Mare Incognitum, *Part II*: Is it Feasible to Salvage the Vancouver Draft Mobile Offshore Unit Convention by Converting It into a Mobile Offshore *Renewables* Unit Convention?

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"Divide each difficulty into as many parts as is feasible and necessary to resolve it."

—Rene Descartes

"The difficult is what takes a little time; the impossible is what takes a little longer."

—Fridtjof Nansen

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I. INTRODUCTION

As described in *Mare Incognitum, Part I: Do We Now Need (to at Least Discuss) a Mobile Offshore Renewables Unit Convention?*[1] ("*Mare Incognitum, Part I*"), a variety of new non-fixed, floating, and mobile offshore renewable energy technologies are now being developed and deployed in coastal states' offshore waters. These mobile offshore renewables units (each, a "Mobile Offshore Renewables Unit" or MORU) might be deployed as a standalone unit or in arrays of multiple MORUs (each such, a "MORU Array"). MORUs possess potential territorial, technological, economic, and legal advantages over comparable offshore fixed-bottom and onshore renewable energy technologies for coastal states seeking to exploit the offshore renewable energy resources in their territorial seas and exclusive economic zones (EEZs) (each such coastal state, a "Producing Coastal State").

Unfortunately, as described in *Mare Incognitum, Part I*, MORUs face two fundamental problems in relation to the existing framework of international maritime conventions governing activities at sea. First,

1. Alexander Severance, *Mare Incognitum, Part I: Do We Now Need (to at least Discuss) a Mobile Offshore Renewables Unit Convention?*, 45 TUL. MAR. L.J. 287 (2021) [hereinafter *Mare Incognitum, Part I*].

because many maritime conventions limit their application to "ships" or "vessels" (or similar terms), unusual watercraft like MORUs may fall outside the existing convention coverage.[2] Second, in relation to those potentially relevant maritime conventions whose scope arguably already includes MORUs, the number of contracting states that are party to such conventions varies widely.[3] This leaves MORU stakeholders in an international legal *mare incognitum* that acts as an *ex ante* impediment to further development of the MORU sector.

Several possible solutions to this problem exist, but if a legally binding solution with international effect is desired, two approaches seem plausible. The first approach would be to amend each relevant existing topical maritime convention to explicitly include MORUs within its scope. However, because of the different procedural requirements for amending different conventions and the different constellations of contracting states to those conventions, this approach could take decades and might not yield a uniform, coherent, multitopic international legal regime for MORUs. Alternatively, a multitopic convention specific to MORUs might be enacted to provide a uniform and coherent international legal regime for MORUs quickly. This Article explores the feasibility of these approaches, likely obstacles, and topics to be addressed, and introduces the Annex[4]: a multitopic draft MORU Convention based largely on (and presented as a standard legal blackline mark-up of) the draft *Convention on Offshore Units, Artificial Islands and Related Structures Used in the Exploration for and Exploitation of Petroleum and Seabed Mineral Resources* (hereinafter the "Vancouver Draft")[5] published by the Comité Maritime Internationale (CMI) in 2004.

A. Mobile Offshore Renewable Energy: Developing Technologies and Untapped Opportunities

Most MORUs are designed to generate electrical power from an offshore renewable resource (each such MORU, a "Floating Generation

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2. *See id.*, at 324-59; Alexander Severance & Martin Sandgren, *Flagging the Floating Turbine Unit: Navigating Towards a Registerable, First Ranking Security Interest in Floating Wind* Turbines, 39 TUL. MAR. L.J. 1, 15-28 (2014).

3. *See Mare Incognitum, Part I*, *supra* note 1, at 324-59.

4. Alexander Severance, *Annex to Mare Incognitum, Part II: A Draft Mobile Offshore Renewables Unit Convention*, 46 TUL. MAR. L.J. 245 (2022) [hereinafter Annex to *Mare Incognitum, Part II*].

5. *Convention on Offshore Units, Artificial Islands and Related Structures Used in the Exploration for and Exploitation of Petroleum and Seabed Mineral Resources*, CMI NEWS LETTER, Jan./Apr. 2004, at 3 [hereinafter, "Vancouver Draft"].

Unit"). "Floating Ocean Thermal Energy Converters" (FOTECs) utilize differences in ocean water temperatures at different depths to generate electrical power.[6] "Floating Solar Energy Converters" (FSECs) use solar energy.[7] "Floating Tidal Energy Converters" (FTECs) use the kinetic energy of the tides.[8] "Floating Wave Energy Converters" (FWECs) use the kinetic energy of waves.[9] "Floating Wind Turbines" (FWTs) use the kinetic energy of offshore winds.[10] Other MORUs are designed to provide auxiliary services to Floating Generation Units. Floating Energy Storage Systems are designed to provide offshore energy storage through a variety of technologies.[11] Floating Grid Integration Systems, like floating substations, help integrate Floating Generation Units into an existing power grid.[12] Floating Measurement Units provide MORU Arrays with resource measurements and metocean data.[13] Floating Offshore Maintenance & Accommodation Facilities (FOMA Facilities) provide MORU Arrays with onsite maintenance and accommodation capabilities.[14] Floating Auxiliary Units typically would be part of a MORU Array. Floating Hybrid Units, incorporating multiple technologies in a single MORU, also are being developed.[15]

Because they float, MORUs have a territorial advantage over comparable fixed-bottom offshore renewables technologies. MORUs can be deployed in offshore waters not currently economically viable for fixed-bottom equivalents, whether shallower waters with subsea geology inappropriate for fixed-bottom foundations or deeper waters where fixed-bottom foundations are uneconomic.[16] The ability to deploy MORUs in waters inappropriate or uneconomic for fixed-bottom foundations can

6. *See Mare Incognitum, Part I*, *supra* note 1, at 304-05.
7. *See id.*, at 305-06.
8. *See id.*, at 307-08.
9. *See id.*, at 308-09.
10. *See id.*, at 309-16.
11. *See id.*, at 316-17.
12. *See Mare Incognitum, Part I*, *supra* note 1, at 317-18; *see also* Noe Rouxel, *Floating Substations: The Next Challenge on the Path to Commercial Scale Floating Windfarms*, DNV, https://www.dnv.com/article/floating-substations-the-next-challenge-on-the-path-to-commercial-scale-floating-windfarms-199213 (last visited Oct. 19, 2021).
13. *See Mare Incognitum, Part I*, *supra* note 1, at 319.
14. *See id.*, at 319-20.
15. *See id.*, at 320.
16. *See* WINDEUROPE, FLOATING OFFSHORE WIND ENERGY: A POLICY BLUEPRINT FOR EUROPE (Oct. 2018), § 1.2, *available at* https://windeurope.org/wp-content/uploads/files/policy/position-papers/Floating-offshore-wind-energy-a-policy-blueprint-for-Europe.pdf; *Mare Incognitum, Part I*, *supra* note 1, at 310-312.

significantly expand the portion of a Producing Coastal State's EEZ which can be used for renewable energy production.[17]

MORUs may have other technological advantages over comparable fixed-bottom or onshore renewable installations. In some cases, Floating Generation Units may offer greater power production than fixed-bottom or onshore equivalents. Floating Wind Turbines may have access to better offshore wind resources. This results in higher average capacity factors, and therefore greater annual production, as compared to equivalent fixed-bottom offshore or onshore wind turbines.[18] Floating Solar Energy Converters can use surrounding water to cool their photovoltaic modules, resulting in higher module efficiency and increased production compared to onshore photovoltaics.[19] Better power production profiles may also be possible. The predictable tide-driven production of FTECs can be matched with energy storage to create a virtual baseload power plant.[20] Similarly, FOTECs' facilities can offer baseload production profiles.[21]

Increased or more predictable production at times of peak demand[22] can result in higher revenues. Consequently, MORUs' anticipated gross revenue might materially differ from equivalent onshore and fixed-bottom renewables facilities.[23] Conversely, MORUs' anticipated costs might also materially differ. As with most developing technologies, the capital and operational expenditures ("capex" and "opex", respectively) of research and pre-commercial MORUs are currently higher on a per-megawatt installed basis than competing fixed-bottom and onshore technologies.[24] However, the capex and opex costs for serially-produced MORUs could soon be less than those for equivalent fixed-bottom facilities, particularly at deep water sites.[25]

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17. *See Mare Incognitum, Part I*, *supra* note 1, at 310-311.
18. *See id.*, at 311.
19. *See id.*, at 305.
20. *See id.*, at 290 n. 6.
21. *See* IRENA, OCEAN THERMAL ENERGY CONVERSION TECHNOLOGY BRIEF 19 (2014).
22. *See Mare Incognitum, Part I, supra* note 1, at 290, 305, 311, 316-17.
23. *See id.*, at 290.
24. *See id.*
25. *See* Wiser, R., Rand, J., Seel, J. *et al.*, *Expert Elicitation Survey Predicts 37% to 49% Declines in Wind Energy Costs by 2050*, NATURAL ENERGY 4, 7, 9 (2021) (from a survey of 37 experts, the median LCOE for floating wind is predicted to be 17% lower in 2035 and 40% lower in 2050 than a 2019 *fixed-bottom* baseline). Fixed-bottom LCOEs are also predicted to drop significantly (i.e. to be 35% lower in 2035 and 49% lower in 2050 than the 2019 *fixed-bottom* baseline). *Id.* at 9. As the gap between fixed-bottom and floating wind is expected to narrow, the depth at which floating becomes less costly than fixed-bottom is predicted to decline with 11%-

As moveable maritime property, MORUs also have potential legal and commercial advantages over equivalent onshore and fixed-bottom offshore renewables facilities. MORU mobility might allow fundamentally different legal and business models for MORUs than those used for equivalent onshore and fixed-bottom offshore facilities.[26] Given the ease with which MORUs may be redeployed to other sites and across maritime borders, different finance and ownership structures facilitating investment in MORUs (including mobile asset finance structures and MORU lease or charter arrangements) could become more feasible under a uniform international legal framework.[27]

B. Is the Current International Legal Framework for MORUs Seaworthy?

As previously mentioned, MORUs face two fundamental problems in relation to the existing framework of international maritime conventions governing other activities at sea. In the first instance, many existing maritime conventions only apply to "ships" or "vessels" (or similar terms), potentially leaving MORUs outside an otherwise relevant convention's coverage.[28] In this sense, MORUs' legal position can be contrasted to that of traditional merchant ships, but compared to that of the mobile offshore drilling units and floating production platforms of the oil and gas industry (each such oil and gas mobile offshore unit or floating platform, an "O&G

25% of all offshore wind projects to be floating by 2035. *Id.* at 9; *see also Mare Incognitum, Part I*, *supra* note 1, at 290-91 and n. 7. Floating wind projects might also benefit from anticipated drops in fixed-bottom wind costs, to the extent that floating wind utilizes some of the same cost-effective technologies, processes, or services being enjoyed by the fixed-bottom sector (e.g. lower equipment or material prices, more efficient or reliable generation technology, drone-based inspection regimes, etc.); *see also* DNV GL, FLOATING WIND: THE POWER TO COMMERCIALIZE 4-5 (2020), https://www.dnvgl.com/focus-areas/floating-offshore-wind/commercialize-floating-wind-report.html (predicting that floating wind costs will go down almost 70% to a global average of 40 EUR per MWh in 2050, and account for more than 20% of the offshore wind market).

26. *See Mare Incognitum, Part I*, *supra* note 1, at 292, 321-23, 363; *see also* ODFJELL OCEANWIND, http://www.oceanwind.no/about/ (last visited May 22, 2021) (describing a fleet of "Mobile Offshore Wind Units" provided on a rental basis to clients for micro-grid applications).

27. *Compare Mare Icognitum, Part I*, *supra* note 1, 292, 321-23, 363 (describing different financial business models that might be possible with mobile units in contrast to fixed facilities), and at 364-68 (describing the CTC's impact on cross-border aircraft finance), *with* Juan Pablo Rodriguez Delgado, *Security Interests Over Ships: From the Current Conventions to a Possible Shipping Protocol to the UNIDROIT Convention-Lege Data and Lege Ferenda*, 49 (2) J. MAR. L. & COM. 239, 260 (2018) [hereinafter Delgado, *Security Interests over Ships*] (mentioning explicit trading limitations in charter parties, prohibiting ships from entering ports where the law of the flag would not be respected and which presumably could also be applied to foreign-flagged MORUs).

28. *See Mare Incognitum, Part I*, *supra* note 1, at 332-356; Severance & Sandgren, *supra* note 2, at 15-28.

MOU")—in some ways a "vessel" like any other vessel, in other ways *sui generis*. In the second instance, the number of contracting states to potentially relevant maritime conventions vary widely.[29] This results in a different challenge to legal uniformity: a territorially-defined international legal patchwork in which different maritime conventions might or might not apply in the waters of relevant coastal states. This leaves MORU stakeholders to evaluate which potentially relevant maritime conventions have been ratified by relevant coastal contracting states each time a MORU transverses a maritime border.[30]

It seems very likely that some of these legal issues, if left unresolved, will act as *ex ante* impediments to the MORU sector's full development.[31] For those legal issues which cannot be adequately solved by enactment of domestic legislation, MORU stakeholders are left dreaming of a future solution to provide the international legal certainty they desire, if not require.[32]

C. Enacting an International Maritime Convention (Ultimately) Requires a Sponsoring Institution

Self-evidently, even the most powerful private stakeholder has almost no ability to bring either amendments to existing conventions or a new, multitopic MORU-specific maritime convention into force on its own.[33] Ultimately, private stakeholders will require the active sponsorship of a political power greater than themselves—either a multilateral organization or one or more national governments—to enact such change (each such institution, a "Sponsoring Institution").

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29. *See Mare Incognitum, Part I*, *supra* note 1, at 332-56.

30. *But see* Delgado, *Security Interests Over Ships*, *supra* note 27, at 260 (mentioning explicit trading limitations on charter parties prohibiting a ship from entering ports where the law of the flag would not be respected, which presumably could also be applied to foreign flagged MORUs).

31. *See Mare Incognitum, Part I*, *supra* note 1, at 299-301, 364-68.

32. *See* Francis Nolan, *The Last Half Century of Financing Vessels,* 91(5) TUL. L. REV. 927, 971 (2017); HUGO GROTIUS, MARE LIBERUM chap. VII, p. 56 ("For so far as the merely municipal laws of any place are concerned, they do not affect foreign peoples, nations, or even individuals, any more than if they did not exist or never had existed. Therefore, it was necessary to have recourse to the common law of nations, primary as well as secondary and to use a law which clearly had not admitted any such prescription and usurpation of the sea.").

33. *See* Nicholas J. Healy, *International Uniformity in Maritime Law: The Goal and the Obstacles*, 9 CAL. W. INT'L L.J. 494, 496 (1979) (acknowledging that this was beyond the power of even the CMI); Griggs, *Uniformity of Maritime Law*, *infra* note 35, at 1555 (noting that the CMI's founders recognized the need for an intergovernmental meeting and a Sponsoring Institution (i.e. the Belgian Government) to enact its maritime conventions).

A number of multilateral organizations have facilitated the enactment of international conventions. The Intergovernmental Maritime Consultative Organization, and its successor, the International Maritime Organization (IMO), have been responsible for the enactment of a large number of international maritime conventions.[34] The United Nations Commission on Trade and Development (UNCTAD) has been responsible for several maritime conventions;[35] including the International Convention on Arrests of Ships, 1999 ("Arrest Convention 1999"),[36] the United Nations Convention on Conditions for Registration of Ships ("Ship Registration Convention"),[37] and the Convention on Maritime Liens and Mortgages ("MLM 1993").[38] UNCTAD and the United Nations Commission on International Trade Law (UNCITRAL) worked together to facilitate the enactment of the United Nations Convention on the Carriage of Goods by Sea 1978 ("Hamburg Rules").[39] UNCITRAL also worked on the Multimodal Convention 1980 and the Terminal Operators Convention 1991.[40] Finally, the International Institute for the Unification of Private Law ("UNIDROIT") facilitated the enactment of the Convention on International Interests in Mobile Equipment ("Cape Town Convention" or CTC).[41]

While acknowledging multilateral organizations' recent dominance in this context, the leading role taken by national governments to enact international maritime conventions and amendments thereof should also be considered. From 1905 until 1968, the Belgian government was the leading government in this context. It established the Diplomatic

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34. *See* William Tetley, *Uniformity of International Private Maritime Law—The Pros, Cons, and Alternatives to International Conventions—How to Adopt an International Convention*, 24(2) TUL. MAR. L.J. 775, 827-28 (2000). For a comprehensive list of IMO treaties, *see List of IMO Conventions*, IMO, https://www.imo.org/en/About/Conventions/Pages/ListOfConventions.aspx (last visited Apr. 26, 2021).

35. *See* Patrick Griggs, *Uniformity of Maritime Law—An International Perspective*, 73 TUL. L. REV. 1551, 1558-59 (1999) [hereinafter Griggs, *Uniformity of Maritime Law*]; Tetley, *supra* note 34, at 826-27.

36. International Convention on Arrest of Ships, U.N. Doc. A/CONF.188/L.2 (Mar. 12, 1999) [hereinafter Arrest Convention 1999].

37. United Nations Convention on Conditions for Registration of Ships, *opened for signature* Feb. 7, 1986, 26 I.L.M. 1229, https://unctad.org/en/PublicationsLibrary/tdrsconf23_en.pdf [hereinafter Ship Registration Convention].

38. International Convention on Maritime Liens and Mortgages, May 6, 1993, 2276 U.N.T.S. 39 [hereinafter MLM 1993].

39. Griggs, *Uniformity of Maritime Law*, *supra* note 35, at 1560.

40. Tetley, *supra* note 34, at 826.

41. Convention on International Interests in Mobile Equipment, *opened for signature* Nov. 16, 2001, 2307 U.N.T.S. 285 (entered into force Apr. 1, 2004) [hereinafter Cape Town Convention or CTC].

Conference on Maritime Law, and called a number of sessions thereof, to enact the various "Brussels Conventions." These were frequently prepared by the CMI with the assistance of its constituent national maritime law associations (NMLAs).[42]

Although multilateral organizations have been the primary Sponsoring Institution of maritime conventions for decades, national governments have begun to resume a more direct and earlier role in convention drafting and enactment. On occasion, one or more national governments directly confronted with a legal problem requiring an international solution have allocated their time and resources to analyze the problem, and develop and sponsor a draft convention or amendment to solve that problem.[43] Two contemporary examples of national government-led multilateral convention or amendment projects are the Nairobi International Convention on the Removal of Wrecks, 2007[44] ("Wreck Removal Convention") originally sponsored by the governments of the Netherlands, the United Kingdom, and Germany,[45] and the efforts to extend the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal to plastic waste, led by Norway.[46]

Whether the convention or amendment is sponsored by multilateral organizations or national governments, either approach ultimately depends on a Sponsoring Institution making an affirmative decision to initiate a project to facilitate enactment of the convention or amendment. Goode, when discussing the UNIDROIT Governing Council's broader efforts to bring uniformity to law, advised that it would "not approve a project unless at least three questions receive a satisfactory answer: Is there a problem? Is there a feasible solution? and Is the project likely to receive a substantial measure of support not only from governments but from

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42. *See* Healy, *supra* note 33, at 496 (pointing out that this was beyond the power of even the CMI); Griggs, *Uniformity of Maritime Law*, *supra* note 35, at 1555-57. The CMI's frequent advisory role to the IMO in recent years should also be noted.

43. *See* Patrick Griggs, *Obstacles to Uniformity of Maritime Law—The Nicolas J. Healy Lecture*, 34 (2) J. MAR. L. & COM. 191, 200, 203 (2003) (*see also* n. 37 thereto) [hereinafter Griggs, *Obstacles to Uniformity*].

44. Int'l Mar. Org. [IMO] *Nairobi International Convention on the Removal of Wrecks*, (May 23, 2007), http://folk.uio.no/erikro/WWW/Wreck%20Removal%20Convention.pdf [hereinafter Wreck Removal Convention].

45. *See* Griggs, *Obstacles to Uniformity*, *supra* note 43, at 200 n. 37 (each of which had "experienced problems with wrecks situated a short distance outside territorial waters and with wrecks belonging to bankrupt owners . . .").

46. Paul Davies & Michael Green, *Basel Convention Extends to Include Transboundary Movements of Plastic Waste*, LATHAM & WATKINS ENVIRONMENT, LAND & RESOURCES (May 23, 2019), https://www.globalelr.com/2019/05/basel-convention-extends-to-include-transboundary-movements-of-plastic-waste/.

industry and other interested sectors?"[47] Although not specific to maritime issues, Goode's tripartite formulation of a Sponsoring Institution's international convention project triage provides a very concise methodology for determining whether, in fact, its time and scarce legal resources should be allocated to the enactment of a new international maritime convention for MORUs. Goode's tripartite test has been adapted to form the analytical framework for a trilogy of interrelated articles on that topic by this author. On the basis of the arguments presented in *Mare Incognitum, Part I*, it has been assumed for purposes of this Article that the first question in Goode's tripartite test may be answered in the affirmative: there are numerous legal problems that MORU stakeholders would need to be solved *ex ante* at an international level in order to facilitate the efficient development of a nascent MORU sector.

The answer to Goode's second question ("Is there a feasible solution?"), which forms the core of this Article, depends to a large degree on how one defines "feasible." *Black's Law Dictionary* defines "feasible" as something which is "[c]apable of being done, executed, affected or accomplished."[48] To the extent that an issue is not already covered under an existing, broadly-accepted topical maritime convention that already unambiguously includes MORUs within its scope, each of the issues identified in *Mare Incognitum, Part I* might be addressed (whether together or separately) in one of several approaches: (i) with non-binding "soft law"; (ii) under the domestic law of the relevant states; (iii) by amending those relevant existing, broadly-accepted maritime conventions that do not yet clearly include MORUs to unambiguously include MORUs within their scope, whether by a *stricto sensu* amendment ultimately affecting the contracting parties to the amendment and all the convention's subsequent contracting states, or (where permitted) by an *inter se* amendment affecting only the parties who accede to the *inter se* amendment;[49] or (iv) by a new maritime convention creating a *sui generis*

47. Roy Goode, *From Acorn to Oak Tree: The Development of the Cape Town Convention and Protocols*, 17(4) UNIFORM L. R. 599, 599-600 (2012), https://doi.org/10.1093/ulr/17.4.599.

48. Feasible, BLACK'S LAW DICTIONARY (6th ed. 1990). Black's also provides an alternate definition of "feasible" as something with a "[r]easonable assurance of success." In the context of this Article, the author has chosen to interpret this alternative definition of "feasible" as most in line with the third question in Goode's tri-partite formulation (i.e. "is the project likely to receive a substantial measure of support not only from governments but from industry and other interested sectors?"), which will be addressed separately in *Mare Incognitum, Part III*.

49. *Compare* United Nations Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 107 [Vienna Convention]; *and* United Nations Convention on the Law of the Sea, art. 311(3), Dec. 10, 1982, 1833 U.N.T.S. 397, 400-03 [hereinafter UNCLOS], *with* Protocol to

international legal regime specifically for MORUs. Each approach has advantages and disadvantages.

For a Sponsoring Institution to believe that it can facilitate the enactment of binding amendments to existing maritime conventions or a new *sui generis* convention, it presumably must see a route for the chosen instrument to be accepted by the relevant contracting states. This would include the development of a draft instrument that not only provides practical solutions to one or more legal issues confronting MORU stakeholders, but also overcomes or circumvents both the technical obstacles typically faced by a working group preparing a draft prior to its submission to a multinational conference for adoption, and the political obstacles to its adoption at that conference and its signature and ratification by contracting states thereafter. Insofar as Goode's tripartite formulation already contains a final question specifically addressing the political feasibility (i.e. "is the project likely to receive a substantial measure of support not only from governments, but from industry and other interested sectors?"), the author has assumed that the scope of Goode's second question (and this Article) should be limited to technical obstacles facing a Sponsoring Institution when developing a conference-ready draft convention or amendment. It is in this context, and for purposes of this Article only, that the author has chosen to interpret Goode's "feasible solution" as conference-ready draft instruments that provide practical and familiar solutions to the legal issue or issues it addresses, without running afoul of likely technical obstacles for such projects.

The projected third Article in the trilogy, *Mare Incognitum, Part III: Could/Should/Would a Mobile Offshore Renewables Unit Convention Find Sufficient Support?*, will address the political feasibility of such a project. Any draft amendment or convention taken to conference will inevitably be debated by parties at the conference, and likely rewritten to some degree, before it is actually adopted (or even considered adoptable). It also faces the possibility of rejection. Any institution sponsoring a draft

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amend the International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading, signed at Brussels on 25 August 1924, concluded at Brussels on 23 February 1968—Protocol amending the Convention, as amended by the above-mentioned Protocol of 23 February 1968, art. 13(1), Dec. 21, 1979, 1412 U.N.T.S. 23643, https://treaties.un.org/doc/publication/unts/volume%201412/volume-1412-i-23643-english.pdf [Visby Rules Protocol] (allowing a de facto *inter se* protocol (see art.6) to amend that Convention to come into effect after only 10 ratifications/accessions); Protocol to Amend the Convention for the Unification of Certain Rules of Law relating to Assistance and Salvage at Sea of 23 September 1910, art. 4(1), May 27, 1967 [hereinafter Assistance and Salvage Protocol 1967] (allowing a de facto *inter se* protocol (*see* art. 4(2)—binding only states subsequently acceding to the protocol, not the Convention) to come into effect after only 5 ratifications/accessions).

convention or hosting a conference for its adoption will want to do everything in its power to ensure an affirmative answer to Goode's final question: "Is the project likely to receive a substantial measure of support not only from governments, but from industry and other interested sectors?"

As both Goode's second and third questions suggest, the tradition-bound departments within Sponsoring Institutions that have previously facilitated efforts to conceive, develop, and enact new international agreements may be subject to certain limitations. Regardless of the need for a solution, the limited resources and institutional risk aversion within a department can result in a tendency to select projects with a perceived higher likelihood of ultimate success, but potentially fewer and more familiar, or more modest, objectives that directly benefit the department's traditional clientele. The longer or more unfamiliar the list of a project's objectives or topics to be covered, the more resources and time a department might assume would be required. The more radical its objectives, the higher a Sponsoring Institution will perceive the project's risk of rejection by potential contracting states and other critical stakeholders, and, consequently, its failure. Finally, because such departments can be parochial organizations structured around a particular governmental function or industry sector with an established clientele, projects clearly benefitting its traditional clientele may be favored over projects that benefit a new and largely unrepresented sector or cross-sector projects, which benefit small elements of multiple existing sectors served by potentially competing departments or institutions.[50] Not surprisingly, over time the projects selected by a Sponsoring Institution can begin to resemble each other, to the point that its test of project feasibility devolves into a completely subjective, Wittgenstein-like family resemblance test.[51]

However, it is extremely unlikely that any draft amendment to an international convention or new convention will ever be adopted by a significant number of contracting states without the eventual sponsorship and support of a Sponsoring Institution. MORU stakeholders are left with a conundrum: how do they convince potentially hesitant but ultimately necessary Sponsoring Institutions with well-established clienteles to commit the required resources to undertake a project that might be perceived as high risk by that institution?

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50. *See* Kozuka, *infra* note 131, at 130-131 (describing the need for cooperation of the Japanese Ministry of Foreign Affairs and the Legislative Council, a consultative organ of the Ministry of Justice, when considering ratification of international conventions).

51. *See* LUDWIG WITTGENSTEIN, PHILOSOPHICAL INVESTIGATIONS 32(e)-36(e) (1953).

Self-evidently, MORU stakeholders could use their own resources to develop a balanced preliminary draft, before asking a Sponsoring Institution to incorporate the project in its work program and facilitate its final adoption or enactment. An open collaboration of interested stakeholders from the private sector and academia might take ownership of the project during earlier and riskier phases. This could include conception, preliminary drafting, debate, redrafting, and further scrutiny by relevant maritime, renewables, and finance-sector stakeholders to identify potential non-government stakeholder deal-breakers. It would allow non-government stakeholders with potentially conflicting interests to debate possible sector-level compromises between themselves and develop a preliminary draft, which balances the needs of an emerging sector and the legal practices and traditions of existing sectors. This early collaboration might continue until a working consensus between non-governmental stakeholders begins to form and the draft itself has reached a more mature stage of development.

The hope would be that a Sponsoring Institution would take interest in the project at some point, perceive the collaborative draft as a largely feasible solution to the problems addressed, and incorporate the collaboration's existing work into its own program. At this point, the Sponsoring Institution would take ownership of the project through its final phases: final drafting; facilitation of an international conference for debate, negotiation, and adoption of the convention; and enactment. In essence, it is a partial return to the earlier CMI/Belgian government model where interested private stakeholders, such as the CMI, initiated the drafting process by soliciting stakeholder input from its NMLAs and developed an initial draft convention for debate, before having it finally adopted at an intergovernmental meeting facilitated by a Sponsoring Institution, such as the Belgian government.[52] At the same time, it is a more decentralized approach, relying on academia and private stakeholders from a new industry and multiple existing sectors to drive the initial discussion and drafting publicly. Potential Sponsoring Institutions contemplating (with dread) the effort required, costs, and the risk of failure attached to the earliest phases of such a project could delay allocation of scarce internal resources until the point when a rigorous draft already

52. *See* Griggs, *Uniformity of Maritime Law*, *supra* note 35, at 1555-57 ("The Belgian Government responded to an approach from the CMI and agreed to be responsible for convening intergovernmental diplomatic conferences to review draft conventions or other instruments produced by the CMI.").

reflecting relevant stakeholder input, general consensus, and sector support has been produced.

D. This Article and the Annex Hereto

This Article approaches Goode's second question ("Is there a feasible solution?") in this context. The author's ambition in this Article is limited: to begin to identify topics to be included, address some of the more common obstacles that would face such a project, examine relevant past efforts to address similar legal challenges in comparable industries, and ultimately, introduce the Annex as a straw-man for criticism, debate, and open collaboration as a method of developing a feasible solution to identified issues and thereby reducing the perceived risk of such a project for Sponsoring Institutions.

Intuitively, a potential Sponsoring Institution would perceive a draft convention as a more feasible solution and a less risky proposition if it adheres to (or at least reflects) relevant commonly accepted principles of international law, is capable of overcoming technical problems common to any draft international convention, and is not excessively broad in scope. Part II of this Article sets out some of the potentially relevant general principles of international law by which Sponsoring Institutions might judge the feasibility of a draft MORU Convention project, technical challenges and obstacles that they would want a draft convention to overcome or circumvent, and finally includes a preliminary assessment of topics that the author believes most potential Sponsoring Institutions would want to include in a hypothetical MORU Convention.

Part III discusses three potential starting points for a straw-man draft of multitopic MORU Convention: (i) the blank page; (ii) the CTC and its Protocols; and (iii) the Vancouver Draft. Each comes with its own advantages, and its own challenges. Based on the topics for inclusion in a hypothetical MORU Convention identified in Part II, Part III also briefly discusses what would need to be added to, deleted from, or modified in, both: (i) a Maritime Protocol to the CTC; and (ii) the Vancouver Draft, when drafting such a hypothetical MORU Convention. Part IV concludes that salvaging the Vancouver Draft (which was originally intended to cover O&G MOUs) and converting it into a Mobile Offshore *Renewables*

Unit Convention could offer one potentially feasible solution to address the problems identified in *Mare Incognitum, Part I*.[53]

Finally, this Article is intended to be read in conjunction with the Annex hereto. As William Tetley astutely observed (albeit in the context of domestic maritime legislation):

> It is proper and very helpful to append to the position/white paper a draft of the legislation contemplated. This permits legislators, the media, and the public at large to become familiar with . . . the draft law and to discuss the adequacy of the measure envisaged from the legal standpoint, even before the formal process of legislative review begins . . . .[54]

The Annex is offered in that same spirit, if not the same legislative context. It is not intended to present a conference-ready feasible solution, or even a draft ready for incorporation into the work program of a relevant department of a Sponsoring Institution. Rather, it is only a straw-man, meant to elicit discussion, criticism, elaboration, and alternatives.[55] Self-evidently, the Annex does not exclude the feasibility of other possible solutions.

II. REDUCING THE PERCEIVED RISK OF A DRAFT CONVENTION PROJECT

As noted above, the author has assumed that potential Sponsoring Institutions would be more inclined to incorporate a draft produced by others into its own work program if it already reflects certain commonly accepted and relevant principles of international law. Similarly, a clear

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53. The adaptation of established maritime law principles to craft for which they were not originally conceived is not entirely unprecedented. One might consider the adoption in 1979 and 1989 of the MODU Code on the application of the Load Line and SOLAS Conventions to mobile offshore drilling units (MODUs), and SUA Protocol 1988, as an example of just such an adaptation (and a refutation of the idea that the IMO must limit itself to traditional shipping). *See* Richard Shaw, *Regulation of Offshore Activity: Pollution Liability and Other Aspects*, Y.B. 2011-2012 ANNUAIRE (Comité Mar. Int'l) 304, 307 (Sept. 2012), https://comitemaritime.org/wp-content/uploads/2018/06/Yearbook_2011_12.pdf [hereinafter Shaw, *Regulation of Offshore Activity*].

54. *Compare* Tetley, *supra* note 34, at 812, *with* INT'L SUB-COMM. ON DRILLING PLATFORMS, DRILLING PLATFORMS: REPORT TO THE XXXIST CMI CONFERENCE IN RIO DE JANEIRO, 1 DOCUMENTATION 1977 28, 29-30 (Comité Mar. Int'l 1977), *available at* https://comitemaritime.org/wp-content/uploads/2018/06/1977-DOCUMENTATION-I-RIO-DE-JANEIRO.pdf [hereinafter INT'L SUB-COMM. ON DRILLING PLATFORMS, DRILLING PLATFORMS REPORT] (stating in relation to conference deliberation of the Rio and Norway Drafts at CMI's 1977 Rio de Janeiro Conference, "[t]he Sub-Committee does not want to make a firm recommendation to the Conference on whether or not to adopt a draft convention in Rio de Janeiro . . . . It is felt, however, that the deliberations at the Conference will be more fruitful and productive if tied to a draft convention such as the two alternative ones submitted herewith.").

55. *See* Tetley, *supra* note 34, at 812-14.

route for the draft to overcome or circumvent most of the anticipated technical obstacles facing Sponsoring Institutions carrying out comparable projects to enact international agreements also would be welcome. Finally, a finite list of issues to be addressed would likely find a more positive response in potential Sponsoring Institutions with limited resources.

A. Commonly Accepted Principles of International Law: A Starting Point for a Solution

Self-evidently, it would be easier for potential contracting states to accede to a convention that reflects principles with which they already agree, or at least with which they don't vehemently disagree. If one accepts that a key metric of any draft maritime convention's success is its acceptance by the greatest number of relevant contracting states, then it seems logical that a Sponsoring Institution would prefer to sponsor a draft convention that already largely reflects a codification of, adheres to, or at least finds an acceptable balance between, commonly accepted principles of international law (regardless of whether those principles are considered *jus cogens*, customary international law, or general principles of international law), which are recognized by the majority of potential contracting states but not yet memorialized in a binding treaty, and conversely avoids controversial legal principles espoused by only a minority of nations. Once a commonly accepted principle is reflected in a binding maritime convention, the parties thereto no longer need to determine or discuss between themselves whether that principle should be considered *jus cogens*, customary international law, or a general principle of international law, let alone recognized. If the goal is codification of the principle, the only questions that need to be answered are whether the principle is commonly accepted, whether it is relevant to MORUs, and whether it should be included in a binding multilateral agreement. Without excluding any other legal principles, in the author's opinion the principles outlined below should be included in any discussion of MORUs and reflected in any MORU-related draft convention or amendment.

1. The Principles of Uniformity, Subsidiarity, and National Sovereignty

For stakeholders whose activities are potentially subject to the domestic laws of more than one jurisdiction, there may be a desire for a single binding, uniform, and international set of codified substantive and

procedural rules for the issues they face. Barring that, clarity with regard to questions of conflicts of laws would be useful. In the maritime world, efforts to impose a uniform international set of rules (be it substantive or procedural) governing various maritime activities, issues, and disputes through the introduction of binding treaties and conventions between states have continued for millennia.[56]

In theory, one could imagine an internationally binding comprehensive and universal code addressing all substantive and procedural legal issues that might arise in relation to MORUs and eliminates any risk of different treatment in different jurisdictions.[57] However, convincing many potential contracting states to voluntarily cede national sovereignty[58] to an international forum on any topic historically has been challenging. Similarly, the modern concept of subsidiarity is a broadly-accepted principle engrained in the law of many jurisdictions.[59]

Uniformity and subsidiarity can be seen as complementary, and not mutually exclusive, principles. Ideally (and at the risk of stating the obvious), any international convention covering MORUs would address at an international level those issues where: (i) uniformity (be it substantive or procedural) is necessary or broadly desired; (ii) the explicit acknowledgement, recognition, or consent of contracting states to such uniformity is required; or (iii) international competence in relation to that issue is already preeminent. Conversely, any such maritime regulatory regime should leave jurisdiction to contracting states where: (i) neither substantive nor procedural uniformity is not needed or desired; (ii) conflicts of laws or jurisdictional disputes are unlikely to arise; and (iii) domestic competence in relation to that particular issue already exists in most states. If one assumes that contracting states are likely to place

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56. *See* Stuart Hetherington, *The CMI and the Panacea of Uniformity—An Elusive Dream*, 39(1) TUL. MAR. L.J. 159, 161, 163, 165 (2014). *See also* Shaw, *Offshore Craft and Structures*, *infra* note 144, at 147.

57. *But see* INT'L SUB-COMM. ON DRILLING PLATFORMS, DRILLING PLATFORMS REPORT, *supra* note 54, at 30 (In relation to early discussions of an O&G MOU Convention, "[t]he ideal solution from a theoretical point of view would be to set out in a convention the complete set of rules in the fields to be covered and to be made applicable to [offshore] craft. But that would not only be a difficult task but also a very time-consuming matter, and all [NMLAs] have replied in the negative to the question of whether that method should be adopted"). *Compare* Vancouver Draft, *supra* note 5, which provides substantive provisions on a variety, but not all, topics which an O&G MOU might encounter.

58. *See* Shaw, *Offshore Craft and Structures*, *infra* note 144, at 147; *see generally* Richard Barnes, *Energy Sovereignty in Marine Spaces*, 29 INT'L J. MARINE & COASTAL L. 573 (2014).

59. U.S. CONST. amend. IX; Treaty of Lisbon Amending the Treaty on European Union and the Treaty Establishing the European Community art. 1(6), Dec. 13, 2007, 2007 O.J. (C 306) 1 (replacing TEU art. 5 subsidiarity with a new art. 3(b) subsidiarity).

high value on the principles of subsidiarity and/or national sovereignty, the burden of proof will lie with those seeking a binding international convention to show that the net benefit of a uniform international solution to a legal issue would outweigh those of a domestic solution for the same issue. Even if a domestic solution is chosen, the international maritime regulatory regime should provide certainty by explicitly acknowledging the relevant state's exclusive jurisdiction to regulate and/or adjudicate disputes in relation to that issue, unless conflict-of-law issues are unlikely to arise.

2. The Principle of *Mare Liberum*

Hugo Grotius's *Mare Liberum* helped established the legal principle of the freedom of the seas—that the seas are international territory and all states are free to use it (at least for peaceful trade and navigation).[60] The modern international codification of that freedom is found in UNCLOS, which for its 168 contracting states,[61] largely frames freedom of the seas and rights of innocent passage and transit, and coastal state limitations on those rights, in the context of a "ship" without defining that term.[62] This begs the question of whether MORUs would be recognized as "ships," or "installations,"[63] or something else altogether, for purposes of innocent or transit passage under the law of the sea (whether UNCLOS or otherwise).

It is the author's belief that MORUs transiting a coastal state's waters should benefit from the same rights of innocent passage and freedom of the seas as traditional merchant vessels.[64] In its lifetime, a particular MORU might be: (i) built in a shipyard and registered under the laws of a

60. *See. e.g.* Alison Reppy, *The Grotian Doctrine of the Freedom of the Seas Reappraised*, 19(3) FORDHAM L. REV. 244-45, 262-64 (1950); Martine Julia van Ittersum, *Preparing Mare Liberum for the Press: Hugo Grotius' Rewriting of Chapter 12 of De iure praedae in November-December 1608*, 26(1) GROTIANA 246, 253-55 (2007); Garry Russ & Dirk Zeller, *From Mare Liberum to Mare Reservarum*, 27(1) MARINE POLICY 75, 76 (2003). *Mare Liberum*, published by Grotius anonymously in 1609, was derived from Chapter 12 of his earlier work, *De iure praedae*, albeit with certain more inflammatory sections removed.

61. Chapter XXI (Law of the Sea), UNCLOS, *supra* note 49, art. 21, (as of 2021, 168 contracting states).

62. UNCLOS, *supra* note 49, art.17-19, 21-28, 38-45, 52-54, and 211. *See also Mare Incognitum, Part I*, *supra* note 1, at 327.

63. *See* UNCLOS, *supra* note 49, art. 60.

64. Conversely, large MORU Arrays also challenge the principle of mare liberum in its most absolute interpretation, at least insofar as they present a physical obstacle to the unimpeded use of a portion of the EEZ by other ocean users. To the extent that a MORU moored in operation of the territorial waters of a Coastal State is an "installation," the impact of that MORU on other watercrafts' rights of innocent passage should be considered Under UNCLOS art. 19(2)(k).

state (the original "Flag State");[65] (ii) upon completion, re-registered in a second Flag State; (iii) towed through a third state's territorial sea and EEZ;[66] (iv) moored and operated by its owner in a fourth state's EEZ;[67] (v) serviced by offshore workers from fifth and sixth states; (vi) towed to a seventh state's port for repairs before returning to the fourth state's EEZ to resume operation;[68] (vii) sold to a new owner,[69] who repowers the

65. *See* Norwegian Mar. Code of 24 June 1994, No. 39, LOV OM SJØFARTEN § 31, https://lovdata.no/dokument/NL/lov/1994-06-24-39/KAPITTEL_1-2#KAPITTEL_1-2 (allowing the registration of ships under construction in Norway and contracts for the construction of ships in Norway in a separate chapter of the Ship Register (the Shipbuilding Register), including hulls and major hull sections built outside Norway, in cases where delivery by the foreign shipyard has taken place). In so far as Norway has allowed the registration of a FWT in the Norwegian Ordinary Ship Register (*see Spennende registrering i NOR*, NORWEGIAN MAR. AUTH. (May 13, 2020), https://www.sdir.no/aktuelt/nyheter/spennende-registrering-i-nor/), it seems possible that it might also allow either FWT registration in the Norwegian International Ship Register or the registration of FWT hulls in its Shipbuilding Register at some point; *see also Convention Relating to Registration of Rights in Respect of Vessels Under Construction*, art. 1, May 27, 1967, *reprinted in* TRANSPORT LAWS OF THE WORLD, SEA I/E/14 (Malcolm Evans & Martin Stanford eds., 1983) (not in force), https://www.jus.uio.no/english/services/library/treaties/07/7-04/vessels-construction.xml.

66. *See Canada Tidal Makes Waves,* RENEWS (Feb. 28, 2019), https://renews.biz/51756/canada-tidal-makes-waves/ (FTEC towed from Scotland to Canada); Adam Vaughan, *World's First Floating Windfarm to Take Shape Off Coast of Scotland*, GUARDIAN (Jun. 27, 2017), https://www.theguardian.com/business/2017/jun/27/hywind-project-scotland-worlds-first-floating-windfarm-norway (five FWTs towed from Norway to Scotland); Darius Snieckus, *North Sea Change: Rotterdam Residents Ready for Floating Wind Service Off Scotland*, RECHARGE (Apr. 16, 2021), https://www.rechargenews.com/wind/north-sea-change-rotterdam-residents-ready-for-floating-wind-service-off-scotland/2-1-996796 (FWTs assembled in Rotterdam towed to Scotland). *Compare Penguin Primed for Tallinn Departure,* RENEWS (Apr. 24, 2019), https://renews.biz/52772/penguin-primed-for-tallinn-departure/ (describing an Estonian-built FWEC, being towed through multiple Baltic states' waters, and the North Sea, before deployment off Scotland).

67. Some Producing Coastal States presumably will allow or encourage the operation of foreign-flagged MORUs in their waters, particularly where the Producing Coastal State's primary focus is obtaining sustainable sources of energy and/or reducing reliance on imported energy and/or foreign Flag State registration of ownership and mortgages offers a viable and more bankable alternative to domestic solutions. *See ABS Classes Record-Capacity Floating Wind Farm Offshore Scotland*, OFFSHORE (Aug 24, 2021), https://www.offshore-mag.com/renewable-energy/article/14209239/abs-classes-recordcapacity-floating-wind-farm-offshore-scotland (Marshallese-flagged FWTs operating in UK waters). Self-evidently, other Producing Coastal States will not.

68. *See Magallanes Tidal Unit Reinstalled at EMEC*, RENEWS (Apr 23, 2021), https://renews.biz/68108/magallanes-tidal-unit-reinstalled-at-emec/ (FTEC repaired in harbor); Jan Dodd, *Devising O&M Strategies for Floating Offshore,* WIND POWER MONTHLY (May 31, 2019 https://www.windpowermonthly.com/article/1585415/devising-o-m-strategies-floating-offshore.

69. *See World's First Floating Wind Turbine Finds New Calling,* OFFSHOREWIND.BIZ (Jan. 8, 2019), https://www.offshorewind.biz/2019/01/08/worlds-first-floating-wind-turbine-finds-new-calling/.

MORU with updated generating equipment[70] prior to reflagging it in a eighth state; (viii) leased by that owner to an offshore developer/lessee, who deploys and operates the repowered MORU in a ninth state's waters for the remainder of its operational life; and (ix) decommissioned and broken up in a tenth state.[71] Over its lifetime, it might also pass through the waters of other coastal states.

Would MORUs in coastal transit benefit from traditionally recognized rights of innocent passage and transit or would they be treated differently than traditional vessels? Given the ambiguity of MORUs' status as "ships," "installations," or something *sui generis*,[72] the answer is not entirely clear. Before UNCLOS's effective date, a similar question arose in the International Court of Justice (ICJ) in relation to an assertion of an infringed right of innocent passage for Finnish-built mobile offshore drilling units (MODUs) intending to pass through Danish waters, but the legal question was not resolved as the parties reached a settlement prior to a decision by the ICJ.[73] The unambiguous recognition of rights of innocent passage and transit for MORUs seems a basic requirement for the MORU sector's full development. This is addressed in greater detail in Part II.C.1. (Freedom of the Seas and Innocent Passage) below and Article XVI of the Annex.

3. The Principle that Developed States are Obliged to Help Facilitate the Flow of Financial Resources and Technology to Developing States in Relation to Climate Change and Sustainable Development

Do developed states have a duty to assist developing states in relation to climate change? Aspects of that principle are implied by provisions of the *Paris Agreement* (the "Paris Agreement"),[74] adopted as an agreement

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70. *See Opera Poised for Re-tune,* RENEWS (June 14, 2018), https://renews.biz/46669/opera-poised-for-re-tune/; WINDEUROPE, *supra* note 16, at § 1.1 (after decommissioning, a FWT semi-submersible hull was prepared for reuse at another project); *BlueTEC Platform Set to Receive Tocardo's T2 Turbine*, MARINE ENERGY (Nov. 12, 2015), https://marineenergy.biz/2015/11/12/bluetec-platform-set-to-receive-tocardos-t2-turbine/ (describing repowering an FTEC).

71. *See* Severance & Sandgren, *supra* note 2, at 5 n. 6. The first FWT was decommissioned in 2016. *See* WINDEUROPE, *supra* note 16, at § 1.1. *See also Press Release, Eur. Mar. Ctr. Orbital Marine Takes Final Lessons from SR2000 Bringing Prototype Programme to a Close*, EMEC (Aug. 12, 2020), http://www.emec.org.uk/press-release-orbital-marine-power-takes-final-lessons-from-sr2000-bringing-prototype-programme-to-a-close/ (decommissioning of an FTEC).

72. *See Mare Incognitum, Part I*, *supra* note 1, at 292-93 n. 9.

73. Passage through the Great Belt (Fin. v. Den.), Provisional Measures, 1991 I.C.J. 12, (July 29), *See* YOSHIFUMI TANAKA, INTERNATIONAL LAW OF THE SEA 130-31 (3rd ed. 2019).

74. Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 12, 2015, T.I.A.S. No. 16,1104 [hereinafter Paris Agreement].

within the *United Nations Framework Convention on Climate Change* (UNFCCC)[75] by the Twenty-first Conference of Parties to the UNFCC, although the precise nature and extent of the duty itself might be debatable. The Paris Agreement recitals describe a situation in which the 193 parties thereto[76] acknowledge "that climate change is a common concern of humankind,"[77] the "Parties may be affected not only by climate change, but also by the impacts of the measures taken in response to it,"[78] and agree that there is a "need for an effective and progressive response to the urgent threat of climate change"[79], which is guided by principles of "equity and common but differentiated responsibilities and respective capabilities, in the light of different national circumstances."[80] In that context, each Paris Agreement party is obliged to pursue mitigation measures to achieve its nationally determined contribution (NDC) to the reduction of green-house gasses (GHGs),[81] but developed nations have additional responsibilities.[82]

Although other parties are encouraged to provide such support voluntarily,[83] developed country Parties to the Paris Agreement are obliged to provide financial resources to assist developing country Parties with both mitigation and adaptation in continuation of their existing obligations under the UNFCCC.[84] As part of a global effort, developed country Parties are encouraged to take the lead in mobilizing climate finance from a wide variety of sources, instruments, and channels through a variety of actions and taking into account the needs and priorities of developing countries.[85] That mobilization of climate finance should represent a progression beyond previous efforts.[86]

Providing a coherent, binding international legal regime for MORUs that reduces international legal uncertainty would also reduce the cost of debt for MORUS and consequently the levelized cost of energy (LCoE) of that MORU. By doing so, it would also help facilitate an increase in the

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75. United Nations Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 107.

76. *Paris Agreement - Status of Ratification*, UNITED NATIONS, https://unfccc.int/process/the-paris-agreement/status-of-ratification#:~:text=188%20Parties%20out%20of%20197,agreement%20on%203%20September%202019 (last visited Feb. 4, 2022).

77. Paris Agreement, *supra* note 74, 11th Recital.

78. *Id.*, 7th Recital.

79. *Id.*, 4th Recital.

80. *Id.*, 3rd Recital.

81. *Id.*, art. 4(2).

82. *See id.*, art. 2(2).

83. *Id.*, art. 9(2).

84. *Id.*, art. 9(1).

85. *Id.*, art. 9(3).

86. *Id.*, art. 9(3).

flow of capital for climate change mitigation (particularly from developed countries to developing countries).[87] Enacting such a regime would seem to be one economically efficient mechanism for developed nations to achieve their own NDCs and comply with their Paris Agreement obligations to assist developing nations by mobilizing climate finance and technology transfers to reduce greenhouse gas (GHG) emissions at lower costs. If one assumes (as this author has) such an increase in the flow of private capital and reduction in cost of debt for MORU projects in both developed and developing countries could, should, and would form an unspoken goal of any international legal regime for MORUs, then various aspects of MORU cross-border bankability must be addressed. In addition to technological and commercial bankability, substantive issues of legal bankability of mobile technologies like MORUS must be addressed (e.g. mutual recognition of foreign registration of the MORU, recognition of foreign publicly registered first-ranking enforceable non-possessory *in rem* security interests, transferability, appropriate limitations of liability and commercial insurability, clear jurisdictional authority over disputes, etc.).[88] At the same time, stylistic issues of legal bankability must be addressed as well. Axiomatically, bankers hate surprises and crave predictability, and completely unfamiliar language or concepts are likely to find limited support.

As the UNFCCC (and by extension, the related Paris Agreement) is also the primary international and intergovernmental forum for negotiating the global response to climate change and achieving the U.N.'s Sustainable Development Goal (SDG) 13 (i.e. taking urgent action to combat climate change and its impacts),[89] such a bankable international regime could also help facilitate some portion of SDG 13's related target 13.a—the mobilization of US $100 billion annually to address the needs of developing countries in the context of meaningful mitigation actions).[90] It also would seem to be a means for developed nations to act in alignment with a wider interpretation of principles of international law in which developed states have a duty to assist developing states with sustainable

87. Delgado, *Preparation of a Future Maritime Protocol?*, *infra* note 269, at 222.

88. *See* Nolan, *supra* note 32, at 971-72.

89. *See* G.A. Res. 70/1, Transforming Our World: The 2030 Agenda for Sustainable Development, SUSTAINABLE DEVELOPMENT UNITED NATIONS, (Sept. 25, 2015) [hereinafter 2030 Agenda for Sustainable Development] (describing SDG 13, and Targets 13.2 and 13.a).

90. *See id.* at 23 (Target 13.a).

development more broadly, when that is beyond the developing state's means.[91]

In addition to Paris Agreement obligations and SDG 13, a binding international legal regime for MORUs might also help address other SDGs: SDG 7 (ensuring access to affordable, reliable, sustainable, and modern energy for all);[92] SDG 9 (building resilient infrastructure, promoting sustainable industrialization, and fostering innovation);[93] SDG 14 (conserving and sustainably using the oceans, seas, and marine resources for sustainable development),[94] and SDG 17 (strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development).[95] With these SDGs comes additional international obligations to facilitate increased access to financing and transfers of relevant technology.[96]

Finally, there may be uncodified general principles of international law suggesting that developed states have an obligation to assist developing states in relation to climate change, regardless of whether that principle is framed in terms of intergenerational *noblesse oblige*,[97] climate justice or equity,[98] or even climate reparations,[99] a transgenerational corollary of the more accepted "polluter pays" general principle of international law.

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91. *See* The Future We Want: Outcome Document of the United Nations Conference on Sustainable Development Rio de Janeiro, Brazil, 20–22 June 2012, ¶¶ 253-54, 262, 267 and 269 (indicating that an increase of finance for all forms of sustainable development (i.e. not just climate change) is needed).

92. *See* 2030 Agenda for Sustainable Development, *supra* note 89, at 14, 19 (Sustainable Development Goal [hereinafter SGD] 7, and Targets 7.2, 7.a, and 7.b).

93. *See id.* at 14, 20 (SDG 9, and Targets 9.1 and 9.a).

94. *See id.* at 14, 23-24 (SDG14, and Targets 14.1 and 14.3).

95. *See id.* at 14, 26 (SDG 17, and Targets 17.3, 17.4, 17.5, 17.7, 17.16, and 17.17).

96. *See id.* at 9 (¶ 32), 10(¶ 41), 11((¶ 44), 19 (Target 7.a), 20 (Targets 9.3 and 9.a), 26 (Targets 17.3, 17.4 and 17.7), 28 ((¶¶ 62-63), 29 ((¶ 69).

97. *See* Paris Agreement, *supra* note 74, 11th recital; Edith Brown Weiss, *Climate Change, Intergenerational Equity, and International Law*, 9 VT. J. ENV. L. 615, 619 (2008). *But see* Louise Henkin, *Law and Politics in International Relations: State and Human Values*, 44(1) J. INT'L AFFAIRS 189 (1990) ("Occasional reference in recent years to inter-state justice or morality imposing obligations on "have-states" to assist "have-not states," is only rhetoric, and has not significant normative implications").

98. *See* Paris Agreement, *supra* note 74, 3rd and 11th recitals, art. 2(2),4(1), 14.

99. *See, e.g.,* Maxine Burkett, *Climate Reparations*, 10 MELB. J. INT'L L. 509 (2009); Benoit Mayer, *Climate Change Reparations and the Law and Practice of State Responsibility*, 7 ASIAN J. OF INT'L L. 185–216 (2017).

4. The Principle That the Polluter Pays

In 1972, the Organisation for Economic Co-operation and Development introduced the "polluter pays" principle as a recommended guiding principle for economic aspects of environmental policy.[100] The principle that the party who creates or releases pollutants should be responsible for paying for the damage caused to the environment is now broadly acknowledged and recognized.[101]

In practice, the application of this principle in a maritime convention might be either an *ex post facto*, corrective regime (i.e. compensation to be paid by the polluter directly, after an incident) or an *ex ante*, distributive regime (i.e. a system in which compensation is to be paid by an international fund into which all potential polluters contribute before the incident),[102] or a hybrid of both. Given the use of "single ship" companies in the maritime world and the availability of limited liability on incorporation in many jurisdictions[103] (and potentially limited liability by convention), the latter may be preferable to the former in some circumstances if the nature of the potential harm is both widespread and catastrophic, but is likely not coverable by the value of the vessel or the available insurance policies. However, the environmental risk posed by the operation of MORUs is limited when compared to the operation of, e.g., ultra large crude carriers or O&G MOUs. Presumably, there is less

100. OECD, *Recommendation of the Council on Guiding Principles Concerning International Economic Aspects of Environmental Policies*, 26 May 1972, C(72)128. *See* Petra E. Lindhout & Berthy van den Broek, *The Polluter Pays Principle: Guidelines for Cost Recovery and Burden Sharing in the Case Law of the European Court of Justice*, 10(2) UTRECHT L. R. 47 (2014).

101. *See* U.N. Conference on Environment and Development, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.I51/26 (Vol. I) Principle 16; (Aug 12, 1992); SEA: Single European Act, 17 Feb. 1986, 1987 OJ (L 169) 1; Consolidated Version of the Treaty on the Functioning of the European Union art. 191(2), May 9, 2008, 2008 O.J. (C 115) 47; Convention on Civil Liability for Oil Pollution Damage Resulting from Exploration for and Exploitation of Seabed Mineral Resources, 6th recital, *opened for signature* May 1, 1977, 16 I.L.M. 1450; *see also* Sanford Gaines, *The Polluter-Pays Principle: From Economic Equity to Environmental Ethos*, 26 TEX. INT'L L. J. 463 (1991); Eric Thomas Larson, *Why Environmental Liability Regimes in the United States, the European Community, and Japan Have Grown Synonymous with the Polluter Pays Principle*, 38 VAND. J. TRANSNAT'L L. 541 (2005).

102. Tetley, *supra* note 34, at 805-07; *see also* International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, Dec. 18,1971, 1110 U.N.T.S. 17146 [hereinafter Fund Convention]; Protocol to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, Dec. 2, 1992, reprinted in 6A BENEDICT, Doe. No. 6-9B, at 6-116.12 [hereinafter 1992 Fund Protocol]. The Fund Convention and Fund Protocol supplement CLC 1969, establishing industry-financed funds obliged to pay compensation for oil pollution when damages exceed the shipowner's liability, when there is no liable shipowner, or when the shipowner is unable to pay its liability.

103. *See* Delgado, *Security Interests over* Ships, *supra* note 27, at 277.

need for such an *ex ante* industry-driven superfund to cover any damages in excess of an insurance-backed limitation of liability (assuming the limitation of liability is set at an appropriate level in the first instance). In that context, requiring upfront contributions to an industry superfund to cover any damages in excess of the insured (and appropriately limited) liability from owners of MORUs not carrying large quantities of hazardous substances could be construed as an economically inefficient impediment on the further deployment of MORUs.

5. Technology Neutrality

A convention should cover the likely forms of MORUs (including manned and unmanned, and generating, auxiliary, and hybrid MORUs). Where an issue is common to all types of MORUs, a general rule would be preferable. At the same time, the idiosyncrasies of different technologies must be acknowledged and addressed. The CTC's use of both common terms and technology-specific protocols provides a possible template for this approach. Given the speed at which new renewable energy generation and auxiliary technologies and hull designs develop, provisions should also be included for the expansion of the convention to other similar technologies in the future. This approach has been reflected in Articles II and XVII of the Annex.[104]

B. Common Obstacles Draft Conventions Must Overcome

In order for a project to address the international legal issues facing MORUs and MORU stakeholders to be considered feasible by a Sponsoring Institution, it presumably should also be capable of overcoming the most common obstacles to the adoption of binding multilateral instruments. Patrick Griggs, in *Obstacles to Uniformity of Maritime Law—The Nicolas J. Healy Lecture,* identified a number of obstacles in this context: (1) an absence of need; (2) use of the right instrument; (3) time scales; (4) differences in assessment of claims; (5) drafting in a void; (6) over elaboration; (7) expense of application; (8) high ratification thresholds; (9) failure to denounce superseded conventions; (10) inconsistent implementation and interpretation; (11) politics; and (12) leading states failing to set a good example (i.e. a failure to lead).[105] The author has elected to combine these last two

104. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 254-55, 278-79 (particularly paragraphs 2.1 and 2.4 and Article XVII).

105. Griggs, *Obstacles to Uniformity*, *supra* note 43, at 198-208.

obstacles (i.e. politics and failures to lead), with an interrelated obstacle mentioned by Tetley (and indirectly suggested by Goode's second and third questions): (13) institutional inertia and lack of vision and courage[106] in a summary below (and more fully in *Mare Incognitum, Part III*). Each of these obstacles are briefly addressed below.

1. Need

Mare Incognitum, Part I addressed the question of "need" for international solutions for issues facing MORUs, identifying various international legal uncertainties, ambiguities, and lack of uniformity that exist in relation to MORUs, some of which are likely to act as *ex ante* impediments to the sector's full development. As described therein, two basic problems arise from certain inadequacies in the existing framework of international maritime conventions for those engaged in various activities on the seas: uncertainty in relation to convention scope and uneven convention acceptance. Unfortunately, existing international maritime conventions intended to regulate issues related to traditional merchant ships often either do not apply to unusual, and frequently unmanned, watercraft without mechanical propulsion such as MORUs (or their cousins, O&G MOUs), or their application to such watercraft is unclear at best. Compounding the problem, the number of contracting states to some existing potentially relevant topical maritime conventions (i.e. the convention's level of acceptance) may be so low as to render that convention's coverage of MORUs ineffective at an international level even if it were to include MORUs, or so high as to render any amendment thereof to include MORUs impractical (in the absence of explicit access to a low threshold amendment acceptance mechanism). These legal uncertainties, uneven levels of acceptance, and potential impediments to enacting amendments are likely to act as a global deterrent to potential future stakeholders in the deployment of utility-scale MORU Arrays, and are likely to have a material, negative impact on MORU cross-border financing. On this basis, the need for international solutions to at least some of the topics discussed in *Mare Incognitum, Part I*, has been assumed to exist for the purposes of this Article.

106. Tetley, *supra* note 34, at 811. *See also* Kozuka, *infra* note 131, at 128, 130 (referring to "institutional inertia" and "bureaucratism" as issues).

2. The Right Instrument

> Where offshore craft are considered to be vessels there is no need for a new, special convention. However, in most countries it is uncertain whether, or at least to what extent, craft will qualify as vessels. There is no universally accepted definition of 'vessel' and it will hardly prove possible to agree on one now. But inasmuch as it is felt desirable to apply the rules on vessels to offshore craft, the contemplated convention should cover such craft as are not considered by a State Party to be vessels. If a complete legal equalization of vessels and craft were intended, no further problems would arise in respect of the distinction between the two categories. But that is not the case.[107]

As noted in the Introduction, each of the topics identified in *Mare Incognitum, Part I* might be addressed (either together or separately): (i) with non-binding "soft law;" (ii) under the domestic law of the relevant states; (iii) by an existing, broadly-accepted topical maritime convention that already unambiguously includes MORUs within its scope; (iv) by an amendment of an existing, broadly-accepted maritime convention (if it does not yet clearly include MORUs within its scope) that reinterprets or modifies the terms of the convention to clearly include MORUs within its scope (be that amendment either a *stricto sensu* amendment ultimately affecting the amendment's contracting states and all the convention's subsequent contracting states,[108] or where such is permitted, an *inter se* amendment affecting only those contracting states to the *inter se* amendment itself);[109] or (v) by a new maritime convention creating a *sui generis* international legal regime for MORUs, whether by reference to the terms of existing topical international maritime conventions (applied *mutatis mutandis* to MORUs), or by inclusion of its own substantive or procedural conflict-of-law provisions addressing each topic. Binding and non-binding approaches, and the potential advantages and disadvantages of addressing each of the relevant topics in a piecemeal fashion (i.e. separately and in isolation from one another) or together as part of a multitopic discussion of the legal issues facing MORU stakeholders are discussed below.

As Griggs points out, there are many "soft law" approaches to international harmonization of the law (e.g. *lex mercatoria*, codes, model

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107. *See* INT'L SUB-COMM. ON DRILLING PLATFORMS, DRILLING PLATFORMS REPORT, *supra* note 54, at 31 (in relation to MODUs).

108. *See* Vienna Convention, *supra* note 49, art. 40; UNCLOS, *supra* note 49, art. 312-16.

109. *See* Vienna Convention, *supra* note 49, art. 41; UNCLOS, *supra* note 49, art. 311(3); *see also* Rio Draft, *infra* note 145, art. 3-8; Norway Alternative Draft, *infra* note 146, art. 2; Sydney Draft, *infra* note 147, art. 2-7.

laws, guidelines, and rules), each of which might be more appropriate than a binding convention in certain circumstances.[110] As noted in Section II.B.11 (Politics, Institutional Inertia, and a Lack of Leadership, Vision, and Courage) below, some of the leading maritime nations that are most likely to become MORU Producing Coastal States (e.g. the United States and Japan) [111] have been reluctant to sign multilateral maritime conventions in the past. As a matter of principle, certain states might be willing to enact a voluntary code into domestic legislation reflecting the substance of a convention but refuse to sign a binding multilateral maritime convention. Particularly where the goal harmonization of the domestic law of many states (vs. regulation of cross-border relationships and conflicts between different states and their respective stakeholders[112]), a model code or guideline might make the most sense. Such reliance on domestic law solutions being enacted in each relevant state to address international legal uncertainty would reflect the principles of subsidiarity and national sovereignty and would require only state-level consensus for domestic enactment, but also would result in the lowest level of international uniformity over time. Self-evidently, the problem with this approach is that the non-binding instruments themselves will be unenforceable,[113] unless and until they are enacted in the relevant state's domestic law, and the way the original code or guideline is actually enacted by each state is likely to vary. "Guidelines are certainly the poor relation of conventions . . ."[114]

Existing, broadly-accepted topical maritime conventions that already unambiguously include MORUs within their scope require no further action by the contracting states thereto, but are relatively rare. Nonetheless, their existence must be acknowledged. To the extent that such conventions are broadly accepted, the replication of provisions or topics from that convention in a separate *sui generis* instrument specific to MORUs would

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110. *See* Griggs, *Obstacles to Uniformity*, *supra* note 43, at 204-05.

111. For various reasons, MORU installed in Japanese or U.S. EEZs may also be less exposed to some international considerations (i.e. arguably it is less likely that U.S. or Japanese flagged MORUs would be built or flagged abroad or would be towed to foreign waters for repairs). However, they would still be exposed to other international considerations (i.e. collision or allision of a foreign flagged vessel with a locally flagged MORU). Further, if and when a Japanese or U.S. flagged MORU was deployed outside its home EEZ, it would be exposed to all the issues facing any other MORU.

112. One can compare the UNCITRAL Model Law on Arbitration with the UN Convention on the Recognition and Enforcement of Foreign Arbitral Awards as examples of both approaches being used in a single context.

113. *See* Griggs, *Obstacles to Uniformity*, *supra* note 43, at 205.

114. *See id.*

risk fragmentation of the existing regime into two independent legal systems (the original regime, and the new regime for MORUs) for the covered topic and result in a loss of uniformity over time (either through subsequently diverging interpretations of equivalent provisions in the different instruments or inconsistent amendments thereof).[115] Conversely, there is a risk that states relevant to a discussion of a MORU-specific legal framework may not be (or may not be willing to become) contracting states to the few broadly-accepted topical maritime conventions that already unambiguously include MORUs within their scope, for any number of non-MORU related reasons. To the extent that a particular broadly-accepted topical maritime convention that already includes MORUs within its scope is to be a critical part of a balanced multitopic international legal framework for MORUs, such non-contracting states would not be full participants in the framework, potentially for reasons that might not relate to MORUs at all.

There are also broadly-accepted topical maritime conventions that are potentially relevant to MORUs but do not yet clearly include MORUs within their scope. Amendments of these conventions, so that each would unambiguously include MORUs alongside traditional merchant ships and other watercraft within their scope (and address MORU peculiarities), is also theoretically possible. On its face, this might appear to be a relatively simple solution. However, if an overarching goal of the project is a broadly-accepted, uniform legal regime covering a large number of topics in relation to MORUs that balances the competing interests of contracting states and stakeholders, an approach relying on the successful amendment of each such convention in isolation might be suboptimal for several reasons.

The amendment procedures specified in multilateral treaties such as maritime conventions may vary considerably from one agreement to the next. Conventions may be silent or contain incomplete provisions governing, *inter alia,* the making of proposals for amendments, consideration of the proposal, adoption of amendments, the impact on other parties to the existing treaty, and thresholds for adoption.[116] In the International Law Commission's Commentary to articles 35 and 36 of the

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115. For a general analysis of the risks of conflicts between *lex specialis* (e.g. a hypothetical MORU-specific *sui generis* international regime) and *lex generalis* (e.g. here, an international regime generally applicable to maritime objects) *see Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law*, INT'L LAW COMM'N, 30-99, UN.Doc. A/CN.4/L.682 (Apr.13, 2006) (by Martti Koskenniemi).

116. *See Draft Articles on the Law of Treaties with Commentaries*, [1966] Y.B. INT'L L. COMM. 187, 232-35 UN.Doc. A/CN.4/SER.A/1966/Add.l.

Draft Articles on the Law of Treaties, the Commission observed that the variety of different approaches to amendment provisions in different treaty clauses made it difficult to trace the development of any detailed customary rules of treaty amendment.[117] Some conventions might explicitly recognize only amendments *stricto sensu* (modifying the operation of a multilateral treaty as between all contracting states to the amendment and subsequent parties to the underlying convention), while others also might explicitly recognize amendments *inter se* (modifying the operation or interpretation of a multilateral treaty or convention between only the contracting states to the *inter se* amendment itself).[118] Amendment approval thresholds can also vary considerably. Similarly, as described below, the methods of indicating acceptance or rejection of an amendment by a contracting state differ from convention to convention. As a consequence, each potentially relevant convention's amendment methodology must be examined both in isolation and in the context of its potential effect on the overarching goal of achieving a broadly-accepted, uniform multitopic legal regime for MORUs that balances contracting states' competing interests.

Broadly-accepted maritime conventions contain a basic paradox: the more accepted an existing maritime convention is (i.e. the greater the number of contracting states already party to that convention) the more *potential* global uniformity in relation to that topic it offers to the MORU sector (bringing MORUs into the same existing legal regime as traditional ships for that topic), but the more challenging it might be to quickly enact a *stricto sensu* MORU amendment due to its traditionally higher or unclear amendment approval thresholds thereto, which could cause considerable delay.[119] In some instances (particularly for technical updates), such delays

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117. *See id.*; M. J. Bowman, *The Multilateral Treaty Amendment Process-A Case Study*, 44 INT'L & COMP. L.Q. 540, 541-43 (1995); *see generally* Malgosia Fitzmaurice & Panos Merkouris, *Re-Shaping Treaties while Balancing Interests of Stability and Change: Critical Issues in the Amendment/Modification/Revision of Treaties*, 20(1) AUSTRIAN R. INT'L & EUR. L. 41 (2017).

118. *See Draft Articles on the Law of Treaties with Commentaries*, *supra* note 116, at 232. When considering an early draft of what was to become the Vienna Convention (*supra* note 49), the International Law Commission considered that a clear-cut distinction must be made between the amendment process *stricto sensu* (binding all the parties) and *inter se* agreements intended to modify its terms between certain parties. For this reason, *inter se* agreements are dealt with separately what would become article 41 while the opening phrase of paragraph 2 of what would become art. 40 underlines that it is concerned only with proposals to amend the treaty as between all the parties.

119. *See e.g.*, UNCLOS, *supra* note 49, art. 312(2), 316(1), 316(5); International Convention on Limitations of Liability for Maritime Claims art. 20, 21(3), Nov. 19, 1976, *reprinted in* 8 J. MAR. L. & COM. 533 (1976) [hereinafter LLMC 1976] (unspecified approval threshold under

were considered unacceptable and a new approach to *stricto sensu* amendment enactment was sought. From the 1970s, the IMO began to include "tacit acceptance" mechanisms for amendment of technical provisions, as an alternative to an "express acceptance" mechanism, allowing more timely updates of the technical protocols of certain conventions.[120] The "tacit acceptance" mechanism turns traditional treaty *stricto sensu* amendment and ratification procedures on their head, by allowing a proposed *stricto sensu* amendment to come into effect automatically, unless a certain percentage of contracting states object by a specified date.[121]

Unfortunately, for those early maritime conventions predating either the codification of an *inter se* amendment process as outlined the broadly-accepted 1969 Vienna Convention on the Law of Treaties ("Vienna Convention")[122] or the introduction of the "tacit acceptance" procedure by the IMO for technical aspects of various IMO Conventions, amendments might only come into force only after a high percentage of the convention's contracting states, usually at least two-thirds, had accepted them.[123] This normally meant that more acceptances were required to amend a broadly-accepted convention than were originally required to bring the convention into force in the first place. The issue is particularly acute when the number of convention contracting states at the time a

art. 20 for general amendment, 2/3rds requirement under art. 21(3) for change limitation amounts or units); Collision Convention 1910, *infra* note 296, art. 14 (unspecified approval threshold); Arrest Convention 1952, *infra* note 278, art. 16. (unspecified approval threshold).

120. *See, e.g.*, SOLAS, *infra* note 155, art. VII(b)(vi); MARPOL 1973/1978, *infra* note 193, art. 16(f)(iii); Convention on the International Regulations for Preventing Collisions at Sea art. VI(4), *opened for signature* Oct. 20, 1972, 1050 U.N.T.S. 16; *see also* Tetley, *supra* note 34, at 817-18 (contrasting the express acceptance procedure with the tacit acceptance procedure to convention amendment adoption). *But see* Lei Shi, *Successful Use of the Tacit Acceptance Procedure to Effectuate Progress in International Maritime Law*, 11 U.S.F. MAR. L.J. 299, 311 (1999) (noting that by 1981 the IMO, after taking stock of the problems posed by the tacit acceptance procedure—including the growing number of amendments and problems for developing countries to implement them—adopted Resolution A.500(Xii) which "expressly provides that amendments to existing conventions are to only be considered on a 'clear and well-documented demonstration of compelling need,' while taking into account the 'costs to the maritime industry and the burden on the legislative and administrative resources of Member States.'").

121. *See* Tetley, *supra* note 34, at 817-19 (contrasting the express acceptance procedure with the tacit acceptance procedure to convention amendment adoption).

122. *See* Vienna Convention, *supra* note 49, art. 41. Note that under art. 4, the benefit of art. 41 is not necessarily available for treaties predating the Vienna Convention.

123. *See Conventions*, IMO, https://www.imo.org/en/About/Conventions/Pages/Default.aspx (last visited Apr. 27, 2021).

MORU-related amendment might be contemplated has become very large.[124]

Conversely, issues can also arise where the number of contracting states required to enact an amendment to an existing broadly-accepted topical maritime convention is low relative to the number of existing contracting states for that convention.[125] Such low threshold *stricto sensu* amendments could result in a profusion of amendments and protocols described in Section II.B.6 below, which would be binding on each subsequent party to the convention itself, fragmenting what is supposed to be a unified legal regime for that topic over time. Similarly, *inter se* amendment (to the extent that they are also low threshold[126]) also carry a risk of a factional fragmentation of that topical convention. Further, to the extent that the convention itself does not explicitly permit *inter se* amendments, the parties to *inter se* amendments (as opposed to a *stricto sensu* amendment) would need to consider whether the existing convention's designated forum for disputes would be open or willing to hear any MORU-related disputes covered by the (potentially invalid) *inter se* amendment.

Although amendment of existing, broadly-accepted topical maritime conventions may be appropriate in some instances, amending every existing, broadly-accepted topical maritime convention that is potentially relevant to MORUs separately, at potentially different points in time and with different constellations of contracting states to each convention, would bring MORUs (as a sector) into the fabric of the different aspects of international maritime law in a rather piecemeal fashion. It would also increase the risk that potentially inconsistent MORU-related modifications in the various topical conventions would be agreed upon at different points in time by different constellations or factions of contracting states. In short, there are risks of both intra-topic and inter-topic fragmentation described above resulting in a patchwork international

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124. *See id.*

125. *See* Inter-governmental Mar. Consultative Org. Res. A.500(xii) (Jan. 8, 1982), at 2, https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/AssemblyDocuments/A.500(12).pdf; Int'l Mar. Org. [IMO], A.777(18) (Nov. 4, 1993), at 2, https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/AssemblyDocuments/A.777(18).pdf (a caution against the growing number of amendments and fragmentation).

126. *But see* Visby Rules Protocol, *supra* note 49, art. 13(1) (allowing a de facto *inter se* protocol (see art. 6) amending the Convention to come into effect after only 10 ratifications/accessions); Assistance and Salvage Protocol 1967, *supra* note 49, art. 4(1) (allowing a de facto *inter se* protocol (see art. 4(2) binding only states subsequently acceding to the protocol, not the Convention) amending the Convention to come into effect after only 5 ratifications/accessions).

legal regime across the MORU sector, if the topics of legal uncertainty are resolved solely through individual amendments (whether *stricto sensu* or *inter se*) to each of the relevant conventions. Nonetheless, it is worth noting that there may be valid reasons for choosing an amendment to an existing, broadly-accepted topical maritime convention over the inclusion of that topic in a *sui generis* multitopic MORU Convention in some instances.

In contrast to a piecemeal amendment process, a new maritime convention creating a *sui generis* multitopic regime for MORUs based on the inclusion of the relevant principles of existing maritime conventions (whether by reference to existing conventions applied *mutatis mutandis*,[127] or by inclusion of standalone provisions[128]) would have two distinct advantages over the piecemeal topical approach described above: (i) it would allow grand bargains[129] covering multiple MORU-related topics between both MORU Producing Coastal States, Flag States, Port States , and other states whose interests are affected by the transit or operation of MORUs (Affected States), and between key stakeholders in sectors with potentially conflicting interests; and (ii) it would allow the MORU Convention contracting states to extend *principles* of multiple existing topical maritime conventions to MORUs in one step, without requiring the consent of potentially different constellations of initially reluctant or disinterested contracting states (who might be currently focused on traditional shipping or other offshore technologies) to each of those existing topical conventions, through potentially very different amendment processes. At the same time, the incorporation of the principles of existing topical maritime conventions in a multitopic, *sui generis* MORU Convention (as opposed to actually amending the existing topical maritime conventions to include MORUs) would create a parallel and independent legal regime for MORUs (i.e. a MORU regime initially similar to, but legally distinct from, that for traditional ships) for each topic so addressed, and with it an inherent risk of possible divergent legal treatment of MORUs and traditional ships over time. Consequently, there

127. *See* Rio Draft, *infra* note 145; Norway Alternative Draft, *infra* note 146.

128. *See* Sydney Draft, *infra* note 147, Vancouver Draft, *supra* note 5.

129. *Compare* COMITE MARITIME INTERNATIONAL, THE TRAVAUX PRÉPARATOIRES OF THE LLMC 1976 AND OF THE PROTOCOL 1996 146 (2018) [hereinafter CMI, TRAVAUX PRÉPARATOIRES OF LLMC 1976] (In re the draft LLMC 1976: "[i]t was proving difficult for the Committee simply to go through the Convention, tackling each Article in turn, because so many issues were closely interrelated, and the position of representatives on one was dependent on the position they adopted on another. The only possible approach, if the Convention was to be acceptable to the large majority of governments, was to work towards a "package deal" or consensus solution").

may be certain topics relevant to MORUs which, for various reasons, are better left to be addressed by amendment to an existing, broadly accepted topical maritime convention.

On the assumption that a broadly-accepted, binding, enforceable, and uniform international regime would result in the greatest reduction of international legal uncertainties and cross-border financing costs of MORUs, and in the interests of simplification, the author has elected to exclude from further consideration possible solutions based on: (i) "soft law;" (ii) domestic law; (iii) amendments of any existing maritime convention that is not broadly accepted; (iv) amendments of existing, broadly-accepted topical maritime conventions which are likely to result in excessive fragmentation of the legal regime for that topic; and (v) any approach relying on an *inter se* amendment to an existing, broadly-accepted topical maritime convention that might be denied access to that convention's dispute forum. For these reasons and those stated previously, the author is of the opinion that each potential international legal uncertainty for MORUs (to the extent that it is not already covered in an existing, broadly-accepted topical maritime convention that already unambiguously includes MORUs within its scope) is best addressed in one of two binding instruments: (a) a low-threshold amendment to an existing, broadly-accepted international maritime topical convention that does not yet include MORUs within its scope, provided that such a low-threshold amendment is not likely to cause unnecessary fragmentation of the existing topical regime; or (b) as part of a new *sui generis* multitopic MORU Convention.

The influence that some binding multilateral maritime conventions may play in relation to the domestic law of *non*-contracting states in the achievement of a uniform maritime law should also be noted.[130] Non-contracting states might refuse to sign a maritime convention, but nonetheless recognize the convention to which they are not a contracting state as an accurate statement of international law.[131] Others might incorporate substantive aspects of multilateral conventions to which they

130. *See* Souichirou Kozuka, *Japan's Maritime Law Reform in an International and Regional Context*, 30 AUSTL. & N.Z. MAR. L.J. 125, 126-27 (2016). *See also* United States v. Beyle, 782 F.3d 159, 167, 2015 AMC 1099, 1109 (4th Cir. 2015) ("With nearly 170 signatory nations today, UNCLOS enjoys widespread acceptance in the international community. As noted above, although the United States is not a signatory to UNCLOS, this country recognizes the treaty's place as an accurate reflection of customary international law.").

131. *See Beyle*, 782 F.3d 159, at 167.

are not a party but with which they agree directly into their domestic law.[132] In this way, a binding maritime convention in force may have a greater actual impact on the achievement of uniformity than the number of its contracting parties might suggest.[133] It has been said imitation is the sincerest form of flattery, but in this circumstance the prerequisite for such flattery would be a binding international instrument covering MORUs for non-contracting states to imitate domestically.

Finally, it might also be argued that a regional convention could be preferable to global conventions in some instances.[134] This argument was put forward by certain stakeholders in relation to the CMI draft O&G MOU conventions.[135] The first legal instrument devoted exclusively to offshore units, the *Protocol for the Protection of the Mediterranean Sea Against Pollution Resulting from the Exploration and Exploitation of the Continental Shelf and the Seabed and Its Subsoil*,[136] entered into force in 2011[137] as a regional agreement. However, the author would suggest that there is little advantage to conceiving or drafting a hypothetical MORU convention as a regional agreement *ab initio*: it seems somewhat unlikely that any potential contracting state interested in becoming a party to a MORU Convention would want it to apply in one body of water but not another, and to the extent that nations of only one region ultimately accede to a document drafted as a global agreement, it would be a *de facto* regional agreement for most purposes anyway. It is not in the nature of those who go down to the sea to dream small, and nor should we.

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132. *See* Kozuka, *supra* note 130, at 126-27 (identifying several states in Asia which had incorporated elements of various maritime conventions into their domestic law without being party to those conventions); John M. Kriz, *Ship Mortgages, Maritime Liens, and Their Enforcement: The Brussels Conventions of 1926 and 1952—Part One*, 1963 DUKE L.J. 671, 675-76 (1963) (identifying several states which had not signed or acceded to MLM 1926 but had used that convention (or the principles therein) as a model for domestic legislation).

133. *See* Griggs, *Obstacles to Uniformity*, *supra* note 43, at 207 ("A convention may therefore actually be more successful than the statistics of ratification reveal.").

134. *Compare* Tetley, *supra* note 34, at 814-15.

135. *See* Tabetha Kurtz-Shefford, *Liability for Offshore Facility Pollution Damage After the Deepwater Horizon?*, 18 J. INT'L MAR. L. 453, 457-58 (2012); Stuart Hetherington, *International Law: Current Issues at CMI*, 28 A.N.Z. MAR. L.J. 51, 53 (2014). *See also* Shaw, *Regulation of Offshore* Activity, *supra* note 53, at 304.

136. *Protocol for the Protection of the Mediterranean Sea Against Pollution Resulting from the Exploration and Exploitation of the Continental Shelf and the Seabed and Its Subsoil*, 2013 O.J. (L 4) 13, https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32013D0005&from=en.

137. *See* Violeta S. Radovich, *Offshore Activity-New Regulations,* Y.B. 2013 ANNUAIRE, (Comité Mar. Int'l) 539, 539 (2013), https://comitemaritime.org/publications-documents/cmi-yearbook/.

3. Time Scales

Bearing in mind the broad scientific and growing international political consensus that we are now or soon will be in the midst of what has been described as a "climate crisis" or "climate emergency," an increasing number of stakeholders are finding themselves pushed, if not obliged, to change past behaviors and investment patterns.[138] Some have concluded that time is a luxury we no longer have.[139] Grotius's personal motto ("ruit hora") seems strangely prescient.[140] In that context, the extent to which MORUs are to play a material role in the fight against climate change, or will be surpassed by other technologies, will be determined in part by the ability to quickly reduce MORU LCoEs to levels which compete with other mitigation technologies. Put simply, we will need to speed up.

In the context of amendment to, or creation of, one or more maritime convention(s) relevant to MORUs, there are two extreme timeframes worth considering: (i) a decades' long process (which ultimately might be fruitless); and (ii) a very short process from conception to adoption and enactment. The speed at which adoption and acceptance of a draft convention might occur is a function of the urgency felt by the adopting states, the political support it receives, and (presumably) the quality of the draft itself.

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138. *See Mare Incognitum, Part I*, *supra* note 1, at 297-99.

139. *See* Larry Elliott, *Tackling Climate Crisis is What We Should Be Doing, Says New IMF Boss*, GUARDIAN (Nov. 30, 2019), https://www.theguardian.com/business/2019/nov/30/imf-boss-kristalina-georgiva-climate-crisis-financial-crash-economics (quoting International Monetary Fund head Kristalina Georgieva: "Countries need to recogni[z]e that we are running out of that most precious commodity—time."); Mark Hertsgaard, *'We're Losing the Race': UN Secretary General Calls Climate Change an 'Emergency'*, GUARDIAN (Sep. 18, 2019), https://www.theguardian.com/environment/2019/sep/18/un-secretary-general-climate-crisis-trump; Roger Harrabin, *Bank of England Chief Mark Carney Issues Climate Change Warning*, BBC NEWS (Dec. 30, 2019), https://www.bbc.com/news/business-50868717.

140. PROPERTY, PIRACY AND PUNISHMENT: HUGO GROTIUS ON WAR AND BOOTY IN DE IURE PRÆDAE—CONCEPTS AND CONTEXTS 9 (ed. Hans Blom) (2009) (citing Jan Romein en Annie Romein-Verschoor, *erflaters van onze beschaving. Nederlandse gestalten uit zes eeuwen,* 12 edn (Amsterdam: Querido 1977, 1st ed 1938-40), pp 231, 235-6. *See also* William J. Ripple, Christopher Wolf, et al., *World's Scientists' Warning of a Climate Emergency,* BIOSCIENCE (Nov. 5, 2019), https://doi.org/10.1093/biosci/biz088 (declaration of climate emergency signed by over 11,000 scientists from 153 countries); Jillian Ambrose, *Climate Change: Do More Now or Risk Catastrophe, Warns Energy Agency*, GUARDIAN (Nov. 13, 2019), https://www.theguardian.com/environment/2019/nov/13/climate-change-do-more-now-or-risk-catastrophe-warns-energy-agency (quoting Dr. Fatih Birol, executive director of the IEA: "We think that governments' current plans could bring us to catastrophic implications for the climate . . . In order to be in line with the Paris targets there is a need for huge efforts in pushing energy efficiency, renewable energy and all other clean energy technologies.").

The typical timeframe from conception to ratification and entry into force of maritime conventions is years, if not decades.[141] Tetley observed that "Legislation and change take time. There are mountains to move."[142] Over four decades, significant efforts were made by the CMI and NMLAs to develop a multitopic convention specific to O&G MOUs.[143] The drafting process was slow and controversial. After the publication of the *Draft Convention on Off-Shore Mobile Craft* in 1977 (the "Rio Draft");[144] the *Draft Convention on the Unification of Certain Rules Relating to Off-Shore Craft*, a contemporaneous but incomplete alternative to the Rio Draft prepared by the Norwegian Maritime Law Association (the "Norway Alternative Draft");[145] and the *Draft International Convention on Off-Shore Mobile Craft* in 1994 (the "Sydney Draft"),[146] the Canadian Maritime Law Association prepared the Vancouver Draft in 2001 (which was subsequently published by the CMI in 2004) (collectively, these draft conventions are referred to as the "CMI draft O&G MOU conventions" hereinafter).[147] However, no major progress has been made since the 2004 CMI conference, and the status of the Vancouver Draft is uncertain—the effort to enact a multitopic convention specific to O&G MOUs appears to be stuck in the doldrums. As evidenced by the two decades' long discussion of the Bunker Oil Convention and the four decades spent on the CMI draft O&G MOU conventions, there is a risk that the states with a urgent need will move on.[148] Indeed, in 1976 the Scandinavian NMLAs, and notably the Danish NMLA, presciently expressed an urgent need to

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141. *See* José M. Alcantará, *Some Reflections over the Brussels Convention of 1952 Relating to Arrest of Sea-going Vessels and its Amending Process*, 26(3) GEORGIA J. OF INT'L & COMP. L. 551, 551 (1997) (describing a two-decade process for Arrest Convention 1952).

142. Tetley, *supra* note 34, at 778.

143. *See generally* Richard Shaw, *Offshore Craft and Structures: Report to the Legal Committee of International Maritime Organization from the International Subcommittee of the Comite Maritime International*, Y.B. 1998 ANNUAIRE (Comité Mar. Int'l) 145 (1998), http://www.comitemaritime.org/Uploads/Yearbooks/Yearbook+1998.pdf [hereinafter Shaw, *Offshore Craft and Structures*); Michael White, *Offshore Craft and Structures: A Proposed International Convention*, 18 AUSTL. MINING & PETROLEUM L.J. 21 (1999).

144. See Draft Convention on Off-Shore Mobile Craft, 1 DOCUMENTATION 1977 (Comité Mar. Int'l) 36 [hereinafter Rio Draft].

145. *See* Draft Convention on the Unification of Certain Rules Relating to Off-shore Craft, 1 DOCUMENTATION 1977 (Comité Mar. Int'l) 39 [hereinafter Norway Alternative Draft].

146. See Draft International Convention on Off-Shore Mobile Craft, Y.B. 1994 ANNUAIRE (Comité Mar. Int'l) 180 [hereinafter Sydney Draft].

147. *See* Nigel Frawley, William Sharp & John Joy, *News from the National Associations: News from the Canadian Maritime Law Association*, CMI NEWS LETTER 1-3 (Comité Mar. Int'l, Antwerp, BE), Jan./Apr. 2004, http://www.comitemaritime.org/ Uploads/Newsletters/2004/Binder 1.pdf.

148. Griggs, *Obstacles to Uniformity*, *supra* note 43, at 200.

act quickly in order to try to obtain a uniform international regime for O&G MOUs *before* national legislation, then being prepared in some countries (including at that time Norway), produced widely differing substantive rules.[149] In a sense, the NMLAs could be seen as attempting to avoid the higher cost of subsequently implementing international regulation on an entrenched technology.[150] One might argue that the CMI draft O&G MOU conventions exemplify Collingridge's dilemma: at an early stage of development, regulation is problematic due to the lack of information about the technology's likely impact; but at a later stage, regulation is problematic as the technology would become more entrenched, making any changes demanded by regulators expensive to implement.[151]

Conversely, there are examples of swift international convention enactment. Multilateral agreements can be achieved at a much quicker pace if likely contracting states are properly motivated. That motivation might come from a sense of fear or frustration. As Griggs observed, "[c]onventions and other unifying instruments are born in adversity", potentially after "one or two states have been confronted by a maritime legal problem that has affected them directly."[152]

The International Ship and Port Facility Security Code (ISPS Code)[153] developed by the IMO's Maritime Security Working Group as a response to perceived threats to shipping and port facilities following the 9/11 terrorist attacks was developed and adopted incredibly quickly. In November 2001, the IMO Assembly adopted a resolution mandating a review of procedures to address maritime terrorism [154] and an extraordinary meeting of the Maritime Safety Committee began working on an amendment to the International Convention for the Safety of Life at

149. *See* INT'L SUB-COMM. ON DRILLING PLATFORMS, DRILLING PLATFORMS REPORT, *supra* note 54, at 29.

150. *See* Wreck Removal Convention, *supra* note 44.

151. *See generally* DAVID COLLINGRIDGE, THE SOCIAL CONTROL OF TECHNOLOGY (1980).

152. *See id.*, at 200 (*see also* n. 37 therein).

153. Int'l Mar. Org. [IMO], *Resolutions of the Conference of Contracting Governments to the International Convention for the Safety of Life at Sea 1974*, (Dec. 12, 2002). It is worth noting that under ISPS Code art. 2.2, MO*D*Us are included within the meaning of the term "ship," but MORUs are not addressed.

154. Int'l Mar. Org. [IMO], *Review and Measures and Procedures to Prevent Acts of Terrorism which Threaten the Security of Passengers and Crews and Safety of Ships*, IMO Doc. A.924(22), (Nov. 20, 2001).

Sea 1974 (SOLAS)[155] to address this issue.[156] A little over a year later, ISPS Code was adopted by the Conference of Contracting Governments to SOLAS on December 12, 2002.[157] As of 2009, this was the fastest ever adoption of a maritime convention by the IMO.[158] Notwithstanding the decades spent developing and debating other maritime conventions, the ISPS Code is proof that the IMO and the maritime community are also capable of responding to an emergency with a sense of urgency.

Similarly, the amendment extending the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal to plastic waste was first proposed by Norway in September 2018.[159] From conception to implementation, it took only nine months, a blistering pace by U.N. standards.[160] The use of an existing international instrument to enshrine the new measures significantly reduced the time required for consultation and adoption.[161]

Griggs also noted a second time-related obstacle to maritime conventions: limitations of liability can become quickly outdated, potentially even before the document has come into force.[162] Ideally, convention negotiations wouldn't last so long. Nonetheless, if negotiations are destined to be prolonged, a possible solution might be to explicitly provide for the use of the much quicker "tacit acceptance" procedure for amendments in relation to any agreed limitations of liability, allowing quicker inflationary adjustments to those limitations.[163]

4. Differences in Assessment of Claims

Griggs has observed that, for various reasons, any limitations of liability in a multi-lateral agreement might be perceived as too high for some state parties, and too low for others.[164] For that reason, any

155. Int'l Convention for the Safety of Life at Sea (SOLAS), 1184 U.N.T.S. 278, (Nov. 1, 1974).

156. *See* James Kraska, *Chap. 14: Ship and Port Facility Safety*, THE IMLI MANUAL ON INT'L MAR. LAW, VOL. III: MAR. ENV'T LAW AND MAR. SEC. LAW (ed. David Attard, Malgosia Fitzmaurice, Norman Martinez Gutierrez, & Riyaz Hamza) 443 (2016).

157. *See* Devinder Grewal, *The ISPS Code: The Australian Experience and Perspective,* LLOYD'S MIU HANDBOOK OF MAR. SEC. 327, 327 (2009).

158. Grewal, *supra* note 157, at 327.

159. Davies & Green, *supra* note 46.

160. *UN: Plastic Waste Pact Approved with US Among Few Holdouts,* AP (May 10, 2019), https://apnews.com/0771a60e9b024247b29073aaa4dee6ed.

161. Davies & Green, *supra* note 46.

162. *See* Griggs, *Obstacles to Uniformity*, *supra* note 43, at 200-201.

163. *See* Lei Shi, *supra* note 120, at 302-03; LLMC PROT 1996, *infra* note 341, art. 8(7).

164. Griggs, *Obstacles to Uniformity*, *supra* note 43, at 202.

compromise on limitations of liability might struggle to find support from various stakeholders.[165] At the same time, consensus on specific, although maybe imperfect, limitations of liability can be reached in some circumstances. Insofar as an international organization such as the IMO cannot be seen to discriminate between two state parties' views of such limitations,[166] the author will similarly leave discussion of the quantum of MORU-specific limitations of liabilities to potential contracting states. However, the author maintains that limitations of liability have been agreed at an international level for traditional ships in the past[167] and a binding international regime explicitly covering MORUs would likewise contribute to improved MORU insurability and bankability.[168]

5. Drafting in a Void

In 2003, Griggs was of the view that the draft Wreck Removal Convention (originally sponsored by the governments of the Netherlands, the United Kingdom, and Germany, but later, was part of the IMO Legal Committee's work program) was being drafted in a void.[169] His dismay at that time of the approach taken and concern that it did not follow a more careful review of the wreck removal laws of a large number of states is worth noting, but with hindsight the approach did not ultimately result in a complete failure of that exercise.[170] As of 2021, there were a respectable fifty-five contracting states[171] to the Wreck Removal Convention.[172]

In the context of MORUs, two further counterpoints to Grigg's caution against drafting in a void are worth considering. Unlike traditional shipping, MORUs are (relatively) new technology and (relatively) unregulated. To the extent that one prefers the first horn of the Collinridge

165. *Id.*

166. *Id.*

167. *See* LLMC 1976, *supra* note 119, art. 6-8; LLMC PROT 1996, *infra* note 341, art. 3-4; 2012 AMEND LLMC PROT, *infra* note 343; CLC, *infra* note 190, art. 5(1) (and the revisions of the limits therein by the Protocols of 1976, 1984, and 1992 thereto).

168. *See* Radovich, *Offshore Activity-New Regulations*, *supra* note 137, at 544-45 (noting Richard Shaw's comment at conference on transboundary pollution that perhaps the CLEE Convention never entered into force because it contains alternative options for limited and unlimited liability, and Justice Steven Rares' paper putting forward the argument that "limitation of liability is a fact of business life, and was essential in order to obtain the support of the insurance community to the proposed instrument").

169. Griggs, *Obstacles to Uniformity*, *supra* note 43, at 203.

170. *Id.*

171. *Status of IMO Treaties*, INT'L MAR. ORG., 538 (2021), https://wwwcdn.imo.org/localresources/en/About/Conventions/StatusOfConventions/Status%20-%202021.pdf [hereinafter *Status of IMO Treaties*].

172. Wreck Removal Convention, *supra* note 44.

dilemma to the second, one might argue that the regulatory void itself is the fundamental problem that such early regulatory drafting for new technologies is intended to address. There is simply not a large and diverse body of domestic law developed over centuries in relation to international issues facing MORUs from which a distillation of the common threads of extant domestic laws of the nations surveyed might be fathomed. This is evidenced by the large number of "no answer" or "no decisions" replies in response to a question in relation to any reported judicial decisions regarding classification of FWTs in a recent CMI survey of NMLAs.[173] In this sense, MORUs are where O&G MOUs were four or more decades ago: adrift in a legal *mare incognitum*.

However, to the extent that drafters salvage the lessons learned or recycle relevant parts from the previous work of others in relation to comparable mobile assets such as O&G MOUs for use in a convention covering MORUs, they cannot be said to be working in a complete void. Although it cannot eliminate them altogether, this might mitigate some of the risks of drafting in a void.

6. Over Elaboration

Griggs has decried lengthy conventions and the profusion of amending protocols after the signing of many maritime conventions.[174] To

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173. In 2016, Stuart Hetherington, then president of the CMI, sent a questionnaire on behalf of the CMI's International Working Group on Vessel Nomenclature to the presidents of various NMLAs, which included question 7(5), asking whether there were any reported decisions in their respective jurisdiction which address the legal classification of "floating wind turbine towers." *See* Letter from Stuart Hetherington, President of the CMI, to Presidents of the NMLAs (Mar. 8, 2016), https://comitemaritime.org/wp-content/uploads/2018/05/Letter-to-Presidents-of-NMLAs-re-IWG-on-Vessel-Nomenclature-080316.pdf. Of the 12 NMLAs' replies (from the Canadian, Brazilian, Chinese, Croatian, Danish, Hong Kong, Irish, Italian, Netherlands, Polish, Romanian, and U.S. MLAs) to the questionnaire which have been placed on the CMI's website (*available at* https://comitemaritime.org/work/ship-nomenclature/#), only the Dutch response answered question 7(5) directly, stating there were no such judicial decisions but a floating wind turbine tower would fall within the meaning of "ship" under Article 8.1 of the Dutch Civil Code. The Canadian Maritime Law Association's response to question 7(5) appears to be incorrect, referring to *J.D. Irving Ltd. v. Siemens Can. Ltd.*, 393 F.T.R. 59 (FC), 2011 FC 791 (2011), which involved steam turbine rotors being dropped in a harbor in the course of being loaded on a barge, and not the classification of floating wind turbines.

174. *See* Griggs, *Obstacles to Uniformity*, *supra* note 43, at 193, 203 ("Another measure of success of [Collisions Convention 1910] is that, ninety-two years on, nobody has felt it necessary to either update it by protocol or replace it with a new Convention."). *See also* Lei Shi, *supra* note 120, at 311 (noting that by 1981 the IMO, after implementing the tacit acceptance procedure, found that the growing number of amendments caused problems for developing countries implementing them and adopted Resolution A.500(XII) stating that amendments to existing conventions are to

some degree, the author is of the opinion that this may reflect a legal cultural bias of lawyers coming from a common law tradition (himself included), to whom the comprehensive structure and systematization of legislation of a civil law tradition can seem overly prescriptive and inflexible.[175] Obviously, this view is not always shared by lawyers of other legal traditions, who might see a lengthy original as evidence of thorough analysis and a series of amending protocols as evidence of the continued vitality of the underlying document. Griggs' comments also predate the enactment of the very successful CTC, which uses protocols not as a corrective tool so much as a technical instrument to address issues specific to a particular subset of the moveable assets covered by the CTC itself and allow the application of the CTC to asset classes at different points in time.

Nonetheless, in an international setting with lawyers from many legal traditions trying to interpret (or argue) a text, Griggs' basic premise is correct—there is much to be said for a text that is concise. Unfortunately, as the Annex (and *Mare Incognitum, Part I*, this Article, and *Mare Incognitum, Part III*) illustrates, it is an ambition that can be elusive. This author hopes for absolution, and seeks solace in the quote attributed to Pascal: "I'm sorry I wrote you such a long letter. I didn't have time to write a short one."

7. Expense of Application

Griggs identifies the expense of application as a potential obstacle to convention acceptance.[176] Governments that would be required to set up expensive administrative machinery manned by civil servants to administer issues arising under a new MORU convention (including monitoring compliance of transient MORUs in the state's EEZ, local impacts of MORU-related incidents occurring in foreign waters, and MORU-related incidents impacting the state's flagged vessels outside of its waters) might hesitate.[177] However, simply ignoring the potential problems arising from an expanding global MORU fleet will not avoid the problems in the end—the issues and resulting administrative expenses may be inevitable for those governments, once other coastal states begin building, towing, and deploying larger numbers of MORUs in their own

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only be considered on a 'clear and well-documented demonstration of compelling need,' considering the costs to the maritime industry and burden on the legislative and administrative resources of states).

175. *See* Tetley, *supra* note 34, at 802-05.

176. *See* Griggs, *Obstacles to Uniformity*, *supra* note 43, at 206.

177. *See id.*

and other states' coastal waters. Further, to the extent that the burden of administrative costs were passed back to the industry, the administrative costs might act as less of a deterrent.[178] In any event, almost all coastal states have an existing maritime administrative authority whose responsibility might be expanded to cover MORUs (somewhat reducing the initial set up costs of a stand-alone MORU administrative unit).

8. High Ratification Thresholds

Griggs observed that different conventions have had different ratification thresholds (i.e. the number of state ratifications required for the convention to enter into force), and asks the question "Why the difference?" [179] As he notes, occasionally there may be a political requirement that the convention be almost universal (vs. regional) before the parties are willing for it to become operational and therefore a higher threshold is imposed, but this may delay its entry into force.[180] However, it is hard to see why an initial high threshold, let alone one bordering on universal acceptance, would be a political necessity for a hypothetical *sui generis* MORU Convention. This obstacle would seem simple to resolve: set a low threshold.[181] There is no reason why those first brave states that have seen the wind and would like to change course should be required to wait until the rest of the world gives them their leave.

The ratification thresholds of some conventions also have been weighted in a way requiring the approval of the "major maritime nations'" before the convention becomes effective.[182] If this approach were to be adopted for a MORU Convention, it begs three questions: (i) which states (if any) should be considered today's "major MORU nations" (and if so, by which metric: number of MORUs, MORU tonnage, nominal MWs of MORUs deployed, population impacted by climate change, etc.); (ii) will these "major MORU nations" now lead (or fail to lead) by example;[183] and (iii) in the absence of leadership by traditional maritime powerhouses or new "major MORU nations," will others act as explorers? The author is of the opinion that a simple ratification mechanism without weighting is preferable, particularly when the sector is at an early stage, the correct

178. *See id.*
179. *See id.*
180. *Id.*
181. *See* Arrest Convention 1999, *supra* note 36, art. 14(1) (10 states); Wreck Removal Convention, *supra* note 44, art. 18(1) (10 states).
182. *See, e.g.*, MARPOL 1973/1978, *infra* note 193, art. 15(1); SOLAS, *supra* note 155, art. 4(1)(a); CLC, *infra* note 190, art. 15(1).
183. *See* Griggs, *Obstacles to Uniformity*, *supra* note 43, at 207-08.

metric for weighting is not clear, and the understanding of MORU leadership is prone to change. Today's MORU sector laggards can quickly become tomorrow's leaders (and vice versa).

The risks of both high and low ratification thresholds to amend existing, broadly-accepted maritime conventions have been addressed generally in Section II.B.2 [The Right Instrument] above. The amendment ratification threshold problems for specific existing, broadly-accepted maritime conventions are also addressed, throughout Section II.C [Which Topics Should be Included in a MORU Convention?] below.

9. Failure to Denounce Superseded Conventions

As there is no existing multitopic MORU Convention to be denounced prior to accession to a new multitopic MORU Convention, this obstacle would seem to be academic at first glance. However, given the ambiguity of the definition (or lack of definition) of the terms "ship" or "vessel" in a number of existing topical maritime conventions, and the ambiguity with regards to the inclusion (or not) of MORUs within those definitions, Mr. Grigg's tenth obstacle[184] might not be so academic after all. Entry into a new convention explicitly including MORUs within its scope would not necessarily remove any ambiguity concerning their inclusion in (or exclusion from) the scope of an existing convention. It might be necessary or advisable for parties wishing to accede to a hypothetical MORU Convention to also simultaneously denounce the application of any conflicting, or potentially conflicting, provisions of comparable topical maritime conventions to which they are party and arguably include MORUs within their scope. [185] Alternatively, the principles of an existing maritime convention might be included in the text of a new MORU Convention and applicable to any two contracting states thereto, provided always, that if: (i) those same two parties are also parties to the earlier maritime convention; and (ii) subsequently MORUs are definitively determined to be within the scope of the earlier convention; then the provisions of that earlier convention shall apply instead. Space for denunciation of conflicting conventions insofar as they apply to MORUs is left in Article XXI in the Annex.

184. *See id.*, at 207.

185. *See* Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Aircraft Equipment, art. 23-25, Nov. 16, 2001, S. TREATY DOC. NO. 108-10 (2003) [hereinafter Aircraft Protocol].

10. Implementation and Interpretation

Griggs is correct to note the challenges in implementing and interpreting an international agreement into the legislative framework of each state's domestic law.[186] Some of the bigger issues would hopefully be resolved in the process of negotiating the final draft, but in the end a document agreed by many contracting states will have to be implemented and interpreted in as many different domestic legal frameworks and traditions. It will not be a perfect fit for all, nor will everyone always see the text in the same light. Nonetheless, we should not let "perfect" be the enemy of good.

11. Politics, Institutional Inertia, and a Lack of Leadership, Vision, and Courage

Griggs astutely observed that politicians only see two types of international maritime conventions: those to which votes may be attached, and those that win no votes at all.[187] His corollary statement is equally true: "those falling into the first category are more likely to gain legislative time and those in the second category are less likely to do so." In the first category, he counts those conventions that protect citizens (and governments) from the effects of maritime accidents,[188] such as the International Convention on Civil Liability for Oil Pollution Damage (CLC 1969)[189] and the related International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (Fund Convention)[190] and subsequent protocols thereto following the TORREY CANYON environmental disaster;[191] the International Convention for the Prevention of Pollution from Ships (as amended by the Protocol of 1978) (MARPOL 1973/1978);[192] and the Athens Convention Relating to the Carriage of Passengers and Their Luggage by Sea[193] and

186. *See* Griggs, *Obstacles to Uniformity*, *supra* note 43, at 207.

187. *See id.*, at 205.

188. *See id.*

189. International Convention on Civil Liability for Oil Pollution Damage, Nov. 29, 1969, 973 U.N.T.S. 3 [hereinafter CLC]. This is identified by Griggs as the most successful maritime convention of all time. *See* Griggs, *Obstacles to Uniformity*, *supra* note 43, at 196.

190. *See* Fund Convention, *supra* note 102; 1992 Fund Protocol, *supra* note 102.

191. *See* Lei Shi, *supra* note 120, at 299.

192. International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, 12 I.L.M. 1319, amended by Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, Feb. 17, 1978, 1340 U.N.T.S. 61 [hereinafter MARPOL 1973/1978].

193. Athens Convention Relating to the Carriage of Passengers and Their Luggage by Sea, Dec. 13, 1974, 1463 U.N.T.S. 24817.

its protocols. In principle, this first category might also be extended to those international agreements that seek to protect citizens from the impacts of global environmental threats, such as the IMO 2020 amendment[194] to MARPOL 1973/1978 implementing standards cutting sulfur oxide emissions, the almost universally accepted Paris Agreement,[195] and (arguably) a hypothetical international legal regime facilitating the broader deployment of MORUs.[196]

In the second category, Griggs includes those that would be unpopular with an influential section of the community or critical group of stakeholders. [197] Maritime conventions that contain inequitable provisions favoring one group of contracting states over another are unlikely to be adopted by the contracting states so disadvantaged, reducing the odds of achieving real uniformity. One illustrative example of this may be seen in the carriage of goods conventions, where the Hamburg Rules were ratified, or acceded to a large extent, by cargo importing and exporting countries, rather than states with substantial commercial fleets.[198]

In the second category, we might also include the CMI draft O&G MOU conventions—including the Vancouver Draft, the enactment of which was successfully resisted by *inter alia* the International Association of Oil and Gas Producers, the International Association of Drilling Contractors, and the United States Maritime Law Association.[199] Likewise, if we take certain state interests as a proxy for key private stakeholder interests, Richard Shaw's 2012 observation that "[i]n developing legal rules appropriate to the industries working offshore, account must be taken

194. See Int'l Mar. Org. [IMO], MEPC.305(73), *Amendments to the Annex of the Protocol of 1997 to Amend the International Convention for the Prevention of Pollution from Ships, 1973, as Modified by the Protocol of 1978 Relating Thereto* (Oct. 26, 2018), https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/MEPCDocuments/MEPC.305%2873%29.pdf [hereinafter IMO 2020].

195. *Chapter XXVII (Environment) 7.d, (Paris Agreement),* UNITED NATIONS TREATY COLLECTION (Nov. 4, 2016), https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=_en (as of 2021,191 contracting states).

196. *But see* Griggs, *Obstacles to Uniformity*, *supra* note 43, at 205 (noting the slow pace of adoption of HNS 1996, which should also arguably fall in this category).

197. *See id.*, at 206.

198. *Id.*, at 195.

199. *See* Radovich, *Offshore Activity-New Regulations*, *supra* note 137, at 545; Hetherington, *International Law*, *supra* note 135, at 52; Shaw, *Regulation of Offshore* Activity, *supra* note 53, at 304; *News from the National Associations,* CMI NEWS LETTER (Comité Mar. Int'l, Antwerp, BE), Jan./Apr. 2004, at 2, Commentary 6.4, http://www.comitemaritime.org/Uploads/Newsletters/2004/Binder1.pdf; White, *supra* note 143, at 26 (noting the US representative to the CMI supporting the IADC position opposing any O&G MOU convention).

of the potential conflict between the interests of the [f]lag [s]tate, which traditionally has jurisdiction over ships (and, by extension offshore mobile craft) flying its flag, and the [Producing] [c]oastal [s]tate, which generally exercises a regulatory jurisdiction over the exploitation of offshore resources within its territorial sea,"[200] is as true for MORUs today as it was for O&G MOUs when made.

Conversely, there also is a risk that the inclusion of politically expedient but technically unworkable compromises in a proposed draft might prevent its enactment completely. Indonesia sponsored a conference in Bali in 2011 to discuss whether an international compensation convention was needed regarding trans-boundary oil pollution damage arising from offshore oil exploration and exploitation. There, Shaw opined that perhaps the Convention on Civil Liability for Oil Pollution Damage Resulting from Exploration and Exploitation of Sea-Bed Mineral Resources adopted in 1976 never entered into force because it contains alternative options for both limited and unlimited liability.[201]

Domestic *realpolitik* and lack of relevant industry support might explain some (but not all) of the failures of maritime conventions to be broadly adopted. A lack of international leadership by the nations perceived as most important to an issue may also play a role, if only because smaller states otherwise inclined to join that convention might choose not to.[202] Grigg's gentle rebuke in 2003 of his American hosts' and other major maritime nations' frequent failure to lead by example and implement maritime conventions also was, and remains, correct.[203]

Cornwallis's retreat from the fleet of de Joyeuse in 1795 exemplifies the idea that a tactical retreat can yield a subsequent strategic maritime victory, even against superior forces. In the context of the Annex, tactical retreat from legal topics, which are neither capable of achieving the support of critical state and non-state stakeholders nor critical to the overall goals of the proposed MORU convention, may be the more strategic approach. Again, "perfect" must not be the enemy of good.

Griggs also asked in 2003 whether we were "conventioned" out.[204] Eighteen years later, one might argue we have likely gone through at least one complete cycle of enthusiasm and disinterest since he posed the question. Nonetheless, the question is a valid one. Does a hypothetical

200. Shaw, *Regulation of Offshore Activity*, *supra* note 53, at 304.
201. *See* Radovich, *Offshore Activity-New Regulations*, *supra* note 137, at 544.
202. Griggs, *Obstacles to Uniformity*, *supra* note 43, at 207-08.
203. *Id.*
204. *See id.*, at 208.

MORU Convention discussion today find itself at the peak or the trough of the current wave of maritime convention interest?

Domestic politics, sector support, institutional inertia, and a lack of institutional leadership (whether from a lack of vision, courage, or even a bit of convention fatigue) taken together form the single largest obstacle to the acceptance of any new maritime convention and, by extension, to the ultimate feasibility of a MORU Convention project. As these topics are some of the most important factors in answering the third question of Goode's tripartite test ("Is the project likely to receive a substantial measure of support not only from governments but from industry and other interested sectors?"), they will be addressed separately in *Mare Incognitum, Part III.*

C. Which Topics Should Be Included in a MORU Convention?

Mare Incognitum, Part I identified several categories of potential international legal uncertainty in relation to MORUs: (a) various freedoms of the seas and rights of innocent passage;[205] (b) default civil jurisdiction in the absence of other regulation; [206] (c) the interrelated topics of registered ownership, *in rem* non-possessory collateral rights, and maritime liens;[207] (d) arrests;[208] (e) collisions and allisions;[209] (f) safety at sea; [210] (g) end of life issues, such as salvage, wreck removal, and decommissioning; [211] (h) limitations of liability; [212] (i) environmental impact and pollution;[213] (j) criminal jurisdiction;[214] (k) allocation of CO_2 reduction obligations; [215] and (l) marine spatial planning. [216] Items (b) through (j) have been identified as missing parts of the international legal

205. *See Mare Incognitum, Part I*, *supra* note 1, at 333.

206. *See id.*, at 333-35; Shaw, *Offshore Craft and Structures*, *supra* note 143, at 152-53.

207. *See Mare Incognitum, Part I*, *supra* note 1, at 335-44; Shaw, *Offshore Craft and Structures*, *supra* note 143, at 148-52.

208. *See Mare Incognitum, Part I*, *supra* note 1, at 344-45; Shaw, *Offshore Craft and Structures*, *supra* note 143, at 152-53.

209. *See Mare Incognitum, Part I*, *supra* note 1, at 345-46; Shaw, *Offshore Craft and Structures*, *supra* note 143, at 153.

210. *See Mare Incognitum, Part I*, *supra* note 1, at 347-48; Shaw, *Offshore Craft and Structures*, *supra* note 143, at 155-57, 161.

211. *See Mare Incognitum, Part I*, *supra* note 1, at 348-50; Shaw, *Offshore Craft and Structures*, *supra* note 143, at 157-58.

212. *See Mare Incognitum, Part I*, *supra* note 1, at 350-51.

213. *See id.*, at 351-354; Shaw, *Offshore Craft and Structures*, *supra* note 143, at 159-60.

214. *See Mare Incognitum, Part I*, *supra* note 1, at 354-56; Shaw, *Offshore Craft and Structures*, *supra* note 143, at 154-55.

215. *See Mare Incognitum, Part I*, *supra* note 1, at 356-57.

216. *See id.*, at 357-60.

regime for O&G MOUs.[217] Not surprisingly, they largely overlap the issues that were to be addressed in the four draft O&G MOU conventions previously prepared by the CMI or a constituent NMLA: the Rio Draft of 1977,[218] the Norway Alternative Draft of 1977,[219] the Sydney Draft of 1994,[220] and finally, the Vancouver Draft of 2001.[221] Items (k) and (l) are more relevant to MORUs and MORU Arrays, and not addressed in the CMI draft O&G MOU conventions.

As stated in Section II.B.2 (The Right Instrument) above, the author is of the opinion that (to the extent uniformity is a goal) each potential international legal uncertainty for MORUs would be best addressed in a legally binding instrument. Here the analysis is meant only to reach an initial conclusion whether each of these areas of potential international legal uncertainty should be addressed either by an amendment to an existing, broadly-accepted maritime convention, within a *sui generis* multitopic MORU Convention, or (for whatever reason) simply not addressed for now. Consequently and for the sake of simplicity, the author has made the following assumptions in relation to a hypothetical multitopic MORU Convention:

> (a) Where an existing, broadly-accepted maritime convention unambiguously includes MORUs within its scope, it should remain the controlling instrument in relation to MORUs for the topic(s) it covers, and a hypothetical MORU Convention should limit itself to requiring accession of MORU Convention contracting states to the existing maritime convention (if deemed relevant).

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217. *See* Shaw, *Offshore Craft and Structures*, *supra* note 143, at 148-61.

218. *See* Rio Draft, *supra* note 144 (addressing nationality of O&G MOUs (i.e. "Craft") (art. 9), rights in Craft (art. 7), collisions (art. 3), salvage (art. 4), arrest (art. 5), limitations of liability (art. 6), and liability for oil pollution (art. 8).

219. *See* Norway Alternative Draft, *supra* note 145 (addressing collisions involving O&G MOU (i.e. "Craft") (art. 2(1) by reference to the relevant law of a State Party, including any international convention having the force of law in that State and the international private law of that State), salvage (art. 2(2) as per collisions, arrest (art. 2(3), as per collisions), liability for oil pollution (art. 2(4), as per collisions and art. 5), limitations of liability (art. 2(5), as per collisions and Art. (a)), liens (art. 2(6), as per collisions), mortgages (art. 2(7)), as per collisions), and nationality (art.3).

220. *See* Sydney Draft, *supra* note 146 (addressing nationality of O&G MOUs (i.e. "Craft") (art. 10), rights in the craft (art. 6), collisions (art. 2), salvage (art. 3), arrest (art. 4), limitations of liability (art. 5 and 9), and liability for oil pollution (art. 7)).

221. *See* Vancouver Draft, *supra* note 5 (addressing ownership of O&G MOU (i.e. "Offshore Units") (art. III), registration (art. IV), mortgages, liens and creditors remedies (art. V), civil jurisdiction (art. VI), penal jurisdiction (art. VII), safety (art. VIII), salvage (art. IX), removal (art. X), pollution (art. XI), apportionment of liability (art. XII), limitations of liability (art. XIII), financial responsibility (art. XIV)).

> (b) Where an existing, broadly-accepted topical maritime convention exists does not yet unambiguously include MORUs within its scope, an amendment to the existing convention should be used if an explicitly permitted method of amendment enactment provided for under that convention could be used by an initially relatively small number of interested states to include MORUs within convention coverage and would not be thwarted by the initial disinterest, apathy, or reluctance of the other contracting states to that convention (e.g. to the extent explicitly allowed in the underlying convention, such methods might include use of the "tacit acceptance" mechanism to achieve a *stricto sensu* amendment, a low threshold *stricto sensu* amendment, or an *inter se* amendment), and would not result in an unacceptable degree of either intra-topic or inter-topic fragmentation. As with (a) above, if an amendment to an existing convention is used, the hypothetical MORU Convention should limit itself to requiring accession of MORU Convention contracting states to the amendment to the existing convention (again, if deemed relevant).
>
> (c)To the extent, any category of potential legal uncertainty identified above has not been addressed by either (a) or (b) above, it should be addressed by a provision in a hypothetical *sui generis* multitopic MORU Convention, provided always that the issue is not so politically charged as to put the adoption of the MORU Convention at risk if it were included in the MORU Convention. Self-evidently, to the extent a legal uncertainty is to be addressed in a *sui generis* MORU Convention, it might be addressed in the MORU Convention either by reference to an existing convention, *mutatis mutandis*, or by a standalone provision.

Within the framework of these assumptions, each of the topics identified are addressed below.

1. Freedom of the Seas and Rights of Innocent Passage

As noted in *Mare Incognitum, Part I*[222] and Section II.A.1 (The Principle of *Mare Liberum*) above, the universal recognition of a MORU's freedoms and rights of innocent passage and transit are uncertain: UNCLOS frames freedoms of the seas and rights of innocent passage and transit and coastal state limitations on those rights in the context of a "ship"

222. *See Mare Incognitum, Part I*, *supra* note 1, at 333.

without defining that term.[223] Absent binding agreement to the contrary, it is not yet clear that all coastal states would consider a MORU transversing their waters to be a ship (or equivalent to a ship) entitled to these freedoms and rights. In fact, it seems quite possible that a coastal state so inclined might argue that a foreign MORU was not a "ship" and therefore had no such freedoms or rights in that state's waters.[224]

Before it can be opened for ratification by the contracting states, a proposed *stricto sensu* amendment of UNCLOS that explicitly recognizes such rights for MORUs would need to adopted under one of two procedures. Following the receipt of favorable replies of not less than one half of the 168 UNCLOS contracting states to a proposal for a conference to discuss the amendment within twelve months of the proposal, the text might be proposed for adoption at that conference.[225] Alternatively, any contracting state might attempt to use the "simplified procedure," in which a proposed amendment is sent to all contracting states for consideration and automatic adoption, provided that not *one* contracting state vetoes the proposed adoption by responding in the negative within twelve months.[226] Self-evidently, the simple procedure is fairly exposed to diplomatic piracy by a single hostile state. If adopted, *stricto sensu* amendments to UNCLOS are then opened for signature for twelve months from adoption, unless otherwise provided in the amendment itself. Enactment of such amendments requires the ratification of or accession to the adopted text by no less than two-thirds of UNCLOS's contracting states.[227] The procedural and numerical challenges related to the adoption and ratification of a *stricto sensu* amendment to UNCLOS make it suboptimal for stakeholders in an emerging sector currently present in a relatively limited number of states.

Alternatively, UNCLOS art. 311(3-4) specifically provides for *inter se* amendments, allowing contracting states to conclude agreements interpreting or modifying the operation of provisions of UNCLOS as between themselves. This leaves open the possibility of a smaller group of states to explicitly recognize UNCLOS's freedoms and rights of innocent passage for MORUs as between themselves under their own rules of adoption and ratification, without binding any other existing or subsequent

223. UNCLOS, *supra* note 49, art. 17-19, 21-28, 38-45, 52-54, and 211. See also *Mare Incognitum, Part I*, *supra* note 1, at 327.

224. *See* Severance & Sandgren, *supra* note 2.

225. UNCLOS, *supra* note 49, art. 312(1).

226. *See id.*, art. 313.

227. *See id.*, art. 316(1)-(2).

parties to UNCLOS. A hypothetical MORU Convention might include provisions under which MORU Convention contracting states recognize MORUs as having the same freedom of the seas and right of innocent passage as traditional merchant ships, whether under UNCLOS (as between UNCLOS contracting states, using UNCLOS art. 311(3-4)) or the law of the sea (between two MORU convention contracting states where at least one is not an UNCLOS contracting state).[228] Given the difficulty of effecting a *stricto sensu* amendment of UNCLOS, the explicit availability of *inter se* amendments of UNCLOS under art. 311, and the complexity of UNCLOS's provisions governing those freedoms and rights, this seems a sensible approach to this topic, and has been reflected in Article XVI of the Annex.[229]

2. Default Civil Jurisdiction (in the Absence of other Regulations)

In the absence of a contractual forum selection provision or allocation of that jurisdiction in relation to specific issues in a binding treaty or convention, parties to a civil dispute are at risk of conflicting claims of jurisdiction by courts in different states. By its very nature, the allocation between two states of a default jurisdiction to settle such civil disputes would require the consent of the two states. No such default jurisdiction for MORUs currently exists and addressing this topic through a *sui generis* provision in a new MORU Convention would seem to be one option. This has been reflected in Article VI of the Annex.[230]

3. Registered Ownership, *In Rem* Non-possessory Collateral Rights, and Maritime Liens

Arguably, resolution of the interrelated legal uncertainties surrounding foreign recognition of Flag State registration of MORUs themselves and *in rem* non-possessory security interests over them, the relative priority of publicly registered *in rem* non-possessory security interests and unregistered *in rem* non-possessory security interests such as maritime liens, and arrest and release of MORUs for various claims, together with limitations of liability, would have the greatest direct impact on the global cross-border bankability of MORUs and MORU Arrays.[231] There are several conventions that might either be used or provide a

228. For example, between the United States as non-contracting state and Canada as UNCLOS contracting state.

229. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 277-78.

230. *See id.*, at 259-60.

231. *See Mare Incognitum, Part I*, *supra* note 1.

template for the resolution of these uncertainties. Unfortunately, because recognition of ownership and security interests, and an established priority of claims implies winners and losers in the event of bankruptcy, they are also some of the more contentious issues facing MORU stakeholders. Recognition of Flag State registration of ownership, registration of *in rem* non-possessory security interests, the relative priority of publicly registered *in rem* non-possessory security interests and unregistered non-consensual rights and interests such as maritime liens, and arrest and release of MORUs have each been addressed below.

a. Recognition of Flag State Registration of MORUs

UNCLOS gives each contracting state the right to establish under its domestic law the conditions for the registration of "ships," and the right to regulate "installations" in its waters.[232] However, it is not clear to what extent UNCLOS addresses public registration of a MORU that is treated under the Flag State's domestic law as a *sui generis* form of moveable property, which is neither "ship" nor "installation." Conversely, to the extent that registration of a MORU (and the characterization of the property as "ship," "vessel," or something else) is left to the domestic law of each state, there still is a need for other coastal states in whose waters the MORU might appear to recognize any such publicly accessible registration of the MORU by foreign Flag States, regardless of whether the MORU is treated as a "ship," "vessel," or as some other form of moveable property under the domestic laws and traditions of that Flag State. [233] The question of foreign recognition of domestic MORU registration no longer can be considered entirely academic: in 2020, Norway permitted registration of the first FWT, *Hywind Demo*, in the Norwegian Ordinary Ship Registry as a "floating facility."[234]

232. UNCLOS, *supra* note 49, Art. 56, 60, 91.

233. See INT'L SUB-COMM. ON DRILLING PLATFORMS, DRILLING PLATFORMS REPORT, *supra* note 54, at 35. The author notes that domestic public registers of ownership remain the norm in both traditional shipping and, notwithstanding the CTC Aircraft Protocol's international register of security interests, aircraft. *See also* UNCLOS, *supra* note 49, art. 91 (giving states the right to fix conditions for granting nationality to ships, registering ships in its territory, and flying its flag); MLM 1993, *supra* note 38, art. 3(2); Ship Registration Convention, *supra* note 37, art. 4 (not yet in force); *Mare Incognitum, Part I*, *supra* note 1, at 336-39.

234. *See Spennende registrering i NOR*, *supra* note 65; *see also* OFFSHORE, *supra* note 67 (indicating Marshallese-flagged FWTs in UK); 42 U.S.C. § 9118(e)(3) (For the purposes of the documentation laws, ocean thermal energy conversion facilities and plantships shall be deemed to be vessels and, if documented, vessels of the United States for the purposes of the Ship Mortgage Act, 1920).

Unfortunately, neither the Ship Registration Convention nor the Convention Relating to Registration of Rights in Respect of Vessels under Construction, 1967 have entered into force,[235] and in any event the Ship Registration Convention would clearly require amendment to include MORUs within its scope.[236] Addressing the issue of international recognition of Flag State registration of MORUs by amending international instruments not yet in force would be suboptimal, if not moot.

The International Convention for the Unification of Certain Rules of Law relating to Maritime Liens and Mortgages, 1926[237] (MLM 1926) and its successor, MLM 1993, both provide for international recognition of Flag State registration of "ships" or "seagoing ships" (respectively) without defining those terms, but neither are widely accepted.[238] Either (or both) might be amended to explicitly include MORUs within their scope, but the impact would be limited to the fairly small list of MLM 1926 or MLM 1993 contracting states. The challenges of amending UNCLOS have already been addressed. The inclusion of a *sui generis* provision for the mutual recognition of other contracting states' public registration (whether the MORU was registered by the contracting state as a "ship" or otherwise) in a separate MORU Convention would seem to be in almost everyone's interest.[239] This has been reflected in Article III and IV of the Annex.[240]

b. Registered *In Rem* Non-Possessory Collateral Rights

The ability to use MORUs as effective cross-border collateral depends in part on a publicly registered *in rem* non-possessory security interest (whatever its form) that is recognized internationally (at least by those coastal states in whose waters a foreign-flagged MORU subject to

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235. *See Status of the Ratifications of and Accessions to the Brussels International Maritime Law Conventions*, Y.B. 2016 ANNUAIRE, (Comité Mar. Int'l) 367, 411, 490 (2016) https://comitemaritime.org/wp-content/uploads/2018/05/Status-of-the-Ratifications-of-and-Accessions-to-the-Brussels-International-Maritime-Law-Conventions.pdf [hereinafter *Status of Brussels Conventions*].

236. *See* Ship Registration Convention, *supra* note 37, art. 2 (defining "ship" as "any *self-propelled* sea-going vessel *used in international seaborne trade for the transport of goods, passengers, or both*, with the exception of vessels of less than 500 gross registered tons").

237. International Convention for the Unification of Certain Rules of Law relating to Maritime Liens and Mortgages, 1926, art. 1, reprinted in 27 AM. J. INT'L L. 28-38 (Supp. 1933), in 6E BENEDICT ON ADMIRALTY, as Doc. No. 15-6 [MLM 1926].

238. *Status of Brussels Conventions, supra* note 135, at 384-85, 490-91; *Chapter XI (Transport and Communications), D. Water Transport, 4, International Convention on Maritime Liens and Mortgages*, 1993, 2276 U.N.T.S. 39.

239. *See Mare Incognitum, Part I, supra* note 1, at 338-339.

240. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 255-57 (noting in particular paragraphs 3.1, 3.3, 3.5, 4.2, 4.3, and 4.6).

the security interest might appear) and which is given priority over (at least most) other claims. Such recognition of foreign registered collateral rights should result in a materially lower cost of secured debt for MORU owners (and a correspondingly lower LCoE for consumers) and simultaneously a greater willingness of international lenders to finance MORUs destined for the waters of other states, particularly where the existing domestic collateral rights are insufficient.[241] Although each coastal state might enact provisions providing for the recognition of foreign registered *in rem* non-possessory security interests,[242] the need for certainty in relation to recognition of foreign registered security interests by each coastal state in whose waters a secured MORU might appear implies that reliance on a piecemeal implementation of domestic law solutions in all relevant jurisdictions would be sub-optimal and a binding international solution would be preferable. Exclusive reliance on such domestic law solutions has been rejected for the purposes of this Article.[243]

Two potential international solutions providing for recognition of registered *in rem* non-possessory security interests already exist and merit further discussion: (a) a convention (or amendment thereto) that provides for the mutual recognition of each contracting state's domestic law covering publicly registered *in rem* non-possessory security interest over MORUs (be it a Flag State domestic ship mortgage, hypothecation, or other form of *in rem* security interest); and (b) a convention (or amendment thereto) giving rise to an international publicly registered *in rem* non-possessory security interest.

Both MLM 1926[244] and MLM 1993[245] provide for mutual recognition by the contracting states of each other's ship mortgages, hypothecations and the like registered in accordance with the second contracting state's domestic law. Unfortunately, by limiting their scope to "vessels" or "sea-going vessels" respectively without defining those terms, neither MLM 1926 nor MLM 1993 can be said to unambiguously recognize MORUs as within their scope. Making matters worse, neither

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241. *See Mare Incognitum, Part I, supra* note 1, at 339-43, 364-68; Böger, *infra* note 248, at 78 (referencing the hugely beneficial economic effect of the CTC on the aircraft sector and the OECD's Aircraft Sector Understanding allowing ECAs to charge lower premiums for buyers or lessees in contracting states) and 94-95.

242. *See* Preferred Ship Mortgage Act, 46 U.S.C. §§ 31301(6)(b), 31325. It is worth noting that recognition of foreign ship mortgages was uncertain until the 1954 amendment of the Act. *See* Kriz, *supra* note 132, at 672 n. 6, 26.

243. *See* Section II.B.2.

244. *See* MLM 1926, *supra* note 237, art. 1.

245. *See* MLM 1993, *supra* note 38, art. 1.

can be said to be broadly accepted[246] (possible reasons for which are described in Section II.C.3.c. below). In principle, both MLM 1926 and MLM 1993 might be amended by their respective state parties to explicitly include MORUs within their scope, but this would only solve the issue for the relatively limited number of states who are parties to either MLM 1926 or MLM 1993.

In contrast to MLM 1926 and MLM 1993, the CTC is broadly accepted and provides for a novel form of registered international security interest (as opposed to a registered domestic law security interest requiring legal recognition by other nations). Unfortunately, it suffers from even clearer problems of applicability in relation to MORUs than the ambiguity of the term "vessels" or "seagoing vessels" (which one might argue could include MORUs) found in MLM 1926 or MLM 1993: the CTC's scope is currently limited to certain categories of mobile equipment covered by specific protocols thereto: airframes, aircraft engines and helicopters; railway rolling stock; space assets; and mining, agricultural, and construction equipment.[247] Amending the CTC to include MORUs in a new Protocol also might prove to be politically difficult, if not impossible. The idea of a maritime protocol[248] to the CTC has been the source of strong disagreement from the beginning, again largely due to the contentious issue of maritime liens on traditional ships and their priorities in relation to a registered *in rem* non-possessory security interest (see Section II.C.3.c. below).

Given the limited acceptance of MLM 1926 and MLM 1993, and conversely, the political challenges in enacting a MORU-inclusive maritime protocol to the broadly-accepted CTC anytime soon, it may be that the issue of mutual recognition of other contracting states' publicly registered *in rem* non-possessory security interests (be they ship mortgages, hypothecations, or other domestic or international registered *in rem* non-possessory security interests) on MORUs is best addressed by a *sui generis* provision in a MORU Convention (similar to what was proposed in the Vancouver Draft in relation to O&G MOUs).[249] This has

246. *See supra* note 211.

247. *See* CTC, *supra* note 41, art. 2(1-3).

248. *See, e.g.*, Ole Böger, *The Case for a New Protocol to the Cape Town Convention Covering Security over Ships*, 5(1) CAPE TOWN CONVENTION J. 73 (2016), https://doi.org/10.1080/2049761X.2016.1256432; Ben Köhler, *Heading towards Cape Town? Some Remarks on the Preparation of a Future Protocol to the Cape Town Convention with Respect to Ships and Maritime Equipment*, 22(3) UNIF. L.R. 507 (2017), https://doi.org/10.1093/ulr/unx031; Delgado, *Security Interests over Ships*, *supra* note 27.

249. *See* Vancouver Draft, *supra* note 5, art. 4.2, 4.4, 4.6.

been reflected in Articles III, IV, V, and XX of the Annex.[250] However, the acceptability of this, or any other method, for international recognition of a registered *in rem* non-possessory security interest on a MORU will likely depend to some degree on the priority given, if any, to maritime liens and other rights and interests.

c. Maritime Liens and Other Rights and Interests Having Priority over Registered *in rem* Non-possessory Security Interests

One of the most potentially vexing issues for future secured creditors of MORUs is the possible priority of domestic law maritime liens or other unregistered non-consensual rights and interests over a secured creditor's previously registered *in rem* non-possessory security interest in those MORUs. The issue is particularly problematic if the registered interest and unregistered interests arise in different states. As noted above, MLM 1926, MLM 1993, and the CTC provide three different possible templates for defining if and when an unregistered right or interest takes priority over a registered interest in a MORU.

MLM 1926 gives contracting state lenders a fixed list of categories of maritime liens that would have priority over a registered Flag State ship mortgage or hypothecation, without disallowing other contracting states to establish maritime liens with a lower priority than the registered Flag State ship mortgage or hypothecation.[251] Similarly, MLM 1993 offers contracting stakeholders a fixed list of slightly different categories of maritime liens with priority over a registered Flag State ship mortgage or hypothecation, without disallowing other contracting states to establish certain maritime liens with a lower priority than the Flag State ship mortgage or hypothecation.[252] Unlike MLM 1926, MLM 1993 does not provide for maritime liens with priority over the Flag State ship mortgage or hypothecation that arise from the provision of "necessaries" to the vessel,[253] but does allow retention of the vessel by shipyards in certain

250. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 255-59, 281 (noting in particular paragraphs 3.3, 4.2, 4.4, 4.6-4.8,5.1, 5.2, 5.4, 5.5, and 20.1(a)).

251. *See* MLM 1926, *supra* note 237, art. 2, 3.

252. MLM 1993, *supra* note 38, art. 4(1), 5, 6. *But see also id.*, art. 4(2) (excluding maritime liens for tort claims arising from different types of damages caused by pollution in certain circumstances). *Contra* MLM 1926, *supra* note 237, art. 2 (offering slightly different maritime liens categories than described in MLM 1993, art. 4(1)).

253. *See* MLM 1926, *supra* note 237, art. 2(5). *Contra* MLM 1993, *supra* note 38, art. 4(1). *See also* CTC, *supra* note 41, art. 39(b).

circumstances.[254] MLM 1993 also provides different rules governing the priorities between multiple maritime liens.[255]

Unlike the fixed list of categories of maritime liens with priority over a registered Flag State ship mortgage/hypothecation under MLM 1926 and MLM 1993,[256] the CTC allows contracting states to declare their own categories of unregistered non-consensual rights and interests that have priority over *previously* registered international interests at the time of ratification, acceptance, approval of, or accession to the relevant protocol by that contracting state.[257] After that point in time, a CTC contracting state may declare their own categories of unregistered non-consensual rights and interests and by doing so giving such categories priority over any international security interest registered after the declaration of that category,[258] provided that the debtor is "situated" in a CTC contracting state.[259] Like MLM 1926 and MLM 1993, a CTC contracting state may also declare its own categories of unregistered non-consensual rights and interests that do *not* have priority over any publicly registered international security interest.[260] Under the CTC, only the debtor, and not the creditor, must be situated in a contracting state, for a creditor to have rights under the Convention.[261] Debtors are "situated" where the owners are registered,[262] or have their place of business[263] (e.g. in the EEZ of Producing Coastal State that granted the concession or license); or presumably in the Flag State where the MORU is be registered.[264]

If a CTC maritime protocol covering both traditional ships and MORUs were to be enacted, Port States joining that protocol might wish to declare on accession a long list of maritime liens and other unregistered non-consensual rights and interests with priority over both previous and subsequently registered international interests on MORUs.[265] Such a declaration would encourage secured lenders intending to rely on the

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254. *Compare* MLM 1993, *supra* note 38, art. 7; CTC, *supra* note 41, art. 39(1)(b). *See also Section X (Arrests).*

255. *See* MLM 1993, *supra* note 38, art. 5, 6. *Contra* MLM 1926, *supra* note 237, art. 5, 6.

256. MLM 1926, *supra* note 237, art. 2-3; MLM 1993, *supra* note 38, art. 4-6.

257. CTC, *supra* note 41, art. 39(1), 39(4).

258. *Id.*, art. 39(3).

259. *Id.*, art. 3-4.

260. *Id.*, art. 39(1)(b). *Compare* MLM 1926, *supra* note 237, art. 3; MLM 1993, *supra* note 38, art. 6.

261. CTC, *supra* note 41, art. 3-4.

262. *Id.*, art. 4(1)(a-b).

263. *See id.*, art. 4(1)(c-d).

264. *Compare* Aircraft Protocol, *supra* note 185, art. 4(1) (expanding the CTC's "sphere of application" to the state of registry in relation to aircraft).

265. *See* CTC, *supra* note 41, at art. 39(4).

priority of their registered international interest to seek contractual warranties and undertakings from their borrowers not to bring or allow the secured MORU to enter the waters of contracting states making such declarations if any such unregistered rights or interests might arise.[266] The CTC's flexibility comes at the potential expense of future international uniformity and certainty for creditors hoping on the priority of a registered international interest in an asset in a new contracting state, but it does protect the priority of previously registered international interests over newly declared forms of unregistered non-consensual security interests declared by current contracting states.[267]

It has been argued that the relatively low level of acceptance for MLM 1926 and MLM 1993 may be due to the contentious issue of maritime liens, and specifically conflicting state interests in prioritizing (or subordinating) various categories of maritime liens arising in Port States over *in rem* non-possessory security interests previously registered publicly in foreign Flag States.[268] Similarly, it has been argued that addressing this issue is the biggest obstacle to developing a maritime protocol to the CTC.[269] UNIDROIT considered incorporating traditional ships within the CTC framework in the 1990s.[270] However, the development of a maritime protocol to the CTC was strongly opposed by both the IMO and the CMI when it was first raised in the 1990s,[271] with a past president of CMI specifically pointing to the significant differences between ship registration, the national registries, the tradition of maritime liens, and the arrest and liens and mortgages conventions when explaining such opposition.[272] The CTC's failure to provide international recognition

266. *Compare* Kriz, *supra* note 132, at 690 (discussing the use of contractual obligations forbidding a bareboat or demise charterer from permitting maritime liens to arise upon the vessel, as the owner, having given up the control of the vessel, wishes to avoid being a guarantor of the charterer's debts); *with* Delgado, *Security Interests over Ships*, *supra* note 27, at 260 (mentioning explicit trading limitations on charter parties prohibiting a ship from entering ports where the law of the flag would not be respected, which presumably could also be applied to foreign flagged MORUs).

267. *See* CTC, *supra* note 41, art. 39(3-4).

268. *See* Böger, *supra* note 248, at 93; Delgado, *Security Interests over Ships*, *supra* note 27, at 246-48; Juan Pablo Rodriguez Delgado, *Is the Preparation of a Future Protocol to the Convention on International Interests in Mobile Equipment Concerning Ships and Maritime Affairs a Good Idea?*, 24 J. INT'L. MAR .L. 213, 215-17 (2018) [hereinafter Delgado, *Preparation of a Future Maritime Protocol?*].

269. *See* Delgado, *Security Interests over Ships*, *supra* note 27, at 254; Delgado, *Preparation of a Future Maritime Protocol?*, *supra* note 268, at 223.

270. Hetherington, *International Law*, *supra* note 135, at 56.

271. *See id.*; Delgado, *Security Interests over Ships*, *supra* note 27, at 240.

272. Hetherington, *International Law*, *supra* note 135, at 56.

of priority of certain types of traditional maritime liens (or non-consensual rights/interests in the wording of the CTC) over registered mortgages and the resulting potential conflict between a hypothetical maritime protocol and the (at that time) new MLM 1993 were considered particularly problematic by some.[273]

Given the limited acceptance of MLM 1926 and MLM 1993, the IMO's and CMI's past reluctance to back an extension of the UNDROIT-supported CTC into the maritime world, and the potential refusal of MORU Flag States to join any instrument acknowledging Port States' rights to declare a potentially unlimited number of categories of unregistered non-consensual security interests with priority over Flag State registered international security interests,[274] it may be that the issue of maritime liens and other non-consensual rights and interests in relation to MORUs would simply be too contentious to resolve if it is too closely linked to the ongoing fights between different groups of traditional shipping creditors and their competing security interests' priorities under the existing conventions, whether under MLM 1926, MLM 1993, or (hypothetically) the CTC.

The simplest solution for MORU stakeholders to avoid the fight between traditional shipping creditors over the relative priority of their competing security interests over traditional ships might be the creation of an MLM-like, but *sui generis* MORU-specific regime. As the MORU sector is a nascent industry with very few existing MORU creditors with vested security interests in MORUs (when compared to the traditional shipping sector), it might be possible (for a brief moment in time) to establish *ab initio* a balanced registered and unregistered non-consensual security interest regime specific to MORUs that includes mutual recognition of:

> (a) each contracting state's declared form of domestic law publicly registered domestic *in rem* non-possessory security interests applicable to MORUs (be they ship mortgages, hypothecations, or any other form of domestic registered *in rem* non-possessory security interests);

273. *See* Delgado, *Preparation of a Future Maritime Protocol?*, *supra* note 268, at 214-15. *See also* Francesco Berlingieri, *The 1993 Convention on Maritime Liens and Mortgages*, LLOYD'S MAR. COM. L.Q. 57–77 (1995).

274. *See* CTC, *supra* note 41, art. 23, 39, and 40.

(b) a fairly limited set of traditional maritime liens[275] with priority over other contracting states' declared form of publicly registered domestic *in rem* non-possessory security interests;
(c) the priority of maritime liens as amongst themselves; and
(d) the right of contracting states to declare other categories of maritime lines or other non-consensual rights and interests without priority over other contracting states' declared form of registered *in rem* non-possessory security interests.

As discussed in the section on arrests below, this should be balanced against a right of cancellation of such liens on payment or (if disputed) the posting of adequate security against the claim with the correct court of the Port State in which the arrest has occurred, allowing the MORU to resume its intended economic activity while the dispute is resolved. This approach has been reflected in Article V of the Annex.[276]

4. Arrests

The International Convention for the Unification of Certain Rules relating to Arrest of Sea-going Ships 1952 ("Arrest Convention 1952")[277] is widely adopted.[278] It allows for the arrest of ships flying a contracting state's flag in the jurisdiction of another contracting state for certain maritime claims (including ship mortgages and hypothecations, various maritime liens, and other claims),[279] and their release on bail in certain circumstances.[280] It applies to "ships" without defining that term,[281] begging the question of whether MORUs would be considered "ships" for purposes of arrest under Arrest Convention 1952. Similarly, Arrest Convention 1999 allows for the arrest of ships for certain maritime

275. *See* Vancouver Draft, *supra* note 5, art. 4.2, 4.4, 4.6. This would seem preferable to an ad hoc contractual approach. *Compare* Kriz, *supra* note 132, at 690 (discussing the use of contractual prohibitions on bareboat or demise charterers from permitting maritime liens to arise upon the vessel, as the owner, having given up the control of the vessel, wishes to avoid being a guarantor of the charterer's debts) *with* Shaw, *Offshore Craft and Structures*, *supra* note 143, at 150-51.

276. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 257-59 (noting in particular paragraphs 5.3, 5.4, 5.6, and 5.7).

277. International Convention Relating to the Arrest of Seagoing Ships, May 10, 1952, 439 U.N.T.S. 193 [hereinafter Arrest Convention 1952].

278. *Status of Brussels Conventions*, *supra* note 235, at 397-98.

279. Arrest Convention 1952, *supra* note 277, art. 1(1), 2. *But see Status of Brussels Conventions*, *supra* note 235, art.6.

280. *Id.*, art. 2, 5.

281. *Id.*

claims, [282] and their release on bail, in certain circumstances. [283] Unfortunately, Arrest Convention 1999 currently has only twelve parties.[284] Like its predecessor, it also applies to "ships" but leaves the term "ship" undefined, again leaving it uncertain whether that convention would apply to MORUs.[285]

Both Arrest Conventions represent a balancing of Port State and Affected State interests (recognition of the Port State's or Affected State's right to arrest a transient asset of a foreign creditor as a security for payment of specific categories of maritime claims) and Flag States', Producing Coastal States', and other states'[286] interests (recognition of the right to secure the prompt release of the Flag State vessel upon payment in full or provision of payment security to cover disputed amounts, and its subsequent prompt return to productive service so that it can generate revenue to pay claims). The balancing of these competing state interests suggests an international solution.

Given the uncertainty with regard to the application of either Arrest Convention to MORUs, two options seem feasible: amending the Arrest Convention(s) to explicitly include MORUs within their scope; or establishing a separate but similar regime for MORUs under a new convention. Unfortunately, the Arrest Convention 1952 itself provides scant guidance in relation to the approval threshold for amendments, saying only that any party can ask the Belgian government (as depository) to call a conference to contemplate proposed amendments.[287] Similarly, there is no explicit provision for *inter se* amendments. Given the procedural uncertainties and potential numerical challenges in enacting a MORU-specific amendment to Arrest Convention 1952, [288] and conversely the futility of amending a convention as unaccepted as Arrest Convention 1999, the inclusion of *sui generis* arrest and release on supply of payment security provisions in a separate MORU Convention would

282. *See* Arrest Convention 1999, *supra* note 36, art. 1(1), 2(2).

283. *Id.*, art. 4.

284. *See Chapter XII (Navigation)*, 12.8 *International Convention on Arrest of Ships, 1999*, 2797 U.N.T.S. 3, https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XII-8&chapter=12&clang=_en.

285. *See* Arrest Convention 1999, *supra* note 36.

286. In the context of a MORU, this would include the Producing Coastal State to the extent it was not also the Flag State.

287. *See* Arrest Convention 1952, *supra* note 277, art. 16.

288. *See* Alcantará, *supra* note 141, at 557-58.

seem to be in almost everyone's interest.[289] This has been reflected in Articles V and XIII of the Annex.[290]

5. Collisions and Allisions

Uncontrolled contact between MORUs, and between MORUs and other vessels flying various flags in Producing Coastal States', Port States', and Affected States' waters will occur.[291] These unfortunate circumstances might arise when the MORU is in transit under tow, properly moored and in normal operation, or is adrift.[292] Would a collision between a traditional merchant ship and a properly moored MORU be considered a collision or (to the extent that MORU is not a "ship" or "vessel" but an "installation") an allision?[293] Under which law or convention does liability attach and how is it allocated between the merchant ship and the MORU? In which forum would the dispute be heard? Do the answers change if the MORU is in transit under tow? Do the answers change when each of the relevant parties is registered or flagged in a state other than the state in whose waters the incident occurred?

Although it is broadly accepted,[294] the International Convention for the Unification of Certain Rules of Law with Respect to Collisions Between Vessels of 1910 ("Collision Convention 1910") applies only to "seagoing vessels" without defining the term.[295] Once again, it is unclear if MORUs are considered "seagoing vessels" for purposes of Collision Convention 1910, whether in transit, moored, or adrift.[296] Even if one assumes that MORUs are "seagoing vessels" for the purposes of Collision

289. *See Mare Incognitum, Part I*, *supra* note 1, at 344.

290. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 257-59, 272-75 (noting in particular paragraphs 5.9, 5.10, 5.11, and 13.16).

291. *See Mare Incognitum, Part I*, *supra* note 1, at 324, 345, 357-59.

292. *See id.*, at 345.

293. *See* Aldo Chircop & Peter L'Esperance, *Functional Interactions and Maritime Regulation: The Mutual Accommodation of Offshore Wind Farms and International Navigation and Shipping*, 30 OCEAN Y.B. 1, 9 (2016), https://ssrn.com/abstract=2757060.

294. *See Status of Brussels Conventions*, *supra* note 235, at 368-70.

295. *See* International Convention for the Unification of Certain Rules of Law with Respect to Collisions Between Vessels art. 1, Sept. 23, 1910, in 2 REG. OF TEXTS OF CONVENTIONS AND OTHER INSTRUMENTS CONCERNING INT'L TRADE L., 125, U.N. Sales No. E.73.V (1973), 125 [hereinafter Collision Convention 1910] http://www.uncitral.org/pdf/english/texts/general/Register_Texts_Vol2.pdf.

296. *See* Sven Hille, Christoph Schröder, Michael Dettmer & Marco Visser, *Offshore-Windkraftanlagen - Haftung und Haftpflichtversicherung* [*Offshore Wind Turbines-Liability and Liability Insurance*], ZEITSCHRIFT FÜR VERSICHERUNGRECHT, HAFTUNGS- UND SCADENSRECHT [JOURNAL FOR INSURANCE LAW, LIABILITY- AND DAMAGE LAW] 585, 586-87 (2010) (in which the authors opine that the Collisions Convention 1910 would not apply to floating wind turbines, as they do not fulfil the requirements to be a "ship").

Convention 1910, the convention itself is not well suited for some of the issues that might arise. Insofar as a MORU is not self-propelled and likely unmanned during normal moored operation, the post-collision obligations under Article 8 on the master of each vessel to render assistance (so far as they are able) would fall on no one. An amendment would be necessary to clarify that MORUs are "seagoing vessels" for purposes of the convention and to address any other issues. Unfortunately, the text of the Collision Convention 1910 itself does not contemplate amendment (let alone *inter se* amendment), leaving MORU stakeholders contemplating amendment of that instrument in a precarious position. Given the procedural uncertainties and potential numerical challenges of amending such a broadly-accepted convention, the inclusion of *sui generis* rules in relation to collision in a separate MORU Convention would seem to be an expedient solution in almost everyone's interest. This has been reflected in Article XII of the Annex.[297]

The International Convention for the Unification of Certain Rules Relating to Civil Jurisdiction in Matters of Collision (May 10, 1952)[298] ("Collision (Civil Jurisdiction) Convention 1952") is also widely accepted.[299] It gives a collision-action plaintiff a choice of forum of the place of the defendant's habitual residence or business, the place of the collision, or a place at which the ship or a "sister ship" may be arrested.[300] Unfortunately, it also only applies to "seagoing vessels," without defining that term. Similar to the Arrest Convention 1952, the Collision (Civil Jurisdiction) Convention 1952 itself provides scant guidance in relation to the approval threshold for amendments, saying only that any party can ask the Belgian government to call a conference to contemplate proposed amendments.[301] Given the procedural uncertainties and potential numerical challenges of amending a convention as broadly accepted as Collision (Civil Jurisdiction) Convention 1952,[302] the inclusion of *sui generis* arrest and release provisions in a separate MORU Convention would seem to be

297. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 270-72.

298. International Convention on Certain Rules Concerning Civil Jurisdiction in Matters of Collision, May 10, 1952, 439 U.N.T.S. 6331 [hereinafter Collision (Civil Jurisdiction) Convention 1952].

299. *See Status of Brussels Conventions*, *supra* note 235, at 387-89.

300. White, *supra* note 143, at 24.

301. *See* Collision (Civil Jurisdiction) Convention 1952, *supra* note 298, art. 14.

302. *See* Alcantará, *supra* note 141, at 557-58.

an expedient solution in almost everyone's interest.[303] This has been reflected in Article VI of the Annex.[304]

6. Safety at Sea

As discussed in *Mare Incognitum, Part I*, the extent to which SOLAS (with its references to "ships" and "international voyages"), including the International Management Code for the Safe Operation of Ships and for Pollution Prevention[305] (ISM Code) (with its references to specific classes of "vessels" such as mobile offshore *drilling* units), the ISPS Code (with its inclusion of mobile offshore *drilling* units within the meaning of "ship"), and other Protocols, should be applied to both manned and unmanned MORUs is not entirely clear.[306] Given the uncertainty with regard to the application of SOLAS to MORUs, feasible options for states desiring a similar regime for MORUs include a *stricto sensu* amendment to the SOLAS Protocols to explicitly include MORUs within their scope and the establishment a separate but similar *sui generis* regime under a new convention.

It is worth noting that different types of MORUs could give rise to different safety concerns. Regulation of manned MORUs and unmanned MORUs should differ to some degree. The rotating equipment of FWTs and FTECs have their own risks that are not present in Floating Solar Energy Converters. The linkages connecting a Floating Solar Energy Converter's modules to each other in a multi-module raft have different mechanical risks than the intake and outtake pipes of FOTECs. The chemicals that may be present in different MORUs categories present different pollution risks for each category, both in operation and in the event of a loss.[307] Any analysis and adoption of any aspect of International Convention on Load Lines, 1966 (LL 1966)[308] or SOLAS to MORUs in the style of the ISM Code or the MODU Code[309] should be tailored to the

303. *See Mare Incognitum, Part I*, *supra* note 1, at 346.

304. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 259-60 (noting in particular 6.4, 6.5, and 6.6); *see also id.*, art. XIII.

305. Int'l Mar. Org. [IMO], A. 741(18), *International Management Code for the Safe Operation of Ships and for Pollution Prevention* (Nov. 4, 1993).

306. *See Mare Incognitum, Part I*, *supra* note 1, at 347-48.

307. *See SKWID Sinks Off Japan*, OFFSHOREWIND.BIZ (Dec. 18, 2014), https://www.offshorewind.biz/2014/12/18/skwid-sinks-off-japan/ (following the loss of the *SKWID*, leakage of lubricating oil was a concern).

308. International Convention on Load Lines, 1966, Apr. 5, 1966, 640 U.N.T.S. 133, art. 4(2) [hereinafter LL 1966] (applying only to ships on international voyages).

309. Int'l Mar. Org. [IMO], A. 1023(26), *Code for the Construction and Equipment of Mobile Offshore Drilling Units* (Dec. 2, 2009).

specific risks that each manned and unmanned MORU technology presents.

To the extent that MORUs are (or will be) covered by SOLAS, amendments to address different classes of MORUs would be largely technical in nature, and SOLAS explicitly gives its contracting states access to the "tacit acceptance" procedure,[310] a *stricto sensu* MORU amendment or amendments to the relevant Protocols and Codes regulated by SOLAS using the tacit acceptance procedure is the author's preferred route to address the different technical needs and issues facing each class of MORU—possibly, a tailored multi-chapter MORU Code could be enacted. However, until the point the application of SOLAS itself to MORUs is clear and such amendments have been enacted, a default position generally applying those Protocols and Codes *mutatis mutandis* to MORUs should be enacted. This has been reflected in Article VIII of the Annex.[311]

7. End of Life Issues: Salvage, Wreck Removal, and Decommissioning

As discussed in *Mare Incognitum, Part I*,[312] the International Convention on Salvage, 1989 (Salvage Convention 1989)[313] includes within the meaning of "vessel" "any structure capable of navigation",[314] but under art. 3 excludes the convention's application to "fixed or floating platforms or to [MODUs] when such platforms or units are on location engaged in the exploration, exploitation or production of sea-bed mineral resources." Insofar as floating platforms are excluded only "when such platforms . . . are on location engaged in the exploration, exploitation or production of sea-bed mineral resources", one might assume that the drafters of Salvage Convention 1989 recognized that fixed and floating platforms (whether O&G MOUs, MORUs, or otherwise) are (or at least potentially are) structures capable of navigation and therefore (subject to the limitations of art. 3) within its scope. Unlike O&G MOUs, MORUs would not be "on location engaged in the exploration, exploitation or production of sea-bed mineral resources," so much as on location engaged in the production of electric power or an activity related thereto.

310. *See* SOLAS, *supra* note 155, art. VIII (b)(vi)(2).

311. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 262-67 (noting in particular paragraph 8.1).

312. *See Mare Incognitum, Part I*, *supra* note 1, at 348-49.

313. International Convention on Salvage, 1989, Apr. 28, 1989, 1953 U.N.T.S. 165 (entered into force July 14, 1996) [hereinafter Salvage Convention 1989].

314. Salvage Convention 1989, *supra* note 313, art. 1(b).

Consequently, and in contrast to O&G MOUs, MORUs would seem already to fall within the scope of Salvage Convention 1989, whether on location or in transit under tow. Given the wide acceptance of Salvage Convention 1989,[315] there is arguably limited need to include salvage as a separate topic in a hypothetical MORU Convention. Consequently, art. IX of the Vancouver Draft has been deleted in the Annex.[316] The hypothetical MORU Convention should limit itself to requiring accession of MORU Convention contracting states to the amendment to Salvage Convention 1989, if deemed relevant. This has been reflected in Article XIX of the Annex.[317]

As noted above, as of 2021 there were fifty-five contracting states[318] to the Wreck Removal Convention. Similar to Salvage Convention 1989, the Wreck Removal Convention's definition of "ship" includes any "floating platform, except when such platforms are on location engaged in the exploration, exploitation or production of seabed mineral resources."[319] Given that MORUs are likely either a "ship" or a "floating platform" for purposes of the Wreck Removal Convention, and are not engaged in the exploration, exploitation or production of seabed mineral resources, it seems that the Wreck Removal Convention also applies to MORUs, whether in transit or on location. It worth considering whether fifty-five contracting states are sufficient evidence to argue that a hypothetical MORU Convention should not repeat what has been already addressed by the Wreck Removal Convention. It might be that the hypothetical MORU Convention should limit itself to requiring accession of MORU Convention contracting states to the Wreck Removal Convention, if deemed relevant. This has been reflected in Article XIX of the Annex.[320]

As of 2021, the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (Hong Kong Convention)[321] had only been accepted by sixteen contracting states, had

315. *Status of IMO Treaties*, *supra* note 171, at 480 (75 contracting states).

316. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 267-68.

317. *See id.*, at 280 (noting in particular paragraph 19.1(a)).

318. *Status of IMO Treaties*, *supra* note 171, at 538.

319. Wreck Removal Convention, *supra* note 44, art. 1.2.

320. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 280 (noting in particular paragraph 19.1(c)).

321. Int'l Mar. Org. [IMO], SR/CONF/45, *Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships* (May 19, 2009), https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_154921.pdf [hereinafter Hong Kong Convention].

not entered into force, and cannot yet be considered generally accepted.[322] As discussed in *Mare Incognitum, Part I*,[323] it would seem that broad definition of "ship"[324] in the Hong Kong Convention would include MORUs, provided that their tonnage is at least 500 gross tons and their operational life was not spent exclusively in their Flag State's waters.[325] Query whether the current level of acceptance of the Hong Kong Convention implies that either: (a) there is simply insufficient support for the substance of the Hong Kong Convention, regardless of whether it applies to traditional ships, O&G MOUs, or MORUs (and this issue should be avoided for now); (b) there would be more acceptance of convention addressing this topic exclusively for MORUs (and it should be included as a *sui generis* provision within a hypothetical MORU Convention, requiring denouncement of the Hong Kong Convention's application to MORUs by any state that is a contracting state to both the MORU Convention and the Hong Kong Convention); or (c) it is simply too early to tell. Given this current uncertainty (but without prejudice to possible future inclusion), no mention of decommissioning or the Hong Kong Convention is made in the Annex.

8. Limitations of Liability

Traditional ship owners have long been able to limit their liability to third parties.[326] Historically, their liability was limited to the vessel's value. Underpinning the contemporary expression of this limitation of liability has been a modern compromise benefitting ship owners, their financiers, their insurers, and (in some circumstances) even claimants whose claims are subject to the limitations. Ship owners had to accept that their liability was to be calculated on a pre-casualty tonnage basis[327] (vs. the value of the vessel, if any, following an incident), but in exchange that pre-casualty

322. *Status of IMO Treaties*, *supra* note 171, at 542, 545.

323. *See Mare Incognitum, Part I*, *supra* note 1, at 350.

324. *See* Hong Kong Convention, *supra* note 321, art. 2(7).

325. *See id.*, art. 3.3. (However, note that the gross tonnage should be calculated in accordance with the tonnage measurement regulations contained in Annex I to the Tonnage Convention 1969, *infra* note 347, or any successor convention, which arguably applies to ships only); Hong Kong Convention, art. 2(8). *But see* Shaw, *Offshore Craft and Structures*, *supra* note 143, at 158 (positing that the Tonnage Convention 1969 could be applied to mobile offshore craft, but not fixed structures). *But see also* INT'L SUB-COMM. ON DRILLING PLATFORMS, DRILLING PLATFORMS REPORT, *supra* note 54, at 33 (making the same observation in relation to MODUs).

326. *See* Steven Rares, *An International Convention on Offshore Hydrocarbon Leaks?*, 2013 Y.B. ANNUAIRE (Comité Mar. Int'l) 340, 357; White, *supra* note 143, at 25.

327. SIMON RAINEY, THE LAW OF TUG AND TOW AND OFFSHORE CONTRACTS 541 (4th ed. 2018); Rares, *supra* note 326, at 352.

tonnage-based and internationally recognized limit of liability would become "virtually unbreakable."[328]

Provided they purchase insurance policies sufficient to cover third party liabilities covered by a limitation convention (i.e. policies covering up to the limitation), ship owners (and their financiers) need not worry about those potential third-party liabilities bankrupting the owner, causing the sale of the vessel, or being paid from casualty insurance proceeds received for damage or loss of the vessel.[329] Under several conventions, a ship owner can obtain the release and resume use of the vessel prior to the settling of the claims by establishing a limitation fund against which *all* claims covered by the convention must be made[330] and which would be distributed pro rata amongst the claimants on the basis of the size of their claims.[331] For ship financiers, the ability to quickly resume profitable operation of the vessel will be considered a key element of bankability.[332] In turn, this limitation of liability to a determinable amount has allowed insurers and P&I clubs to provide commercially workable and affordable liability insurance and indemnity protection to ship owners on the basis of a known maximum risk.[333]

Finally, this "unbreakable" limitation can be combined with an obligation under the convention for the ship owner to carry such insurance covering the potential liabilities (i.e. up to the limitation).[334] Although they

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328. *See* Rares, *supra* note 326, at 357; RAINEY, *supra* note 327, at 542-43.

329. *See* CMI, TRAVAUX PRÉPARATOIRES OF LLMC 1976, *supra* note 129, at 5 ("It is suggested that limitation of liability should be permitted only in respect of such excess of liability for which the person liable cannot reasonably be required to carry adequate insurance. It is not in the public interest, and in most cases of little benefit to the creditor, to endeav[o]r to enforce liabilities which are uninsurable from a practical point of view. On the other hand, the fact that there is a ceiling encourages potential debtors to insure up to the ceiling which may be a higher amount than the one they would have chosen had there been no ceiling."); Nolan, *supra* note 32, at 951 (as part of an insurance package to "insure for the benefit of a mortgagee the loss of preferred mortgage liens in the event of a priming maritime. . . lien swamps the vessel's value").

330. *See* CLC, *supra* note 189, art. 5(1,3), 6(1)(b); LLMC 1976, *supra* note 119, art. 11, 13(1-2). *See also* Arrest Convention 1952, *supra* note 278, art. 5; Arrest Convention 1999, *supra* note 36, art. 4-5.

331. *See* CLC, *supra* note 189, art. 5(4); LLMC, *supra* note 119, art. 12(1).

332. *See* Nolan, *supra* note 32, at 951, 971-72 (raising the issue of seizure of nontraditional watercraft not qualifying as vessels under local law, and begging the question of whether release upon delivery of security would be certain); The Von Rocks, (1998) 2 LLOYD'S REP. 198 (arrest of a floating back-hoe dredger/purported "ship"). *Compare* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 273-75, (noting paragraphs 13.8-13.18).

333. *See* Rares, *supra* note 326, at 357 and *supra* note 329 (in re the benefit of reasonable insurance).

334. *See* UNCLOS, *supra* note 49, art. 235(3); CMI, TRAVAUX PRÉPARATOIRES OF LLMC 1976, *supra* note 129, at 3, 642 ("As it is known, compulsory liability insurance is provided by the

no longer have a right to make unlimited claims against the owner, the combination of a limited liability calculated on a pre-casualty basis (vs. the value of the vessel, if any, following an incident) and insurance up to that limit gives potential claimants greater recourse than they might otherwise previously have had under a theoretically unlimited claim against the effectively "judgement proof" owner of an uninsured, aging, damaged, or lost vessel or a "single ship" company with limited liability.[335] In this sense, at least, the modern compromise also benefits claimants—they receive more than they otherwise would receive, if not all of what they claimed.[336]

It would seem that MORU Flag States, Producing Coastal States, and various stakeholders could benefit from the recognition by Port States and Affected States of ship-like limitations of liability determined on a pre-casualty basis for the Flag State's MORUs, in large part to facilitate the availability (and use) of commercially workable and affordable insurance and indemnity protection for those MORUs (and, consequently, improve MORU bankability).[337] Indeed, it would make little sense to not provide for a pre-casualty limitation of liability tied to mandatory insurance similar to that regime for ships: theoretically unlimited liability for a "single ship" owner/operator with limited liability under corporate law, whose only asset is the MORU (to the extent it has not been damaged or destroyed by casualty) would be a hollow victory for the claimant, and unlimited liability could make some MORUs commercially uninsurable—an unacceptable outcome for some potential owners, insurers, financiers, and arguably claimants against an uninsured (or uninsurable) MORU.[338] Lord Denning MR summarized the position as follows: ". . . limitation of liability is not a matter of justice. It is a rule of public policy which has its origin in history and its justification in convenience."[339]

Historically, reaching agreement on the quantum of the limitations, particularly where personal injury or death are concerned, can be challenging.[340] However, as most forms of MORUs are unmanned and

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HNS Convention (article 12) and in the CLC Convention (article 7), while no provision is contained in this respect in the LLMC Convention and in its Protocol. However a Resolution was adopted on 25 November 1999 by the Assembly of IMO by which 'Guidelines on Shipowners' Responsibilities in Respect of Maritime Claims' were approved. By these Guidelines shipowners are urged to arrange for the liability insurance in respect of their ships.").

335. Shaw, *Offshore Craft and Structures*, *supra* note 143, at 158.

336. *Id.*

337. *See* Rares, *supra* note 326, at 357.

338. *See id.*; Shaw, *Offshore Craft and Structures*, *supra* note 143, at 157-58.

339. *See* The Bramley Moore [1963] 2 LLOYD'S REP. 429 at 429 (CA).

340. *See* Griggs, *Obstacles to Uniformity*, *supra* note 43, at 200-02.

moored in normal operation and would rarely have more than a handful of people on board, this should present less of a challenge than agreeing on global limitations for these claims for passenger or merchant vessels, regardless of flag. Similarly, different frequencies of movement and risk profiles for MORUs when compared to traditional ships or O&G MOUs suggest that different limitations of liability and pricing for liability insurance might be merited.

The modern law of limitations of liability is set out in the LLMC 1976, the 1996 protocol thereto ("LLMC PROT 1996"),[341] and the 2012 amendment to that protocol.[342] As of 2021, there were fifty-six contracting states to the LLMC 1976 and sixty-three contracting states to LLMC PROT 1996.[343] Although LLMC PROT 1996 is framed as an amendment to LLMC 1976, the two instruments act as independent regimes. LLMC 1976 expressly excludes "floating platforms constructed for the purpose of exploring or exploiting the natural resources of the sea-bed or the subsoil thereof" (e.g. O&G MOUs) from its application,[344] a position unchanged in LLMC PROT 1996. Unfortunately, the exclusion of O&G MOUs from application of LLMC 1976/LLMC PROT 1996 only begs the question of whether LLMC 1976/LLMC PROT 1996 would (or should) apply to MORUs.[345] One might extend the author's own argument that MORUs arguably already fall within the Salvage and Wreck Removal Conventions[346] to LLMC 1976 (i.e. on the basis that the explicit exclusion of floating platforms applies only to those engaged in exploitation of seabed mineral resources). However, it has been observed that Article 6(5) of LLMC 1976 references the International Convention on Tonnage Measurement of Ships, 1969,[347] to determine tonnage for purposes of the limitation and is calculated for purposes of the limitation using the rules in

341. 1996 Protocol to Amend the 1976 Convention on Limitation of Liability for Maritime Claims, May 2, 1996, 35 I.L.M. 1433 [hereinafter LLMC PROT 1996].

342. Int'l. Mar. Org. [IMO], Amendments to the Protocol of 1996 to Amend the Convention on the Limitation of Liability for Maritime Claims, 1976, Res. LEG.5(99) (Apr. 19, 2012) [hereinafter 2012 AMEND LLMC PROT] https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/LEGDocuments/LEG.5(99).pdf.

343. *Status of IMO Treaties*, *supra* note 171, at 384, 397.

344. *See* LLMC 1976, *supra* note 119, art. 15.5(b); White, *supra* note 143, at 25.

345. *See* RAINEY, *supra* note 327, at 545 ("It is submitted that floating structures such as rigs or platforms as well as large objects that are capable of flotation and being waterborne (such as drydocks or caissons) will not be "ships" for the purposes of limitation under the [LLMC] 1976 Convention and the Merchant Shipping Act 1995.").

346. *See supra*, section II.C.7. (End of Life Issues: Salvage, Wreck Removal, and Decommissioning).

347. International Convention on Tonnage Measurement of Ships, 1969, June 23, 1969, 1291 U.N.T.S. 21264 [Tonnage Convention 1969].

Annex I to that convention, but this applies to ships only,[348] leaving the LLMC's tonnage-based limitation for non-ships incalculable.

One might argue that, in light of the uncertainty and importance of insurability to commercial MORU deployment, either an amendment of LLMC 1976/LLMC PROT 1996 or a *sui generis* regime is required. Unfortunately, the amendment process described in article 20 of the LLMC 1976 and article 13 of LLMC PROT 1996 indicate the number of contracting states required before the IMO must call a conference to contemplate amendment, but does not indicate the number of contracting states required to actually enact such an amendment itself.[349] Further, it is not entirely clear whether the fifty-six contracting states to LLMC 1976 or sixty-three contracting states to LLMC PROT 1996 would be the same contracting states as might join a hypothetical MORU Convention.

For these reasons and additional reasons described in the next section in relation to bunker oil pollution, *sui generis* provisions establishing broad limitations of liability calculated on a pre-casualty basis, mandatory liability insurance, limitation funds, bars to other actions, etc., for MORUs have been included in the Annex. Article XIII of the Annex provides for a calculable pre-casualty limited liability by MORU owners and concession licensees, without stating any opinion as to what an appropriate limitation of liability for MORUs might be.[350] It also provides for the establishment of owner- or licensee-financed funds to facilitate distribution of compensation between claimants after determination of liability, prompt return of the MORU to productive use, and a release of the owner or licensee from further liability.[351] Article XIV requires each MORU owner to procure insurance or other financial security to cover its liability under the Convention.[352]

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348. *See* INT'L SUB-COMM. ON DRILLING PLATFORMS, DRILLING PLATFORMS REPORT, *supra* note 54, at 33. *But see* Shaw, *Offshore Craft and Structures*, *supra* note 143, at 158 (positing that the Tonnage Convention 1969 could be applied to mobile offshore craft, but not fixed structures).

349. *See* LLMC 1976, *supra* note 119, art. 20(2-3). *Contra id.*, art. 21.3 (specifying that two-thirds of contracting states present at a conference are required to amend the limitation amounts or units of account). *Compare* 1996 Protocol, art. 8(7) (allowing the tacit acceptance procedure for amendments of the limits).

350. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 272-73 (noting paragraphs 13.2 and 13.5); Rares, *supra* note 326, at 352 ("The process of arriving at such a maximum liability will not be easy.").

351. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 273-74 (noting paragraphs 13.9-13.15).

352. *See id.*, at 275-76.

9. Environmental Impact and Pollution

As noted in *Mare Incognitum, Part I*, it would appear that, with the exception of bunker oil leak liability described below, there is no international legal regime in force that would impose liability for environmental damages arising from Mobile Offshore Renewables Units which are suffered by an Affected State that is not the Producing Coastal State.[353]

One can assume that coastal states contemplating a hypothetical MORU Convention might consider the possibility of becoming an Affected State in the future, and seek to follow the general approach dating from the 1970s for offshore pollution originating from traditional ships: strict liability for the owner, with direct action against his insurer, but (as a counterbalance to strict liability) a finite, tonnage-based limit of liability and the availability of insurance for such liabilities.[354]

The International Convention on Civil Liability for Bunker Oil ("Bunker Oil Convention") [355] governs "bunker oil," including "any hydrocarbon mineral oil, including lubricating oil, used or intended to be used for the operation . . . of"[356] a "ship," which includes "any seaborne craft, of any type whatsoever."[357] As noted in *Mare Incognitum, Part I*,[358] it would seem that MORUs fall within the scope of the Bunker Oil Convention. That convention does not have its own limitations of liability, but relies on limitations of liability "under any applicable national or international regime, such as [LLMC 1976/LLMC PROT 1996]."[359] Given that the Bunker Oil Convention likely applies to many MORUs,[360]

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353. *Compare* Shaw, *Offshore Craft and Structures*, *supra* note 143, at 157 (noting the same in re O&G MOUs in 1998); Rares, *supra* note 326, at 352 (noting the same), *with* Shaw, *Regulation of Offshore Activity*, *supra* note 53, at 305 (questioning the legal basis for such transboundary claims filed in US Federal Courts in relation to the Deepwater Horizon incident).

354. *But see* Shaw, *Offshore Craft and Structures*, *supra* note 143, at 157 (noting the same in re O&G MOUs in 1998).

355. International Convention on Civil Liability for Bunker Oil Pollution Damage, Mar. 27, 2001, 40 I.L.M. 1493 (entered into force Nov. 21, 2008) [hereinafter Bunker Oil Convention].

356. *Id.*, art. 1(5).

357. *Id.*, art. 1(1).

358. *Mare Incognitum, Part I*, *supra* note 1, at 352-53.

359. *See* Bunker Oil Convention, *supra* note 355, at art. 6; KONSTANINOS BACHXEVANIS, REED SMITH LLP, BUNKER POLLUTION CONVENTION 2001 2, 15 (2009), https://www.reedsmith.com/-/media/files/perspectives/2009/09/the-bunker-pollution-convention-2001/files/the-bunker-pollution-convention-2001/fileattachment/the-bunker-pollution-convention-2001--k-bachxevani.pdf (link is directly to .pdf download); *but see* Patrick Griggs, *International Convention on Civil Liability for Bunker Oil Pollution Damage*, BRITISH MAR. L.AW ASS'N (2001), https://www.bmla.org.uk/documents/imo-bunker-convention.htm (describing possible limitations of this approach).

360. *Mare Incognitum, Part I*, *supra* note 1, at 352-53.

but the application of LLMC 1976/LLMC PROT 1996 to those MORUs is at least questionable,[361] it is possible that MORUs are subject to unlimited strict liability under the Bunker Oil Convention,[362] in contravention to that convention's preamble, which links owners strict liability to appropriate limitations of liability.[363] Although most MORUs would carry limited "bunker oil," consisting primarily of lubricants,[364] some MORUs (e.g. a manned FOMA Facility with an auxiliary generator) might carry greater amounts.

In that context and to remove the apparent internal contravention of the preamble linking strict liability to an uncertain limitation of liability, a clearer internationally recognized limitation of liability covering bunker oil pollution originating from MORUs seems warranted. Although it has been argued that tonnage might be an inappropriate yardstick for measuring potential liability for O&G MOUs' exposure to blowout and reservoir hydrocarbon leakage risks,[365] it would be a feasible approach for limiting liability from pollution damage (if any) originating from most MORUs, which generally carry limited "bunker oil" and will be exposed to fewer risks—in essence, MORU's risk profile is no worse than traditional merchant vessels and better than O&G MOUs or crude carriers in this context. As mentioned above, internationally recognized limits of liability might be a prerequisite to insuring MORUs on a commercially acceptable basis.[366] As noted in the Section above, *sui generis* provisions establishing limited liability have been reflected in Articles XIII and XIV of the Annex. Conversely, in order to place all contracting states on a level field in relation to strict liability for MORU bunker oil emissions (if any), Article XIX of the Annex would also require each contracting state to also be a contracting state to the Bunker Oil Convention.[367]

CLC 1969, arguably the most successful international maritime convention of all time,[368] is at its core an environmental regulation of seagoing vessels actually carrying oil in bulk as cargo. Similarly, its

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361. *See supra*, section II.C.8. (Limitations of Liability).

362. *See* BACHXEVANIS, *supra* note 359, at 2.

363. *See* Bunker Oil Convention, *supra* note 355, 6th recital; BACHXEVANIS, *supra* note 359, at 2, 3.2, 3. *But see*, *supra*, section II.C.8. (Limitations of Liability).

364. *See* Bunker Oil Convention, *supra* note 355, art. 1(5).

365. *See* Shaw, *Offshore Craft and Structures*, *supra* note 143, at 158 (noting the same in re O&G MOUs in 1998).

366. *But see* Rares, *supra* note 326, at 352-56 (describing the challenges in insuring the same in re O&G MOUs in 2013).

367. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 280 (noting paragraph 19.1(b)).

368. *See* Griggs, *Obstacles to Uniformity*, *supra* note 43, at 196.

supplement, the Fund Convention, was widely acceded to or ratified (although it ceased to have effect in 2002).[369] Subsequently, the 1992 Protocols to the Civil Liability Convention of 1969 and the Fund Convention were also widely adopted.[370] Assuming that MORUs would never be used to carry oil *as cargo*, their applicability to MORUs is limited but their broad acceptance indicates that there is appetite for environmental regulation in international maritime conventions.

10. Criminal Jurisdiction

Most MORUs are unmanned during normal operation, reducing the risk (or at least frequency) of the types of criminal offences likely to occur between workers or occupants onboard manned MORUs, O&G MOUs, and traditional merchant ships. Nonetheless, it seems likely that a multinational work force will be present on even unmanned MORUs from time to time.[371] Given that MORUs will both transit coastal waters and be moored for extended periods in Producing Coastal States' EEZs generating electrical power, determination of applicable criminal law and allocation of criminal jurisdiction in relation to various personal, property, and regulatory offenses occurring on or in relation to MORUs is required, particularly in relation to foreign-flagged MORUs.

For traditional merchant ships endlessly transiting the seas, this has historically been the preserve of the domestic law of the Flag State.[372] Conversely, the positioning of MORUs (as with O&G MOUs) for extended periods in the waters of a Producing Coastal State gives rise to important public interests of that state.[373] Such extended operations at a foreign site were simply not contemplated in earlier international maritime conventions allocating criminal jurisdiction on vessels, such as the 1952 International Convention for the Unification of Certain Rules Relating to Penal Jurisdiction in Matters of Collision or Other Incidents of Navigation[374] but has been addressed to a degree in UNCLOS Part V. In addition to Flag States' and Producing Coastal States' interests, any determination of applicable criminal law or allocation of penal jurisdiction in relation to MORUs should also address the reality of multinational work forces operating and servicing both manned and unmanned MORUs and

369. *See id.*
370. *See id.* at 197.
371. White, *supra* note 143, at 24.
372. *Id.*
373. *Id.*
374. *Id.*

the different interests of Port States, and Affected States (including the potential application of the criminal laws of the domiciliary states of the MORU workers themselves).[375] Given the potential for conflicts of law, these States' interests must be prioritized in some way, applicable law and criminal jurisdiction determined, an accused's exposure to double jeopardy eliminated, and the accused's right to the defense of compulsory compliance preserved.[376]

As mentioned in *Mare Incognitum, Part I*, UNCLOS allocates criminal liability to either a ship's flag state or a coastal state, but only for specific topics: art. 27(1) limits coastal state criminal jurisdiction on a foreign "ship" transiting the coastal state's territorial sea without entering its internal waters to certain a few specific categories of crime or circumstances.[377] Except as provided in Part XII thereto (e.g. in relation to protection and preservation of the marine environment[378]) or with respect to violations of laws and regulations adopted in accordance with Part V (e.g. in relation to the establishment and use of installations in a Producing Coastal State's EEZ[379]), UNCLOS art. 27(5) also restricts coastal states' ability to board a foreign ship passing through its territorial sea to arrest any person or to conduct any investigation in connection with any crime committed before the ship entered the territorial sea.[380] Under UNCLOS art. 97, the Flag State holds criminal jurisdiction in matters of collision or any other incident of navigation involving a ship on the high seas.[381] Unfortunately, it is not clear whether a foreign flagged MORU would be considered either a "ship" for purposes of articles 27 or 97, or an "installation or structure" under Part V.

Furthermore, even if one assumes that a MORU is a "ship" and/or an "installation," these provisions fail to determine the applicable criminal law or allocate criminal jurisdiction in other circumstances, leaving it unclear which states would have jurisdiction for criminal acts outside of those categories specified in UNCLOS.[382] Given the difficulty of effecting

375. *Id.*

376. *See* Vancouver Draft, *supra* note 5, Commentary 7.1-7.8 (in relation to O&G MOUs).

377. *Compare* UNCLOS, *supra* note 49, art. 27, 211(5); *with, id.*, art. 97 (which limits the jurisdiction of any state (other than the Flag State) in relation to collision and incidents of navigation).

378. *See id.*, art. 56(1)(b)(iii).

379. *See id.*, art. 56(1)(b)(i).

380. *See id.*, art. 27(5), Part V, Part XII.

381. *See id.*, art. 27, 97.

382. *See* United States v. Beyle, 782 F.3d 159, 165-66, 2015 AMC 1099, 1108 (4th Cir. 2015), at 165-66 (in which the 4th Circuit held that a U.S. District Court had criminal jurisdiction over a Somali defendant accused of the abduction and murder of US citizens in the Somali EEZ).

a *stricto sensu* amendment of UNCLOS to remove the ambiguity in relation to a MORU's status as a "ship" or an "installation" and address other circumstances in which applicable criminal law and jurisdiction would need to be determined, the inclusion within a MORU Convention of a *sui generis* provision that allocates applicable criminal law and jurisdiction in a manner consistent with its allocation under UNCLOS but also address other gaps in UNCLOS's allocation of criminal jurisdiction in other circumstances seems a sensible approach to this topic. This has been reflected in Article VII of the Annex.[383]

The peculiar nature of piracy and maritime acts of terrorism require special consideration. Although piracy and politically motivated offences like terrorism are regulated under the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation, 1988 (SUA 1988), vessels permanently attached to the sea-bed are specifically excluded from its application.[384] Fixed platforms are addressed under the Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms located on the Continental Shelf, 1988 (SUA PROT 1988).[385] Depending on whether one sees a MORU's relative mobility more akin to that of a MODU or that of the huge, site-specific fixed but floating production platforms of the oil and gas industry (i.e. whether its attachment to the seabed is "permanent" or "fixed"), it seems that MORUs would fall under either SUA 1988 or SUA PROT 1988, although it is not immediately clear to the author which one.[386] However, until either SUA 1988 or SUA PROT 1988 is unambiguously amended to include MORUs in its scope, a default position applying its principles to MORUs, *mutatis mutandis*, should be enacted. This has been reflected in Article VII of the Annex.[387]

383. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 261-62.

384. White, *supra* note 143, at 25; *see also* Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation, art. 1, Mar. 10, 1998, 1678 U.N.T.S. 201 (excluding vessels "permanently" attached to the seabed from the definition of "ship").

385. Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms located on the Continental Shelf, Mar. 10, 1998, 1678 U.N.T.S. 201; *see also* White, *supra* note 143, at 25.

386. White, *supra* note 143, at 25.

387. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 261-62 (noting paragraph 7.9).

11. Allocation of CO_2 Reduction Obligations

As noted under in *Mare Incognitum, Part I*,[388] under Article 3 of the Paris Agreement, almost all nations[389] have self-determined, mandatory GHG reduction targets (i.e. its NDCs).[390] In circumstances where MORU ownership has been registered in a Flag State other than the Producing Coastal State and there is no agreement to the contrary, it is not clear whether, as a default, the Flag State (under some variation of a "floating island" theory) or the Producing Coastal State in whose waters the foreign flagged MORU is located would be entitled to include the GHG reductions attributable to that MORU within its NDCS. However, Paris Agreement parties may enter into cooperative agreements to achieve their respective NDCs,[391] including international transfers of mitigation outcomes (e.g. between a Flag State and a Producing Coastal State).[392] On the basis that a Producing Coastal State (in the absence of an agreement to the contrary) would have the sovereign right under UNCLOS to require licensees to ensure that any NDCs arising from the use of foreign-flagged MORUs be transferred to it as a condition of permitting the operation of foreign-flagged MORUs in its EEZ, it is the author's opinion that the Producing Coastal State should be entitled to include such foreign MORUs within its NDCs as the default. This has been reflected in Article XVIII of the Annex.[393]

12. Marine Spatial Planning

Because of their potentially vast size, utility-scale MORU Arrays sitting in deeper waters of Producing Coastal State EEZs present novel marine spatial planning issues.[394] Grotius's statement in *Mare Liberum* that "the navigation of rivers is easily lessened and impeded by constructions placed therein, but this is not true of the sea"[395] may no

388. *See Mare Incognitum, Part I*, *supra* note 1, at 356-357.

389. *See Chapter XXVII (Environment), 7.d (Paris Agreement)*, *supra* note 195 (as of 2022 there are 193 contracting states, making almost every state a stakeholder in this discussion); *see also* Depositary Notification (Nov. 4, 2019) C.N.575.2019.TREATIES-XXVII.7.d, https://treaties.un.org/doc/Publication/CN/2019/CN.575.2019-Eng.pdf (UN Secretary General's acknowledgment of US withdrawal from the Paris Agreement); Depositary Notification (Jan. 20, 2021) C.N.10.20121.TREATIES-XXVII.7.d, https://treaties.un.org/doc/Publication/CN/2021/CN.10.2021-Eng.pdf (UN Secretary General's acknowledgment of US reentry into the Paris Agreement)

390. *See* Paris Agreement, *supra* note 74, art. 3, 4, 7, 9, 10, 11 and 13.

391. *Id.*, art. 6(1).

392. *Id.*, art. 6(3).

393. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 280.

394. *See Mare Incognitum, Part I, supra* note 1, at 357-60.

395. HUGO GROTIUS, MARE LIBERUM, *Ch. VII,* 58 (1608).

longer be true. Despite the fact that the term "marine spatial planning" is not expressly mentioned in UNCLOS,[396] the author is of the opinion that any unaddressed international aspects of marine spatial planning are best addressed thereunder,[397] through an IMO-facilitated process that balances the rights of Producing Coastal States to establish and regulate MORU Arrays and other states' retained rights,[398] and in the case of cables, potentially under UNCLOS[399] and the Convention for the Protection of Submarine Telegraph Cables.[400] As a consequence, these topics have not been included or addressed in the Annex.

III. THE STARTING POINT FOR A DRAFT MULTITOPIC MORU CONVENTION

There are at least three plausible starting points for a straw-man draft multitopic MORU Convention: (i) the blank page; (ii) the CTC and its Protocols; and (iii) the Vancouver Draft. Each comes with its own advantages and disadvantages.

A. The Blank Page

The freedom of a blank page is tempting. Where a given technology is truly revolutionary and there is little existing law, custom, or precedent governing or mirroring the legal issues raised, the blank page might be the correct starting point. Conversely, to the extent that the technology in question is more evolutionary in nature, or the legal issues raised are largely analogous to other precedents, a few small changes to the existing international legal system may be all that is required. Arguably, the legal issues raised by possibility of large scale deployment of MORUs sit somewhere between these two extremes, requiring the establishment of a new branch of maritime law addressing various legal issues raised by a technology currently falling outside of many international instruments, which nonetheless respects the traditions and customs of existing maritime law governing analogous technologies.

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396. Dorota Pyć, MARITIME SPATIAL PLANNING, *Chap. 16: The Role of the Law of the Sea in Marine Spatial Planning* 377 (Jacek Zaucha & Kira Gee eds., 2019).

397. *See* UNCLOS, *supra* note 49, art. 58, 79.

398. *See id.*, art. 17, 19, 21, 45, 52, 58, 87; Chircop & L'Esperance, *supra* note 293, at 12-24.

399. *See* UNCLOS, *supra* note 49, art. 21(1)I, 51(2), 58(1), 79. *But see id.*, art. 297(1)(a).

400. Convention for the Protection of Submarine Telegraph Cables, Mar. 14, 1884, T.S. No. 380 (1888); *see* Chircop & L'Esperance, *supra* note 293, at 10-12.

Separately, building support for a completely novel international legal regime originating from a blank page is less likely to succeed, and is likely to require many more revisions and amendments than a draft that is largely based on prior work of others over years. Ultimately, it seems likely to be more time consuming than other approaches, and simultaneously less likely to succeed. For a nascent industry with little direct legislation or jurisprudence on point but with other industries, practices, legal traditions, and existing instruments from which inspiration might be found, starting with a blank page would also be the most egregious violation of Grigg's caution of drafting in a void.[401] There is little room for ego when time is running out.

B. The Cape Town Convention and Its Protocols

As a starting point, the CTC and its Protocols have three distinct advantages over other potential starting points for a multilateral, multitopic legal framework covering particular classes of mobile equipment that frequently cross borders: its broad acceptance, the financial importance of its core subject matter, and its approach to similar but different classes of mobile assets. First, its provisions and the provisions of the Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Aircraft Equipment (Aircraft Protocol)[402] have been broadly accepted by a large number of nations: as of 2021, there are eighty-two contracting states to the CTC itself,[403] and seventy-nine contracting states to the Aircraft Protocol.[404] Second, it reduces transactional costs and materially improves asset cross-border bankability by providing an internationally recognized security interest for classes of high-value moveable property.[405] With the benefit of hindsight, the positive impact the CTC and the Aircraft Protocol have on the bankability of aircraft finance (particularly in countries with less developed domestic security interest regimes) is widely acknowledged[406] and can broadly be considered a success. Finally, the CTC itself and the Aircraft Protocol have entered into force,[407] but the railway stock,

401. *See also* Delgado, *Security Interests over Ships*, *supra* note 27, at 264.

402. Aircraft Protocol, *supra* note 185.

403. *Convention on International Interests in Mobile Equipment,* UNIDROIT, https://www.unidroit.org/instruments/security-interests/cape-town-convention/.

404. *Protocol to the Convention on International Interests in Mobile Equipment Specific to Aircraft*, UNIDROIT, https://www.unidroit.org/instruments/security-interests/aircraft-protocol/.

405. *See* Delgado, *Preparation of a Future Maritime Protocol?*, *supra* note 269, at 222.

406. *See Mare Incognitum, Part I*, *supra* note 1, at 365-67.

407. *See* supra notes 402 & 403.

spacecraft, and MAC protocols have not yet. This is indicative of a key advantage of the CTC: it addresses each technology within its own protocol and allows each protocol to enter into force independently, once there is sufficient consensus in relation to that particular technology.[408]

However, the CTC also has disadvantages as a starting point. Most critically, it seems unlikely that a hypothetical CTC maritime protocol establishing international security interests for both traditional ships and MORUs would find broad support in the short term.[409] Further, in contrast to many existing maritime conventions, the CTC is not intended to be a conflict-of-laws convention[410] nor is it intended to address a myriad of potential issues. Instead, the CTC is primarily focused on a single substantive issue for specific classes of moveable property: establishing an effective international security interest regime for mobile equipment. Setting aside the failure to date to do so, the inclusion of the interrelated topics of recognition of domestic registration of ownership (in whatever form), other *in rem* non-possessory collateral rights, maritime liens, and arrest (in the context of creditor remedies) in a hypothetical maritime protocol thereto might arguably fit within the broader purpose of the CTC.[411]

However, query whether the other areas of international legal uncertainties faced by MORUs fit within a CTC/maritime protocol framework. It seems unlikely that a hypothetical maritime protocol would be considered the appropriate instrument for provisions covering the following: default civil jurisdiction; collisions, allisions, and civil jurisdiction in relation thereto; limitations of liability; or criminal jurisdiction. Requiring contracting states to a hypothetical maritime protocol to also accede to a hypothetical MORU Protocol to SOLAS, and (to the extent they are not already contracting states thereto) the Salvage Convention 1989, the Wreck Removal Convention, and either SUA 1988 or SUA PROT 1988 (as relevant) is not so clear. Likewise, a hypothetical maritime protocol like the CTC, which covers both traditional ships and MORUs, seems a somewhat awkward place for *inter se* amendments to either UNCLOS (recognizing MORUs' freedom of the seas and rights of

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408. *See* CTC, *supra* note 41, art. 49(1) (providing that the CTC is only in force to the extent that there is an applicable Protocol in place).

409. *See*, *supra*, section II.C.3.c. (Maritime Liens and Other Rights and Interests Having Priority over Registered *in rem* Non-possessory Security Interests). *See generally* Böger, *supra* note 248; Köhler, *supra* note 248; Delgado, *Security Interests over Ships*, *supra* note 27.

410. *See* Delgado, *Preparation of a Future Maritime Protocol?*, *supra* note 269, at 217.

411. *See* Delgado, *Security Interests over Ships*, *supra* note 27, at 265-67, 273-74; Böger, *supra* note 248, at 77-80, 84-91, 94-98.

innocent passage) or to the Paris Agreement (allocating MORUs' contributions to NDCs). For these reasons, the author has rejected the CTC as a starting point for a multitopic MORU Convention.

C. The Vancouver Draft

In contrast to the CTC's approach enacting substantive law governing a new international security interest across a number of different mobile equipment technologies, the Vancouver Draft primarily uses conflict-of-law provisions to establish international recognition of the jurisdiction of a particular contracting state in relation to a variety of different legal topics for a single technology (i.e. O&G MOUs) while remaining within the existing traditions of maritime law. In a single instrument, the Vancouver Draft addresses recognition of registration,[412] registered and unregistered *in rem* non-possessory security interests such as maritime liens,[413] the priority of those security interests,[414] arrests and other creditors' remedies,[415] civil jurisdiction,[416] penal jurisdiction,[417] safety,[418] salvage,[419] removal,[420] pollution,[421] apportionment of liability (including following collisions and allisions),[422] limitations of liability and creation of limitation funds by owners to cover claims and allow the release of the O&G MOU,[423] and mandatory insurance and financial responsibility.[424] It does not address issues related to the allocation of CO_2 reduction obligations, or marine spatial planning, but in principle these could be added within its existing multitopic framework. Unfortunately, the CMI's efforts to develop a multitopic O&G MOU convention have been stuck in the doldrums for some time.[425] Neither the Vancouver Draft nor any other earlier CMI draft O&G MOU conventions have been

412. *See* Vancouver Draft, *supra* note 5, art. 3-4.
413. *See id.*, art. 4-5.
414. *See id.*, art. 5(4)-5(6).
415. *See id.*, art. 5(4)-5(11).
416. *See id.*, art. 6.
417. *See* Vancouver Draft, *supra* note 5, art. 7.
418. *See id.*, art. 8.
419. *See id.*, art. 9.
420. *See id.*, art. 10.
421. *See id.*, art. 11.
422. *See* Vancouver Draft, *supra* note 5, art. 12.
423. *See id.*, art. 13.
424. *See id.*, art. 14.
425. *See* Severance & Sandgren, *supra* note 2, at 23 (". . . no major progress has been made since the 2004 [CMI] conference, and the status of the Draft Convention is uncertain"); Hetherington, *International Law*, *supra* note 135, at 52-53. For a history of the earlier drafts, *see generally* Shaw, *Offshore Craft and Structures*, *supra* note 143; White, *supra* note 143.

adopted or entered into force. It appears that the resistance of the U.S. Maritime Law Association, and the assertions of the International Association of Drilling Contractors (IADC) and the E&P (Exploration and Production) Forum (now the International Association of Oil and Gas Producers (IOGP) that there was no need for such a global convention, have been decisive thus far.[426]

However, this failure does not seem to be fatal to the idea of using the Vancouver Draft as a starting point for a MORU Convention. A lack of enthusiasm from the United States for a maritime convention of any sort would not come as a huge surprise,[427] and in any event, neither the United States nor any other nation can yet be considered a major MORU nation whose individual participation is critical to the success of a MORU Convention. Similarly, if a hypothetical MORU Convention based on the Vancouver Draft limits its application to MORUs (i.e., excludes O&G MOUs), the IADC and IOGP would not be the most relevant industry associations to represent MORU sector stakeholders, and at best would have only an indirect interest in a convention exclusively governing MORUs.[428]

Because the Vancouver Draft has been conceived of as a multitopic convention from the beginning, already addresses many international legal issues that non-traditional, unpropelled vessels such as MORUs would face, and already fits within a legal framework that adopts UNCLOS and existing maritime law as its base, it is the author's opinion that the Vancouver Draft is a better starting point for a multitopic MORU Convention than the CTC, despite the Vancouver Convention's failure to find sufficient support within the oil and gas sector at the time it was being actively contemplated. At the same time, the CTC's use of separate protocols to address the idiosyncrasies of different technologies and allow for different adoption timelines for those technologies is a concept worth pursuing. This hybrid approach has been reflected in the Annex, which is respectfully presented as a blackline edit of the Vancouver Draft as a base, but includes in Articles II and XVII the CTC's concept of the separate and

426. *See supra* note 197.

427. *See* White, *supra* note 143, at 26. *See also UN: Plastic Waste Pact Approved with US Among Few Holdouts*, ASSOCIATED PRESS (May 10, 2019), https://apnews.com/0771a60e9b02424 7b29073aaa4dee6ed (U.S. one of few holdouts on plastic waste amendment to the Basel Convention).

428. Obviously, this is not to say that the oil and gas majors would not have an interest in a draft MORU Convention, only that these particular industry associations themselves are primarily focused on issues arising from other activities.

independent adoption of technology-specific Protocols to address issues peculiar to each MORU asset class.[429]

IV. CONCLUSIONS

As identified in *Mare Incognitum, Part I*, there are a number of international legal uncertainties in relation to MORUs which could act as an *ex ante* impediment to broader deployment of a promising category of mobile offshore renewable energy assets. With the exception of a few topical maritime conventions that already clearly include MORUs within their scope, the existing framework of maritime conventions fails to provide MORU stakeholders with adequate certainty in relation to a number of international legal issues, particularly for MORU in foreign waters. This is largely due to two factors: the majority of the potentially relevant topical maritime conventions in force, which might provide such international certainty either do not unambiguously apply to MORUs, or are not broadly accepted. Amending a topical convention to include MORUs seems quixotic if the convention is not already broadly accepted. Conversely, amending *stricto sensu* each relevant maritime convention with broad acceptance to include MORUs in a piecemeal manner might suffer from high approval thresholds, could take a considerable amount of time, would insert MORUs into the "what is a ship" debate,[430] would impede grand bargains between different categories of contracting states, and would result in different constellations of contracting states for each convention. For some conventions, the use of *inter se* amendments or use of the "tacit approval" process to include MORUs within their scope may be feasible, but for others it will not.

A multitopic international maritime convention, if properly drafted, could be used to avoid various technical obstacles, resolve many of these otherwise unaddressed issues for MORUs and MORU stakeholders in a single step, and provide a unified and balanced *sui generis* international legal regime for MORU stakeholders. However, any hypothetical multitopic MORU Convention would inevitably require one or more multilateral organizations or national governments to sponsor its ultimate enactment. Before any such Sponsoring Institution incorporates such a project in its work program, it would likely need to conclude that the project is both technically and politically feasible.

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429. *See* Annex to *Mare Incognitum, Part II*, *supra* note 4, at 254-55, 278-79 (noting paragraphs 2.1 and 2.4, and Article XVII); Böger, *supra* note 248, at 77.

430. *See Mare Incognitum, Part I*, *supra* note 1, at 292 n. 9.

Although originally intended to cover the mobile offshore units of the oil and gas sector and never adopted, the Vancouver Draft offers one template for a multitopic maritime convention that might be adapted to provide MORUs and MORU stakeholders with certainty in relation to a number of international legal issues. With careful changes to the Vancouver Draft to address the peculiarities of MORUs generally, and each class thereof specifically, a draft multitopic MORU Convention could be developed that lives up to (or at least finds a balance between) the principles and practical considerations addressed in this Article and is capable of overcoming some of the technical obstacles identified herein. Without precluding other possible solutions, the salvage of the Vancouver Draft and its conversion into a Mobile Offshore Renewables Unit Convention seems a technically feasible solution to address at least some of the legal issues identified in *Mare Incognitum, Part I*. It is left to the reader to determine the extent to which the Annex does so.