert judgement on safety is typically of great instrumental value; however, these have little to do with scientific rationality”.¹¹⁴⁹ This is precisely where the decision becomes more political, and decision-makers are faced with deciding in light of potential scientific uncertainty.¹¹⁵⁰ In fact, even an initial scientific evaluation of the risk posed by the projected activity in question is almost inevitably going to contain uncertainties which would make the decision of whether or not they are likely to cross the relevant screening threshold doubtful.¹¹⁵¹ Indeed, Stirling looked at how specific studies, particularly in the fields of energy policy, although appearing to afford precise findings at first sight, typically understate uncertainty and the “enormous variability inherent in the literature as a whole”.¹¹⁵² Thus, he noted that “‘sound scientific’ procedures” lead to varying perceptions of the same risk, and argued that this is due to the fact that “the answers delivered in risk assessment typically depend on how the analysis is ‘framed’”.¹¹⁵³ Such “framing” is a repercussion of the aspiration of conventional risk assessments to reach a “single reductive” picture of the risk at hand,¹¹⁵⁴ which explains their focus on scientific *justification* through a reliance on decisive relevant evidence, and their disregard of incomplete or ambiguous information which might nonetheless be vital for accurate description of the risk.¹¹⁵⁵ Thus, the precautionary principle could validly be triggered in support of an uncertainty-embracing scientific examination, allowing for a more rigorous political decision at the screening

¹¹⁴⁹ Stirling, note 1093, 311.

¹¹⁵⁰ Craik, note 907, 218.

¹¹⁵¹ This takes into account the discussion on the uncertainties which would trigger the application of the precautionary principle in Chapter VI-2 above; most notably that it applies “in the spectrum between 0 and 95 per cent certainty”.

¹¹⁵² Stirling, note 1093, 311.

¹¹⁵³ *Ibid.*

¹¹⁵⁴ See note 1094-1096 above and accompanying text.

¹¹⁵⁵ Philippe Grandjean, ‘Science for precautionary decision-making’ in European Environmental Agency (ed), *Late lessons from early warnings: science, precaution, innovation* (Luxembourg: Publications Office of the European Union, 2013) 625; case studies have shown that various industries producing hazardous products resort to certain strategies/tactics to defend their products, including through trying to control relevant scientific research, see generally European Environmental Agency (ed), *Late lessons from early warnings: science, precaution, innovation* (Luxembourg: Publications Office of the European Union, 2013).

stage.¹¹⁵⁶ Practically, its implementation here would entail that an EIA would be *required* where the information available is insufficient and uncertainties are present so as to make it *unclear* whether or not the planned project in question creates risks of causing significant transboundary harm. It is within this logic that Gullet found that “this lower evidentiary standard would reflect the principle in so far as it would shift attention from the acceptability of the 'significance' of the environmental impacts of a proposal to the acceptability of the level of scientific uncertainty which attaches to the predictions of the impacts”.¹¹⁵⁷ In fact, this “lower evidentiary standard” was embraced in the UNEP Conclusions on Offshore Activities which, although providing for a Kuwait/Barcelona Protocol approach to screening, limited the discretion recognised to the CtAu not to require an EIA to situations where it is satisfied that, in light of the description of the planned operations, significant transboundary harm “cannot be expected”.¹¹⁵⁸

In doing so, the principle further contributes in limiting the problematic discretion which might be left for States when deciding whether an EIA is required pertaining to a given activity and thus in defining their due diligence requirement. Moreover, the assumption made under Espoo and the EU EIA Directive reflects a different, stronger, application of the principle at this stage as it mandates that State err on the side of caution while only allowing them the narrow discretion of assessing whether or not the assumption is triggered. The latter approach is also favourable as it presents the advantage of being practical, time and cost effective, and avoids complications arising from disputes surrounding whether or not an EIA is required.¹¹⁵⁹ Both approaches nevertheless could be analysed as an implementation of the precautionary principle at this stage. This, in itself, is reflective of the normative nature of the latter, namely that it is a *principle* which serves to *generally guide* decision-makers in the face of

¹¹⁵⁶ Ibid, arguing that the precautionary-principle-based decisions are less demanding of conclusive evidence and shapes research such that it accounts for the possible magnitude of potential environmental hazards; Stirling, note 1093, 313 (Fig. 5), 314.

¹¹⁵⁷ Gullett, note 881, 149.

¹¹⁵⁸ UNEP Conclusions on Offshore Activities, 6(2).

¹¹⁵⁹ UNEP EIA and SEA Report, 46 noting “[q]uick and early screening is easiest when mandatory lists are used. A proponent usually knows immediately whether or not EIA applies”.

uncertainty without intending to mandate particular measures in response to specific understanding of risks and uncertainties. Thus, when conjoined with the obligation to assess, the principle affords decision-makers with a “broader range of non-reductive methods, which avoid spurious promises to determine ‘science-based’ policy” and ensures environmental protection is not overlooked.¹¹⁶⁰ Therefore, the precautionary principle appears to be a useful tool in this context, and the examples explored above could validly constitute approaches according to which the principle would form an integral part of the procedural facet of States’ due diligence requirement.

b- Scoping

Broadly speaking, scoping consists of the stage where the relevant environmental issues and the impacts which could potentially be caused by the planned activity/project are identified as meriting further investigation for the purpose of conducting a thorough EIA.¹¹⁶¹ It could be seen as a process operating as a “screening” which applies in relation to the innumerable possible impacts which a given planned project/activity might lead to. In other words, it is the stage that, as its name indicates, determines the scope of the assessment to be conducted in relation to the planned project/activity. Logically, it has direct repercussions on the content of the EIA report/statement produced at the end of the process as decisions would only be expected with regard to the matters which are included in the terms of reference (a document containing the findings of the scoping stage). Having regard to the international disputes on the subject of the validity of the EIA conducted by the State of origin, and to the general statement by the ICJ in *Pulp Mills* whereby it provided that it is left for States to determine in their domestic legislation “the specific content of the environmental impact assessment required in each case” while exercising due diligence in the conduction of such

¹¹⁶⁰ Stirling, note 1093, 312. He thus concluded that “[t]he intention [of the application of the precautionary principle] is not to imply a neat one-to-one mapping of specific methods to individual states of knowledge, but rather to illustrate the rich variety of alternatives that exist if risk assessment is not properly applicable”.

¹¹⁶¹ See UNEP EIA and SEA Report, 47; IAIA Best Practice, 2.3; UNEP Goals and Principles, Principle 3.

assessment,¹¹⁶² a discussion on the possible integration of the precautionary principle at the scoping stage becomes relevant. Within this context, the focus would be on the element of scoping within which the principle is most readily applied, namely, the identification of the impacts relevant for the process.

Clarifying the purpose of scoping, the UNEP EIA and SEA Report indicated that, more specifically, it is “designed to establish the information that is necessary for project decision-making”.¹¹⁶³ However, the issue which arises is that, as expressed by the ICJ in *Pulp Mills*, general international law “does not specify the scope and content of an environmental impact assessment”.¹¹⁶⁴ Nevertheless, guidance as to the general requirements of the scoping stage could be inferred from the minimum information to be included in an EIA statement as provided for in the most notable treaties and guidance documents on EIAs. For example, the UNEP EIA and SEA Report provided that internationally-accepted principles of EIA good practice require that scoping defines “the *important* issues and impacts that *need* to be studied further” (emphasis added).¹¹⁶⁵ More eloquently, and with special reference to offshore activities, the UNEP Conclusions on Offshore Activities provided that EIAs must contain a “description of the foreseeable direct and indirect long term and short-term effects of the operations on the environment [...]” “wherever such effects may occur”.¹¹⁶⁶ This requirement is embedded and clarified in treaties on EIA. For example, Appendix II(d) of the Espoo Convention requires that the EIA Documentation contains “a description of the *potential* environmental impact of the proposed activity and its alternatives and an estimation of its significance” (emphasis added); and Art. 5(1)(b) of the EU EIA Directive similarly requires a developer preparing an EIA to provide information including “a description of the *likely* significant effects of the project on the environment” (emphasis added).¹¹⁶⁷ Furthermore, Annex IV.5 of the latter

¹¹⁶² *Pulp Mills* [205].

¹¹⁶³ UNEP EIA and SEA Report, 47.

¹¹⁶⁴ *Pulp Mills* [205]; ILC Draft Articles on Prevention, Art. 7, commentary (6).

¹¹⁶⁵ UNEP EIA and SEA Report, 47.

¹¹⁶⁶ UNEP Conclusions on Offshore Activities, 8(e).

¹¹⁶⁷ The relevant effects are enumerated in Art. 3.1 of the Directive.

Directive non-exhaustively lists causes which might lead to such effects. The relevance of these provisions stems from the logic that since they generally outline the expected content of EIA Documentation/Statement in this manner, an understanding of the relevant information at the scoping stage could be inferred. Thus, information surrounding the potential/likely impacts/effects is conventionally expected to be required at the scoping stage.

Significantly, it is advanced that this should be read in tandem with the agreed-upon environmental goals which these treaties aim to achieve,¹¹⁶⁸ as well as with the thresholds they adopt.¹¹⁶⁹ Such reading defeats the risk of opening the process to an abundance of potential impacts and confines further research to relevant ones, the study of which leads to an EIA suitable for justifying subsequent decisions abiding by the professed set environmental goals.¹¹⁷⁰ In this regard, for example, in its commentary on Art. 7 of the Draft Principles on Prevention, the ILC provided that “[o]bviously, the assessment of risk of an activity can only be meaningfully prepared if it relates the risk to the possible harm to which the risk could lead” and added that “[t]his corresponds to the basic duty contained in Art. 3”, namely the prevention of significant transboundary harm. Moreover, providing an example on how the “significant transboundary harm” threshold could define the information to be included at the scoping stage, one could look at the guidelines offered by the regulations issued by the US Council on Environmental Quality, which are widely regarded as key to an effective EIA practice.¹¹⁷¹ Particularly, the Title 40 of the US Code of Federal Regulation (‘Protection of Environment’), which embraces the threshold of “reasonably foreseeable significant adverse impacts” (which is comparable to “potential/likely significant impacts”) provides at §1502.22(b) that “‘reasonably foreseeable’ includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by

¹¹⁶⁸ See discussion on screening above.

¹¹⁶⁹ See discussion in Chapter VI.3 above.

¹¹⁷⁰ In line with the widely acknowledged feature of scoping to be “a key to appropriate and cost-effective EIA of a specific proposal”, see UNEP EIA and SEA Report, 47.

¹¹⁷¹ Ibid.

credible scientific evidence, is not based on pure conjecture, and is within the rule of reason”.¹¹⁷² Thus, information surrounding impacts which are merely speculative is not expected to be included in the scope of the EIA process. This requirement for the inclusion of information surrounding the impacts of potential catastrophic accidents at the scoping stage could also be inferred from the addition, following the 2014 amendments to the EU EIA Directive, of the term “significant” and of the provision that the impacts which have to be identified within an EIA process include those “deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned”.¹¹⁷³ It follows that, within TEIAs, the relevant potential impacts which must be identified at the scoping stage are those which could – not speculatively- be characterised as causing significant transboundary damage and include major/worst-case scenario accidents.

The application of the foregoing in relation to the assessment of risks created by offshore activities entails that, under international law, a State under the jurisdiction of which they are projected only has to include within the scope of such assessment *significant transboundary* impacts which could be supported by plausible scientific indications. Thus, arguably, this at least includes the assessment of the impacts resulting from major accidents on offshore platforms, given that such events, despite the probability of their occurrence being relatively lower, are most likely to lead to unacceptable impacts.¹¹⁷⁴ Consistently, recital (26) of the OSD provided that “In order to make suitable arrangements for major accident prevention, operators and owners should comprehensively and systematically *identify all major accident scenarios* relating to all hazardous activities that may be carried out on that installation, *including impacts on the environment arising from a major accident*. Those best practices also require an

¹¹⁷² Code of Federal Regulation 40: §§1502.22 (1986).

¹¹⁷³ See EU EIA Directive, Art. 3.1 and 3.2, Recital (15), and Annex IV.8 (following 2014 amendments).

¹¹⁷⁴ See generally Chapter IV.1 on how, domestically and under a performance-based type of regulation, the practice is that operators/licensees are required to identify the potential impacts of offshore activities and to ensure that they are kept within acceptable levels of safety.

assessment of the likelihood and consequences and therefore the risk of major accidents” (emphasis added).¹¹⁷⁵ Providing guidance on the implementation of the EU EIA Directive and OSD in the UK, the BEIS noted that developers are expected to assess the impacts of “the major accident scenario that would result in the worst-case potential release of hydrocarbons, such as a well blow-out [...]” (which would in most cases correspond to the worst-case scenario relating to the identified major accident hazards).¹¹⁷⁶ Hence, the BEIS concluded that “the [Environmental Statement] should therefore [...]; identify the accidental events *that have the potential to result in a significant environmental impact*; [...]; and describe the impacts of the worst-case scenario. The ES should also confirm whether any of the impacts could be *significant*” (emphasis added).¹¹⁷⁷ Accordingly, a failure by a State of origin to ensure compliance with these requirements would arguably expose it to a well-supported claim of its breach of its procedural obligation of due diligence in preventing transboundary harm.

Another notable feature of scoping good practice is that it is naturally an open and interactive process, and shall “inform and involve the stakeholders who are affected by or interested in the proposal”.¹¹⁷⁸ It is submitted that pertaining to TEIA, this interactive feature is embodied in the requirement of cooperation through notification and consultation between the States involved.¹¹⁷⁹ This is confirmed in ICJ case-law,¹¹⁸⁰ and in treaties on TEIA.¹¹⁸¹ Without analysing the particulars of such requirement, it is noted that it involves an exchange of information between the States concerned, notably surrounding the impacts

¹¹⁷⁵ See also OSD, Art. 13, Annex I.2.

¹¹⁷⁶ BEIS Guide, 39

¹¹⁷⁷ Ibid, 40.

¹¹⁷⁸ UNEP EIA and SEA Report, 47; Ibid, 29 ff.

¹¹⁷⁹ See generally Craik, note 907, 141-150.

¹¹⁸⁰ See *Costa Rica v. Nicaragua* [104] where the Court provided that “[i]f the environmental impact assessment confirms that there is a risk of significant transboundary harm, the State planning to undertake the activity is required, in conformity with its due diligence obligation, to notify and consult in good faith with the potentially affected State, where that is necessary to determine the appropriate measures to prevent or mitigate that risk”.

¹¹⁸¹ Espoo Convention, Art. 3 and 5; EU EIA Directive, Art. 7; UNEP Goals and Principles of EIA, Principle 12.

which might be deemed by either of them to merit further examination within the process.¹¹⁸² Thus, insofar as cooperation is applied, and following the materialisation of the risks which the TEIA seek to prevent, a victim State's prospective contention that relevant types of impacts ought to have been included in the assessment is weakened commensurate with the information exchanged. The argument is even more compelling where the victim State had decided not to take part of the EIA process.

Importantly, and in the same manner as it is the case at the screening stage, the identification of the potential impacts which, should they occur, risk leading to a crossing of the threshold of causing significant transboundary harm, is a fabric of scientific expertise.¹¹⁸³ Such approach is again supported as it arguably affords the scoping process with a desired robustness limiting State discretion, thus reinforcing a credibility that the State of origin has taken "reasonable and appropriate" steps at this stage of the EIA process.¹¹⁸⁴ Therefore, for example, the question of whether the worst-case potential release of hydrocarbons following a major accident on board an offshore facility foreseeably leads to a major environmental incident having significant transboundary impacts on neighbouring States (and thus needs to be identified as an impact which has to be evaluated in the following stages of the process) will depend upon scientifically established methods/evidence. This is in fact described in the UNEP EIA and SEA Report which admitted that methods such as impact modelling and hypothesis setting and testing are "advanced methods" which might be suitable for "complex and controversial proposals".¹¹⁸⁵ However, again, we should remain wary of the limitation of science, and of the quality of the information which is available surrounding the impacts in question. In other words, uncertainties must be taken into account where science is applied to identify the relevant impacts meriting

¹¹⁸² For example, under Art. 2(a) of the Espoo Convention, the notification by the source State in respect of activities which cross the screening threshold must contain "[i]nformation on the proposed activity, including any available *information on its possible transboundary impact*" (emphasis added).

¹¹⁸³ Craik, note 907, 218.

¹¹⁸⁴ See ILA Report, 3.

¹¹⁸⁵ UNEP EIA and SEA Report, 48.

further study. In fact, the UNEP EIA and SEA further adopted a step-by-step approach to scoping as advanced by Everett, Ashe and Sadler, mandating that following the identification of the significant issues to be evaluated in the EIA process, these should be organised and prioritised “with reference to information that is critical for decision-making”.¹¹⁸⁶ Importantly, this also includes reference to the lack of such information. Indeed, the Espoo Convention provides in its Appendix II(f) that the EIA statement must include an “explicit indication of predictive methods and underlying assumptions as well as the relevant environmental data used” to, inter alia, “describe the potential environmental impacts of the proposed activity” (Appendix II(d)) as well as an “identification of gaps in knowledge and uncertainties encountered in compiling the required information” (Appendix II(g)); and the 2014 amendments to the EU EIA Directive similarly requires a “description of the forecasting *methods or evidence*, used to *identify* and assess the significant effects on the environment, including details of *difficulties* (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the *main uncertainties involved*” (emphasis added). Therefore, it is arguably established that developers must be transparent in conducting EIAs¹¹⁸⁷ and are expected to be critical of scientific evidence so as to remain mindful of the limitations inherent to scientific methods and analyses even at the early stage of scoping. This led Tennøy to conclude that “in the screening and scoping processes *subjective considerations* must be made, *often on the basis of insufficient knowledge*” (emphasis added).¹¹⁸⁸

But what does this mean for the integration of the precautionary principle at this stage? In this regard, Stirling adopted Gee *et al*’s argument that precaution “‘broadens out’ the inputs to appraisal beyond the scope that is typical in conventional regulatory risk assessment”, in order to provide, inter alia, an

¹¹⁸⁶ UNEP EIA and SEA Report, 49 (Box 3:4).

¹¹⁸⁷ On the importance of the communication of uncertainties within the EIA process see generally Aud Tennøy, ‘Consequences of EIA Prediction Uncertainty on Mitigation, Follow-Up and Post-Auditing’ in Michael Schmidt, John Glasson, Lars Emmelin and Hendrike Helbron (eds) *Standards and Thresholds for Impact Assessment* (Springer 2008) 447 ff.

¹¹⁸⁸ *Ibid*, 451.

“examination of a greater range of uncertainties, sensitivities and possible scenarios” and a “deliberate search for ‘blind spots’, gaps in knowledge and divergent scientific views”.¹¹⁸⁹ Hence, reinterring the triggers for the invocation of the principle, the latter mandates that impacts must be *included* in the scope of the assessment where the uncertainties (quality of the information) surrounding them makes it unclear whether or not they are likely to cross the adopted environmental threshold, including whether or not they could be catastrophic/major in nature. In doing so, the principle would mandate erring on the side of caution at this stage through serving as a complement for scientific methods relied upon to identify the relevant impacts to be considered. Practically and as a consequence, it could bring to the forefront types of impacts which could otherwise be mistakenly undermined or even disregarded, while highlighting the level of information (or lack of) attached thereto. In doing so, lack of full scientific knowledge would not be used to delay the adoption of possible cost-effective measures to preserve environmental thresholds. A failure by a State to adopt such approach would therefore expose it to possible claims of its breach of its procedural due diligence requirement as qualified by the integration of the precautionary principle.

c- Impact Studies

This stage has been briefly referred to in Chapter VI.3 when the applicable threshold for TEIA were discussed. According to the UNEP EIA and SEA Report, these studies include a number of elements which have broadly been inserted in the Espoo and EU EIA Directive Appendix/Annex listing the minimum requirements of environmental statements, notably: establishing an environmental baseline, the review of alternatives, the examination of environment/project interactions (prediction of cause-effect relationships), coping with uncertainty and determining risk, and the evaluation of impact significance.¹¹⁹⁰ The following discussion will simultaneously touch upon the final

¹¹⁸⁹ Stirling, note 1093, 313.

¹¹⁹⁰ UNEP EIA and SEA Report, 49-54.

three of the aforementioned elements considering their interrelation and the most obvious potential integration of the precautionary principle within them.

The object of this stage, constituting the technical bit of the EIA process, is to assess the probability and severity of the detrimental environmental consequences/impacts included in the terms of reference at the scoping stage, in order to inform risk-management decision-making pertaining to the planned activity/project.¹¹⁹¹ However, the cause-effect relationships tying the predicted potential occurrences with the detrimental consequences to be evaluated are in themselves marked with uncertainty which often renders impact prediction inaccurate.¹¹⁹² The UNEP EIA and SEA Report noted that this is due to the insufficiency and imprecision of scientific understanding of such cause-effect relationships,¹¹⁹³ while academics have attributed such inaccuracy to uncertainty stemming from multiple reasons, notably lack of knowledge, changes in the project occurring between the time the predications were made and the time of the project's realisation, and the scientific methods adopted in making these predictions (for example data errors, model errors, errors in the description of the environmental baseline, assumptions relied upon, etc.)¹¹⁹⁴ In light of such established shortcomings, the UNEP EIA and SEA Report considered good practice a predictive approach reflecting an "explicit attempt" to handle uncertainty.¹¹⁹⁵ It is submitted that the integration of the precautionary principle means that a failure of a State of origin to ensure the adoption of such approach to impact prediction demonstrates that it did not exert sufficient due diligence in satisfying its obligation to assess through TEIAs.

¹¹⁹¹ In this regard, Tennøy noted that "[o]nce impacts have been predicted, the next step is evaluation, where the relative significance of impacts is assessed, in order to equip the decision-makers with information enabling them to judge of they consider the impacts acceptable or not", see note 1187, 448; see also *ibid*, 51 noting that "[t]he primary focus of EIA is on predicting project/environment relationships in terms of cause and effect".

¹¹⁹² See *ibid*, 449 for an example of inaccuracies in EIA predictions revealed following a study including 22 Norwegian cases. The study astonishingly found that 29% of the predictions were inaccurate.

¹¹⁹³ UNEP EIA and SEA Report, 53.

¹¹⁹⁴ Tennøy, note 1187, 450-451.

¹¹⁹⁵ UNEP EIA and SEA Report, 53.

Indeed, domestic EIAs acknowledge the existence of uncertainties which could influence the predictions made under the process.¹¹⁹⁶ In fact, various techniques are relied upon to deal with them; notably, probability density functions, Bayes linear methods, and sensitivity analysis.¹¹⁹⁷ However, on the one hand, and as explained by Tennøy, these techniques could constitute the source of other uncertainties derived from errors and assumptions; and on the other hand, her study revealed that it is not straightforward that the uncertainties dealt with in EIA predictions are communicated or discussed.¹¹⁹⁸ Therefore, while such techniques usually fall short from meeting the abovementioned “explicit attempt” requirement when attempting to handle existing uncertainties, the precautionary principle naturally finds its purpose as a policy tool.¹¹⁹⁹ In this regard, according to Tickner, the relevant criteria for a precautionary application at this stage would include an evaluation of the strength of the evidence available; an imperative to consider “all evidence and all plausible hypotheses”; and of whether presumptions of “causal relatedness” based on previous experience could lower the applicable cause-effect evidentiary standard required for triggering regulatory intervention.¹²⁰⁰ This is of course consistent with the references made in the previous section as to the requirements under the Espoo Convention and the EU EIA Directive for developers to explicitly take account of such uncertainties in their identification of the potential environmental impacts of the proposed activity. For example, if uncertainty surrounds the possibility of a discharge of oil following a major accident on board an offshore platform causing significant

¹¹⁹⁶ See for example DEFRA and CCEUMNER, ‘Guidelines for Environmental Risk Assessment and Management – Green Leaves III’ (Crown, 2011) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69450/pb13670-green-leaves-iii-1111071.pdf> accessed 26 March 2019 [‘Green Leaves III’], 38-40.

¹¹⁹⁷ Ibid.

¹¹⁹⁸ Tennøy’s study revealed that, in the 22 cases examined, uncertainty was not mentioned in 43% of the documents reviewed; and that in 23% of the documents, uncertainty was merely suggested without being explicitly referred to as such; whereas in 13% of the documents uncertainty was pointed out but not discussed. See Tennøy, note 1187, 449-450.

¹¹⁹⁹ UNEP EIA and SEA, 53 providing that “[a] precautionary approach should be taken in situations where the likely impacts of a proposal are unknown or uncertain”.

¹²⁰⁰ See Gullett, note 881, 153.

transboundary damage in a neighbouring State as a result of lack of knowledge/understanding of movements of underwater currents and/or other factors, the precautionary principle mandates an explicit reference to this uncertainty and a lowering of the standard of proof required to justify a pro-environmental perception of the plausible risks at hand. Thus, the cause-effect relationship would be deemed to be established despite below-par information available for accurate findings, and the precautionary principle would mandate that we err on the side of caution in adopting and implementing policies aiming at preserving the environmental threshold at hand.

In reality, the recognition of the inherent uncertainties at this stage of the process highlights the subjective character which makes bias possible when decisions are expected to be made.¹²⁰¹ This is also reflected where the significance of the predicted impacts is evaluated. In relation to this element, the UNEP EIA and SEA Report adopted an analysis conducted by Sadler and Fuller advancing that it is a “priority for better EIA practice” that such evaluation be made with reference to “the nature and extent of impacts (e.g. type duration); the likely adverse effects on the receiving environment (e.g. sensitive areas, land use, community traditions); the magnitude of impacts (e.g. low, moderate, high); and the options for impact mitigation (e.g. reduction, avoidance)”.¹²⁰² Problematically, these elements in themselves depend upon scientific assessments. This applies for example to the determination of the duration of the expected impact, the sensitivity of the baseline, etc. Thus developers are faced with the task of determining such elements, relying on methods/techniques aimed at dealing with potential scientific limitations, in order to reach an ultimate decision forming their perception of the potential significance of the predicted impacts. In this regard, the BEIS Guide emphasised the importance, at this stage, of the description and justification of the appropriateness and reasonableness of the information, data and methods used to perform such evaluation.¹²⁰³ The Guide

¹²⁰¹ Ibid, 53-54; Tennøy, note 1187, 451.

¹²⁰² Ibid, 45.

¹²⁰³ BEIS Guide, 42.

further added that “[w]here assumptions or unsupported data have been used in the predictions, these should be highlighted and an indication provided of reliability / confidence of those assumptions or data”.¹²⁰⁴ It is particularly within such methods that the precautionary principle could find its application given that they are naturally marked with uncertainty. Thus, for example, where assumptions or unsupported data are relied upon to determine the predicted duration of the discharge of oil following an offshore accident, or its influence on the pre-existing environmental baseline, the precautionary principle mandates that the uncertainty therein is interpreted so that it would lead to situations of false-positives rather than false-negatives. This is directly relevant to this study where such uncertainty attaches to the impacts which potential incidents could have on the environmental baselines of neighbouring States. Importantly, such techniques are only used where knowledge is lacking pertaining to *certain elements* of the risks being evaluated. Therefore, this precautionary method to impact evaluation is applied to risks considered *plausible* through scientific assessment. In sum, within the context of TEIAs, the uncertainty in question should be interpreted as supporting a perception that the predicted impacts are likely to breach the applicable environmental threshold, namely to lead to significant transboundary damage. Such approach does not seek to deal with the inaccuracies of the assessments made; however, it ensures a cautious approach to the implementation of the environmental goals sought by the TEIA requirement.

The discussions in this section aimed to show that EIA good practice now requires States of origin to account for uncertainties/lacks in knowledge/limitations in the quality of information relied upon in the various stages of the process. This approach provides the necessary infrastructure for the requirement of precautionary TEIAs, at least in relation to their informative function. Importantly, such process would entail that the subjectivity exercised at the various stages thereof is applied with the purpose of ensuring that concerns of the crossing of set environmental thresholds, which would not have been identified

¹²⁰⁴ Ibid.

through conventional TEIA, are perceived to be present despite the obscurity caused by uncertainty surrounding them. This reinforces the position in favour of the possible application of the precautionary principle at the risk assessment stage as such assessment could err on the side of caution, taking the relevant uncertainties into account. This arguably constitutes a manner in which the precautionary principle could form an “integral part” of an essential and established obligation-creating component of the due diligence requirement, namely, TEIA. Moreover, it would constitute a prerequisite for the application of the precautionary principle at the risk management stage as the triggers for the implementation of precautionary measures would then have been met (as opposed to the situation where uncertainties-blind conventional TEIA were performed).

3. The precautionary principle’s role in the management of the risks of transboundary pollution from offshore activities

This section aims to explore how, once the conditions for the triggering of the precautionary principle within a *principled system of rules* have been met, it affords decision-makers with a useful tool for the management/mitigation of the risks at hand. However, the focus would be upon the contention that, in an attempt to manage the risks of significant transboundary harm from offshore activities, the principle mandates the policy approach by States of origin to elaborate/adopt one or more liability regime(s) requiring compensation for such harm. Thus, sub-section (A) would generally describe why such regimes would be mandated by the precautionary principle; while sub-section (B) complements the discussions in the previous section (2) and advances that TEIA could support the decision to adopt such liability regime(s) for the purpose of the mitigation of the relevant risks posed by offshore activities.

A- Liability regimes as precautionary measures

With regard to the precautionary measures which could validly be dictated by the precautionary principle once it has been invoked, it should be noted that the literature commenting on the principle approves that, apart from via technical

tools of risk management, precautionary measures should in general be implemented through legislation and administrative action. In this regard, Sage-Fuller, commenting on the due diligence standard in the context of transboundary harm arising from non-prohibited activities, reiterated States' obligation to take measures to address the risks posed by such activities, noting that "[m]easures are to be expressed in policies and implemented by legislation, administrative directives as well as enforcement measures, including economic incentives and compliance schemes".¹²⁰⁵ Moreover, Deville and Harding listed "legislation and Law reform" as a form of precautionary measures, while further distinguishing between "direct" and "indirect" such measures.¹²⁰⁶ This distinction was also made by Cameron and Abouchar (and adopted by Freestone and Hey)¹²⁰⁷ who defined the formers as measures which "impose *de jure* precautionary standards" and the latter as those which "create an environment of incentives and disincentives which will tend to generate behavioural adherence to the precautionary principle."¹²⁰⁸ It is within this logic that Deville and Harding enumerate liability regimes as a sub-category of "indirect" precautionary measures, while further adding that such regimes present the additional advantage of functioning as a "mechanism through which to pay for ecological debt".¹²⁰⁹ Thus, the elaboration of one (global convention) or more (national and/or bilateral/regional treaties) liability regime(s) dealing with transboundary pollution from offshore activities could constitute a type of precautionary measure mandated by the interplay between the precautionary principle and the duty to prevent significant transboundary harm.

This falls in line with the intentions of this thesis according to which such regime(s) is(are) sought to be motivated through the definition of international obligations allowing for a better application of the law of State responsibility. In fact, this intention is partially based on the fact that: 1) reliance on such indirect

¹²⁰⁵ Sage-Fuller, note 860, 80.

¹²⁰⁶ Deville and Harding, note 854, 71-73.

¹²⁰⁷ Freestone and Hey, note 852, 257.

¹²⁰⁸ Cameron and Abouchar, note 852, 50-51.

¹²⁰⁹ Deville and Harding, note 854, 73.

precautionary measures would present an *efficient* method for States to satisfy their international obligations to prevent significant transboundary harm from offshore activities as refined by the precautionary principle; as 2) the adoption of such regime(s) creates an “environment of incentives” for operators under their jurisdiction to be uncertainty-conscious in their assessment and management of risks of transboundary harm.

The following review and developments simultaneously touch upon these two elements of the argument. It appears sensible, as a starting point to explore the basic feature of the economic approach to law according to which financial consequences affect the behaviours of people.¹²¹⁰ Authors have elaborated on this feature, and thence deduced an economic approach to liability rules. In this regard, Shavell advanced that operators of risk-creating activities will be motivated to invest in risk-mitigating measures when they are exposed to the financial repercussions of the potential damage their activities might create, possibly through liability rules.¹²¹¹ The same approach was supported by Faure who reasoned that when imposed on operators of risk-creating activities “the ex post duty to compensate will provide ex ante incentives to invest in disaster mitigation”.¹²¹² Faure further added that this approach could be well-suited for situations of “technological/man-made” disasters where operators have a certain degree of influence on the creation of the risk.¹²¹³ Offshore petroleum operations clearly fall under this category. Analysing the existing legal instruments of international law which include liability provisions, Faure looked at those potentially affording compensation for transboundary harm or “at least indirectly relevant for the prevention of disaster with a transboundary character”.¹²¹⁴ Thus, in doing so, it appears that he suggested a convergence in the goals sought by both. This is significant for this discussion as it implies that the development of

¹²¹⁰ See generally Robert Cooter and Thomas Ulen, *Law and Economics* (6th edn, Addison-Wesley 2016) Chap 6-7.

¹²¹¹ Steven Shavell, *Foundations of Economic Analysis of Law* (Belknap Press 2004) 177-206.

¹²¹² Michael Faure, ‘In the Aftermath of the disaster: liability and compensation mechanisms as tools to reduce disaster risks’ [2016] 52 *Stan. J. Int’l L.* 95, 101.

¹²¹³ *Ibid.*

¹²¹⁴ *Ibid.*, 111.

liability regimes contributes in the satisfaction by States of their obligations to prevent transboundary harm.¹²¹⁵ Ultimately, having assessed the existing instruments, he concluded that these provide incentives for disaster mitigation when they meet a number of conditions; namely when they provide for strict liability, ensure the financial capacity of the responsible parties, and impose no limitation on liability which, he further added, “should be attributed to all actors who can influence the risk of a catastrophe”.¹²¹⁶ Despite its relevance to the extent to which they effectively influence operator’s behaviours, the discussion surrounding the features of the liability regimes is a subject for further research and will not be tackled here. Nevertheless it must be noted that Faure inferred from some of the features common in liability instruments (which he deemed ineffective) that “the scope of liability rules in providing prevention and compensation will remain limited” and that for this reason “alternative” rules such as *ex ante* government regulation which provide for compensation through insurance could be relied upon.¹²¹⁷ Commenting on this statement, it is submitted that, in the context of the argument made under this thesis and as inferred from the ITLOS Advisory Opinion, States are under an obligation to ensure that significant transboundary pollution is not caused from offshore activities within their jurisdiction, an obligation “to deploy adequate means, to exercise best possible efforts, to do the utmost, to obtain this result”.¹²¹⁸ Thus it is not essential for liability regimes to *guarantee* that measures are taken by operators to avoid transboundary pollution. Rather, States’ obligations could be satisfied through their adoption of a regime akin to those analysed by Faure, notably the CLC; or by following the trend among developed States to rely on liability regimes in parallel to more specific regulations in their management of the risks attached to the offshore oil and gas industry within their jurisdiction.¹²¹⁹ Moreover, it is further advanced that the negotiations surrounding the features of the prospective

¹²¹⁵ Faure mentioned the provisions under UNCLOS for the general obligations upon States to protect and preserve the marine environment.

¹²¹⁶ Faure, note 1212, 111.

¹²¹⁷ *Ibid*, 114-115.

¹²¹⁸ ITLOS Advisory Opinion [110].

¹²¹⁹ See Chapter III-1 and Chapter V.

liability regime applicable to offshore activities could well take into account the risks which it aims to protect against, and thus include features which are well-suited for its purpose.¹²²⁰ This was in fact the subject of De Smedt, Wang and Faure's discussion surrounding the "Principles of Efficient and Fair Compensation".¹²²¹

Numerous other authors, less specialized in the interactions on law and economics but prominent in the field of environmental law, support the reliance on liability regimes to incentivize protection of the environment. For example, Vicuña noted in relation to responsibility and liability that these concepts "contribute in themselves to the prevention of environmental harm, particularly by means of encouraging the fulfilment of specific obligations and of deterring potentially damaging types of conduct", and therefore concluded that "responsibility and liability for environmental damage under international Law should not always be regarded as a negative sanction but rather, and to the extent possible, as a positive inducement to prevention".¹²²² Thus he suggested that an approach based on these concepts is advisable in the negotiations of regimes on liability for environmental damage as they might "*better ensure* the attainment of the objectives of *adequate environmental protection*" (emphasis added).¹²²³ Moreover, Rochette et al. have endorsed the criticism advanced against the OSD for omitting to provide for rules on liability and compensation applicable to the offshore industry. In support of their position, they noted that "given the financial implications, e.g. insurance costs and, if any damage occurs, compensation costs, an adequate liability regime would have significantly promoted safety and, as a result, prevented accidents to occur".¹²²⁴ Furthermore, Sundaram, commenting on the liability regimes implemented under OPA and the CLC, has embraced the approach adopted by Faure, Jing and Hui¹²²⁵ and asserted that "compensation

¹²²⁰ See Chapter III-2.

¹²²¹ De Smedt, Wang and Faure, note 288, 306-308.

¹²²² Vicuña, note 271, 280.

¹²²³ Ibid.

¹²²⁴ IDDRI Study, 20.

¹²²⁵ Their approach has been reaffirmed in Faure's more recent works, and thus will not be discussed.

has an important role to play in such ventures” and that this role is performed through “[guaranteeing] cost internalization and incentiv[ising] operators and stakeholders to prevent further oil spills”.¹²²⁶ Commenting on the role which insurance could play within the context of ensuring the financial capacity of potential polluters, he further noted that, under the CLC regime, shipowners are induced towards a “heightened standard of care so that they pay less in premiums”.¹²²⁷ Thus suggesting that should such feature (mandatory insurance) be provided for in a prospective regime dealing with pollution from offshore activities, an extra layer of incentives would be created for potential polluters, which equally stems from the interactions of law of economics.

It follows from the foregoing that the interactions between law and economics support the reliance on the development of a liability regime as a means for implementing “indirect” precautionary measures which incentivise risk-creators to exert higher levels of care in conducting their activities. In light of the chosen level of environmental protection made by States in respect of potentially-harmful activities presenting the risk of causing transboundary pollution, the development and the adherence by States to such regime arguably satisfies their obligation to ensure that the obligations incumbent upon them under the no-harm/preventive principles as refined by the precautionary principle are met. This would present the advantage of accommodating the exercise by States of their sovereign right to promulgate desired regulations pertaining to the HSEP from offshore operations within their respective jurisdictions, which would operate in parallel to a prospective liability regime.

B- Could TEIA support the decision to adopt one or more liability regime(s) applicable to transboundary pollution from offshore activities?

In the previous section, when analysing the obligation to assess particularly via TEIAs, the focus was on the informative function thereof. Attempting to afford substantiality to the obligation of States to act with due diligence in preventing

¹²²⁶ Sundaram, note 113, 81.

¹²²⁷ Ibid, 105.

transboundary pollution from offshore activities, the following discussion will revolve around the second function of TEIAs, namely, as put by Sands, that they “require decisions to be influenced by information on the environmental consequences of proposed activities”.¹²²⁸ Interestingly, Craik has noted that, domestically, there exists no legal obligation for States to be bound by the findings and recommendations contained in the EIA documentation prepared.¹²²⁹ Nevertheless, he was of the view (which is adopted here) that having regard to the no-harm environmental goals which TEIAs aim to achieve, applying such approach thereto risks to “devolve [the harm principle] into pure proceduralism”,¹²³⁰ further supporting his view by the fact that “parties are still obligated to justify their respective positions, and their good faith will be assessed, in light of the substantive principle to prevent environmental harm”.¹²³¹ In fact, this function of TEIAs is enshrined in the most notable international treaties describing them, specifically in Art. 8 and 8a of the EU EIA Directive, and Art. 6 of the Espoo Convention.

Furthermore, it must be noted that when acting upon the information furnished in TEIAs, priority should be accorded to the goal of mitigation of environmental impacts of the projects/activities in question rather than the decision to either allow or prohibit their execution. In support of this position, Wood advanced that EIA mainly aim to allow for projects to proceed all while ensuring that their potential impacts are maintained within acceptable thresholds.¹²³² Moreover, analysing the purpose of the Espoo Convention, Craik advanced that “it is not intended in a formal and absolute sense to prohibit a state from engaging in activities that have significant impacts” and instead requires States to (1) adequately investigate the potential impacts of such activities while taking account of the interest of neighbouring States and (2) to take “due account” of the

¹²²⁸ See note 1112 above and accompanying text.

¹²²⁹ Craik, note 907, 150.

¹²³⁰ *Ibid*, 151.

¹²³¹ *Ibid*; see discussion under Chapter III-2.B.

¹²³² See notes 1127-1128 and accompanying text.

EIA Report.¹²³³ This is all consistent with the general principles applicable to EIAs as presented by the UNEP EIA and SEA Report, most notably that according to which “*EIA should be applied as a tool to implement environmental management, rather than as a report to gain project approvals*”.¹²³⁴

As defined in the UNEP EIA and SEA Report, mitigation is “the practical phase of the EIA process. It is concerned with preventing or remedying the adverse impacts and optimising the environmental and social benefits of a proposal”.¹²³⁵ This is performed through the adoption of measures applicable to each major adverse impact predicted by the activity/project in question.¹²³⁶ The Report did not attempt to exhaustively list such measures. Nevertheless, it has, on the one hand, attempted to group them into categories (notably those aiming to prevent and minimize the undesired impacts before they occur, and those aiming to ensure compensation for the environmental loss sustained); and on the other hand, established a hierarchy of priority applicable thereto (giving highest priority to those measures aiming to prevent and avoid adverse impacts).¹²³⁷ Moreover, it embraced the practice whereby these measures would be described in an Environmental Management Plan [‘EMP’], which would also contain requirements for impact management (defined as “the process of implementing mitigation measures in accordance with the schedule of actions contained in the EMP”),¹²³⁸ and measures for monitoring and following-up the EIA.¹²³⁹ Importantly, impact management would typically be merged into a “larger facility-based Environmental Management System” [‘EMS’].¹²⁴⁰ Clarifying the link between EMP and EMS, Cherp advanced that the former, viewed by many as a formal document prepared at the same time as the EIA Report/Statement and which could be incorporated therein, “describes the proposed management

¹²³³ Craik, note 907, 151.

¹²³⁴ UNEP EIA and SEA Report, 42.

¹²³⁵ Ibid, 55.

¹²³⁶ Ibid.

¹²³⁷ Ibid.

¹²³⁸ Ibid, 59.

¹²³⁹ Ibid.

¹²⁴⁰ Ibid.

systems [...] required to ensure [...] the proper implementation of agreed mitigation measures”; whereas the latter is seen as “a set of both documents and processes for *implementing* and (re)formulating EMPs”, notably “the environmental objectives and targets as may be defined” therein (emphasis added).¹²⁴¹ In this regard, EMSs are specifically relied upon within the operational period of the project at hand.¹²⁴² In fact, the UNEP EIA and SEA Report noted that “much closer links are [now] being developed between EIA and EMS so that environmental considerations are integral to all phases of project development, from pre-design through construction to the operations and, eventually, decommissioning”.¹²⁴³ This is reflected in the dependency of regulatory systems in various States upon SEMS and SCs with regard to HSEP from offshore activities, which are then relied upon as reference points for the competent regulatory authority in question to oversee the project (discussed in Chapter V). As concluded in Chapter V, the problem with such approach is that it strongly depends upon the competence/capacity of the regulatory authorities responsible for such oversight as well as on the underlying safety culture in place, irrespective of the development of BPRs in the field. Moreover, they are better suited for dealing with the known rather than the uncertain consequences of offshore activities.¹²⁴⁴ Thus, the effectiveness of the SEMS system in place, taken in isolation, is put into question even in States adopting a performance-based approach to the regulation of risks of offshore activities such as the USA. Therefore, and taking account of the effectiveness of liability regimes in incentivising optimal levels of care by the creators of risks, it is submitted that reliance should instead be placed upon them for the purpose of achieving the goals of mitigation described in EMPs. This approach was in fact supported by the UNEP as it advanced that “impact mitigation is consistent with the polluter pays

¹²⁴¹ Aleh Cherp, ‘The Role of Environmental Management Systems in Enforcing Standards and Thresholds in the Context of EIA Follow-up’ in Michael Schmidt, John Glasson, Lars Emmelin and Hendrike Helbron (eds) *Standards and Thresholds for Impact Assessment* (Springer 2008) 437-439.

¹²⁴² UNEP EIA and SEA Report, 115.

¹²⁴³ *Ibid*, 128.

¹²⁴⁴ See notes 484-487 above and accompanying text.

principle (PPP), which places a responsibility of proponents to ‘internalize’ the full environmental costs of development proposals” and added that “under the sustainability agenda, [...], this principle may be interpreted broadly, *encouraging a proponent to voluntarily meet higher standards of environmental performance*”.¹²⁴⁵ Nevertheless, this measure must be consistent with the good practice described by the UNEP, namely that it “take[s] account of various issues and considerations, such as *practicality, cost-effectiveness*, views of stakeholders, and *policy and regulatory guidance*” (emphasis added).¹²⁴⁶ In light of the good prospects for the elaboration of liability regimes covering transboundary pollution from offshore activities, of the policy trend of developed States to rely thereon, and of the precedent set by the industry to commit itself to a private such regime (OPOL), the combination of the precautionary and polluter-pays principle accommodates the requirement to adopt such “indirect” precautionary measure.

In fact, a statistical analysis of the oil spills from tankers since the adoption of the CLC reflects the effectiveness of reliance on liability regimes to prevent harm. This is evident as seaborne the shipping volume of crude oil and oil products has more than doubled since 1970,¹²⁴⁷ the number of tanker spills diminished considerably.¹²⁴⁸ Granted, the argument could be made that such decline in oil spills is due to technological development in safety of navigation, but such argument is easily countered by the acknowledgment of the necessity of a legal infrastructure which acts as a driver for such development. This begs the question of whether a similar approach could appropriately be applied to the offshore oil and gas industry.

The answer is naturally political. However, it is the realisation of the inadequacy of the pre-CLC legal system to cope with the materialisation of the risks posed by

¹²⁴⁵ UNEP EIA and SEA Report, 56.

¹²⁴⁶ *Ibid*, 55.

¹²⁴⁷ ‘Seaborne shipping volume of crude oil and oil products from 1970 to 2008’ <<https://www.statista.com/statistics/267688/seaborne-shipment-of-crude-oil-and-oil-products-since-1970/>> accessed 12 June 2020.

¹²⁴⁸ ‘Oil Tanker Spill Statistics 2019’ <<https://www.itopf.org/knowledge-resources/data-statistics/statistics/>> accessed 12 June 2020.

seaborne oil trade which generated the requisite political support behind the elaboration and adoption of the CLC. Indeed, claims for oil pollution harm from tankers were frustrated by the complexity, inconsistency, and inadequacy of national substantive and procedural laws pre-CLC.¹²⁴⁹ This was coupled with an acknowledgment of the reality that the size and numbers of trans-oceanic oil tankers were growing on a global scale, carrying aboard the ghost of the *Torrey Canyon* incident, the grounding of which in March 1967 caused the discharge of 50,000 tons of crude oil into the English Channel and causing environmental damage both in England and France.

The political perplexity in relations to the question of whether a global liability regime is called for in relations to the offshore oil and gas industry is clearly reflected in the IMO response to the Indonesian Proposal following the Montara Blowout. The IMO's final position was in favour of a reliance on regional or bilateral efforts. The views expressed in the Legal Committee encompassed the arguments that no international liability regime is needed in the absence of an internationally regulated safety regime and that a "cautious approach" must be taken by the IMO considering the "complexity and strategic nature of the subject" and the "sensitive issue of transboundary liability". Without discussing these arguments, the Committee recognized that the most appropriate way to address the matter was through bilateral and regional agreements and informed the Council that it wished to analyse the subject further in view of affording guidance to States in developing such agreements. However, a number of criticisms could be advanced against this conclusion. Firstly, strictly speaking, safety regimes are concerned with prevention of the occurrence of damage and the limitation of its consequences, whereas liability regimes are focused on affording compensation after damage has occurred. In any case, it is not obvious why internationally regulated safety regimes should be a prerequisite for a global liability regime on the subject. On the contrary, as discussed above, liability regimes are better suited to manage the *uncertain* risks posed by a hazardous activity. Secondly, for the Committee to consider that a "cautious" approach based on the considerations

¹²⁴⁹ Mason, note 412, 4.

mentioned above would be achieved through the provision of guidelines for bilateral and regional agreements, it must have understood that these considerations highlight different practices among States. The dilemma in this regard revolves around setting a global uniform balance between development/sovereign use of resources and the responsibility for environmental protection. The rest point of the balance is usually set in sector-specific treaties and it generally varies in different contexts. For example, treaties dealing with pollution from nuclear accidents or ships shift the balance more towards responsibility for environmental protection compared to those concerned with land based sources of marine pollution. It is submitted that the achievement of this balance in the subject of this study is made “complex” and “strategic” in the eyes of the Legal Committee for a number of reasons.

A first complication relates to the “sensitive issue of transboundary liability”. Indeed, the ILC works on the subject discussed in Appendix II shows how problematic and “sensitive” the matter is. Nevertheless, the latest development as shown in the 2006 Draft principles on Allocation is focused on a logic of allocation of loss primarily channelling liability to the polluter, and thus one cannot deny the evolution of the law on the subject. Another issue relates to the concept of “common but differentiated responsibility” [‘CDR’] of States in international environmental law. This concept entails that international law does not apply equally to all States and draws a distinction between developed and developing States. It places higher standards of conduct on developed States on the grounds that they contribute more in environmental degradation and that they possess more advanced technologies and financial resources. According to the Birnie and Boyle, CDR principally imposes an obligation to “co-operate in developing the law”, and generally, the objective of international environmental agreements is to “harmonize national Laws, either globally or regionally”. In that sense, the IMO position is problematic as it contradicts with the contemporary international environmental policy direction reflected in the sustainability agenda discussed in the introduction to this thesis. This is the case as, on the one hand, the CDR would entail the development of high standards of environmental protection in

developed States regions, whereas the exploitation of natural resources would be the primary focus in developing States regions; and on the other hand, multinational and bilateral treaties akin to the Energy Charter Treaty and the numerous bilateral investment treaties as well as the establishment of international organisations like the WTO and the International Centre for Settlement of Investment Disputes (ICSID) allowed the liberalization of trade and protection of cross-border investments, thus encouraging opportunities for first-world-countries' private actors to operate within foreign jurisdictions where safety standards are demoted on the scale of priorities. Moreover, and from a strictly factual perspective, the reality of the offshore oil and gas industry is shifting as exploration ventures into deeper and more delicate areas which potentially affect a multitude of States such as the Mediterranean and even the Arctic. Additionally, what has been consistently worrying is the potential magnitude and duration of oil spills from offshore oil and gas incidents as contrasted with spills from tankers whose carrying capacity is limited and therefore ascertainable. The Montara and Deepwater Horizon incidents are incontestable examples of this reality. These arguments suggest that the prospects of the adoption of global liability regime applicable to offshore oil and gas activities is backed not only by legal analysis, but also but public policy and factual considerations.

Putting the abovementioned developments into perspective, and following up from the argument presented at the end of section IV-2.B, it is submitted that despite the established understandings of the consequences of offshore incidents, the reality is that there remains a lack of knowledge surrounding the potential scope of their negative effects. Thus, purely preventive measures might not adequately take into account the transboundary character of the pollution which might result therefrom. In this regard, and in comparison, the precautionary principle would dictate that, where relevant uncertainties are recognised in TEIA, the credible scenario taken into account would involve the causing of significant transboundary pollution emanating from offshore petroleum accidents occurring within a given source States' jurisdiction. It is further argued that, although the

principle's approach to uncertainty does not necessarily entail a perception for the existence of more serious risks, it is the case in the scenario at hand, as the lack of knowledge in question attaches to the transboundary effects of pollution from offshore incidents, which arguably presupposes a higher severity of the harm they cause. It follows that the application of the principle in this given situation entails that the legislative and regulatory systems in source States reflect a robustness which ensures the implementation of higher levels of care in offshore operations conducted within their jurisdiction as: (1) uncertainties surrounding the prediction and assessment of major accidents are now interpreted taking account of worst case scenarios of harm; and thus (2) the no-harm principle is more readily called into action as, operating within a principled system of rules, it mandates behaviour from States which is consistent with their obligation to take measures that are "designed to minimize to the *fullest possible extent*" (emphasis added) pollution from offshore oil and gas activities under their jurisdiction in order for them "to ensure that [they] are so conducted as not to cause damage [...] to other States and their environment".¹²⁵⁰ Therefore, and having regard to the effectiveness of liability regimes in incentivising optimal levels of care from the creators of risks, it could be argued that their adoption would be better suited for the aforementioned purposes than the traditional regulation of safety and environmental protection of offshore activities. Accordingly, should significant transboundary harm result from an offshore incident despite an appropriate performance of a TEIA, States which do not provide for an adequate such regime risk being in breach of their substantive due diligence requirement under their international obligation to prevent transboundary pollution from offshore activities under their jurisdiction (which is the case in many States as exposed in Chapter III above). In other words, it is contented that the requirement for the adoption of an indirect precautionary measure enshrined in one or more liability regime(s) meets the overall requirement of reasonableness attached to the substantive obligation of due

¹²⁵⁰ UNCLOS, Art. 194.2 and 194.3. Refer to the discussion in section IV-2.B on the relevance of the robustness of the regime in place in the State of origin to the substantive obligation of due diligence required from it.

diligence.¹²⁵¹ In fact, such contention is reflective of the variable nature of the due diligence concept in accordance with the degree of risk posed by the activity/project in question, particularly taking account of the knowledge acquired by source States through precautionary TEIAs guiding them to err on the side of caution in their perception of the risks at hand.

In doing so, the precautionary principle's integration within the obligation of States to assess the potential consequences of activities within their jurisdiction delimits the obligation of States to prevent transboundary pollution therefrom. On the one hand, it clarifies that TEIAs should reflect that the uncertainty surrounding the causing of significant transboundary damage from offshore incidents is interpreted as evidence of the reality of such risk; while on the other hand, and consequently, it requires the taking of measures which effectively implement higher levels of care in offshore operations conducted within their jurisdiction, most notably through the elaboration and adoption of one or more liability regime(s) dealing with transboundary pollution resulting therefrom.

¹²⁵¹ See ILA Report, 7-9 for an explanation of the reasonableness requirement and its establishment under international law; see also ITLOS Advisory Opinion [120].

IX- Conclusions

Relying on the analysis of the developments surrounding the obligation of States to prevent transboundary harm from risk-creating activities under their jurisdiction, this study examined how the application of the precautionary principle defines the expected behaviour from States in their management of the transboundary risks posed by offshore activities they host. It advanced that the integration of the principle within the aforementioned obligation encourages States to update their environmental policies to correspond to the most recent trends adopted in developed States and works of the ILC, namely the adoption of one or more liability regime(s) channelling liability to operators of offshore platforms for the transboundary harm from incidents they might cause.

The study started by assessing the *status quo* in relations to liability regimes applicable to environmental harm caused by offshore oil and gas activities at various levels across the globe. It confirmed shortcomings and inconsistencies in the field, and noted a trend amongst developed States to rely on such regimes in their environmental policies surrounding offshore oil and gas activities. Despite this reality, however, it argued that general agreement on the legal underpinnings of a prospective liability regime on the subject mean that good prospects exist for its potential elaboration. Therefore, the challenge appears to be one of incentivising States to sovereignly engage themselves to ratify such regime.

Acknowledging that such incentive stems from “political pressure” founded upon factual and legal underpinnings, the study went on to examine the particularities of the established obligation of States to prevent significant transboundary harm from hazardous activities under their jurisdiction as currently perceived in legal writings and decisions of international courts and tribunals. It noted that the imprecision of the due diligence concept, central to the aforementioned obligation, makes it challenging to determine the appropriate behaviour which States are expected to adopt to prevent such harm from offshore incidents under their jurisdiction. It analysed the discussion in legal literature and case-law surrounding the distinction between the substantive and procedural facets of the obligation to prevent, highlighting the move towards its expression through the

obligation of States to assess the potential impact of risk-creating activities they host (“proceduralisation” of the obligation to prevent) and the relevance of both facets within the context of inter-State disputes as a result of significant transboundary harm. It placed such examination within the context of the operation of the law of State responsibility, which pre-supposes for its invocation, that defendant States breach one or more of the international obligations incumbent upon them. It found that the proceduralisation of the obligation to prevent affords some clarification as to the expected behaviour from States (the specific content of the obligation to prevent) as it serves an informative function which feeds into the understanding that the due diligence requirement entails a proportional relationship between the measures of prevention expected of States and the level/degree of risk posed by the activities they host. It highlighted, however, that this informative function of the obligation to assess is threatened by its traditional inability to account for uncertainties, and suggested that an analysis founded upon the inclusion of the precautionary principle within the due diligence requirement as advanced in the ITLOS Advisory Opinion might help overcome this hurdle. Thus, it advanced that, under the current *status quo* of legal writings analysing the obligation of States to prevent transboundary harm from activities within their jurisdiction, the process of State responsibility is hampered as the substantive measures they are expected to adopt are obscured by the lack of information/understanding surrounding the risks posed by such activities. This is an unfavourable situation as States are consequently left with ample discretion in setting their own [discrepant] national environmental policies, without a real compelling need for them to abide by policy and legal objectives of environmental protection through ensuring the sustainable use of the oceans and seabed resources and the prevention of significant transboundary harm in neighbouring States.

The discrepant national environmental policies adopted in States with strong offshore oil and gas presence were then confirmed as the HSEP regulations implemented therein were analysed. This analysis revealed that despite the categorisation of such regulations under two broad approaches, namely,

prescriptive and performance-based regulations, important variations entail that the prospects of a global rapprochement in the field are very weak. In the process, it highlighted the fact that such regulations have regularly been subject to review following major disasters on board offshore facilities leading to loss of life and significant harm to the environment. Thus, developed States switched from a prescriptive to a performance-based regulation of the risks of harm from offshore activities, as the latter type was perceived as more effective in achieving this purpose. Importantly, this analysis rebutted the argument that there currently exists a State practice consistent enough to constitute one of the elements forming customary international law defining the content of the obligation of States to prevent transboundary harm from offshore incidents within their jurisdiction. In other words, the responsibility of States cannot be invoked on the contention that regulatory approach they have adopted in the process of setting their own environmental policies is flawed. Moreover, the offshore industry's BPRs were examined and found inconsistent and non-binding in nature, and so incapable of supporting an argument in favour of a *de facto* international normativity pertaining to the regulation of the risks posed by the industry which would diminish the need for international law to develop in this direction.

In light of the foregoing conclusions, this study proceeded to analyse the repercussions which the provision by ITLOS' Advisory Opinion for the integration of the precautionary principle within the general requirement of due diligence incumbent upon States could have on the behaviour expected from them in preventing transboundary harm from offshore incidents under their jurisdiction. To this end, it presented an overview of the principle and of its operation within a principled system of environmental rules. In this regard, it advanced that the principle draws its prescriptive force from binding existing rules of environmental law such as the obligation of States to prevent transboundary harm, and their obligation to assess the potential impacts of activities under their jurisdiction on the environments of neighbouring States, all while contributing in defining their respective specific contents. It then examined the principle's relevance to the issue of the management of the risks of transboundary harm from offshore

incidents, as it dissected the conditions for its invocation. It found that the principle is readily invoked within this context as gaps in knowledge mean that the information surrounding the varying components of the risks of harm from such activities is of insufficient quality to ascertain whether or not their potential occurrence would lead to the breach of the applicable level of protection adopted by the international community, namely protection against *significant transboundary harm*.

Having established the principle's relevance for the subject of this study, subsequent analysis focused on academic writings and decisions of international courts and tribunals to evaluate the support behind the reliance thereon for these purposes, and to establish common denominators in the interpretation of the repercussions of its invocation in environmental matters. It found that the principle comes into play at both phases of risk regulation, namely risk assessment and risk management; and that its invocation entails a lowering of the prerequisite standard of proof (instead of its reversal) necessary for regulatory intervention for environmental protection to be required from States. More specifically, the application of the principle entails that *plausible indications* (rather than convincing evidence) are relied upon in the assessment by States of whether the applicable environmental threshold would be crossed by potential offshore oil and gas incidents under their jurisdiction.

Within this context, the final Chapter of this thesis examined the repercussions of the integration of the precautionary principle in assessment and management of the risks of transboundary harm posed by offshore activities. It argued that States have conventionally relied on TEIAs to assess the potential impacts of hazardous activities under their jurisdiction, a process which now arguably forms the basis of a norm customary international law. It then applied the principle within the various stages of TEIAs as commonly analysed in renowned international guideline documents and reflected upon in international treaties. It concluded that such integration of the principle dictates that the subjectivity applied within the aforementioned various stages, embraced by their reliance on inconclusive scientific methods of evidence in the face of uncertainty, is exercised in a way that

relevant concerns of the crossing of set environmental thresholds are perceived to be present *despite* the obscurity caused by uncertainty surrounding them. Thus, States become better informed of the likelihood of worst-case-scenario offshore incidents to lead to transboundary harm, relying for this end merely on plausible scientific indications in light of potential gaps in knowledge surrounding the cause-effect relationship in question. It was then argued that, this informative function of TEIAs as refined by the integration of the precautionary principle is vital for ascertaining the substantive precautionary measures which source States are expected to adopt in their management of the risks of transboundary harm from offshore activities under their jurisdiction. This contention was supported by the reference to the current understanding of the concept of due diligence acknowledging a correlation between the severity of the risk at hand and the measures expected to be taken by States to prevent their occurrence. Thus, relying on theories of law and economics providing for the effectiveness of liability regimes in incentivising optimal levels of care by proponents of risk-creating-activities, and reiterating the policy followed in developed States to adopt liability regimes in their legal infrastructure to manage the risks posed by offshore activities under their jurisdiction (and the works of the ILC in that direction), such regimes were argued to constitute appropriate precautionary measures which States are expected to adopt to satisfy their substantive no-harm duties.

In doing so, the precautionary principle contributes in defining both the procedural and substantive contents of the obligation of States to prevent transboundary harm from offshore activities under their jurisdiction. Placing these conclusions within the context of the operation of the process of State responsibility, and answering the topic of this thesis, it is argued that such reliance on the principle does indeed stimulate States hosting offshore oil and gas activities to adopt liability regimes specifically tailored for dealing with the risks of transboundary harm they pose, as their failure to do so arguably exposes them to valid claims of their breach of their [refined] obligation to prevent such harm.

Appendix I – Failed attempts to draft a global liability regime regulating the offshore industry

When it comes to drafting efforts, the first serious attempt of creating a global legal instrument applicable to various aspects of the operation of offshore activity was made in 1977 by the Comité Maritime International (CMI) at its conference in Rio de Janeiro. The conference resulted in the drafting of Convention on Offshore Mobile Craft (The Rio Draft)¹ which purported to extend the application of established principles of maritime Law to crafts involved in offshore activities without being qualified as “vessels”.² The Rio Draft was submitted to the IMO, but the Draft was not considered until the early 1990s as priority was given to other “more important” international maritime Law matters at the time,³ and the CMI was requested to review the Draft in light of the developments that have occurred since its creation.⁴ The revised version of the Draft was presented at the CMI conference in Sydney (The Sydney Draft). Further studies were later undertaken on the topic by an international working group established by the CMI, however, and admitting that the best international organisation to deal with the subject is the IMO,⁵ the process for the creation of a new global regime lacked the sufficient support for its adoption.⁶ Consequently, the CMI decided to halt its effort in pursuit of the topic.

¹ Richard Shaw, ‘Offshore Craft and Structures: Report of the Legal Committee of the International Maritime Organization from the International Subcommittee of the Comité Maritime International’ CMI Yearbook 1998, 145; see also Nengye Liu, ‘Protection of the Marine Environment from Offshore Oil and Gas Activities’ in Rosemary Rayfuse (ed) *Research Handbook on International Marine Environmental Law* (Edward Elgar Publishing 2015) 190, 203.

² Ibid Shaw.

³ Kashubsky, note 111, 5.

⁴ Michael White, ‘Offshore Craft and Structures: A Proposed International Convention’ [1999] 18 Australian Resources and Energy Law Journal, 21.

⁵ Baris Soyer, ‘Compensation for Pollution Damage Resulting from Exploration for and Exploitation of Seabed Mineral Resources’ in Baris Soyer and Andrew Tettenbom (eds) *Pollution at Sea: Law and Liability* (Informa, London 2012) 73.

⁶ Sundaram, note 113, 93; Nigel Frawley, William Sharpe and John Joy, ‘The Origins of the CMLA Draft Convention on Offshore Units, Artificial Islands and Related Structures Used in the Exploration for and Exploitation of Petroleum and Seabed Mineral Resources’, [2004] 1 CMI Newsletter, 2. It is believed that the fact that Maritime Law Association of the United States

A more recent attempt at developing an international framework for civil liability arising from offshore activities was deliberated under the auspices of the G20 but failed in the early stages of the process.⁷

Moreover, a Draft produced by the Canadian Maritime Law Association (the Canadian Draft)⁸ was published in 2004 in the CMI Newsletter in hope of stimulating initiatives for work on the subject. The Canadian Draft is a relatively comprehensive document which includes provisions dealing with liability for pollution damage resulting from offshore activities.⁹ The silver lining in these efforts is that, although unfruitful so far, they express an evident desire by many to construct a regime dealing with the manifest issues presented by offshore activities.

A number of reasons could be associated with the failure of crystallization of legislation in the offshore sector in general and a civil liability regime applicable thereto in particular. As expressed above, such efforts lacked the necessary support and infrastructure for their ultimate adoption.

Indeed, despite undisputed need for international regulation of matters such as salvage and mortgages within the offshore industry through the application of well-defined legal principles, some actors, such as the IADC, were not supportive of such initiative.¹⁰ Similarly, and broadly speaking, the lack of sufficient governmental support for the adoption of global legal regimes in the offshore sector, coupled with strong opposition from the oil industry,¹¹ pose the biggest hurdle for their achievement.¹² Another significant disadvantage is the absence of

challenged the need for a global treaty on the subject had an important impact on the process; Sundaram, note 113, 70.

⁷ Ibid Sundaram, 93.

⁸ Draft Convention on Offshore Units, Artificial Islands and Related Structures Used in the Exploration for and Exploitation of Petroleum and Seabed Mineral Resources 2001, (not in force) ['UOC 2001'].

⁹ Ibid, Art. XXI.

¹⁰ Shaw, note 1270, 130.

¹¹ White, note 1273; Soyer, note 1274, 75; Noah Sachs, 'Beyond the Liability Wall: Strengthening Tort Remedies in International Environmental Law' [2008] 55 UCLA Law Review 837, arguing on the pressure put by oil companies on governments.

¹² Kashubsky, note 111, 6.

a competent international organization overlooking legal initiatives on the subject. In that respect, apart from the fact that the IMO ultimately found that a global regime was not the appropriate solution for the problem, strong arguments against its competency to deal with offshore activities could be advanced. Indeed, Art. 1 of the 1948 Convention on the International Maritime Organization,¹³ under Part I therefore entitled “purposes of the Organization”, refers at many occasions at “ships” and “shipping” without making any reference to offshore activities. Moreover, in the view of some, the IMO lacks the necessary technical expertise in relation to matters on offshore activity.¹⁴ Another important dissimilarity between pollution from vessel-sources and from offshore activities which is thought to explain the divergence in development of the Law in the respective areas is the fact that the former results from “tankers mov[ing] across international boundaries all the time, whereas platforms remain fixed in place”.¹⁵ Although the ever-growing risks of transboundary pollution from offshore activities, in our opinion, defeats such argumentation.

¹³ Adopted in Geneva on 6 March 1948.

¹⁴ Gaskell, note 63, 83.

¹⁵ See Kate Galbraith, ‘Gap in Rules on Oil Spills from Wells’ *New York Times* (16 May 2010).

Appendix II- Developments of the International Law Commission (ILC) Works on Liability

The ILC works on Liability attempted to place liability on States in respect of significant transboundary damage from hazardous but lawful activities. Looking at the developments within these works, we note that focus was first placed on States' obligations of cooperation and notification, leaving the principle of strict liability a mere subsidiary role.¹⁶ The second special-rapporteur then relied more clearly on strict liability for transboundary harm as a primary duty for States.¹⁷ However, commentators have heavily criticized the conceptual foundations of the topic.¹⁸ Consequently, the third special-rapporteur Rao assessed the State liability approach followed by his predecessors and found that it was "a case of misplaced emphasis".¹⁹ And in light of the non-acceptance by States of the emergence of a

¹⁶ See Quintin-Baxter, *Third Report on International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law*, [1982] 2 YBILC (pt.1), UN Doc A/CN.4/360, 51; Quintin-Baxter, *Fourth Report on International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law*, [1983] 2 YBILC (pt.1), UN Doc A/CN.4/373, 201; Quintin-Baxter, *Fifth Report on International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law*, [1984] 2 YBILC (pt.1), UN Doc A/CN.4/583 Add.1, 155.

¹⁷ [1986] II-1 YBILC, 154-161, paras.42-69.

¹⁸ For example, Handl, supporting Brownlie's position, found that basing liability rules on a distinction between acts not prohibited by international law and acts that are is "misguided". The basis of his argument is that rules on acts not prohibited by international law would extend to apply to States' "wrongful" behaviour in failing to meet a standard of due care to avoid transboundary harm, and therefore he believes that the works deal more accurately with "internationally lawful conduct". Ibid, 55-56. Dupuy, note 410, 113 found that the gap between "wrongful acts" and "acts not prohibited by international law" was in fact "artificial", and that State practice and case-law prove that such distinction only exists when it is voluntarily established by States in Conventions. Other commentators found that the ILC works on State responsibility could have dealt with the liability topic through the adoption of primary rules providing for State strict liability breach of which entails the application of secondary rules of reparation, and that therefore the distinction between the ILC's projects was "unnecessary". See for example, Boyle, note 48.

¹⁹ Pemmaraju Sreenivasa Rao, *First report on the legal regime for allocation of loss in case of transboundary harm arising out of hazardous activities* [2003] UN Doc A/CN.4/531, 16. In Rao's words, "State liability and strict liability are not widely supported at the international level, nor is liability for any type of activity located within the territory of a State in the performance of which no State officials or agents are involved. Non-performance of duty of due diligence cast upon private citizens and individuals cannot easily be attributed to the State as a wrongful conduct justifying attachment of liability [...] The case law on the subject is scant and the basis on which

general absolute liability for non-prohibited activities for their failure to make diligent effort to avoid transboundary harm,²⁰ the ILC work shifted to focus on “allocation of loss”²¹ rather than an overarching concept of liability. This led to the adoption of the Draft Principles on Allocation.²² However, the United Nations’

some claims of compensation between States were eventually settled is open to different interpretations. They do not lend strong support to the case of State liability. The role of customary international law in this respect is equally modest.”

²⁰ YBILC 1987 Vol II (pt2), A/CN.4/SER.A/1987/Add.I (Part 2), paras 138-39 providing: “In the absence of established scientifically substantiated international standards for the determination of adverse transboundary effects in various spheres, the elaboration of general principles could contribute to the emergence of disputes, while the lack of such standards would impede their settlement”; “It was contended by some members that a general regime of liability for non-prohibited acts would amount to absolute liability for any activity, and that that would not be acceptable to States”; See also Tomuschat, ‘International Liability for injurious consequences arising out of acts not prohibited by international law: the work of the International Law Commission’ in Francioni & Scovazzi (eds) *International Responsibility for Environmental Harm* (Graham & Trotman 1991), 55: “It is submitted that this global approach ... is not suited to yield constructive results. First, it can hardly be presumed that states might be prepared to accept liability for any harm sustained by another state in the form of physical consequences of just any kind of activity carried out within their territories or under their control. By undertaking such a commitment, states would on their part accept an uncontrollable risk ... A legal regime with unforeseeable consequences and heavy financial implications is (not acceptable to States by way of progressive development and hence) quite another matter. No responsible government could commit itself for such an adventure”; See also Caroline Foster, ‘The ILC Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising out of Hazardous Activities: Privatizing Risk?’ [2005] 14:3 RECIEL 265, 273.

²¹ That is among the different actors involved in the operation of the activity concerned, namely *primarily* “those authorising, managing or benefiting from them” such as “operators, insurance and pools of industry funds” and *subsidiarily* States whose role is “important” in “devising and participating in loss-sharing schemes” particularly where the internalization of costs by operators proves insufficient for attaining “equitable allocation”, ILC, note 366, paras 445 and 450-56. In this regard, the role of the State as a “beneficiary of the activities, might be taken into account when determining the State’s role in loss allocation”.

²² The Articles contained obligations on States of origin to ensure that victims of transboundary harm caused by hazardous activities be afforded “prompt and adequate compensation” where activities are located either within the State’s territory or under its jurisdiction or control. Draft Principles 4.1; achievement of this objective is through “the necessary means”, giving States ample flexibility to attain it, Ibid Principle 4, Commentary (4); that is including through the establishment of industry funds at national level in “appropriate cases”, Ibid Principle 4.4, Commentary (37); Compensation by States is nevertheless envisaged: on the one hand, the principles are without prejudice to possible ex gratia payments made by States, and on the other hand, where the measures undertaken by States prove insufficient to meet the objective of ensuring prompt and adequate compensation, although not directly under an obligation to set up government funds through which the remainder of the compensation is paid, States are required to ensure that additional financial resources are available, Ibid Principle 4.5, Commentary (38).

General Assembly has, over the past 12 years, merely commended the Principles to the attention of Governments, without prejudice to any further action and invited them to comment on any such action.²³ Thus, it appears that the process of the prospective elaboration of a Convention on the basis of the Draft Principles on Allocation is not imminent.

One obvious difference with our intended reasoning is that obligations thereunder fall under the rules of State responsibility as opposed to international liability in the sense adopted by the ILC.²⁴ Moreover, focusing our research on the particular context of transboundary pollution from offshore activities delimits States' obligations in scope, and thus eliminates the unwanted scenario of creating an unwelcomed rule of general absolute State liability. Consequently, such approach avoids being vulnerable to the abovementioned criticism against the ILC works on Liability.

²³ See UNGA Res (18 December 2006) UN Doc A/Res/61/36; UNGA Res (1 January 2008) UN Doc A/Res/62/68; UNGA Res (10 January 2011) UN Doc A/Res/65/28; UNGA Res (18 December 2013) UN Doc A/Res/68/114; and most lately UNGA Res 71/143 (20 December 2016) UN Doc A/Res/71/143.

²⁴ In relation to the Draft Principles on Allocation, failure to prevent the occurrence of transboundary harm entails the imposition of obligations contained therein as opposed to the triggering of State responsibility. Draft Principles on Allocation, Principle 4, Commentary (2) providing: "[...] Without prejudice to other claims that may be made under international law, the responsibility of the State for damage in the context of present principles is [...] not contemplated".

Appendix III – Strategic Environmental Assessment

It is comprehensible to consider the effects which the integration of the precautionary principle within the general duty of States to act with due diligence in preventing transboundary environmental harm from offshore oil and gas incidents within their jurisdictions could have on the manner in which relevant strategies are assessed and decided upon. The question is justified where the particular matter of the exploration and exploitation of hydrocarbons depends on policies and plans sanctioning a move into deeper waters, thus creating higher risks of catastrophic transboundary environmental consequences from potential offshore incidents. In this regard, it is safe to wonder whether the developments within the obligation of prevention of transboundary harm could indicate that the assessment of relevant strategies should account for the uncertainties attached to the aforementioned potential catastrophic consequences and subsequently require precaution within the decision-making process at this higher strategic level. The answer to this question would potentially contribute in further clarifying and delimiting/defining the content of the obligation of States to prevent transboundary pollution from offshore incidents within their jurisdiction, on the basis of which State responsibility could then be invoked. Nevertheless, this all depends upon the preliminary question surrounding whether SEA constitute the subject of an obligation incumbent upon States under international law. Should this latter question be answered in the negative, any further developments in the direction described above would be rendered purely theoretical. Hence, the following paragraphs aim to provide a brief but comprehensible overview of SEAs and their status as the subject of a norm of international law. It will be argued that, unlike EIAs, SEAs fall far short from constituting the basis of an international obligation imposable upon States; therefore, the developments suggested above are not pursued in the remainder of this thesis.

SEA is a procedure which is generally associated in academic literature with the concept of sustainable development.²⁵ This is understandable as, despite the numerous variations in its definition and actual meaning,²⁶ it is broadly conceived as a method to integrate environmental, economic and social considerations in decision-making by public authorities with regard to policies, plans and programmes ['PPP'].²⁷ Although originally seen as an extension of the EIA procedure from a project-specific level to a higher strategic level,²⁸ it was later contrasted from the latter in a number of ways, notably in its geographical and temporal scales,²⁹ in the level of detail sought therein,³⁰ and in the ways in which strategic decision relying thereon are made.³¹

The ambiguity inflicted by the aforesaid lack of uniform definition perhaps stems from the imprecision of what is more generally understood by PPPs, or even more

²⁵ For example, Dalal-Clayton and Sadler interpreted the integration function of SEA as evidence of its purpose as a “key tool for sustainable development”, Barry Dalal-Clayton and Barry Sadler, *Strategic Environmental Assessment – a Sourcebook and Reference Guide to International Experience* (Earthscan 2005) 10. See also Thomas Fischer, *The theory and practice of strategic environmental assessment: towards a more systematic approach* (Earthscan 2007) 15 ff; See also Council Directive 2001/42/EC of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment [2001] OJ L197/30 ['EU SEA Directive'], Art. 1, explicitly stating the promotion of sustainable development as one of the Directive's objectives; See also the Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context (adopted 21 May 2003, entered into force 11 July 2010) 2685 UNTS 140 ['the Kiev Protocol'], Article 1(e), also referring to sustainable development as an one of its objectives.

²⁶ Ibid, 10-11; see also Antonio Waldimir da Silva et al., 'Strategic environmental assessment: once concept, multiple definitions' [2014] 8:1 Intl. J. Innovation and SD 53.

²⁷ The EU SEA Directive strictly applies to public plans and programmes (see Art. 2(a)), whereas the Kiev Protocol, despite also only applying to public authorities (see Art. 2.5) also applies to policies (see Art. 1(b)).

²⁸ Dalal-Clayton and Sadler, note 1294, 10; Fischer, note 1294, 2. This is traceable in the mechanisms adopted in the EU SEA Directive and the Kiev Protocol, which are both EIA-based in that they provide for systematic decision processes relying on an environmental assessment report.

²⁹ See generally Norman Lee and Fiona Walsh, 'Strategic environmental assessment: an overview' [1992] 7:3 Project Appraisal 126.

³⁰ Maria Partidario and Thomas Fischer, 'Follow-up in current SEA understanding' in Angus Morrison-Saunders and Jos Arts (eds) *Assessing impact: handbook of EIA and SEA follow-up* (Earthscan 2004) 224-247.

³¹ Tracey Nitz and Lex Brown, 'SEA must learn how policy-making works' [2001] 3:3 Journal of Environmental Assessment Policy and Management 329.

broadly by “strategic”.³² Moreover, although they have at times also been combined together, practice points towards the development of SEAs specific to each ‘P’ taken individually respectively aiming to answer distinct questions relevant for the decision-making process.³³ This suggests further inconsistencies within the overall definition of SEA and thus weakens the grounds of any argument made thereupon. Interestingly, the application of SEA to plans and programmes has generally received wider acceptance in practice than its application to policies (and legislation). In fact, the two standout international and regional instruments dealing with SEA and establishing a framework for minimum common procedures for its application to PPPs are the EU SEA Directive and the Kiev Protocol. However, only the Kiev Protocol extends its scope to cover policies as well as plans and programmes (which are covered by the EU SEA Directive). Furthermore, Sadler had examined the state of SEA at the policy level in 2005 and found that the number of states and/or international organisations that employ it for that matter are estimated to be between 20 and 25,³⁴ and that even then, they “vary in their provision, requirements and scope of application”.³⁵

Importantly, beyond the aforementioned instruments imposing an obligation of notification and consultation (broadly, cooperation) amongst their signatories,³⁶ there exists no general requirement under international law that mandates States to perform SEAs in any form, even where the PPPs in question present the risk of having significant detrimental effects on the environments of neighbouring States. Thus, this is left to the discretion of States to adopt under the umbrella of their exercise of their sovereign rights over their respective jurisdictions. In fact,

³² See generally Bram Noble, ‘Strategic Environmental Assessment: what is it? & what makes it strategic?’ [2000] 2:2 *Journal of Environmental Assessment Policy and Management* 203.

³³ Fischer, note 1294, 10-35.

³⁴ Barry Sadler, ‘Strategic Environmental Assessment at the Policy Level: Recent Progress, Current Status and Future Prospects’ [2005] *The Regional Environmental Center for Central and Eastern Europe*, 11.

³⁵ *Ibid.*, 15.

³⁶ See generally Eike Albercht, ‘Transboundary consultations in strategic environmental assessment’ [2008] 26:4 *Impact Assessment and Project Appraisal* 289.

out of the States examined by Sadler, only a few were not party to any of the SEA instruments mentioned above, namely the USA, Canada, Hong Kong and New Zealand. Moreover, the practice of SEA is generally seen as much more advanced in developed States than it is in developing States.³⁷ Furthermore, there exists no international rulings dealing with SEA in inter-State disputes susceptible to shed any light on potential State obligation(s) with regard to environmental considerations within PPPs. In other words, arguments in favor of an established State practice on the subject are very unlikely, and thus any suggestion of SEA forming the basis of an obligation under customary international law is strongly diminished.

It is within this background that SEA are employed by some States in the oil and gas offshore sector. In that respect, it must be noted that such trend is both non-universal and differentiated,³⁸ which led some to describe SEA in the oil and gas sector to be “at its infancy”.³⁹ In fact, the nature and objectives of SEA employed in a number of international offshore systems (namely Norway, Canada and the UK) have been found both unclear and varying, primarily having regard to the institutional and regulatory contexts in which they are employed.⁴⁰ This is directly tied to the overall structure of the regulatory system in place in the jurisdiction in question and to the role attributed to the regulating authorities established therein (both discussed in the first Chapter in this thesis). This, in turn, moved SEAs’ practical purpose away from the theoretical/academic expectations attached thereto and towards their more restrictive use for licensing

³⁷ See generally Sadler and Dalal-Clayton, note 1294, Chapter 6.

³⁸ See generally Adeoye Foluke, ‘A report on the strategic environmental assessment (SEA) for oil and gas development plans’ (2012) Paper submitted to the Department of Environmental Science – Avans University of Applied Science <http://www.commissiemer.nl/docs/mer/diversen/foluke_finalassignment2.pdf> accessed 8 January 2019.

³⁹ Ibid, 98.

⁴⁰ See generally Courtney Fidler and Bram Noble, ‘Advancing strategic environmental assessment in the offshore oil and gas sector: Lessons from Norway, Canada, and the United Kingdom’ [2012] 34 EIA Rev 12; Foluke attributed this lack of clarity in the SEA process applicable to the offshore sector to “the relatively fragmented nature of the oil and gas industry”, and emphasized on the need to develop tailor made yet flexible guidelines for the process, see *ibid*, 98.

purposes both in a number of jurisdictions.⁴¹ Thus, within this context, their efficacy in improving environmental assessment and in better guiding lower tiered project-level decision making through EIA processes is inherently and severely weakened.⁴² This conclusion is further reinforced by the fact that the practical reliance on SEAs was found to diverge from its usually argued and widely supported advantage of constituting a decision-making tool which affords the taking into account of regional scaled and cumulative repercussions of environmentally degrading activities.⁴³ In any case, any discussion on the cumulative effects of offshore activities shifts the focus away from the issues attached to the accidental pollution therefrom and therefore falls outside the scope of this thesis.

In summary, the developments above indicate that SEA process in the oil and gas sector not only varies between jurisdictions, but it is also context-dependent, unclear, underdeveloped, and ineffective in affording a higher-tiered strategic dimension capable of guiding project-level assessments and subsequent management. Therefore, it is safe to say that the process applied within the offshore sector is consistently far from constituting the subject of an international obligation incumbent upon States within their overall obligation to prevent transboundary pollution from offshore activities under their jurisdiction, and that there is no actual need for a move in that direction. On the contrary, the conclusions reached seem to fall directly in line with the arguments advanced by the IMO Legal Committee in its rejection of the Indonesian Proposal regarding the establishment of a global regime dealing with liability for transboundary pollution from offshore incidents, notably its reference to the “complexity and *strategic* nature of the subject” (emphasis added), to the “sensitive issue of transboundary liability”, and to the fact that “the development of an international

⁴¹ Ibid, 17-18, notably Canada and the UK.

⁴² Ibid, 19.

⁴³ On the theoretical role of SEAs in addressing the cumulative effects of activities see Surina Esterhuyse, ‘Identifying the risks and opportunities of unconventional oil and gas extraction using the strategic environmental assessment’ [2018] 3 Current Opinion in Environmental Science & Health 33; on the practical role of SEAs in that respect, see Ibid, 19.

treaty might interfere with the sovereign right of States to regulate oil exploration and exploitation in the EEZ".⁴⁴ Clearly, what any development in favour of the morphing of the SEA process in oil and gas activities into an international obligation has in common with the elaboration of a global liability regime dealing with pollution resulting therefrom is the threat that they both pose in limiting the exercise by States of their sovereign rights to explore and exploit their natural resources. Perhaps the opposition against the systematic reliance on SEAs by national and international developing agencies in industrial countries is in itself reflective of the stance which States adopt on the subject.⁴⁵ Logically, a certain legal infrastructure is essential for any attempt to move the pendulum further into the realm of environmental protection at the expense of an aforementioned sovereign right of States, and it appears that the confusion surrounding SEAs in general, and more specifically in offshore oil and gas activities, constitutes a major hurdle against any such outcome

⁴⁴ IMO Legal Committee Report, 26-27.

⁴⁵ Sadler and Dalal-Clayton, note 1294, 5.

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