Offshore Decommissioning in Southeast Asia and the opportunity for Rig-to-Reef

The Regulation of Continental Shelf Developments:
Rethinking International Standards
Halifax, 21-22 June 2012

By Youna Lyons
Introduction: definition, dilemma and legal framework

I. Location and profile of offshore platforms in SEA

II. Decommissioning in territorial and archipelagic waters

III. Decommissioning on the continental shelf

IV. The case for rigs-to-reefs in SEA

Conclusion: Regional perspective
Introduction: Definition of decommissioning

Technically

- Well capping
- Pipelines & power cables
- Deck and conductors removal
- Drill cuttings
- Jacket
Introduction: Definition of decommissioning

International Law

• Any installation or structure which is abandoned or disused (art.60 UNCLOS)
• Pipelines are not expressly mentioned in this context and excluded from 1996 LP
• Drill cuttings and debris left around the installations are not mentioned (no clear best practice)
• Well capping/abandonment left to domestic law and industry
Introduction: pros and cons in decommissioning

- Environmental risks or benefits?
- Impact from decom. operations?
- Fisheries: Good or bad?
- Energy balance
- Navigational Hazards?
- Cost?

Ardjuna field – N Java
Introduction: Legal framework

No Regional Sea Agreement

- Regional sea programs and projects do not include offshore oil and gas
- Joint development agreements for hydrocarbon resources do not include provisions on decommissioning
- Offshore extraction mostly the responsibility of national oil companies
- ASEAN Council on Petroleum (ASCOPE)
- Marginal wells at the end of a concession often given to a new small operator who could technically be charged with decommissioning
I – Location and profile: where 1/5

> 20 years
I – Location and profile 3/5

Water depth

Bathymetry data – Extracted from ETPO 5
Courtesy of Dr. Madhusoodanan M. Sukumarannair, TMSI, NUS
I > 20 years old installations: where? 2/5

<table>
<thead>
<tr>
<th>Coastal States</th>
<th>Installations &gt; 30 years</th>
<th>Installations 20-30 years</th>
<th>Total per country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maritime zone</td>
<td>TS/Archipelagic waters</td>
<td>EEZ</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>169</td>
<td>0</td>
<td>170</td>
</tr>
<tr>
<td>Malaysia</td>
<td>63 (15)</td>
<td>47</td>
<td>45 (8)</td>
</tr>
<tr>
<td>Brunei</td>
<td>74 (48)</td>
<td>13</td>
<td>55 (19)</td>
</tr>
<tr>
<td>Thailand</td>
<td>0</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Philippines</td>
<td>0</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Vietnam</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>China</td>
<td>1</td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>Sub-total</td>
<td>306</td>
<td>83</td>
<td>270</td>
</tr>
<tr>
<td>Grand total</td>
<td>389</td>
<td></td>
<td>444</td>
</tr>
</tbody>
</table>

Values must considered as indicative only due to known discrepancies between sources - Compiled from OPL World Offshore Field Development Guide Database, Vol 2: Asia, India, Australasia & Far East, 2010
I - Location and profile 4/5

<table>
<thead>
<tr>
<th>Age (y)</th>
<th>% offshore installations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>27.9</td>
</tr>
<tr>
<td>10-20</td>
<td>24.1</td>
</tr>
<tr>
<td>20 - 30</td>
<td>36.1</td>
</tr>
<tr>
<td>30+</td>
<td>11.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water depth (m)</th>
<th>% offshore installations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-50</td>
<td>51.5</td>
</tr>
<tr>
<td>50-75</td>
<td>33.3</td>
</tr>
<tr>
<td>75+</td>
<td>15.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country</th>
<th>Total</th>
<th>Fixed</th>
<th>Mobile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>485</td>
<td>463</td>
<td>13</td>
</tr>
<tr>
<td>Thailand</td>
<td>265</td>
<td>260</td>
<td>5</td>
</tr>
<tr>
<td>Malaysia</td>
<td>249</td>
<td>237</td>
<td>12</td>
</tr>
<tr>
<td>Brunei</td>
<td>160</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>Vietnam</td>
<td>46</td>
<td>40</td>
<td>6</td>
</tr>
<tr>
<td>China</td>
<td>120</td>
<td>98</td>
<td>22</td>
</tr>
<tr>
<td>Malaysia-Thailand JDA</td>
<td>15</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Philippines</td>
<td>8</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Cambodia</td>
<td>2</td>
<td></td>
<td>2?</td>
</tr>
<tr>
<td>Total</td>
<td>1350</td>
<td>1278</td>
<td>72</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Jacket Weight range (t)</th>
<th>% offshore installations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 -4,000</td>
<td>78.25%</td>
</tr>
<tr>
<td>4,000+</td>
<td>21.25%</td>
</tr>
</tbody>
</table>
Shipping traffic in the seas of Southeast Asia
(National Center for Ecological Analysis and Synthesis from UC Santa Barbara)
I – Location and profile 5/5

Safety of navigation
II- Offshore installations in territorial and archipelagic waters 1/6
II- Offshore installations in territorial and archipelagic waters 2/6

Archipelagic baseline of Indonesia
Is there an obligation of removal?

In and around archipelagic sea lanes:

- Outside scope of Art. 60 UNCLOS and 1989 IMO guidelines
- Safety of navigation in archipelagic sea-lane passage or routes normally used for international navigation
- Will depend on traffic and magnitude of risk
II- Offshore installations in territorial and archipelagic waters 4/6

Is there an obligation of removal?

In archipelagic waters and away from archipelagic sea lanes

- Art.194(1): All measures necessary to prevent, control and reduce pollution from any source, using the best practical means at their disposal and in accordance with their capabilities
- Art.208: Do standards and recommended practices impose removal?
- State practice: Indonesia’s domestic law
II- Offshore installations in territorial and archipelagic waters 5/6

Is there an obligation of removal?

In transboundary area

- Obligation to regulate and control activities which may pose a significant risk of transboundary pollution or environmental harm
- Obligation to take appropriate measures to prevent or minimize as far as possible the risk of significant harm
- Art.194(2) UNCLOS
- Art.3 CBD

Not an obligation of removal but one of adopting regulation aimed at the protection of the environment; Need for an EIA-type process.
II- Offshore installations in territorial and archipelagic waters 6/6

Disposal at sea

• Could an abandoned installation qualify as a ‘placement for disposal’?


• State practice is not directly contrary to London Convention: Indonesia’s domestic law
### III- Decommissioning on the continental shelf

**Fixed offshore installations in less that 75m deep and < 4000 tons: total removal?**

- 253 installations > 20 years
- 1989 IMO guidelines not designed to be mandatory except if considered within the scope of art.208 UNCLOS

- Decommissioning is only the last of a series of activities requiring authorization and EIAs
- Take into account safety of navigation and marine environment
- Additional diligence standard in transboundary areas
- Case-by-case analysis including EIAs

---

**www.cil.nus.sg**

[Image: Erawan - GOT]
III- Decommissioning on the continental shelf

Disposal at sea

• Mandatory character of the 1972 LC on Dumping
• Has only been ratified by the Philippines
• Art.210: as effective as global rules and standards
• State practice
• Mandatory character of 1996 LP?
IV- The case for rigs-to-reefs in Southeast Asia

The facts

- 40% marine biodiversity in SEA seas under high endemic threats (human and natural)
- Destroyed habitats but highly productive systems
- Removal platform = removal reef and associated community
- Proof of production of new fish communities develop (not only attraction)
- Also potential pathway for alien species

Courtesy of Ashley Fowler and the Serpent Project
IV- The case for rigs-to-reef in Southeast Asia

The law

- Assumption: Artificial reef project is based on a sound environmental analysis, whether left in situ or moved.
- UNCLOS allows it in TS, Archipelagic waters and EEZ.
- But coastal State’s jurisdiction to take protective measures depends on the maritime zone concerned.
- 1989 IMO guidelines are not mandatory and envisage it.
- Consistent with Art. 8(f) CBD: Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species.
- Within nat’l jur.: Overlap of competencies of several agencies.

www.cil.nus.sg
Conclusion: Regional perspective

- International law does not prevent the re-use of rigs as (true) artificial reefs, provided that it does not compromise safety of navigation

- IMO guidelines are inadequate

- A paradigm shift is needed in the approach: from an obligation of removal to a cost-benefit analysis?

- Towards the regional implementation of art.208?
Thank you!

For any question please contact younalyons@nus.edu.sg