Overview of International Offshore Decommissioning Regulations

Volume 1 – Facilities
Acknowledgements

Decommissioning Committee

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<td>ALARP</td>
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<td>BOEM</td>
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Summary

This report is the first of two volumes providing a high level review of the legislation relevant to the decommissioning of offshore facilities and infrastructure (VOLUME 1) and the Plugging & Abandonment (P&A) of offshore wells (VOLUME 2), for specific hydrocarbon producing countries.

The national legislation of 32 countries was reviewed, as well as relevant international and regional instruments. Countries have been grouped by sea areas, broadly based on the United Nations Environment Programme (UNEP) and associated Regional Seas Programme.

Within each country section a summary is provided of key regulatory bodies and overarching legislation, focussing in particular on any specific requirements in relation to:

- Decommissioning of platforms and associated infrastructure;
- Decommissioning of pipelines;
- Actions required with respect to cuttings piles; and
- Decommissioning plans or similar documents and associated timescales for submission.

In terms of international guidelines, the United Nations Convention on the Law of the Sea (UNCLOS III) 1982, together with the International Maritime Organization’s (IMO) Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone (EEZ) which were adopted in 1989, set the most widely used decommissioning requirements across the globe. The IMO Guidelines state that abandoned or disused offshore installations or structures on any continental shelf or in any EEZ are required to be removed, except in a number of cases based primarily on depth of the water and size of the structure.

In many countries, specific decommissioning legislation is minimal. In some instances, decommissioning requirements are incorporated into Production Sharing Agreements (PSAs) or other operating agreements between Operators/Operator groups and the Concessionaire. In the absence of comprehensive national legislation or operating agreements, either regional protocols or international regulations/guidelines may form the basis for decommissioning requirements. Given that all countries covered by this report are members of the IMO, the IMO guidelines have been taken as the default position (see Table 2).

Neither UNCLOS III nor the IMO provide guidance in relation to pipelines.
On a regional level, only the Oslo Paris (OSPAR) Convention (North East Atlantic), the Barcelona Convention (Mediterranean region), the Kuwait Convention (Middle East) and the Nouméa Convention (Pacific) contain specific decommissioning requirements. In all other cases the Regional Seas’ conventions and protocols only make general commitments to protection of the environment and other sea users.

At the time of writing, the countries with the most comprehensive decommissioning regulations include: the United Kingdom; Norway; the United States (US); Australia; Thailand and Brunei. In some countries, specific conditions written into PSAs tend to override any regional or national legislation. However, the detailed review of PSAs is outside the scope of this overview.

Table 1 summarizes, for each of the 32 countries, which conventions and protocols the countries have ratified, or are signatories to. Only the conventions and protocols of most relevance to oil and gas decommissioning have been included. All of the countries listed are members of the IMO and have ratified (or acceded to) the Convention on International Trade in Endangered Species (CITES). All of the countries, with the exception of the US, have also ratified the Convention on Biological Diversity (CBD). Therefore, these are not shown as a separate column in Table 1.

Table 2 summarizes the key decommissioning requirements and regulatory drivers for each country in relation to platforms, pipelines and cuttings piles. None of the countries reviewed have specific legislation relating to other subsea structures, with the exception of Thailand, which requires removal of “associated structures” (see Section 9.6.3), and therefore these have not been separated out in Table 2.
### Table 1: International and Regional Instruments

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**Notes:** - Indicates non-party/non signatory. Signature does not establish the consent to be bound but expresses willingness to proceed, ratification indicates consent by the State to be bound by the treaty. Accession is where a State becomes party to a treaty already negotiated and signed by other States. It has the same legal status as ratification. All countries are members of IMO and have ratified (or acceded to) CITES. All countries except the US are parties to and have ratified the CBD. IMO, CITES and CBD are therefore not shown in the table.
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<tr>
<td>Mediterranean (Section 4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algeria</td>
<td>Remove</td>
<td>Barcelona Convention</td>
<td>Remove or bury</td>
<td>Barcelona Convention</td>
</tr>
<tr>
<td>Egypt Mediterranean</td>
<td>Remove</td>
<td>Barcelona Convention</td>
<td>Remove or bury</td>
<td>Barcelona Convention</td>
</tr>
<tr>
<td>Egypt Red Sea</td>
<td>Remove under specified conditions [based on water depth and weight], remainder assessed on a case by case basis.</td>
<td>IMO/UNCLOS III</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Italy</td>
<td>Remove</td>
<td>Barcelona Convention</td>
<td>Remove or bury</td>
<td>Barcelona Convention</td>
</tr>
<tr>
<td>Caspian (Section 5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>Case by case</td>
<td>Decommissioning Rules, 1999, but these can be overruled by Production Sharing Agreements (PSA)</td>
<td>Case by case</td>
<td>Decommissioning Rules, 1999, but these can be overruled by PSAs</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>Removal</td>
<td>Caspian Sea PSA, no legislation as such.</td>
<td>Removal</td>
<td>Caspian Sea PSA, no legislation as such</td>
</tr>
<tr>
<td>Middle East (Section 6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oman</td>
<td>Case by case</td>
<td>ROPME Protocol</td>
<td>Case by case</td>
<td>ROPME Protocol</td>
</tr>
<tr>
<td>Qatar</td>
<td>Case by case</td>
<td>ROPME Protocol</td>
<td>Case by case</td>
<td>ROPME Protocol</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>Case by case</td>
<td>ROPME Protocol</td>
<td>Case by case</td>
<td>ROPME Protocol</td>
</tr>
<tr>
<td>Country</td>
<td>Platforms and other facilities</td>
<td>Pipelines</td>
<td>Drill cuttings piles</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nominal requirement</td>
<td>Regulatory driver</td>
<td>Nominal requirement</td>
<td>Regulatory driver</td>
</tr>
<tr>
<td><strong>Western Africa (Section 7)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angola</td>
<td>Remove under specified conditions [based on water depth and weight], remainder assessed on a case by case basis</td>
<td>IMO/UNCLOS III and protocol under the Abidjan Convention under development</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>Case by case</td>
<td>Hydrocarbons Law Article 32, 2006</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gabon</td>
<td>Remove under specified conditions [based on water depth and weight], remainder assessed on a case by case basis</td>
<td>IMO/UNCLOS III and protocol under the Abidjan Convention under development</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Remove under specified conditions [based on water depth and weight], remainder assessed on a case by case basis</td>
<td>EGASPIN 2002, IMO/UNCLOS III and protocol under the Abidjan Convention under development</td>
<td>Guidance for inland and nearshore waters only: case by case. No guidance for offshore waters.</td>
<td>EGASPIN 2002</td>
</tr>
<tr>
<td>Republic of Guinea</td>
<td>Remove under specified conditions [based on water depth and weight], remainder assessed on a case by case basis</td>
<td>IMO/UNCLOS III and protocol under the Abidjan Convention under development</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>South Asia Seas (Section 8)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>Platforms and other facilities</td>
<td>Pipelines</td>
<td>Drill cuttings piles</td>
<td>Decommissioning Plan needed?</td>
</tr>
<tr>
<td>------------------</td>
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<td>------------------------------</td>
</tr>
<tr>
<td></td>
<td>Nominal requirement</td>
<td>Regulatory driver</td>
<td>Nominal requirement</td>
<td>Regulatory driver</td>
</tr>
<tr>
<td>East Asian Seas (Section 9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brunei</td>
<td>Remove in &lt; 50 m water depth (and a number of other conditions). Remains assessed on a case by case basis.</td>
<td>Draft guidelines: Brunei Darussalam decommissioning and restoration of onshore and offshore facilities (2016)</td>
<td>Remove in &lt; 30 m water depth. Remains assessed on a case by case basis.</td>
<td>Draft guidelines: Brunei Darussalam decommissioning and restoration of onshore and offshore facilities (2016)</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Remove under specified conditions (based on water depth and weight), remains assessed on a case by case basis.</td>
<td>IMO/UNCLOS III and ASCOPE guidelines, 2012</td>
<td>Main export pipelines, leave in situ. Smaller infield pipelines assessed on a case by case basis.</td>
<td>ASCOPE guidelines, 2012</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Case by case</td>
<td>Guidelines for Decommissioning of Upstream Installations, 2014</td>
<td>Case by case</td>
<td>Guidelines for Decommissioning of Upstream Installations, 2014</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Remove under specified conditions (based on water depth and weight), remains assessed on a case by case basis.</td>
<td>IMO/UNCLOS III and ASCOPE guidelines, 2012</td>
<td>Main export pipelines, leave in situ. Smaller infield pipelines assessed on a case by case basis.</td>
<td>ASCOPE guidelines, 2012</td>
</tr>
<tr>
<td>Thailand</td>
<td>Case by case</td>
<td>The Petroleum Act (No. 6) B.E. 2550, 2007, Section 80/1 and 80/2</td>
<td>Case by case</td>
<td>The Petroleum Act (No. 6) B.E. 2550, 2007, Section 80/1 and 80/2.</td>
</tr>
<tr>
<td>Pacific (Section 10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>Remove but partial removal or abandonment in situ can be considered.</td>
<td>OPGGSA, 2006</td>
<td>Remove but partial removal or abandonment in situ can be considered</td>
<td>OPGGSA, 2006</td>
</tr>
<tr>
<td>Wider Caribbean (Section 11)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trinidad &amp; Tobago</td>
<td>Remove under specified conditions (based on water depth and weight), remains assessed on a case by case basis.</td>
<td>IMO/UNCLOS III</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Venezuela</td>
<td>Remove under specified conditions (based on water depth and weight), remains assessed on a case by case basis.</td>
<td>IMO/UNCLOS III</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Country</td>
<td>Platforms and other facilities Nominal requirement</td>
<td>Regulatory driver</td>
<td>Pipelines Nominal requirement</td>
<td>Regulatory driver</td>
</tr>
<tr>
<td>------------------</td>
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</tr>
<tr>
<td><strong>Arctic (Section 12)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>Remove</td>
<td></td>
<td>No specific guidance but the principle of leaving the seabed in a fishable/navigable state will apply</td>
<td>Canada – Newfoundland and Labrador Development Plan Guidelines and C-NSOPB Guidelines on Plans and Authorizations Required for Development Projects, 1995</td>
</tr>
<tr>
<td><strong>Countries included in multiple Regional Seas Programmes (Section 13 and 14)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>Remove unless specific approval to conduct other activities or approval for conversion to an artificial reef has been granted.</td>
<td></td>
<td>National Artificial Reef Plan, 2007 and specific state legislation in Gulf of Mexico (NTL 2010-005) and Pacific OCS (NTL 2009-P04)</td>
<td>Pipelines can be decommissioned in situ if they do not constitute a hazard to navigation or commercial fishing or interfere with other uses of the OCS</td>
</tr>
<tr>
<td>Russia</td>
<td>Remove</td>
<td></td>
<td>Continental Shelf Law, 1995</td>
<td>Remove</td>
</tr>
<tr>
<td><strong>Latin America (Section 15)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>Remove under specified conditions (based on water depth and weight), remainder assessed on a case by case basis</td>
<td>IMO/UNCLOS III</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Brazil</td>
<td>Remove under specified conditions (based on water depth and weight), remainder assessed on a case by case basis</td>
<td>ANP 27/2006 under revision</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Notes:** - indicates no guidance
Nominal requirement for decommissioning shown, further detail given in individual country sections. Where there is no national or regional guidelines IMO has been taken as the default position. IMO guidelines stem from UNLOS III Article 60. Decommissioning Plan refers to Decommissioning Plan or similar document, may be referred to differently in different countries (Closure Plan, Abandonment Plan etc.). Some countries may require an EIA even though they do not require a Decommissioning Plan, this is not shown in the table, refer to individual country sections.
1. Introduction

1.1 Intent and Scope of this Document

Different regions of the world have taken varying approaches to understanding and managing the environmental impacts and the regulation of decommissioning and Plug & Abandonment (P&A) activities.

This document (VOLUME 1) is the first of two volumes on this subject matter. It provides a high level review of the legislation relevant to the decommissioning of offshore facilities and infrastructure for specific hydrocarbon producing countries. The second volume (VOLUME 2) provides a high level review of the legislation relating to P&A of offshore wells, for the same specific hydrocarbon producing countries.

The document is intended to be a resource for operators and stakeholders who want to understand the current status of decommissioning requirements around the world. Caution should be applied in transposing recommendations from one country to other parts of the world, as experience has shown that decommissioning solutions need to be fit for purpose and risk based which is often contextual driven. There are no “one size fits all” solutions that apply to all offshore settings.

The report focuses on the specific obligations of a number of countries required by national, regional and international regulations with respect to the eventual physical decommissioning of a field. Who these obligations actually rest with, will depend on whether the operator of an asset has an ongoing liability after relinquishing a lease, or whether the national body of a specific country retains that liability. In many cases this is governed by contractual arrangements between parties rather than by legislation. Contractual arrangements are considered to be outside the scope of this report but where possible an indication of liabilities and decommissioning funding requirements has been given where this is set out in applicable legislation.

The report is the result of a Joint Industry Project (JIP) and is not exhaustive in terms of the number of countries considered. It focuses on those of interest to the contributing operators; BP, Chevron, ExxonMobil, Shell and Total. However, the document is of use to other oil and gas companies hence the International Association of Oil & Gas Producers (IOGP) Decommissioning Committee has elected to disseminate it as an IOGP issued document.

The countries considered in the report are: Abu Dhabi, Algeria, Angola, Australia, Argentina, Azerbaijan, Brazil, Brunei, Canada (East and West Coast), Denmark, Egypt, Equatorial Guinea, Gabon, Republic of Guinea, India, Indonesia, Italy, Kazakhstan, Malaysia, Myanmar, Netherlands, New Zealand, Nigeria, Norway, Oman, Qatar, Russian Federation, Thailand, Trinidad & Tobago, UK, US (Gulf of Mexico, Alaska and California) and Venezuela.
1.2 Document Structure

Following a summary of the international instruments and legislation relevant to decommissioning (Section 2), each subsequent section of the report focuses on a specific sea area, based on the United Nations Environmental Programme (UNEP) Regional Seas Programme (see Section 2.9), and it identifies applicable regional frameworks before summarising the decommissioning legislation specific to the countries within each region (see Figure 1-1). The relationship between international, regional and national regulations is summarized in Figure 1-2.

The countries have been grouped as far as possible by Regional Seas Programme area. However, in order to avoid repetition, where a country falls into more than one Regional Seas Programme, it is only included once in what is considered to be the main area. In addition, the Russian Federation and the United States have been given completely separate sections as different parts of each fall under separate Regional Seas Programmes but it was considered important to consider the federal/national framework within one place in the report.
Figure 1-1: Areas of Offshore Oil and Gas Production Covered by Review
Figure 1-2: Structure of International, Regional and National Instruments
2. **Key International Instruments**

2.1 **United Nations Convention on the Law of the Sea**

The first United Nations Conference on the Law of the Sea took place in 1958 (UNCLOS I) and was concerned with many aspects of national rights and obligations over the marine area. This Conference resulted in four international Conventions:


The Convention on the Continental Shelf of 1958, signed in Geneva and referred to as the **Geneva Convention 1958**, established *inter alia* that due notice must be given of the construction of any such installations, and permanent means for giving warning of their presence must be maintained. It specifically states that "any installations which are abandoned or disused must be entirely removed". This came into force in 1964.

In many countries this was superseded by **The United Nations Convention on the Law of the Sea (UNCLOS III) 1982** which defines the rights and responsibilities of nations in their use of the world’s oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources. To date, as illustrated in Figure 2-1, 167 United Nations (UN) member states and the European Union (EU) have ratified the Convention. An additional 14 UN member states (including the United States and Venezuela) have signed, but not ratified the convention. Of the countries covered by this report, only Kazakhstan has not signed up to either UNCLOS I or III.

The Convention came into force on 16 November 1994. The most significant issues covered were setting limits, navigation, archipelagic status and transit regimes, Exclusive Economic Zones (EEZs), continental shelf jurisdiction, deep seabed mining, the exploitation regime, protection of the marine environment, scientific research, and settlement of disputes. In accordance with Article 311 of the Convention, it prevails over the Geneva Convention 1958 by countries which have ratified it.

The UN aims to help states understand and implement the Convention to utilise their marine resources in an environment relatively free of conflict and conducive to development whilst at the same time safeguarding the rule of law in the oceans.

In this context, the Division for Ocean Affairs and the Law of the Sea [DOALOS] of the UN Office of Legal Affairs helps to coordinate the Organization’s activities and programmes in the area of marine affairs. It is active in assisting and advising States in the integration of the marine sector in their development planning.
UNCLOS III defines dumping (Article 1) as:

5 (a) “dumping” means:

(i) any deliberate disposal of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea;

(ii) any deliberate disposal of vessels, aircraft, platforms or other man-made structures at sea;

(b) “dumping” does not include:

(i) the disposal of wastes or other matter incidental to, or derived from the normal operations of vessels, aircraft, platforms or other man-made structures at sea and their equipment, other than wastes or other matter transported by or to vessels, aircraft, platforms or other man-made structures at sea, operating for the purpose of disposal of such matter or derived from the treatment of such wastes or other matter on such vessels, aircraft, platforms or structures;

(ii) placement of matter for a purpose other than the mere disposal thereof, provided that such placement is not contrary to the aims of this Convention.

There would therefore appear to be more flexibility than under the Geneva Convention for leaving structures or parts of structures in place provided that they did not result in harm to other users of the sea. Indeed, Article 60 which covers artificial islands, installations and structures in the EEZ, states that abandoned or disused structures “…shall be removed to ensure safety of navigation…. Appropriate publicity shall be given to the depth, position and dimension of any installations or structures not entirely removed.” This would seem to imply that partial removal can be considered. It is also worth highlighting that Article 60 applies to installations and structures in the EEZ and through Article 80 to the continental shelf, but laws governing the removal of installations and structures from territorial waters [up to 12 nautical miles (nm) from the low water mark], or internal waters, do not come under Article 60 [see Figure 2-2 for schematic of maritime zones].

UNCLOS III does not address the decommissioning of pipelines or cables.

PART XII of UNCLOS covers protection and preservation of the marine environment [Articles 192 to 237]. It gives sovereign states the right to exploit their natural resources but requires them to protect and preserve the marine environment. Articles of particular relevance to decommissioning include:
Article 208 requires coastal states to adopt laws and regulations to prevent, reduce and control pollution of the marine environment arising from or in connection with seabed activities subject to their jurisdiction and from artificial islands, installations and structures under their jurisdiction.

Article 210 requires States to prevent, reduce and control pollution of the marine environment by dumping, and dumping must not be carried out without the permission of the coastal State.
2.2 International Maritime Organization

The International Maritime Organization (IMO) was established in Geneva in 1948 and came into force ten years later. The IMO is a specialized agency of the UN with 171 Member States and three Associate Members [http://www.imo.org/en/About/Pages/Default.aspx, see Figure 2-3]. The IMO’s primary purpose is to develop and maintain a comprehensive regulatory framework for shipping and its remit today includes safety, environmental concerns, legal matters, technical co-operation, maritime security and the efficiency of shipping.

The IMO guides the regulatory development of member states to improve safety at sea (including safe navigation), facilitate trade and protect the environment. Early environmental concerns were around oil pollution from tanker operations, machinery space drainage and anti-fouling coatings. These have grown into wider aspects such as energy efficiency and acidification. 23 of the IMO’s 51 legal instruments are environment-related.


The IMO’s Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the EEZ were adopted in 1989. They stem from Article 60 of UNCLOS III 1982. They state that abandoned or disused offshore installations or structures on any continental shelf or in any EEZ are required to be removed, except where non-removal or partial removal is consistent with the stated guidelines and standards. The guidelines also state that any decisions for non-removal must be made on a case by case evaluation by the coastal State (with jurisdiction over the installation or structure), taking into account, amongst others, the following:

- Complete removal of all structures in <75 m of water and <4,000 tonnes in air, excluding deck and superstructure;
- Complete removal of all structures emplaced on the sea-bed after 1/1/1998, in less than 100 m of water and weighing <4,000 tonnes in air, excluding the deck and superstructure;
- Removal should cause no significant adverse effects on navigation or the marine environment;
- Any structure projecting above the surface of the sea should be adequately maintained to prevent structural failure. In cases of partial removal, an unobstructed water column sufficient to ensure safety of navigation, but not less than 55 m, should be provided above any partially removed installation or structure which does not project above the surface of the sea;
Where living resources can be enhanced by the placement on the sea-bed of material from removed installations or structures (e.g. to create an artificial reef), such material should be located well away from customary traffic lanes, taking into account relevant standards;

After 1/1/1998, no Installation should be installed unless the design and construction is such that entire removal upon abandonment would be feasible.

Figure 2-3: Members of the IMO

IMO does not explicitly address decommissioning of pipelines or subsea infrastructure.
2.3 London Convention 1972 and Protocol 1996

The dumping into the oceans of wastes [oil, untreated sewage and heavy metals] by industrialized countries was one of the primary concerns for marine environment pollution in the 1970s, which led to the signing of the London Dumping Convention in 1972, at the Intergovernmental Conference on the Convention on the Dumping of Wastes at Sea.

In 1993, a review of this Convention was undertaken, which later led to the 1996 London Protocol which amends the Convention, and asks States to "individually and collectively protect and preserve the marine environment from all sources of pollution and take effective measures, according to their scientific, technical and economic capabilities, to prevent, reduce and, where practicable, eliminate pollution caused by dumping or incineration at sea of wastes or other matter."

Under the 1972 Convention dumping of listed wastes was prohibited, with the implication that unlisted wastes were permitted; under the 1996 Protocol all dumping is prohibited with the exception of a "reverse list" (Annex 1) of wastes that may be dumped subject to a permit from the host State. This includes "vessels and offshore platforms or other man-made structures at sea" as well as the deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures. The London Protocol makes no reference to pipelines.

Dumping is defined as "any abandonment or toppling at site of platforms or other man-made structures at sea, for the sole purpose of deliberate disposal." It does not include "placement of matter for a purpose other than the mere disposal thereof, provided that such placement is not contrary to the aims of this Protocol."

As of December 2016, 87 Governments are Parties to the Convention, of which 36 are also parties to the Protocol [see Figure 2-4].

The dumping of wastes or other matter listed in Annex 1 requires a permit. Contracting Parties are expected to adopt administrative or legislative measures to ensure that issuance of permits and permit conditions comply with provisions of Annex 2. Particular attention shall be paid to opportunities to avoid dumping in favour of environmentally preferable alternatives.

A permit to dump wastes or other matter shall be refused if the permitting authority determines that appropriate opportunities exist to re-use, recycle or treat the waste without undue risks to human health or the environment or disproportionate costs. The practical availability of other means of disposal should be considered in the light of a comparative risk assessment involving both dumping and the alternatives. Further guidance is given in Annex 2 of the Protocol.

Figure 2-4: Parties to London Convention 1972 and Protocol 1996

Key
- **Green**: Parties to the Protocol 1996 (48 states)
- **Yellow**: Parties to the Convention 1972 (87 states, out of which 51 are Party to the Convention only, 36 are Non Party States)
- **Red**: Non Party States

2.4 Transboundary Movement of Waste

2.4.1 The Basel Convention 1989

Most international waste legislation is aimed at preventing the movement of hazardous wastes, particularly to countries which may be less well equipped with laws or infrastructure to manage the associated safety and environmental hazards.

In the late 1980s, a tightening of environmental regulations in industrialized countries led to a dramatic rise in the cost of hazardous waste disposal, and exports to less developed countries increased. International concern led to the drafting and adoption of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, (http://www.basel.int/).

The Convention regulates the international shipment and disposal of hazardous wastes in order to protect human health and the environment. It developed a framework for controlling the movement of hazardous wastes across international frontiers. It also established criteria for “environmentally sound management”. The export or import of hazardous wastes or other wastes to or from a non-party state without a licence is prohibited.

A two-tiered control system is used to control transboundary movements:

- The Green control procedure which covers generally non-hazardous wastes (as per Annex IX of the Basel Convention) – waste shipments are subject to existing controls normally applied in commercial transactions; and
- The Amber control procedure which covers hazardous wastes (as per Annex VIII of the Basel Convention) – wastes shipments require specific contracts, financial guarantees and prior notifications to be in place.

Wastes can only be exported if both the state of import and export have given their consent in writing to the import. Information about proposed transboundary movements must be communicated to the states concerned to enable them to evaluate the effects of the proposed movements on health and the environment. Transboundary movements of wastes must only be authorized where there is no danger attached to their movement and disposal.

The Basel Ban Amendment (1995) prevents developed countries from exporting any hazardous waste to less developed countries. Although not yet formally in force, it has been translated into EU and Norwegian law. Under the Lomé Convention 1990, EU countries cannot export hazardous waste to Africa, the Caribbean or the Pacific states.

As shown in Figure 2-5, there are 184 parties (signed and ratified) to the Basel Convention (http://www.basel.int). Only the US and Haiti have signed but not ratified the treaty (Non Party). Of the countries covered by the current document only Angola is a Non Participant.
Figure 2-5: Parties and Non Parties to Basel Convention

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non Party (signatory but not ratified, applies only to US and Haiti)</td>
<td><a href="http://www.basel.int">http://www.basel.int</a></td>
</tr>
<tr>
<td></td>
<td>Party</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non Participant</td>
<td></td>
</tr>
</tbody>
</table>
Stricter rules apply in Africa under the **Bamako Convention** (see Section 7.1.2) whereby no hazardous waste can be imported from a non-African country.

The **Waigani Convention** (2001) controls the movement of hazardous and radioactive waste in the South Pacific Region and is modelled on the Basel Convention (see Section 10.1.2).

### 2.4.2 Control of Transboundary Movements of Waste within European Union and non-European Union Countries

The EU has a system in place to supervise and control shipments of waste within its borders and with the countries of the European Free Trade Association (EFTA), the Organisation for Economic Cooperation and Development (OECD) and non-EU countries that have signed the Basel Convention [http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:l11022].

OECD countries have signed an agreement regarding the control of transboundary movements of waste destined for recovery operations within the OECD area, referred to as Decision 107 [http://www.oecd.org/env/waste/30654501.pdf]. Under this agreement, the facilities used for recovery operations must do so in an *environmentally sound manner* and according to national laws and regulations.

European Community (EC) Regulation no. 1013/2006, the Waste Shipments Regulations, lays down rules for controlling waste shipment in order to improve environmental protection. It incorporates the provisions of the Basel Convention and OECD's Decision 107 into EU law. Under EC 1013/2006 the following are banned:

- Exports of waste for disposal to non EU countries (except EFTA countries party to the Basel Convention);
- Exports for recovery of hazardous waste (except to OECD countries);
- Most imports from non EU countries of waste for disposal or recovery (exceptions apply for OECD countries, non EU countries that have signed the Basel Convention, countries that have signed bilateral agreements, other areas during situations of crisis).

### 2.4.3 Naturally Occurring Radioactive Materials

Naturally Occurring Radioactive Materials (NORM) waste has not always been considered comprehensively in international standards and legislation that provide the radiation protection framework for managing radioactive wastes.

NORM waste is not specifically dealt with under the Basel Convention, although the general principals of the Basel Convention will apply. NORM is also subject to the Joint Convention on the Safety of Spent Fuel Management and on the Safety
of Radioactive Waste Management [generally referred to as the Joint Convention, https://www.iaea.org/topics/nuclear-safety-conventions]. The preamble of the Joint Convention specifies the desirability of waste being disposed of in the State of origin, although alternative arrangements are acceptable if subject to agreement between Contracting Parties.

The main instruments for placing controls on the transfrontier shipment of radioactive waste into, out of and within the European Union are Directive 2006/117/Euratom and EC Regulation 1013/2006. However, neither of these instruments provide specific legislation in relation to NORM and therefore a number of European countries, including Norway and the UK, have pulled together national guidance in order to clarify the regulatory requirements and manage NORM.

2.5 Hong Kong Convention

The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 [the Hong Kong Convention], was adopted at a diplomatic conference attended by delegates from 63 countries, held in Hong Kong, China, in 2009. The Convention is aimed at ensuring that ships, when being recycled after reaching the end of their operational lives, do not pose any unnecessary risks to human health, safety and to the environment. This is therefore relevant to the decommissioning of Floating Production Storage and Offloading (FPSO) units, Floating Storage Units and Floating Liquefied Natural Gas units.

Regulations in the new Convention cover: the design, construction, operation and preparation of ships so as to facilitate safe and environmentally sound recycling without compromising the safety and operational efficiency of ships; the operation of ship recycling facilities in a safe and environmentally sound manner; and the establishment of an appropriate enforcement mechanism for ship recycling, incorporating certification and reporting requirements. Upon entry into force of the Hong Kong Convention, ships to be sent for recycling will be required to carry an inventory of hazardous materials, which will be specific to each ship.

The Convention is open for accession by any State. It will enter into force 24 months after the date on which 15 States, representing 40 per cent of world merchant shipping by gross tonnage, have either signed it without reservation as to ratification, acceptance or approval or have deposited instruments of ratification, acceptance, approval or accession with the Secretary-General. To date only a few countries (Belgium, Congo, France, Norway and Panama) have signed the convention.
2.6 Guidelines on Artificial Reefs

The London Convention (see Section 2.3) has developed a series of guidelines for the creation of artificial reefs from the materials on the “reverse list” of the 1996 Protocol; notably, The Guidelines for the Placement of Artificial Reefs (London Convention and Protocol/UNEP 2009). Placement under these Guidelines is not considered to be “dumping”. The Guidelines are intended to assist proposals for the placement of artificial reefs on the basis of scientifically sound criteria, as well as to develop an appropriate regulatory framework; as guidance for countries where such regulations are already in place and for updating existing guidelines or regulations.

Annex 5 of the London Convention and Protocol/UNEP Guidelines provides specific guidelines for assessment of vessels and platforms. There is emphasis on the prior need to evaluate alternatives to sea disposal. While they mention ‘due regard’ being given to navigation and a need to avoid navigational interference, no mention is made of specific navigational clearance. Deliberately placed reefs can therefore be constructed in shallower water than in situ abandonment and the reef can benefit from the potentially more productive upper water column.

Different regions have adopted a range of approaches to the use of artificial reefs for disposal of oil and gas platforms, notably in the US, the North East Atlantic region and the Mediterranean. Further information is provided in the relevant sections.

2.7 Convention on International Trade in Endangered Species of Wild Fauna and Flora

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. CITES was drafted as a result of a resolution adopted in 1963 but the text of the Convention was agreed in 1973 and entered into force in 1975. CITES now has 183 Parties [https://www.cites.org/eng/disc/what.php].

All of the countries covered by this report are contracting parties to CITES, though not all have ratified the Convention.
2.8 Convention on Biological Diversity

The Convention on Biological Diversity (CBD) entered into force on 29 December 1993 [https://www.cbd.int/]. It has three main objectives:

- The conservation of biological diversity;
- The sustainable use of the components of biological diversity; and
- The fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

Its objective is to develop national strategies for the conservation and sustainable use of biological diversity. The Convention was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force in 1993. It set a target for 2010 to significantly reduce the current rate of biodiversity loss, but this was not achieved.

At the 2010 (10th) Conference of Parties to the CBD in Nagoya, Japan, the New Strategic Plan of the Convention on Biological Diversity (the Aichi Target) was adopted. This had five strategic goals:

- Address the causes of biodiversity loss;
- Reduce the pressures on biodiversity;
- Safeguard biodiversity at all levels;
- Enhance the benefits of biodiversity; and
- Provide for capacity building.

The measures agreed include:

- By 2020, take urgent action to halt the loss of biodiversity to ensure that ecosystems are resilient and continue to provide essential services;
- By 2020 ensure all fish stocks are managed sustainably on an ecosystem basis;
- 10% of coastal and marine areas to be conserved through protected areas and other measures; and
- Make special efforts to reduce the pressures faced by coral reefs.

To date 196 countries are party to the convention, of which 168 are signatories (i.e. ratified). All of the countries covered in this report are parties to and have ratified the convention, with the exception of the US.
2.9 Regional Seas Programme

The Regional Seas Programme (http://www.unep.org/regionalseas/about/default.asp) was launched in 1974 by UNEP. The Programme aims to address the accelerating degradation of the world’s oceans and coastal areas through the sustainable management and use of the marine and coastal environment, by engaging neighbouring countries in comprehensive and specific actions to protect their shared marine environment. Most of the Regional Seas Programmes function through action plans, which are adopted by member governments in order to establish a comprehensive strategy and framework for protecting the environment and promoting sustainable development. An action plan outlines the strategy and substance of the programme, based on the region’s particular environmental challenges as well as its socio-economic and political situation.

Currently 143 countries participate in 18 Regional Seas Programmes (not all programmes are directly administered by UNEP). A summary of all Regional Seas Programmes and associated conventions/action plans is provided in Table 2-1.

Fourteen of the Regional Seas Programmes have also adopted legally-binding conventions that express the commitment and political will of governments to tackle their common environmental issues through coordinated activities. Most conventions have added protocols, which are legal agreements addressing specific issues such as protected areas or land-based pollution.
<table>
<thead>
<tr>
<th>Regional Sea Area</th>
<th>Short Name</th>
<th>Title of Regional Seas Convention or Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ROPME sea area)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Antarctic, Baltic, Black Sea, Eastern Africa, North East Pacific, North West Pacific, Red Sea/Gulf of Aden and South East Pacific Regional Seas areas have not been given a separate section in the report but have been cross referenced as required.
2.10 World Bank and European Bank for Reconstruction and Development

Whilst not an international instrument as such, the World Bank provides financial assistance to developing countries around the world and therefore information on their environmental and health and safety requirements is considered relevant to a number of countries included in this document. Similarly, the European Bank for Reconstruction and Development (EBRD) provides financial assistance in a wide range of countries.

The World Bank require preparation of a platform and facilities Decommissioning Plan for closure as part of the Environmental Assessment process; the plan and budgets/provisions for financing should be agreed with the sponsor as early as possible.

World Bank Group guidelines include:

- International Finance Corporation (IFC) Performance Standards, 2012, which endorse planning and management of Environmental, Social, Health and Safety considerations as part of the entire project cycle (including decommissioning and closure);
- The IFC General and Project Specific Environmental, Health, and Safety (EHS) Standards April 2007, which provide general and sector specific considerations for enhanced EHS management;
- Towards Sustainable Decommissioning and Closure of Oil Fields and Mines: A Toolkit to Assist Government Agencies (2010), which provides a framework for the assessment of key decommissioning issues and is intended to compliment other World Bank guidelines;
- The Equator Principles, which include a covenant to decommission the facilities, where applicable and appropriate, in accordance with an agreed decommissioning plan;
- The IFC Stakeholder Engagement Good Practice Handbook for Companies Doing Business in Emerging Markets (2007), a tool that can be used by private sector companies and government authorities to plan and implement engagement strategies that support sustainable closure; and
- The IFC Environment, Health and Safety Guidelines: Oil and Gas Development (Offshore) state that decommissioning should follow internationally recognized guidelines and standards issued by the IMO and decisions issued by OSPAR.

The EBRD agreements vary locally but typically require abandonment plans far in advance of decommissioning, as well as establishment of an Abandonment Fund and commitments implemented in accordance with good oilfield practice and standard environmental practice.
2.11 Summary of International Regulations

The overriding principle of all international regulations and guidance is that decommissioning activities should not result in any harm to other users of the sea or to the environment.

The Geneva Convention (UNCLOS I) 1958 required complete removal of oil and gas installations. However, for most countries this has been superseded by UNCLOS III 1982 which, although it requires removal to ensure the safety of navigation, does allow some flexibility to leave installations or parts of installations in place, provided they do not interfere with other users of the sea. UNCLOS III applies to the EEZ but not to territorial waters, i.e. it does not apply to waters from the coast to 12 nm. This is left to each country’s jurisdiction.

The IMO guidelines adopted in 1989 require abandoned or disused offshore installations or structures on any continental shelf or in any EEZ to be removed, except where non-removal or partial removal is consistent with the stated guidelines and standards. Any decisions for non-removal must be made on a case by case basis. The IMO provides a number of cases where removal is always required based on water depth and weight of the installation.

None of the international guidelines provide guidance in relation to pipelines or cables.

The control of transboundary shipments of waste is primarily controlled by the Basel Convention, 1989, as well as a number of regional conventions such as Bamako and Waigani.

2.12 References


Information on European Bank for Reconstruction and Development. Available online at: http://www.ebrd.com/home


Information on the IMO. Available online at: http://www.imo.org/en/About/Membership/Pages/MemberStates.aspx [accessed September 2016]


IMO, 1989. Guideline and Standards for the removal of offshore installations and structures on the continental shelf and in the exclusive economic zone (IMO Resolution A.672(16)). Available online at: https://cil.nus.edu.sg/research-projects/ocean-law-policy/offshore-installations/offshore-decommissioning/


Information on Regional Seas Programme. Available online at: http://www.unep.org/regionalseas/about/default.asp


3. North East Atlantic

3.1 Regional Framework

3.1.1 OSPAR Convention

The North East Atlantic encompasses the region from the coast of Greenland eastward to the North Sea, and the North Pole southwards to the Straights of Gibraltar. The OSPAR Convention of 1992 is the current legal instrument guiding international cooperation on the protection of the marine environment of the North East Atlantic. Work under the Convention is managed by the OSPAR Commission, made up of representatives of the Governments of 15 Contracting Parties (Belgium, Denmark (see Section 3.2), Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands (see Section 3.3), Norway (see Section 3.4), Portugal, Spain, Sweden, Switzerland and the United Kingdom (see Section 3.5) and the European Commission, representing the European Union.

The mission of OSPAR is to conserve marine ecosystems and safeguard human health in the North East Atlantic by preventing and eliminating pollution, protecting the marine environment from the adverse effects of human activities and by contributing to the sustainable use of the seas.

OSPAR’s work is organized under six strategies:

- Biodiversity and Ecosystem Strategy;
- Eutrophication Strategy;
- Hazardous Substances Strategy;
- Offshore Industry Strategy;
- Radioactive Substances Strategy; and
- Strategy for the Joint Assessment and Monitoring Programme.

Overall, the work of the OSPAR Commission is guided by the ecosystem approach to the integrated management of human activities in the marine environment. This is supported by a general obligation of Contracting Parties to apply:

- The precautionary principle;
- The polluter pays principle;
- Continuous reduction of pollution - Article 5 of the OSPAR Convention requires Contracting Parties to take all possible steps to prevent and eliminate pollution from offshore sources; and
- Best Available Techniques (BAT) and Best Environmental Practice (BEP).
Decommissioning

In 1995, the OSPAR Commission adopted, notwithstanding reservations from Norway, the UK and France, “a moratorium on the disposal at sea of decommissioned offshore installations until the Oslo Commission or a Commission in its succession has adopted a Decision on the disposal of offshore installations with a view to banning the disposal of such installations at sea”. This Decision (95/1) entered into force on 4 August 1995.

The OSPAR Environment Ministers, at their Ministerial Conference held in Sintra, Portugal in July 1998 agreed on what was to become the OSPAR Decision 98/3 on the Disposal of Disused Offshore Installations [http://www.ospar.org/convention/agreements/page10]. The Decision entered into force in February 1999, and replaced Decision 95/1.

The 98/3 Decision lays down the general principle of forbidding the dumping and the leaving wholly or partly in place of disused offshore installations in the maritime area covered by the OSPAR Convention. There is a presumption in favour of re-use, recycling or final disposal on land. The Convention is written around the precept of periodic review with the assumption of progressive tightening of standards.

The Decision recognises that there may be difficulties in removing the footings of large steel jackets weighing more than 10,000 tonnes and in removing concrete installations. The following exceptions (or derogation) to the general rule are therefore allowed, based on:

- All or part of the footings* of a steel installation in a category listed in Annex 1, placed in the maritime area before 9 February 1999, to be left in place;
- A concrete installation in a category listed in Annex 1 or constituting a concrete anchor base, to be dumped or left wholly or partly in place; and
- Any other disused offshore installation to be dumped or left wholly or partly in place, when exceptional and unforeseen circumstances resulting from structural damage or deterioration, or from some other cause presenting equivalent difficulties, can be demonstrated.

It should be noted that the disturbance of cuttings piles while decommissioning is not accepted as justification to leave structures wholly or partly in place.

Annex 1 categories (excludes topsides):

1) steel installations weighing more than 10,000 tonnes in air;
2) gravity based concrete installations;
3) floating concrete installations;
4) any concrete anchor-base which results, or is likely to result, in interference with other legitimate uses of the sea.
footings means those parts of a steel installation which:

i) are below the highest point of the piles which connect the installation to the sea bed;

ii) in the case of an installation built without piling, form the foundation of the installation and contain amounts of cement grouting similar to those found in footings as defined in sub-paragraph 3[a]; or

iii) are so closely connected to the parts mentioned in subparagraphs (i) and (ii)…
    as to present major engineering problems in severing them from those parts.

Annex 2 of Decision 98/3 provides the framework for the assessment of proposals for the disposal at sea of disused offshore installations. Each decommissioning option for derogation requires a Comparative Assessment (CA). The assessment needs to consider the potential impacts of the proposed disposal of the installation on the environment and on other legitimate uses of the sea, as well as considering the practical availability of reuse, recycling and disposal options for the decommissioning of the installation.

Further information on the decommissioning of concrete gravity based structures can be found in IOGP report 484 (2012).

**Drill Cuttings Piles**

The OSPAR sea area contains many cuttings piles from wells that were originally drilled with diesel based muds and also subsequently low toxicity oil based muds. OSPAR Decision 2000/3 came into effect on 16 January 2001 and effectively eliminated the discharge of cuttings contaminated with oil based fluids with a few minor exceptions. Since 2001, discharged cuttings generally contain water based mud which is considerably less toxic, but on older sites the cuttings may lie on top of oil based mud piles.

In 2006, Recommendation 2006/5 was adopted which introduced a management regime for offshore drill cuttings piles and OSPAR’s most recent position on cuttings piles was published in 2009 in the "Assessment of the possible effects of releases of oil and chemicals from any disturbance of cuttings piles" (OSPAR, 2009).

Stage 1 required the assessment of drill cuttings piles against criteria such as rate of oil loss (leaching) and persistence (area of the seabed where the concentration of oil remains above 50 mg/kg) and its duration, to establish whether further action was required on any particular pile. If either of these thresholds is exceeded, the operator is required to characterise the cuttings pile and review the impacts (referred to as Stage 2). Characterization in Stage 2 includes determining the position, area, topography, hydrography, volume, physical characteristics, chemical content and biological characterization of the cuttings pile.
At present, there are no comprehensive guidelines within OSPAR for sampling drill cuttings piles, however the Joint Assessment and Monitoring Programme (JAMP) 2014 – 2021 requires an assessment of impacts of the offshore oil and gas industry on the marine environment, including possible releases of oil and chemicals from any disturbance of cuttings piles. At the Offshore Industry Committee (OIC) 2014, a draft assessment paper on cuttings was presented and at the OIC 2015, the United Kingdom (UK) introduced a paper discussing the chemical characterization of cuttings piles with reference to existing characterization studies [OIC, 2015].

Currently OSPAR 2006/5 refers only to oil content, however other contaminants may also be important in assessing environmental risks. The OIC 2015 concluded that further work was required before adopting a basis for similar studies for the decommissioning of all fields with significant drill cuttings piles. The OIC / JAMP are currently developing OSPAR Guidelines to provide operators with the framework for Stage 2 ensuring that the samples collected are representative of each site and relevant to the decommissioning process.

Artificial reefs in the OSPAR Maritime Area

The OSPAR 1999 Guidelines on Artificial Reefs in relation to Living Marine Resources defined artificial reefs as follows: “An artificial reef is a submerged structure placed on the seabed deliberately, to mimic some characteristics of a natural reef. It could be partly exposed at some stages of the tide.”

The development of artificial reefs in the OSPAR Maritime Area has been relatively limited, for uses such as fisheries protection and production, habitat protection and enhancement, research and recreation. The majority of these reefs have been purpose-built, primarily in concrete, although natural rock has also been utilized. OSPAR undertook an assessment of artificial reefs in the OSPAR area [OSPAR, 2009] and concluded that where they are present, the negative effects have been very localized and that the potential benefits of reefs, aimed at enhancing production of living marine resources and restoring or protecting natural habitats, outweigh their negative impacts.

Currently, there are no binding regulations specific to artificial reefs in OSPAR countries at an international, regional or national level but specific guidelines have been developed under the London Convention/Protocol [see Section 2.6]. OSPAR Decision 98/3 on the Disposal of Disused Offshore Installations – which is mandatory – has, since its adoption, effectively stopped the use of such structures as artificial reefs.
3.1.2 EU Marine Strategy Framework Directive

The objective of the Marine Strategy Framework Directive (MSFD) 2008 is to reach Good Environmental Status (GES) of the marine waters by 2020, through marine strategies which apply the ecosystem based approach. This is very much in line with the objectives and approaches taken by OSPAR.

In order to achieve GES in a coherent and strategic manner, the MSFD established four European Marine Regions: the Baltic Sea, the North East Atlantic Ocean, the Mediterranean Sea and the Black Sea, based on geographical and environmental criteria. The North East Atlantic Marine Region is further divided into four sub-regions: (i) the Greater North Sea, (ii) the Celtic Seas, (iii) the Bay of Biscay and the Iberian Coast and (iv) the waters surrounding the Azores, Madeira and the Canary Islands. Each Member State is required to develop a marine strategy for their waters, in coordination with other countries within the same marine region or sub-region. This coordination is being achieved through the Regional Seas Conventions.

Under the MSFD, marine strategies are being implemented to protect and conserve the marine environment, prevent its deterioration, and where practicable, restore marine ecosystems in areas where they have been adversely affected.

3.2 Denmark

3.2.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1959;
- Ratified London Dumping Convention and London Protocol;
- Signatory to the Basel Convention [ratified];
- CBD (ratified); and
- CITES (ratified).

3.2.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme for the North East Atlantic - OSPAR Convention; and
- EU MSFD.
3.2.3 Principal Legislation

All oil and gas activities, including licensing, in the Danish Kingdom (which also covers Greenland and the Faroe Islands) are regulated by the Danish Energy Agency (DEA).

The Danish upstream oil sector as well as natural gas exploration and production – is governed by the Danish Subsoil Act (Act No. 960 of 13th September 2011 as amended by Act No. 535 of 29 April 2015):

https://ens.dk/sites/ens.dk/files/OlieGas/consolidated_act_use_danish_subsoil.pdf

This Act sets out rules on the appropriate exploitation of the Danish subsoil and its natural resources in adherence to EU regulations. It applies to the Danish EEZ (which includes Greenland and the Faroe Islands) and to the Danish continental shelf area.

A number of changes were introduced in the Danish Subsoil Act with effect from 19 July 2015. Most, but not all of the changes were required due to the EU Offshore Safety Directive (Directive 2013/30/EU).

The Danish Subsoil Act regulates the general licensing conditions. It governs preliminary investigations, exploration and production of resources from the Danish subsoil with a focus on hydrocarbons. The purpose of the Danish Subsoil Act is to ensure appropriate use and exploitation of the Danish subsoil, in a manner that is safe and preventative regarding waste.

Denmark has officially stated that all offshore constructions must be removed after the facilities have been abandoned. However, some installations may be retained for ‘other purposes’, such as importing and storing natural gas. The DEA can order the removal of all or part of any installation. There is no specific reference to pipeline decommissioning in the Danish Subsoil Act.

Decommissioning of platforms is further regulated by the Offshore Safety Act. In addition, the licence and the joint operating agreement provide further guidance. Before submitting a development plan to the DEA, licence holders must agree the terms of an abandonment agreement. Such agreements shall state the terms for the security that each party provides to the other parties for its percentage interest share in the abandonment costs.
The licence holders are jointly responsible for carrying out decommissioning in accordance with the pre-approved abandonment plan. In the case of a transfer, the new licence holder takes over all obligations related to decommissioning. However, the seller remains liable for obligations which were accumulated at the time of the transfer. Licence holders have a strict liability for all accidents that occur either during decommissioning, or subsequently if any installations are left in situ. The liability is in perpetuity. However, with effect from July 2015, a so-called subsidiary or secondary liability for licensees has been implemented in the Subsoil Act, i.e. a previous licensee will remain liable for decommissioning costs even if ownership has been transferred to a new licensee.

The Model Licence document issued during licensing rounds makes reference to the requirement of a closure plan to be provided two years before the termination of the licence or two years before expected decommissioning (Section 36(6)), [https://ens.dk/sites/ens.dk/files/OlieGas/modellicence_7th_round.pdf].

The environmental requirements applicable to offshore oil and gas installations are laid down in various legislation, including the Danish Subsoil Act, the Danish Continental Shelf Act and the Danish Marine Environment Protection Act. The Environmental Protection Agency is responsible for supervising emissions and discharges to the marine environment, while the DEA is responsible for the EIA procedures [https://ens.dk/en/our-responsibilities/oil-and-gas/environmental-requirements-oil-and-gas]. Screening of the closure plan submitted by the operator will be undertaken to determine whether an EIA is required.

### 3.2.4 Additional Information

No Danish offshore oil and gas structures have been decommissioned to date (November 2016). Data published by OSPAR and the North Sea regulators identifies a total of four installations in the Danish Sector of the North Sea likely to cease production and/or be removed in the coming decade; [Cecille, Dagmar, Rolf, Siri and Svend] [Decom North Sea, 2014].
### 3.2.5 Summary

**Table 3-1: Denmark Summary Decommissioning Requirements**

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Removal but derogations possible.</td>
<td>OSPAR Decision 98/3</td>
</tr>
<tr>
<td></td>
<td>Under Decision 98/3 the dumping and leaving wholly or partly in place of offshore installations is prohibited.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decision 98/3 recognises it may be difficult to remove the ‘footings’ of large steel jackets weighing more than 10,000 tonnes and concrete installations.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>As a result, there are derogations for these categories of installations if the internationally agreed assessment and consultation process shows leaving them in place is justifiable.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Some installations may be retained for ‘other purposes’, such as importing and storing natural gas.</td>
<td>Danish Subsoil Act, 2011.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>Case by case</td>
<td>OSPAR 2006/5 and OSPAR 2009.</td>
</tr>
<tr>
<td></td>
<td>OSPAR currently developing sampling and monitoring guidelines in relation to cuttings piles.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Should be considered in the decommissioning programme which is required under the Danish Subsoil Act, 2011.</td>
<td></td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Yes, Closure Plan to be submitted two years before anticipated closure of the facility.</td>
<td>Danish Subsoil Act, 2011 [Section 37(6) of the Model Licence].</td>
</tr>
<tr>
<td></td>
<td>An EIA may be required. Decided on a case by case basis, following review of the closure plan.</td>
<td></td>
</tr>
</tbody>
</table>
3.3 Netherlands

3.3.1 Membership of International Treaties, Conventions and Protocols
- Signatory to UNCLOS III (ratified);
- Member of IMO since 1949;
- Ratified London Convention and London Protocol;
- Signatory to the Basel Convention (ratified);
- CBD (party); and
- CITES (ratified).

3.3.2 Membership of Regional Programmes and Conventions
- Regional Seas Programme for North East Atlantic - OSPAR Convention; and
- EU MSFD.

3.3.3 Principal Legislation
The Dutch Mining Act gives principal regulatory powers in upstream oil and gas, apart from environment and planning in general, to the Ministry of Economic Affairs (MEA) and the State Supervision of Mines (SSM). The SSM falls under the competence of the MEA.

Two statutory advisory bodies – the Mining Council and the Technical Committee on Soil Movement (TCB) complete the main structure of decision-making, supervisory, enforcement and advisory bodies in upstream oil and gas.

The Mining Act, effective as of 1 January 2003, forms the legal basis for exploration and production activities relating to minerals in the Netherlands (including the Dutch part of the Continental Shelf). The Dutch Mining Act consists of three levels: the ‘Mijnbouwwet’ (Mining Act itself), the ‘Mijnbouwbesluit’ (Mining Decree) and the ‘Mijnbouwregeling’ (Mining Regulations).

The Dutch Mining Act covers both onshore and offshore exploration and development of mineral resources and aims to give a clear framework for responsible and effective mining. The Mining Decree specifies the main elements of the Mining Act.

The Mining Act prescribes that mining installations that are no longer used must be removed, including scrap and other materials at or immediately near such installations. MEA may limit the obligation to a certain depth, to be determined at their discretion, beneath the soil or the water surface, and may set a time frame within which the obligation must have been fulfilled.
The decommissioning regime with respect to cables and pipelines situated on the Dutch part of the Continental Shelf is slightly different in that the removal obligation does not exist by force of law, but applies if and to the extent that MEA has ordered the removal. The obligation rests on the cable or pipeline operator or last known operator.

The “Beleidsnota Noordzee 2016-2021” policy document for the North Sea indicates that in principle, decommissioned pipelines need to be removed, but exceptions can be made based on cost-benefit assessment for which a decision frame work is provided.

Removal Plan

The Mining Decree requires a removal plan, the mandatory elements of which are detailed in the Mining Regulation. The removal plan must be submitted for approval to the MEA prior to the removal of mining installations.

The removal of mining installations (whether or not used in production) that are entirely situated below the water surface, does not require a prior removal plan but guidelines laid down in the Mining Regulation must be observed. The SSM must be notified at least 24 hours before and immediately following the removal of mining installations in both categories.

Article 61 of the Mining Decree sets out the terms and requirements for the removal plan and states that “the removal plan shall contain at least a description of:

a) The way in which removal of the mining installation and of scrap and other material as referred to in Article 44.2 of the Mijnbouwwet is to take place;

b) The way in which it will be shown that the position where the mining installation stood on the seabed is free from scrap and other material;

c) The way in which the mining installation and the scrap and other material will be removed;

d) The ultimate destination of the mining installation, its components and scrap and other material, and

e) The waste and other substances present on the mining installation and their ultimate destination.

Furthermore, the removal plan shall contain details of the times when the elements of the plan referred to in Articles 61a up to and including Article 61e will be carried out. Further rules concerning the removal plan may be set by ministerial regulation.”
Financial Security

The MEA may decide that financial security, in an amount at the MEA’s discretion, must be provided to cover costs of administrative enforcement measures to be taken upon the failure of the licensee or operator to fulfil its removal obligations. Regulations are silent as to when the MEA can demand financial security. The application for an exploration or production licence may be denied if the MEA is not satisfied that the applicant will be able to provide security, if requested to, at any point in the future.

Environmental Permitting

As a general rule, the erection and operation of mining installations requires an environmental permit based on the Environmental Permitting (General Provisions) Act (EPA), applying to Dutch territory, including the seabed extending 12 nm from the coastline, or, if the EPA does not apply (notably on the Dutch part of the continental shelf), based on the Mining Act. In either case the MEA is the competent authority to issue permits and an EIA is required as part of the environmental permitting.

In June 2014, a new bill was proposed, providing for one comprehensive set of laws related to environmental and planning which are currently laid down in different acts. The new bill (not yet enacted) will also affect environmental aspects of (offshore) mining activities and replace specific provisions in the Mining Act.

3.3.4 Additional Information

Most platforms in the Dutch Sector of the North Sea are relatively small and located in shallow depths.

In total, three processing platforms and 21 satellite platforms on the Dutch Continental Shelf have been decommissioned to date (December 2016). From the satellites removed, a total of 11 topsides (73%) have been re-used on other field developments. The topsides were mostly completely stripped of all processing equipment and only the steel structure was reused. So far, installations have only been re-used for the purpose they were originally designed for.

Data published by OSPAR and the North Sea regulators identifies a total of two installations in the Dutch Sector of the North Sea likely to cease production and/or be removed in the next seven years; Q8-B and K10-B (Decom North Sea, 2014).
The Netherlands Masterplan for Decommissioning and Re-use (Energie Beheer Nederland, EBN, 2016) recognises that decommissioning of Dutch oil and gas assets will be an important topic over the coming decades and identifies a number of initial priorities, including:

- Establishing a National Platform for decommissioning to create an organization responsible for coordinating decommissioning;
- Establishing a National Decommissioning Database; and
- Promoting effective regulation.

EBN was founded by the Dutch Government to optimise benefits from energy sources. It invests in almost all oil and gas exploration projects in the Netherlands and is therefore a key stakeholder in all decommissioning projects.

3.3.5 Summary

**Table 3-2: Netherlands Summary Decommissioning Requirements**

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Removal but derogations possible. Under Decision 98/3 the dumping and leaving wholly or partly in place of offshore installations is prohibited. Decision 98/3 recognises it may be difficult to remove the ‘footings’ of large steel jackets weighing more than 10,000 tonnes and concrete installations. As a result, there are derogations for these categories of installations if the internationally agreed assessment and consultation process shows leaving them in place is justifiable. Removal includes the installation itself and scrap/other materials in the immediate vicinity. May limit the obligation to a specified depth.</td>
<td>OSPAR Decision 98/3. Dutch Mining Act, 2003.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>Removal but exceptions can be made based on cost benefit analysis. Removal on case by case basis may be ordered by MEA.</td>
<td>Beleidsnota Noordzee 2016-2021 Dutch Mining Act, 2003.</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>Case by case.</td>
<td>OSPAR 2006/5 and OSPAR 2009. OSPAR currently developing sampling and monitoring guidelines in relation to cuttings piles.</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Yes, a Closure or Decommissioning Plan has to be submitted to the Ministry of Economic Affairs (MEA) for approval before a mining location is actually closed or an offshore installation is decommissioned.</td>
<td>Dutch Mining Act, 2003.</td>
</tr>
</tbody>
</table>
3.4 Norway

3.4.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1958; and
- Ratified London Convention and London Protocol;
- Party to the Basel Convention;
- CITES (ratified); and
- CBD (ratified).

3.4.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme for the North East Atlantic - OSPAR Convention; and
- EU MSFD.

3.4.3 Principal Legislation

Several Norwegian acts and regulations apply to decommissioning of offshore installations, and authorities from different governmental bodies are involved in regulating and granting permits in decommissioning activities. Broadly, dismantling of installations offshore is considered to be part of the petroleum activities. Once modules have been loaded on to a barge, they come under the rules for maritime transport. Demolition and recycling are regulated by other legislation, such as the Pollution Control Act. Relevant legislation is explained below:

- Petroleum Activities Act, 1996;
- Pollution Control Act, 1981; and
- Regulations on radioactive pollution and waste.

The Pollution Control Act and regulations on waste and radioactivity are not specific to the oil and gas industry or to decommissioning and have therefore not been covered in detail.
Petroleum Activities Act [Ministry Petroleum and Energy]

The Petroleum Act 1996 (http://www.npd.no/en/Regulations/Acts/Petroleum-activities-act/) governs the decommissioning of offshore installations and pipelines in the Norwegian sector of the North Sea. Chapter 5 of the Act (Cessation of petroleum activities) deals with the termination of petroleum activities. Chapter 4.2 of the Act requires, at an early stage of a development, that the plan for development and operation of a field must include information on how an installation can be disposed of after the end of production following OSPAR Decision 98/3. The Act is administered by the Norwegian Ministry of Petroleum and Energy (MPE) who make decisions on the acceptable disposal method based on each individual case.

A Decommissioning Plan (Cessation Plan) must be submitted by the licensee two to five years prior to the shut-down of the facility. Decisions are made based on technical, safety, environmental and economic factors as well as regard for other users of the sea. Prior to the submission of the Decommissioning Plan, the licensee is required to clarify the scope of the Impact Assessment with the Ministry. Infield pipelines and smaller pipelines dedicated to a specific field are normally covered by the field specific Cessation Plan. A separate plan is usually required for larger pipelines.

Decommissioning Plans must consist of two parts, a Disposal Report and an Impact Assessment, as set out in Sections 43–45 of the Petroleum Regulations, [http://www.npd.no/en/Regulations/Regulations/Petroleum-activities/].

The MPE makes final decisions on disposal with feedback from other governmental bodies such as the Norwegian Petroleum Directorate (NPD) and Petroleum Safety Authority (PSA). Any exceptions from removal of the facility must be assessed and grounds given for this option: these cases must also be presented to OSPAR before the Parliament makes a decision. Figure 3-1 shows the decommissioning plan approval process.
The decommissioning plan must be supported by an EIA which assesses the impacts of the proposed decommissioning activities on the environment. It should also contain details of potential mitigation measures which may be implemented to reduce such impacts. The EIA must draw from relatively recent development specific survey data, i.e. site surveys must not be more than 5 years old. Hence it is likely that an environmental baseline survey will be required before decommissioning activities commence if a relevant survey has not been undertaken in the last five years.

The EIA will be subject to a public hearing, while the Disposal Report will be evaluated by the MPE, the Ministry of Local Government and Regional Development and the NPD. The MPE will co-ordinate the evaluation of the Disposal Report and the EIA. All consultations are co-ordinated by the MPE and the operator is not required to conduct any consultations independently.

The Norwegian Environment Agency (NEA) is one of the bodies consulted in these matters, and can provide input on ways of reducing pollution. Activities that may result in pollution during dismantling offshore, and that are not covered by the general permit for the field, must be dealt with separately by the NEA.
According to the Petroleum Act, the decommissioning plan shall include an assessment of the options for disposal for the installations/components to be removed with consideration of:

- Further use in petroleum activities;
- Other uses;
- Complete or partial removal; and
- Abandonment.

If installations are not left in place or re-used directly they must be removed to shore and delivered to approved waste treatment plants. If an installation is to be transported from the Norwegian sector of the continental shelf to another country, or imported, an export application must be sent to the competent authority in the dispatch state, and this process should be started between two and six months before the planned start of the operation.

The Norwegian Oil and Gas Association (NOROG, joint operators) has put together a Guide for Impact Assessments of Offshore Decommissioning, [https://www.norskoleoggass.no/no/Publikasjoner/Miljorapporter/Handbok-i-KU-ved-Offshore-Avvikling-/], which includes a list of appropriate disposal alternatives which can be considered for offshore installations. These are summarized in Table 3-3.

**Table 3-3: Summary of NOROG Guidance on Appropriate Disposal Methods**

<table>
<thead>
<tr>
<th>Installation/Component</th>
<th>Further use in Petroleum industry</th>
<th>Other Use</th>
<th>Complete or partial removal</th>
<th>Abandonment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Footings left, if can maintain 55 m unobstructed water column**</td>
<td>Sea Disposal</td>
<td>Re-use of greater of less parts</td>
<td>Cutting and recycling</td>
</tr>
<tr>
<td>Topsides</td>
<td>X X</td>
<td>X X</td>
<td>X X</td>
<td>x x</td>
</tr>
<tr>
<td>Steel Substructure &lt; 10,000 ton*</td>
<td>X X</td>
<td>X X</td>
<td>X X</td>
<td>x x</td>
</tr>
<tr>
<td>Steel Substructure &gt;10,000 ton</td>
<td>X X</td>
<td>X X</td>
<td>X X</td>
<td>x x</td>
</tr>
<tr>
<td>Concrete Substructure</td>
<td>X X</td>
<td>X X</td>
<td>X X</td>
<td>x x</td>
</tr>
<tr>
<td>Floaters</td>
<td>X X</td>
<td>X X</td>
<td>X X</td>
<td>x x</td>
</tr>
<tr>
<td>Pipelines</td>
<td>X X</td>
<td>X X</td>
<td>X X</td>
<td>x x</td>
</tr>
</tbody>
</table>

*Includes templates and other smaller steel installations.

**See definition of “footing” in OSPAR Decision 98/3

***Including Trench/ Excavation, buried or covered with rock
Parliament White Paper - Report No. 47 (pipelines and cables)

In the Norwegian Continental Shelf (NCS), pipeline decommissioning is regulated principally by the Norwegian Petroleum Act. Due to the different circumstances surrounding each decommissioning case, each pipeline is considered individually.

The Norwegian Parliament has issued a White Paper which comprehensively addresses the decommissioning of pipelines and cables and which will form the basis for future decisions regarding the disposal of pipelines; namely the White Paper No. 47 (1999-2000) [https://www.regjeringen.no/no/dokumenter/Stmeld-nr-47-1999-2000-/id193707/]. Generally, pipelines and cables may be left in place so long as they do not cause an obstruction or present a safety risk for bottom fishing, considering the costs of burial, covering or removal of these items.

Final decisions on the disposal of oil and gas installations, including pipelines, are made by the MPE. The following disposal solutions are normally considered:

- Clean and leave in situ;
- Burial/trenching;
- Rock dumping; or
- Removal.

Permission to leave in situ will not be given if the pipeline or cable contains substances that may constitute or may cause danger to human health or environmental damage.

Selecting a disposal alternative shall be made on the basis of a broad assessment where costs are considered in relation to the consequences to the environment, fisheries and other users of the sea, and having regard to other international resolutions and directives.

If the Ministry decide that the most appropriate disposal method is to leave the facility/pipeline in place, the licensee is liable for any interference or damage caused.

Where it is proposed that a pipeline should be decommissioned in place, either wholly or in part, then the decommissioning programme should be supported by a suitable study which addresses the degree of past and likely future burial/exposure of the pipeline and any potential effect on the marine environment and other uses of the sea. The study should include the survey history of the line along with appropriate data to confirm the current status of the line, including the extent and depth of burial, trenching, spanning and exposure.

Upon completion of decommissioning, clear procedures for inspection shall be established for pipelines left on the seabed. In addition, pipelines decommissioned in situ shall be subject to a suitable monitoring programme agreed with MPE in consultation with other Government Departments.
### 3.4.4 Additional Information

Information regarding the installations decommissioned in the NCS can be found in [http://www.norskpetroleum.no/en/facts/fields-norway/](http://www.norskpetroleum.no/en/facts/fields-norway/). This is updated on a regular basis. Also for the first time in 2016 the Oil & Gas UK Decommissioning Insight Report includes assets on the Norwegian Continental Shelf.

While many proposals have been put forward in terms of converting disused installations on the NCS into facilities for other purposes such as offshore wind power generation and rigs-to-reefs solutions, there are no known plans for such use.

Some of the fixed concrete facilities on the Norwegian shelf are approaching the end of their life. A report on disposal of such installations was made on the initiative of NPD with the participation of PSA and NEA. The report covers the technical feasibility, health, safety and environmental challenges by various disposal options for disused concrete facilities offshore. The report suggests that abandonment of the concrete facilities offshore may have less impact on the environment and human health than landing for scrapping and recycling.

3.4.5 **Summary**

**Table 3-4: Norway Summary Decommissioning Requirements**

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Removal but derogations possible. Removal but derogations possible.</td>
<td>OSPAR Decision 98/3.</td>
</tr>
<tr>
<td></td>
<td>Under Decision 98/3 the dumping and leaving wholly or partly in place of offshore installations is prohibited.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decision 98/3 recognises it may be difficult to remove the ‘footings’ of large steel jackets weighing more than 10,000 tonnes and concrete installations. As a result, there are derogations for these categories of installations if the internationally agreed assessment and consultation process shows leaving them in place is justifiable.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Removal or abandonment dependent upon location and in accordance with ‘good industry practice’</td>
<td>NOROG guidelines.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>Removal or leave in situ if they do not constitute a hazard to navigation or commercial fishing or interfere with other uses of the OCS.</td>
<td>Parliament Whitepaper No. 47.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOROG guidelines.</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>Case by case.</td>
<td>OSPAR 2006/5 and OSPAR 2009.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSPAR currently developing sampling and monitoring guidelines in relation to cuttings piles.</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Yes, a Cessation Plan incorporating a Disposal Plan and an EIA for public consultation. These must be submitted between two and five years before installation is taken out of use.</td>
<td>Norwegian Petroleum Act, 1996.</td>
</tr>
</tbody>
</table>
3.5 United Kingdom

3.5.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1949;
- Ratified London Convention and London Protocol;
- Signatory to the Basel Convention;
- CBD (ratified); and
- CITES (ratified).

3.5.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme for the North East Atlantic - OSPAR Convention; and
- EU MSFD.

3.5.3 Principal Legislation

The decommissioning of offshore oil and gas installations and pipelines on the United Kingdom Continental Shelf (UKCS) is controlled through the Petroleum Act 1998, as amended by the Energy Act 2016.

The Oil and Gas Authority (OGA) is responsible for maximising field life and economic revenues as well as ensuring that decommissioning is executed in a safe, environmentally sound and cost effective manner. The Department for Business, Energy and Industrial Strategy (BEIS) is the competent authority for decommissioning and regulates offshore oil and gas decommissioning under the Petroleum Act 1998.

The OGA works with BEIS and is specifically required to assess decommissioning programmes on the basis of cost, future alternative use and collaboration. All oil and gas decommissioning operations must be described in a detailed programme, which has undergone an appropriate amount of stakeholder scrutiny. Other government departments and agencies, non-governmental organizations, members of the public and other relevant bodies are given the opportunity to comment on the proposals set out in a programme.

Once a programme is sufficiently mature it is submitted to BEIS as part of the consultation process. On satisfactory completion of the consultation process and with stakeholder input the programme requires final approval from BEIS.
Petroleum Act 1998

Part IV of the Petroleum Act 1998 provides a framework for the orderly decommissioning of disused installations and pipelines on the UKCS.

The principal provisions of Part IV of the Petroleum Act 1998 are listed below:

- Enable the Secretary of State, by written notice, to require the submission of a costed decommissioning programme for each offshore installation and submarine pipeline. Those persons given notices are jointly liable to submit a programme;
- Where a decommissioning programme is approved by the Secretary of State, make it the (joint and several) duty of the persons who submitted it to secure that it is carried out;
- Provide the Secretary of State with the means to satisfy himself that any person who has a duty to secure that an approved decommissioning programme is carried out, will be capable of discharging that duty and, where he is not so satisfied, require that person, by notice, to take such action as may be specified;
- In the event of failure by those given notice to submit a programme or secure that it is carried out, enable the Secretary of State to do the work and recover the cost from those given notice;
- Provide penalties for failure to comply with notices; and
- Enable the Secretary of State to make regulations relating to decommissioning.

The Petroleum Act sets out the requirements for a formal Decommissioning Programme, which must be approved by BEIS before decommissioning commences. The operator must also consult the OGA.

In most cases the general rule under OSPAR Decision 98/3 will apply and the Decommissioning Programme will provide for full removal for re-use, recycling or final disposal of the installation on land. The Decommissioning Programme should contain details of cost and proposals for removal and disposal. The BEIS Guidance Notes (DECC, 2011) require that the Decommissioning Programme is supported by an Environmental Impact Assessment (EIA), which considers the potential environmental impacts. It should also contain details of potential mitigation measures which may be implemented to reduce such impacts. The EIA must draw from relatively recent development specific survey data, i.e. site surveys must not be more than 5 years old. Hence it is likely that an environmental baseline survey will be required before decommissioning activities commence if a relevant survey has not been undertaken in the last five years.
Where full removal of the installation is the chosen option there is no requirement for a detailed CA nor for the UK Government to consult with other OSPAR Contracting Parties. The Decommissioning Programme must however, be made available for public comment and include a statement indicating how the principles of the waste hierarchy will be met.

In more complex cases relating to concrete installations and to steel installations with a jacket weight greater than 10,000 tonnes (see Section 3.1.1), a full assessment of the options in accordance with Annex 2 to OSPAR Decision 98/3 must be undertaken by the operator to allow BEIS to decide whether there is a case for seeking a derogation from the general rule of the Decision.

Pipelines should be the subject of a separate Decommissioning Programme unless they are located within the same field as other equipment or installations to be decommissioned at the same time.

There are a number of options for the decommissioning of offshore pipelines, and these are evaluated by CA in accordance with the BEIS Guidance (DECC, 2011). The CA process takes account of the technical, safety, environmental and societal impact and cost in order to determine the optimum decommissioning option for a specific pipeline and associated infrastructure. Where it is proposed that a pipeline should be decommissioned in place, either wholly or in part, then the decommissioning programme should be supported by a suitable study which addresses the degree of past and likely future burial/exposure of the pipeline and any potential effect on the marine environment and other uses of the sea. The study should include the survey history of the line along with appropriate data to confirm the current status of the line, including the extent and depth of burial, trenching, spanning and exposure.

In addition to the approval of the Decommissioning Programme for a pipeline, the following may also be required:

- Confirmation that the requirements of the Coast Protection Act 1949 Section 34 Part II have been satisfied;
- Fulfilment of notification requirements for the Health and Safety Executive (HSE) under regulation 22 of the Pipeline Safety Regulations 1996;
- Any environmental consents or permits required during decommissioning activity; and
- Disposal of materials onshore must comply with relevant health and safety, pollution prevention and waste requirements/permits.

For both installations and pipelines, and on completion of each decommissioning phase, appropriate surveys should be undertaken to identify and recover any debris located on the seabed, which may have arisen from the decommissioning operation or from past development and production activity. In addition to debris
surveys, a post decommissioning environmental seabed sampling survey should be undertaken, in particular to monitor levels of hydrocarbons, heavy metals and other contaminants in sediment and biota. In most cases a second survey will need to be undertaken at some point after the post-decommissioning sampling. Any further surveys will depend upon the results of earlier work and the circumstances of each case. The scope of the surveys and the survey interval should be agreed with BEIS (DECC, 2011).

The persons who own an installation or pipeline at the time of its decommissioning will remain the owners of any residues. Any residual liability remains with the owners in perpetuity (DECC, 2011).

**Energy Act 2008 and Energy Act 2016: Oil and Gas Decommissioning**

Chapter 3 of Part 3 of the Energy Act 2008 ("the 2008 Act") amends Part IV of the Petroleum Act 1998. The 1998 Act consolidated provisions from the Petroleum Act 1987. Since the regime was originally established in 1987 there have been changes in business practices in the oil and gas industry, such as increased participation by smaller companies which have fewer assets and as such bring increased risks that they might not be able to meet their decommissioning liabilities. Moreover, experience has shown that it has not always been possible to share liabilities equitably between parties responsible for any installation or pipeline.

In summary, the 2008 Act amends the regime by:

- Enabling the Secretary of State to make all the relevant parties liable for the decommissioning of an installation or pipeline and, where a licence covers multiple sub-areas, clarifying which licensees will be liable;
- Giving the Secretary of State power to require decommissioning security at any time during the life of an oil or gas field if the risks to the taxpayer are assessed as unacceptable; and
- Protecting the funds put aside for decommissioning, so in the event of insolvency of the relevant party, the funds remain available to pay for decommissioning and the taxpayers’ exposure is minimized.

The Energy Act 2016 establishes the OGA as an independent government company and sets out the OGA’s functions. Schedule 2 of the Energy Act amends the Petroleum Act 1998 to require relevant persons to consult the OGA before submitting an abandonment programme to the Secretary of State, and to require the Secretary of State to consider representations from the OGA when deciding whether to approve a programme. Alternatives to decommissioning, such as re-use or preservation, must be considered by the OGA.
Marine and Coastal Access Act 2009 and Marine (Scotland) Act 2010

Operators need to apply for a marine licence to undertake certain licensable marine activities. The licensable activities are principally related to decommissioning operations, including activities such as disturbance of the seabed, the deposit and removal of materials and the use of explosives.

If the approved Decommissioning Programme for a pipeline contains proposals for the placement of associated materials on the seabed such as rockdump, then a licence must be obtained under the Marine and Coastal Access Act 2009 in England and Wales or the Marine (Scotland) Act 2010.

Other Applicable Legislation

General UK environmental and waste legislation applies to the decommissioning process, including:

- The Environmental Protection Act 1990, which places a duty of care on the waste producer to ensure that the waste is managed properly, recovered or disposed of safely, does not cause harm to human health or pollution of the environment and is only transferred to someone who is authorized to receive it;
- Special Waste Regulations 1996 – Special Waste Amendment (Scotland) Regulations 2004 / Hazardous Waste (England and Wales) Regulations 2005 which require all movements of special/hazardous wastes to be tracked by way of a consignment note system;
- Transfrontier Shipment of Waste Regulations 2007 (Council Regulation No 1013/2006/EC on shipments of waste [see Sections 2.4.2], enforced by the EA [England and Wales], SEPA [Scotland] and NI Environment Agency [Northern Ireland] to control the international movement of waste;
- Health and Safety at Work etc. Act 1974, the Offshore Safety Act 1992 and The Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015 [SCR 2015]. The SCR 2015 include requirements for safeguarding the integrity of an installation throughout its life cycle, from design and construction, through operation and maintenance, to decommissioning and dismantling. The dismantling of a fixed installation requires a specific revision of the Safety Case to take account of the particular hazards and risks involved; and
- The Pipelines Safety Regulations, 1996 which require that pipelines are decommissioned safely either by dismantlement and removal or by being left in a safe condition, and for notification of decommissioning works at least 3 months prior to commencement.
3.5.4 Additional Information

To help inform future decommissioning projects, Oil & Gas UK have collated the experience gained so far in decommissioning pipelines and steel-piled jackets in the North Sea, as well as information on degradation rates for offshore structures and pipelines and the management of marine growth during decommissioning. Oil & Gas UK have published four reports which are all available on the Oil & Gas UK website:


2) Decommissioning of Pipelines in the North Sea Region 2013. 1  

3) Decommissioning of Steel Piled Jackets in the North Sea region October 2012.  

### 3.5.5 Summary

#### Table 3-5: UK Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Removal but derogations possible. Under Decision 98/3 the dumping and leaving wholly or partly in place of offshore installations is prohibited. Decision 98/3 recognises it may be difficult to remove the 'footings' of large steel jackets weighing more than 10,000 tonnes and concrete installations. As a result, there are derogations for these categories of installations if the internationally agreed assessment and consultation process shows leaving them in place is justifiable.</td>
<td>Petroleum Act, 1998 which enforces OSPAR Decision 98/3.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>Case by case dependent on the outcome of the CA and agreement of BEIS.</td>
<td>Petroleum Act, 1998 and DECC guidelines 2011</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>Case by case.</td>
<td>Should be considered in the decommissioning programme which is required under the Petroleum Act, 1998. OSPAR 2006/5 and OSPAR 2009. OSPAR currently developing sampling and monitoring guidelines in relation to cuttings piles.</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Yes, including an EIA for public consultation. Discussions required with the regulator prior to Cessation of Production. Decommissioning Plan must be submitted a minimum of one year before the installation is decommissioned. Pre and post decommissioning surveys required.</td>
<td>Petroleum Act, 1998 and accompanying Guidance Notes, DECC, 2011.</td>
</tr>
</tbody>
</table>
3.6 References

Beleidsnota Noordzee, available at https://www.rijksoverheid.nl/documenten/beleidsnota-s/2015/12/14/beleidsnota-noordzee-2016-2021


Danish Model Licence. Available online at: https://ens.dk/sites/ens.dk/files/OlieGas/modellicence_7th_round.pdf


Oil and Gas UK, 2016. Decommissioning Insight 2016. Available online at: http://oilandgasuk.co.uk/decommissioninginsight.cfm


North East Atlantic Regional Sea Area. Information available online at: http://www.unep.org/regionalseas/programmes/independent/neatlantic/default.asp

Key Websites:

Danish Energy Agency https://ens.dk/en
Norwegian Environment Agency http://www.miljodirektoratet.no/
Norwegian Oil and Gas Association https://www.norskoljeoggass.no/
Norwegian Petroleum Directorate http://www.npd.no/
Norwegian Petroleum Safety Authority http://www.psa.no/
Norwegian Government documents https://www.regjeringen.no/
4. Mediterranean

4.1 Regional Framework

4.1.1 Barcelona Convention


- The Dumping Protocol (from ships and aircraft);
- The Prevention and Emergency Protocol (pollution from ships and emergency situations);
- The Land-based Sources and Activities Protocol;
- The Specially Protected Areas and Biological Diversity Protocol;
- The Offshore Protocol (pollution from exploration and exploitation);
- The Hazardous Wastes Protocol; and
- The Protocol on Integrated Coastal Zone Management (ICZM).

The Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil (entered into force 2011, referred to as the Offshore Protocol in the list above) covers oil and gas activities including removal of installations. Under Article 5 Requirements for Authorizations, it states that any application must include (g) The plans for removal of installations as specified in Article 20.

**Article 20 Removal of Installations:**

The operator is required to remove any installation that is abandoned or disused, in order to ensure the safety of navigation and taking into account other users of the sea (notably fishing) and the protection of the marine environment. The operator is also required to remove abandoned or disused pipelines or to clean and bury them so “they cannot cause pollution, endanger navigation, hinder fishing, threaten the marine environment nor interfere with other legitimate uses of the sea.”

Guidelines were also adopted under the Barcelona Convention in 2005 in relation to artificial reefs (UNEP, 2005). However, the guidelines focus solely on structures specifically created as artificial reefs and make no mention of re-use of offshore platforms as reefs.
4.1.2 Jeddah Convention


4.1.3 Bamako Convention

The Bamako Convention is a treaty of African nations prohibiting the import into Africa of any hazardous (including radioactive) waste (see Section 7.1.3 for further information). Egypt is a signatory to and has ratified the Bamako Convention. Algeria is a non-signatory. Italy is outwith the applicable area.

4.2 Algeria

4.2.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1963;
- Party to the Basel Convention;
- CITES (accession); and
- CBD (ratified).

4.2.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme – Mediterranean, signatory to the Barcelona Convention (ratified); and
- Member of the African Petroleum Producers’ Association (APPA) (see Section 7.1.2).
4.2.3 Principal Legislation

Offshore activities in Algeria are relatively recent and still at an early stage of exploration. By law the national oil company, Sonatrach, must have a stake of at least 51% in each new exploitation and exploration contract (Article 32 of the Hydrocarbon Law, [CMS Cameron McKenna LLP, 2013]).

The Hydrocarbon Law (Act no. 05-07, April 2005 and amendments 2006 and 2013) establishes the framework for regulation of the petroleum industry. There are two independent national agencies that deal with the regulation of the petroleum industry: ALNAFT (Agence Nationale pour la Valorisation des Ressources en Hydrocarbures) which deals with upstream activities and is the exclusive holder of all hydrocarbon mining titles, and ARH (Autorité de Régulation des Hydrocarbures) which is responsible for downstream activities and for enforcing regulations.

Decommissioning is covered by Articles 80 to 82 of the Hydrocarbon Law [http://www.energy.gov.dz/fr/legis/hydrocarbures-05-07.pdf]. The contracting party must assume responsibility for all site abandonment and restoration costs provided for in the contract. In order to cover the costs associated with site abandonment and restoration operations, which must be conducted at the end of the exploitation period, the contracting entity must deposit reserve funds during each calendar year. This reserve shall be considered an operational charge deductible from the taxable results of the fiscal period. Decommissioning and site remediation is regulated by the Ministry of Mines and the Ministry for the Environment.

There are a number of laws pertaining to industrial safety and environmental requirements. The Hydrocarbon Law effectively requires that all this legislation is applied to petroleum activities. An EIA is required prior to development which must be submitted to ARH.

In the absence of any national guidelines, decommissioning requirements will be governed by the Barcelona Convention to which Algeria is a signatory.

4.2.4 Additional Information

No information was available on whether any decommissioning has been carried out but given that offshore activities are relatively recent it is likely that none has been carried out to date.
4.2.5 Summary

Table 4-1: Algeria Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Remove any installation that is abandoned or disused, to ensure the safety of navigation and taking into account other users of the sea (notably fishing) and the protection of the marine environment.</td>
<td>Barcelona Convention/Article 20.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>Remove abandoned or disused pipelines or to clean and bury them so “they cannot cause pollution, endanger navigation, hinder fishing, threaten the marine environment nor interfere with other legitimate uses of the sea.”</td>
<td>Barcelona Convention/Article 20.</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>No national requirement. Initial exploration requires an EIA but it is not known whether this needs to include abandonment plans.</td>
<td>The Algerian Hydrocarbon Law, 2005 and amendments.</td>
</tr>
</tbody>
</table>

4.3 Egypt

4.3.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1958;
- Ratified London Convention and London Protocol;
- Party to the Basel Convention;
- CITES (accession); and
- CBD (ratified).

4.3.2 Membership of Regional Programmes and Conventions

- Signatory to Bamako Convention (ratified);
- Regional Seas Programmes –
  - Mediterranean, signatory to the Barcelona Convention (ratified); and
  - Red Sea / Gulf of Aden, signatory to the Jeddah Convention; and
- Member of the African Petroleum Producers’ Association (APPA) [see Section 7.1.2].
4.3.3 Principal Legislation

All petroleum production in Egypt takes place through joint ventures, established under a Production Sharing Contract (PSC) between the Contractor and either the Egyptian Petroleum Corporation (EGPC), the Egyptian Natural Gas Holding Company (EGAS) or Ganoub El Wadi Petroleum Holding Company (Ganope). The PSC is established in the form of a law and governs all aspects related to the concession.

The petroleum industry in Egypt is regulated primarily by the Fuel Materials Law No. 66/1953 (and amendments) (Freshfields Bruckhaus Deringer, 2013) and the Environment Law No.4/1994 [http://www.misr.gov.eg/english/laws/].

The Ministry of Petroleum is responsible for regulation of the entire chain of oil and gas activities in Egypt, supported by EGPC, EGAS and Ganope, whilst the Egyptian Environmental Affairs Authority, is tasked with enforcement of the obligations stated within the Environment Law. This includes the implementation of international and regional conventions related to the environment (as listed in Sections 4.3.1 and 4.3.2) and reviewing environmental statements. Part Three of the Environment Law specifically deals with the protection of the water environment.

To date, there is no specific legislation covering decommissioning activities in Egypt. In practice, PSCs, usually set out the parties’ agreement relating to abandonment activities or decommissioning, but this is typically focussed on agreements relating to decommissioning funds and ongoing liabilities rather than on the specific requirements for the decommissioning of facilities and associated assets.

In the absence of any national guidelines, decommissioning requirements in the Mediterranean part of Egypt will be governed by the Barcelona Convention to which Egypt is a signatory. For the Red Sea/ Gulf of Aden area, international legislation will apply [UNCLOS III and IMO] as the associated Jeddah Convention contains no specific requirements in relation to decommissioning.

4.3.4 Additional Information

Egypt’s crude oil, condensate, and more recently, gas production areas are the Gulf of Suez and the Mediterranean along with significant onshore areas (Sinai, Western Desert, Eastern Desert and Nile Delta). Most oil production is from mature fields in the Gulf of Suez which are declining rapidly, (Mediterranean Energy Observatory, 2011) whereas most of the gas production is in the Mediterranean.
No information was available on whether any decommissioning had been carried out to date. However, given that the Mediterranean area has only recently been developed it is likely that no decommissioning has been undertaken so far in that area. Production in the Red Sea is declining and therefore decommissioning is more likely to have taken place or to take place in that area in the near future.

### 4.3.5 Summary

#### Table 4-2: Egypt Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
</table>
| Platforms and other facilities | Mediterranean  
Remove any installation that is abandoned or disused, to ensure the safety of navigation and taking into account other users of the sea (notably fishing) and the protection of the marine environment.  
Red Sea/Gulf of Aden  
Remove if in < 75 m water depth and weighing < 4,000 tonnes (installations pre 1998); or  
Remove if in < 100 m water depth and weighing < 4,000 tonnes (installations post 1998).  
Remainder assessed on a case by case basis. | Barcelona Convention/Article 20.  
IMO/UNCLOS III |
| Pipelines | Mediterranean  
Remove abandoned or disused pipelines or to clean and bury them so “they cannot cause pollution, endanger navigation, hinder fishing, threaten the marine environment nor interfere with other legitimate uses of the sea.”  
Red Sea/ Gulf of Aden  
- |
| Drill cuttings piles | No guidance. | - |
| Decommissioning Plan needed | No national requirement. | - |
4.4  Italy

4.4.1  Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1957;
- Ratified London Convention and London Protocol;
- Party to the Basel Convention;
- CITES (ratified); and
- CBD (ratified).

4.4.2  Membership of Regional Programmes and Conventions

- Regional Seas Programme – Mediterranean, signatory to the Barcelona Convention (ratified); and
- EU MSFD – Italian marine waters fall into three of the Mediterranean sub-regions (Western Mediterranean Sea, Adriatic Sea and Ionian Sea/Central Mediterranean Sea). Further information on the EU MSFD is given in Section 3.1.2.

4.4.3  Principal Legislation

EU legislation forms the basis of environmental and oil and gas development legislation in Italy.

In 2010, the Italian Government implemented new measures (Legislative Decree No. 128/2010) aimed at protecting the environment and the ecosystem by prohibiting offshore oil exploration and production within the boundaries of, and within 12 nm miles, of coastal and marine protected areas. However, the subsequent Legislative Decree No. 83/2012 allowed for offshore exploration concessions located in these protected areas, but granted before 2013, to continue.

Depending on the size of the development, oil and gas activities require either an EIA or preliminary screening by the relevant authorities (EU regulations for EIA have applied in Italy since 1985).
The regulatory body for the oil industry is the Ministry of Economic Development, which also issues concessions and authorizations for the exploration and development of oilfields. Within the Ministry two internal agencies and a technical commission deal with the oil-extracting industry:

- DGERM (Direzione Generale dell’Energia e delle Risorse Minerarie) issues national policy guidelines and liaises with the EU and other international organizations;
- UNMIG (Ufficio nazionale minerario per gli idrocarburi e Geo-Risorse) is responsible for granting exploration rights, production concessions, safety studies and planning; and
- The Technical Commission for Hydrocarbons oversees technical programmes, health and safety surveys.

All applications for an exploration permit or a production concession must include a work programme covering the expected requirements during decommissioning of any plant and facility used in the exploitation of hydrocarbons. An estimate of decommissioning costs must be included in the work programme.

According to Article 31 of the Ministerial Decree of 22 March 2011, operators must request a specific authorization from the Territorial Office of the Ministry of Economic Development prior to decommissioning. Operators must provide a detailed work plan and time frame needed to carry out all decommissioning activities.

The Ministry for the Environment MATTM (Ministero dell’Ambiente e della Tutela del Territorio e del Mare) is responsible for the implementation of environmental policy.

In the absence of any national guidelines, decommissioning requirements will be governed by the Barcelona Convention to which Italy is a signatory.

### 4.4.4 Additional Information

The majority of oil and gas developments in Italy are onshore (approximately 87%). The key offshore areas are the northern, central and southern Adriatic, the southern tip of Italy (Calabria) and the area south of Sicily.

The Paguro jackup drilling rig sank during a blowout incident in 1965 and has been left on the seabed. It is submerged in 10 to 33 m water depth, within a depression caused by the blowout. It has become a valuable habitat and is now a European Protected Site under the Habitats Directive Natura 2000 network.

The hard substrate of the rig in contrast to the natural sediments is a key feature of its importance, and the shallow depth and low turbidity contribute to the productivity of the site. The Italian government has authorized the sinking of parts of decommissioned platforms inside the Paguro area (Ponti et al., 2002).
4.4.5 Summary

Table 4-3: Italy Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Remove any installation that is abandoned or disused, to ensure the safety of navigation and taking into account other users of the sea (notably fishing) and the protection of the marine environment.</td>
<td>Barcelona Convention/ Article 20.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>Remove abandoned or disused pipelines or to clean and bury them so “they cannot cause pollution, endanger navigation, hinder fishing, threaten the marine environment nor interfere with other legitimate uses of the sea.”</td>
<td>Barcelona Convention/ Article 20.</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
</tbody>
</table>

4.5 References


CMS Cameron McKenna LLP, 2013. Oil Regulation in 33 jurisdictions worldwide.


5. Caspian Sea

5.1 Regional Framework

The Caspian Sea Regional Seas Programme encompasses all five Caspian littoral states (Azerbaijan, Kazakhstan, the Russian Federation, Iran and Turkmenistan). Following the development of various non-binding regional agreements during the 1990s, including the Caspian Environment Programme (CEP) in 1999, a legally binding framework (known as the Tehran Convention) for the protection of the marine environment of the Caspian Sea was signed and ratified by all five Caspian states. The Tehran Convention was signed in 2003 and entered into force in August 2006.

Four ancillary protocols have since been developed, with two having a relation to offshore oil and gas:

1) The Aktau Protocol Concerning the Regional Preparedness, Response and Co-operation in Combating Oil Pollution incidents is the first to be ratified by all parties and entered into force on the 25th of July 2016; and

2) The Protocol on Environmental Impact Assessment in a transboundary Context which has been assigned priority by the contracting parties.

Neither protocol make specific mention of decommissioning.

Note: although the Russian Federation is part of the Caspian Regional Seas area, it has been covered separately (see Section 14) as it also falls in other UNEP Regional Seas areas.

5.2 Azerbaijan

5.2.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified 2016);
- Member of IMO since 1995;
- Party to the Basel Convention;
- Party to the London Convention;
- CITES (accession); and
- CBD (ratified).

5.2.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme – Caspian Sea area, Tehran Convention.
5.2.3 Principal Legislation

Regulatory functions are carried out by the Ministry for Energy in accordance with its regulations approved by Decree No 575 of the President. There is no independent state oil and gas regulator.

The Ministry of Ecology and Natural Resources (MENR) does not have a direct involvement with the oil and gas industry but does have a role in monitoring environmental conditions of the Caspian. Upon application for obtaining a licence for sub-soil use, one of the conditions for issuance of a licence is satisfying an ecological assessment carried out by the MENR. The primary objective of the ecological assessment is to measure the hazard level of the projects that are ready for commencement, or have already commenced, and which affect, or may affect, the state of the environment, and the health and safety of the population.

The interests of the Government in the oil and gas sector are represented by The State Oil Company of Azerbaijan (SOCAR) who prepare, negotiate and implement the vast majority of Production Share Agreements (PSAs) between SOCAR and foreign Contractors/Operators. As a general rule PSAs executed by SOCAR on behalf of the government are enacted as law after being executed. The PSA grants rights to operate which must be in accordance with generally accepted principles of the international petroleum standards.

The requirements for decommissioning are regulated by Resolution No 2 on Approval of the Rules of Liquidation and Conservation of Entities which Extract Natural Resources, Mining Drilling Rigs, Bore Wells and Sub-soil Plants not related to Extraction of Natural Resources, issued by the Cabinet of Ministers of the Republic of Azerbaijan on 9 January 1999 (referred to as the Decommissioning Rules).

The Decommissioning Rules are mandatory and request that the subsoil users submit an application to the Ministry of Energy which justifies the need to liquidate or conserve the entities, rigs, well or subsoil plants. To this end, subsoil users are to attach to their applications’ technical-economical calculations, mining and graphical documents and action plans related to the safety of works and the prevention of possible damage to the other entities. If the requirements of the Decommissioning Rules contradict the terms of the respective PSA, the PSA will prevail.

An Energy Contract is drawn up before any works commence and must include a rehabilitation plan approved by SOCAR or the Ministry of Energy. PSAs regulate the decommissioning obligations in more detail and include details of a required abandonment fund to finance the removal of assets involved with oil and gas operations. SOCAR and the contractor must both approve the abandonment plan.

General environmental laws of Azerbaijan can be found here [http://www.cawater-info.net/library/eco-az_e.htm](http://www.cawater-info.net/library/eco-az_e.htm). These cover protection of water, air etc. with no specific reference to decommissioning.
5.2.4 Additional Information

Azerbaijan was among the first countries to have an oil and gas industry and onshore it dates back to the 1800s. Major offshore exploration started in the 1960s under Russian rule before the country became independent in December 1991. The vast majority of the country’s oil and gas now comes from offshore.

From the information available in November 2016, no offshore decommissioning has been undertaken in Azerbaijan.

5.2.5 Summary

**Table 5-1: Azerbaijan Summary Decommissioning Requirements**

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Contractor signed PSA*.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contractor signed PSA*.</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contractor signed PSA*.</td>
</tr>
</tbody>
</table>

* The Decommissioning Rules lay down the basic rules but specifics will be in the PSA and where the Rules contradict the PSA is the defining document.

5.3 Kazakhstan

5.3.1 Membership of International Treaties, Conventions and Protocols

- Member of IMO since 1994;
- Party to the Basel Convention;
- CITES (accession); and
- CBD (ratified).

*Note: Kazakhstan is the only country covered within this volume which is not party to UNCLOS III or UNCLOS I.*

5.3.2 Membership of Regional Programmes and Conventions

- Regional Seas Programmes –Caspian Sea area, Tehran Convention.
5.3.3 **Principal Legislation**

The Ministry of Energy was established in 2014 and replaced The Ministry of Oil and Gas as the Government’s Competent Authority to regulate all oil and gas activity in Kazakhstan. Legislation in Kazakhstan has been subject to large changes in recent years with the adoption of the Subsoil Law in 2010. Kazakhstan is currently working on a Subsoil Code which is likely to replace the Subsoil Law in 2017. The effect of the Subsoil Code is to relax some of the conditions placed on foreign contractors to attract investment, [http://www.mondaq.com/x/524718/Oil+Gas+Electricity/The+New+Subsoil+Code+Of+Kazakhstan+Is+Set+For+Approval+In+Late+2017](http://www.mondaq.com/x/524718/Oil+Gas+Electricity/The+New+Subsoil+Code+Of+Kazakhstan+Is+Set+For+Approval+In+Late+2017) and [http://aequitas.kz/upload/files/brochures/Subsoil_Legal_Regime_in_Kazakhstan.pdf](http://aequitas.kz/upload/files/brochures/Subsoil_Legal_Regime_in_Kazakhstan.pdf).

Currently the Subsoil Law regulates the full range of upstream oil and gas activities, including the procedures for granting subsoil use rights, the rights and obligations of subsoil users, the conditions for transfer of subsoil use rights, abandonment and reclamation of petroleum operations. The related Environmental Code dated January 2007 is the principle Law regulating the environmental protection, [http://adilet.zan.kz/eng/docs/K070000212](http://adilet.zan.kz/eng/docs/K070000212).

The Environmental Code requires that prior to commencing any kind of activity that may affect the environment, a company must conduct an EIA and prepare an EIA report, including consideration of decommissioning.

As Kazakh waters of interest to the oil and gas industry in the Caspian Sea are shallow waters and are environmentally sensitive, no drilling waste including cuttings can be dumped and all must be re injected or transported to shore under the PSA for the North Caspian Sea. At the time of writing there are few developments in the North Caspian Sea area and the PSA has been written specifically for these. It is to be expected, however, that this PSA would provide the template for any future developments.

The site abandonment process must be approved by a commission established by the competent authority made up of representatives from selected state bodies. A signed Act of Acceptance from this commission is required to consider site abandonment complete.

The Subsoil Law also requires that the subsoil user sets up a deposit account at any bank in Kazakhstan to ensure finance is available for decommissioning. The amount required will be set out in the Subsurface Use Contract.
5.3.4 Additional Information

Historically the vast majority of Kazakhstan’s oil and gas production has been from onshore fields in the west of the country. One major offshore development in the North Caspian Sea started production in November 2016 and a second field is currently being developed.

From the information available at November 2016, no offshore decommissioning has been undertaken in Kazakhstan.

5.3.5 Summary

Table 5-2: Kazakhstan Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Removal.</td>
<td>No legislation, however, PSA for the North Caspian Sea states that everything must be removed.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>Removal.</td>
<td>No legislation, however, PSA for the North Caspian Sea states that everything must be removed.</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>-</td>
<td>No legislation, however, PSA for the North Caspian Sea requires removal during drilling, therefore there should be no cuttings piles present at the time of decommissioning.</td>
</tr>
</tbody>
</table>
5.4 References


http://www.mondaq.com/x/524718/Oil+Gas+Electricity/The+New+Subsoil+Code+Of+Kazakhstan+Is+Set+For+Approval+In+Late+2017


6. Middle East

6.1 Regional Framework

6.1.1 Regional Organization for the Protection of the Marine Environment

The Regional Organization for the Protection of the Marine Environment (ROPME) sea area covers eight coastal countries in the Middle East including Oman [see Section 6.2], Qatar [see Section 6.3] and the United Arab Emirates (UAE) [see Section 6.4]. In April 1978, the eight Governments of the ROPME sea area adopted the Kuwait Convention and Action Plan, making it one of the first Regional Seas under the UNEP umbrella. The programme of activities covered by the Action Plan mainly relate to the following:

- Oil pollution;
- Industrial wastes; and
- Sewage and marine resources.

ROPME was established in 1979 and in 1982 the Marine Emergency Mutual Aid Centre (MEMAC) was set up to guide the protection of the marine environment. ROPME has adopted five protocols concerned with marine environmental management:

- Protocol concerning Regional Cooperation in Combating Pollution by Oil and Other Harmful Substances in Cases of Emergency (1978);
- Protocol concerning Marine Pollution resulting from Exploration and Exploitation of the Continental Shelf (1989);
- Protocol for the Protection of the Marine Environment against Pollution from Land-Based Sources (1990);
- Protocol on the Control of Marine Transboundary Movements and Disposal of Hazardous Wastes and Other Wastes (1998); and
- Protocol Concerning the Conservation of Biological Diversity and the Establishment of Protected Areas.

In the context of decommissioning, Article XIII of the protocol 'Concerning Marine Pollution from Exploration and Exploitation of the Continental Shelf' [http://www.ropme.org/Uploads/Protocols/Continental_Shelf_Protocol.pdf] requires each Contracting State to ensure that the operator of an offshore installation shall:

- "a. in the case of a pipeline –
  i) to flush and remove any residual pollutants from the pipeline, and
  ii) to bury the pipeline, or remove part and bury the remaining parts thereof, so as to eliminate for the foreseeable future any risk of hindrance to navigation of fishing, taking all circumstances into account;
b. in the case of platforms and other seabed apparatus and structures, to remove the installation in whole or in part to ensure the safety of navigation and in the interests of fishing;”

- Adopt a common policy on the removal of installations where there is a common interest in fishing grounds;
- In determining whether or not installations must be removed, refer to any Guidelines issued by ROPME. Whether pipelines are removed or not, they shall be flushed to remove residual pollutants;
- Take all practicable steps to ensure that no offshore installation which is in use that has floated at or near the sea-surface, and no equipment from an offshore installation, shall be deposited on the seabed or the continental shelf when it is no longer needed.

6.1.2 The Gulf Cooperation Council

Established in 1981, the Gulf Cooperation Council (GCC) has six members: Saudi Arabia, Kuwait, Bahrain, Oman, Qatar and the UAE. The GCC Economic Agreement (2001) provides that the GCC states will adopt integrated policies in all stages of the oil and gas industries, in a manner that facilitates the best exploitation of natural resources, taking into account environmental considerations and the interests of future generations, and that they will adopt the policies and mechanisms necessary to protect the environment according to all relevant legislation and resolutions adopted within the GCC framework, as representing the minimum level for national rules and legislation.

6.2 Oman

6.2.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of the IMO since 1974;
- Party to the London Convention 1972;
- Signatory to the Basel Convention;
- CITES (accession); and
- CBD (ratified).

6.2.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme – ROPME Sea Area (Kuwait Convention and Action Plan, 1978);
- Member of the GCC.
6.2.3 Principal Legislation

Subject to the ultimate oversight of His Majesty the Sultan, the Ministry of Oil and Gas (MOG) is authorized to set rules, policies and plans related to investments in oil and gas fields as well as supervising all activities with respect to exploration and production. The key legislation governing offshore oil and gas exploration and production is the Oil and Gas Law, put into effect by the Royal Decree No. 8/2011. The law applies to all Petroleum Substances located in the internal waters, territorial sea, EEZ or the continental shelf of the Sultanate of Oman:


The provisions of the law set out the obligations of an operator which are to be included within a Concession Agreement (Exploration and Production Sharing Agreement – EPSA). In relation to decommissioning, these include:

- The procedure for relinquishment and abandonment of the Concession Area; and
- Requirements for the protection of the environment, health, safety and security.

The EPSA usually provides that the Concession Holder will have a decommissioning plan and account for the plan annually in accordance with International Financial Reporting Standards. The decommissioning plan must be updated every year and actual costs relating to the plan are treated as recoverable costs. The Concession Holder must also open and maintain a decommissioning fund with an international bank (Practical Law, 2016a).

Article 16 of the Oil and Gas Law specifically requires the Concession Holder [at its own expense] to restore the Concession Area to normal by removing any building, plant, machinery, equipment, tool, waste or other substances, or any type of property except that which the MOG considers not required to be removed.

The Concession Owner must use substances and equipment that conform to international standards and specifications, and that meet the requirements of safety and environmental regulations, while using best methods.

Specific environmental protection measures related to oil and gas operations are set out in Chapter VI and Articles 39 and 40 of the Oil and Gas Law. In general, the Concession Owner is committed to the implementation of operations with due diligence and in accordance with the technical standards set forth in the Concession Agreement and international standards to which the Sultanate is party, and must take all necessary measures to achieve the protection of the environment. In particular, and in relation to decommissioning, these include:
• Treatment of waste before disposal;
• Take all precautions necessary for the possession, transportation, transfer or use of hazardous substances, including wastes. Insurance cover is required against liability for damage that may result from them;
• To abandon or close a dry, or used well in accordance with rules established by the Ministry;
• To take necessary precautions to prevent the leakage of petroleum substances;
• To take preventative measures to prevent pollution of all kinds;
• To take all appropriate immediate actions to reduce the environmental effects of explosions and accidents that may arise from operations, and to inform the competent authorities immediately of any accident and take steps to control it; and
• To reduce greenhouse gas emissions in the Concession Area using appropriate techniques and means to protect the environment.

The Ministry of the Environment and Climate Affairs (MECA) is the regulatory authority for environmental aspects of upstream operations in Oman. The principal environmental legislation in Oman is the Law on Conservation of the Environment and Prevention of Pollution (Environmental Law), put into effect by the Royal Decree No. 114/2001. Under Article 9 of the Law, no process or activity that may, directly or indirectly, cause environmental pollution is to be established before obtaining an environmental permit confirming its environmental soundness. An application for a permit must be made to MECA. Before the application for the environmental permit, a detailed EIA may be required. This is determined through liaison with MECA.

There are several regulations on the disposal of waste products resulting from oil and gas extraction and processing. These include (Practical Law, 2016a):
• Ministerial Decision 18/93: Regulations for Management of Hazardous Waste;
• Ministerial Decision 145/93: Regulations for Wastewater Re-use and Discharge; and
• Ministerial Decision 17/93: Regulates the management of solid non-hazardous waste.

6.2.4 Additional Information

The majority of oil and gas production in Oman takes place onshore. Currently, the Norwegian company DNO operates Oman’s only producing offshore fields which are located in Block 8 off the northwest coast in the Persian Gulf.
6.2.5 Summary

Table 6-1: Oman Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Assessment on a case by case basis. Remove in whole or in part to ensure safety of navigation and in the interests of fishing.</td>
<td>ROPME Protocol Concerning Marine Pollution from Exploration and Exploitation of the Continental Shelf, 1989. EPSA may include specific requirements.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>Assessment on a case by case basis. Flush and remove residual pollutants from the pipeline or remove part and bury remaining parts.</td>
<td>ROPME Protocol Concerning Marine Pollution from Exploration and Exploitation of the Continental Shelf, 1989. EPSA may include specific requirements.</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Yes, as part of the Concession Award and must be updated annually.</td>
<td>Oman Oil and Gas Law, 2011.</td>
</tr>
</tbody>
</table>

6.3 Qatar

6.3.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (signatory);
- Member of the IMO since 1977;
- Party to the Basel Convention;
- CITES (accession); and
- CBD (ratified).

6.3.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme – ROPME Sea Area (Kuwait Convention and Action Plan, 1978).
- Member of the GCC.

6.3.3 Principal Legislation

The Ministry of Energy and Industry regulates Qatar’s oil and natural gas policy, subject to the ultimate control of the Emir of Qatar. Qatar Petroleum is the state-run agency responsible for all phases of oil and gas production in the country on behalf of the Government. The Ministry of Municipality and Environment is the regulatory authority for environmental aspects of oil and gas operations in Qatar.
Qatar Petroleum (established by Qatar Law No. 10 in 1974) is the state-run agency responsible for all phases of oil and gas production in the country on behalf of the Government. The oil and gas industry is regulated by the Natural Resources Law (Law No. (3) 2007 regarding the Exploitation of Natural Resources and its Sources. The right to explore, develop and produce petroleum is typically granted through Development and Production Sharing Agreements (DPSAs) & Exploration and Production Sharing Agreements (EPSAs) (collectively known as PSAs) with Qatar Petroleum.

Other primary legislation relating to oil and gas exploration and production, which may have relevance to decommissioning include (Practical Law, 2016b):

- Decree-Law No. (30) of 2002 issuing the Environmental Protection Law;
- Law No. (8) 2004 concerning Protection of the Maritime Facilities of Petroleum and Gas;
- Decision No. (4) 2005 of the President of the Supreme Council of Environment and Natural Protection concerning the issuance of the Executive Regulations of the Environmental Protection Law issued by Decree-Law No. (30) 2002;
- Law No. (3) 2007 regarding the Exploitation of Natural Resources and its Sources; and

The disposal of waste products and the handling of hazardous materials are regulated by the Environmental Protection Law. The disposal of waste is prohibited, other than in places identified under the Executive Regulations and in accordance with its terms and conditions. The party in charge of producing, handling and transporting such waste must also take all precautions to prevent any damage to the environment. Dumping of petroleum products or waste products into the sea without written approval from the Competent Authorities is prohibited.

An EIA is required before undertaking any kind of development project or other industrial activity that may have a harmful impact on the environment. The Ministry of Municipality and Environment sets the standards, specifications, basis and restrictions required for the evaluation of the environmental impact of the project to be licensed and undertaken. The Ministry of Municipality and Environment also has responsibility for granting permits which address all issues of environmental impact, including permitted emissions and discharges.

Although decommissioning obligations are not addressed by specific legislation, oil and gas licence holders must comply with the general requirements relating to pollution and protection of the environment, both under the Environmental Protection Law and any specific requirements under the relevant contract and applicable regulations. In general, the operator has an obligation to decommission at its own expense, and subject to good oil industry practices, any contract area
relinquished back to the state at the end of the EPSA or DPSA. The operator of the field must comply with the obligations in the EPSA and the approved EIA (Practical Law, 2016b).

6.3.4 Additional Information

Oil and gas are the chief exports of Qatar, accounting for more than half of the country’s gross domestic product. Qatar has several producing offshore oil and gas fields which include Idd El Shargi North Dome (ISND), Al Shaheen, and Maydan Mahzam and Bul Hanine fields.

6.3.5 Summary

**Table 6-2: Qatar Summary Decommissioning Requirements**

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other</td>
<td>Assessment on a case by case basis. Remove in whole or in part to ensure safety of</td>
<td>ROPME Protocol Concerning Marine Pollution from Exploration and Exploitation of the Continental Shelf, 1989.</td>
</tr>
<tr>
<td>facilities</td>
<td>navigation and in the interests of fishing.</td>
<td></td>
</tr>
<tr>
<td>Pipelines</td>
<td>Assessment on a case by case basis</td>
<td>ROPME Protocol Concerning Marine Pollution from Exploration and Exploitation of the Continental Shelf, 1989.</td>
</tr>
<tr>
<td></td>
<td>Flush and remove residual pollutants from the pipeline. Either bury the pipeline</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or remove part and bury remaining parts.</td>
<td></td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>needed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.4 United Arab Emirates [Abu Dhabi]

6.4.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III [signatory];
- Member of the IMO since 1980;
- Party to the Basel Convention;
- CITES [accession]; and
- CBD [ratified].

6.4.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme – ROPME Sea Area [Kuwait Convention and Action Plan, 1978].
- Member of the GCC.
6.4.3 National Framework

The UAE is a constitutional federation consisting of seven emirates including the capital, Abu Dhabi. The natural resources and wealth in each emirate are considered to be the public property of that emirate and as a result each one regulates the oil and gas industry within its territory through its own bodies and policies.

The Federal Ministry of Energy has limited powers to set policies and planning at a federal level and is subject to the constitutional rights of the emirates. The Federal Ministry of Environment and Water oversees environmental approvals, but in practice, local emirate environmental departments are responsible for the approvals in each emirate and for enforcing the requirements of the Federal Environmental Law, as well as any local laws and regulations. The Environment Agency Abu Dhabi is the local environmental regulatory body.

More than 90% of the federation’s oil and gas resources are located in Abu Dhabi. In the emirate of Abu Dhabi, the Supreme Petroleum Council (SPC) has overall policy making responsibility for the petroleum industry as well as management control over the Abu Dhabi National Oil Company (ADNOC). ADNOC is responsible for managing day-to-day operations and implementing the directives of the SPC.

6.4.4 Principal Legislation

Abu Dhabi does not have comprehensive petroleum legislation governing the granting of exploration and development concessions, although a number of laws affect the petroleum industry. The applicable laws are (ICLG, 2016; Practical Law, 2016c):

- Abu Dhabi Tax Decree of 1965, as amended;
- Abu Dhabi Law No. 7 of 1971, as amended (establishing ADNOC);
- Abu Dhabi Law No. 2 of 1973, as amended (petroleum ports);
- Abu Dhabi Law No. 4 of 1976 [Gas Ownership Law], which grants ADNOC the right to exploit and use all such gas either solely or through joint agreements or projects concluded with third parties, provided ADNOC’s participation is not less than 51% (Article 6, Gas Ownership Law) and to claim all rights derived from agreements concluded by the Abu Dhabi Government related to gas (Article 4, Gas Ownership Law);
- Abu Dhabi Law No. 8 of 1978 [conservation of petroleum resources]; and
- Abu Dhabi Law No. 1 of 1988 (establishing the SPC).
The Health, Safety and Environment regime for the oil and gas sector is not specifically regulated, however, applicable laws include:

- Federal Law No. 7 of 1993 on the Federal Environment Agency;
- Federal Law No. 8 of 1980 concerning Labour Law; and

Concession holders are obliged to comply with the general requirements relating to pollution and protection of the environment under the Federal Environment Law [No. 24], in addition to any specific environmental requirements under the concession agreement, and any environmental regulations applicable in the emirate where oil and gas structures are located. The following liabilities are applicable (Practical Law, 2016c):

- Under Article 4, Federal Law No. 24 of 1999, a company must obtain a licence for starting a project, establishment or activity including an EIA.
- Any person causing damage to the environment, either intentionally or by way of negligence which violate the provisions of Law No. 24 of 1999, is responsible for all costs of treatment or removal of such damages and any compensation incurred.
- The marine environment must be protected under Chapter II of Law No. 24 of 1999. The financial penalties for a pollution event do not apply where there is a sudden break in a pipeline carrying oil or a mixture of oil during working operations, drilling, exploration or testing of wells, and not resulting from negligence, providing sufficient precautions to monitor operations and control pollution at its source are in place.
- Under Abu Dhabi Law No. 8 of 1978, an operator must take all precautions to prevent air pollution, subsurface and surface water pollution, and the pollution of territorial and continental shelf waters, and the beaches and islands located in the territorial waters and continental shelves. If pollution occurs, the party involved must take steps to remediate the pollution.
- The operator must pay compensation in addition to indemnifying the loss of reservoirs to the government for waste of oil or other hydrocarbons, where there has been a failure in adopting the common practice of the petroleum industry.
Further relevant environmental regulations under Federal Law No. 24 of 1999 include:

- Prohibition of the discharge of polluting substances into the water environment in the vicinity of oil and gas activities unless there is a safety measure in place for the treatment of discharged waste and polluting substances;
- Possessing a valid International Oil Pollution Prevention certificate;
- Precautions to keep the amount of pollutants from combustion within permissible limits;
- Requirement for a licence to handle and dispose of hazardous substances and waste; and
- Maintenance of a registry of hazardous substances and waste to be maintained. There is also a prohibition on importing, buying or disposing of hazardous wastes unless a written permit is obtained from Ministry of Environment and Water.

While not specifically legislated for, decommissioning activities are implicitly covered by the environmental obligations provided by Federal Law No. 24. Additionally, the Abu Dhabi Petroleum Resources Conservation Law No. 8 of 1978 also sets out specific notification requirements in relation to abandonment (Practical Law, 2016c).

### 6.4.5 Additional Information

Oil production in the UAE is dominated by several large fields. Offshore these fields include Upper Zakum, Lower Zakum, Umm Shaif fields, all located in Abu Dhabi.

### 6.4.6 Summary

**Table 6-3: UAE (Abu Dhabi) Summary Decommissioning Requirements**

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Assessment on a case by case basis. Remove in whole or in part to ensure safety of navigation and in the interests of fishing.</td>
<td>ROPME Protocol Concerning Marine Pollution from Exploration and Exploitation of the Continental Shelf, 1989.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>Flush and remove residual pollutants from the pipeline. Either bury the pipeline or remove part and bury remaining parts.</td>
<td>ROPME Protocol Concerning Marine Pollution from Exploration and Exploitation of the Continental Shelf, 1989.</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>No guidance.</td>
<td>-</td>
</tr>
</tbody>
</table>
6.5 References


http://www.memac-rsa.org/ropme-region-protocols
7. Western Africa

7.1 Regional Framework

7.1.1 Abidjan Convention

The Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region (known as the Abidjan Convention), covers a marine area from Mauritania to South Africa which has a coastline of just over 14,000 km. It is part of the UN Regional Seas Programme. The Convention provides an overarching legal framework for all marine-related programmes in West, Central and Southern Africa.

The Convention’s mission is to “Protect, Conserve and Develop the Abidjan Convention Area and its Resources for the Benefit and Well-being of its People.” The plan was first adopted in 1981 and came into force in 1984, but made little progress until 2002. Since then an increasing number of countries have ratified the Convention and additional funds have been made available allowing for the implementation of a number of initiatives:

- Adoption of Regional Contingency Plans and other Means of Preventing and Combatting Pollution Incidents (2011);
- Creation of the Ad Hoc Committee on Science and Technology (2014); and
- Creation of the Regional Coordination Centre for Marine Pollution Emergency.

As of November 2016, the Contracting Parties of the Abidjan Convention that have ratified the Convention are: Benin, Cameroon, Congo, Côte d’Ivoire, Democratic Republic of Congo, Gabon, Gambia, Ghana, Republic of Guinea, Guinea-Bissau, Liberia, Mauritania, Nigeria, Senegal, Sierra Leone, South Africa and Togo.

Other Member States in the Convention area who are in the process or yet to ratify the Convention are: Angola, Cape Verde, Equatorial Guinea, Namibia and Sao Tome e Principe.

The Convention makes no specific reference to decommissioning of disused offshore installations; however, Article 8 states that “Contracting Parties shall take all appropriate measures to prevent, reduce, combat and control pollution resulting from or in connection with activities relating to the exploration and exploitation of the sea-bed and its subsoil subject to their jurisdiction and from artificial islands, installations, and structures under their jurisdiction.”

In 2014, the Meeting of Parties to the Abidjan Convention announced the intention to develop a Protocol to the Convention covering “Environmental Standards for Offshore Oil and Gas Development”. OSPAR was invited to participate in the various meetings (further meetings held in February and October 2016). At the time of writing (November 2016) the draft protocol was not publically available.
but indications were that the decommissioning of disused installations would be addressed and would be likely to follow existing IMO Guidelines. Further information can be obtained from the Abidjan Convention website [http://abidjanconvention.org].

7.1.2 African Petroleum Producers’ Association

The African Petroleum Producers’ Association (APPA) is an intergovernmental organization created in 1987 in Lagos, Nigeria, to serve as a platform for African petroleum producing countries to cooperate, collaborate and share knowledge and competences.

It aims to promote common policy initiatives and projects in all facets of the petroleum industry with a view to maximising the developmental and welfare benefits accruable from petroleum exploitation activities in the Member Countries in particular and in Africa in general.

APPA currently comprises eighteen Member Countries namely, [Algeria](http://www.appa.int/index.php) (see Section 4.4), [Angola](http://abidjanconvention.org), Benin, Cameroon, Chad, Democratic Republic of Congo, Congo, Côte d’Ivoire, [Egypt](http://www.appa.int/index.php) (see Section 4.3), [Gabon](http://www.appa.int/index.php), Ghana, [Equatorial Guinea](http://www.appa.int/index.php), South Africa, Libya, Mauritania, Niger, [Nigeria](http://www.appa.int/index.php) and Sudan. Note that the [Republic of Guinea](http://www.appa.int/index.php) is not a member of APPA.

One of APPA’s missions is to “actively contribute to the efforts of Member Countries to derive maximum socio-economic benefits from the exploitation of their hydrocarbons while taking into consideration up-to-date environmental protection and safety standards”.

The 8th Programme of Actions lists the range of projects to be covered by APPA. This includes studies related to sustainable development and to the dismantling of “dilapidated” oil installations. It is unclear from the APPA website what work has been carried out in relation to this and whether APPA are involved in the development of the additional protocol to the Abidjan Convention (see Section 7.1.1).

7.1.3 Bamako Convention

The Bamako Convention is a treaty of African nations prohibiting the import into Africa of any hazardous (including radioactive) waste. The convention came into force in 1998. To date it has 25 parties [signed and ratified] and 17 members [signed but not ratified] (correct as at June 2013). Of the countries covered by this document:

- Signed and ratified: [Gabon](http://www.appa.int/index.php), [Egypt](http://www.appa.int/index.php) (see Section 4.3);
- Signatories [but not yet ratified]: [Angola](http://www.appa.int/index.php), [Republic of Guinea](http://www.appa.int/index.php), [Nigeria](http://www.appa.int/index.php); and
- Non signatory: [Equatorial Guinea](http://www.appa.int/index.php), [Algeria](http://www.appa.int/index.php) (see Section 4.4).
The impetus for the Bamako convention arose from the failure of the Basel Convention to prohibit trade of hazardous waste to less developed countries and the realization that many developed nations were exporting toxic wastes to Africa.

Under the Bamako Convention, no hazardous waste (including radioactive waste) can be imported from a non-African country and all forms of ocean disposal are banned. For intra-African waste trade, parties must minimize the transboundary movement of wastes and only conduct it with consent of the importing and transit states. They should minimize the production of hazardous wastes and cooperate to ensure that wastes are treated and disposed of in an environmentally sound manner.

7.2 Angola

7.2.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1977;
- Ratified London Protocol;
- CITES (acession);
- CBD (ratified).

7.2.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme for Western Africa, Abidjan Convention 1981 (ratification process ongoing 2016);
- Signatory to Bamako Convention (ratification process ongoing 2016); and
- Member of APPA.

7.2.3 Principal Legislation

All oil and gas activities are regulated by the Ministry of Petroleum (MinPet) and all of the laws listed below are enforced by the MinPet:

- Petroleum Activities Law, Law 10/04 (supersedes General Petroleum Activities Law 13/78) – seeks to safeguard national interests, promote development and protect the environment;
- Environmental Protection for the Oil Industry, Decree 39/00 – regulates environmental practices in the oil industry in Angolan marine and terrestrial territory at all stages of design, construction, operation and abandonment;
- Law on Taxation of Oil Activities, Law 13/04 – explains the tax regime for petroleum operations; and
- Oil Operations Regulations, Decree 01/09.
The Ministry of Environment regulates the following:

- **General Environmental Law, Law 05/98** – establishes the basic principles of environmental protection, and although it does not specifically cover decommissioning, it establishes the principal of liability for environmental damage; and

- **Decree on Environmental Impact Assessment (51/2004)** – aims to ensure better environmental protection of human activities likely to have an impact on the environment, this includes oil and gas activities.

All oil and gas exploration and production activities in Angola are controlled by the national oil company, Sociedade Nacional de Combustiveis de Angola E.P. (SONANGOL), which was established in June 1976. SONANGOL are the sole concessionaire (with the exception of Block 0) and therefore all companies, either national or foreign, need to be associated with SONANGOL in order to be licensed. This principle, together with the requirement for all oil and gas activities to be regulated by the MinPet, is enshrined in the General Petroleum Activities Law (13/78) and its succeeding legislation, the Petroleum Activities Law 10/04.

There is a certain amount of overlap between the various laws and decrees. Effectively the key points are:

- The general development and production plan for a field must contain a preliminary plan for the decommissioning of facilities as well as the funds necessary for the decommissioning of the oilfield. In practice this means production expenses must include a provision for decommissioning costs (Oil Operations Regulations);

- Within the taxation regime (Law on Taxation of Oil Activities) there is the opportunity to make provisions for future abandonment costs to be included in production expenses for the purposes of assessing taxable income;

- Companies must develop and implement a Site Abandonment and Rehabilitation Plan which must be submitted to the MinPet at least one year prior to abandonment. The Plan must describe facilities to be abandoned or removed and the methods used as well as the measures to be put in place to mitigate environmental impact and rehabilitate the site (covered in Article 11 of the Decree on Environmental Protection for the Petroleum Industry and to a lesser extent in Articles 24 and 75 of the Petroleum Activities Law);

- Executive Decree 8/05 on Waste Management, Removal and Deposit (which comes under the Petroleum Activities Law 10/04) details procedures for the management, removal and disposal of waste from petroleum activities, to be implemented by the operator and other oil companies to ensure the prevention or minimization of damage to people’s health and the environment. Article 8 within Decree 8/05 refers to the requirement for an abandonment plan to be submitted to the MinPet one year prior to abandonment (as detailed above);
• Plans are deemed approved if there is no negative reply within 90 calendar days following the date of receipt;
• Abandonment and rehabilitation must be undertaken in line with applicable legislation and normal practice in the oil industry. Enforcement measures can be taken by the MinPet if the abandonment plan is not submitted in the required timescale or if the measures set out in the plan are not carried out (Article 75 of the Petroleum Activities Law).

The National Secretariat for the Environment was established in 1993 and became the Ministry for the Environment in 1997. The Ministry for Environment is responsible for the review and regulation of EIAs. Oil and gas activities are included in the list of projects which require an EIA and the EIA must cover environmental impacts resulting from construction and operation, but also from disposal of the facility.

7.2.4 Additional Information

Recent decommissioning in Angola has included the Xikomba FPSO (Exxon Mobil) and the Kuito FPSO (Chevron).

Under the title Oil for Development (OfD), Norway provides assistance to a number of countries, of which Angola is one. The current phase of the Angolan project runs from 2013 to 2017 and one of the key aims of the programme is to strengthen institutional mechanisms at the MinPet, with the legal framework highlighted as a main activity area. Further information on the project can be found at https://www.norad.no/en/front/thematic-areas/oil-for-development/where-we-are/angola/. It is assumed that project findings will be available through this website on completion in 2017.

The Association of Oil Exploration and Production Companies of Angola (Associação das Companhias de Exploração e Produção Petrolífera de Angola, ACEPA), have delivered Draft Decommissioning Guidelines for Offshore Oil and Gas Facilities to SONANGOL in November 2016. A final version is expected in 2017.
7.2.5 Summary

Table 7-1: Angola Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Remove if in &lt; 75 m water depth and weighing &lt; 4,000 tonnes (installations pre 1998); or&lt;br&gt;Remove if in &lt; 100 m water depth and weighing &lt; 4,000 tonnes (installations post 1998).&lt;br&gt;Remainder assessed on a case by case basis.</td>
<td>IMO/UNCLOS III Protocol under development (Abidjan Convention) likely to require adherence to international standards such as IMO.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Yes, &gt;1 year prior to abandonment.</td>
<td>Decree on Environmental Protection for the Petroleum Industry, 2004</td>
</tr>
</tbody>
</table>

7.3 Equatorial Guinea

7.3.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III [ratified];
- Member of IMO since 1972;
- Ratified the London Convention;
- Party to the Basel Convention;
- CITES [accession];
- CBD [accession].

7.3.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme for Western Africa, Abidjan Convention 1981 [not ratified]; and
- Member of APPA.

7.3.3 Principal Legislation

Extensive oil and gas exploration in Equatorial Guinea during the 1990s has led to rapid field development offshore. The national oil company, Guinea Ecuatorial de Petroleos (GEPetrol) was established in 2001 and the national gas company, Sociedad Nacional de Gas de Guinea Ecuatorial (SONAGAS, G.E.) was formed in January 2005. Both these national companies are controlled by the Ministry of Mines and Hydrocarbons [the Ministry].
The Hydrocarbons Law provides the framework for the licensing and award of exploration and production rights and authorises the Ministry to enter into contracts with oil companies. The most recent version of the Hydrocarbons Law is Law no. 8/2006 (http://equatorialoil.com/Petroleum_legislation.html). The following text provides a summary overview of the most recently enacted Hydrocarbons Law.

The Hydrocarbons Law covers petroleum operations during the exploration, appraisal, development and production phases. However, the production phase is specifically defined as including the decommissioning of wells, facilities, pipelines and related activities. Specific Articles within the Hydrocarbons Law of relevance to decommissioning are listed below:

- Article 5 requires all operations to be conducted "in a manner compatible with the conservation and sanitation of the environment...Petroleum Operations shall be conducted in a prudent manner using the best technical and scientific practices available in the petroleum industry and taking into account the safety of Persons and facilities, as well as the protection and sanitation of the environment and the conservation of nature."

- Article 32 states that "All facilities, materials, equipment and all other assets used in Petroleum Operations shall be transferred to the ownership of the State after the Contractor has recovered all costs in respect of such asset or upon expiration of the applicable Contract, whichever occurs first, at no cost, in good operating condition and free of all liens and other encumbrances. If the Ministry so decides, the Ministry may require the Contractor to dispose of any such facilities, materials, equipment and assets and such disposal shall be carried out so as to protect and preserve the environment..."

- Articles 65 to 70 all relate to environmental protection, stressing the need for the environment to be protected in line with international oil industry practices, and state the requirement for EIA studies to be undertaken and submitted to the Ministry for approval;

- Articles 112 to 117 cover abandonment plans. The Contractor must prepare an Abandonment Plan for submission and approval by the Ministry, covering wells, facilities and equipment. This must be done "...upon the earlier of (i) six (6) years prior to the estimated commencement of abandonment operations, (ii) the date on which fifty percent (50%) or more of the recoverable Hydrocarbons from a Development and Production area have been produced and (iii) one (1) year prior to the termination of the applicable Contract or the proposed date of the abandonment of any production area included therein...". The Plan can then be amended by the Contractor to take account of changes to petroleum operations. The Plan must cover environmental protection and must also include details of a reserve fund to be established to provide for future abandonment costs. There are no specific requirements within any of these Articles on whether facilities, pipelines etc. need to be removed or can be abandoned in situ.

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Ministerial Order Number 4/2013 approves and promulgates the Petroleum Regulations, which were approved and adopted pursuant to the Hydrocarbons Law. Chapter XXVI covers “Abandonment Plan and Decommissioning”, and within that chapter Article 175 lists the contents of the Abandonment Plan.

Environmental Law No. 7/2003 regulates the environment [referenced in the definitions sections of the Hydrocarbons Law but no further information available].

### 7.3.4 Summary

**Table 7-2: Equatorial Guinea Summary Decommissioning Requirements**

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>“may require the Contractor to dispose of facilities”. This has been interpreted as meaning assessment on a case by case basis.</td>
<td>Hydrocarbons Law (Equatorial Guinea) / Article 32, 2006.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Abandonment Plan submitted to the Ministry, six years prior to decommissioning or one year prior to end of contract or once more than 50% reserves used up (whichever happens first).</td>
<td>Hydrocarbons Law (Equatorial Guinea) / Article 112, 2006 and Petroleum Regulations, Article 175, 2013.</td>
</tr>
</tbody>
</table>

### 7.4 Gabon

#### 7.4.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III [ratified];
- Member of IMO since 1976;
- Party to London Convention but no the London Protocol;
- Party to the Basel Convention;
- CITES (accession);
- CBD [ratified].

#### 7.4.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme for Western Africa, Abidjan Convention 1981 [ratified];
- Bamako Convention [ratified]; and
- Member of APPA.
7.4.3 Principal Legislation

A new code of hydrocarbons came into force in 2014 (Law no. 11/2014), replacing former Law no. 14/82. A national oil company, Société Nationale des Hydrocarbures du Gabon, generally referred to as the Gabon Oil Company (GOC) was established in August 2011, with the specific aim of holding and managing the exploration and exploitation of blocks in coordination with the State.

Under the new Hydrocarbons Law (http://droit-afrique.com/upload/doc/gabon/Gabon-Loi-2014-11-hydrocarbures.pdf), operators have to decommission all equipment at the end of exploitation. Operators contribute to a decommissioning fund throughout production, up to a percentage to be agreed within the Production Sharing Contract (PSC).

The bulk of the Hydrocarbons Law focuses on contractual obligations and cost sharing agreements. Specific Articles within the Hydrocarbons Law of relevance to decommissioning are listed below:

- Definitions are provided for the conventional zone (0 to 1,000 m water depth), deep water (1,000 to 3,000 m) and very deep water (>3,000 m);
- Article 24 – puts the onus on the competent authority (the Ministère en Charge des Hydrocarbures or Minister of Hydrocarbons) to ensure that environmental standards are maintained by Operators;
- Article 40 states that the transfer or relinquishment of a lease needs to be approved by the competent authority;
- Article 193 requires Operators to work in line with Gabonese legislation relating to environmental protection;
- Article 194 requires Operators to update the competent authority regularly on state of environment;
- Articles 195 to 198 deal with decommissioning. Operators must prepare and submit a decommissioning and reinstatement plan to the competent authority prior to all operations (no specific timescales given) and the Operator must reinstate the site in line with legislation in force at the time. If the State has to undertake the reinstatement on the Operators’ behalf the State will use the decommissioning fund set up by the Operator (the fund must be held by a Gabonese bank).

It should be noted that no contracts have yet been agreed under the updated Hydrocarbons Law and current practice is driven by existing contracts, some of which may also predate the original (1982) version of the Hydrocarbons Law, and are therefore likely to have limited (if any) requirements relating to decommissioning.

### 7.4.4 Additional Information

Gabon is among the top five oil producers in Sub-Saharan Africa and has been an oil producer for more than 50 years. The late 1990s onwards saw over a decade of falling oil production but Gabon is now attempting to reverse that trend as demonstrated by several licensing rounds launched in recent years, mostly targeting deep and very deep waters offshore. Natural gas production has been less important to date but recent discoveries have been made both in shallow water and in deep pre-salt reservoirs offshore.

The decision was taken in November 2014 to create a network of marine protected areas around Gabon. Gabon has identified approximately 23% of its EEZ as proposed marine protected areas. However, the focus appears to be on fisheries management and only a very small coastal area appears to have been designated as a petroleum exclusion zone ([http://www.gabon-vert.com/les-actions/environnement/biodiversite-0](http://www.gabon-vert.com/les-actions/environnement/biodiversite-0), [http://medias.legabon.net/PROD/0000007910.pdf](http://medias.legabon.net/PROD/0000007910.pdf)). The current status (i.e. whether the proposed areas have been officially designated as protected areas) is not known.

### 7.4.5 Summary

**Table 7-3: Gabon Summary Decommissioning Requirements**

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Remove if in &lt; 75 m water depth and weighing &lt; 4,000 tonnes (installations pre 1998); or</td>
<td>Protocol under development (Abidjan Convention) likely to require adherence to international standards such as IMO.</td>
</tr>
<tr>
<td></td>
<td>Remove if in &lt; 100 m water depth and weighing &lt; 4,000 tonnes (installations post 1998).</td>
<td>IMO/UNCLOS III</td>
</tr>
<tr>
<td></td>
<td>Remainder assessed on a case by case basis [this will be the bulk of installations as mostly in deep water].</td>
<td></td>
</tr>
<tr>
<td>Pipelines</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Yes. Timescales for submission not specified.</td>
<td>Hydrocarbons Law (Gabon), 2014.</td>
</tr>
</tbody>
</table>
7.5 Nigeria

7.5.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1962;
- Party to London Convention and the London Protocol;
- Party to the Basel Convention;
- CITES (ratified);
- CBD (ratified).

7.5.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme for Western Africa, Abidjan Convention 1981 (ratified);
- Signatory to Bamako Convention; and
- Member of APPA.

7.5.3 Principal Legislation

Nigerian oil production has been ongoing since 1957, mainly onshore and in the Niger Delta, but also offshore in more recent years. The Nigerian National Petroleum Company (NNPC) was established in 1977. The regulatory regime is similar onshore and offshore and the Petroleum Act, 2004 is the principle statute regulating the oil industry. Nigeria’s National Oil and Gas Policy issued in 2007 resulted in a comprehensive restructuring of the entire petroleum industry. Amongst other things it introduced the need for due consideration of health, safety and environment.

The decommissioning of oil and gas facilities and pipelines is regulated through:

- The Environmental Guidelines and Standards for the Petroleum Industry of Nigeria (EGASPIN), 1991, revised 2002; and
- Any specific requirements laid out in the PSC.
The Petroleum (Drilling and Production) Regulations, 1969 require an abandonment programme to be submitted to the Department of Petroleum Resources (DPR) which is the regulatory agency of the Federal Ministry of Petroleum Resources (FMPR). On termination of a lease the Operator is obliged to remove all buildings, installations and facilities used in petroleum development operations (Adedayo, 2011). The Regulations appear to be focused primarily on onshore and nearshore, and on the abandonment of boreholes and wells, rather than offshore facilities.

The Oil Pipelines Act, Section 28, covers decommissioning of pipelines and ancillary installations. It requires the licence holder to remove pipelines and make good any damage done to the land. Although not explicitly stated, the Oil Pipelines Act appears to apply to land based facilities only.

EGASPIN were amended in 2002, with the addition of new provisions for the decommissioning of offshore installations based on the IMO Guidelines [Part VIII G. Decommissioning of Oil and Gas Facilities]. Key points include:

- All abandoned installations sited in less than 100 metres water depth and weighing less than 4,000 tons (excluding the deck and super structure) must be completely removed;
- The removal process should avoid significant adverse effects upon navigation or the marine environment;
- After January 1 2003, no installation can be placed on the Nigerian continental shelf or EEZ unless it is designed for complete removal;
- For inland waters (fresh or non-tidal) and nearshore areas (brackish and saline waters up to 5 km from the shoreline) pipelines must be either decontaminated, plugged and left *in situ* or removed. (N.B. there is no mention of requirements in relation to pipelines for offshore waters; 5 to 50 km from the shoreline).

EGASPIN requires a Decommissioning Plan Report to be submitted by the Operator, supported by an EIA, if no EIA was submitted prior to project implementation (see Part VIII of EGASPIN guidelines for details). EGASPIN makes no mention of offshore pipelines.

The requirements in EGASPIN are in line with those of UNCLOS III/IMO to which Nigeria is a signatory and are likely to be further reinforced once the Abidjan Convention Protocol on Environmental Standards for Offshore Oil and Gas Development (see Section 7.1.1) has been finalized.

Decommissioning activities (for facilities completely shut down or abandoned) must commence “at least one year after abandonment” and must be completed within six months (EGASPIN, 2002, part G, Section A, 2.1). EGASPIN does not specify any timescales in relation to the submission of the Decommissioning Plan Report.
The National Environmental Standards and Regulations Enforcement Agency (NESREA), established in 2007 [http://nesrea.gov.ng/about/index.php], is responsible for enforcing all environmental laws, guidelines, policies, standards and regulations and enforcing compliance with international protocols, conventions and treaties on the environment to which Nigeria is a signatory. However, Sections 7(k) and 8(s) of the NESREA act specifically excludes the oil industry from this act.

There are no statutory requirements for a licensee to make security payments in respect to future decommissioning costs, although this might be part of contractual requirements within the PSC.

Other regulations of note include:

- The Environmental Impact Assessment Act, 2004 which makes the conduct of an EIA mandatory prior to the development of any project or activity likely to have a significant effect on the environment. This includes oil and gas developments. The EIA should also include details of abandonment. The Ministry of Environment, Housing and Urban Development is responsible for evaluating and approving EIA reports;

- The dumping of decommissioned material is governed by the Harmful Waste (Special Criminal Provisions, etc.) Act 1988, Section 1(3) of which makes it a criminal offence to dump solid, semi-solid or liquid harmful waste into Nigerian territorial waters including the EEZ. Although, oil and gas structures are not actually mentioned, “harmful waste” is defined to include toxic or noxious substances e.g. radioactive substances, and such substances are to be found in deactivated installations (Adedayo, 2011).

### 7.5.4 Additional Information

To date no decommissioning of offshore facilities has taken place in Nigeria. Current structures present in waters offshore Nigeria include fixed steel platforms, gravity base platforms and FPSOs.
### 7.5.5 Summary

#### Table 7-4: Nigeria Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other</td>
<td>Remove if in &lt; 75 m water depth and weighing &lt; 4,000 tonnes (installations pre 1998); or</td>
<td>EGASPIN, 2002, follow similar guidelines to IMO.</td>
</tr>
<tr>
<td>facilities</td>
<td>Remove if in &lt; 100 m water depth and weighing &lt; 4,000 tonnes (installations post 1998).</td>
<td>Protocol under development (Abidjan Convention) likely to require adherence to international standards such as IMO.</td>
</tr>
<tr>
<td></td>
<td>Remainder assessed on a case by case basis.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Note: The Oil Pipelines Act, 2004 requires pipeline removal but appears to be applicable to onshore only.</td>
<td></td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td></td>
</tr>
<tr>
<td>Decommissioning Plan</td>
<td>Yes, but timescales for submission not specified.</td>
<td>The Petroleum (Drilling and Production) Regulations, 1969 (Nigeria) and EGASPIN, 2002.</td>
</tr>
<tr>
<td>needed</td>
<td>Note: Decommissioning must start &quot;at least one year after abandonment&quot; and be completed within six months.</td>
<td></td>
</tr>
</tbody>
</table>

### 7.6 Republic of Guinea

#### 7.6.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1975;
- Party to the Basel Convention;
- CITES (accession);
- CBD (ratified).

#### 7.6.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme for Western Africa, Abidjan Convention 1981 (ratified); and
- Bamako Convention (signatory, not ratified).
7.6.3 Principal Legislation

In order to encourage the exploration and exploitation of onshore and offshore oil resources the Republic of Guinea adopted a New Petroleum Code in 2014 [http://mines.gov.gn/assets/uploads/2016/03/Code-Petrolier.pdf, Code Pétrolier de la République de Guinée, Loi L/2014/34] which replaces the previous Petroleum Code 1986. It has also recently created a National Oil Office (Administration Pétrolière) which is part of the Ministry for Mines and Geology (Ministère des Mines et de la Géologie). The Petroleum Code (2014) applies to all contracts signed after the date of enactment of the code. It also states that previous leases will continue to be regulated by existing contracts but that Contractors cannot object to the application of the current code.

Specific Articles within the Petroleum Code of relevance to decommissioning are listed below:

- Article 31 requires a Field Development Plan to be submitted, which must include an EIA in line with Article 60. The Field Development Plan must include an outline programme for restoration once development is finished;

- Articles 43 and 44 cover the cessation of petroleum operations and the restoration phase. It requires all contractors to submit a restoration plan for approval by the Ministry, prior to cessation of production but no specific timescales are provided. Contractors are required to make an annual contribution to a restoration fund (which can be offset against production costs but are not tax deductible). Following restoration, the lease is returned to the State.

- Articles 59 to 61 cover environmental protection, they require Contractors to adhere to the Environment Code (Code de la Protection et de la Mise en Valeur de l’Environnement, Ordonnances No 045/PRG/87 et No 22/PRG/89, http://mines.gov.gn/docs/PDF/code-de-lenvironnement.pdf) and to put in place mitigation measures in line with international oil and gas industry standards. An EIA must be submitted for approval to support seismic work, exploration drilling, field development plans and site restoration plans.

The Petroleum Code does not make any specific requirements in relation to whether offshore facilities need to be removed following cessation of production. However, as a signatory to UNCLOS III/IMO and the Abidjan Convention, the Republic of Guinea is bound by these international and regional agreements.

The Environment Code referred to above is enforced by the Ministry of Natural Resources, Energy and Environment. Its key aims are to protect the environment whilst promoting the use of natural resources. Title 2 / Chapter III deals with maritime waters and their resources and Title 5 deals with EIA requirements for major projects.
7.6.4 Additional Information

Oil and gas development in the Republic of Guinea is in its infancy: to date 22 offshore blocks have been released for exploration but very limited exploration drilling has taken place, no platforms or other facilities have been installed and therefore no decommissioning has taken place.

7.6.5 Summary

Table 7-5: Republic of Guinea Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other</td>
<td>Remove if in &lt; 75 m water depth and weighing &lt; 4,000 tonnes (installations pre 1998); or</td>
<td>Protocol under development (Abidjan Convention) likely to require adherence to international standards such as IMO.</td>
</tr>
<tr>
<td>facilities</td>
<td>Remove if in &lt; 100 m water depth and weighing &lt; 4,000 tonnes (installations post 1998).</td>
<td>IMO/UNCLOS III</td>
</tr>
<tr>
<td></td>
<td>Remainder assessed on a case by case basis.</td>
<td></td>
</tr>
<tr>
<td>Pipelines</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Restoration Plan to be submitted with Field Development Plan and subject to EIA. Restoration Plan to be submitted prior to cessation of production but no actual timescales specified.</td>
<td>Petroleum Code (Guinea), 2014.</td>
</tr>
</tbody>
</table>

7.7 References

General web sites:


Regional Seas Programme:


Bamako Convention: [http://unep.org/delc/BamakoConvention](http://unep.org/delc/BamakoConvention) [accessed October 2016]
Angola


Equatorial Guinea


Republic of Guinea


Gabon


http://medias.legabon.net [accessed November 2016]


Nigeria


8. South Asian Seas

8.1 Regional Framework

The South Asian Seas (SAS) region includes the island nations of the Maldives and Sri Lanka and the Asian mainland nations of Bangladesh, India, and Pakistan.

The South Asian Seas Action Plan (SASAP) was adopted in March 1995, with the South Asia Cooperative Environment Programme (SACEP) acting as the Action Plan secretariat. The SASAP focuses on four activities:

- Integrated Coastal Zone Management (ICZM);
- Oil spill contingency planning (OSCP);
- Human resource development; and
- The environmental effects of land-based activities.

OSCP largely relates to the transport of oil across the Arabian Sea. Oil and gas exploration, development or decommissioning are not specifically mentioned.

8.2 India

8.2.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of the IMO since 1959;
- Signatory to the Basel Convention;
- CITES (ratified); and
- CBD (ratified).

8.2.2 Membership of Regional Programmes and Conventions


8.2.3 Principal Legislation

The Ministry of Petroleum and Natural Gas (MoPNG) is responsible for the exploration and production of oil and natural gas and is the over-arching body for central policy making. The Directorate General of Hydrocarbons (DGH) is the main regulatory agency responsible for the management of oil and gas reserves with regard to the environment, safety, technological and economic aspects. Other bodies, such as the Petroleum Conservation and Research Association, the Oil Industry Safety Directorate and the Ministry of Environment and Forests and Climate Change are involved in various aspects of the industry (Soni and Chatterjee, 2014).
The major acts governing the oil and gas industry in India are:

- The Petroleum Act, 1934;
- The Oilfields (Regulation and Development) Act, 1948;
- The Petroleum and Minerals Pipeline Act, 1962;
- The Oil Industry (Development) Act, 1974;
- The Petroleum and Natural Gas Regulatory Board Act, 2006;
- The Petroleum and Natural Gas Rules, 1959; and

The last two acts listed are of most relevance to decommissioning and are discussed further below.

The Petroleum and Natural Gas Rules, 1959, Section 22 states that on surrender of an oil and gas lease, the licensee or lessee should return the area of the lease in good order and condition.

The Petroleum and Natural Gas (Safety in Offshore Operations) Rules, 2008 state that the licensee, the lessee, or as the case may be, the operator, shall submit a decommissioning plan to the competent authority including a description of:

- Risk during and following a possible removal;
- Methods intended to be used in the event of a possible removal, including re-floating of the structure;
- Analyses planned to be carried out;
- Operations planned to be carried out in the event of a possible removal;
- Consequences of a possible removal in respect of adjacent fields and facilities;
- Other matters of importance; and
- Measures, if any, designed to secure the area against possible future pollution from abandoned wells or polluted deposits of cuttings.

Under the New Exploration and Licensing Policy (NELP), Production Sharing Contracts (MPSC) [MoPNG, 2009] are made between the contractor/operator and government, whereby the contractor bears all exploration risks, production and development costs in return for its share in any profit made from the production operations.

Under Article 14.9 of the MPSC, an operator is required to perform all necessary site restoration in accordance with modern oilfield and petroleum industry practices and to take all actions necessary to protect human life, property and the environment. The contractor is also required to prepare a proposal for the restoration of a development site, including an abandonment plan and requirement of funds for this and the annual contribution [Article 14.10]. Restoration activities
should render the site compatible with its intended ‘after-use’ (to the extent reasonable) and should include:

- Proper abandonment of wells (see VOLUME 2) or other facilities;
- Removal of equipment; structures and debris; and
- Other appropriate actions “in the circumstances”.

Under Article 14 of the MPSC, an operator must undertake an EIA to assess the impact of the proposed operations on the environment. Two studies are required to be undertaken before the start of operations:

- The first to determine the current state of the environment in the contract area and its adjoining regions prior to exploration and drilling; and
- A second EIA study should be completed prior to the commencement of development operations to determine the likely effect on the environment of the proposed operations. It should also establish the methods and measures proposed to minimise environmental damage and those to restore the site following cessation of operations (MoPNG, 2009; DGH, 2016a).

EIA guidelines for the offshore and onshore oil and gas industry in India (Ministry of Environment and Forests and Climate Change, 2010) indicate that an EIA should also be undertaken for the decommissioning phase and that planning for the decommissioning phase should be considered at the beginning of the development.

General guidance for the decommissioning of offshore facilities includes:

- Development of a full decommissioning and rehabilitation plan in consultation with local authorities;
- Provide instruction for proper use of any facilities handed over to the local authorities;
- Decommissioning of offshore structures is subject to international and national laws, and should be dealt with on a case by case basis;
- Removal of all debris from the seabed; and
- Record and monitor the site as required after appropriate decommissioning activities (Ministry of Environment and Forests and Climate Change, 2010).

A comprehensive Environmental Management Plan should be developed prior to initiating operations which will include an environmental and social impact assessment, the results of which are to be incorporated into all stages of the development, including decommissioning (DGH, 2016b).

In 2014, a Committee on Site Restoration for Petroleum Operations was constituted with a remit to oversee the development of such guidelines for the onshore and offshore petroleum industries which would provide ‘transparent policies for abandonment and decommissioning of petroleum operational activities’. A draft report has been submitted for review by the committee (DGH, 2016c).
Environmental Acts and legislation with relevance to the oil and gas industry (apply to all industrial activity in India, not specific to the oil and gas industry) include:
- The Environment (Protection) Act, 1988;
- Environmental (Protection) Rules, 1986;
- Hazardous Waste (Management and Handling) Rules, 1989; and

8.2.4 Additional Information

Most of India’s offshore oil reserves are located to the west of the country in the Arabian Sea. Substantial reserves are, however, also located offshore in the Bay of Bengal. The beginnings of the Indian oil and gas industry can be traced to the 1954 Industrial Policy Resolution when the Government announced that petroleum would be a core sector industry. Following the Resolution, the Government owned national oil companies – the Oil & Natural Gas Commission (ONGC) (now the Oil and Natural Gas Corporation), the Indian Oil Corporation (IOC) and Oil India Ltd, (OIL) were formed (Indian Mirror, 2016). About 51% of the country’s proven oil reserves are offshore (Make in India, 2016).

The largest oil field in India is the Mumbai High field, discovered in 1964 and located 160 km west of the Mumbai coast. Production at the field started in 1976 (Indian Mirror, 2016; Offshore Technology, 2016).

8.2.5 Summary

Table 8-1: India Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Removal or abandonment in accordance with generally accepted international standards and guidelines.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Removal or abandonment in accordance with generally accepted international standards and guidelines.</td>
<td></td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Yes, but no timescales specified.</td>
<td>The Oilfields (Regulation and Development) Act, 1948 and the Petroleum and Natural Gas (Safety in Offshore Operations) Rules, 2008. Required under a number of environmental acts.</td>
</tr>
</tbody>
</table>
8.3 References


9. East Asian Seas

9.1 Regional Framework

9.1.1 COBSEA

The East Asian Seas is one of UNEP’s Regional Seas’ programmes. It has 10 participating countries, including Indonesia (see Section 9.2), Malaysia (see Section 9.3), Thailand (see Section 9.4) and Australia (see Section 10.2). Neither Brunei (see Section 9.6) nor Myanmar (see Section 9.5) are part of the East Asian Seas programme but they have been included in this section as they are geographically part of this area and are members of the Association of Southeast Asian Nations (ASEAN).

The Action Plan for the Protection and Development of the Marine and Coastal areas of the East Asian Region was approved in 1983 and was initially sub-regional, involving only five ASEAN countries (Indonesia, Malaysia, Philippines, Singapore and Thailand) with five more joining in 1994 (Australia, Cambodia, People’s Republic of China, Republic of Korea and Vietnam). The Action Plan is steered from Bangkok by its coordinating body, COBSEA (Coordinating Body on the Seas of East Asia). There is no regional convention but instead the programme promotes compliance with existing environmental treaties and is based on member country goodwill. The action plan makes no specific reference to decommissioning.

9.1.2 ASCOPE

The ASEAN Council on Petroleum (ASCOPE) is the association of national oil companies in the ASEAN region. It was set up to support member countries increase their capabilities in all areas of the petroleum industry. Indonesia, Malaysia, Thailand, Myanmar and Brunei are all members of ASCOPE.

ASCOPE have developed decommissioning guidelines (ASCOPE, 2012) in order to provide a reference document on decommissioning. The guidelines are intended to compliment member countries’ own decommissioning procedures rather than replace them. However, most of the ASCOPE member countries do not have laws and regulations in place to manage the decommissioning process and in many cases production sharing agreements can effectively be considered as the main control on decommissioning requirements.

All of the countries covered in this section are members of the IMO and have ratified the UNCLOS 1982 treaty. The ASCOPE guidelines re-iterate the UNCLOS III/IMO requirements in relation to platforms. Pipelines are not covered by UNCLOS III/IMO and the ASCOPE guidelines assume that export pipelines will be left in place provided that there is no history of spanning or movement of the seabed, whereas for smaller infield pipelines the decommissioning option will be decided on a case by case basis. The guidelines recommend that drill cuttings piles are
where possible left undisturbed. The removal of jackets obstructed by drill cuttings should be evaluated on a case by case basis.

The decommissioning guidelines identify a number of key stages relating to decommissioning, notably:

- Annual review of cost estimation and decommissioning liability;
- Preparation and submission of a preliminary decommissioning study;
- Discussions with Government authority and submission of draft decommissioning study;
- Formal submission of Decommissioning Plan and approval process;
- Implementation of Decommissioning Programme;
- Management of post decommissioning liability.

It is up to each individual country to define in more detail how to implement these stages. The guidelines do provide the contents of a typical Decommissioning Plan (Appendix 1 of the ASCOPE guidelines) and require an EIA to support the Decommissioning Plan.

9.2 Brunei

9.2.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1984;
- Party to the Basel Convention;
- CITES (accession);
- CBD (accession).

9.2.2 Membership of Regional Programmes and Conventions

- Member of ASCOPE.

9.2.3 Principal Legislation

The principal legislation governing oil and gas in Brunei is:

- The Petroleum Mining Act [2002]; and
- The Petroleum (Pipe-Lines) Act [1984].

The Energy Upstream Business unit under the Energy and Industry Department, Prime Minister’s Office (EIDPMO), is responsible for monitoring, overseeing
and facilitating upstream activities that are carried out by oil and gas operating companies in Brunei Darussalam. The Safety, Health and Environmental National Authority (SHENA) is responsible for the development of the health and safety legal framework, especially for high risk activities in the oil and gas industry.

The Department of Environment, Parks and Recreation (JASTRe) under the Ministry of Development is responsible for matters relating to waste management, environmental conservation and management, and environmental cooperation at national, bilateral and international levels. The principle environmental acts are:

- The Environmental Protection and Management Order (EPMO) (2016) (currently under review); and

In 2002, the Pollution Control Guidelines for the Industrial Development in Brunei were adopted for the control of emissions, effluents and discharge from various development and construction activities. The EIA Guidelines for Brunei serve to guide project proponents to survey, predict and assess environmental impacts and study possible environmental protection measures relating to a number of prescribed activities which include petroleum. EIA, air pollution control, licensing and permitting, environmental audit, and emergency response oil and chemical spills all fall under EPMO.

Brunei has published guidelines for the decommissioning, abandonment and restoration (DAR) of the oil and gas industry assets in Brunei Darussalam (2009) [http://energy.gov.bn/Shared%20Documents/HSSE/Advice/DAR%20Guideline%20Sept%2009.pdf]. The guidelines were a result of a collaborative effort between the Government of Brunei and the Brunei Shell Company Sendirian Berhad. However, their current status is unclear and further draft guidelines were published in November 2016 which cover both onshore and offshore decommissioning. The information presented in the following sections is based on the 2016 draft guidelines, however, it should be noted that changes may occur following consultation.

The 2016 Guidelines cover offshore facilities or structures, including wells, pipelines jackets and topsides, subsea structures, subsea ancillaries, seabed debris, umbilical and cables. The guidelines are based on the use of CA of options. They provide a minimum set of requirements whilst at the same time recognising that a certain degree of flexibility is required and therefore options will need to be looked at on a case by case basis. The base case for offshore assets is that they are required to be made hazardous substance free, removed and the site returned to its original state. More specifically:

- Structures between the shoreline and 50 m water depth must be removed;
- Structures within 3 nm of a border with a neighbouring country must be removed;
• Structures in more than 50 water depth should be assessed on a case by case basis;
• Parts of an offshore installation that is located below the surface of the seabed or any concrete anchor-base associated with a floating installation that is not likely to result in interference with other users of the sea may be left in place, and require to be assessed on a case by case basis; and
• Floating installations are required to be re-used elsewhere where possible, otherwise they will need to be returned to shore for storage or dismantling.

The Guidelines list specific conditions for subsea pipelines, of which the key points are:
• Pipelines between the shore and 30 m water depth that contained hazardous substances must be removed;
• Pipelines in more than 30 m water depth may be removed, to be assessed on a case by case basis;
• Pipelines within, crossing or in the proximity of recognized shipping lanes, anchorage areas, declared sensitive coastal waters must be removed; and
• Pipelines within 3 nm of a border with a neighbouring country must be removed;

Where a pipeline is to remain in position or only be partly removed, provision for maintenance of the pipeline must be included.

The Decommissioning Guidelines reference Brunei’s national and international obligations and stress that all activities are expected to be undertaken in line with these.

The process to be followed is set out in Section 6 of the 2016 Guidelines and comprises the following key stages:
• Cessation of Production (COP) – consent required and engagement with the Petroleum Authority and SHENA;
• Preparation of preliminary stakeholder engagement plan, submitted to the Petroleum Authority and SHENA for consultation;
• On receipt of the consent for COP, submission the Decommissioning and Restoration (D&R) Submission which comprises the Decommissioning Programme, and applicable notifications (e.g. pipeline notification etc.);
• Assessment of D&R Submission within 3 months of submission;
• On acceptance of D&R Submission, preparation of the D&R Safety Case;
• Implementation of the activities “without delay”;
• Monitoring, maintenance and management of the decommissioned site as applicable; and
• Submission of a D&R close out report.
The Guidelines stress that discussions should start well ahead of COP, potentially two years or more for a large field with multiple facilities.

Drill cuttings piles are not specifically mentioned in the 2016 Guidelines but were covered in the 2009 Guidelines. D&R programmes are required to take account of the presence of any drill cuttings and on the basis of CA, consider whether any action should be taken. The volume, composition and dimensions of any cuttings present will need to be established and details included in the D&R programme. A history of the types of drilling fluids used during the life of the field should be provided. Disposal of drilling mud and cuttings are to be agreed by the Authority.

Converting offshore facilities to artificial reefs is an option, provided that the EPMO Regulations are complied with and that consultation is undertaken with the relevant government departments. In particular, the risk posed to navigation and other users of the sea needs to be considered and arrangements made to ensure that any obstructions to be left in place are suitably marked (Draft Decommissioning Guidelines, 2016).

Any residual liability arising from or in connection with D&R will remain with the operator/company in perpetuity, and the company/operator will remain responsible for complying with any conditions attached to the Authority’s approval of the D&R programme. This will not extend to any damages / liabilities arising out of acts or omissions from a third party, such as new owners, operators or licensees (excluding the Government).

9.2.4 Additional Information

Oil and gas has been a mainstay of Brunei’s economy for over 85 years. Offshore exploration began in the 1960s and the South West Mapa field was discovered in 1963. The most prolific offshore field is Champion in 30 metres of water. It holds 40% of the country’s known reserves and produces around 100,000 barrels per day (Shell Brunei, 2016).
### 9.2.5 Summary

**Table 9-1: Brunei Summary Decommissioning Requirements**

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Removal of all structures in less than 50 m water depth or within 3 nm of the border with another country. Remainder assessed on a case by case basis.</td>
<td>Draft guidelines: Brunei Darussalam decommissioning and restoration of onshore and offshore facilities (2016).</td>
</tr>
<tr>
<td>Pipelines</td>
<td>Removal of all pipelines in less than 30 m water depth, or within 3 nm of the border with another country, or in shipping lanes or sensitive coastal areas. All other pipelines assessed on a case by case basis.</td>
<td>Draft guidelines: Brunei Darussalam decommissioning and restoration of onshore and offshore facilities (2016).</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>Potential disturbance of cuttings to be assessed on a case-by-case basis.</td>
<td>Guidelines for the decommissioning, abandonment and restoration (DAR) of the oil and gas industry assets in Brunei Darussalam (2009).</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Preliminary discussions on D&amp;R to start at least 2 years prior to any activity taking place. Preliminary stakeholder engagement plan D&amp;R Submission (Decommissioning Plan and applicable notifications) D&amp;R Safety Case D&amp;R Close out report</td>
<td>Draft guidelines: Brunei Darussalam decommissioning and restoration of onshore and offshore facilities (2016).</td>
</tr>
</tbody>
</table>

*Note: 2016 Guidelines are still in draft form and may change following consultation.*
9.3 Indonesia

9.3.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1961;
- Party to the Basel Convention;
- CITES (accession);
- CBD (ratified).

9.3.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme – East Asian Seas (no regional convention); and
- Member of ASCOPE.

9.3.3 Principal Legislation

Law No. 22 of 2001 on Oil and Gas is the overarching legislation for the petroleum industry in Indonesia. This legislation is in the process of being updated, and is expected to be passed in 2016 (http://www.mondaq.com/article.asp?article_id=414574&signup=true).

The agency in charge of regulation of the oil and gas industry has changed over the years:

- From the 1960s to 2001, Pertamina, the main Indonesian state-owned oil and gas company acted as both an oil company and the main regulator;
- From 2001 to 2012, Pertamina’s regulatory functions were moved to an independent oil and gas regulatory agency, BPMIGAS (Badan Pelaksana Minyak dan Gas Bumi, or the Upstream Oil and Gas Regulatory Agency);
- From 2012 to current day, BPMIGAS was replaced by SKKMIGAS (Satuan Kerja Khusus Pelaksana Kegiatan Usaha Hulu Minyak dan Gas Bumi, or the Special Unit of the Upstream Oil and Gas Regulatory Agency), which sits directly under the energy minister. This was set up as a temporary regulatory entity pending a new oil and gas law; and
- Once the new draft oil and gas law is enacted there will be a new “upstream cooperation supervisor”, (Bada Usaha Milik Negara Pelaksana Kerja Sama Hulu or BUMN-K). This state-owned enterprise will take on functions currently assumed by SKKMIGAS.
Under the new draft law, BUMN-K will enter into cooperation contracts with private oil and gas companies. The minimum contents of the cooperation contracts are prescribed by the new draft law, but there is no mention of cost recovery mechanisms. Licences will be issued for a maximum of 50 years, after which the licences must be transferred to Pertamina.

Reference was found to the Ministry of Energy and Mineral Resources Regulation No. 1 (2011) Technical Guidance of Decommissioning of Oil and Gas Offshore Facilities, and in particular to Article 4 – stating that off shore decommissioning must be done using technology based on Indonesian National Standards or regional standards or international standards and technical best practice, which must comply with all health, environment and safety aspects. The Ministry website http://jdih.esdm.go.id/?page=home has links to regulations (in Indonesian).

Given the current lack of clarity with respect to Indonesian decommissioning regulations it is assumed that decommissioning would follow the ASCOPE guidelines, which effectively advocate use of the UNCLOS III/IMO guidelines, to which Indonesia is a signatory.

9.3.4 Additional Information

There are over 500 platforms offshore of Indonesia, of which approximately 25% were installed in the 1970s and 30% in the 1980s, resulting in a significant proportion of aging facilities. However, little decommissioning has taken place to date. Many production contracts signed 20 to 30 years ago do not state how, or when, decommissioning should happen [http://www.offshore-technology.com/features/featuredecommissioning-indonesias-oil-rigs-a-vast-but-challenging-market-4470226/2015].
### 9.3.5 Summary

**Table 9-2: Indonesia Summary Decommissioning Requirements**

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other</td>
<td>Remove if in &lt; 75 m water depth and weighing &lt; 4,000 tonnes (installations pre 1998); or Remove if in &lt; 100 m water depth and weighing &lt; 4,000 tonnes (installations post 1998). Remainder assessed on a case by case basis.</td>
<td>IMO/UNCLOS III and ASCOPE guidelines, 2012.</td>
</tr>
<tr>
<td>facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pipelines</td>
<td>Recommend main export pipelines left <em>in situ</em>, smaller infield pipelines assessed on a case by case basis.</td>
<td>No legislation but covered by ASCOPE guidelines, 2012.</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>Where possible leave undisturbed. Case by case where jacket obstructed by drill cuttings is being removed.</td>
<td>No legislation but covered by ASCOPE guidelines, 2012.</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Recommend submission of draft then full Decommissioning Plan.</td>
<td>No legislation but covered by ASCOPE guidelines, 2012.</td>
</tr>
</tbody>
</table>

### 9.4 Malaysia

#### 9.4.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III [ratified];
- Member of IMO since 1971;
- Party to the Basel Convention;
- CITES [accession];
- CBD [ratified].

#### 9.4.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme – East Asian Seas [no regional convention]; and
- Member of ASCOPE.
9.4.3 Principal Legislation

The national Malaysian oil company, Petroleum Nasional Berhad (PETRONAS), was set up in 1974 ([http://www.petronas.com.my](http://www.petronas.com.my)), and has ownership of all oil and gas offshore and onshore in Malaysia. The key law relating to oil and gas activities in Malaysia is the Petroleum Development Act 1974. All exploration, development and production of oil and gas is regulated by PETRONAS through product sharing agreements or risk service contracts.

The Guidelines for Decommissioning of Upstream Installations which form part (Section 10 of Volume 7) of PETRONAS’s Procedures and Guidelines for Upstream Activities, [2014, Version 3.0] provide details of the Malaysian decommissioning philosophy and decommissioning process.

The decommissioning philosophy [Section 10 of the Guidelines] states that:

- Decommissioning should be consistent with local/national laws and international standards;
- Removal should be evaluated on a case by case basis taking into account safety, preservation of the environment and other users of the sea; and
- It is envisaged that consultation with interested parties will be required and is likely to include (but not limited to) the Department of the Environment, the Federal Marine Department, the Maritime Enforcement Co-ordination Centre, the Department of Fisheries and the Department of Safety and Occupational Health.

Contractors need to provide a decommissioning plan for approval, which should include details of the schedule, methods/options and costs. The plan must be submitted to PETRONAS for approval at least 12 months prior to decommissioning activities [suggested table of contents in Appendix 8.2 of the Guidelines]. An Environmental Management Plan (EMP) and comparative risk assessment must be submitted to PETRONAS six months prior to decommissioning. At least one month prior to decommissioning, a Project Execution Plan must be submitted to PETRONAS [suggested table of contents given in Appendix 8.3 of the Guidelines]. Within three months of completion of the decommissioning work a Post Environmental Assessment must be carried out.

The Guidelines discuss the option of artificial reefs, providing water depth is great enough to allow sufficient clearance for navigation [55 m]. Pipelines may be left in situ, but flushed and cleaned, filled with seawater, cut and plugged with the ends buried below the mudline.
The Government of Malaysia has not published any specific decommissioning regulations for the oil and gas industry but there are a number of provisions in other Acts which can be used in relation to decommissioning:

- The Merchant Shipping Ordinance, 1952, Section 485A – relates to safety of offshore structures;
- The Continental Shelf Act, 1966, Section 16.6 – requires the removal of installations constructed in on or above the continental shelf which have become abandoned or disused;
- The Exclusive Economic Zone Act, 1984, Section 21 – prohibits the construction of artificial islands, installations or structures in the EEZ or on the continental shelf without authorization of the Government. Section 23 requires the owner of pipelines or cables that are disused to inform the Government and remove them if required; and
- The Environmental Quality Act, 1974 – Section 27 prohibits discharge of oil into Malaysian waters and Section 29 prohibits discharge of wastes into Malaysian waters.

Pending the implementation of a National Policy on Restoration of Oil & Gas Fields, any residual liability for disused upstream structures will be decided by PETRONAS in consultation with the relevant government authorities.

9.4.4 Additional Information

Malaysia is the second largest oil producer in Southeast Asia behind Indonesia and one of the world’s largest exporters of liquefied natural gas. Decommissioning in the country is still in its infancy and to date the handful of decommissioning projects undertaken have largely employed re-use or artificial reefing techniques, for example the reefing of the Baram 8 jacket platform off the coast of Sarawak in 2004, and the Seaventures Dive Resort, a decommissioned jack up oil rig converted into a diver’s “offshore-hotel” off the coast of Sabah. [http://www.mssa.org.my/site/index.php?option=com_content&view=article&id=169]
9.4.5 Summary

Table 9-3: Malaysia Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>facilities</td>
<td>Artificial reefs can be considered but minimum of 55 m clearance is required.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>cuttings is being removed.</td>
<td></td>
</tr>
<tr>
<td>Decommissioning</td>
<td>Yes, Decommissioning Plan at least 12 months prior to decommissioning.EMP at least</td>
<td>Guidelines for Decommissioning of Upstream Installations, 2014.</td>
</tr>
<tr>
<td>Plan needed</td>
<td>6 months prior to decommissioning. Project Execution Plan at least 1 month prior to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>decommissioning.</td>
<td></td>
</tr>
</tbody>
</table>

9.5 Myanmar

9.5.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1951;
- Party to the Basel Convention;
- CITES (accession);
- CBD (ratified).

9.5.2 Membership of Regional Programmes and Conventions

- Member of ASCOPE.

9.5.3 Principal Legislation

To date Myanmar has no decommissioning laws and regulations, however, there are some legal instruments in documents related to Production Sharing Contracts (PSC) (MOGE, 2012).
The principle legislation governing oil and gas in Myanmar includes:

- The Oilfields Act 1918;
- The Oilfields Rules 1936;
- The Petroleum Act 1934;
- The Petroleum Rules 1937;
- The Essential Supplies and Services Law 2012;
- The Oilfields (Labour and Welfare) Act 1951;
- The Petroleum Resources (Development Regulation) Act 1957;
- The Law Amending the Petroleum Resources (Development Regulation) Act 1969; and

The Ministry of Energy (MOE) is the coordinating body for all types of energy in Myanmar. It has oversight of four state-owned enterprises/departments which includes the Myanmar Oil and Gas Enterprise (MOGE). Under the State-Owned Economic Enterprises Law, MOGE is assigned responsibility for the upstream oil and gas sector by engaging in PSCs with private companies. PSCs are granted by the Myanmar Investment Commission (MIC) through the Foreign Investment Law, Foreign Investment Rules and MIC Notification 26/2016. PSCs also need to be reviewed and approved by a number of other government entities including MOGE, the Ministry of National Planning and Economic Development (MNPED), the Contract Department of the Attorney General’s Office, the Ministry of Finance and the Ministry of Environmental Conservation and Forestry (Myanmar Legal Services, 2016; Norton Rose Fulbright, 2016).

Until 2012, there was no specific law protecting the environment in Myanmar, although the Constitution of the Republic of the Union of Myanmar (2008) contains provisions guaranteeing the conservation of natural resources and the prevention of environmental degradation [http://www.burmalibrary.org/docs5/Myanmar_Constitution-2008-en.pdf]. Environmental protection generally falls under the aegis of the National Commission for Environmental Affairs (NCEA) which formulates the government’s environmental policy and sets environmental standards, however, significant budget and resource constraints have limited the ability of the NCEA to serve its stated purposes (Chandler, Kyi and Sein, 2016).

The EIA guidelines (Annex A) list the type of economic activity for which an EIA should be carried out, this includes:

- All sizes of project for offshore oil and gas production;
- Drilling and production activities;
- Offshore pipeline operations;
- Offshore transportation;
- Compressor stations and storage facilities;
- Ancillary support operations; and
- Decommissioning

The proponent of the project or activity must prepare, obtain approval for, and implement an appropriate Environmental Management Plan (EMP) in respect of the proposed project or activity.

Current PSCs indicate that an EIA must be completed within the first six months of the signing of a PSC and there is a requirement for EIAs at further stages in the project cycle (Myanmar Centre for Responsible Business, 2014).

To guide decommissioning activities, the current policy of MOGE is to reference the ASCOPE Decommissioning Guidelines for Oil and Gas Facilities (2015).

[http://www.ascope.org/Projects/Detail/1061](http://www.ascope.org/Projects/Detail/1061)

### 9.5.4 Additional Information

Myanmar has a long history of oil and gas exploration and production dating back to 1854, however, production from offshore oil and gas fields is relatively recent, starting in 1998 and no offshore decommissioning has taken place to date. The end of life for these developments is not anticipated until 2028 and therefore the first decommissioning projects may not be for another 12 years, assuming that there is no field life extension, (MOGE, 2012). There are currently four offshore gas projects in the waters of Myanmar: Yadana (1998); Yetagun (2000); Daewoo (2013); and Zawtika (2014).
9.5.5 Summary

Table 9-4: Myanmar Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Remove if in &lt; 75 m water depth and weighing &lt; 4,000 tonnes (installations pre 1998); or Remove if in &lt; 100 m water depth and weighing &lt; 4,000 tonnes (installations post 1998). Remainder assessed on a case by case basis.</td>
<td>UNCLOS III/IMO and ASCOPE guidelines, 2012.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>Recommend main export pipelines left <em>in situ</em>, smaller infield pipelines assessed on a case by case basis.</td>
<td>No legislation but covered by ASCOPE guidelines, 2012.</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>Where possible leave undisturbed. Case by case where jacket obstructed by drill cuttings is being removed.</td>
<td>No legislation but covered by ASCOPE guidelines, 2012.</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Recommend submission of draft then full Decommissioning Plan.</td>
<td>No legislation but covered by ASCOPE guidelines, 2012.</td>
</tr>
</tbody>
</table>

9.6 Thailand

9.6.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1973;
- Party to the Basel Convention;
- CITES (ratified);
- CBD (ratified).

9.6.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme – East Asian Seas (no regional convention); and
- Member of ASCOPE.

9.6.3 Principal Legislation

The Department of Mineral Fuels (DMF) of the Ministry of Energy is the sole Government Agency overseeing the upstream petroleum industries of Thailand. It should be noted that much of the legislation, including tax deductibility, has not yet been finalized.
The major legislation governing oil and gas in Thailand includes:

- Petroleum Act B.E. 2514, 1971 regulates the conduct of petroleum operations anywhere in Thailand including the areas of the continental shelf over which Thailand has jurisdiction; [http://law.dmf.go.th/detail2.php?lan=en&itm_no=I384142581](http://law.dmf.go.th/detail2.php?lan=en&itm_no=I384142581);

- Petroleum Income Tax Act B.E. 2514, 1971, which sets out the rules and regulations regarding the direct tax levied on the profit made from oil and gas exploration and production activities, [http://law.dmf.go.th/detail2.php?lan=en&itm_no=I286703210](http://law.dmf.go.th/detail2.php?lan=en&itm_no=I286703210);

- Thailand – Malaysia Joint Authority Act B.E. 2533, 1990 which sets out the regulations for oil and gas exploration and production activities in the Thailand / Malaysia Joint Development Area, [http://law.dmf.go.th/detail2.php?lan=en&itm_no=I793729908](http://law.dmf.go.th/detail2.php?lan=en&itm_no=I793729908); and

- Act on Offences Relating to Offshore Petroleum Production Places B.E. 2530, 1987 which regulates the notification of offshore safety zones and any offence committed within the safety zone or petroleum production place (e.g. temporary or permanent installation), [http://law.dmf.go.th/detail2.php?lan=en&itm_no=I649072070](http://law.dmf.go.th/detail2.php?lan=en&itm_no=I649072070).

The Ministry of Natural Resources and Environment is responsible for the protection, conservation and sustainable development of Thailand’s natural resources. Under the National Environmental Quality Act (NEQA) (1992), the Minister of Natural Resources and Environment with the approval of the National Environment Board (NEB) has the power to notify the categories and magnitude of projects or activities that are required to submit an EIA report to the Office of Natural Resources and Environmental Policy & Planning, and the Expert Review Committee for consideration and approval before an activity can take place (Office of Natural Resources and Environmental Policy and Planning, 2012).

The Petroleum Act (No. 6) B.E. 2550 (2007) brought in amendments, including Section 80/1 and 80/2 which specifically impose decommissioning obligations and the placement of financial security obligations on concessionaires, these are:

- Under Section 80/1, concessionaires are required to submit a decommissioning programme together with its estimated decommissioning costs for the approval of the Director General before decommissioning begins; and

- Section 80/2 further requires concessionaires to place security to ensure that their decommissioning obligations are observed under the approved program.

Sections 80/1 and 80/2 do not provide specific detailed decommissioning requirements such as rules, procedures, conditions, schedules and financial securities. These are set out in the Ministerial Regulation Prescribing Plan and
The decommissioning regulations require the concessionaire to submit a Decommissioning Plan (divided into an initial Decommissioning Programme and a Final Decommissioning Programme), an Estimate of Decommissioning Costs, a Decommissioning Environmental Assessment Report and a Best Environmental Option Report to the Director General within prescribed timelines. The decommissioning process can be triggered by any one of the following:

- When the concessionaire does not use the installations continuously for more than one year;
- When petroleum reserves of the concession are less than 40% of the sum of the accumulated petroleum production and reserves;
- When the remaining time for petroleum production as specified in the concession is five years; or
- If the concessionaire wishes to voluntarily commence decommissioning activities.

The two Decommissioning Programmes must be audited by authorized third parties and the Director General has the authority to accept the Decommissioning Plans or to request clarifications and/or amendments if the reports are not in compliance with the prescribed rules. The concessionaire is also obliged to make a security deposit to the Director General for an amount which must not be less than the Estimated Decommissioning Cost (Beckstead, 2016).

In May 2006, the DMF set up a Decommissioning Guidelines Project to develop guidelines to help provide a consistent approach to decommissioning upstream oil and gas infrastructure in Thailand. The draft guidelines cover four general categories: technical feasibility; environmental management; legal considerations and financial management. Published in 2009, they are available from http://thaidecom.ptit.org/.

The environmental principles of the guidelines are intended to follow globally accepted environmental concepts from international environmental law and conventions, including: The Rio Declaration, Agenda 21 and the CBD (see Section 2.8). From these, the following principles have been defined:

A precautionary approach:

- Discharges posing a potential risk to the environment should be regulated;
- Where there is uncertainty regarding potential impacts on marine mammals or protected species, supplementary studies should be undertaken to observe the impacted areas and additional measures implemented to prevent or minimise such impacts; and
• In the event of uncertainty when considering the decommissioning option for contaminated pipelines, the environmental assessment should assume the worst-case scenario and choose the best practical option.

Environmentally responsible business practice:
• Operators are to be self-regulating regarding health, safety and environment and use the same standards for all locations;
• Operators to work with contractors to guarantee environmentally sound practices;
• Operators to facilitate the transfer of pipeline decontamination technology; and
• Operators to maintain transparent communication channels with stakeholders.

Use of environmentally friendly technologies to minimise impacts, applied to:
• Cutting technologies;
• Pipeline decontamination technology;
• Waste storage, treatment and disposal; and
• Consideration of energy consumption and emissions when assessing the best available decommissioning options.

In addition, BAT should be used to ensure that discharges, emissions and waste are minimized.

Polluter-pays principle:
• For an oil spill or pollution from any other source in violation of the accepted standards, fines should be used to implement the principle; and
• In case of mortality to marine mammals and/or protected species, the concessionaire will be held responsible and subjected to penalties stated in the relevant laws.

There are currently no specific requirements for EIAs for decommissioning of oil and gas installations, however, the guidelines recommend that an environmental assessment is required to manage the decommissioning process. The EIA policies under NEQA (see earlier) do not by themselves address the cumulative impacts, alternatives and mitigation measures required for decommissioning, therefore the guidelines require the use of a Decommissioning Environmental Assessment (DEA), integrated into the final decommissioning programme.
The DEA has two stages:

- The Regional Decommissioning Environmental Assessment (RDEA); and
- A project development stage consisting of Best Practical Environmental Option (BPEO) and Decommissioning Environmental Management Plan (DEMP).

The RDEA provides a common basis for the preparation of the DEMP and assesses cumulative impacts and their significance. The worst-case scenario is used and public participation is required to review the scoping and early draft stages.

Based on the results of the RDEA, the DEMP focusses on the selected decommissioning option. It is used as a tool for improved environmental design and management.

Compliance with the conditions of the RDEA and proposed management plans in the DEMP should be verified and audited.

Under Sections 80/1 and 80/2 of the Petroleum Act, four groups are jointly responsible for complying with decommissioning requirements:

- Concessionaires;
- Co-venturers;
- Associated assignors and assignees; and
- Third-party assignees.

The triggers for commencing decommissioning as set out in the Decommissioning Regulations are also discussed in detail in the Decommissioning Guidelines.

The approval process for a Decommissioning Plan includes:

- Approval of the initial Decommissioning Programme;
- Approval of the final Decommissioning Programme. The Concessionaire must demonstrate that he has, or can obtain the necessary permits and consents to undertake the decommissioning activities. Once approved, the decommissioning activities can start. This may be earlier than the anticipated start date, as long as the Director General is notified. The concessionaire is responsible for dismantling, removing, leaving in place or transferring ownership of the installations under the approved plan;
- Approval of extension to the decommissioning period;
- Approval of closeout report of decommissioning activities; and
- Approval of closeout report of post-decommissioning monitoring activities.
Under a concession agreement, designated installations may be transferred to the government without remuneration. In this case, the Director General must inform the concessionaire at least three years ahead of the expiry of the concession period to specify which installations are to be transferred. The concessionaire must then submit the following reports and permits to the relevant government agencies:

- Environmental baseline;
- Facility condition report; and
- Anticipated decommissioning costs.

Where an installation is used by more than one concessionaire, then an agreement should be reached to transfer the ownership of the installation.

The options for decommissioning activities relating to this report and covered by the decommissioning guidelines are:

**Seabed deposits:**

Drill cuttings piles may be left *in situ* (undisturbed) or removed for onshore disposal. The concessionaire must evaluate the physical, chemical and biological state of the cuttings and their potential impact on the environment before determining the most suitable management options through BPEO. If the cuttings are to be left *in situ*, an appropriate monitoring programme will need to be approved.

**Pipelines and associated structures:**

Alternatives for pipeline decommissioning include leaving them *in situ*, removal and re-use. The preferred option should be decided through BPEO and approved by the designated authority. If they are contaminated with heavy metals and are to be left *in situ* or re-used, decontamination will be necessary. Associated structures that protrude from the seafloor and that pose a hazard to fishing, navigation or other users of the sea must be removed and disposed of onshore. They will need to be cleaned for safe transportation.
Structures and facilities:

Topsides must be cleaned and decontaminated to an acceptable level prior to their removal for re-use, recycling and/or disposal.

The alternatives for substructure decommissioning are to re-use, dispose of, or implement Rigs-to-Reef [see Additional Information]. To remove substructures, piles and jacket legs they must be cut by means of an appropriate cutting method which together with depth, must be considered on a case-by-case basis. The cutting depth required is based upon the potential impact to other sea users. Potential disturbance to seabed deposits may also be an issue. BPEO must be applied to select the preferred option.

Following decommissioning, the concessionaire, co-venturers, associated assignors and assignees, and third-party assignees are released from their decommissioning liabilities under Section 80/1 of the Petroleum Act. However, residual liabilities will remain with these four groups, if it can be proved that decommissioning activities have caused damage to the environment, people or other parties.

9.6.4 Additional Information

Thailand has a well-established oil and gas sector dating back to its extensive exploration in the 1970s and commercial discoveries made in the 1980s. The Exploration and Production Public Company Limited (PTTEP) is the national oil company of Thailand (established in 1985) and dominates upstream oil and gas activities (Australian Trade and Investment Commission, 2016). About 80% of the country’s crude oil production comes from offshore fields in the Gulf of Thailand, with the largest field being Chevron’s Benjamas located in the Pattani Trough (World Energy Council, 2016). There are currently over 300 platforms in the Gulf of Thailand and estimates suggest a total of 400 – 500 by 2030 (DMF, 2012).

A Rigs-to-Reef project is currently being undertaken to determine the requirements for successful acceptance and implementation of this option for future decommissioning. Further information is available from:

### Summary

#### Table 9-5: Thailand Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Re-use, removal or recycling on a case-by-case basis. Rigs-to-reef may also be considered. BPEO must be applied to select the preferred option.</td>
<td>The Petroleum Act (No. 6) B.E. 2550, 2007, Section 80/1 and 80/2. Ministerial Regulation Prescribing Plan and Estimated Cost and Security for Decommissioning of Installations Used in the Petroleum Industry B.E. 2559, 2016.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>Leave in situ, removal or re-use. If left in situ or re-used, they must be decontaminated. BPEO must be applied to select the preferred option. Associated structures that protrude from the seafloor must be removed and disposed of onshore.</td>
<td>The Petroleum Act (No. 6) B.E. 2550, 2007, Section 80/1 and 80/2. Ministerial Regulation Prescribing Plan and Estimated Cost and Security for Decommissioning of Installations Used in the Petroleum Industry B.E. 2559, 2016.</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>Leave in situ (undisturbed) or removal and disposal onshore. The most suitable option for management must be determined through BPEO. If left in situ, an appropriate monitoring programme must be determined.</td>
<td>The Petroleum Act (No. 6) B.E. 2550, 2007, Section 80/1 and 80/2. Ministerial Regulation Prescribing Plan and Estimated Cost and Security for Decommissioning of Installations Used in the Petroleum Industry B.E. 2559, 2016.</td>
</tr>
</tbody>
</table>
References


Brunei


Indonesia


Malaysia


Myanmar


Thailand


Thailand – Malaysia Joint Authority Act B.E. 2533, 1990 [http://law.dmf.go.th/detail2.php?lan=en&itm_no=I793729908]; and


World Energy Council (2016). Oil in Thailand. Available at: [https://www.worldenergy.org/data/resources/country/thailand/oil/] [accessed December 2016]
10. Pacific

10.1 Regional Framework

10.1.1 Nouméa Convention

The Pacific is one of the Regional Seas Programmes and covers 25 island states and territories in the Pacific, including Australia and New Zealand. Australia is also a participating country in the East Asian Seas Programme (see Section 9.1).

The Secretariat of the Pacific Regional Environment Programme (SPREP) is the primary regional organization concerned with environmental management and sustainable development in the Pacific and serves as the Secretariat for three Conventions:

- The 1976 Convention on the Conservation of Nature in the South Pacific [the Apia Convention], came into force in 1990. Its operation was suspended in 2006;
- The 1986 Convention for the Protection of the Natural Resources and Environment of the South Pacific region [the Nouméa Convention] entered into force in 1990; and
- The 1995 Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region [the Waigani Convention, see Section 10.1.2] entered into force in 2001.

In the context of decommissioning the Nouméa Convention, Protocol for the Prevention of pollution of the South Pacific Region by dumping, is the most relevant, [http://www.sprep.org/attachments/NoumeConventintextATS.pdf].

Within this protocol dumping is defined as:

- any deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea;
- any deliberate disposal at sea of vessels, aircraft, platforms or other man-made structures at sea;”

Article 8 covers pollution from seabed activities and this includes exploration and exploitation of the seabed and its subsoil.

Article 10 covers disposal of wastes and states that parties “shall take all appropriate measures to prevent, reduce and control pollution in the Convention Area caused by dumping from vessels, aircraft, or man-made structures at sea, including the effective application of the relevant internationally recognised rules and procedures relating to the control of dumping of wastes and other matter.”
10.1.2 Waigani Convention

The Waigani Convention (2001) [https://sprep.org/legal/waigani-convention] controls the movement of hazardous and radioactive waste in the South Pacific Region and is modelled on the Basel Convention. The objective of the Convention is to reduce and eliminate transboundary movements of hazardous and radioactive waste, to minimize the production of hazardous and toxic wastes in the Pacific region and to ensure that disposal of wastes in the Convention area is completed in an environmentally sound manner. The Waigani Convention is modelled on the Basel Convention and constitutes the regional implementation of the international hazardous waste control regime. There are however some differences between the two conventions: the Waigani Convention also covers radioactive wastes and extends to the EEZ (200 nautical miles) rather than the territorial sea (12 nautical miles) under Basel.

10.2 Australia

10.2.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1952;
- Party to the London Convention 1972 and to the London Protocol 1996;
- Signatory to Basel Convention (ratified);
- CITES (ratified); and
- CBD (ratified).

10.2.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme – Pacific Region (Nouméa Convention, 1990) and East Asian Seas (no regional convention);

10.2.3 National Framework

Australia has a federal system of government with powers divided between the central government and eight individual state and territory governments. Offshore petroleum operations beyond designated state and territory coastal waters are governed by the Commonwealth Offshore Petroleum and Greenhouse Gas Storage Act 2006 (as amended) (OPGGSA) and related Acts and Regulations [see Section 10.2.4]. Within this legal framework, Australian Government entities administer the regulatory regime together with State and Northern Territory Government’s involvement through Joint Authority arrangements.
The Joint Authority makes the major decisions under the OPGGSA regarding petroleum titles, resource management and resource security. There is a Joint Authority for the offshore area of each state, the Northern Territory, the external territories and a designated authority for the Joint Petroleum Development Area and the Greater Sunrise gas and condensate fields in the Timor Sea.

Two additional Australian Government bodies also perform regulatory functions under OPGGSA. These are the National Offshore Petroleum Titles Administrator (NOPTA) and the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

Ultimate responsibility for Australia’s offshore areas (beyond three nautical miles from the territorial sea baseline) rests with the Australian Government (Department of Industry, Innovation and Science, 2016).

10.2.4 Principal Legislation

The principal Act which governs offshore oil and gas activities beyond the designated state and territory coastal waters is the OPGGSA which contains a broad requirement for title holders to operate in accordance with ‘good oil field practice’ and the principles of ecologically sustainable development. It establishes objective-based regulation for petroleum activities so that environmental impacts and risks of the activity will be reduced to as low as reasonably practicable and environmental impacts and risks of the activity will be of an acceptable level, [https://www.nopsema.gov.au/legislation-and-regulations/environment].


Specific environmental provisions require operators to control and prevent the escape of wastes and petroleum. Activities must also be carried out in a manner that does not interfere with other rights, including the conservation of the sea and seabed.


Other regulations under the OPGGSA include:

Australia's national environmental law, the Environment Protection and Biodiversity Conservation Act, 1999 (EPBC Act), also plays a key role in the regulation of offshore activities; protecting those aspects of the environment considered to be of National Environmental Significance (NES). Offshore petroleum activities which are likely to significantly impact NES matters require assessment under the EPBC Act and approval by the Federal Environment Minister. NOPSEMA became the sole designated assessor of petroleum and greenhouse gas activities in Commonwealth waters in accordance with the Minister for the Environment’s endorsement of NOPSEMA’s environmental authorization process under Part 10, section 146 of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).


Under the OPGGS (Environment) Regulations, an oil and gas title holder must have an accepted Offshore Project Proposal (OPP) in place prior to the submission of an Environmental Plan (EP) for activities that are undertaken for the recovery of petroleum, and conveyance of the recovered petroleum by pipeline. This is not required if the offshore project has already received an equivalent decision approval under the EPBC Act, or where a new stage of an activity is proposed. A decommissioning activity would not represent an offshore project on its own, but the decommissioning phase of an offshore development should be considered within the OPP (for fields that submitted an OPP). This would include a description of the actions proposed to be carried out at the completion of the project to decommission the development [NOPSEMA, 2014]. A preliminary decommissioning plan may also have been addressed in the Field Development Plan accepted by the Joint Authority [on advice from NOPTA]. Prior to decommissioning taking place, an EP would be required. There is currently no prescribed process or mechanism that dictates when to begin the decommissioning phase or how this should be undertaken. Titleholders can negotiate with the Joint Authority as to when decommissioning can commence and with NOPSEMA to obtain safety and environment approvals (Goodwin et al., 2016).

The OPGGSA provides that a title holder must remove “all structures that are, and all equipment and other property...” used in connection with offshore petroleum options. Although this appears to mandate a complete removal of all equipment, other provisions of the OPGGSA allow the possibility of partial removal or abandonment in situ. The titleholder may make alternative arrangements for the treatment of equipment in an EP, as long as the impacts and risks are deemed acceptable and As Low As Reasonably Practicable (ALARP). This approach allows the titleholder to demonstrate that total removal may not be the best option based on safety, cost and environmental risk factors (Goodwin et al., 2016).
For states that have conferred powers to NOPSEMA, NOPSEMA administers regulations under the OPGGSA for health and safety, well integrity and environmental management for all offshore petroleum operations including decommissioning, in so-called Commonwealth waters (areas beyond state and territory waters) and in coastal state waters. States that have not conferred power to NOPSEMA regulate state waters and Environment Plans under the mirrored state legislation. NOPSEMA has the power to give directions to current and former titleholders to remove all property, plug all wells, provide for the conservation and protection of natural resources in the title area and rectify any damage to the seabed.

The plans required for decommissioning include the following (NOPSEMA, 2016):

**Environment Plan (OPGGS Environment Regulations)**

For decommissioning to commence, a company must submit an EP for decommissioning to NOPSEMA. The EP must identify the potential risks and impacts to the environment and should also consider the net environmental benefit of the decommissioning activity proposed. EPs must also identify any legislative and other requirements that apply to the activity and demonstrate how these will be met. The assessment of the plan by NOPSEMA explicitly takes into consideration impacts on matters protected under the EPBC Act. To be accepted, the EP must clearly demonstrate how the company will reduce the environmental impacts and risks for decommissioning to a level that is acceptable and ALARP. While preparing an EP, a company is required to consult with relevant government departments, individuals and organizations that may be affected by, or have an interest in, the proposed activity.

**Sea Dumping**

If the company proposes to leave any equipment on the seabed, then approval may be required under:


A broad overview of the decommissioning process is shown in Figure 10.1.
Overview of International Offshore Decommissioning Regulations

Figure 10-1: Decision-making process for offshore decommissioning in Australia

Source: NOPSEMA, 2016
10.2.5 Additional Information

Offshore oil and gas exploration has taken place in all of the Australian territories, however, offshore developments have so far been primarily concentrated on the North West Shelf off Western Australia, and Victoria in the south east.

In Australia to date, only a few small facilities have been decommissioned. In most cases this has involved the disconnection of a floating production facility and the removal of associated flowlines, wellheads and moorings that have either been scrapped or refurbished in South East Asia (Goodwin et al., 2016).

Information on the developments that currently have decommissioning activities are listed in the NOPSEMA Activity Status and Summaries database -


10.2.6 Summary

**Table 10-1: Australia Summary Decommissioning Requirements**

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other</td>
<td>Remove</td>
<td>OPGGSA, 2006.</td>
</tr>
<tr>
<td>facilities</td>
<td>Partial removal or abandonment in situ can be considered on a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>case by case basis provided that environmental impacts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>demonstrated to be ALARP and will be of ‘an acceptable level’.</td>
<td></td>
</tr>
<tr>
<td>Pipelines</td>
<td>Remove</td>
<td>OPGGSA, 2006.</td>
</tr>
<tr>
<td></td>
<td>Partial removal or abandonment in situ can be considered on a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>case by case basis provided that environmental impacts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>demonstrated to be ALARP and will be of ‘an acceptable level’.</td>
<td></td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan</td>
<td>Yes but no timescales specified.</td>
<td>OPGGSA, 2006.</td>
</tr>
<tr>
<td>needed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
10.3 New Zealand

10.3.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1960;
- Signatory to the Basel Convention (ratified);
- CITES (acceded); and
- CBD (ratified).

10.3.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme – Pacific Region (Nouméa Convention, 1990); and

10.3.3 Principal Legislation

Six government agencies together with 16 regional councils share the responsibility for managing petroleum activities in New Zealand’s offshore waters (the EEZ, CS and territorial waters):

- **New Zealand Petroleum & Minerals** – manage the Government’s oil, gas, mineral and coal resources in accordance with the Crown Minerals Act 1991;
- **Ministry for the Environment** – develop environmental policy and administer legislation and regulations applying to the EEZ and territorial waters;
- **WorkSafe New Zealand** – responsible for the rules that ensure that oil ‘stays in the pipe’ and the risk of well failure is ALARP;
- **Maritime New Zealand** – responsible for ensuring that operators have plans in place to prevent spills of oil and to manage emergency response;
- **Environmental Protection Agency** – responsible for managing the effects of specified restricted activities on the environment in the EEZ and the CS under the EEZ Act;
- **Department of Conservation** – responsible for protected species under the Wildlife Act 1953 and Marine Mammals Protection Act 1978; and
- **Regional Councils** – are responsible under the Resource Management Act for managing the effects of activities on the environment in territorial waters.

The Regional Councils, the Environmental Protection Agency and WorkSafe are primarily responsible for regulating offshore decommissioning activities.
The principal Act which governs offshore oil and gas activities in New Zealand is the Crown Minerals Act 1991 (CMA). Under the Act, a permit is required to prospect, explore or mine for minerals that are part of the Crown Mineral Estate.


The administration and application of the CMA 1991 is set out in the Minerals programmes. The most recent of these is:


The requirements that permit holders must meet are defined in a series of regulations. For petroleum these are:


Companies undertaking activities must also comply with the appropriate environmental legislation.

For territorial waters (within 12 nm), local authorities manage the environmental consenting process in their region under:


For activities which are more than 12 nm from the coastline, specific restricted activities which may have an impact on the environment are managed by the Environmental Protection Agency under:


Maritime New Zealand is responsible for protecting the marine environment (for territorial waters and waters beyond the 12 nm limit) from oil leaks or spills under:

The Department of Conservation (DOC) is responsible for protected species (territorial waters and waters beyond the 12 nm limit) under:

- The Wildlife Act 1953
- The Marine Mammals Protection Act 1978

Under the CMA, an oil and gas operator must have permits in place to undertake prospecting (e.g. seismic surveys), exploration and production. A Petroleum Mining Permit authorises the permit holder to mine petroleum. Before production can begin, resource consent is generally required under the Resource Management Act, within territorial waters, and for areas outside 12 nm, activities must comply with the EEZ Act and its regulations. Marine consents are required for activities not permitted in the regulations and must include an impact assessment which is publically notified by the Environmental Protection Agency. A work programme authorized in a Petroleum Mining Permit may include provisions for decommissioning structures and abandoning wells in accordance with good industry practice.

Decommissioning activities within 12 nm of the coastline must comply with the Resource Management Act and local authority plans while activities more than 12 nm from the coastline must comply with the EEZ Act and its regulations. Decommissioning is considered at the point of initial agreement of a resource consent (Resource Management Act) or marine consent (EEZ) for exploration or production activities and should include the following:

- Potential removal of site infrastructure and ongoing monitoring of the site. Approval is needed to remove or discard a structure.
- Local authorities or the Environmental Protection Agency may hold a bond for the restoration of the site, where indications are that current financial provisions and the fiscal regime in relation to future decommissioning obligations may not be adequate.

### 10.3.4 Additional Information

New Zealand’s producing oil and gas fields are in the Taranaki Basin, which sits offshore and onshore of the west coast of the North Island. There are 17 other known petroleum basins across New Zealand’s EEZ. These are relatively underexplored [New Zealand Petroleum and Minerals, 2016].

All of New Zealand’s offshore fields remain in production and decommissioning is yet to take place [Environment Guide, 2016].
10.3.5 Summary

Table 10-2: New Zealand Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>facilities</td>
<td>Removal or abandonment in situ dependent upon location and in accordance with ‘good</td>
<td></td>
</tr>
<tr>
<td></td>
<td>industry practice’.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Removal or abandonment in situ dependent upon location and in accordance with ‘good</td>
<td></td>
</tr>
<tr>
<td></td>
<td>industry practice’.</td>
<td></td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
</tbody>
</table>

10.4 References


11. Wider Caribbean

11.1 Regional Framework

11.1.1 Cartagena Convention

The Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region (WCR) or Cartagena Convention is an umbrella agreement for the protection and development of the marine environment. The WCR includes 28 island and continental countries including Trinidad & Tobago and Venezuela. The US is also a signatory (see Section 13). The Cartagena Convention was adopted in 1983 and entered into force in 1986. It is supported by three additional agreements:

- The Protocol Concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region (adopted in 1983 and entered into force in 1986) (see Figure 11-1);
- The Protocol Concerning Specially Protected Areas and Wildlife (SPAW) in the Wider Caribbean Region (adopted in 1990 and entered into force in 2000) (see Figure 11-2);
- The Protocol Concerning Pollution from Land-Based Sources and Activities (adopted in 1999 and entered into force in 13 August 2010).

Source: http://www.cep.unep.org/cartagena-convention/

**Figure 11-1:** Ratification Map for Cartagena Convention and Oil Spills Protocol
The Convention and associated protocols make general provisions for the protection of the marine environment, notably Article 8: Pollution from Seabed Activities, which states that contracting parties will take all appropriate measures to prevent, reduce and control pollution resulting directly or indirectly from exploration and exploitation of the seabed and its subsoil. There are no specific references to decommissioning.

Figure 11-2: Ratification of SPAW Protocol

Although the US is part of the Wider Caribbean Regional Seas area, it has been covered separately (see Section 13) as it also falls into several other Regional Seas areas.

11.1.2 Latin America Energy Organization

La Organizacion Latinoamericana de Energia (OLADE) or the Latin American Energy Organization, was established in 1973 to develop a more equitable economic relationship between the developed and developing countries of Latin America and the Caribbean. The organization is committed to the defense of natural resources in the Region, technical cooperation on policies for sustainable...
and comprehensive development and measures to address issues arising in the energy sector such as market prices, supply demand, electricity generation, energy efficiency, climate change and data management. There are 28 member countries, including Trinidad & Tobago and Venezuela, [http://www.olade.org/?lang=en].

11.2 Trinidad & Tobago

11.2.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III [ratified];
- Member of IMO since 1965;
- Signatory to the Basel Convention [ratified];
- CITES [acceded]; and
- CBD [ratified].

11.2.2 Membership of Regional Programmes and Conventions

- UN Regional Seas Programme – Wider Caribbean [Cartagena Convention, 1983]; and
- Member of OLADE.

11.2.3 Principal Legislation

The key laws and regulations relating to oil and gas are [http://www.energy.gov.tt/for-investors/legislation-and-tax-laws/]:

- The Petroleum Act, Chapter 62:01 and supporting regulations [1969, and amendments] – which deals with the granting of Exploration and Production Licences and of Production Sharing Contracts. Within the Petroleum Act, the Petroleum Regulations [1970] contain references to P&A of wells (see Article 43 Technical obligations of licensees, further details provided in VOLUME 2), but there is no mention of obligations relating to decommissioning of platforms or pipelines. Decommissioning is now covered under production sharing contracts which provide for submission of abandonment programmes to be carried out to the satisfaction of the Minister of Energy and Energy Industries;
- The Petroleum Taxes Act, Chapter 75:04 [1974, and amendments] – which makes provisions for an allowance to cover decommissioning or abandonment costs (Article 26E). This can only be claimed in the year in which the work relating to decommissioning has been performed;
- The Environmental Management Act, Chapter 35:05 (2000) – which governs the protection, enhancement and conservation of the environment; and
- The Certificate of Environmental Clearance (Designated Activities) Order (part of the Environment Management Act). The Act lists designated activities to which the regulations apply (see Schedule starting on p135 of the Act). It is assumed oil and gas installations would fall either under No.13 Coastal or offshore construction or modification and dredging activities, which includes “artificial reefs or other offshore structures” or under No.19 Establishment of a facility for petroleum products, petrochemicals or petrochemical products. The schedule makes it clear that decommissioning or abandonment activities are designated activities and therefore they require a Certificate of Environmental Clearance. In some cases, but not all applications for a Certificate of Environmental Clearance also require an EIA. Submissions timescales are not provided in the Act, however, additional guidance can be found in guidance issued by the Environmental Management Authority (undated). All applications are screened within 10 working days as to whether an EIA is required or not. For applications requiring an EIA notification of a decision will be within 80 working days of receipt of the EIA and for applications not requiring an EIA, notification of a decision will be within 30 working days of receipt of all requested information.

There are two governing bodies relevant to oil and gas activities:
- The Ministry of Energy and Energy Industries who have overall responsibility for regulation of oil and gas activities; and
- The Environmental Management Authority who monitor compliance with standards and take appropriate action for the prevention and control of pollution and conservation of the environment.

### 11.2.4 Additional Information

Trinidad & Tobago is the largest oil and natural gas producer in the Caribbean (http://www.energy.gov.tt/our-business/oil-and-gas-industry/) and has been involved in the petroleum sector for over 100 years, both offshore and onshore. Exploration and production activity in the last 12 years has been primarily offshore.

From the information available in November 2016, no offshore decommissioning has been undertaken in Trinidad & Tobago.
11.2.5 Summary

Table 11-1: Trinidad & Tobago Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Remove if in &lt; 75 m water depth and weighing &lt; 4,000 tonnes (installations pre 1998); or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remove if in &lt; 100 m water depth and weighing &lt; 4,000 tonnes (installations post 1998).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remainder assessed on a case by case basis.</td>
<td></td>
</tr>
<tr>
<td>Pipelines</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Yes, Certificate of Environmental Clearance. Timescales vary depending on whether EIA is required or not. Allow 10-12 months for approval.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>More recently abandonment programmes are generally required by production sharing contracts.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environment Management Act, 2000: Certificate of Environmental Clearance (Designated Activities) Order.</td>
<td></td>
</tr>
</tbody>
</table>

11.3 Venezuela

11.3.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III [not ratified];
- Member of IMO since 1975;
- Signatory to the Basel Convention [ratified];
- CITES [ratified]; and
- CBD [ratified].

11.3.2 Membership of Regional Programmes and Conventions

- UN Regional Seas Programme – Wider Caribbean [Cartagena Convention, 1983]; and
- Member of OLADE.
11.3.3 Principal Legislation


Article 1 of the Organic Law of Hydrocarbons states that the law governs “every aspect of the exploration; development; refining; industrial processing; transportation; storage; commercialisation, and preservation of hydrocarbons, as well as every aspect pertaining to the refined products and any works that such activities may call for.”

There are no direct references to decommissioning but the Organic Law of Hydrocarbons does contain general rules that encourage the conservation and protection of the environment:

- Articles 5 and 19 both require activities to be undertaken with due regard to the environment; and
- Article 34 (a) refers to all works and facilities being handed over on termination in such a way as to cause the least possible environmental damage.

The liability regime is provided for in the Environmental Criminal Law which states that the improper disposal or abandonment of hazardous waste or solid waste materials (which may include oil and gas facilities and pipelines) is subject to a fine.

The MPM may request security deposits regarding future decommissioning liabilities, however, since primary activities can only be carried out by the state or through mixed enterprises in which the state owned oil company, Petróleos de Venezuela, S.A. (PDVSA) controls at least 50% of the equity, it is not common practice.
Under Decree no 1.257 Rules on Environmental Assessment Activities Likely to Degrade the Environment (1996), all oil and gas companies are required to carry out an EIA for the exploration and production of oil and gas. EIAs are submitted to the Ministry of the People’s Power for Environment (MINEA, Ministerio del Poder Popular para Ecosocialismo y Aguas, http://www.minea.gob.ve/). Article 3 lists the types of project requiring an EIA and it specifically lists temporary or definitive closure of a facility or activity, as well as dismantling of a facility as activities requiring an EIA.

11.3.4 Additional Information

Venezuela is one of the world’s largest producers and exporters of crude oil and oil products. Reserves are both onshore and offshore. Oil exploration and production can only be carried out by the state, through its wholly owned oil company, PDVSA and subsidiaries, or through mixed enterprises (where the state owns at least 50% of the equity).

11.3.5 Summary

Table 11-2: Venezuela Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Remove if in &lt; 75 m water depth and weighing &lt; 4,000 tonnes (installations pre 1998); or</td>
<td>IMO/UNCLOS III (N.B. UNCLOS not ratified)</td>
</tr>
<tr>
<td></td>
<td>Remove if in &lt; 100 m water depth and weighing &lt; 4,000 tonnes (installations post 1998).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remainder assessed on a case by case basis.</td>
<td></td>
</tr>
<tr>
<td>Pipelines</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>No, but an EIA is required to cover decommissioning activities. No timescales specified.</td>
<td>Decree no 1.257 Rules on Environmental Assessment Activities Likely to Degrade the Environment.</td>
</tr>
</tbody>
</table>
11.4 References


Trinidad & Tobago


Venezuela


http://www.minea.gob.ve/
12. Arctic

12.1 Regional Framework

The UNEP Regional Seas Programme includes the Arctic region. The eight Arctic countries, Canada, Denmark (including Greenland and Faroe Islands) [see Section 3.5], Finland, Iceland, Norway [see Section 3.4], Russian Federation [see Section 14], Sweden and the US [see Section 13], adopted the Arctic Environmental Protection Strategy (AEPS) in 1991. There is no Convention for this region [see Section 2.5].

In 1996, Foreign Ministers of the Arctic States agreed in the Ottawa Declaration, to form the Arctic Council with a mandate to undertake a broad programme to include all dimensions of sustainable development. The Arctic Council is a high-level intergovernmental forum that provides a mechanism to address the common concerns and challenges faced by the Arctic Governments and the people of the Arctic. Co-operation within the Arctic Council establishes a common knowledge base, spreads information on best practice and lessons learned and has an important role in policy development. It is the responsibility of the Arctic Council to oversee and coordinate programmes established under the AEPS.

Each of the participating countries have specific definitions of which parts of those countries fall within the Arctic area [Arctic Council, 2009]. Further details are provided under the relevant country section.

12.2 Canada

12.2.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III [ratified];
- Member of IMO since 1948;
- Party to the London Convention 1972 and to the London Protocol 1996;
- Signatory to Basel Convention [ratified]; and
- Canada-United States Joint Marine Pollution Contingency Plan 2013. This is an agreement between the Canadian Coast Guard and the US Coast Guard and is designed to deal with accidental and unauthorized releases of pollutants that cause or may cause damage to the environment along the shared maritime boundary;
- CBD [ratified]; and
- CITES [ratified].
12.2.2 Membership of Regional Programmes and Conventions

- Regional Seas Programme – Arctic Region (AEPS) and Ottawa Declaration; and
- Agreement between the Government of Canada and the Government of the United States concerning the Transboundary Movement of Hazardous Waste 1986 [amended 1992]. This agreement seeks to ensure that the treatment, storage, and disposal of hazardous waste and other waste are conducted so as to reduce the risks to public health, property and environmental quality.

12.2.3 National Framework

Canada is a federal State with provincial Governments (known as the Crown) and its Constitution grants jurisdiction over offshore natural resources located on the continental shelf to the federal Government. The provinces of Nova Scotia & Newfoundland and Labrador on the east coast of Canada have entered into an accord with the federal government to provide for the joint management and administration of petroleum offshore from that province [East Canada, see Section 12.5].

Canada’s petroleum industry is subject to oversight by both the federal and provincial Governments. The National Energy Board (NEB or the Board - https://www.neb-one.gc.ca) has regulatory responsibilities for oil and gas activities on frontier lands not otherwise regulated under joint federal/provincial accords which includes the West Coast offshore (Section 12.3) and Northern [Arctic] Canada (Section 12.4). The accords negotiated between the federal Government and Nova Scotia, and Newfoundland and Labrador established joint administration agencies with each province, respectively the Canada-Nova Scotia Offshore Petroleum Board and the Canada-Newfoundland and Labrador Offshore Petroleum Board [Section 12.2.6] (Chambers and Partners, 2016).

12.2.4 Principal Legislation

Canada has four principal Acts which govern offshore oil and gas activities and which are administered by Natural Resources Canada (NRCan) (http://www.nrcan.gc.ca/energy/offshore-oil-gas/5837):

- The Canadian Petroleum Resources Act, 1985 [http://laws-lois.justice.gc.ca/eng/acts/c-8.5/index.html] – governs the lease of federally owned oil and gas rights, on frontier lands, to oil and gas companies that wish to find and produce oil and gas. The frontier lands include the territorial sea (low water mark of the outer coastline out to 12 nm) and the continental shelf (beyond the territorial seal). It provides the opportunity to protect the environment by attaching certain restrictions to leasing rights or to stop work if there is an environmental problem. There is no specific mention of decommissioning;
- The Canada Oil and Gas Operations Act, 1985 (http://laws-lois.justice.gc.ca/eng/acts/o-7/) – governs the exploration, production, processing and transportation of oil and gas in marine areas controlled by the federal Government. This includes the territorial sea and continental shelf, but not areas controlled by the provincial Government. The Act is used to promote safety, protection of the environment, the conservation of oil and gas resources, and joint production agreements; and


Other federal legislation and regulation applicable to the offshore oil and gas industry in Canada includes, but is not limited to:

- Canadian Environmental Protection Act (CEPA), 1999 (http://laws-lois.justice.gc.ca/eng/acts/c-15.31/) – to prevent pollution and protect the environment and human health in order to contribute to sustainable development. CEPA makes provision for both disposal/recycling on land and disposal at sea;

- Canadian Environmental Assessment Act (CEAA), 2012 (https://www.ceaa-acee.gc.ca/default.asp?lang=en&n=16254939-1) – to allow natural resources to be developed in a responsible and timely way for the benefit of all Canadians. Project descriptions must be provided to the Canadian Environmental Assessment Agency if the project is likely to require an environmental assessment (e.g. it has the potential to have adverse environmental effects);


- Fisheries Act, 1985 (http://laws-lois.justice.gc.ca/eng/acts/f-14/page-1.html#h-1) – provides protection and conservation of fish habitat essential to sustaining freshwater and marine fish species and prohibits any work that would cause harmful alteration, disruption or destruction of fish habitat;

- Migratory Birds Conservation Act, 1994 (http://laws-lois.justice.gc.ca/eng/acts/M-7.01/) – implements a Convention to protect migratory birds in Canada and the United States; and

- Arctic Waters Pollution Prevention Act, 1985 (http://laws-lois.justice.gc.ca/eng/acts/A-12/) – to prevent pollution of areas of the arctic waters adjacent to the mainland and islands of the Canadian Arctic.
Environment & Climate Change Canada is responsible for the administration of CEPA, the Fisheries Act (Section 36), the Migratory Birds Convention Act, and SARA. It is also responsible for promoting the Federal Policy for Pollution and the Toxic Substances Management Policy. Fisheries and Oceans Canada (DFO) is responsible for authorizations required under Sections 35-42 of the Fisheries Act relating to the protection of fish habitat.

12.2.5 West Canada

To date there has been no offshore oil and gas developments in West Canada off the coast of British Colombia and the federal and provincial moratoriums are still in place.

12.2.6 Arctic Canada

The Arctic area of Canada includes the drainage area of the Yukon Territory, all lands north of 60 degrees North latitude (which includes parts of the Northwest Territories and Nunavut) and the coastal zone of Hudson Bay and James Bay. A number of offshore exploration wells have been drilled in the Arctic regions of Canada in the past, and there are several current exploration and significant discovery licences, but there are no producing fields in Canadian offshore Arctic waters at the present time.

Any future work in the Canadian Arctic would be bound by the principles contained in the Arctic Council ‘Arctic Offshore Oil and Gas Guidelines 2009’ (Arctic Council, 2009). However, as of December 2016 the Canadian Government has announced that the Canadian Arctic Ocean is off limits to new oil and gas exploration licences. This decision is to be reviewed every five years.

12.2.7 East Canada

The primary area of offshore oil and gas exploration and development is in East Canada where there are six producing oil and gas projects and one project under development. One project has been decommissioned (Section 12.5.2). The provincial Crowns, freehold owners of petroleum rights and the joint administration regime for each of the east coast offshore areas may issue leases or licenses to companies who wish to explore for petroleum. They also regulate decommissioning activities.

Specific State Legislation

The Accord Acts provide the primary legislation governing offshore oil and natural gas activities in East Canada. Offshore oil and gas activities are regulated by the
Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB - [http://www.cnlopb.ca/]) and the Canada-Nova Scotia Offshore Petroleum Board (C-NSOPB - [http://www.cnsopb.ns.ca/]). These are independent administrative boards jointly appointed by the federal and provincial Governments whose mandate is to interpret and apply the provisions of the Accord Acts to all activities of operators in the Newfoundland and Labrador Offshore Area and in the Nova Scotia area, and to oversee operator compliance. The NEB has regulatory responsibilities for oil and gas exploration and activities on frontier lands in East Canada not otherwise regulated under the joint accords. Offshore this includes the Gulf of St. Lawrence and a portion of the Bay of Fundy. The Board also exchanges technical knowledge with the C-NLOPB and C-NSOPB.

Every offshore operator must have authorization from the C-NLOPB or C-NSOPB to pursue offshore activity. To receive authorization, operators are required to submit a variety of plans and to meet specific requirements. These include the following:

- Safety Plan – sets out the procedures, activities, resources, timelines and monitoring to ensure the safety of the proposed activity.
- Environmental Protection Plan – sets out the procedures, activities, resources, timelines and monitoring to protect the environment from the proposed work.
- Contingency Plan (including e.g. oil spill response plans) – sets out how the effects of a potential emergency event will be mitigated to ensure safety and to protect the environment.
- Benefits Plan – a plan for the employment of Canadians (particularly within the province in which the activity is occurring), and to allow service providers a full and fair opportunity to participate in the supply of goods and services.

From an environmental perspective, the decommissioning phase of the oil and gas lifecycle is treated in the same way as exploration and production: Environmental assessments and environmental protection plans are developed, and mitigations are identified for any potential adverse impacts on the environment. Monitoring of sites following the abandonment of wells and removal of infrastructure is then carried out, as outlined by relevant guidelines and plans. Decommissioning may also be included in environmental assessments completed prior to construction and production.

The C-NSOPB Guidelines on Plans and Authorizations Required for Development Projects [1995] ([http://www.cnsopb.ns.ca/pdfs/plansauthorizations.pdf]) provides guidance on the information required to produce the development plans for Nova Scotia. For decommissioning, this includes a general description of the provisions made in the installation design to facilitate decommissioning. An overview plan of the decommissioning and abandonment programme and a discussion of the
feasibility of the proposed procedures should also be included. The suspension and abandonment of the wells should also be briefly discussed. Similarly, C-NOLPB also provides development plan guidelines for Newfoundland and Labrador [Canada-Newfoundland and Labrador Development Plan Guidelines, 2006] (http://www.cnlopb.ca/pdfs/guidelines/devplan.pdf). Decommissioning requirements are similar with an added specific requirement to leave the site in a ‘fishable and navigable state’. Further C-NOLPB guidance documents are available at http://www.cnlopb.ca/legislation/guidelines.php.

Due to the long life-span of oil and gas projects, proponents of the project usually commit to a general approach to decommissioning in the initial Development Plan Application (DPA), with more detailed programs developed and approved in accordance with regulations applicable at the time.

In line with UNCLOS III, the general approach proposed for platforms is to remove them and send them to shore for treatment and disposal. Currently there is no international legislation or guidelines for the decommissioning of subsea pipelines. Although pipelines and drill cuttings may be left in situ, miscellaneous debris is removed. In the East Canada region, decommissioning of subsea infrastructure, such as pipelines, flowlines and manifolds has been treated in applications in different ways (either leaving in place or removing). Where decommissioning plans change, an amendment to the original plan must be applied for and approved by the regulatory bodies.

12.2.8 Additional Information

The Cohasset-Panuke (located ~256 km southeast of Halifax, about 55 km west-southwest of Sable Island) decommissioning project was the first of its kind in Canada. Phase I of the decommissioning activities took place in 2000. At that time platforms and installations were rendered hydrocarbon and chemical free, mobile components were demobilized and removed, and platforms and subsea facilities were depressurized and de-energized. Phase II of the decommissioning began in the summer of 2003. Partial removal and total removal options were both considered. The Cohasset-Panuke platforms were removed in 2005. The Cohasset jacket was transported to the Gulf of Mexico for scrapping (Hydro-International, 2007).
## Table 12-1: Canada Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>facilities</td>
<td>The seabed should be left in a fishable/navigable state.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>seabed in a fishable/navigable state will apply.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>seabed in a fishable/navigable state will apply.</td>
<td></td>
</tr>
<tr>
<td>Plan needed</td>
<td>development.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Timescales for submission and approval of a detailed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>decommissioning plan [and related documents] appear</td>
<td></td>
</tr>
<tr>
<td></td>
<td>similar to those for the initial development plan [</td>
<td></td>
</tr>
<tr>
<td></td>
<td>approximately 1 year prior to works].</td>
<td></td>
</tr>
</tbody>
</table>
12.3 References


Hydro-International (2007). Platform Decommissioning: Survey opportunities to optimise the task. Available online at: https://www.hydro-international.com/content/article/platform-decommissioning [accessed October 2016]

Natural Resources Canada, 2016 http://www.nrcan.gc.ca/energy/offshore-oil-gas/5837


A commercially available guide on offshore decommissioning in Atlantic Canada is available – the McInnes Cooper Offshore Oil and Gas Decommissioning Best Practices for oil and gas issues in Atlantic Canada https://www.mcinnescooper.com/offshore-oil-gas-decommissioning/.
13. United States

13.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (not ratified);
- Member of IMO since 1950;
- Party to the London Convention 1972 but not to the Protocol 1996;
- Signatory to Basel Convention (not ratified);
- CITES (ratified); and
- Not a party to CBD.

13.2 Membership of Regional Programmes and Conventions

- Regional Seas Programmes:
  - Wider Caribbean (Cartagena Convention) (see Section 11.1);
  - Pacific (Nouméa Convention) (see Section 10.1); and
  - Arctic (AEPS) (see Section 12.1).

13.3 National Framework

The US legal system is organized on a federal and state level and therefore a range of departments/agencies are involved in the regulation of oil and gas activities. At the federal level this includes the Department of the Interior (DOI), the Department of Energy (DOE) and the Environmental Protection Agency (EPA).

In addition, each of the major oil producing states (Gulf of Mexico, California and Alaska) has an agency tasked with regulation of certain oil and gas upstream activities as highlighted in Sections 13.3 to 13.5.

Department of the Interior

The DOI regulates offshore oil and gas exploration and production activities through two technical agencies:

- The Bureau of Safety and Environmental Enforcement (BSEE) is the lead agency charged with improving safety and ensuring environmental protection in relation to the offshore oil and gas industry. The BSEE executes its authority primarily through the Outer Continental Shelf Lands Act (OCSLA) (see Section 13.2.4) and the Code of Federal Regulations (CFR), Title 30 Mineral Resources, Part 250 Oil and Gas and Sulphur Operations in the OCS, Subpart Q Decommissioning Activities (referred to as 30 CFR 250, Subpart Q, see Section 13.2.4) - [https://www.gpo.gov/fdsys/pkg/CFR-2012-title30-vol2/pdf/CFR-2012-title30-vol2-part250-subpartQ.pdf]; and
• The Bureau of Ocean Energy Management (BOEM) governs the award of offshore leases giving the right to conduct exploration and production. The lease agreements, normally contain a fixed primary term (1 to 10 years) and a conditional secondary term. BOEM require lessees to submit a bond in an amount sufficient to ensure compliance with decommissioning requirements.

Both BSEE and BOEM were established in 2011 in the wake of the re-organization to oil and gas legislation which followed the Deepwater Horizon oil spill. Together with the Office of Natural Resources Revenue they replace the former Mineral Management Services.

Department of Energy

The DOE manages nuclear infrastructure and administers energy policy. The Office of Fossil Energy (part of the DOE) is responsible for research and development of programmes involving oil and gas but has no specific role to play within decommissioning.

Environmental Protection Agency

The EPA is the principal federal enforcement agency for environmental legislation. Federal laws applicable to the discharge of pollutants are generally not industry specific but are based on a particular impact.

13.4 Principal Legislation

• Submerged Lands Act (SLA) 1953;
• Outer Continental Shelf Lands Act (OCSLA) 1969;
• 30 CFR 250, Subpart Q Decommissioning Activities, 2012;
• Notice to Lessees (NTL); and
• National Artificial Reefs Plan, 2007 (initial plan compiled 1985).

Further information is provided in the subsections below.
**Submerged Lands Act**

The SLA grants individual states the rights to the natural resources of submerged lands from the coastline to 3.5 miles (5.6 km) offshore, with the exception of Texas and Florida in the Gulf of Mexico and California in the Pacific, where state jurisdiction extends to 10 miles (16.2 km) offshore. Submerged lands seaward of state jurisdiction come under federal jurisdiction.

**Outer Continental Shelf Lands Act**

OCSLA establishes jurisdiction beyond the state limit to the US Exclusive Economic Zone (EEZ), i.e. to 200 nm (equivalent to 230 miles or 370 km).

OCSLA establishes decommissioning obligations to which an operator must commit when they sign a lease. Leases typically require the operator to remove seafloor obstructions such as offshore platforms, within one year of lease termination, or prior to termination of the lease if BOEM deem the structure unsafe, obsolete or no longer useful for operations.

Regulations, conditions of approval and lease terms establish the applicable requirements, procedure and time frames for decommissioning of wells, structures, and pipelines on terminated leases and decommissioning of pipelines on terminated pipeline rights-of-way. When a lease terminates the lessee must obtain BSEE approval to decommission wells, pipelines, platforms and other facilities.

OCSLA regulatory and lease requirements for decommissioning offshore platforms are designed to minimise the environmental and safety risks inherent in leaving unused structures in the ocean and to reduce potential conflicts with other users.

**30 CFR 250, Subpart Q Decommissioning Activities, 2012**

30 CFR 250, Subpart Q provides detailed regulations for sealing wells, removing platforms, decommissioning of pipelines and clearing the seafloor of obstructions. These are summarized in Table 13-1. All decommissioning activities must be conducted safely and in a manner that does not reasonably interfere with other uses of the OCS or cause serious harm to the environment.
### Table 13-1: 30 CFR 250 Requirements for Decommissioning

<table>
<thead>
<tr>
<th>Item</th>
<th>Decommissioning requirements</th>
<th>Decommissioning timescales</th>
<th>Reporting requirements and timescales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Remove all platforms and other facilities unless specific approval to conduct other activities or approval for conversion to an artificial reef [see information on National Artificial Reef Plan] has been granted.</td>
<td>Within 1 year of lease terminating.</td>
<td>Initial platform removal application required for leases/rights of way in Pacific and Alaska OCS (contents as per 250.1726*). Submit 2 years before production projected to cease. Final platform removal application accompanied by payment (contents as per 250.1727*). Submit report to BSEE within 30 days of removing platform (contents as per 250.1729*).</td>
</tr>
<tr>
<td>Pipelines</td>
<td>Pipelines can be decommissioned in place if they do not constitute a hazard to navigation or commercial fishing or interfere with other uses of the OCS. Pipelines abandoned in place need to be flushed, filled with seawater, cut, and plugged with the ends buried at least 3 feet (1 m) below the mudline.</td>
<td>Within 1 year of pipeline right-of-way terminating. NTL 2010 G05 also applies to pipelines.</td>
<td>Submit pipeline decommissioning or pipeline removal application and payment (contents as per 250.1751* and 250.1752*). Submit report to BSEE within 30 days of decommissioning pipeline (contents as per 250.1753*).</td>
</tr>
<tr>
<td>Seafloor</td>
<td>Clear seafloor of all obstruction.</td>
<td>Within 60 days of plugging well or removing platform.</td>
<td>Submit form BSEE-0124 Application for Permit to Modify to BSEE within 30 days of verifying site clearance.</td>
</tr>
</tbody>
</table>

Source: 30 CFR 250, Subpart Q  
Note: * refers to subsection within 30 CFR 250, Subpart Q

The platform removal application should include a description of methods used for severance of piles. Where explosive methods are proposed, three copies of the application are required rather than two [30 CFR 250.1727]. Details on the type of explosives, number and sizes of charges, depth of detonation below the mudline and whether they are to be placed inside or outside the piles must all be provided. Operators are required to mitigate the risks to protected species, for example using passive acoustic monitoring and extensive surface and aerial monitoring before explosives are used.
Notice to Lessees

Over the years BSEE has issued a series of NTLs regulating differing aspects of the oil and gas industry [see https://www.bsee.gov/site-page/notices-to-lessees-and-operators-0#national]. NTLs are numbered according to the year of issue and the issuing office (N- National, A – Alaska region, G- Gulf of Mexico region and P- Pacific region).

In relation to decommissioning the most relevant NTL at the national level are:

- **NTL 2016- N01** (supersedes NTL 2008-N07) Requiring Additional Security which applies to operators of oil and gas leases and holders of pipelines rights of way on the OCS. Previously where lessees etc. had sufficient financial reliability additional security was not required, under NTL 2016-N01 this is no longer the case. The full liability for decommissioning needs to be taken into consideration and the criteria for determining financial strength have been updated.

- **NTL 2016- N03** Reporting Requirements for Decommissioning Expenditures on the OCS, which will require lessees to submit certified summaries of the actual cost of decommissioning activities (e.g. well plugging, platform removals, site clearance). The summaries will need to be submitted within 120 days of completion of each decommissioning activity. As of 16/11/16 BSEE announced the release of final pipeline decommissioning costs regulations, which will come into effect on 16/12/16 and effectively enlarge the scope of NTL 2016- N03 to include pipelines. As for other decommissioning activities, summaries of actual expenditures relating to pipelines must be submitted within 120 days of completion,


Where applicable, state level NTLs are discussed within specific region (Sections 13.3 and 13.4, no relevant NTLs for Alaska).

**National Artificial Reef Plan**

BSEE (referred to as the Regional Supervisor) may grant a departure from the requirement to remove a structure by approving partial removal or toppling in place for conversion to an artificial reef, if the operator meets the requirements of the National Artificial Reef Plan (National Oceanic and Atmospheric Administration, 2007). Some states also have artificial reef plans and legislative acts associated with reefing (see Section 13.5.2). The National Fishing Enhancement Act (NFEA) 1984 provides for the creation of Artificial Reef Plans, and the Army Corps of Engineers issues a permit under the Section 10 of the
Rivers and Harbors Act of 1899. The NFEA requires the State to take over liability for a reefed platform under the National Artificial Reef Plan.

The National Oceanic and Atmospheric Administration in conjunction with BSEE and other state and federal agencies has overall responsibility for the artificial reef programme.

A platform structure may be converted to an artificial reef provided that:

- The remaining structure does not inhibit future oil or other mineral development;
- The resulting artificial reef complies with the Army Corps of Engineers permit requirements and procedures outlined in the National Artificial Reef Plan;
- A state fishing management agency accepts liability for the remaining structure; and
- The operator satisfies the US Coast Guard navigational safety requirements (normally require a minimum of 85 feet (26 m) clearance below the water line).

An Act of Donation is entered into between the Operator and the State, typically worded as follows, but varying between States.

“Title to the Donated Structure, including all future liability (except release of hazardous material) must pass from Donor to Donee.” The Donee holds the Donor “free and clear of all encumbrances of any kind or description”

“Donor shall have no obligation or duty whatsoever to provide for the maintenance or repair of the Donated Structure or any appurtenance attached thereto”.

New reef sites should not be established within 5 miles of existing reef locations (referred to as the “5-mile rule”). This is to allow room for future OCS exploration.

Since 1986 over 400 rigs-to-reefs proposals have been approved [https://www.bsee.gov/site-page/decommissioning-0] and six have been denied, mainly due to proximity to OCS infrastructure, notably active oil and gas pipelines.

A wide range of studies have been commissioned by BOEM to examine the potential impacts of the rigs-to-reef policy.

Overall federal permitting requirements in relation to oil and gas decommissioning are summarized in Table 13-2.
### Table 13-2: Federal Permitting Requirements

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit/approval</th>
<th>Regulated activity</th>
<th>Legislation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOEM</td>
<td>Environmental impact statement required for major projects.</td>
<td>Responsible for OCS lease administration including compliance with bonding requirements.</td>
<td>OCSLA, 1969 &lt;br&gt;National Environmental Policy Act of 1969 (NEPA).</td>
</tr>
<tr>
<td>BSEE</td>
<td>Approval of decommissioning application.</td>
<td>Responsible for approving decommissioning applications and enforcing safety and environmental regulations.</td>
<td>OCSLA, 1969 &lt;br&gt;30 CFR 250 Subpart Q.</td>
</tr>
</tbody>
</table>
Other relevant legislation

Any waste brought to shore comes under the EPA waste management regulatory framework, [https://www.epa.gov/hw/learn-basics-hazardous-waste](https://www.epa.gov/hw/learn-basics-hazardous-waste). State regulatory requirements may differ from the federal programme.

No information was found on the management of drill cuttings piles during decommissioning. Oil based mud cuttings were discharged until the mid-1990s. Thereafter the EPA brought in stricter regulations but not an outright ban on discharge of cuttings with synthetic based muds. No discharges of drilling wastes are allowed within 3 miles of the shore.

13.5 Gulf of Mexico

The geographical area covered by the Cartagena Convention [UNEP Regional Seas Programme for the Wider Caribbean] includes the Gulf of Mexico. The US are signatories to, and have ratified the Cartagena Convention, and all three associated protocols [see Section 11.1.1].

13.5.1 Specific State Legislation

The BSEE Gulf of Mexico regional office are responsible for reviewing applications for activity permits, conducting inspections of existing facilities and enforcing environmental compliance. A newly developed section within the region oversees decommissioning activities and helps to ensure appropriate decommissioning costs are assessed to every offshore asset.

State variations to federal legislation include:

- State jurisdiction extends to 10 miles (16 km) rather than 3.5 miles as stated under SLA;
- No initial platform removal application is required under 30 CFR 250 Subpart Q (whereas an initial application is required in other states, Table 13-1);
- There are additional requirements under NTL 2010-G05, Notice to Lessees and operators of federal oil and gas leases and pipeline right-of-way holders in the OCS, Gulf of Mexico, Decommissioning Guidance for Wells and Platforms – further information is provided below.

Notice to Lessees NTL 2010-G05

In the wake of several destructive hurricanes between 2004 and 2008 it was recognized that idle infrastructure (often referred to as idle iron) posed a potential threat to the OCS environment and a financial liability to operators and potentially to the federal Government. The cost and time to permanently plug wells and
remove storm-damaged infrastructure (including pipelines) is significantly higher than decommissioning assets that are not damaged when decommissioned.

The NTL was issued to ensure a consistent and systematic approach to determine the future utility of idle infrastructure on active leases (N.B. CFR 250 Subpart Q timescales apply to terminated leases), and to ensure that all wells, structures, and pipelines were decommissioned within the timeframes established by regulations, conditions of approval, and lease instruments. The NTL requires that any well that has not been used during the past five years for exploration or production must be plugged, and associated production platforms and pipelines must be decommissioned if no longer involved with exploration or production activities.

13.5.2 Additional Information

The BSEE Gulf of Mexico regional office oversees approximately 3,000 oil and gas facilities and more than 27,000 miles of pipeline [https://www.bsee.gov/stats-facts/ocs-regions/gulf-of-mexico].

The Gulf of Mexico OCS has 11 designated reefing areas and BSEE is currently working with the Texas Parks and Wildlife Department to develop two new artificial reef planning areas.

A large number (about 20%) of the offshore platforms that have been decommissioned in the Gulf of Mexico to date have been donated to the various state Artificial Reef programmes [https://www.bsee.gov/site-page/decommissioning-0, numbers shown correct as of September 2012].

- Louisiana - 302 platforms;
- Mississippi - 8 platforms;
- Alabama - 4 platforms;
- Florida – 3 platforms; and
- Texas – 103 platforms.


The majority of pipelines in the Gulf of Mexico have been abandoned in situ and very few complete pipeline removals have been performed.
13.6 California (Pacific)

California does not fall within any of the Regional Seas Programmes (N.B although the US is a signatory to the Nouméa Convention [Pacific region] this does not specifically cover the area of the Pacific which lies offshore from California).

It is also worth noting that within US websites and documents California is referred to as the Pacific region (i.e. Pacific OCS rather than California OCS) and therefore this nomenclature has been adopted in the following sections.

13.6.1 Specific State Legislation

**Rigs-to-Reef Law, Assembly Bill 2503, 2010**

The Rigs-to-Reef Law allows the State to decide whether to approve partial removal of oil platforms on a case-by-case basis. The law allows a platform owner or operator to design a “partial removal” plan for a platform and to apply for permission to implement it. Three state agencies within the California Natural Resources Agency are charged with reviewing the application:

- The Department of Fish and Game who ultimately approve or deny the application;
- The California Ocean Protection Council, who determine whether the plan for partial removal would benefit the marine environment as compared to complete removal; and
- The California State Lands Commission who calculate the avoided removal cost.

Between 55% and 80% of the avoided removal cost goes into a fund called the California Endowment for Marine Preservation, dedicated to conservation of marine resources.

In addition, all partial removal projects must comply with the California Environmental Quality Act and the State must take ownership of any platform in federal waters before it may be partially removed.

**Notice to Lessees NTL 2009-P04 Decommissioning of Pacific OCS Facilities**

This NTL provides general guidelines regarding the permitting process for decommissioning platforms, pipelines and other related oil and gas facilities on the Pacific OCS. It re-affirms the requirements to follow federal regulations 30 CFR 250 subpart Q and that an initial platform removal application is required as well as a final one.
13.6.2 Additional Information

The Pacific OCS currently has 43 active leases [http://www.boem.gov/Pacific-Lease-Management/]. Within these leases, the BSEE Pacific Region currently oversees operation and production activity from 23 oil and gas platforms located offshore California and regulate approximately 213 miles of pipelines. A further four platforms come under the responsibility of the Californian State Lands Commission (i.e. they fall within State waters, 3.5 miles from land).

To date no major platforms have been decommissioned in the Pacific OCS, with the exception of some small structures within State waters which have been decommissioned through complete removal. The US Government has estimated that within five to twenty years, all the oil and gas platforms off the California coast will stop producing oil and gas in quantities sufficient to be economically viable, [http://www.environment.ucla.edu/reportcard/article9389.html].

BOEM has held three public workshops (1994, 1997, 2003) addressing offshore oil and gas facility decommissioning within the region, [http://www.boem.gov/Oil-and-Gas-Energy-Program/Leasing/Regional-Leasing/Pacific-Region/Leasing/Decommissioning/Decommissioning.aspx]. Information from the 1997 BOEM workshop indicated that at that time seven platforms had been removed, all from the State tidelands, i.e. within 3.5 miles of the coast. All of the structures were relatively small and located in shallow water (less than 150 feet/46 m). Indications during that workshop were that five OCS platforms were likely to be decommissioned “early in the next century”; however, to date no major structures have been decommissioned. No updated predictions on which platforms were likely to be decommissioned in the near future was available on US agency websites.

Following the 1997 workshop a small group of federal, State, and local agencies formed an Interagency Decommissioning Working Group (IDWG) to develop an action plan to guide agency efforts in addressing issues identified during the workshop. The IDWG is composed of representatives from the BOEM, the California State Lands Commission, California Coastal Commission, California Department of Fish and Game, National Marine Fisheries Service, Ventura County, Santa Barbara County, U.S. Coast Guard and U.S. Army Corps of Engineers.

The IDWG continues to collect and organize information relevant to decommissioning and works with academia and other parties to address scientific issues that are important to decommissioning.

BSEE develop decommissioning cost estimates every five years to assess the ability of lessees to comply with decommissioning requirements and to assist in decisions relating to supplemental bond requirements. The most recent cost estimates for the Pacific region were prepared in 2015 (BSEE, 2015).
The predicted costs developed by BSEE for the 23 platforms in federal waters are based on:

- Complete removal of platforms and transport to shore;
- No explosives will be used during decommissioning;
- Pipelines routed to shore will be removed from 200 foot water depth level to state tidal boundary;
- Pipeline segments between platforms on the OCS will be decommissioned in place and pipeline segments in water depths greater than 200 feet will be decommissioned in place; and
- Power cables will be completely removed from the OCS to the state tidal boundary.

There is no mention of rigs-to-reefs in the cost predictions. The passing of the Rigs-to-Reefs Law in 2010 was controversial in California: two previous bills had been rejected (one in 1998 and again in 2001).

13.7 Alaska

The US is a signatory to the UNEP Regional Seas Programme for the Arctic and is therefore bound by the Arctic Environmental Protection Strategy (see Section 12.1). Only the northern half of the Alaska OCS falls into the UNEP Arctic region.

The Alaska OCS Region oversee more than one billion acres on the OCS and more than 6,000 miles of coastline. The region covers the Beaufort and Chukchi Sea, the Bering Sea, Cook Inlet and the Gulf of Alaska. Just over 100 wells (including 85 exploration wells) have been drilled in Alaska since 1975, most of these prior to 1993, with only six wells drilled between 1994 and 2016. To date none of these prospects have been developed.

There are no state specific regulations or guidance in relation to decommissioning.
13.8 Summary

Table 13-3: US Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other</td>
<td>Remove unless specific approval to conduct other activities or approval for conversion to an artificial reef has been granted.</td>
<td>National Artificial Reef Plan, 2007 and specific state legislation in Gulf of Mexico (NTL 2010-G05) and Pacific OCS (NTL 2009-P04).</td>
</tr>
<tr>
<td>facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pipelines</td>
<td>Pipelines can be decommissioned in situ if they do not constitute a hazard to navigation or commercial fishing or interfere with other uses of the OCS.</td>
<td>30 CFR 250, Subpart Q, 2012, NTL 2010-G05 and NTL 2009-P04.</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Gulf of Mexico: Final platform removal application required prior to removal. No timescale specified: regulations only state this must be done “before” removing the platform. Pacific and Alaska OCS: Initial application required 2 years before production cease. Final removal application required not more than 2 years after submission of the initial application.</td>
<td>30 CFR 250, Subpart Q, 2012 [note regional variations].</td>
</tr>
</tbody>
</table>

13.9 References


UCLA School of Law, California’s Rigs-to-Reefs Law (Hecht S.B.), 2010 http://www.environment.ucla.edu/reportcard/article9389.html.

US Department of the Interior (DOI), BOEM, Regulation and Enforcement Gulf of Mexico OCS Region, NTL 2010-G05. Notice to lessees and operators of federal oil and gas leases and pipeline right-of-way holders in the Outer Continental Shelf, Gulf of Mexico OCS region. Decommissioning Guidance for Wells and Platforms.
US Department of the Interior (DOI), BOEM, NTL 2016-N01. Notice to lessees and operators of federal oil and gas and sulfur leases and holders of pipeline right-of-way holders and right of use and easement grants in the Outer Continental Shelf. Requiring Additional Security.

US Department of the Interior (DOI), BOEM, NTL 2016-N03. National notice to lessees and operators of federal oil and gas and sulfur leases, Outer Continental Shelf. Reporting Requirements for Decommissioning Expenditures on the OCS.

Key websites:

Bureau of Safety and Environmental Enforcement https://www.bsee.gov/
Environment Protection Agency website https://www3.epa.gov/
14. Russian Federation

14.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III [ratified];
- Member of IMO since 1958;
- Ratified London Convention 1972;
- Party to the Basel Convention;
- CITES [ratified]; and
- CBD [ratified].

14.2 Membership of Regional Programmes and Conventions

- Black Sea Regional Seas Programme, Convention on the Protection of the Black Sea Against Pollution, 1992;
- Arctic Regional Seas Programme, Ottawa Declaration 1996 [see Section 12.1]; and
- Caspian Sea Regional Seas Programme, Tehran Convention, 2006 [see Section 5.1].

The North West Pacific region under the Regional Seas Programme covers China, the Democratic People’s Republic of Korea, Japan, the Republic of Korea and the Russian Federation. The Black Sea region under the Regional Seas Programme covers Bulgaria, Georgia, Romania, the Russian Federation, Turkey and Ukraine.

Neither NOWPAP, nor the Black Sea Convention, nor the Ottawa Declaration, nor any of the protocols developed under the Tehran Convention make any specific reference to decommissioning of oil and gas facilities.
14.3 National Framework

The main agency co-ordinating environmental concerns in Russia is the Ministry of Natural Resources and Environment of Russia (MNR) [http://www.mnr.gov.ru]. They have a number of agencies reporting to them that function as regulators:

- The Federal Agency for Subsoil Use ("Rosnedra") – Monitors compliance with subsoil licences and oversees remediation and decommissioning activities;
- The Federal Service for Supervision in the Sphere of Natural Resource Use ("Rosprirodnadzor") – Monitors compliance with environmental regulations and subsoil licences; and
- The Federal Environmental, Industrial and Nuclear Supervision Service ("Rostekhnadzor") – conducts inspections of subsoil licence holders to verify compliance with relevant laws.

14.4 Principal Legislation

Russia has a long history in oil and gas production and is one of the biggest oil producers worldwide. After the collapse of the Soviet Union in 1991 a large proportion of the industry became privately owned. Prior to 1994 all of their industry was onshore until offshore development started on the Russian Continental Shelf off Sakhalin Island to the east of the Russian mainland. Since then offshore exploration has expanded to most of Russia’s offshore areas. Russia has also been exploring in the Caspian since 2000 and now has a number of major assets producing in the Caspian with more development planned.

The main federal laws regulating environmental protection and covering the whole of the Russian Federation are:

- Subsoil Law – The law that sets out the regulatory framework in relation to subsoil use and includes decommissioning requirements. It also establishes the powers of the regulators;
- Federal Law No. 225-FZ "On Production-Sharing Agreements" dated 30 December 1995 (as amended) (the "PSA Law") – establishes any local requirements and may relate to decommissioning. If specific guidelines are included in a PSA relating to decommissioning then these become the prevailing requirement and will be followed over the base rules contained in the Continental Shelf Law;
- Federal Law No. 187-FZ "On the Continental Shelf of the Russian Federation" dated 30 November 1995 (as amended) (the "Continental Shelf Law") – sets out the permitting and documentation requirements for all offshore petroleum projects including the requirement for an environmental assessment and the base rules for decommissioning which requires total removal of infrastructure offshore as it may affect navigation or fishing;
• Federal Law No. 7-FZ, “On Environmental Protection” dated 10 January 2001 [Environmental Protection Law] – establishes the regulatory framework for environmental protection and governs all activities that may impact the environment; and


The Continental Shelf Law is the main law governing offshore work and requires the removal of all structures including pipelines at decommissioning. The PSA Law allows for specific requirements to be included in a PSA which would override the Continental Shelf Law requirements.

14.5 Russia – Arctic

There has been some initial exploration by Russia in the Arctic and a single platform has now been installed. There are plans for Russia to expand their interests in the Arctic region as major reserves have been discovered along the continental shelf to the north of Russia in the Kara Sea, the Pechora Sea, the Chukchi Sea, the Barents Sea and the Laptev Sea.

Future Arctic developments will be bound by the principles contained in the Arctic Council ‘Arctic Offshore Oil and Gas Guidelines 2009’ [Arctic Council, 2009].

There is no track record of any decommissioning in the Arctic.

14.6 Russia – Baltic

At the time of writing there are two field developments in the Russian sector of the Baltic. To date there has been no decommissioning in this area of Russia.

14.7 Russia – Black Sea

At the time of writing there were no Russian facilities in the Black Sea.

14.8 Russia – Caspian

As well as the Federal laws, work in the Caspian is governed by the Tehran Convention [see Section 5.1]. In any instance where the international rules are more onerous than federal rules, the international rules will be followed.

Again at time of writing there has been no track record for decommissioning as it is still early in the development of this area.
14.9 Russia - Sakhalin

There are no specific laws relating to Sakhalin outside of those described in Section 14.4.

As yet there have been no decommissioning activities on Sakhalin.

14.10 Summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drill cuttings piles</td>
<td>No guidelines.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>Yes, prepared at time of application to decommission and must include a positive state environmental assessment approving the plan.</td>
<td>Continental Shelf Law, 1995.</td>
</tr>
</tbody>
</table>

*As mentioned above if legislation is provided in a PSA then this will override the Continental Shelf Law.

14.11 References


Federal Agency for Subsoil Use ("Rosnedra")

Federal Service on Supervision in the Sphere of Natural Resource Use ("Rosprirodnadzor")
www.rpn.gov.ru (accessed December 2016)

Federal Environmental, Industrial and Nuclear Supervision Service ("Rostekhnadzor")
www.gosnadzor.ru (accessed December 2016)

Information on Regional Seas Programmes. Available online at:
15. Latin America

15.1 Regional Framework
Neither Argentina nor Brazil fall within any of the Regional Seas Programmes. Both countries are members of OLADE [see Section 11.1.2].

15.2 Argentina

15.2.1 Membership of International Treaties, Conventions and Protocols
- Signatory to UNCLOS III (ratified);
- Member of IMO since 1953;
- Party to the London Convention 1972;
- Signatory to the Basel Convention (ratified);
- CITES (ratified); and
- CBD (ratified).

15.2.2 Membership of Regional Programmes and Conventions
- Member of OLADE.

15.2.3 Principal Legislation
Until 2014, Energia Argentina S.A (ENARSA), a state-owned company, had a monopoly over offshore exploration activities. In 2014, under Law No. 27.007, (2014) [http://servicios.infoleg.gob.ar/infolegInternet/anexos/235000-239999/237401/norma.htm] all offshore areas previously granted to ENARSA, and which did not have any associated agreements with other companies, were relinquished and transferred to the federal State.

The offshore oil and gas industry is controlled by the Federal Ministry of Energy and Mining [Ministerio de Energia y Mineria, https://www.minem.gob.ar/index.html].

The main body of legislation relating to the oil and gas industry is The National Hydrocarbons Law No.17.319 (1967), the full text of which can be accessed here (Spanish): http://servicios.infoleg.gob.ar/infolegInternet/anexos/15000-19999/16078/texact.htm
There are no specific requirements in the National Hydrocarbons Law relating to decommissioning of facilities or to the protection of the environment. Once a permit is terminated, the area and infrastructure reverts to State ownership (Article 85). There is reference to well abandonment (Article 69, further details provided in VOLUME 2).


An EIA is required for any activity which has the potential to harm the environment (Article 11). There is no specific mention of whether the EIA needs to include decommissioning activities, however, it is thought likely that such activities could fall under Article 11.

15.2.4 Additional Information

The majority of oil and gas exploration is located onshore. Offshore production is only located in southern Argentina, in the provinces of Santa Cruz and Tierra del Fuego. It is not thought that any major decommissioning programmes have been undertaken to date [December 2016].

15.2.5 Summary

Table 15-1: Argentina Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other facilities</td>
<td>Remove if in &lt; 75 m water depth and weighing &lt; 4,000 tonnes (installations pre 1998); or Remove if in &lt; 100 m water depth and weighing &lt; 4,000 tonnes (installations post 1998). Remainder assessed on a case by case basis.</td>
<td>IMO/UNCLOS III</td>
</tr>
<tr>
<td>Pipelines</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning Plan needed</td>
<td>No. EIA required for field development may need to include high level decommissioning plans.</td>
<td>General Environmental Law, 2002.</td>
</tr>
</tbody>
</table>
15.3 Brazil

15.3.1 Membership of International Treaties, Conventions and Protocols

- Signatory to UNCLOS III (ratified);
- Member of IMO since 1963;
- Party to the London Convention 1972;
- Signatory to the Basel Convention (ratified);
- CITES (ratified); and
- CBD (ratified).

15.3.2 Membership of Regional Programmes and Conventions

- Member of OLADE.

15.3.3 Principal Legislation

Until 1995, exploration and exploitation of oil and gas reserves in Brazil were government monopolies, carried out exclusively by Petróleo Brasileiro S.A. – Petrobras (the Brazilian national oil company). This was altered following an amendment to the constitution which has allowed other state-owned and/or private companies to undertake oil and gas development.

There are two different regulatory frameworks for the granting of exploration and production rights in Brazil:

- The Pre-Salt Law (No. 12.351/2010), which established a production sharing contract regime for licensing in “pre-salt” areas. Since May 2017 (Decree Law 9.041/2017) Petrobras will decide on the acquisition of pre-salt areas and no longer has the obligation to act as the sole operator. The Law No. 13.365/2016 regulates Petrobras’ preferential right to act in the exploration of oil blocks in the pre-salt layer; and
- The concession regime, under which the Government has no right to participate in a licence except indirectly through Petrobras.

The Petroleum Law (No. 9,478/1997, [http://www.planalto.gov.br/ccivil_03/leis/L9478.htm](http://www.planalto.gov.br/ccivil_03/leis/L9478.htm), in Portuguese), established a new regulatory framework for oil and gas activities and introduced two new regulatory agencies, both of which come under the overall operations of the Ministry of Mines and Energy:

- The Brazilian National Oil, Natural Gas and Biofuels Agency (the ANP), which is responsible for regulation of the oil and gas industry and for promotion of oil and gas development through a competitive bidding process; and
• The National Energy Policy Council (the CNPE), whose objective is to foster rational use of Brazil’s energy resources.

Decommissioning is regulated through a combination of the Petroleum Law (notably Article 28), ordinances/decrees enacted by ANP and specific provisions within the concession agreement applicable to the relevant field. Decommissioning procedures must be included in the field development plan, which is subject to approval by the ANP prior to the start of production [ANP Resolution 17/2015]. Guidance on the decommissioning of installations, ANP Resolution 27/2006 Desativação de Instalações (Deactivation of Facilities), is currently under revision. There is no specific legislation covering pipelines. The base case requirement for platforms and other facilities is for them to be removed if they weigh less than 4,000 tonnes in air and are in less than 80 m water depth. Structures should be cut to 20 m below the seabed in areas subject to erosional processes. Where removal is not technically advised, then a minimum of 55 m clearance must be left between the top of the structure and sea level. The non-removal of installations or parts of installations, when technically justified, should be authorized by the Maritime Authority and the remaining ones left in the area should be flagged in accordance with current norms.


At ANP’s request the concessionaire must present a guarantee for decommissioning and abandonment, in the form of insurance, a letter of credit, contingency fund or other security acceptable to ANP.

The Petroleum Law makes specific reference to protecting the environment throughout all operations (Chapter V, Article 44). At the end of the concession period the operator must remove, at his expense, all equipment and goods that are no longer required, and carry out any necessary environmental remediation (Chapter V, Article 28).

In order to operate, a concessionaire must obtain an environmental licence from the Federal Environmental Protection Agency (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renovaveis, IBAMA) and this must be accompanied by an EIA. EIAs are mandatory for facilities that perform activities potentially resulting in significant environmental impacts. EIA regulation comes under a number of Resolutions enacted by the National Environment Council (CONAMA), notably:

• Resolution 237/1997 which establishes the provisions for the granting of environmental licences; and
• Resolution 1/1985 which establishes the basic criteria for undertaking EIAs.
The following three governmental agencies are involved in decommissioning:

- ANP, who require the Installation and Deactivation Programme (Programa de Desativação da Instalação, PDI);
- IBAMA, who require the Deactivation Programme (Programa de Desativação, PD); and
- The Brazilian Navy, who require the Technical Specification (Memorial Descritivo, MD).

In addition, a number of other governmental agencies are indirectly involved:

- The Comissão Nacional de Energia Nuclear, the National Nuclear Energy Committee who are responsible for the management of naturally occurring radioactive materials;
- The Secretaria da Receita Federal do Brasil, the Internal Revenue Service of Brazil, who are responsible for the tax system; and
- The Ministério do Trabalho e Previdência Social, the Ministry of Labour and Social Welfare, who are responsible for dealing with matters relating to platform crew demobilization and may require a relocation plan to be submitted to them prior to the start of decommissioning activities.

Federal Law No. 9,966/2000 [available in Portuguese http://www.planalto.gov.br/ccivil_03/leis/L9966.htm], regulates the prevention, control and enforcement of oil pollution and other hazardous substances in Brazilian waters. It specifically references handling of oil and other harmful substances on platforms but makes no specific reference to decommissioning.


15.3.4 Additional Information

Although Brazil has both onshore and offshore fields, offshore production predominates, with approximately 93% of domestic oil production in February 2017 resulting from offshore fields. There has been limited decommissioning to date in Brazil. In 2014, Petrobras appointed consultants to conduct a global study to enable them to better understand the industry’s current best practice in subsea decommissioning. In 2016, Petrobras formally created a decommissioning sector in its E&P organization structure.

15.3.5 Summary

**Table 15-2**: Brazil Summary Decommissioning Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Nominal requirement</th>
<th>Legislation driving requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platforms and other</td>
<td>Remove if in &lt; 80 m water depth and weighing &lt; 4,000 tonnes. Remainder assessed on</td>
<td>ANP 27/2006 under revision</td>
</tr>
<tr>
<td>facilities</td>
<td>case by case basis but a clearance of 55 m between any remaining structure and sea</td>
<td>Petroleum Law mentions removal at operator's expense for equipment no longer required but does not</td>
</tr>
<tr>
<td></td>
<td>level is required.</td>
<td>define what determines whether equipment is no longer required.</td>
</tr>
<tr>
<td>Pipelines</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Drill cuttings piles</td>
<td>No guidance.</td>
<td>-</td>
</tr>
<tr>
<td>Decommissioning</td>
<td>Yes, need to include decommissioning in Field Development Plan prior to start of</td>
<td>ANP 17/2015 Field Development Plan.</td>
</tr>
<tr>
<td>Plan needed</td>
<td>production for approval by ANP.</td>
<td></td>
</tr>
</tbody>
</table>

15.4 References

**Argentina**


Brazil


Brazilian National Oil, Natural Gas and Biofuels Agency http://www.anp.gov.br/ (accessed December 2016)


This report is the first of two volumes providing a high level review of the legislation relevant to the decommissioning of offshore facilities and infrastructure (VOLUME 1) and the Plugging & Abandonment (P&A) of offshore wells (VOLUME 2), for specific hydrocarbon producing countries.