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ABANDONED OFFSHORE INSTALLATIONS IN SOUTHEAST ASIA AND THE OPPORTUNITY FOR RIGS-TO-REEFS

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INTRODUCTION

Offshore oil and gas activities in Southeast Asia have developed later and slower than in other more mature basins such as the North Sea, the Gulf of Mexico or the Persian Gulf. Coastal States in these basins have had to define rules for the decommissioning of offshore oil and gas installations over the past 20 years; it is now incumbent on Southeast Asia to do the same.

This paper aims at demonstrating that the current legal framework and dominant paradigm, which focuses on full removal of offshore installations, is inherited from early decommissioning incidents in the North Sea and needs to be adapted to the context of Southeast Asia. This adaptation could assist the coastal States to better meet their general obligations to protect the marine environment as provided for in the 1982 United Nations Convention of the Law of the Sea (UNCLOS),¹ their obligation to protect marine biological diversity as provided for in the 1992 Convention on Biological Diversity (CBD),² and the need to adapt to climate change impact on the marine environment. This paper explores the international legal framework in which new regional guidelines, such as those currently being developed by the ASEAN Council on Petroleum (ASCOPE), may play out.

From an industry perspective, the decommissioning of offshore operations can include a large number of operations, including well capping and abandonment, removal and clean-up of subsea installations (including sub-sea well heads and other subsea systems), pipelines, power cables and conductors, removal of surrounding debris, removal of cuttings and the removal of the topside and the jacket of platforms. The extent of the obligation to restore the site to prior condition varies according to the industry standards adopted by the operator and the domestic law which is applicable. To date there is no clear consensus on what best practice should be and practices vary along a continuum from simple abandonment or non-decommissioning to full removal and site clean-up.

However, this paper focuses on the obligations of coastal States provided for in international law in Southeast Asia. It thus discusses the legal treatment of offshore installations, such as offshore platforms and subsea structures rather than all decommissioning operations. The term offshore installation will generally be preferred to the term offshore platform because it is more general. However, the focus of this paper is on offshore installations which are either protruding above water or are large enough to present a risk to the freedom or safety of navigation, a risk to the marine environment or a risk of interference with other ocean users.

Following a presentation of the location, size and weight of aging offshore installations in the seas of Southeast Asia, this paper discusses the ways in which the different sets of rules that apply to offshore decommissioning combine to form an overall legal regime that governs disused and obsolete offshore platforms in the region. The main issues arise from the application of the 1989 International Maritime Organization Guidelines and Standards for the Removal of Offshore Installations and Structures (1989 IMO Guidelines and Standards)³ in Southeast Asia, especially with respect to the restrictive provisions

¹ United Nations Convention on the Law of the Sea, opened for signature 10 December 1982, 1833 UNTS 3 (entered into force 16 November 1994) <<http://cil.nus.edu.sg/1982/1982-united-nations-convention-on-the-law-of-the-sea/>>.

² 1992 Convention on Biological Diversity, opened for signature 5 June 1992, 1760 UNTS 79 (entered into force 23 December 1993) <http://www.cbd.int/convention/text/>.

³ IMO Assembly Resolution A.672(16), adopted 19 October 1989 <<http://cil.nus.edu.sg/1989/1989-guidelines-and-standards-for-the-removal-of-offshore-installations-and-structures-on-the-continental-shelf-and-in-the-exclusive-economic-zone-imo-resolution-a-672-16-adopted-on-19-october-1989/>>.

relating to the light offshore installations located in depths of less than 75 meters, and the extent of the application of the standards set in the 1972 London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the 1972 London Convention)⁴ to non-ratifying coastal States. Following a discussion of the application of these international rules to abandoned and disused offshore installations in Southeast Asia, the consistency of domestic regulations with these international rules will also be reviewed. The third part of this paper discusses the legal justifications for the promising solution offered by rig-to-reefs to enhance Southeast Asia's fisheries and marine biodiversity.

I. REGIONAL CONTEXT

Pioneers of the offshore oil and gas industry were active off the Brunei coast as early as the end of the 19th century. Although the volume of offshore oil and gas production has not kept up with the developments in the Persian Gulf, the North Sea or the Gulf of Mexico, industry databases reveal that the seas of Southeast Asia, which include the South China Sea (SCS), the Gulf of Thailand and the Sulu-Celebes Sea,⁵ host 1390 offshore platforms for hydrocarbon pollution. Of these, more than 800 are over 20 years old, and close to 400 are more than 30 years old.⁶ Based on the general understanding that the normal life cycle of a fixed platform is 20 to 30 years old, these figures show that there is an urgent need to determine the fate of the aging offshore installations of Southeast Asia.

The location of aging installations is critical for determining the extent of coastal States' obligations. Of the 389 platforms which have been built 30 years ago or more, 78% are located in the territorial sea of coastal States or in the archipelagic waters of Indonesia. Of the platforms which are between 20 and 30 years and may thus constitute the next set of platforms that are nearing the end of their initial use and require planning for their best treatment, 61% are also located in coastal States territorial seas and Indonesia's archipelagic waters. This relative increase in aging installations located on the continental shelf is an expression of the global evolution of the offshore industry which commenced activities in more accessible and shallower fields closer to the coasts and spread to new fields located further offshore as closer sites were exhausted.

Also of note is the fact that the coastal States that are primarily concerned by the rise in obsolete offshore installations are Indonesia, Malaysia, Brunei and Thailand. A common feature of these countries is that offshore oil and gas activities are managed and controlled by their national oil companies.⁷ This is of particular relevance in the context of the implementation of international laws and regulations because the costs of enforcing national legislation that may be adopted by the States to regulate the treatment of disused offshore installations by their national oil companies will directly

⁴ The 1972 London Convention is the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, opened for signature 29 November 1972, 1046 UNTS 120 (entered into force 30 August 1975).

⁵ These four seas correspond to four Large Marine Ecosystems (LME) of Southeast Asia, the boundaries of which are based on four linked ecological criteria: bathymetry, hydrography, productivity and trophic relationships. The map of the 64 LMEs of the world is the result of a collaborative effort led within the Regional Seas' program of the United Nations Environmental Program involving other UN agencies and the United States National Oceanographic and Atmospheric Administration. <http://www.lme.noaa.gov/index.php?option=com_content&view=article&id=178&Itemid=62>. Unlike the other seas, the Indonesian Sea is primarily composed of Indonesia's archipelagic waters.

⁶ Data compiled from OLP World Offshore Field Development Database, Vol.2: Asia, India, Australasia & Far East, 2010 and B. Twomey, 'Study Assesses Asia-Pacific Offshore Decommissioning Costs' (2010) 15 March, *Oil and Gas Journal*: 51-55. However, due to the discrepancies existing between different industry sources, this information should be considered as being only indicative. The reasons for these discrepancies include confusion between the counting of platforms and the counting of installations which may include 2,3, 4 or more platforms connected together. There also exists no centralized registry for offshore platforms or installations. Oil and gas blocks located on the continental shelf of a coastal State are managed domestically and the list and location of the platforms located on the blocks is often not accessible, not exhaustive or not up-to-date.

⁷ Of note is the fact that petroleum activities in developing countries are generally handled by or under the purview of the government owned national oil company rather than by privately owned petroleum corporations.

or indirectly be met by the coastal States themselves. Arguably, this situation operates as a disincentive for compliance with constraining international regulations.

II. CAN OFFSHORE INSTALLATIONS BE SIMPLY ABANDONED?

1. *Does the abandonment of an offshore installation qualify as dumping?*

The question raised here is whether a disused and abandoned platform that has not been removed can be considered to have been 'dumped' at sea. The same question would apply to the part of a platform which has been left *in situ* while the rest of the platform has been removed and disposed of elsewhere. Several distinct and competing sets of rules must be consulted to answer this question. This paper focuses on two sets of rules; (i) the dumping rules in UNCLOS⁸ and in the 1972 London Convention⁹ and its 1996 Protocol¹⁰; and, (ii) the provisions in UNCLOS pertaining to the removal of offshore installations and the 1989 IMO Guidelines and Standards.¹¹

According to the definition of dumping provided in UNCLOS, *any deliberate disposal of platforms or other man-made structures at sea* [emphasis added]¹² would amount to dumping. It is thus clear, on the one hand, that one or several parts of a dismantled platform which would be placed at sea for no other purpose than strict disposal would qualify as dumping. On the other hand, the situation of an abandoned platform left *in situ* is not specifically dealt with in this provision. Nevertheless, as long as the initial purpose for which it was built is terminated, it seems sensible to consider that the decision not to remove the platform, i.e not to leave the platform but rather to abandon the platform *in situ* amounts also to a mere (and inexpensive) disposal.¹³

Some may argue that this interpretation is unconvincing because article 60(3) of UNCLOS does not explicitly refer to the dumping rules. Indeed, article 60(3) provides that 'any installations or structures which are abandoned or disused shall be removed to ensure safety of navigation taking into account any generally accepted international standards established in this regard by the competent international organization. However, this paper argues that article 60(3) provides for specific dumping rules applicable only to offshore installations. It would not make sense that the abandoned section of an offshore installation would fall under a different regime than the disposal at sea elsewhere of another part, which would have been removed. It would not make sense that the decision to remove or not the part left in place be governed primarily under article 60(3) of UNCLOS and the 1989 IMO Guidelines and that the disposal of the part of the platform which has been cut and transported elsewhere would be governed by the UNCLOS rules on dumping and the 1972 London Convention.

The reason for the lack of an explicit reference to dumping in article 60(3) of UNCLOS can be found in the legislative history of the drafting of this provision which shows that article 60(3) was drafted to

⁸ *Supra* note 1. UNCLOS, which provides for the rights and obligations of coastal States with respect to the uses of the sea, has been widely ratified in Southeast Asia (and globally), including by all the large producers of offshore hydrocarbons in the region. Although Cambodia has not yet ratified UNCLOS, its developments in offshore hydrocarbons are recent. The treatment of disused or abandoned offshore installations is thus not an immediate concern.

⁹ *Supra* note 4.

¹⁰ 1996 Protocol to the 1972 London Convention on Prevention of Marine Pollution by Dumping of Wastes and other Matter, opened for signature 7 November 1996, 2006 ATS 11, (entered into force 24 March 2006).

¹¹ *Supra* note 3.

¹² UNCLOS article 1(5).

¹³ This is also the position expressed by Louise de La Fayette (see (1998) "The London Convention 1972: Preparing for the Future," *International Journal of Marine and Coastal Law*, Vol.13-4: 515-536 [525]) and more generally the Conference of the Parties (COP) of the London Convention: *London Dumping Convention, The First Decade and Beyond* (1991) IMO, London [282] and the 13th Conference of the Parties to the London Convention on 29 October- 2 November 1990, IMO Report dated 18 December 1990 [7.4 and 7.5]

cater for the aging and very heavy platforms of the North Sea.¹⁴ Furthermore article 60(3) of UNCLOS is concerned with freedom and safety of navigation, not the protection of the marine environment. By contrast, dumping rules can be found in Part XII of UNCLOS which is devoted solely to the protection of the marine environment and applies in all maritime zones. The origin of articles 1(5) and 210 of UNCLOS can be traced back to the 1968 resolution of the United Nations General Assembly which brought the question of prevention and control of marine pollution on to the international political agenda,¹⁵ although the impetus which drove successful negotiations on dumping at sea came later.¹⁶ They resulted first in the 1972 London Convention and later in the provisions on dumping in UNCLOS.

However, there is no contradiction between article 60(3) and article 210 on dumping. While article 60(3) sets out specific rules with respect to the freedom of navigation, it refers to the need to also balance out other legitimate uses of the sea when determining whether a platform should be entirely removed or not without setting out in detail how these uses are to be balanced. The specific rules which are applicable with respect to the protection of the marine environment from abandoned installations are those provided for in Part XII of UNCLOS. Further, the provisions of article 60(3) can be analysed as a simple application of the consent regime provided for pollution by dumping¹⁷, especially in light of the 1989 IMO Guidelines and Standards¹⁸ which were adopted to assist coastal States in the implementation of article 60(3). In essence, these IMO Guidelines reiterate the principle, which is the obligation to remove disused installations, while allowing non-removal on a case-by-case basis depending on the impact to the safety of navigation, the marine environment, fisheries and other uses of the sea. Similarly, article 210 of UNCLOS refers to international rules which provide for the same case by case approach designed to minimize negative impacts to the marine environment from dumping.

2. The 1989 IMO Guidelines and Standards in Southeast Asia

These Guidelines were called for in the text of article 60(3) which refers to generally accepted international standards established in this regard by the competent international organization. They were discussed in the context of concerns resulting from the perceived future interferences and risks created by a growing number of aging offshore oil and gas installations and were thus aimed at the offshore oil and gas industry and the coastal States.¹⁹ In the context of Southeast Asia, the provisions of the 1989 IMO Guidelines and Standards which relate to light platforms located in shallow waters are of particular relevance. The presentation of these provisions is now followed by a discussion of their legal standing in Southeast Asia.

¹⁴ The Oil Industry International Exploration and Production Forum sent a memorandum in June 1980 to emphasize the downsides presented by strict removal (impact on the environment and very high costs to the tax payer) and suggested that the decision of removal be discretionary except where the installation represents a danger to navigation or to other uses of the sea or to the environment. See *United Nations Convention on the Law of the Sea 1982, A Commentary*, Vol. II, M.H. Nordquist ed., Martinus Nijhoff Publishers, London [section 60.10-60.14] and *Third United Nations Conference on the Law of the Sea: Documents*, R. Platzöder, Volume IV, 1983 Oceana Publications Inc., New York [534].

¹⁵ Resolution 2467 A, B, C and D (XXIII) has been adopted on 21 December by the General Assembly. It established the Sea-Bed Committee. (United Nations, Office for Ocean Affairs and the Law of the Sea, *Pollution by Dumping: Legislative History of Articles 1, paragraph 5, 210 and 216 of the United Nations Convention on the Law of the Sea*, UN Publication Sales No. E.85.V.12 (1985) [1]).

¹⁶ It came from the United Nations Conference on the Human Environment in 1972 (the Stockholm Conference. See *United Nations Convention on the Law of the Sea 1982, A Commentary*, Vol. IV, M.H. Nordquist, Ed., Martinus Nijhoff Publishers, London [158].

¹⁷ UNCLOS article 210(3) and (5)

¹⁸ *Supra* note 3.

¹⁹ G.C. Kasoulides (1989) "Removal of offshore platforms and the development of international standards", *Marine Policy* 13: 249-265; as updated in *Marine Policy* 14 (1990) 84-86.

a. The treatment of light platforms in shallow waters in the 1989 IMO Guidelines and Standards

These Guidelines and Standards are generally seen by the offshore industry as a welcome opening to the partial removal of offshore installations which they allow in contrast with the 1958 Geneva Convention on the Continental Shelf²⁰ and in clearer terms than article 60 of UNCLOS which still provides for a general principle of full removal.²¹ The 1989 IMO Guidelines and Standards set a case-by-case approach on the basis of which parts of an offshore platform or the whole platform may be left *in situ*, despite the general rule of full removal.

However, these Guidelines and Standards include a special set of standards for smaller offshore installations located in shallow waters. Pursuant to section 3.1, installations which weigh 4,000 tons or less and are located in water of 75 meters depth or less should be entirely removed. The only circumstances in which partial or non-removal of such installations may be contemplated are: (i) if entire removal is not technically possible; (ii) if it would involve extreme cost, or (iii) if it would involve unacceptable risks to personnel or to the marine environment.²² The rationale behind this rule can be found in the concerns expressed for the decommissioning of offshore installations in the North Sea at the time the 1989 IMO Guidelines and Standards were discussed. Two opposite forces came into play in the adoption of these Guidelines and Standards. First, representatives of the offshore industry and coastal States with vested interests in the development of this industry advocated for partial removal to be permitted because many of the installations were so large and heavy that full removal would have been extremely costly. Second, the opposite group of coastal States supporting the lobby of commercial fisheries and environmentalists was concerned with the minimization of obstacles to industrial trawling and of damage to the large nets of trawlers.²³

By contrast, aging offshore installations in the seas of Southeast Asia are mostly light and located in shallow water. Most of the aging installations are located in less than 75 metres of water and weigh 4,000 tons or less.²⁴ While they could technically be fully removed, the costs incurred might outweigh the benefits except when such aging offshore installations are so unstable that they create a hazard to the safety of navigation or when they hold toxic substances which are harmful to the marine environment. The relationship between fisheries and offshore installations is another big difference between the North Sea context and Southeast Asia. With respect to fisheries, the difficulty is more to keep artisanal fisheries away from offshore installations, the latter being attractive given the shelter and habitat they offer to fish and other marine living creatures. Fishermen are often found within the safety zone of 500 meters which surround offshore installations although they are theoretically not allowed in this zone. The three exceptions to the obligation of removal encompass circumstances where the risks attached to the removal operations are too great. These observations show that the

²⁰ Signed in Geneva on 27 April 1958, entered into force on 10 June 1964, 499 UNTS 311.

²¹ While Article 60 of UNCLOS still provides for a general rule of full removal it also implicitly recognises the possibility for partial removal since it provides that 'appropriate publicity shall be given to the depth, position and dimensions of any installations or structures not entirely removed'. (Article 60 UNCLOS). The obligation of complete removal also remains the general rule in the 1989 Guidelines and Standards (section 1). During the negotiations that led to the IMO guidelines, the discussions within the IMO showed a convergence of an allowance of 2% of platforms left *in situ*, showing that this was reserved for unusual cases, see R. Bentham, "The North Sea: problems of de-commissioning, Reports," *Marine Policy* 11 (1987) 315. The possibility of partial removal is subject to a case-by-case evaluation by the coastal State which includes an environmental impact assessment, cost-benefit analysis and an assessment of risks to the safety of navigation (1989 IMO Guidelines, 2.1 to 2.4, *ibid.* note 3).

²² 1989 IMO Guidelines article 3.5.

²³ On the origin of the 1989 IMO Guidelines and Standards, see R. Beckman *supra* note 9. For the context in which the 1989 IMO Guidelines and Standards were negotiated and the discussion on their application, see Bentham, *supra* note 23, J. Side (1987) "IMO drafts platform removal standards," *Marine Pollution Bulletin* Vol.18: 474-476, T. Ijstra (1989) "Removal or disposal of offshore installations," *Marine Pollution Bulletin* Vol. 20: 544-545. For the discussion of the concerns on fisheries, see also C.J. Antonakis (1986) "Platform removal – a review of the task," *Transactions (TM)* Vol. 99, Paper 9.

²⁴ OPL *World Offshore Field Development Guide Database*, Vol. 2: Asia, India, Australasia & Far East, 2010.

1989 IMO Guidelines and Standards are at odds with the characteristics of aging offshore installations in Southeast Asia.

b. Legal force of the 1989 IMO Guidelines and Standards in Southeast Asia

This paper argues that in appropriate circumstances, the 1989 IMO Guidelines and Standards may not preclude coastal States from permitting partial or non removal of offshore installations which weigh less than 4,000 tons and are located in less than 75 meters of water. Four arguments are discussed to justify this position. The first two result from the legal status of the 1989 IMO Guidelines and Standards *per se*, irrespective of the requirements contained in UNCLOS that coastal States adopt laws and regulations no less effective than the relevant standards. The fourth argument concerns situations where a disused offshore installation would be subject to a new legitimate use and is discussed in Part III below. This section discusses the first two arguments. The third argument which relates to the indirect binding nature of standards set in the 1989 IMO Guidelines and Standards through their incorporation by reference in UNCLOS is discussed in section 3 below together with the discussion on the binding nature of the 1972 London Convention through the same legal mechanism.

(i) Relationship with UNCLOS

In addition to being called for in article 60(3) of UNCLOS, the 1989 IMO Guidelines and Standards are often read as being implied in the UNCLOS rules on pollution from sea-bed activities.²⁵ These rules expressly refer to offshore installations and provide for the obligation of coastal States to adopt laws and regulations on pollution arising from or in connection with seabed activities and from offshore installations and structures.²⁶ They also require States, acting through competent international organizations or diplomatic conference, to establish global and regional rules, standards and recommended practices and procedures.²⁷

Where dumping is carried out within seabed activities,²⁸ the provisions of articles 210 and 214 of UNCLOS are also applicable. However the provisions on dumping and on seabed activities are similar in the way they both require States to establish global rules (through the competent international organization)²⁹ and to adopt national laws, regulations and measures (to prevent, reduce and control pollution) which are at least as effective as global standards.³⁰ Accordingly, implied reference to the 1989 IMO Guidelines and Standards can be read in article 60(3) as well as articles 208, 210, 214 and 216 of UNCLOS.³¹

(ii) Limited scope of the 1989 IMO Guidelines and Standards

As recalled in the first part of the Guidelines, they find their origin in article 60(3) of UNCLOS which provides that any offshore installation which is abandoned or disused shall be removed to ensure safety of navigation, taking into account any generally accepted international standards established in

²⁵ UNCLOS article 208(1): "Coastal States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment arising from or in connection with seabed activities subject to their jurisdiction and from artificial islands, installations and structures under their jurisdiction, pursuant to articles 60 and 80."

²⁶ UNCLOS articles 208 and 214.

²⁷ UNCLOS article 208(5).

²⁸ It is noted that pollution arising out of the normal operations of a platform do not qualify as dumping (article 1(5)(b)(i) UNCLOS). Activities which would qualify would for instance be the disposal at sea from a ship of drill cuttings produced on an offshore hydrocarbon production platform.

²⁹ UNCLOS articles 208(5) and 214 (on seabed activities) and articles 210(4) and 216(1) (on dumping).

³⁰ UNCLOS articles 208(1) and 214 (on seabed activities) and article 210(6) (on dumping). Doctrine and practitioners alike lament on the confusing language of UNCLOS which alternatively refers to generally accepted international regulations, practices and procedures, generally accepted rules and standards, etc. B.H. Oxman (1991) The duty to respect generally accepted international standards, N.Y.U. Journal of International Law and Politics 24: 109-159.

³¹ However, this reference may have to be limited to the provisions which, in the 1989 IMO Guidelines and Standards, deal with the protection of the marine environment from dumping and seabed activities rather than a reference to the whole text of the Guidelines (and especially not as a reference to the provisions relating to the safety of navigation).

this regard by the competent international organization [emphasis added]. It is only in the following sentence that reference is made to the fact that such removal shall also have due regard to fishing, protection of the marine environment and the rights and duties of other states.

Based on article 60(3), the direct implied reference made to the IMO concerns international standards applicable to the safety of navigation. For the purpose of interpretation of the 1989 IMO Guidelines and Standards where they might conflict with other rules, these guidelines must thus be read in this context and within the scope of article 60(3). Such an approach is again justified by the fact that UNCLOS' rules on the removal of offshore installations are a special regime. They are not general rules designed to be given an expansive application.³²

(iii) A standard susceptible of flexibility in implementation

First, the text of article 60(3) refers to 'generally accepted' international standards. Whether the 1989 IMO Guidelines and Standards fully qualify as such is still unclear given the lack of State practice on this.³³ However, there is no discussion on the full legitimacy of the IMO to adopt these standards.³⁴

Second, the text of article 60 indicates that coastal States have to 'take [the Guidelines] into account', which expresses flexibility rather than a strict application. This wording is reiterated in the text of the 1989 Guidelines and Standards in its section relating to the standards, which include these stricter provisions for the removal of lighter installations located in shallow waters.³⁵ It must also be noted that these more restrictive provisions are included in the third part of the 1989 IMO Guidelines and Standards which is titled 'Standards' and is drafted in less imperative language. The legal committee of the IMO itself considers that IMO guidelines and standards are not mandatory *per se*.³⁶ However, this approach might not be accurate for the provisions of the 1989 Guidelines and Standards which relate to pollution from dumping or from seabed activities and fall within the scope of article 208 or 210 of UNCLOS. The application of the requirement that domestic laws be no less effective than the relevant standards is discussed with respect to the 1989 IMO Guidelines and Standards and the London Convention and Protocol in section 3 below.

³² P. Peters, A.H.A. Soons and L.A. Zima (1984) "Removal of installations in the exclusive economic zone," *Netherlands Yearbook of International Law* 15:167-207[188]. See also part II section 1 above for the discussion on the characterisation of abandoned installations as dumping.

³³ For a discussion on the concept of generally accepted international standards and global standards in UNCLOS, see Bernard H. Oxman (1991) The duty to respect generally accepted international standards, *N.Y.U. Journal of International Law and Politics* 24: 109-159 [121-139].

³⁴ On the legitimacy of the IMO to adopt these standards, their history and their generally accepted status as 'international standard', see *supra* Kasoulides (1989) note 19 and R. Beckman (2013) Global legal regime on the decommissioning of offshore installations and structures [in press].

³⁵ 1989 IMO Guidelines and Standards, section 3(1)

³⁶ Study by the Secretariat of the IMO: Implications of the United Nations Convention on the Law of the Sea for the International Maritime Organization, LEG\MISC.7 19 January 2012: 10 and 35.

3. Disposal at Sea: The legal status of the London Convention and its Protocol in Southeast Asia

a. Relevant provisions in the London Convention

The disposal of offshore installations is expressly dealt with in the 1972 London Convention. The deliberate disposal at sea of platforms or other manmade structures at sea constitutes 'dumping' under the Convention.³⁷ Platforms and other man-made structures at sea are treated within the Annex II list (often referred to as 'the grey list') requiring special care and a special permit. As such, their disposal is conditional upon the granting of a prior special permit by the authority appointed for this task under the Convention.³⁸ The permit issuance is expected to include a pre-screening mechanism taking into account the characteristics and composition of the waste being discarded, the characteristics of the dumping site and the method of deposit as well as the impact on the environment, on other users of the sea and the availability of other alternative terrestrial means of disposal.³⁹

In the way it focuses on the action of 'deliberate disposal at sea', the drafting of the London Convention has been seen by some as not covering the mere abandonment on site. According to this view, such 'abandonment' does not involve the action of 'placement for disposal' which would trigger the application of the Convention.⁴⁰ However, the opposite view that 'a decision *not* to remove is a decision to dump'⁴¹ under the terms of UNCLOS and of the London Dumping Convention has been taken by the Contracting Parties to the London Convention and officially confirmed at the thirteenth consultative meeting of the Contracting Parties to the London Convention.⁴² (see section 1 above).

b. 1996 Protocol to the London Convention and Guidelines

The debate triggered by the discussion surrounding the negotiations and adoptions of the 1989 IMO Guidelines and Standards prompted the Parties to the 1972 London Convention to adopt:

- (i) the new 1996 Protocol,⁴³ which explicitly includes within its scope, 'abandonment or toppling at site of platforms or other man-made structures at sea, for the purpose of deliberate disposal',⁴⁴ and adopts a precautionary approach and the polluter pays principle;⁴⁵
- (ii) general guidelines for the assessment of wastes or other matter that may be considered for dumping, which include guidelines for a waste prevention audit, consideration of waste management options and dump-site selection and are applicable to the disposal of offshore oil and gas installations or platforms;⁴⁶ and,
- (iii) specific guidelines for the assessment of platforms or other man-made structures at sea (the 2000 Guidelines).⁴⁷

While the 1996 Protocol changed the approach to the dumping of waste, it did not change the principle that the dumping of platforms and other man-made structures at sea is authorized with a permit.⁴⁸ However, the level of scrutiny presented by the review of waste and of the dumping condition which would need to be implemented at the national level is substantially increased. Aligned

³⁷ London Convention article 3(1)(a)(ii).

³⁸ London Convention article 4(1)(b), annex 2 (b) and article 6(1)(a).

³⁹ London Convention annex 3.

⁴⁰ Maria Gavouneli, *Pollution from Offshore Installations*, International Environmental Law & Policy Series, Graham & Trotman/Martinus Nijhoff, London, 1995 [26].

⁴¹ Louise de La Fayette, *supra* note 14.

⁴² *The London Convention, The First Decade and Beyond* (1991) IMO, London [282].

⁴³ *Supra* note 31. For more on this topic, Z. Gao (2000) *Environmental Regulation of Oil and Gas*, Kluwer Law International Ltd, London, UK: 15.

⁴⁴ 1996 London Protocol article 1(4)(1)(4).

⁴⁵ 1996 London Protocol article 3(1) and 3(2).

⁴⁶ Adopted at the 19th Consultative Meeting of the Contracting Parties to the London Convention in 1997.

⁴⁷ Adopted at the 23rd Consultative Meeting of the Contracting Parties to the London Convention in 2000 (LC 22/14 5.3(i)).

⁴⁸ The dumping of vessels and other man-made structures at sea is authorised under annex 1 (1)(4).

with the principles of the precautionary approach and polluter pays, these new dumping conditions include a waste prevention audit, consideration of waste management options, description and characterization of the waste (chemical, physical and biological properties), parameters on the dump-site selection and assessment of effect and monitoring.⁴⁹ In the 2000 Guidelines, each of these categories is further detailed and applied to the specificities of offshore installations.⁵⁰

In 2009, the United Nations Environmental Programme and the IMO published joint Guidelines for the Placement of Artificial Reefs (the 2009 Guidelines).⁵¹ They were conceived to address the concern that the inappropriate placement of inconvenient or ill-suited artificial reefs could be used to legitimize dumping of waste or other matter which would otherwise be prohibited under the London Convention or Protocol. However, they were not formally adopted by members of UNEP, nor the Contracting States of the London Convention or the London Protocol. They are the result of cooperation between internal organs of these institutions: the Division of Environmental Policy Implementation of UNEP and the Secretariat of the London Convention and Protocol in the Marine Environment Division of IMO.

c. Legal strength of the London Convention, the London Protocol and later guidelines

Unlike the 1989 IMO Guidelines and Standards, the 1972 London Convention is not restricted to the disposal of offshore installations in the EEZ.⁵² It is intended to apply in all maritime zones other than the internal waters of States. This includes territorial seas and archipelagic waters. However, the London Convention has not been ratified by the coastal States whose territorial sea, archipelagic water and EEZ hold the largest number of obsolete and disused offshore installations in Southeast Asia, namely Indonesia, Malaysia, Thailand and Brunei. In these circumstances, the extent of the application of provisions from the London Convention to these maritime zones needs to be carefully considered.

(i) Incorporated in UNCLOS by reference

Under UNCLOS, coastal States have an obligation to adopt laws and regulations to prevent, reduce and control pollution of the marine environment by dumping and pollution from seabed activities which are 'no less effective than the global rules and standards'. The following question thus arises: are coastal States bound by the terms of a treaty which they have not ratified?

The obligation provided in articles 208, 210, 214 and 216 of UNCLOS⁵³ to adopt minimum standards provided by instruments to which States might not have agreed might be seen by some as an unacceptable intrusion on the sovereignty of States. However, any other interpretation would render these provisions superfluous. It would deprive them of their meaningfulness or *effet utile*.⁵⁴ This is further confirmed by the language of articles 214 and 216 of UNCLOS which clearly indicate that the strong wording used in articles 208 and 210 was intended. Although the negotiations have unfortunately resulted in slightly different wordings, both provisions reiterate the obligation of coastal

⁴⁹ 1996 London Protocol annex 2.

⁵⁰ The text of the Guidelines is available on the IMO website at http://www.imo.org/blast/blastDataHelper.asp?data_id=17024&filename=5-Platforms.pdf.

⁵¹ The text of the guidelines are available on the IMO website at http://www.imo.org/blast/blastDataHelper.asp?data_id=25688&filename=London_convention_UNEP_Low-res-ArtificialReefs.pdf.

⁵² Article 60(3) of UNCLOS only applies to offshore installations located in the EEZ where they can conflict with the freedom of navigation. Installations located in the territorial sea and archipelagic waters are not subject to this regime.

⁵³ These are provisions relevant to this paper. However, many other provisions in UNCLOS use the same mechanism with respect to for instance pollution from shipping (article 211) and in the context of maximum standards applicable by coastal States towards States exercising their right of innocent passage (article 21).

⁵⁴ The principle of effectiveness (or *effet utile*) in treaty interpretation, which requires that every provision in a treaty be interpreted in a way that renders it meaningful (*utile*) rather than meaningless is implied in article 31(1) of the 1969 Vienna Convention on the Law of Treaty (Art. 31-32, 1155 U.N.T.S. 331). See E.g. Oppenheim's *International Law* 1280-81 (R. Jennings and A. Watts eds., 9th ed. 1996), stating that "an interpretation is inadmissible which would make a treaty provision meaningless or ineffective".

States to adopt and/or enforce laws and regulations and other measures taken to implement international rules and standards established through competent organizations. According to Boyle, 'if the object of the pertinent provisions of the Law of the Sea Convention is to bring about the widest possible application of international rules, this conclusion [that a non party may be bound by a treaty which it has not ratified] seems inescapable'.⁵⁵

These observations leave two open questions. Firstly, do the 1972 London Convention and the 1996 London Protocol qualify as 'global rules and standards'. Secondly, should the minimum requirement that domestic regulations and measures must be at least as effective as the global rules and standards be interpreted as a request for full implementation of the convention concerned.

(ii) Is it a global rule or standard?

To qualify as a legitimate global rule or standard, international rules must be widely accepted.⁵⁶ According to Oxman, 'general acceptance' would emerge from a combination of ratification or formal acceptance by some states, implementation of the standard by other States and respect for the standard by individuals and companies whose activities are its ultimate object.⁵⁷ There is little doubt that the London Convention meets the first and second part of the test.

First it was already in force when UNCLOS was negotiated to the extent that it was embedded in UNCLOS with respect to dumping. Second, as at 19 July 2012, 87 States have ratified the London Convention and it is generally considered as a global rule.⁵⁸ Despite the non-ratification of the London Convention in Southeast Asia, other Asian countries have ratified this convention, namely China, Japan and the Republic of Korea. As for the third part of the test, State practice suggests a general agreement with the consent regime for the disposal at sea of dangerous or toxic wastes.⁵⁹ State practice under the London Convention (as evidenced by compliance reporting reports) shows that while coastal States which are parties to the London Convention are willing and progressing in the implementation of the dumping regime, the level of compliance is also generally low.⁶⁰

Unlike the 1972 London Convention, the 1996 Protocol has only been ratified by 42 States (as at 31 May 2012) and, as such, does not qualify as having gained global acceptance.⁶¹ It is also doubtful whether this Protocol could be treated as 'international standards' under the London Convention (rather than 'rules') which would have to be taken into account. With respect to the 2000 Guidelines,

⁵⁵ A. Boyle (1985) "Marine pollution under the Law of the Sea Convention," *American Journal of International Law*, Vol.79: 356.

⁵⁶ The concept of 'generally accepted standards' which was first used in the international law of the sea in article 10 of the 1958 Convention on the High Seas developed to meet the need for universal observance of 'the maritime rules of the road'. However the initial use was later expanded as is reflected in UNCLOS. For a complete discussion on the concept of generally accepted international standards and use in UNCLOS, see B. H. Oxman (1991) *supra* note 30 [121-139]. Oxman presents the view that it cannot be assumed that the use of different words in UNCLOS necessarily represents an intentional decision to convey a different meaning. This lack of consistency might rather be the result of the negotiation process [132 n74].

⁵⁷ B.H. Oxman (1991) *supra* note 29 [141].

⁵⁸ See the status of ratification at http://www.imo.org/blast/blastDataHelper.asp?data_id=31094&filename=2.pdf and IMO, Implications of the United Nations Convention on the Law of the Sea for the International Maritime Organization, LEG/MISC.7 [65-66] accessible online at http://www.imo.org/ourwork/legal/documents/implications_of_unclos_for_imo.pdf.

⁵⁹ This observation is based on converging though indirect information. First, nautical charts of seas of Southeast Asia all show areas titled 'explosive dumping grounds', which suggests the existence of an underlying permit system for explosive wastes. Furthermore, in Indonesia, the dumping of drill cutting is allowed provided that the oil content is less than 10% and the dumping site selected is removed from any resource. However, further rules are in the making to limit the size of the dumping site and the level of solid in suspension to match the national standard for seawater quality.

⁶⁰ Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 and its 1996 Protocol, Final Report on Permits Issued in 2007, LC-LP.1/Circ.43, 2 February 2011.

⁶¹ D. L. Vanderzwaag and A. Daniel (2009) "International law and ocean dumping: steering a precautionary course aboard the 1996 London Protocol, but still an unfinished voyage" [519], in the *Future of Ocean Regime-Building, Essays in Tribute to Douglas M. Johnson*, Eds. A. Chircop, T.L. McDorman and S.J. Rolston, Martinus Nijhoff Publishers.

although they were prepared by the Scientific Committee of the London Convention and are presented as guidelines for the 1972 Convention and the 1996 Protocol, they were adopted by only 33 of the 78 States that are parties to the 1972 London Convention.⁶² Unfortunately, State practice is also of little help in concluding whether the 1996 Protocol, the 2000 and the 2009 Guidelines to the London Convention and Protocol could qualify as ‘international standards’ with respect to decommissioning practices. Domestic laws on this topic are outlined in section 5 below.

(iii) Domestic measures must be ‘as effective as’ global standards

The language used may be distinguished from a straight requirement of implementation and enforcement of global rules and standards. It is obviously aimed at leaving more flexibility for the coastal States to determine their own approach, rules and measures. The focus is on the outcome or the overall effect of the measure. But what is the benchmark of the standard to be implemented by coastal States under these provisions of UNCLOS? What does ‘as effective’ as the 1972 London Convention mean?

While the London Convention contains some clear and prescriptive objectives such as the absolute ban of dumping for some specific types of waste, the rules provided for in relation to the abandonment of offshore platforms are not as clear cut. It involves a thorough case-by-case analysis and balancing of interests, with a particular emphasis on the protection of the marine environment. In this context, the duty imposed on coastal States is one of scrutiny. It could be expressed in terms of a standard of care. If ‘as effective’ is to be understood as ‘leading to an equivalent result’, it seems that a coastal State which adopts a permit procedure incorporating a thorough balancing of the same parameters involving the protection of the marine environment as a guiding principle would meet the test.⁶³ The permit should, as a minimum, have been granted after consideration of a case-by-case assessment of the environmental risk (i.e. an Environmental Impact Assessment or EIA), of the dumping site characteristics, of land-based methods of treatments and of the impact on other uses of the sea.

4. Combining the application of the 1989 IMO Guidelines and Standards and the 1972 London Convention to disused offshore installations in coastal States’ EEZ

When issues and areas fall within the scope of several texts, they must be considered together.⁶⁴ The challenge consists in determining the way in which these instruments can be woven together to make the legal fabric pertaining to the issue of the treatment of disused and abandoned offshore installations. Consideration of numerous aspects is necessary, including the extent of the overlap with respect of the subject matter and of the geographical scope of each instrument, and the potential inconsistencies and differences in objective between the instruments.

a. Extent of the overlap ratione materiae

Four situations need to be distinguished to identify circumstances in which there is or is not overlap in the application of the 1989 IMO Guidelines and Standards and the London Convention.

⁶² Report of the Twenty-Second Consultative Meeting of the Contracting Parties to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter 1972, 25 October 2000, LC 22/14, p. 18 and Annex 7.

⁶³ D. Vanderzwaag and A. Daniel go even further. They indicate that parties to UNCLOS would be implicitly bound by the London Convention standards for ocean dumping (even if not a party to that specific convention), see *supra* note 61.

⁶⁴ Beyond common sense, this rule is provided for in article 31(3)(c) of the 1969 Vienna Convention on the Law of Treaty (1155 U.N.T.S. 331) according to which parties to a treaty must take into account any relevant rules of international law applicable in the relations between the parties.

(i) Disused installations which are entirely removed prior to disposal at sea

In these circumstances, the application of the 1989 IMO Guidelines and Standards and the London Convention do not overlap. They complete and succeed each other. The removal process will fall under the 1989 IMO Guidelines and Standards (and UNCLOS). The approval for dumping, the dump-site selection process and the disposal in the dump-site will then fall within the scope of the London Convention.

(ii) Parts of disused installations which are dismantled prior to being disposed at sea

The analysis is nearly identical in this situation to the previous one. The only difference is that the legal treatment of the section of the platform which remains *in situ* will differ from that of the removed parts and follow the treatment described in (iv) below.

(iii) Disused installations which are reused for a new legitimate use of the sea

Such re-used platforms (be it for environmental purposes or otherwise such as the transformation in a diving resort) fall outside the scope of both the 1989 IMO Guidelines and Standards and the London Convention. They are the subject of part 3 of this paper.

(iv) Disused installations (or parts thereof) left *in situ* and not re-fitted to serve a new legitimate use of the sea

In this situation there is a clear overlap between the London Convention and the 1989 IMO Guidelines and Standards. The 1989 IMO Guidelines and Standards require the decision to allow an offshore platform to remain in place to be assessed on a case-by-case evaluation taking into account a set of loose parameters, including primarily information relevant to the impact on navigation (such as the rate of deterioration, risk to navigation and the risk that it will shift⁶⁵). An unobstructed water column of 55 meters is also required.⁶⁶ In parallel, if an abandoned offshore installation is considered to fall within the scope of dumping under UNCLOS and the London Convention it is subject to the dumping rules provided for by these conventions (see part II section 1 and section 3(a) above). However, the 1972 London Convention provides for a list of parameters to be taken into account for this process which differs from those listed in the 1989 IMO Guidelines and Standards, especially with respect to the protection of freedom of navigation and the safety of navigation.

b. Similarities and differences in objectives

To reconcile these different sets of overlapping guidance and rules, it is helpful to look at their respective objectives. It is an essential rule of interpretation of treaties to interpret in good faith with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.⁶⁷

In essence the aim of the rules contained in these instruments is similar, namely limiting the number of offshore installations abandoned at sea after their original purpose ended. These rules also promote a similar case-by-case approach with a reference in both to the protection of the marine environment. It is therefore not so surprising that when informed of the draft IMO Guidelines and Standards prepared by the Maritime Safety Committee, the Conference of Parties of the London Convention expressed its general satisfaction with the content of the guidelines. However, they regretted that the Guidelines and Standards were not more detailed. The Conference also emphasized that the condition for disposal should be addressed by the London Convention, as the competent body for dumping.⁶⁸ This comment points to the first key difference between these instruments which is the interests being

⁶⁵ 1989 IMO Guidelines and Standards articles 2(1), 2(2) and 2(4).

⁶⁶ 1989 IMO Guidelines and Standards article 3(6).

⁶⁷ 1969 Vienna Convention on the Law of Treaty Article 31(1) (1155 U.N.T.S. 331).

⁶⁸ G.C. Kasoulides (1990) Update, *Marine Policy* 14, Jan. 84-85 [84].

defended. These find their origin in the institutional authority of the body which drafted and adopted each instrument: the IMO and the COP of the London Convention.

The primary interest vested in the COP of the London Convention was to defend the marine environment against unregulated dumping at sea. Thus, the case-by-case assessment required prior to the granting of a permit includes primarily information related to the impact which the dumping which is being contemplated would have on the marine environment, the analysis of alternative waste management options and of the best dump-site selection and planning for disposal. However, although reference is made to the need to also 'give attention' to other uses of the sea including navigation, there is no further guidance as to the way they would be taken into account.⁶⁹ Safety of navigation is not within the mission of the COP of the London Convention.

It is the primary concern and *raison d'être* of the IMO.⁷⁰ The IMO also looks after the protection against pollution of the marine environment, specifically shipping pollution. However, the removal of fixed offshore installations is not a shipping issue. It is no surprise that the 1989 IMO Guidelines and Standards are primarily concerned with safety of navigation, though they also consider incidentally the protection of the marine environment and issues of cost and technical feasibility. The environmental impact assessment provided for in the guidelines are expected to take into account: 'the effect on water quality, geological and hydrographic characteristics; the presence of endangered or threatened species; existing habitat types; local fishery resources, and the potential for pollution contamination of the site by residual products from, or deterioration of the offshore installation or structure.' Arguably, these concerns, which go beyond the protection of the marine environment from pollution from shipping and safety of navigation fall outside the scope of the mission of the IMO.

c. Combined regime

By contrast with the respective objectives pursued by the IMO and the London Convention, UNCLOS is the overarching legal framework for all uses of the sea. While it devotes an entire chapter to the protection of the marine environment which is recognized as one of the pillars of this instrument, freedom of navigation is also a key feature of the regime. Securing freedom of navigation was a key driver in UNCLOS negotiations.

The 1989 IMO Guidelines and Standards and the London Convention and guidelines must cumulatively be taken into account within the IMO framework and, where they conflict, a case-by-case analysis must be carried out to balance the interests at stake. The specialised rules provided in each regime must not be construed so extensively as to make them conflict with the other.

5. Applicable rules in territorial sea and archipelagic waters

Common to both these maritime zones is that neither the obligation of removal provided in article 60 of UNCLOS nor the 1989 IMO Guidelines and Standards apply. This stems from the fact that they are both under the full jurisdiction of the coastal States, albeit with different rights recognised to other States in each zone. However, while the freedom of navigation is reduced in these maritime zones, coastal States are still under the same obligation of protection of the marine environment and implementation of the rules on dumping and seabed activities provided in UNCLOS. They also have an obligation to not hamper the rights of passage of other States.

⁶⁹ 2000 Specific Guidelines for Assessment of Platforms or Other Man-made Structures at Sea, section 7.1.

⁷⁰ Article 1(a) of the Convention on the International Maritime Organization adopted in Geneva on 6 March 1948, 289 UNTS 48, provides that the purpose of the IMO includes: 'to encourage and facilitate the general adoption of the highest practical standards in matters concerning the maritime safety, efficiency of navigation and prevention and control of the marine pollution from ships'.

(i) Securing safety of navigation

Although in the territorial sea, the freedom of navigation is reduced, other States still benefit from the freedom of innocent passage and the coastal State has the obligation to give appropriate publicity to any danger to navigation. All installations must thus be adequately publicised for safety of navigation purposes.⁷¹ Furthermore, if the coastal State has elected to designate sea lanes and traffic separation schemes, its obligation of safety and non-obstruction of the lane with offshore installations (especially if they are disused) is reinforced.⁷²

The rules for passage by other States in the archipelagic waters are less restrictive than in the territorial sea. This leads to greater obligations for archipelagic States in this regard. They have less discretion in the determination of sea lanes⁷³ and an obligation to ensure the condition for continuous, expeditious and unobstructed transit.⁷⁴ Arguably, these rules create an incentive for coastal States to designate sea lanes of passage. Should an offshore installation located within one of these sea lanes become disused, the risk to the safety of navigation depends on the intensity of the maritime traffic (provided that the platform is officially and clearly publicised) and the stability and integrity of the installation. Should a maritime casualty be triggered by fallen parts of a disintegrating platform, the coastal States would have difficulties justifying that it fulfilled its obligations.

(ii) Protection against pollution of the marine environment

Unlike the obligation of coastal States *vis-à-vis* other States for navigation, their obligations towards the protection of the marine environment is the same in the EEZ as it is in the territorial sea and in archipelagic waters and are provided for in part XII of UNCLOS. The dumping rules provided in UNCLOS therefore apply and coastal State the obligation to enact anti-dumping legislation based on the consent regime (see section 3 above). Arguably, the standard provided in the London Convention must also be implemented by coastal States with respect to their territorial sea or archipelagic waters, unless the London Convention is not considered as having created a global standard with respect to such maritime zones.

6. Reinforced obligations in case of a risk of transboundary pollution

The obligation to prevent, reduce and control activities that pose a significant risk of transboundary pollution or environmental harm is an obligation of customary international environmental law.⁷⁵ It is also clearly provided for in UNCLOS. States are required to regulate and control activities taking place within their jurisdiction or control that pose a significant risk of global or transboundary pollution.⁷⁶ Article 210(5) also provides for the obligation of the coastal States to take into consideration and consult with other States whose rights might be adversely affected by dumping operated in proximity to their territorial sea or EEZ. Although this obligation to consult is limited and the decision to grant the permit to 'dump' is under the exclusive jurisdiction of the initial coastal State, it must take place prior to the permit being granted.

⁷¹ UNCLOS article 24(2).

⁷² UNCLOS articles 22(1) and (3).

⁷³ UNCLOS article 53(4).

⁷⁴ UNCLOS article 53(3).

⁷⁵ Patricia Birnie and Alan Boyle, *International Law and the Environment*, Oxford: Oxford University Press (2009) [137].

⁷⁶ UNCLOS articles 194(2) and 195.

When States have reasonable grounds for believing that planned activities under their jurisdiction or control may cause substantial pollution or significant harmful changes to the marine environment, they shall, as far as practical, assess the potential effects of such activities on the marine environment and shall communicate reports of the results of such assessments to the competent international organizations.⁷⁷

This provision could operate as an incentive for full removal of offshore installations located close to transboundary areas. Given the obligation to carry out an EIA and other impact assessment prior to the granting of a permit to abandon an offshore platform, the level of understanding of the risks taken in authorising dumping is high which increases the probability that the trigger for monitoring under article 206 of UNCLOS would be activated. Unless the offshore platform concerned is particularly large and heavy or the neighbouring State does not and will not harvest resources in the vicinity or there is no sensitive marine environment around, full removal and disposal away from the boundary might be the preferable alternative.

7. Regional guidelines and State practices

State practice is rare given the minimal number of decommissioning of installations in Southeast Asia actually performed, nearly inversely proportionate to the very abundant literature. However, some indication of the position of States can be gathered from their legislation, with respect to their obligation to remove disused offshore installations or the possibility to leave them *in situ*. The main domestic regulations are outlined below based on published reports and regulations available online. This review (which does not purport to be exhaustive but rather focuses on the main principles relating to an obligation of removal of disused installations) shows that there is a general regional regulatory trend to require removal. However, even in countries where a clear removal rule has been adopted since the 1970s, the small number of decommissioning operations realised to date demonstrate that either compliance has been low or that exemptions have been granted. Further, another current trend is that domestic regulations on this topic are currently under review.

In Indonesia, Act No 5 of 1983 on the Indonesian Exclusive Economic Zone, requires that a prior permit be obtained for the construction of artificial islands or installations or other structures within the EEZ. Article 8(1) of the Act states that whoever conducts any activity within the EEZ has a duty 'to take steps towards preventing, minimizing, controlling and surmounting the pollution of the environment.' Article 8(2) provides that the discharge of waste in the exclusive economic zone requires a prior permit. However, the Act does not define the term 'waste' and does not specify whether a disused offshore installation can qualify as such 'waste'. Article 21(1) of Government Regulation No. 17 of 16 April 1974 concerning the supervision of oil and natural gas exploration and exploitation activities in offshore areas provides for the complete decommissioning and disposal of offshore installations that are no longer in use, taking into account the safety of navigation.⁷⁸ More recently, the Ministry of Energy and Mineral Resources has adopted Minister of Energy and Mineral Resources Regulation No. 1 of 2011 giving Technical Guidance of Decommissioning of Oil and Gas Offshore Installations.⁷⁹ They are many other domestic laws and regulations regulating offshore oil and gas activities in Indonesia but they do not include decommissioning provisions.

⁷⁷ UNCLOS articles 205 and 206.

⁷⁸ Regulation No17 of 16 April 1974, article 21(1). For a detailed review of the topic, refer to M.A.Ayoade (2002) *Disused Offshore Installations and Pipelines*, Kluwer Law International, The Hague. [95-96].

⁷⁹ J. Wiratno (2012) Decommissioning in Indonesia: Regulatory Frameworks and Challenges, Decomworld 4th Annual Offshore Decommissioning Training Workshop, Asia Pacific, Oct. 31-Nov. 1 2012, Singapore.

In Thailand, the 1971 Petroleum Act⁸⁰ obliges the concessionaire to “take appropriate measures in accordance with good petroleum industry practice to prevent pollution of any place by oil, mud or any other substance” but does not contain any provisions specific to decommissioning. However, the Ministerial Regulation No. 12 from 1981 prescribing rules and procedures for production operations issued under the provisions of the Petroleum Act, provides for an offshore well and installations abandonment procedure which entails a full removal unless otherwise authorised by the Director General of the Ministry of Energy.⁸¹ The current decommissioning regime is under review and new draft national decommissioning guidelines are being considered for adoption.⁸²

While Malaysia’s long experience in offshore oil and gas is fully appreciated by other ASEAN countries and has been relied on by Vietnam in the development of its own infrastructure and regulation, it does not have any specific legislation on decommissioning. However, Malaysia’s national oil company, Petronas, has adopted Decommissioning Guidelines which require that offshore installations be fully decommissioned, except where non-removal or partial removal is consistent with the standards and requirements imposed by those guidelines. Decommissioning of structures and installations must be evaluated on a case-by-case basis. There are also signs that the Department of Environment is working on new legislation and guidelines for the country.

In Brunei, the 2002 Merchant Shipping Order⁸³ reiterates literally the terms of article 60(3) of UNCLOS. Decommissioning guidelines were also adopted in September 2009⁸⁴. Based on a case-by-case analysis, their solution design is directly inspired from the 1989 IMO Guidelines and Standards, to which they expressly refer.

In Vietnam, the 1993 Petroleum Law requires that upon termination of petroleum activities, the contractor has the obligation to remove installations and equipment upon request of the authorities.⁸⁵ However, the 1996 and 2000 Decrees enacted to implement the Petroleum Law provide for the possibility that offshore installations be either left in place or partially removed if so requested by the relevant authority in charge.⁸⁶ The 2008 Law which amends and supplements the 1993 Petroleum Law also requires that the environment be restored as provided for in the law.⁸⁷ However, the extent of the restoration required is not precisely described. Finally, in 2009, the Government adopted Decree No. 115 which amends the 2000 Decree and provides that contractors have the obligation to draw up a removal plan, submit it to the competent authority for approval and remove the installations in accordance with the approved plan.⁸⁸

The laws and regulations adopted in the above noted States of Southeast Asia show their awareness of the general obligation of removal but also highlight the uncertainty surrounding the possibilities to not remove abandoned offshore installations. Interestingly, the most recent rules and guidelines adhere closely to the principles set in UNCLOS and in the 1989 IMO Guidelines. However they do not give further guidance on the scoping of the study needed in the work plan, nor mention a requirement that an impact assessment or cost-benefit analysis be undertaken. The responsibility taken on by ASCOPE

⁸⁰ B.E. 2514, section 75.

⁸¹ These regulations are accessible on the website of the Ministry of Energy of Thailand:

http://law.dmf.go.th/detail.php?lan=en&itm_no=1673760911 (last accessed on 30 October 2012).

⁸² W. Thungsuntonkhun (2012) Thailand Decommissioning of Exploration and Production Installations Project, Decomworld 4th Annual Offshore Decommissioning Training Workshop, Asia Pacific, Oct. 31-Nov. 1 2012, Singapore.

⁸³ See section 132(2) of this order which can be found on the website of the Energy Department of Brunei Darussalam [http://www.energy.gov.bn/info/Text of Order/Merchant Shipping Order - 2002.pdf](http://www.energy.gov.bn/info/Text%20of%20Order/Merchant%20Shipping%20Order%20-%202002.pdf) (last accessed on 30 October 2012).

⁸⁴ Also on the website of the Energy Department of Brunei Darussalam [http://www.energy.gov.bn/HSE/Documents/DAR Guideline Sept 09.pdf](http://www.energy.gov.bn/HSE/Documents/DAR%20Guideline%20Sept%2009.pdf) (last accessed on 16 November 2012).

⁸⁵ Law No 18-L/CTN of 6 July 1993, articles 13 and 30.

⁸⁶ Decree No 84/CP of 1 January 1996, article 16 and Decree No 48/2000/ND-CP of 12 September 2000, article 15.

⁸⁷ Law No 10/2008/QH12 of 12 June 2008, article 1.

⁸⁸ Decree No. 115/2009/ND-CP, 24 December 2009, article 2.

to draft decommissioning guidelines for the region further illustrates a growing awareness by coastal States that the risks created by the existing abandoned installations are rising, be it political, legal, environment or financial.

III. A NEW AND LEGITIMATE USE: THE TRANSFORMATION OF RIGS INTO ARTIFICIAL REEFS

The possibility to leave *in situ* a disused or abandoned platform which is serving a new use is expressly referred to in section 3.4 (1) and (2) of the 1989 IMO Guidelines and Standards.⁸⁹ This refers to a situation in which an obsolete platform that has reached the end of its planned life can be deemed to serve a new legitimate purpose that could justify some interference with navigation. Where such new use is legitimate the initial question of whether there is an obligation to remove the offshore platform becomes moot. However, to constitute a new legitimate use of the sea, a disused offshore installation transformed into an artificial reef must comply with States' obligations to protect marine biodiversity and to protect and preserve the marine environment in general. It must not have been merely left after the initial function it had been placed for seized. The fact that it may incidentally imitate some function of a natural reef would not be sufficient. This is also the condition set under the London Convention for the artificial reef not to qualify as dumping.⁹⁰

However, the 1989 IMO Guidelines and Standards do not apply to offshore installations located in the territorial sea or in archipelagic waters. This part discusses the rules which are applicable.

1. States' obligations to protect marine biodiversity and the marine environment and to develop adaptation to climate change

Coastal States have the obligation to take measures that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities.⁹¹ These measures include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.⁹² Furthermore, coastal States are required to ensure, through proper conservation and management measures, that populations of harvested species at levels which can produce the maximum sustainable yields are maintained and restored.⁹³

These obligations were later complemented with the 1992 Convention on Biodiversity, the objectives of which include the conservation of biological diversity and the sustainable use of its components.⁹⁴ Article 2 defines biological diversity as 'the variability among living organisms from all sources including marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes within species, between species and ecosystems'. Coastal States also have the obligation to take the necessary measures to achieve this end. This includes measures to conserve biological diversity⁹⁵ and to rehabilitate and restore degraded ecosystems.⁹⁶ Finally, the 1992 United Nations

⁸⁹ They provide that the coastal State may determine that the installation or structure may be left wholly or partially in place where an existing installation or structure will serve a new use.

⁹⁰ The language of the 2009 Guidelines adopted by the Conference of the Parties to the 1996 London Protocol is unhelpful in this respect. It is unfortunate that these Guidelines assume that submerged structures deliberately placed to perform functions not related to those of a natural reef cannot be considered as legitimate artificial reefs. Environmental management based on sound science would recommend that an assessment of the ecological benefits allegedly gained from offshore installations designed to be used as an artificial reef be made, irrespective of the reason why all or parts of the installation may have been initially placed for.

⁹¹ UNCLOS article 194(1).

⁹² UNCLOS article 194(5).

⁹³ UNCLOS articles 61(2) and 61(3).

⁹⁴ CBD article 1.

⁹⁵ CBD article 8(a).

Framework Convention on Climate Change (UNFCCC)⁹⁷ and its 1997 Kyoto Protocol⁹⁸ identify adaptation measures as necessary steps to mitigate the adverse effects from climate change.

It follows from the obligations resulting from these three global conventions that the placement of an artificial reef which would be designed to enhance marine biological diversity or fisheries would also constitute a legitimate use of the sea while fulfilling the obligations provided for in these conventions. Arguably, the existence of other anthropogenic stressors and habitat destruction in the areas surrounding the potential site where artificial reefing is contemplated could further justify such placement. However, an analysis that the placement of an artificial reef amounts to a legitimate use of the sea presupposes that the artificial reef placement is genuinely designed to rehabilitate, restore or enhance degraded ecosystems or to enhance fisheries. If the placement of an artificial reef is in fact a disguised disposal at sea designed to escape the required dumping permit procedure, the placement would be qualified as dumping at sea and it would fall within the scope of the London Convention.⁹⁹ In such circumstances, domestic regulations should follow the minimum standard set in the London Convention.¹⁰⁰

2. The use of artificial reefs to manage living resources and enhance fisheries or enhance biological diversity

The use of artificial reefs to enhance and manage fisheries is not new. Although the practices and materials being used have evolved over time, it is a traditional use of the sea and a centuries old practice used to support artisanal and subsistence fisheries, particularly in tropical areas.¹⁰¹ Despite negative press from conservationist groups whose objective is to maintain pristine oceans and who see artificial reefs as disguised dumping, a growing body of scientific research demonstrates that the re-use of a jacket as an artificial reef can have net ecological benefits.¹⁰²

a. Fisheries enhancement

Artificial reef programs re-using obsolete or disused offshore installations have been in place in the Gulf of Mexico since the 1980s.¹⁰³ A variety of structures including old ships and decommissioned oil rig jackets have been refitted as artificial reefs despite opinion remaining divided over the ecological benefits and disadvantages. Much of the published research focuses on the cost savings compared to on-shore decommissioning, and on the benefits to fisheries.

The main debate with respect to artificial reefs and fisheries revolves around the question of whether artificial reefs enhance fisheries by attracting fish from elsewhere or whether such artificial reefs would lead to the creation of a larger fish biomass. This debate has been nicknamed the aggregation versus production debate.¹⁰⁴ While the theoretical debate remains, site-specific data is expanding.

⁹⁶ CBD article 8(f).

⁹⁷ *United Nations Framework Convention on Climate Change*, opened for signature on 9 May 1992, 1771 UNTS 107, article 3(3) – Accessible online at <http://cil.nus.edu.sg/1992/1992-united-nations-framework-convention-on-climate-change/>.

⁹⁸ Kyoto Protocol to the United Nations Framework Convention on Climate Change, open for signature on 17 December 1997, 2303 UNTS 148, article 10(b) – Accessible online at <http://cil.nus.edu.sg/1997/1997-kyoto-protocol-to-the-un-framework-convention-on-climate-change-unfccc/>.

⁹⁹ See above Part II section 1.

¹⁰⁰ See part II section 3 above.

¹⁰¹ W. Seaman and W. J. Lindberg (2009) "Artificial Reefs," *Encyclopedia of Ocean Sciences* (2nd ed.), 2009 Elsevier Ltd: 226-233 [226-227].

¹⁰² P.I. Macreadie, A.M. Fowler and D.J. Booth (2011) "Rigs to reefs: will the deep sea benefit from artificial habitat?" *Frontiers in Ecology and the Environment*: 455-461.

¹⁰³ M.J. Kaiser and A.G. Pulsipher 2005. "Rigs-to-reef programs in the Gulf of Mexico." *Ocean Development & International Law* 36(2): 119-134.

¹⁰⁴ S.A. Bortone (1998) "Resolving the attraction-production dilemma in artificial reef research: some yeas and nays," *Fisheries* 23(3): 6-10; and T.J. Picher and W. Seaman Jr. (2001) "Petrarch's Principle: how protected human-made reefs can help the reconstruction of fisheries and marine ecosystems" *Fish and Fisheries* 1(1): 73-81.

There may well be no definite answer to this question as the ecological benefits of an artificial reef depend on many factors including the location of the reef, seabed substrate and surrounding habitats, oceanographic condition, the marine life which is the focus of the program, the material and shape of the artificial reef, etc. Furthermore, the analysis of net ecological benefits may need to be complemented with a socio-economic assessment.¹⁰⁵

b. Artificial reefs for habitat improvement or rehabilitation

The idea of extending the use of artificial reefs made from waste materials to reinstate destroyed natural habitats is not new either¹⁰⁶ and it is of particular relevance in Southeast Asia, due to the current status of the marine environment and its importance for the subsistence of the coastal communities and the development of the coastal States. The net economic benefits derived from ecosystem services provided by the coral reefs of Southeast Asia were already valued at between US\$23,100 and US\$270,000 per square km per annum in 2002.¹⁰⁷ At the same time, 88% of Southeast Asia's coral reefs are under threat of degradation from anthropogenic activities including climate change. Coral ecologists who specialise in Southeast Asia consider that disused rigs have a good potential for developing coral reef communities and improving the resilience of coral systems. The vertical height in the water column, structural complexity and large dimensions of artificial reefs built from offshore installations are an advantage compared to the smaller structures and coral fragment transplantation generally used in reef restoration efforts. These large artificial reefs have a greater potential with respect to the area covered. They can also allow the development of reef communities in otherwise barren non-reef areas, thus making a positive contribution to biodiversity enhancement and the accompanying ecosystem services.

3. Conflicting legitimate uses of the sea

In fulfilling these obligations to protect and preserve the marine environment and enjoying their rights towards legitimate uses of the seas, the coastal State must refrain from unjustifiable interference with activities carried out by other States in the exercise of their rights.¹⁰⁸ In particular, the placement of an artificial reef must not compromise the freedom and the safety of navigation. In the territorial sea and in archipelagic waters, particular attention has to be given to artificial reefs which would be placed in the vicinity of published sea lanes or traffic separation schemes.¹⁰⁹ Such reefs should allow for sufficient water clearance or benefit from adequate signalization at sea and marking on nautical charts. Such a requirement would also apply to all artificial reefs located in the EEZ or on the continental shelf.¹¹⁰

UNCLOS also indicates that the removal of offshore installations must have due regard to fishing but does not provide more information. Two questions arise. Is it the removal operations themselves which should have due regard to fishing and minimize the impact on nearby fishing grounds (from explosives used for the removal for instance)? Or was the concern to remove fully installations to leave the space open to industrial trawling? In light of the views expressed by fisheries lobbies through the IMO,¹¹¹ it seems that the concern was to ensure the ease of trawling. However, it seems that in Southeast Asia, the approach may be different, especially when abandoned or disused installations can

¹⁰⁵ S.J. Cripps and J.P. Aabel (2002) "Environmental and socio-economic assessment of Ekoreef, a multiple platform rigs-to-reef development," *ICES Journal of Marine Science*, 59 (suppl): S300-S308. doi: 10.1006/jmsc.2002.1293.

¹⁰⁶ See for instance in the North Sea, R.B. Stone (1972) "Artificial reefs of waste material for habitat improvement," *Marine Pollution Bulletin*, Vol.3: 27-28.

¹⁰⁷ L. Burke, E. Selig and M. Spalding (2002) *Reefs at Risk in Southeast Asia*, World Resources Institute.

¹⁰⁸ UNCLOS article 194(4).

¹⁰⁹ UNCLOS article 22 for the territorial sea and article 53 for archipelagic sea lanes of passage.

¹¹⁰ UNCLOS article 60(3).

¹¹¹ Kasoulides, *supra* note 20.

be reached from the shore in one sailing day. Such installations attract artisanal and subsistence fisheries.

CONCLUSION

This paper has demonstrated that UNCLOS is the primary source of international law to determine the extent of coastal States' obligation with respect to removal or non-removal of disused and abandoned offshore installations. However, difficulties are created by the reference made in UNCLOS to other sources of international law (the 1989 IMO Guidelines and Standards, the London Convention, the London Protocol and their guidelines). The legal standing and interpretation of these sources in Southeast Asia and their combined application is complex and results in legal uncertainty which has to date not been clarified by either regional or domestic rules. The extent of the application of standards set by the London Convention in the territorial sea and in archipelagic waters of non-party States is particularly uncertain. There seems to be a misalignment between the legal obligations allegedly incumbent on these States on the basis of UNCLOS and the State's political position on this topic.

Despite this apparent complexity, the principles set out in these various sources of international law follow guiding principles which are a useful in the current debate. Firstly, coastal States rights and obligations with respect to abandoned and disused offshore installations are the result of the balancing of two primary principles: (i) the freedom and safety of navigation; and, (ii) the obligation of the protection of the marine environment of the coastal State, including submitting all dumping at sea to a permit process. Secondly, this paper also highlights the commonalities in approach between the process recommended under article 60 of UNCLOS, the 1989 IMO Guidelines and Standards and the 1972 London Convention. All suggest a case-by-case analysis.

Uncertainties in the legal regime can be narrowed down to two primary points. Firstly there is uncertainty about the content of the case-by-case analysis which provides the basis for the optimal solution to be proposed. There is little doubt that an environmental impact assessment is required by law but its exact scope is unclear. It is also uncertain whether the comparative analysis should include a cost-benefit analysis of all possible alternative uses or disposal solutions of the abandoned or disused offshore installation. The second uncertainty pertains to the treatment of offshore installations located in the territorial sea and in archipelagic waters and the fact that the London Convention has been seldom ratified in Southeast Asia. The view presented in this paper is that, if effect is granted to the London Convention through the application of article 210 of UNCLOS, coastal States have an obligation to adopt a permit system for dumping at sea, which would include the placement at sea of offshore installations for sole disposal (rather than re-use for another purpose).

Consistent with this approach, coastal States are currently drafting non-mandatory guidelines which embrace a case-by-case analysis. Such guidelines, especially if they are taken at regional level by ASCOPE, could be a substantial step in clarifying the policy and rules applicable to offshore decommissioning in Southeast Asia and contribute to filling the gap left in the absence of a binding regional agreement to protect and manage the coastal and marine environment of Southeast Asia. However, to be workable, a case-by-case approach needs to be bound by clear principles such as the safety of navigation and a satisfactory standard of protection of the marine environment. Otherwise, such guidelines would fail to provide the legal certainty and environmental safeguards expected from such a body of rules.