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## Deepwater Transboundary Hydrocarbons: Considerations for Exploitation at the Edge of Continental Margins Under the United Nations Convention on the Law of the Sea (1982) Between Coastal States and the International Seabed Authority

Erik A. Neff

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DEEPWATER TRANSBOUNDARY HYDROCARBONS:  
CONSIDERATIONS FOR EXPLOITATION AT THE EDGE OF CONTINENTAL  
MARGINS UNDER THE UNITED NATIONS CONVENTION ON THE  
LAW OF THE SEA (1982) BETWEEN COASTAL STATES AND THE  
INTERNATIONAL SEABED AUTHORITY

*Erik A. Neff\**

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## I. INTRODUCTION

This article explores the issue on how a coastal State may resolve transborder hydrocarbon exploitation issues with a sponsor State and the International Seabed Authority (“Authority”) under the United Nations Convention of the Law of the Sea of 1982 (“UNCLOS”). In discussing this topic, I will determine: 1) the types of agreements that could be made by a coastal State, 2) which parties have what powers, such as veto rights, and 3) how a coastal State could deal with the Authority when a transboundary hydrocarbon deposit is shared between them. I will also address potential conflicts of law present within UNCLOS, specifically between Articles 81 and 85, and Articles 78 and 142. This article does not deal with issues pertaining to installations or environmental concerns, but rather examines a legal topic that may be of future importance as hydrocarbons become more scarce.

## II. GEOLOGICAL FEASIBILITY OF DEEP SEABED HYDROCARBONS

This article would be abstract unless there is a potential for existence of hydrocarbon deposits that span from the continental margin of coastal States to the Area. For my questions to be properly addressed, it needs to be determined whether there is any potential for transboundary hydrocarbon deposits at the edge of coastal States’ continental margins and the Area, and if the exploration and exploitation of such deposits is economically feasible. The world’s resources of fossil fuels are finite and have been consumed at rates that could lead to their exhaustion within hundreds of years.<sup>1</sup> Since 2000, deepwater hydrocarbon production capacity has more than tripled, and is only expected to increase as the demand for hydrocarbons continues to rise.<sup>2</sup> Hydrocarbon deposits located within the subsoil of the

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<sup>1</sup> Sir Eric Drake, *Oil Reserves and Production*, 276 PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY OF LONDON. SERIES A, MATHEMATICAL AND PHYSICAL SCIENCES, 453, 456 (1974).

<sup>2</sup> Rebecca K Richards, *Deepwater Mobile Oil Rigs in the Exclusive Economic Zone and the Uncertainty of Coastal State Jurisdiction*, 10 J. INT’L BUS. & L. 387, 410 (2011).

continental margin were generated over the course of geological time, and are “not renewable” in terms of industrial timespan and the current rate of exploitation.<sup>3</sup> Further, “[t]he minimum size of accumulation needed to justify production of [hydrocarbons] depends on the economics of the operations and reserves are therefore influenced by economic circumstances.”<sup>4</sup>

Assessing hydrocarbon potential is not a simple question, nor can it be determined by a single parameter or factor.<sup>5</sup> As H.R. Warman stated, any assessment of deepwater hydrocarbon potential should consider all relevant geological factors that support hydrocarbon formation;

The range of depth of burial for oil generation appears to be from 1 to 3.5 km with an optimum for giant fields in the range 1.5-3 km. Gas is most abundant in the range 3.0-4.5 km. Gas exists below that to considerable depths, in fact at least to 10 km, but below 4.0 km there is normally a marked and continuous decrease in reservoir porosity and permeability. Deformation to form traps must occur at the correct time to collect the hydrocarbons produced during the main period of migration. All these requirements must be met for the formation of large and highly productive fields.<sup>6</sup>

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<sup>3</sup> Drake, *supra* note 1, at 456 (“[Hydrocarbons] are now being consumed at rates that will lead to their exhaustion in a matter of hundreds of years, a negligible period on the geological time scale, and not therefore renewable within the time span of our industrial society”).

<sup>4</sup> *Id.* at 453.

<sup>5</sup> Leigh Royden, J. G. Sclater, & R. P. Von Herzen, *Continental Margin Subsidence and Heat Flow: Important Parameters in Formation of Petroleum Hydrocarbons*, 64 THE AM. ASS'N. OF PETROLEUM GEOLOGISTS BULL., 173, 184 (1980) (“[T]he presence of oil or gas . . . depends not only upon the thermal history of the area, but also upon sediment composition and structures”).

<sup>6</sup> H.R. Warman, *Hydrocarbon Potential of Deep Water*, 290 PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY OF LONDON. SERIES A, MATHEMATICAL AND PHYSICAL SCIENCES, 33, 35 (1978).

most abundant in the range 3.0–4.5 km. Gas exists below that to considerable depths, in fact at least to 10 km, but below 4.0 km there is normally a marked and continuous decrease in reservoir porosity and permeability. Deformation to form traps must occur at the correct time to collect the hydrocarbons produced during the main period of migration. All these requirements must be met for the formation of large and highly productive fields.<sup>7</sup>

Geologically speaking, the floor of the ocean is not flat. It has distinguishing formations such as: mid-ocean ridges, abyssal plains or ocean basins, and continental margins. Mid-ocean ridges, which make up 32.7 percent of oceanic areas, do not appear to have the appropriate geological character for hydrocarbon formation and thus can be “dismiss[ed] totally” for hydrocarbon potential.<sup>8</sup> Abyssal plains are located beneath 4,000 meters of water, and cover 41.8 percent of the ocean floor. Their sedimentary veneer, however, is too thin and lacks the permeable rock that is considered to be a major contributor to hydrocarbon production.<sup>9</sup> By these geographic approximations, roughly 74 percent of the deepwater subsoil would not be ideal for hydrocarbon exploration. Of what remains, continental margins are the areas of the seabed that are most likely to have hydrocarbon deposits. Based on geological variations and structures, it is thought that passive continental margins<sup>10</sup> are more probable to have hydrocarbons than those of the active Pacific type.<sup>11</sup>

From the above research, it appears that the probability of hydrocarbon deposits at the edge of the continental margin, especially in passive margins, is higher than anywhere else on the seabed. However, even with the existence of all of the appropriate geological requisites for hydrocarbon formation, the possibility of hydrocarbon

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<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

<sup>9</sup> *Id.*

<sup>10</sup> Such as, the margins in the Atlantic Ocean, Indian Ocean, and the Arctic Ocean.

<sup>11</sup> Warman, *supra* note 6, at 36. *See infra* pp. 53–54 (continental margins may be “passive” or “active.” Passive margins are devoid of tectonic activity with a wide, long, and flat continental shelf with gentle a slope. Active margins are tectonically active with a narrow continental shelf that steeply drops off into the oceanic crust, i.e. the subduction zone.).

reserves, let alone large deposits, is still rather small.<sup>12</sup> The economics, including political considerations, of deepwater drilling will strongly factor into the decision making for exploring and exploiting such hydrocarbon deposits.

### III. THE CONTINENTAL SHELF: A LAW/GEOGRAPHY DICHOTOMY

The term continental shelf can be defined in both legal and geological terms. With the geological lexis, the continental shelf is part of the continental margin, which is comprised of, in order: the shelf, slope, and rise. The rise leads to the abyssal plain, which is part of the deep seabed. The abyssal plain and the other areas not comprised of the continental margin are approximately where the Area exists.<sup>13</sup> Despite these specifically defined areas of the continental margin, considerable geological variation exists and the demarcation of abyssal plains and continental margins may be contentious. Further, the breadths of the continental shelves are not uniform. The average breadth of a continental shelf is 42 nautical miles (NM) and varies greatly throughout the world.<sup>14</sup> Under UNCLOS, the continental shelf is a legal construct, and by definition it is comprised of “[...] the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin.”<sup>15</sup> UNCLOS, Article 76 prescribes that a coastal State’s continental shelf be measured from the same baselines that the breadth of its territorial sea is measured. Under UNCLOS, if the geographical continental margin of a coastal State does not span 200 NM, then its legally defined continental shelf is 200 NM.<sup>16</sup> From the above descriptions, it is obvious that the judicial continental shelf overlaps with the geographical continental margin, and also expands

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<sup>12</sup> The existence of the factors for the formation of hydrocarbons is a necessary but not sufficient indicator of hydrocarbons.

<sup>13</sup> U.N. Convention on the Law of the Sea art. 1(1), 76, Dec. 10, 1982, 1833 U.N.T.S. 397, 428; *See also* Message from the President of the United States, UNCLOS, with Annexes, and the Agreement Relating to the Implementation of Part XI of the U.N. Convention on the Law of the Sea, with Annexes, Treaty Doc. 103-39 (2nd Sess. 1994) [hereinafter UNCLOS].

<sup>14</sup> JOHN L. MERO, *THE MINERAL RESOURCES OF THE SEA* 53 (1964).

<sup>15</sup> UNCLOS, *supra* note 13, art. 76(1).

<sup>16</sup> *Id.* art. 76(1).

the definition of the continental shelf to encompass the majority of, or the entire continental margin. I argue that the geological continental margin is more representative of the regions described in Article 76 and Part VI. Accordingly, for the purposes of this paper, I will use the phrase "continental margin" in lieu of the "judicial continental shelf."

UNCLOS, Article 76(4) prescribes that where the geographical continental margin extends past 200 NM from the baselines of the coastal State<sup>17</sup> either by;

- (i) a line delineated in accordance with paragraph 7<sup>18</sup> by reference to the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 percent of the shortest distance from such point to the foot of the continental slope; or (ii) a line delineated in accordance with paragraph 7 by reference to fixed points not more than 60 nautical miles from the foot of the continental slope[...]<sup>19</sup>

the fixed points drawn according to UNCLOS, Article 76(4) shall not exceed 350 NM from the baselines that the breadth of the territorial sea is measured, or 100 NM from the 2,500 meter isobath,<sup>20</sup> not including the natural submarine elevations that are components of the continental margin.<sup>21</sup> The breadth of the judicial continental shelf is unilaterally determined by the coastal State.<sup>22</sup>

The interplay between the legal and geographical definition of the continental shelf is important to coastal States that may have potential geographical advantages and disadvantages where seabed subsoil exploitation is concerned. For example, along the rim of the Pacific Ocean, the continental margins are usually narrow and steep,

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<sup>17</sup> *Id.* art. 76(4)(a) ("[F]rom where the breadth of the territorial sea is measured [. . .]").

<sup>18</sup> *Id.* art. 76(7) ("The coastal State shall delineate the outer limits of its continental shelf, where that shelf extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, by straight lines not exceeding 60 nautical miles in length, connecting fixed points, defined by coordinates of latitude and longitude").

<sup>19</sup> *Id.* art. 76(4)(a)(i)–(ii).

<sup>20</sup> *Id.* art. 76(5).

<sup>21</sup> *Id.* art. 76(6) (noting that submarine elevations that are natural components of the continental margin include plateaus, rises, caps, banks and spurs).

<sup>22</sup> *Id.* art. 76(8).

and the continental rise is usually poorly developed or non-existent.<sup>23</sup> In contrast, the rim of the Atlantic Ocean, the continental margin is usually broad, with low gradient sloping and well-developed continental rises.<sup>24</sup> These differences in margin formations are important when considering issues of deepwater hydrocarbon potential and transboundary deposits between a coastal State's continental margin and the Area. Coastal States that have continental margins similar to those of the Pacific rim may not have to concern themselves as much over deepwater hydrocarbon exploration and exploitation; however, this may not be the case with coastal States on the Atlantic rim.

#### IV. THE AREA: LEGAL CONSTRUCTION AND CONSIDERATION OF HYDROCARBON POTENTIAL WITHIN THE AREA

Part XI of UNCLOS deals with the Area. The Area is not a geological region so much as a legally created "area" under UNCLOS that encompasses most of the deep seabed. UNCLOS defines the Area as the regions of the seabed that exist beyond a State's national jurisdiction as established by Article 76 of UNCLOS.<sup>25</sup> Geographically, the Area is the seabed that States cannot, or do not, claim sovereignty over that exists past their seabed/continental margin as determined by Article 76.<sup>26</sup> Sovereignty of the Area is reserved to the Authority.<sup>27</sup> No State may claim sovereignty or sovereign rights over any part of the Area or its resources, and no claim, "nor such appropriation" by a State, shall be recognized in the Area.<sup>28</sup> The Area and its resources have been deemed by UNCLOS as the "common heritage of mankind."<sup>29</sup> Activities in the Area shall be carried out for the benefit of mankind as a

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<sup>23</sup> Larry James Doyle, *Continental Margin*, BRITANNICA ACADEMIC EDITION, (Nov. 20, 2011), <http://www.britannica.com/EBchecked/topic/135007/continental-margin>.

<sup>24</sup> *Id.*

<sup>25</sup> UNCLOS, *supra* note 13, art. 1(1); UNCLOS, *supra* note 13, at art. 76.

<sup>26</sup> UNCLOS, *supra* note 13, art. 76.

<sup>27</sup> UNCLOS, *supra* note 13, at art. 137(2). *See also* UNCLOS, *supra* note 13, at art. 152 *et seq.* ("The Authority is the organization through which States Parties shall, in accordance with this Part, organize and control activities in the Area, particularly with a view to administering the resources of the Area.").

<sup>28</sup> UNCLOS, *supra* note 13, art. 137(1).

<sup>29</sup> UNCLOS, *supra* note 13, art. 136.



whole,<sup>30</sup> irrespective of the location of the States—landlocked or coastal—taking into “particular consideration” the interests and needs of developing States.<sup>31</sup>

When considering the reach of the legal regime of the Area, one needs to determine the statutory reach of Part XI on hydrocarbon potential within that region. As stated above, a continental shelf formed from passive margins has a lower rate of descent into the abyssal plain compared to that formed from active margins that have steep descents.<sup>32</sup> According to Article 76, where the continental shelf extends past 200 NM, the continental shelf may expand either to 350 NM from the baselines, or 100 NM from the 2,500 meter isobath.<sup>33</sup> Hence, longer sloping continental shelves, as in passive margins, possess a larger area for exploration, and are more conducive to the geological factors favoring hydrocarbon formation. In active margins, as the continental shelf descends rapidly into the deep seabed, the geological factors for hydrocarbon formation are located closer to the basins of the coastal State. As the average continental shelf does not extend past 200 NM, the possibility of exploitable hydrocarbons in the Area, or transboundary hydrocarbons, is rather low. Irrespective of the low possibility of exploitable hydrocarbons, the Authority holds the rights of these minerals and their exploitation in the Area,<sup>34</sup> which shall be discussed below.

#### V. A BRIEF BACKGROUND ON UNCLOS, CUSTOMARY INTERNATIONAL LAW, AND RELEVANT CONSIDERATIONS PERTAINING TO THE CONTINENTAL SHELF

The initial precepts of UNCLOS's regime of the judicial continental shelf originated from President Truman's Continental Shelf Proclamation of 1945 (“Truman Proclamation”). The Truman Proclamation effectively stated that in light of the need for new sources of petroleum and other minerals, the United States regarded “the natural resources of the subsoil and seabed of the continental shelf

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<sup>30</sup> UNCLOS, *supra* note 13, art. 138.

<sup>31</sup> UNCLOS, *supra* note 13, art. 140(1).

<sup>32</sup> Doyle, *supra* note 23.

<sup>33</sup> UNCLOS, *supra* note 13, art. 76(1), (5).

<sup>34</sup> UNCLOS, *supra* note 13, at art. 137(2)–(3).

beneath the high seas but contiguous to the coasts of the United States as appertaining to the United States, subject to its jurisdiction and control [...]”<sup>35</sup> This proclamation, which prompted other coastal States to claim sovereignty over their continental shelves, has been credited by the International Court of Justice as “the starting point of the positive law” regarding the continental shelf.<sup>36</sup> In 1953, the United States passed the Outer Continental Shelf Lands Act, which was enacted to regulate the exploitation of the United States continental shelf. From there, other coastal States followed.<sup>37</sup>

In 1958, the Convention on the Continental Shelf followed in suit with the Truman Proclamation, and expressed that coastal States would have sovereign rights over their continental shelf in regard to exploration and exploitation of the natural resources of the continental shelf’s soil and subsoil.<sup>38</sup> These rights were limited, however, to 1) where the water reached 200 meters in depth outside of the coastal State’s territorial sea, or 2) where technology would allow exploitation of natural resources.<sup>39</sup> UNCLOS established more concrete boundaries with respect to States’ rights over the judicial continental shelf. UNCLOS states that coastal States have the exclusive right to exploit and explore their continental shelf, and that these rights are not dependent on actual exploration or exploitation, or any assertion of rights.<sup>40</sup> A State may not explore or exploit living or mineral resources from another coastal State’s continental margin without the coastal State’s consent.<sup>41</sup> However, should a coastal State exploit non-living resources from the continental shelf beyond 200 NM of its baseline, it must pay or contribute a percentage of value, or volume of the production at the site, to the Authority.<sup>42</sup>

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<sup>35</sup> Exec. Order No. 9633, 4 C.F.R. 39 (1945 Supp.)

<sup>36</sup> North Sea Continental Shelf (F.R.G./Den; F.R.G/ Neth.) 1969 I.C.J. n. 47 (Feb. 20) [hereinafter Shelf Cases].

<sup>37</sup> See U.N. Legislative Series, *Supplement to Laws and Regulations of the Regime of the High Seas*, 3–18, ST/LEG/SER. B/8 (1959).

<sup>38</sup> U.N. Convention on the Continental Shelf, Apr. 29, 1958, 499 U.N.T.S. 311, art. 1–2 [hereinafter Convention on the Continental Shelf].

<sup>39</sup> Convention on the Continental Shelf, *supra* note 37, art. 1.

<sup>40</sup> UNCLOS, *supra* note 13, art. 77.

<sup>41</sup> UNCLOS, *supra* note 13, art. 81.

<sup>42</sup> UNCLOS, *supra* note 13, art. 82(1)(2) (the payment schedule requires that after the first five years of production a State shall pay/contribute one percent of the value or

## VI. COASTAL STATES AND THE CONTINENTAL SELF: A DISCUSSION OF RIGHTS UNDER UNCLOS

UNCLOS provisions detail States' rights with respect to particular international maritime matters. Some of these provisions must be relied upon when coastal States explore and/or exploit their continental margins. Part VI of UNCLOS defines the judicial continental shelf, as-well-as States' rights in regards to the regime of the judicial continental shelf.<sup>43</sup> Specifically, it enumerates States' rights with respect to the exploitation of the soil and subsoil of their continental margin, their interests in their continental margin against neighboring coastal States and vice versa, and against landlocked States.<sup>44</sup> This section will focus on Article 81 and Article 85, and will address coastal States' rights to exploit their own continental margins vis-à-vis other coastal States.

### A. *Rights of Coastal States to Exploit the Subsoil of Their Continental Margins*

#### 1. Article 81: The Drilling Provision

Article 81 states that coastal States "shall have the exclusive right to authorize and regulate drilling on the continental shelf for all purposes."<sup>45</sup> Along with the rights granted under Article 77, the coastal State has the ability to prevent other States from exploiting hydrocarbon deposits in the subsoil of its continental shelf. These articles prohibit States from directly drilling or directionally drilling<sup>46</sup> into coastal States' subsoil for hydrocarbon exploitation, or drawing hydrocarbons from the subsoil of a coastal State by other means without permission.<sup>47</sup> Effectively, Articles 81 and 77 establish a

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volume of the production, with each year an increase of one percent until six years and a maximum of seven percent thereafter).

<sup>43</sup> UNCLOS, *supra* note 13, art. 76, 77, 81, 85.

<sup>44</sup> UNCLOS, *supra* note 13, art. 77, 85.

<sup>45</sup> UNCLOS, *supra* note 13, art. 81.

<sup>46</sup> Colloquially known as "slant drilling."

<sup>47</sup> As an aside to this, slant drilling on *terra firma* is typically frowned upon and has led to international conflict, *i.e.* Iraq's invasion of Kuwait in 1990.

potential “veto” by the coastal State over a sponsoring State.<sup>48</sup> If UNCLOS stopped here, it would seem that there is a general prohibition from drilling activities that affect the sovereign rights granted to coastal States under Part VI. However, there may be a potential exception to Articles 77 and 81. The wording of Article 85, the “tunnelling provision” of UNCLOS, could be perceived as creating an exception to the enumerated rights in Part VI of UNCLOS that could also potentially affect the application of Part XI.

## 2. Article 85: The Tunnelling Provision

The most striking issue that must be addressed when discussing the rights of coastal States in regards to transboundary marine subsoil hydrocarbon deposits is the tunnelling provision. Article 85 indicates that “[t]his Part does not prejudice the right of the coastal State to exploit the subsoil by means of tunnelling, irrespective of the depth of water above the subsoil.” This raises two interesting questions: 1) what is the difference between the definitions of “tunnelling” and “drilling” as used within UNCLOS; and 2) what are the rights of coastal States in regards to these terms? One issue to consider is whether Article 85 grants an exception to the requirement from Article 77 pertaining to the rights of coastal States over their natural resources in the subsoil of their continental margin. If this is the case, then the purpose of Article 81 should be questioned. Another issue to consider is whether Article 85 raises an exception to Article 78(2), which states that in exercising its rights, a coastal State must not infringe or interfere with the rights and freedoms of other States. Unequivocally, we can discern that Article 85 is not designed to raise an exception to Article 78(2), nor should it be construed to do so.

Article 31 of the Vienna Convention on the Law of Treaties (“Vienna Convention”) states that “[a] treaty shall be interpreted in good faith in accordance with the ordinary meaning to the terms of the treaty in their context and in light of its objective and purpose.”<sup>49</sup> Since “tunnelling” and “drilling” are dealt with separately in UNCLOS, it appears that the terms are to be considered distinct from each other in

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<sup>48</sup> See UNCLOS, *supra* note 13, at 78–79; See also UNCLOS, *supra* note 13, at 148–49.

<sup>49</sup> Vienna Convention on the Law of Treaties, May 23, 1969, 1155 U.N.T.S. 331, art. 31 [hereinafter Vienna Convention].

terms of definition and intended effect. Therefore, the two terms must have different meanings and intended effects in regards to their usage, and Articles 81 and 85 are likely concerned with manifestly different issues.

Under the Vienna Convention a State must act in good faith and in accordance with the ordinary meanings of the words within a treaty.<sup>50</sup> The ordinary meaning of "tunnelling," according to the Oxford Dictionary is to "dig or force a passage underground or through something."<sup>51</sup> The verb "tunnelling" is derived from the noun "tunnel," which means "an artificial underground passage, [especially] one built through a hill or under a building, road, or river."<sup>52</sup> The ordinary meaning of "drilling" is "to make a hole in or through something by using a drill."<sup>53</sup> It is derived from the noun "drill," which is a tool or machine with a rotating cutting tip, reciprocating hammer, or chisel used for making holes.<sup>54</sup> Considering the use of "tunnelling" and "drilling" in UNCLOS, under these definitions alone "tunnelling" could be "drilling" depending on the methods used to create an underground passage in the subsoil of the continental margin.

If "tunnelling" could in fact be drilling, then the question as to why Article 85 was not consolidated within Article 81 arises. A relevant and important distinction is the technical approach of the exploration/exploitation, which may begin on the surface of water or from terra firma and down into the subsoil of the coastal State's continental margin. Therefore, in order to properly address this issue the geographical/physical origin and direction of the exploratory/exploitative activity should be considered. Following this line of analysis, the major distinguishing factor between the terms lies in the wording of the articles and potentially in the history of Article 85. With respect to its wording, Article 81 clearly states that a coastal State has the exclusive right to authorize and regulate drilling on its continental shelf for all purposes.<sup>55</sup> The word "on" is the operative

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<sup>50</sup> *Id.*

<sup>51</sup> NEW OXFORD AMERICAN DICTIONARY 1863 (3d ed. 2010).

<sup>52</sup> *Id.* (the word tunnel is commonly used to denote a man made passage through a geographical obstacle for the expeditious passage of vehicles, persons, and/or cargoes).

<sup>53</sup> NEW OXFORD AMERICAN DICTIONARY 529 (3d ed. 2010).

<sup>54</sup> *Id.*

<sup>55</sup> UNCLOS, *supra* note 13, art. 81.

distinction here, which differentiates the scope of each article. The word “on” implies an exclusively top-down approach to the drilling activities that are being controlled; while, the “right to exploit” language in Article 85 is more directionally flexible. Despite this flexibility, the term “tunnelling” in Article 85 must conform to the definition of a tunnel in some respect, and cannot be taken out of the context of its typical usage – which is a passage to bypass an obstacle. However, since the supporting language of Article 85 does not directly suggest “tunnelling” must be in response to certain types of obstacles or for resource exploitation,<sup>56</sup> the concept of an “obstacle” should be applied to a geographical or geological hindrance to an interest that a coastal State has in its continental margin.

In order to determine whether this interpretation of the tunnelling provision is correct, it is important to look at the drafting history of Article 85 along with the surrounding circumstances at the time it was drafted. If under Article 31 of the Vienna Convention an interpretation would be “ambiguous or obscure” or “manifestly absurd or unreasonable,”<sup>57</sup> then pursuant to Article 32 of the Vienna Convention supplementary means of interpretation may be used in applying Article 31. UNCLOS does not explicitly define “tunnelling” or “drilling,” and the ordinary meanings of both terms are ambiguous. One cannot deduce the intended meaning of these terms within the context of their use, and should Article 85 be taken to its logical extreme, it would impermissibly frustrate Part VI and Part XI of UNCLOS. Therefore, applying Article 32 of the Vienna Convention is appropriate in this instance to determine the meaning of “tunnelling” and “drilling.”

Article 85 grants a coastal State the right to exploit the subsoil by means of tunnelling, irrespective of the depth of the water above it.<sup>58</sup> This extremely broad allowance is not compatible with the regime of sovereignty over the continental margin expressed in Part VI and the benefit of humanity language in Part XI. Since Article 85 is the descendent of Article 7 of the Convention on the Continental Shelf of 1958, the wording of the predecessor article may shed some light as to

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<sup>56</sup> For example, if Article 85 was written in such a way that would allow subsoil projects such as the Channel Tunnel.

<sup>57</sup> Vienna Convention, *supra* note 45, art. 32.

<sup>58</sup> UNCLOS, *supra* note 13, art. 85.

the scope of Article 85.<sup>59</sup> Article 85 states “[t]he provisions of these articles shall not prejudice the right of the coastal State to exploit the subsoil by means of tunnelling irrespective of the depth of water above the subsoil.”<sup>60</sup> When comparing the wording of Article 7 and Article 85, it appears that both articles serve a similar purpose in the context of their respective conventions. Within the Convention on the Continental Shelf, Article 7 appears to distinguish Articles 1 and 2 by expressing that the coastal State has the right to tunnel from terra firma to exploit “the subsoil of the high seas.”<sup>61</sup> The word “exploit” does not modify an object, such as natural resources or minerals, and can be read as a broad or narrow allowance for non-resource based exploitation. The term “tunnel” takes on a specific meaning of a particular activity when considering the context of its use in the International Law Committee’s (“ILC”) Commentary of its Eighth Session 1956 (“ILC Commentary”), and the history of deep sea hydrocarbon exploitation. Paragraph 11 of the ILC Commentary on proposed Article 67 states:

[...] the Commission points out that it does not intend limiting the exploitation of the subsoil of the high seas by means of tunnels, cuttings or wells dug from terra firma. Such exploitation of the subsoil of the high seas by a coastal State is not subject to any legal limitation by reference to the depth of the superjacent waters.<sup>62</sup>

As used in the ILC Commentary, the term “tunnels” is distinct from the terms “cuttings” and “wells.” With respect to the manner in which the ILC Commentary was drafted, it appears that the drafters intended “cuttings” and “wells” to be related terms referring to accepted oil drilling activities/techniques at the time of its drafting. This interpretation of the ILC Commentary is acceptable because the Oxford Dictionary definition of “drill” includes a “cutting machine,” and the act of “cutting” could logically incorporate certain types of drilling techniques. For example, the use of an auger, or a mechanically similar

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<sup>59</sup> U.N. Convention on the Continental Shelf, *supra* note 38, art. 7.

<sup>60</sup> See U.N. Convention on the Continental Shelf, *supra* note 37, at 318.

<sup>61</sup> *Int'l Law Comm'n, Articles Concerning the Law of the Sea with Commentary*, [1956] 2 Y.B. INT'L COMM'N, at 296 [hereinafter *Articles Concerning the Law of the Sea*].

<sup>62</sup> *Id.*

motion, would be a form of “cutting.” On the other hand, “tunnelling” and well digging are activities that can be undergone by “drilling,” or other similar excavation techniques. If this is the case, a similar situation to the Article 81 and 85 verbiage conundrum could occur.

The most important difference between “drilling” and “tunnelling,” as gleaned from the ILC Commentary, is that “tunnelling” can presumably start from the coastal State’s terra firma and continue into its continental margin. This particular characteristic of “tunnelling” is expressed by the ILC Commentary of its Eighth Session 1956. The history of the development of deep sea oil drilling and the ILC Commentary of its Eighth Session 1956 indicates that coastal States were interested in extending the reach of their sovereign rights over their continental margin past the 200 meter depth to “where the depth of the superjacent waters admits [the] exploitation of the natural resources of the seabed and subsoil.”<sup>63</sup> Further, the ILC found that technological advancements in the future might make it possible to exploit resources past the depth of 200 meters.<sup>64</sup> However, the ILC Commentary of the proposed Article 67, which later became integrated into Article 1 of the Convention on the Continental Shelf, makes no mention of “tunnelling” except for paragraph 11 where “tunnelling” is used exclusively in the context of an activity conducted from terra firma. Therefore, I believe that Article 85 is merely a remnant of the Convention on the Continental Shelf, expressing a coastal States’ right to conduct exploratory/exploitative activities from terra firma into the subsoil of its seabed without infringing upon the rights of neighboring and adjacent coastal States. Therefore, the right to tunnel within UNCLOS should not be read as an exception to the rights guaranteed to coastal States under Part VI.

## VII. THE AREA’S KEEPER, THE AUTHORITY

The Authority is the intergovernmental organization (“IGO”) that oversees the Area.<sup>65</sup> As stated previously, the Area is the area ocean floor that is not controlled by the coastal States under Part VI.<sup>66</sup>

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<sup>63</sup> *Articles Concerning the Law of the Sea*, *supra* note 53, at 296.

<sup>64</sup> *Id.*

<sup>65</sup> UNCLOS, *supra* note 13, art. 136(2).

<sup>66</sup> UNCLOS, *supra* note 13, art. 1(1).



Coastal States that want to establish the boundaries of their continental margins under Part VI of UNCLOS are not affected by Part XI. Nor is the validity of delimitation agreements between States affected by Part XI.<sup>67</sup> The Authority is granted all the rights for the natural resources in the Area, and it shall act on behalf of mankind.<sup>68</sup> The Authority regulates exploration and exploitation of in situ minerals found in the Area.<sup>69</sup> Resources in the Area are not subject to alienation, and recovered minerals may only be alienated in accordance with Part XI and the rules, regulations and procedures of the Authority.<sup>70</sup> Under UNCLOS Article 157, the Authority is the organization that State parties, in accordance with Part XI shall go through to organize and control activities in the Area.<sup>71</sup> The organization and control of the activities in the Area by the Authority should be with a view to administer the resources of the Area.<sup>72</sup> The powers and functions of the Authority are expressly enumerated by UNCLOS, and the Authority shall also have "incidental powers" that are implicit and necessary for it to conduct its enumerated powers and functions.<sup>73</sup>

The Authority, as it is not a State, does not have sovereign powers based on customary international law. However, it does have powers granted to it by UNCLOS, subsequent annexes, implementation agreements, and protocols. In the territory of each State party under UNCLOS, subject to ratification, the Authority enjoys the privileges and immunities set forth in section 4, subsection G of Part XI.<sup>74</sup> UNCLOS grants the Authority an international legal personality and the legal

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<sup>67</sup> UNCLOS, *supra* note 13, art. 134(4) ("Nothing in this article affects the establishment of the outer limits of the continental shelf in accordance with Part VI or the validity of agreements relating to delimitation between States with opposite or adjacent coasts.").

<sup>68</sup> UNCLOS, *supra* note 13, art. 137(2).

<sup>69</sup> UNCLOS, *supra* note 13, art. 133(a) (Minerals includes "all solid, liquid, or gaseous mineral resources . . . in the Area at or beneath the seabed.").

<sup>70</sup> UNCLOS, *supra* note 13, art. 137. It should be noted that UNCLOS uses the words "resources" and "minerals" to denote different phases of exploitation. Resources means "all solid, liquid, or gaseous mineral resources in situ in the Area at or beneath the seabed. . . ." Minerals means resources that have been recovered from the Area; UNCLOS, *supra* note 13, art. 133.

<sup>71</sup> UNCLOS, *supra* note 13, art. 157.

<sup>72</sup> UNCLOS, *supra* note 13, art. 157(1).

<sup>73</sup> UNCLOS, *supra* note 13, art. 157(2).

<sup>74</sup> UNCLOS, *supra* note 13, art. 177.

capacity necessary to exercise its functions and fulfill its purposes.<sup>75</sup> The Authority has legal immunity from suit unless it waives this right.<sup>76</sup> The general conduct of States towards the Area, which is administered by the Authority, shall conform with Part XI of the convention and other principles of international law, with an eye towards maintaining peace and security, and promoting international coordination and mutual understanding.<sup>77</sup> Further, the Authority must conduct activities in the Area with regard to the rights and legitimate interests of any coastal State where resource deposits lie across the limits of national jurisdiction.<sup>78</sup>

#### VIII. HYDROCARBONS IN THE AREA: WHAT IS THE PROTOCOL?

Typically, coastal States have enacted domestic legislation on the exploration and exploitation of subsoil resources of their continental margins, even if they are not a party to UNCLOS. While the Area has expressed protocols in regards to exploitation of certain enumerated resources, none specifically deal with hydrocarbon exploitation. Instead of a full-fledged hydrocarbon protocol, there exists Article 151(9).<sup>79</sup> This article states that the Authority has the power to limit the level of minerals exploited from the Area, other than polymetallic nodules, under the conditions and methods as may be appropriate by adapting regulations in accordance with Article 161(8).<sup>80</sup> According to UNCLOS, however, minerals recovered from the Area may only be alienated in accordance with Part XI and the rules, regulations and procedures of the Authority.<sup>81</sup> Since “minerals” comprises all in situ liquid and gaseous minerals, including hydrocarbons, this implies that coastal States may not exploit transboundary hydrocarbons in the Area until either rules, regulations, and procedures are developed by the Authority, or some other form of negotiation or contract between a coastal State and the Authority is agreed upon. The issue of uncertainty is compounded by the fact that exploration and exploitation may not be

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<sup>75</sup> UNCLOS, *supra* note 13, art. 176.

<sup>76</sup> UNCLOS, *supra* note 13, art. 178.

<sup>77</sup> UNCLOS, *supra* note 13, art. 138.

<sup>78</sup> UNCLOS, *supra* note 13, art. 142(1).

<sup>79</sup> UNCLOS, *supra* note 13, art. 151(9).

<sup>80</sup> UNCLOS, *supra* note 13, art. 161(8).

<sup>81</sup> UNCLOS, *supra* note 13, art. 137(2).

conducted unless the plans are approved by the Authority and undertaken by the Enterprise.<sup>82</sup>

Effectively, the fact that no explicit rules or protocols exists under UNCLOS on hydrocarbons may dissuade States from seeking to exploit the Area until such rules and protocols, or other agreements, are put into place by the Authority. As the resources of the Area are meant to be for the benefit of mankind, it would make sense to prevent States from exploiting common hydrocarbon pools until protocols are developed. Although I will not attempt to explicitly posit the particulars on the types of regulations that the Authority could draft, I imagine that they would be similar to the regulations and requirements set for the polymetallic nodules.<sup>83</sup> I also imagine the profit calculus of hydrocarbons in the Area would be similar to a standard unitization agreement, with the percentage payout being based on the percent of the volume of the subsoil hydrocarbons within the territory of the respective parties. Irrespective of any uncertainty, I shall consider and discuss possible issues of hydrocarbon exploitation within UNCLOS despite the lack of an express protocol, and attempt to address the potential issues that could arise.

#### IX. ARTICLE 85 AND ITS POTENTIAL IMPACT ON THE AREA

While Article 85 may be troublesome within Part VI, it does not apply when a coastal State deals with the Area. Article 137 effectively negates the tunnelling provision by stating that no State may claim or exercise sovereignty or sovereign rights over the Area.<sup>84</sup> Further, the resources of the Area are not subject to alienation unless it is in accordance with Part XI.<sup>85</sup> Effectively, Part VI expresses rights that coastal states have with respect to each other, but does not affect the Authority's rights to the resources within the Area. Therefore, Part VI's exploitation rights only concern coastal State relations with other States, and Part XI expressly limits State's rights under Part VI vis-à-vis the Area.

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<sup>82</sup> UNCLOS, *supra* note 13, art. 153.

<sup>83</sup> See UNCLOS, *supra* note 13, at Annex III.

<sup>84</sup> UNCLOS, *supra* note 13, art. 137(1).

<sup>85</sup> UNCLOS, *supra* note 13, art. 137(2).

#### X. ARTICLE 78 (2) AND ARTICLE 142: A CONFLICT OF LAW?

An interesting issue arises over the interplay of Article 78(2) and Article 142(1). Article 78(2) states that “[t]he exercise of the rights of the coastal State over the continental shelf must not infringe or result in any unjustifiable interference with navigation and other rights and freedoms of other States as provided for in this Convention.” This is an effective right to veto by coastal States against other coastal States within Part VI. Notwithstanding other parts of UNCLOS, this prohibition is rather direct and does not seem to warrant further discussion as to its application. However, the interplay between it and Article 142 of Part XI seems to create a bit of confusion.

Article 142(1) states that, “[a]ctivities in the Area, with respect to resource deposits in the Area which lie across limits of national jurisdiction, shall be conducted with due regard to the rights and legitimate interests of any coastal State across whose jurisdiction such deposits lie.” Article 142(2) states that “[i]n cases where activities in the Area may result in the exploitation of resources lying within national jurisdiction, the prior consent of the coastal State concerned shall be required.” When comparing Article 78 to Article 142, an interesting question arises regarding resource exploitation: does Article 78(2) frustrate the purpose Article 142? This question is especially important where hydrocarbons are concerned, as hydrocarbons pool and an entire deposit may be completely exploited from a single site.

For example, imagine a hydrocarbon deposit that lies across a sponsor State’s continental margin, the Area, and a coastal State’s continental margin. The sponsor State has made the appropriate arrangements with the Authority and may now conduct exploitation activities in its continental margin and the Area. However, the coastal State does not agree to it and is not a party to the agreement on the common pool exploitation between the sponsor State and the Authority, and therefore, uses its veto under Article 142. Under this scenario, a coastal State preventing the exploitation of its subsoil resources is also preventing a sponsor State’s exploitation of its continental shelf in violation of Article 78(2). Is this a fair result?

Article 142, in relation to hydrocarbons, is meant to prevent the bypassing of the sovereign rights of coastal States granted under Part VI through the Authority, or another party, and acts as a deterrent for sponsor States from conducting exploitation activities before reaching

all necessary multilateral agreements. Yet, in situations involving common pools of liquid or gaseous hydrocarbon deposits, Article 142 could be used in bad faith<sup>86</sup> by a coastal State, or serve as political leverage by the coastal State against the sponsor State who is conducting exploitation activities within the Area. In essence, this behavior would prevent the sponsor State from exploiting its own continental margin as well. Like Article 142, Article 78(2) states that a sponsor State may not exploit the resources of a coastal State unless the coastal State consents.<sup>87</sup> Article 78(2) can be viewed as dealing with special issues that arise with common pools of liquid and gaseous hydrocarbon deposits.<sup>88</sup> The fugitive nature of these deposits warrants more protection than static deposits, as static deposits cannot be exploited by activities that are physically in a different geographical region. Article 142's veto power essentially restates the rights of coastal States under Part VI.

The independent veto provisions of Articles 78(2) and 142 work in tandem and seek to effectively facilitate agreements between States that share a common gaseous or liquid hydrocarbon subsoil deposit, prior to any exploitation. Article 142 is utilized where Authority action is involved in an agreement to exploit a common pool. Article 78(2)'s language is a broader prohibition against the actions of sponsor States breaching the "other rights and freedoms of other States as provided for in this Convention" through any method.<sup>89</sup> The result of the interplay between Articles 78(2) and 142 is acceptable, because it conforms with the sentiment expressed within Article 77(2). Further, this result is also acceptable under Article 32 of the Vienna Convention because it does not serve to frustrate the purpose of UNCLOS.<sup>90</sup>

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<sup>86</sup> See UNCLOS, *supra* note 13, art. 300. This could be in spite of UNCLOS Article 300's requirement for States to act in good faith, and to not commit an abuse of right.

<sup>87</sup> UNCLOS, *supra* note 13, art. 78(2).

<sup>88</sup> See also UNCLOS, *supra* note 13, art. 77(2) ("[The sovereign rights a coastal State exercises over the continental shelf] are exclusive in the sense that if the coastal State does not explore the continental shelf or exploit its natural resources, no one may undertake these activities without the express consent of the coastal State.").

<sup>89</sup> UNCLOS, *supra* note 13, art. 78(2).

<sup>90</sup> Vienna Convention, *supra* note 42, art. 32.

XI. MAKING THE DEAL: CONSIDERATIONS FOR AVENUES OF AGREEMENT  
AMONG STATES, AND STATES AND THE AUTHORITY

The following sections deal with potential agreement structures between coastal States, and the Authority. I will look at the ways that coastal States could possibly extend their continental margins, either using UNCLOS or other methods, and discuss the possible means that interested parties could reach agreements over hydrocarbon exploitation. The power of the Authority over the Area is not unlimited, and coastal States may have the ability to change their continental margins, thus affecting the boundaries of the Area. As stated previously, Part VI of UNCLOS enumerates the rights of coastal States over their continental margins; Article 134(4) may provide coastal States with the ability to expand their judicial continental shelf against the Area. Article 134(4) states that “[n]othing in this article affects the establishment of the outer limits of the continental shelf in accordance with Part VI or the validity of agreements relating to delimitation between States with opposite or adjacent coasts.”<sup>91</sup> Therefore, Article 76 and Article 77 are not affected by Article 134 and Article 1(1), and coastal States have the power to adjust the jurisdiction of the Authority. The potential methods coastal States may use to increase the breadth of their continental margins deserves special consideration, as expanding the judicial continental shelf 1) may allow for a higher probability of discovering subsoil hydrocarbons; 2) could be used as leverage in negotiations for unitization and delimitation agreements; and 3) could be employed as a method to stymie States’ exploitation agreements with the Authority in the Area.

A. Coastal States May Extend Their Continental  
Margins under Part VI

Coastal States can control to a certain extent the breadth of their continental margins, prior, during, or after ratification of UNCLOS, and can thus effectively alter the reach of the Authority by changing the dimensions of the Area.<sup>92</sup> Further, coastal States may also challenge the breadth of the continental shelves of adjacent coastal states.<sup>93</sup>

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<sup>91</sup> UNCLOS, *supra* note 13, art. 134(4).

<sup>92</sup> UNCLOS, *supra* note 13, art. 76(7)–(10).

<sup>93</sup> *See generally* UNCLOS, *supra* note 13, art. 279–99.

Interestingly enough, there is no express prohibition under UNCLOS of coastal States altering their judicial continental shelf to become more favorable for resource exploitation.<sup>94</sup> Article 76(7)-(9) does not construct any boundary estoppel, nor does Annex II of UNCLOS,<sup>95</sup> and creates a potential tool for coastal States to use to their own benefit. However, it is unlikely coastal States have not already taken full advantage of Article 76, especially since Article 76(4)(a)(i) is written in such a way to allow coastal States to claim continental margins with optimal subsoil conditions for hydrocarbon formation.<sup>96</sup>

This potential geographical gerrymandering creates a potential strategy to gain advantages in negotiations in regard to subsoil hydrocarbons. What happens if a State declares a judicial continental shelf that does not completely accord with Article 76(8) and Articles 7 and 8 of Annex II, and then pursues an extended exchange with the Commission on the Limits of the Continental Shelf? What would then be the legal status of the coastal State's continental margin? There is nothing within UNCLOS that states that judicial continental shelves that are not in conformity with Article 76 will be held as ineffective until properly revised. In fact, UNCLOS states that the limits of the judicial continental shelf shall be unilaterally established by a coastal State, although made on the basis of the recommendations of the Commission on the Limits of the Continental Shelf, and shall be final and binding.<sup>97</sup> Yet, there is no language in UNCLOS, or its Annexes, stipulating that a State must take into account the totality of the Commission's recommendations when declaring the margins of its

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<sup>94</sup> For an in depth discussion See MARK J. VALENCIA ET AL., SHARING THE RESOURCES OF THE SOUTH CHINA SEA, pp. 17-76 (1st ed. 1999) (discussing issues pertaining to different claims to the Spratly Islands in the South China Sea).

<sup>95</sup> Annex II sets forth the Commission on the Limits of the Continental Shelf, an organ that gives technical support and recommendations to Coastal states claiming continental shelves past 200 NM pursuant to Art. 76(8).

<sup>96</sup> Article 76(4)(a)(i) reads, "(a) For the purposes of this Convention, the coastal State shall establish the outer edge of the continental margin wherever the margin extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, by either: (i) a line delineated in accordance with paragraph 7 by reference to the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope[.]"

<sup>97</sup> UNCLOS, *supra* note 13, art. 76(8).

judicial continental shelf. The only expressly binding language states that a coastal State must follow the limitations set forth under Article 76(4)–(6).<sup>98</sup> However, non-cooperation with the Commission could lead to other issues concerning potentially affected neighboring coastal States, resulting in binding arbitration and the redrawing of coastal margins and the continental shelf pursuant to Article 76.<sup>99</sup>

If a coastal State's judicial continental shelf under UNLOS does not comport with Annex II and Part VI, it does not mean that the coastal State has no sovereign rights over its geographical continental margin. Under customary international law, coastal State's sovereignty over the continental margin would reach a breadth of at least 200 NM, notwithstanding other entitlements under UNCLOS.<sup>100</sup> This type of tactic may also be at odds with Article 300 of UNCLOS, which provides that "[p]arties shall fulfill in good faith the obligations assumed under this Convention and shall exercise the rights, jurisdiction and freedoms recognized in this Convention in a manner which would not constitute an abuse of right."<sup>101</sup> Despite this, there is no mention of any punitive mechanism for non-compliance with the Committee on the Limits of the Continental Shelf. As a result, a coastal State should be mindful of "bad faith" finagling with multilateral treaties because other States may be weary to deal with them in the future. Further, a coastal State planning to alter its judicial continental shelf should also be aware of all possible issues in relation to Part VI and Part XI.

#### B. Dispute Settlement: Considerations and Concerns

If a delimitation agreement issue arises between coastal States, the matter can be taken to the International Court of Justice ("ICJ"), the International Tribunal on the Law of the Sea ("ITLOS"), the Seabed Disputes Chamber, or any other tribunal that has jurisdiction.<sup>102</sup> Part XV of UNCLOS deals with the settlement of disputes between States Parties, and Part XI, Section 5, of UNCLOS deals with the settlement of

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<sup>98</sup> UNCLOS, *supra* note 13, art. 76(2).

<sup>99</sup> See also Dispute Concerning Delimitation of the Maritime Boundary Between Bangladesh and Myanmar in the Bay of Bengal (Bangl./Myan.), Case No. 16, Judgment of Mar. 14, 2012, 12 ITLOS Rep.4 [hereinafter Dispute Judgment].

<sup>100</sup> *Id.*

<sup>101</sup> UNCLOS, *supra* note 13, art. 300.

<sup>102</sup> UNCLOS, *supra* note 13, art. 83, 186, 286.



disputes between States Parties and the Authority. While dispute settlement is not entirely within the scope of the question of “what kinds of agreements could coastal States make,” it is somewhat important in considering stratagem for making, or not making, agreements. Party States, as well as non-party States, to UNCLOS should want to seriously consider the language in their delimitation agreements, unitization agreements, correlative seabed agreements, or anything of the like. If adjacent coastal States are having a dispute over the breadth of their respective continental margins and are doing so without any delimitation agreements in force, then the dispute may undergo binding settlement that grants an equitable solution under UNCLOS.<sup>103</sup> While redrawing of margin lines by a third party may be helpful to coastal States that have reached an impasse, it is important that coastal States protect their continental margin interests by a prior non-arbitral delimitation agreement.<sup>104</sup>

In *The Maritime Delimitation in the Black Sea (Romania v. Ukraine)*, a prior delimitation agreement between Romania and the Union of Socialist Soviet Republics (U.S.S.R.) regarding a marine rock in proximity to Ukraine was held to still be effective when the ICJ determined the coastal States’ maritime delimitation.<sup>105</sup> Coastal States must be wary of agreements made prior to ratification of UNCLOS, as Article 83(4) states that “[w]here there is an agreement in force between the States concerned, questions relating to the delimitation of the continental shelf shall be determined in accordance with the provisions of that agreement.”<sup>106</sup> Therefore, if a coastal State that is the party to a delimitation agreement wishes to acquire more seabed under UNCLOS, the delimitation issue must also be resolved in terms of the agreement in force between the parties prior to a tribunal’s determination of the new boundaries. Another important consideration to be made is the Commission on the Limits of the Continental Shelf and the Authority must not affect delimitation agreements between States with opposite

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<sup>103</sup> UNCLOS, *supra* note 13, art. 83(1); *see also* Dispute Judgment, 12 ITLOS Rep. 4.

<sup>104</sup> *See* *Maritime Delimitation in the Black Sea (Rom. v. Ukr.)*, 2009 I.C.J. 61 (Feb. 3) (The ICJ found a prior delimitation agreement to still be effective in a maritime delimitation dispute between coastal States).

<sup>105</sup> *Maritime Delimitation in the Black Sea (Rom. v. Ukr.)*, 2009 I.C.J. 61, 119 (Feb. 3).

<sup>106</sup> UNCLOS, *supra* note 13, art. 83(4).

or adjacent coasts.<sup>107</sup> Hence, State agreements effectively carry weight over the organs created by UNCLOS.

In a recent judgment by ITLOS, *Dispute Concerning Delimitation of the Maritime Boundary Between Bangladesh and Myanmar in the Bay of Bengal*, the Tribunal discussed the application of UNCLOS where there was a question of the delimitation of the judicial continental shelf.<sup>108</sup> The Tribunal considered issues pertaining to the 200 NM breadth of the continental shelf under Article 76, whether Bangladesh and Myanmar had entitlement to a judicial continental shelf beyond the initial 200 NM, and whether the Tribunal could delimit the judicial continental shelf beyond 200 NM.<sup>109</sup> In this case, the Tribunal concluded that Article 77(3) confirmed the existence of a coastal State's entitlement to the continental shelf beyond 200 NM, and that this entitlement did not depend on the establishment of the outer limits of the continental shelf by a coastal State.<sup>110</sup> The Tribunal ruled that even if the outer limits of a continental shelf have not been determined by a coastal State, or recommended by the Commission on the Limits of the Continental Shelf,<sup>111</sup> it did not imply that the Tribunal had to refrain from determining the existence of entitlement to the continental shelf within 200 NM, nor would it prevent the Tribunal from delimiting a continental shelf past 200 NM.<sup>112</sup> The Tribunal unanimously decided that it had the jurisdiction to "[...] delimit the maritime boundary of the territorial sea, the exclusive economic zone and the continental shelf [...]"<sup>113</sup> and then ruled, by twenty-one votes to one, that it had also the jurisdiction to delimit the continental shelf beyond 200 NM.<sup>114</sup>

By this judgment, ITLOS notified all potential claimants that the Tribunal has the jurisdiction to determine entitlements to the

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<sup>107</sup> UNCLOS, *supra* note 13, art. 76(10), 134(4); UNCLOS, *supra* note 13, Annex II, art. 9.

<sup>108</sup> *See* *Dispute Judgment*, 12 ITLOS Rep. 4.

<sup>109</sup> *Dispute Judgment*, 12 ITLOS Rep. 4, ¶¶ 399, 401.

<sup>110</sup> *Id.* at ¶ 409.

<sup>111</sup> *Id.* ¶ 377 ("There is nothing in the Convention or in the Rules of Procedure of the Commission or in its practice to indicate that delimitation of the continental shelf constitutes an impediment to the performance by the Commission of its functions.").

<sup>112</sup> *Id.* ¶¶ 363, 377, 379, 394, 410.

<sup>113</sup> *Id.* ¶ 506(1).

<sup>114</sup> *Id.* ¶ 506(2).

continental shelf within 200 NM, as well as the limits of the continental shelf beyond 200 NM. ITLOS, in this instance, took a positive approach to determining the rights of the parties. It noted that, a continuing impasse regarding the coastal States' rights prevented the implementation of UNCLOS and would be contrary to the efficient operation of UNCLOS,<sup>115</sup> and therefore, the Tribunal had a responsibility under the Convention to resolve the issue.<sup>116</sup> The effect of this decision is that coastal States may risk the Tribunal demarking their entitlements and continental shelves where an impasse exists.<sup>117</sup>

Interestingly, the Tribunal stated that “[i]t is not unusual in such cases for States to enter into agreements or cooperative arrangements to deal with problems resulting from the delimitation.”<sup>118</sup> This could lead an observer to believe that this instance may have been an exceptional case, and that the Tribunal sought to warn similarly situated parties. However, continued issues regarding the lack of delimitation, such as with the Spratly Islands in the South China Sea,<sup>119</sup> may lead to similar situations in the future. The Tribunal noted that under UNCLOS Annex VI, Article 33(2), it would not make any binding decision that would prejudice non-claimant third parties.<sup>120</sup> The Tribunal also noted that if the seabed of the Area was concerned within a dispute, it would not prejudice the rights of the international community.<sup>121</sup> Although the Tribunal was limited in its discretion to affect the boundary between Myanmar and Bangladesh, this judgment

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<sup>115</sup> See also *id.* ¶¶ 433, 434, 455, 471, 472. The Tribunal observed that “during the Third United Nations Conference on the Law of the Sea the notion of natural prolongation [of the continental shelf] was employed as a concept to lend support to the trend towards expanding national jurisdiction over the continental margin.” ¶ 433. The Tribunal noted that the methods of delimiting the continental shelf past 200 NM were distinct from the question of the object and the extent of the rights granted in Articles 57 and 76. ¶ 455. However, the Tribunal also acknowledged that delimitation past 200 NM may lead to “grey” areas that created where overlapping jurisdiction/claims to transboundary resources exist. ¶ 472.

<sup>116</sup> *Id.* ¶¶ 391–94.

<sup>117</sup> It does not matter if coastal States have, or have not, submitted their delimitations of their continental shelves to the Commission on the Limits of the Continental Shelf, or have not made prior agreements with neighboring coastal States pursuant to Article 311.

<sup>118</sup> Dispute Judgment, 12 ITLOS Rep. 4, ¶ 472.

<sup>119</sup> VALENCIA, *supra* note 94.

<sup>120</sup> Dispute Judgment, 12 ITLOS Rep. 4, ¶ 367.

<sup>121</sup> *Id.* ¶ 368.

did not concern changes to the boundaries on the Area.<sup>122</sup> Inasmuch, there is still no clear answer to what would occur where a coastal State's claims over the continental shelf were in contention with the Authority's rights over the Area.

### C. Redrafting Continental Margins: Shifting Claims

A possible "flaw" of UNCLOS is that it implicitly allows for continued revision of continental margins by coastal States.<sup>123</sup> Although coastal States may face issues where delimitation agreements determine a majority of legal margins, they still could theoretically alter areas that are not covered by such agreements. As revisions to the continental margins are not proscribed by UNCLOS, this tactic could be used by coastal States in a variety of ways. A coastal State may revise its continental margin as a potentially legitimate maneuver to gain more exploitable territory, to shift veto power between States, or to create leverage depending on the structure of a delimitation agreement. This tactic could occur where judicial continental shelves are adjacent or opposite of each other.

Another probable situation occurs where a sponsor State is stymied by a coastal State via Article 146(1) where the coastal State successfully altered its judicial continental Shelf to cover the seabed where the sponsor State is facilitating exploitation/exploration with the Authority. While this type of maneuver may have the theoretical potential to cause an issue, it is doubtful that it actually would occur. Depending on the maximum breadth of the continental margin allowed under Article 76, a coastal State may not be able to gain much more judicial continental shelf. The wording of Article 76 invites coastal States to claim the maximum legal breath of continental margin on the outset. What may occur, however, is an attempt to minutely extend and hook the continental margin over hydrocarbon rich areas of a neighboring coastal State. This could be strategically important when a coastal State's continental margin borders, but does not intersect a hydrocarbon deposit of a sponsoring State. In this instance, the coastal State may seek to gain a sovereign interest over the hydrocarbon deposit for either economic or diplomatic purposes.

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<sup>122</sup> *Id.*

<sup>123</sup> VALENCIA, *supra* note 94.

#### D. Unitization Agreements: Further Considerations for Delineation

Delimitation of transboundary resources can lead to conflicts between coastal States in regard to the exercise of rights over subsoil transboundary hydrocarbons. Unitization could be a legal and diplomatic way to provide for the exploration and development of an entire hydrocarbon area by a single operator, so that exploration and production may proceed in the most efficient and economic manner. Unitization agreements are agreements between States that normatively modify the rule of capture, decreases the waste between subsoil tracts from being drained by one or more coastal States from common pools, and leads to a more effective exploitation.<sup>124</sup> This type of agreement has already been utilized in transboundary groundwater agreements.<sup>125</sup> Additionally, the majority of continental shelf delimitation agreements address the issue of natural resources.<sup>126</sup> Typically, unification production/profit agreements are based on the percentage of the subsoil resource that each State party controls. Hence, it is imperative that the signatory parties determine and agree to the extent that the transboundary hydrocarbon deposit is within their continental margin.<sup>127</sup> If parties, States and/or IGOs, agree to unitize their interests, cooperation throughout the unitization process is important for the overall success of the joint exploitation operation. Unification especially helps to relieve exploitation issues stemming from migratory subsoil hydrocarbons. Geological variations within hydrocarbon reservoirs, such as differences in the depth of a reservoir, can allow a State to exploit more hydrocarbons volumetrically via optimally located exploitation sites.<sup>128</sup> Further, States can make arrangements for

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<sup>124</sup> See Charles Biblowit, *International Law and the Allocation of Property Rights in Common Resources*, 4 N.Y. INT'L L. REV. 77, 79 (1991).

<sup>125</sup> See Thomas A. Reynolds, *Delimitation, Exploitation, and Allocation of Transboundary Oil & Gas Deposits Between Nation-States*, 1 ILSA J. INT'L & COMP. L. 135, 144 (1995).

<sup>126</sup> See Alberto Székely, *The International Law of Submarine Transboundary Hydrocarbon Resources: Legal Limits to Behavior and Experiences for the Gulf of Mexico*, 26 NAT. RESOURCES J. 733, 759 (1986).

<sup>127</sup> Reynolds, *supra* note 107, at 149.

<sup>128</sup> *Id.* at 166.

delimitation either by diplomacy or through various forms of international arbitration.

While there is nothing in UNCLOS about unitization agreements, unitization-like joint venture systems have been suggested by ICJ to State parties.<sup>129</sup> This suggestion is significant as the ICJ has decided many delimitation agreements between States without factoring in issues of economic interests in natural resources.<sup>130</sup> In the North Sea Continental Shelf cases, the ICJ stated that the “the land dominates the sea,” and the continental shelf is the natural prolongation of a coastal State’s land territory.<sup>131</sup> The ICJ further stated that the natural resources of the continental shelf under delimitation “so far as known or readily ascertainable” may be relevant enough in certain circumstances to be reasonably considered in delimitation cases.<sup>132</sup> However, for the most part, the ICJ has ruled that the presence of transboundary resources is not necessary in itself to create a special circumstance that would alter a delimitation agreement between coastal States, and recommended that States negotiate, subsequent to delimitation, any exploitation schemes.<sup>133</sup> This is important to note, as the ICJ is of the view that economic considerations or altering delimitation lines cannot be taken primarily into account.<sup>134</sup> The ICJ explained that their position was due to the fact that economic considerations are “virtually extraneous factors” since they represent

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<sup>129</sup> Agreement on the Continental Shelf between Iceland and Jan Mayen, Ice.-Nor., art. 3–5, Oct. 22, 1981, 2124 U.N.T.S. 262, 21 I.L.M. 1222 (1982).

<sup>130</sup> UNCLOS, *supra* note 13, art. 83(1); Statute of the International Court of Justice art. 38(1), June 26, 1945, 59 Stat. 1055, 33 U.N.T.S. 993). Especially considering that under UNCLOS Article 83(1), the tribunal with jurisdiction must effect delimitation agreements on the basis of international law, as referred to under Article 38 of the Statute of the International Court of Justice.

<sup>131</sup> North Sea Continental Shelf (F.R.G./Den; F.R.G./Neth.) 1969 I.C.J. n. 32, 33 (Feb. 20).

<sup>132</sup> *Id.*

<sup>133</sup> See France-United Kingdom: Arbitration on the Delimitation of the Continental Shelf, *reprinted in* 18 I.L.M. 397 (1979); Treaty Concerning the Lateral Delimitation of the Continental Shelf in the Vicinity of the Coast, Neth.-Ger., Dec. 1, 1964, 550 U.N.T.S. 128.

<sup>134</sup> See Continental Shelf (Tunisia-Libyan Arab Jamahiriya), 1982 I.C.J. 63, art. 5 ¶ 107 (Feb. 24).

variables that are not predictable, and may "tilt the scale one way or the other," in favor of one State over the other.<sup>135</sup>

Unification agreements are implicitly allowed under Articles 76(10) and 83, and help advance two important interests. They resolve the issue of inequitable exploitation by creating possessory interests in the quantifiable output of shared hydrocarbon resources and they promote the efficient exploitation of hydrocarbon resources. This is especially important if the desired outcome of a delimitation agreement is to set the stage for the optimization of transboundary hydrocarbon exploitation. However, issues present themselves that may stand in the way of optimization. Since there is no current protocol governing transboundary hydrocarbon deposits spanning between the Area and coastal States, it is certain that such issues will crop up. For illustrative purposes, imagine a transboundary hydrocarbon deposit that spans two coastal Party States and the Area. What would happen in the case where coastal States had a unification agreement in force prior to ratifying UNCLOS? It would be particularly troubling if the States' unification agreement included the entirety of a deposit, spanning into what would become the Area, and it is unclear how one would reconcile this possibility with Article 137.<sup>136</sup>

What if the above mentioned States are allowed to exploit hydrocarbons in the Area, but are bound under reservation requirements, similar to that prescribed for mining under UNCLOS Annex III, Article 8?<sup>137</sup> A situation like that is inherently complex and poses a number of possible quandaries. Questions about the percentage of production/profit sharing under a unitization agreement may arise, and States could be required to produce more hydrocarbons than necessary for their economic or energy needs. In the case where the Area owns rights to the majority of a hydrocarbon deposit and the coastal States own rights to the minority, the sponsor State may only want to exploit an individually equitable percentage of the shared deposit and may not wish to form an agreement in which it has rights under Part VI. A concern for the sponsor State might be whether it is possible and permissible to exploit these hydrocarbons without

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<sup>135</sup> *Id.*

<sup>136</sup> UNCLOS, *supra* note 13, art. 137 (expressing who may exert rights over the Area).

<sup>137</sup> Setting forth the mineral-sharing regime for States seeking to mine in the Area.

compromising the rights of the coastal States under Article 142.<sup>138</sup> Further, what if the Authority requires State production limitations to exploitation for all hydrocarbon resources in the Area? Depending on the method of limitation and related potential protocols, what effect would such a regime create? All the issues that arise from this hypothetical cannot be addressed under the current scope and direction of Authority protocols and UNCLOS, especially in light of the considerations concerning migratory subsoil hydrocarbons, and the protection of the States' rights over their mineral resources.

Without a protocol on the topic of transboundary hydrocarbon deposits, the apparent conflict between Articles 77 and 137 may create a situation where a coastal State is not allowed to exploit its own hydrocarbons from its continental margin. Since coastal States are best equipped to know the expanse of their subsoil hydrocarbon deposits, and if no exploration has been conducted in the Area for data on hydrocarbon potential, a State may inadvertently claim rights over resources that it has no rights to. Unfortunately, the benefit to mankind is not always an incentive for coastal States to exploit hydrocarbons, nor is it always economical. In light of this, UNCLOS may actually create an economic disincentive for coastal States to cooperate and invest in hydrocarbon exploitation where deposits span into the Area, especially if States are seeking to lower the costs of energy.

## XII. CONCLUSION

Considering the complex and often vague nature of UNCLOS, with its annexes, rules, and protocols in relation to the question of subsoil hydrocarbons, there are no simple answers regarding State and the Authority hydrocarbon agreements and other ensuing issues. These issues are further complicated when non-party States are included in the consideration. While it is in the best interest of coastal States to gain optimal economic and/or energy outcomes over their neighbors, UNCLOS addresses only some of these issues in an equitable manner through Part VI and Part XI's articles on delimitation, the enumeration

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<sup>138</sup> *I.e.* UNCLOS art. 142(1) ("Activities in the Area, with respect to resource deposits in the Area which lie across limits of national jurisdiction, shall be conducted with due regard to the rights and legitimate interests of any coastal State across whose jurisdiction such deposits lie.")



of coastal State's rights, and provisions seeking to resolve issues of mineral deposits past the continental margin. However, glaring ambiguities in verbiage and constructive double standards lead to a regime of all-or-none diplomacy when the Area is involved. As no Authority protocol or implementation agreement exists for the exploitation of deep sea hydrocarbons, it is difficult to deduce what exactly the particulars of a multilateral hydrocarbon agreement should be, and whether they would resolve the many issues, questions, and concerns that were noted throughout this paper. Therefore, the possibility for protracted disputes, conflicts, and disagreements remains high. In order to become more effective in facilitating coastal States and the Authority's interests in deep sea hydrocarbon exploitation, UNCLOS needs to better define the limitations of the rights of coastal States over their continental margins and develop a much needed hydrocarbon regime.