

ENERGY INSTALLATIONS IN THE MARINE ENVIRONMENT

Maria Gavouneli*

Abstract: The Law of the Sea Convention includes provisions for at least three categories of energy installations: offshore platforms used for oil and gas exploration and exploitation; offshore platforms used for the generation of energy from renewable sources; pipelines. The regulatory framework for each one of those covers each stage of their deployment: coastal State jurisdiction; placement; operation and responsibility and liability for any damage caused by their presence in the marine environment. Yet, one finds a wide variety of rules applicable, some of them of long provenance, others newly-minted; some of them specific to the task, others offering simply the general parameters of a regulation. As energy operations at sea expand, the multitude of applicable rules adds to the challenges we face for the future.

The presence of energy sources in the marine environment brings together some of the oldest and some of the most recent challenges in the international law of the sea. Ever since the first offshore platforms erected in the Gulf of Mexico at the turn of the twentieth century, the question of retrieving from the sea (bed) and transporting energy through the marine environment exercised both the regulatory instincts but also the imagination of international lawyers.

Today that the offshore production of energy has expanded beyond the wildest dreams of the first pioneers,¹ the regulatory framework for energy sources at sea constitutes a puzzle work. It comprises three different items of relevance in this discussion: offshore platforms used for oil and gas exploration and exploitation; offshore platforms used for energy generation from renewable sources; and the profuse network of pipelines linking these energy sources with the mainland and the final consumer. Their presence and operation is regulated by another three – albeit not corresponding – categories with distinct elements of considerable age although not necessarily maturity (the provisions on pipelines offer the typical example); mainstream applications of the traditional general rules mostly en-

* Assistant Professor of International Law, Faculty of Law, National & Kapodistrian University of Athens. Research for this paper forms part of Project 70/30/12463: *Energy at Sea*, implemented within the framework of the Operational Programme “Education and Lifelong Learning” (Action “ARISTEIA II”) and co-funded by the European Social Fund and National Resources.

¹ Only in the first semester 2014 224 offshore wind turbines in 16 commercial farms were connected to the European grid whereas there are 310 wind turbines awaiting grid connection; data available from the European offshore wind industry, <www.ewea.org/statistics/offshore/> last accessed: 10 January 2015. For an overview of the international energy statistics per source and country see the data comprised by the US Energy Data Administration, <www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=44&pid=44&aid=1> last accessed: 10 January 2015.

shrined in the Law of the Sea Convention (the placement of offshore platforms falls in this category); and distinct areas of no or scarce regulation (such as the operational framework of offshore platforms).

The multiplicity of provisions, however, and their diverse provenance does not preempt the existence of commonalities, such as the need to observe environmental procedures for their placement. On the other hand, it is clear that the presence of specific provisions on operational matters, including on liability in cases of damage caused by their operation, may lead to different solutions, often on a case-by-case basis.

In the following pages, I will endeavor to identify the rules applicable to the installation and placement of such elements in the marine environment (under I) and further investigate on the physiology and pathology of their operation (under II).

I. Introducing energy installations in the marine environment

The placement of energy installations at sea shares a number of common characteristics across the board, irrespective of the purpose for which they are built. The starting point and certainly the deciding factor remains the allocation of jurisdiction (under A). From this primordial parameter derives a series of repercussions, pertaining especially to the procedure to be followed for deciding the specific placement of each type of energy installation and the terms and conditions attached thereto, depending on the function and operation of each such installation (under B).

A. The allocation of jurisdiction

In the classical formulation, the notion of jurisdiction denotes the outer limits of State

power to make laws, decisions or rules (prescriptive jurisdiction) [and] ... to take executive or judicial action in pursuance of or consequent on the making of decisions or rules (respectively enforcement or adjudicative jurisdiction).²

As such, jurisdiction necessarily contains a geographical element, which is even more pronounced in the context of the Law of the Sea Convention and its zonal approach to State power. As a result, the allocation of jurisdiction on energy installations fully conforms to the fundamental precepts of UNCLOS and indeed is explicit in numerous articles thereof.

There is no controversy regarding the presence of offshore installations in the territorial sea, where the coastal State exercises full sovereignty,³ presumably

² James Crawford, *Brownlie's Principles of Public International Law* (8th ed., Oxford 2012) 456.

³ Article 2 of the UN Law of the Sea Convention (hereinafter: UNCLOS).

with a sole limitation imposed by its obligation 'not [to] hamper the innocent passage of foreign ships'⁴ through it. In the continental shelf and the exclusive economic zone, both areas where the coastal State exercises sovereign rights, there is an express identical reference to the exclusive jurisdiction of the coastal State over 'artificial islands [and] ... installations and structures for the purposes provided for in Article 56 and other economic purposes',⁵ which expressly include the exploration and exploitation of the natural resources of the seabed and its subsoil as well as 'activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds'.⁶ The exclusivity thus accorded to the coastal State is not a necessary concomitant of jurisdiction but it rather constitutes a conscious choice of the Convention in order to concentrate in a single point all relevant decisions and thus enhance their economic and strategic feasibility. It has the added advantage of being fully compatible with the general allocation of jurisdiction in the Convention, which opts for a graduated diminution of the State powers the further one moves from the shore. When faced with the task of balancing interests in that respect, the notion of jurisdiction returns fully to its original function, which is the administration of competing claims on the same geographical area, in this case: a maritime zone, on the basis of commonly agreed bases of jurisdiction.⁷

The ensuing relativization of coastal State jurisdiction becomes evident in the case of offshore structures erected on the seabed of the high seas. This freedom of the high seas exercised by the flag State (which does not necessarily coincide with the coastal State) is tempered by the concomitant obligation to pay due regard to the interests of other States in the high seas and in the Area.⁸ The in-built exclusivity of exploration and exploitation for natural resources becomes thus severely constrained by the corresponding and conflicting claims on the same maritime area. It is fortunate that the available technology does not allow for a significant number of energy installations in the high seas as the Law of the Sea Convention does not really offer any meaningful guidance as to the resolution of conflicting claims other than on a rather crude first-come first-served basis. One should also keep in mind that alternative sources of energy at sea require an extensive spatial deployment for the investment to be commercially sufficient, which would aggravate security concerns for the project⁹ and safety concerns for the other uses of the oceans.

In any case, the exclusivity accorded to the coastal State presupposes a very clear delimitation of maritime areas, so that the allocation of jurisdiction may be ren-

⁴ Article 24 para 1 UNCLOS.

⁵ Articles 60 paras 1-2 and 80 UNCLOS.

⁶ Article 56 para 1 UNCLOS.

⁷ Maria Gavouneli, *Functional jurisdiction in the Law of the Sea* (Martinus Nijhoff, 2007).

⁸ Article 87 para 2 UNCLOS.

⁹ Stuart Kaye, International measures to protect oil platforms, pipelines and submarine cables from attack, 31 *Tulane Maritime LJ* 2007, 377-423.

dered equally clear. We have seen in practice that the exploration and exploitation of the natural resources of the seabed and its subsoil (in effect: oil and gas) by the coastal State presupposes the conclusion of a delimitation agreement with its neighbours.¹⁰ The most recent example of this tendency is to be found in a series of agreements negotiated, some successfully and others not so, by Cyprus in the Eastern Mediterranean during the last decade.¹¹ The practice is liable to be further reinforced as the International Court of Justice has generally been reluctant to consider equitable access to natural resources –as opposed to the actual presence of offshore structures– a relevant circumstance for delimitation purposes.¹²

The priority accorded to the coastal State for offshore structures harvesting both fossil and renewable energy resources is best illustrated when compared with the allocation of jurisdiction over pipelines, which by definition cross the tidy jurisdictional parcels of the Law of the Sea Convention. The original body of regulations exudes the patina of time as it goes back to the 1884 Paris Convention for the Protection of Submarine Telegraph Cables.¹³ Admittedly, the present-day multi-use pipelines are scarcely similar to the unobtrusive telegraph cables hidden in the sand. Yet, the original allocation of jurisdiction remains true as enshrined in Article 79 of the Law of the Sea Convention: although all States are entitled to lay submarine cables and pipelines on the continental shelf, the coastal State retains both exclusive jurisdiction over ‘pipelines constructed or used in connection with the exploration of its continental shelf or exploitation of its re-

¹⁰ A practice already ascertained by the ICJ in 1969: *North Sea Continental Shelf* (Federal Republic of Germany v. The Netherlands, FRG v. Denmark), ICJ Reports 1969, para 48. For a comprehensive approach in another part of the world see also Maurice K. Kamga, *Délimitation maritime sur la côte atlantique africaine* (Bruylant, 2006).

¹¹ Maria Gavouneli, Energy at sea: New challenges over troubled waters in the Eastern Mediterranean, in Harry Schreiber, James Kraska & Jordan Diamond (eds), *Science, technology and new challenges to ocean law* (Brill, 2015) [forthcoming]; Emmanuella Doussis, L’Accord du 17 février 2003 entre Chypre et l’Égypte sur la délimitation de leurs zones économiques exclusives: Bref commentaire, 9 *Annuaire du droit de la mer* 2004, 143-155; Tullio Scovazzi, Maritime Delimitations in the Mediterranean Sea, in Jorge Cardona Lloréns, Amparo Sanjosé Gil and Ruth Abril Stoffels (eds), *Cursos Euromediterráneos Bancaja de Derecho Internacional*, (vols VIII/IX, Tirant lo Blanch, Valencia 2009) 349–504; Haritini Dipla, Ressources énergétiques et limites maritimes en Méditerranée orientale, 16 *Annuaire du droit de la mer* 2011, 63-86.

¹² *Territorial and maritime dispute* (Nicaragua v. Colombia), ICJ Reports 2012, para 223; *Maritime Delimitation in the Black Sea* (Romania v. Ukraine), ICJ Reports 2009, para 198. See also Dimitra Papageorgiou & Eva Tzavala, Energy at Sea and the jurisprudence of the International Court of Justice, in Dário Moura Vicente (ed.), *Towards a universal justice? Putting international courts and jurisdictions into perspective* (Collective papers of the 2014 ILA Regional Conference held in Lisbon, Brill 2015) [forthcoming].

¹³ Signed on 14 March 1884 and entered into force on 1 May 1888, USTS 380. See also Louis Savadogo, Le régime international des câbles sous-marins, 140 *Journal de droit international* 2013, 45-82.

sources'¹⁴ and the final decision-making power over the delineation of the course of their placement. This dual formulation reflects the balance of interests required yet again by the coastal State: on the one hand and in principle: a negative duty not to impede the laying of such pipelines by any State;¹⁵ and on the other hand and in practice: the requirement of consent for any such incursion on the continental shelf.¹⁶ The same balancing act is also evidenced in pipelines laid out on the bed of the high seas beyond the continental shelf in exercise of a freedom of the high seas,¹⁷ where the right of passage accorded to all States under Article 112 of the Convention is counterpoised with an equivalent duty to control and ensure the redress of any damage caused to a pipeline.

B. The common rules on placement

If the rules on the allocation of jurisdiction over energy installations at sea are explicit and diverse corresponding to the different types of existing structures, the terms and conditions on their placement in the marine environment seem to be common and delegated to general international law. Instead of creating a new detailed set of rules for the challenges and environmental impacts that need to be addressed when placing a platform or a pipeline in a specific area, the Law of the Sea Convention opted simply to state the general framework within which the common rules applicable in all such projects would apply.

As a result, one would have some difficulty in recognising behind the general obligation of all States to exercise the rights accorded to them with 'due regard to the rights and duties of the coastal State'¹⁸ or 'for the interests of other States'¹⁹ a specific obligation not to place such structures in marine protected areas both within and out of the jurisdiction of the coastal State.²⁰ The notion originates in regional environmental agreements, where the coastal States have mutually contracted to refrain from the full exercise of their rights within certain vulnerable areas under their jurisdiction and control – and leaves a gaping hole when faced

¹⁴ Article 79 paragraph 4 UNCLOS. Wayne F. Nielsen & Tara Davenport, Submarine cables and offshore energy, in Douglas R. Burnett, Robert C. Beckman & Tara M. Davenport (eds), *Submarine cables: The Handbook of Law and Policy* (Martinus Nijhoff, 2014) 351-373.

¹⁵ Article 79 paragraphs 1-2 UNCLOS.

¹⁶ Article 79 paragraph 3 UNCLOS. See also Cyrille Coutansais, *Les câbles sous-marins: d'une coutume permissive à une coutume restrictive?*, 17 *Annuaire du droit de la mer* 2012, 83-92.

¹⁷ Article 87 paragraph 1(c) UNCLOS.

¹⁸ Article 58 paragraph 3 UNCLOS.

¹⁹ Article 87 paragraph 2 UNCLOS.

²⁰ Alexander Proelss, Pipelines an protected sea areas, in Richard Caddell & D. Rhidian Thomas (eds), *Shipping Law and the marine environment in the 21st century: Emerging challenges for the Law of the Sea – Legal implications and liabilities* (Lawtext, 2013) 276-292.

with third States not party to the same obligation.²¹ The typical example is the 1995 Barcelona Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean²² but other instruments may also have a spatial parameter.²³ A similar approach is evidenced in Article 211 UNCLOS, which provides for the suspension of the right of navigation and other rights within a

particular clearly defined area ... where the adoption of special mandatory measures for the prevention of pollution from vessels is required for recognised technical reasons in relation to its oceanographical and ecological conditions, as well as its utilization or the protection of its resources and the particular character of its traffic.²⁴

The complicated procedure set out in the same article has guaranteed that it has and will remain unused. However, the intervention of an international organization has been maintained in similar projects, in order to substitute the requirement of direct consent by the States involved with the general consent of the international community as expressed in the resolutions of the organization. Thus the IMO has been able to develop a network of Particularly Sensitive Sea Areas (PSSAs), without a specific legal basis but rather as a precautionary response for any marine areas that need protection. The 2005 Revised Guidelines for the identification and designation of PSSAs²⁵ follow a flexible multi-stage approach closely based on that set out in Article 211 UNCLOS – but this time with significant success.²⁶

The expanding list of PSSAs covers also areas in the high seas, where by definition the coastal State does not exercise any powers from which it may resign. The question of *pacta tertiis* becomes inescapable in this context and cannot be cir-

²¹ Erik Franckx, *Pacta tertiis* and the Agreement for the implementation of the straddling and highly migratory fish stocks provisions of the United Nations Convention on the Law of the Sea, 8 *Tulane JICL* 2000, 49-81.

²² It entered into force on 12 December 1999; text available at <www.unepmap.org/index.php?module=content2&catid=001001001> last accessed: 10 January 2015.

²³ Tullio Scovazzi & Ilaria Tani, Offshore Wind Energy Development in International Law, in Jonas Ebbesson, Marie Jacobsson, Mark Klamberg, David Langlet & Pål Wrangé (eds), *International Law and Changing Perceptions of Security. Liber Amicorum Said Mahmoudi* (Brill/Martinus Nijhoff, 2014) 244-258.

²⁴ Article 211 paragraph 6(a) UNCLOS.

²⁵ IMO Resolution A.982 (24), Revised Guidelines for the identification and designation of Particular Sensitive Sea Areas, adopted on 1 December 2005, replacing IMO Resolution A.927 (22), Guidelines for the designation of Special Areas under MARPOL 73/78 and Guidelines for the identification and designation of Particularly Sensitive Sea Areas, adopted on 29 November 2001, available at <[www.imo.org/blast/blastDataHelper.asp?data_id=25322&filename=A982\(24\).pdf](http://www.imo.org/blast/blastDataHelper.asp?data_id=25322&filename=A982(24).pdf)> last accessed: 10 January 2015.

²⁶ For a more comprehensive discussion see Maria Gavouneli, State jurisdiction in relation to the protection and preservation of the marine environment, in David Attard, Malgosia Fitzmaurice, Norman Martinez & Riyaz Hamza (eds), *IMLI Manual on International Maritime Law*, vol. III: *Marine environmental law and international maritime security law* (Oxford 2015) [forthcoming].

cumvented but with the express contractual consent of all the States involved. The discussion on a new legal instrument, possibly implementing the UNCLOS obligations on the conservation of the marine environment in areas beyond national jurisdiction,²⁷ rages at present and draws on the accumulated experience on the matter.²⁸ Meanwhile, the States concerned avail themselves of the tools presented to them: in an example that may develop into a trend, Portugal has used the 1992 OSPAR Convention for the protection of the marine environment of the North-East Atlantic²⁹ to have the Altair Sea Mount recognised as a high seas protected area and then declared the same a protected area within national jurisdiction on the basis of its claim for an extended continental shelf before the UN Commission on the Limits of the Continental Shelf (CLCS), thus effectively separating the status of the waters above from that of the seabed below.³⁰ Interestingly enough, although the placement of offshore energy structures is largely left to the discretion of States within a wider obligation to balance the interests of all users of the sea, the Law of the Sea Convention has expressly included an obligation to remove such installations once their useful life is over. Once again, the original removal mandate is placed within a wider 'due regard' obligation, which includes considerations of 'fishing, the protection of the marine environment and the rights and duties of other States'³¹ with '[a]ppropriate publicity ... given to the depth, position and dimensions of any installations or structures not entirely removed'.³² It also includes one of these interesting clauses of incorporation by reference,³³ which transform the UNCLOS to the comprehen-

²⁷ International Institute for Sustainable Development, Summary of the seventh Meeting of the Working Group on marine biodiversity beyond areas of national jurisdiction, UN, New York, 1-4 April 2014, < www.iisd.ca/oceans/marinebiodiv7/ > last accessed: 10 January 2015.

²⁸ See, among many others, Karen Scott, Conservation on the high seas: Developing the concept of the High Seas Marine Protected Areas, 27 *TIJMCL* 2012, 849-857; Kristina Gjerde & Anna Rulska-Domino, Marine Protected Areas Beyond National Jurisdiction: Some practical perspectives for moving ahead, *ibid.*, 351-373; Petra Drankier, Marine Protected Areas in Areas Beyond National Jurisdiction, *ibid.*, 291-350; Kim Jung-Eun, The incongruity between the ecosystem approach to high seas marine protected area and the existing high seas conservation regime, 2 *Aegean Review of the Law of the Sea and Maritime Law* 2013, 1-36; Yoshifumi Tanaka, Reflections on High Seas Marine Protected Areas: A comparative analysis of the Mediterranean and the North-East Atlantic models, 81 *Nordic JIL* 2012, 295-326; Tundi Agardy, Giuseppe Notarbartolo di Sciara & Patrick Christie, Mind the gap: Addressing the shortcomings of marine protected areas through large scale marine spatial planning, 35 *Marine Policy* 2011, 226-232.

²⁹ Text and history available at < www.ospar.org/html_documents/ospar/html/ospar_convention_e_updated_text_2007.pdf > last accessed: 10 January 2015.

³⁰ Marta Chantal Ribeiro, The 'Rainbow': The first national marine protected area proposed under the high seas, 25 *TIJMCL* 2010, 183-207.

³¹ Article 60 para 3 UNCLOS.

³² *Ibid.*

³³ David M. Ong, The 1982 UN Convention on the Law of the Sea and marine environmental protection, in Malgosia Fitzmaurice, David M. Ong & Panos Merkouris (eds), *Research Handbook on International Environmental Law* (Edward Elgar, 2010) 567-585.

sive living instrument it is: 'taking into account any generally accepted international standards established in this regard by the competent international organization'.³⁴ The discussion as to whether such rules have indeed been established continues unabated.³⁵

The commonality of rules applicable on all energy structures at sea is best exhibited beyond spatial planning, when the UNCLOS obligations on the protection of the marine environment, set out in Part XII of the Convention, come to fore. Although the Convention expressly refers to pollution 'arising from or in connection with seabed activities subject to their jurisdiction and from artificial islands, installations and structures under their jurisdiction',³⁶ it does not expand on the procedures required in order to safeguard the marine environment, neither generally nor specifically regarding energy installations: Article 206 introduces an obligation to conduct an Environmental Impact Assessment (EIA) for 'planned activities under their jurisdiction or control [which] may cause substantial pollution of or significant and harmful changes to the marine environment',³⁷ only when 'States have reasonable grounds for believing'³⁸ so and 'as far as practicable'.³⁹

This is a standard significantly less than that found by the ICJ, in the *Pulp Mills* case, to have acquired the status of customary law.⁴⁰ Indeed, the Court clearly considers that the applicable standard of

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 marine environment] did not undertake an environmental impact assessment on the potential effects of such works.⁴¹

³⁴ Article 60 para 3 UNCLOS.

³⁵ Robert Beckman, Global legal regime on the decommissioning of offshore installations and structures, in Myron H. Nordquist, John Norton Moore, Aldo Chircop, and Ronán Long (eds), *The Regulation of Continental Shelf Development: Rethinking International Standards* (Brill/Nijhoff, 2013) 259-280; Seline Trevisanut, L'enlèvement et la gestion des plates-formes et installations offshore abandonnées ou désaffectées, in Gemma Andreone, Andrea Caliguri & Giuseppe Cataldi (eds), *Droit de la mer et émergences environnementales = Law of the Sea and environmental emergencies* (Editoriale Scientifica, 2012) 193-217.

³⁶ Article 208 UNCLOS. Nathalie Ross, Exploration, exploitation and protection of the Mediterranean continental shelf, in Eva M. Vázquez Gómez & Claudia Cinelli (eds), *Regional strategies to maritime security: A comparative perspective* (MARSAFENET, Tirant lo Blanch, Valencia 2014) 101-132.

³⁷ Article 206 UNCLOS.

³⁸ *Ibid.*

³⁹ *Ibid.* Lingjie Kong, Environmental Impact Assessment under the United Nations Convention on the Law of the Sea, 10 *Chinese JIL* 2011, 651-669.

⁴⁰ *Case concerning Pulp Mills on the River Uruguay* (Argentina v. Uruguay), ICJ Reports 2010, paragraph 204.

⁴¹ *Ibid.* Ilias Plakokefalos, The *Pulp Mills* case, 26 *TIJMCL* 2011 169-183.

It acknowledged that in the absence of an agreed context for such an assessment in international law, it is for each State to determine the specific content of the EIA required. Nevertheless, it proceeded to specify that an EIA 'must be conducted prior to the implementation of the project' and that 'continuous monitoring of its effects on the environment shall be undertaken' through the life of the project.⁴²

In the absence of a universal contractual instrument that would indicate the content of an EIA, the 1991 Espoo Convention on Environmental Impact Assessment in a Transboundary Context⁴³ being after all just a regional agreement, the need to specify the actions to be undertaken prior to the commissioning of an offshore project becomes imperative. And yet the only such instrument in force, the 1994 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,⁴⁴ requires only 'a survey concerning the effects of the proposed activities on the environment',⁴⁵ which *may* amount to an EIA with the somewhat limited content specified in Annex IV to the Protocol. It is worth noting in that respect that –in addition to the obvious geographical limitations– the 1994 Protocol applies only to offshore installations used for activities concerning the exploration and/or exploitation of the mineral resources of the Mediterranean.⁴⁶ There is no specific international provision for an EIA prior to the commissioning of offshore installations to be used for the generation of energy from renewable sources; nor is there one for pipelines. Recourse then to domestic legislation becomes imperative. For the States member to the European Union (and indirectly also for those connected to it in the European periphery) the relevant regulations may be found in Directive

⁴² Case concerning Pulp Mills on the River Uruguay (n.33), paragraph 205.

⁴³ The Espoo Convention was adopted in February 1991 and came into force on 10 September 1997; text available at <www.unece.org/env/eia> last accessed: 10 January 2015. N. Craik, *The International Law of Environmental Impact Assessment: Process, substance and integration* (Cambridge 2008); K. Bastmeijer & T. Koivurova, *Theory and Practice of Transboundary Environmental Impact Assessment* (Martinus Nijhoff, 2008); E. Olufemi, Environmental Impact Assessment, in M. Fitzmaurice, D. Ong & P. Merkouris (eds), *Research Handbook on International Environmental Law* (Edward Elgar, 2010) 227-242.

⁴⁴ It entered into force on 24 March 2011; text and history available at <www.unepmap.org/index.php?module=content2&catid=001001001> last accessed: 10 January 2015.

⁴⁵ Article 5 paragraph 1(a) of the Offshore Protocol.

⁴⁶ Article 1 paragraphs (c)-(d) of the Offshore Protocol.

2014/52/EU,⁴⁷ the scope of which explicitly includes the placement and safety requirements of *all* offshore platforms and their environmental impact.⁴⁸

The obligation to conduct an EIA is further complemented by the obligation to consult all affected parties, which is stipulated in the 1998 Aarhus Convention on access to information, public participation in decision-making and access to justice in environmental matters.⁴⁹ Again this is a regional convention, although its three pillars are reflected in other instruments as well, most notably in the 2008 Mediterranean Protocol on Intergrated Coastal Zone Management.⁵⁰ Although these agreements cover both the introduction of offshore platforms and pipelines in the marine environment, they cannot and do not make provision for the technical specifications required for such installations are to be built in great depths under extreme pressure: the massive investment required is only matched by the increased requirements for technological and business confidentiality,⁵¹ which renders the whole project difficult to access and be understood by the layman.⁵²

II. Operating energy installations in the marine environment

The lack of specific provisions and the difficulty in applying the generic rules that one encounters in the initial phases of offshore energy projects is eclipsed by the almost complete dearth of international regulation on their operation. Energy resources constitute an essential security parameter for any State and, consequently, all States are keen to maintain overall control over offshore energy projects and avoid external interference, even in the form of international law-making. On the other hand, there is no question that most such projects are by definition international, either because the impact of their operation and (mal)function has immediate transboundary effects or because they are designed

⁴⁷ Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014, amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, OJ L 124, 1-18, 25 April 2014, text available at <www.eur-lex.europa.eu> last accessed: 15 January 2015; this is the latest codified instalment of the venerable Directive 85/337/EC, the first international instrument on EIA.

⁴⁸ Preamble paragraph 12 of Directive 2014/52/EU.

⁴⁹ Adopted on 25 June 1998, it came into force on 30 October 2001; for the text and the story so far see <www.unece.org/env/pp> last accessed: 10 January 2015.

⁵⁰ The ICZM Protocol entered into force on 24 March 2011; text and history available at <www.unepmap.org/index.php?module=content2&catid=001001001> last accessed: 10 January 2015. See also Maria Gavouneli, *Mediterranean challenges: Between old problems and new solutions*, 23 *TIJMCL* 2008, 477-497.

⁵¹ Seline Trevisanut, *Foreign investments in the offshore energy industry: Investment protection v. energy security v. protection of the marine environment*, in Tullio Treves, Francesco Seatzu & Seline Trevisanut (eds), *Foreign investment, international law and common concerns* (Routledge, 2014) 247-264.

⁵² Michelle Portman, *Involving the public in the impact assessment of offshore renewable energy facilities*, 13 *Marine Policy* 2009, 332-338.

to cross boundaries. The need to adopt common rules for the operation of such structures (under A) is further reinforced by the almost complete lack of any specific responsibility and liability provisions when disaster strikes (under B).

A. In pursuit of common operational rules

It is often said that major developments in international law and the law of the sea in particular are often preceded by major catastrophes. This is certainly the case with the offshore industry in the wake of the *Deepwater Horizon* accident, a \$350 million offshore oil-drilling rig operating in the Gulf of Mexico, which blew up in April 2010 causing 11 deaths, an oil spill of more than four million barrels affecting more than 1000km of coastline, grave damage to private property generating records amounts of fines and penalties in the industry. Any discussion for universally applicable operational rules and contingency planning, as opposed to the piecemeal national approach,⁵³ died fairly quickly.⁵⁴ However, the alarming conclusions arrived at by the European Commission, when reviewing a veritable cornucopia of domestic applicable rules on operation, accident prevention procedures, damage mitigation techniques and liability standards in the EU member States, led in June 2013 to the first comprehensive international regulation on the safety of offshore oil and gas operations. Directive 2013/30/EU⁵⁵ is considered domestic law by the EU member States but it still represents the only transnational legal standard applicable on the operation of offshore platforms worldwide.

The adoption of the Directive was to a certain extent a triumph of will over impressive odds. The offshore industry had successfully resisted for decades any attempt to create common standards and establish a globally binding legal regime. Even at the last moment, the drive for self-regulation was sufficiently powerful to convert the original regulation,⁵⁶ which left no leeway to member States as to its implementation, to a much more flexible directive. Still, it is the first time that a very significant part of the offshore industry, comprising not only the European Union but also offshore operations in Norway, Iceland and Lichtenstein, members of the European Economic Area (EEA), as well as parties to the Euro-

⁵³ Anne L. Hanson, Offshore drilling in the United States and Norway: A comparison of prescriptive and performance approaches to safety and environmental regulation, 23 *Georgetown IELR* 2011, 555-575.

⁵⁴ Tabetha Kurtz-Shefford, Liability for offshore facility pollution damage after the '*Deepwater Horizon*'? What happened to the global solution?, 18 *Journal of International Maritime Law* 2012, 453-474.

⁵⁵ Directive 2013/30/EU of the European Parliament and of the Council of 12 June 2013 on safety of offshore oil and gas operations and amending Directive 2004/35/EC, OJ L 178, 66-106, 28 June 2013; available at <www.eur-lex.europa.eu> last accessed: 10 January 2015.

⁵⁶ Proposal for a Regulation on safety of offshore oil and gas prospecting, exploration and production activities, 27 October 2011, COM(2011) 688 final.

pean Energy Community,⁵⁷ comes under a common set of rules. In addition, the new regulations would also apply to existing offshore installations, thus generating a major review of current operations in all European waters⁵⁸ – and even beyond, as operators and owners registered in the EU are expected to apply their corporate major accident prevention policies even when operating outside the offshore waters of the member States.⁵⁹

The provisions of the Directive are fully conforming to the existing international regulations. All oil and gas installations are subject to the licensing principle, already firmly established in the 1995 Mediterranean Offshore Protocol⁶⁰ as well as in Annex III on the prevention and elimination of pollution from offshore sources to the OSPAR Convention.⁶¹ Technically, the Directive is expanding the provisions of Directive 94/22 on the conditions for granting and using authorizations for the prospection, exploration and production of hydrocarbons.⁶² Each stage of the procedure is subject to a separate licence, which may be accorded only once a full EIA is carried out, taking also into consideration all relevant financial and technical risks.⁶³ In addition, enhanced public participation is required even when the project involves drilling of an exploration well from a non-production installation, again in conjunction with the Aarhus Convention and its implementing EU legislation.⁶⁴

⁵⁷ Created by the Treaty establishing the Energy Community, concluded in Athens on 25 October 2005 and entered into force on 1 July 2006, OJ L 198/18, 20 July 2006; information available at <www.energy-community.org/portal/page/portal/ENC_HOME/ENERGY_COMMUNITY/Milestones> last accessed: 10 January 2015. See also Carsten Nowak, *The Energy Community of South-East Europe*, *European YB of International Economic Law* 2012, 405-441.

⁵⁸ Preamble paragraph 3 and article 42 of Directive 2013/30/EU.

⁵⁹ Preamble paragraphs 37-38 and article 20 of Directive 2013/30/EU.

⁶⁰ Article 4 of the Offshore Protocol (n.37). Lucien Chabasson, *L'exploitation pétrolière offshore : une nouvelle frontière pour le droit international de l'environnement*, 15 *Annuaire du droit de la mer* 2010, 121-129. See also Catherine Redgwell, *Mind the gap in the GAIRS: The role of other instruments in LOSC regime implementation in the offshore energy sector*, 29 *TIJMCL* 2014, 600-621.

⁶¹ Text as amended on 24 July 1998, updated 9 May 2002, 7 February 2005 and 18 May 2006 with amendments to Annexes II and III adopted at OSPAR 2007, available at <www.ospar.org/html_documents/ospar/html/ospar_convention_e_updated_text_2007_annex_ii.pdf> last accessed: 10 January 2015.

⁶² Directive 94/22/EC of the European Parliament and of the Council of 30 May 1994 on the conditions for granting and using authorizations for the prospection, exploration and production of hydrocarbons, as amended, OJ L 164/19, 25 June 2008.

⁶³ Article 4 of Directive 2013/30/EU.

⁶⁴ Article 5 of Directive 2013/30/EU.

The thrust of the Directive lies in the prevention policies for major accidents during every-day operations on the platform⁶⁵ and the contingency plans for emergency preparedness and response⁶⁶ in case of a major accident or 'of a situation where there is an immediate risk of a major accident'.⁶⁷ The principal environmental tool for this assessment is the 'Major Hazard Report' (MHR),⁶⁸ which encompasses best technical and technology practices as well as contingency plans and emergency procedures in case of accident. All such reports should be submitted to a competent authority designated by the member State,⁶⁹ with a view to coordinate the exchange of all relevant information and facilitate the cooperation with the other national authorities, the industry, other stakeholders and the Commission through the European Union Offshore Oil and Gas Authorities Group (EUOAG),⁷⁰ an expert group whose task is to promote efficient collaboration between national representatives and the Commission, including disseminating best practices and operational intelligence, establishing priorities for raising standards, and for advising the Commission on regulatory reform.⁷¹ This decentralised State system purports to supervise the flow of information and coordinate emergency response, including transboundary action. It is complemented by the existing informal coordination committees organised by the industry, mainly the North Sea Offshore Authorities Forum and the International Regulators Forum⁷² – in an excellent example of institutional cooperation between the public and private sector. In addition, the European Maritime Safety Agency will assist the member States to address oil spills and develop and execute emergency response plans, 'especially when there are transboundary impacts within and beyond offshore waters of member States'.⁷³

The free flow of information lies at the heart of the Directive, in an attempt to increase the transparency of the decision-making process and public accountability. Information is due to any State liable to be affected by a major hazard relating to offshore oil and gas operations likely to have significant effects on the environment in another State;⁷⁴ to the Commission in an annual report on the safety and environmental impact of such operations;⁷⁵ even to third countries under-

⁶⁵ Article 19 of Directive 2013/30/EU. Jay Wagner & Kit Armstrong, Managing environmental and social risks in international oil and gas projects: Perspectives on compliance, 3 *Journal of World Energy Law & Business* 2010, 140-165.

⁶⁶ Articles 28-29 of Directive 2013/30/EU.

⁶⁷ Article 30 of Directive 2013/30/EU.

⁶⁸ Articles 12-13 of Directive 2013/30/EU.

⁶⁹ Article 8 of Directive 2013/30/EU. Note that such authorities need to be designated even in States that do not have for the moment any offshore industry or are land-locked; article 32, *ibid*.

⁷⁰ Article 27 of Directive 2013/30/EU.

⁷¹ Preambular paragraph 47 of Directive 2013/30/EU.

⁷² *Ibid*.

⁷³ Article 10 paragraph 2 of Directive 2013/30/EU.

⁷⁴ Article 31 of Directive 2013/30/EU.

⁷⁵ Article 25 of Directive 2013/30/EU.

taking offshore oil and gas operations in the same marine regions as the member States.⁷⁶

However, the effectiveness of the proposed comprehensive review is undermined by the lack of any provision affecting the design of offshore installations. Reference is being made to the only extant relevant international regulation, the IMO Code for the construction and equipment of Mobile Offshore Drilling Units (MODU), which effectively treats offshore platforms as another type of vessel irrespective of the operations carried out thereon, only to confirm that the Directive addresses such structures when stationary.⁷⁷ Other than that the construction of offshore platforms –and consequently the safety and security requirements for the effective review of all aspects of oil and gas production– remains in the hands of each individual State. Admittedly, the variety of regulatory provisions is limited in practice as the industry is comprised of a fairly small number of private corporations and an even smaller number of States concerned. This is also one of the reasons it has succeeded in maintaining a united front against any regulatory initiative emanating by the States and the world community as a whole.

Comprehensive as the Directive purports to be, it covers only offshore installations designed for oil and gas exploration and exploitation. As a result, offshore structures erected for the generation of energy from renewable sources remain virtually unregulated by international law.⁷⁸ Directive 2009/28/EC on the promotion of the use of energy from renewable sources⁷⁹ refers mostly to market share rather than the legal status and operation of offshore structures such as windmills. Inevitably, the question of a separate legal regime for such offshore platforms remains pending and generates an inordinate amount of controversy.⁸⁰

Pipelines are also excluded from the scope of the Offshore Directive, with the exception of connected infrastructure, which by definition does not cover ‘conveyance of oil and gas from one coast to another’.⁸¹ However, non-binding recom-

⁷⁶ Article 33 of Directive 2013/30/EU.

⁷⁷ Preamble paragraph 32 of Directive 2013/30/EU.

⁷⁸ Hannah Katharina Müller & Martha Roggenkamp, Regulating offshore energy sources in the North Sea – Reinventing the wheel or a need for more coordination?, 29 *TIJMCL* 2014, 716-737.

⁷⁹ Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, OJ L140, 16-62, 5 June 2009.

⁸⁰ Francesca Galea, A legal regime for the exploration and exploitation of offshore renewable energy, 25 *Ocean YB* 2011, 101-129; David Leary & Miguel Esteban, Recent developments in offshore renewable energy in the Asia-Pacific Region, 42 *Ocean Development & IL* 2011, 94-119; Hannah Katharina Müller, Legal bases for offshore grid development under international and EU law: Why national regimes remain the determining factor, 38 *European LR* 2013, 618-637; Ronán Long, Harnessing Offshore Wind Energy: Legal Challenges and Policy Conundrums in the European Union, 29 *TIJMCL* 2014, 690-715.

⁸¹ Article 2(3) and (21) of Directive 2013/30/EU.

recommendations on the building and operation of pipelines are to be found in the *Safety Guidelines and Good Practices for Pipelines*, adopted in 2008 by the UN Economic Commission for Europe in the context of the Convention on the Transboundary Effects of Industrial Accidents and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes.⁸² Admittedly, they are mostly designed with land pipelines in mind but the fundamental principles of safety and security for the neighbouring populations and the environment would undoubtedly remain valid.

B. Responsibility and liability – or the lack thereof

The normative desert of international law provisions on the operation of energy installations at sea is sharply contrasted with the elements of responsibility and liability for environmental harm caused by the operation of offshore energy installations. It would be inaccurate to consider, however, that there exists a uniform system of attribution and redress that would cover any and all offshore activities across the seas. Instead, one could discern a full deployment of specific rules per category of offshore structure complementing the general rules on State responsibility.

Indeed, the general rules on State responsibility are clearly invoked in Article 235 of the Law of the Sea Convention, again incorporating international standards by reference. The parties to the original 1976 Barcelona Convention for the protection of the Mediterranean Sea against pollution undertook to cooperate ‘as soon as possible’ in the formulation and adoption of appropriate rules and procedures for the determination of liability and compensation for damage resulting from pollution of the marine environment in the Mediterranean Sea.⁸³ Almost twenty years later, the updated 1995 Convention for the protection of the marine environment and the coastal region of the Mediterranean simply dropped the embarrassing time indication⁸⁴ and life continued. It remains open to discussion whether the classical formulation of State responsibility is indeed adequate for purposes of environmental protection.⁸⁵

⁸² Text available in <www.unece.org/fileadmin/DAM/env/documents/2008/TEIA/ece.cp.teia.16_-_Guidelines_for_Pipelines_E.pdf> last accessed: 10 January 2015.

⁸³ Article 12 of the 1976 Convention; text available at <195.97.36.231/dbases/webdocs/BCP/BC76_Eng.pdf> last accessed: 10 January 2015.

⁸⁴ Article 16 of the 1995 Convention for the protection of the marine environment and the coastal region of the Mediterranean; text available at <195.97.36.231/dbases/webdocs/BCP/bc95_Eng_p.pdf> last accessed: 10 January 2015.

⁸⁵ Thus Catherine Redgwell, *The wrong trousers: State responsibility and international environmental law*, in Malcolm Evans & Panos Koutrakos (eds), *The international responsibility of the European Union: European and international perspectives* (Hart, 2013) 257-274.

The Offshore Directive explicitly extends the application of the Environmental Liability Directive 2004/35/EC⁸⁶ to activities offshore. Indeed, it further amends its territorial application to also cover all activities undertaken in the maritime zones under the jurisdiction and control of the member States.⁸⁷ It is thus expected that the EU States will be able to avoid the significant difficulties encountered by the US in the aftermath of the *Deepwater Horizon* debacle: The deeply flawed supervision system, fully explained in the workings of the National Commission of the BP *Deepwater Horizon* Oil Spill and Offshore Drilling,⁸⁸ gave rise to a series of law suits, the latest of which was concluded on 16 October 2014 with a settlement agreement amounting to a one million US dollar fine plus remedial action.⁸⁹ Needless to say, we were fortunate to not have as yet the opportunity to test the elaborate system set up by the Liability Directive in an offshore polluting incident and therefore we are unable to verify the integrity and effectiveness of the system. It suffices to indicate, however, that the offshore industry offers the best example of an industry operating on a compulsory insurance system, as the one encouraged in Article 14 of the Directive,⁹⁰ and thus it is expected that an occasional full deployment of the mechanism provided therein would also provide an excellent case-study and a test run for the European system.

It is also interesting to note that pollution from offshore installations engaged in the generation of energy from renewable sources would also fall under the general liability regime of the Directive and thus the two types of offshore installations come under the same rules in this respect.

⁸⁶ Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage, OJ L 143/56, 30 April 2004.

⁸⁷ Article 38 of Directive 2013/30/EU.

⁸⁸ Full reports available at <www.oilspillcommission.gov> last accessed: 10 January 2015. Jacqueline L. Weaver, Offshore safety in the wake of the *Macondo* disaster: The role of the regulator, 36 *Houston JIL* 2014, 379-502; Andrew Hartsig, Shortcomings and solutions: Reforming the Outer Continental Shelf oil and gas framework in the wake of the *Deepwater Horizon* disaster, 16 *Ocean & Coastal LJ* 2011, 269-325.

⁸⁹ Details on the settlement available at <www.justice.gov/opa/pr/offshore-oil-platform-owner-improve-safety-and-operations-gulf-mexico-following-unauthorize-0> last accessed: 10 January 2015. See also Marissa Smith, The *Deepwater Horizon* disaster: An examination of the spill's impact on the gap in international regulation of oil pollution from fixed platforms, 25 *Emory ILR* 2011, 1477-1516; Nicholas J. Lund & Niki L. Pace, *Deepwater Horizon* natural resource damages assessment: Where does the money go?, 16 *Ocean & Coastal LJ* 2011, 327-353; R. Abeyratne, The *Deepwater Horizon* disaster – Some liability issues, 35 *Tulane Maritime LJ* 2010, 125-152; Kyriaki Noussia, The BP oil spill – Environmental pollution liability and other legal ramifications, *EEELR* 2011, 98-107.

⁹⁰ Lucas Bergkamp & Barbara J. Goldsmith (eds), *The EU Environmental Liability Directive: A Commentary* (Oxford 2013); Victoria Mertikopoulou, Environmental liability and economic analysis: The paradigm of Directive 2004/35/EC, 60 *Revue hellénique de droit international* 2007, 199-206; Sergio M Carbone, Francesco Munari & Lorenzo Schiano di Pepe, The Environmental Liability Directive and liability for damage to the marine environment, 13 *TIJMCL* 2007, 341-355.

The situation is different with regard to pipelines. Although the Law of the Sea Convention does not include a comprehensive liability regime for damage caused by or to such pipelines, it does expressly stipulate a duty to control, namely that every State shall adopt the laws and regulations necessary to ensure that 'the breaking or injury by a ship flying its flag or by a person subject to its jurisdiction of ... a submarine pipeline' shall be a punishable offence;⁹¹ and also that

if persons subject to its jurisdiction who are the owners of a ... pipeline beneath the high seas, in laying or repairing that ... pipeline, cause a break in or injury to another ... pipeline, they shall bear the cost of repairs.⁹²

These provisions do not create a separate liability regime. They rather allocate liability to certain actors, indicating in a somewhat primitive manner the extent of the liability to be incurred. Nevertheless, the final obligation of redress remains with the State –rather than the private actor–, presumably in application of the due diligence standard, defined by the Court as

an obligation which entails 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...⁹³

In practice, underwater or mixed onshore and offshore pipelines are projects of such complexity and value, by definition transboundary,⁹⁴ that it is highly unlikely for the project to proceed without clarification of the liability lines. The situation is further complicated by the concurrent presence of States and private parties; construction, transit and transport activities; multiple origins and destinations, in a single pipeline project. The jurisdictional conundrum of the Nord Stream was a typical such project, requiring a network of contractual arrangements at both the international and the subnational level in order to be constructed and operate smoothly.⁹⁵ In other instances, the lines of liability are shifted further away from the traditional route: in the case of the TransMed LNG pipeline, completed in 1981 in order to transport Algerian gas to Italy via the Tunisian territory, ownership of the gas is transferred directly to the Italian ENI as soon as the gas exist the Algerian terminal. Although the peculiarity is usually explained by the economic and political inequality between the parties, it might

⁹¹ Article 113 UNCLOS.

⁹² Article 114 UNCLOS.

⁹³ *Pulp Mills* case (n.33), paragraph 197.

⁹⁴ ESMAP, *Cross-Border Oil and Gas Pipelines: Problems and Prospects* (Energy Sector Management Assistance Project, 2003), available at < www.esmap.org/node/383> last accessed: 10 January 2015; Sergei Vinogradov & Gokce Mete, Cross-border oil and gas pipelines in international law, 56 *German YBIL* 2014, 65-105; David Langlet, Transboundary transit pipelines: Reflections on the balancing of rights and interests in light of the Nord Stream project, 63 *ICLQ* 2014, 977-995.

⁹⁵ Sergei Vinogradov, Challenges of Nord Stream: Streamlining international legal frameworks and regimes in submarine pipelines, 52 *German YBIL* 2010, 241-292.

be linked to the delayed delimitation of the maritime border between Tunisia and Algeria, which was concluded in 2002.⁹⁶

The diversity of sources, methods and ultimately applicable rules on the different energy installations at sea offers but a glimpse of the challenges ahead as more and more such installations populate the seas and the international society transforms its increased dependence on energy to a developing human right of access to energy services.⁹⁷

⁹⁶ Sotirios-Ioannis Lekkas & Stavros-Evdokimos Pantazopoulos, Technical Report no. 1: *Maritime agreements and energy at sea*, research paper, Project 70/30/12463: *Energy at Sea*, implemented within the framework of the Operational Programme “Education and Lifelong Learning” (Action “ARISTEIA II”) and co-funded by the European Social Fund and National Resources [on file with the author].

⁹⁷ Thus the UN Secretary-General during the Rio+20 Rio Conference; UN, *Report of the UN Conference on Sustainable Development*, Rio de Janeiro, 20-22 June 2012, UN Doc. A/CONF.216/16, paragraph 129.