

Decommissioning of upstream oil and gas facilities¹

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1. Introduction²

The decommissioning of disused offshore oil and gas structures has posed a plethora of legal, regulatory and technical challenges for international law, individual states and the oil and gas industry. This chapter discusses the progressive development of international law on the subject; how the international oil and gas industry as well as international law have struggled to find the right balance in formulating rules and standards for disposal of disused structures; the seminal effect of the Brent Spar episode on the development of international law and policy; and current law and practice across regions and selected jurisdictions. The chapter discusses evolving legal, policy and removal trends and identifies innovations. It also looks at regional law and policy developments in the Gulf of Mexico and the North Sea (North East Atlantic), which are suggested as pivotal to general international law. The chapter concludes with a discussion of aspects of the decommissioning challenge that can now be considered as resolved, and those aspects that remain “unfinished”, and considers some particularly challenging issues and jurisdictions.

2. Abandonment or decommissioning

Decommissioning describes the set of activities to be undertaken to manage and dispose of installations and platforms and eliminate environmental footprint once a producing field is nearing, or reaches the end of, its economic life. In this chapter, the discussion is focused on the decommissioning of oil and gas installations typically placed on the continental shelf, as these are the subjects of international law. It is estimated that there are more than 6,500 such offshore installations in place around the world.³

Decommissioning may involve leaving in place, dismantling, removing or sinking disused facilities. Other technical activities forming part of decommissioning include plugging and abandonment of wells, pipelines, risers and related facilities. Options to be selected will take into consideration likely environmental impact, the safety of personnel and other users of the sea, the reputational impact of any decision, and financial implications.

1 This chapter is a modified version of a paper originally published by the Rocky Mountain Mineral Law Foundation in the Proceedings of the 53rd Annual Rocky Mountain Mineral Law Institute (2007).

2 The views expressed in this chapter are personal to the authors and do not reflect the official position of Shell.

3 www.info.ogp.org.uk/decommissioning

Terminology associated with decommissioning is interesting and has evolved even as international law on the subject has evolved. “Abandonment”, “removal” and “disposal” are terms commonly used to describe the process of managing and/or disposing of disused installations. However, the most appropriate term is “decommissioning”, and it is this term that is increasingly used within the oil and gas industry as well as by international law commentators. This trend is in contrast with the previous tendency to use the term “abandonment”. It was initially suggested that offshore oil and gas installations should be likened to shipwrecks. It was argued that on disuse, offshore oil and gas installations could be “abandoned” by the operator, similar to the right of a ship owner to abandon a shipwreck, without any further legal liability or responsibility for the same.⁴ It is, however, now commonly accepted as a general principle of international law as well as a requirement of international treaties that the relevant coastal state is responsible for ensuring that disused installations are removed from the continental shelf, or otherwise handled in accordance with the rules of international law.

3. Decommissioning outlook and activities



Decommissioning activities form part of the licence to operate. Decommissioning occurs at the tail end of the upstream oil and gas industry activity cycle. However, in light of environmental considerations, concerns about sustainable development, the level of preparatory work involved, the complexity of removal activity, and the high costs and challenges of a complex regulatory structure, it is now clear to the oil and gas industry as well as to international law commentators, that the challenges of offshore decommissioning are quite considerable and not to be underestimated. Careful planning and preparation (including anticipatory plans during the development phase of an offshore field) are now good practice. A plan that is timely and properly conceived is essential to the success of a decommissioning project.⁵

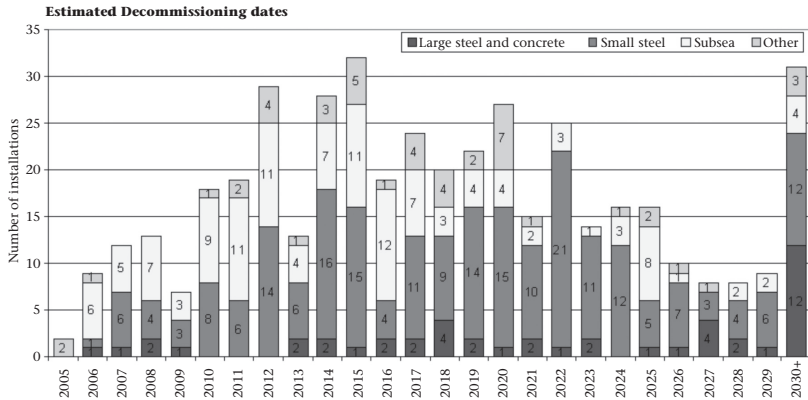
Decommissioning activities are now expected to increase across the global oil and gas industry, with peak decommissioning activity levels likely to be concentrated in the two main regions of the United States’ Gulf of Mexico and the North Sea, at least for the foreseeable future. In the United States’ Gulf of Mexico, at least 210 installations have been removed to date. However, it is thought that as many as 1,000 other fixed installations have ceased production, but are yet to be

4 See Bruce M Kramer and Gary B Conine, *Joint Development and Operations, in International Petroleum Transactions, Second Edition*, in Rocky Mt. Min. L. Fdn, 2000, p 651: “The difficulty with the term ‘abandonment’ is that it is wrongly believed that the liability of the owner or the operator of the installation continues forever. It should be noted here that the rules on abandonment of a wreck are quite different. Under § 531 of the Merchant Shipping Act 1894, as amended, a shipowner is under a duty to remove a wreck if it constitutes an obstruction or hazard to navigation and is liable for any damages suffered by a passing ship if such damage is caused by the lack of marking. (Once the harbour authority or the P&I Club has accepted notice of abandonment, however, the owner normally is relieved of further liability.)”

5 In the United Kingdom continental shelf, it is recommended that planning begin not less than three years before cessation of production.

decommissioned. To address the backlog, the US Minerals Management Service (MMS) directed that, by end 2006, all inactive offshore platforms should be re-activated, put to some other agreed use, or removed entirely.⁶ It remains to be seen, how much progress was made towards meeting this target.

Across the North Sea, some 40 fields have been abandoned to date, with a further 66 in the process of or awaiting abandonment. Of the 40 fields abandoned, 23 are in the United Kingdom, 11 in Norway and six in The Netherlands.⁷ The trend definitely shows an increasing rate of decommissioning and a decreasing rate of new fields or installations. In the United Kingdom, it is expected that some 280 installations (out of some 470 installations altogether) will be decommissioned during the peak removal years from 2012 to 2024.



Decommissioning in the United Kingdom⁸

The impending increase in the level of decommissioning activities, particularly in the Gulf of Mexico and the North Sea, is a clear indication that the subject will become even more pressing for the international oil and gas industry, interested non-governmental organisations and other stakeholders as well as international law commentators. The table above, which shows the estimated dates for decommissioning of offshore oil and gas installations in the United Kingdom continental shelf, demonstrates that the oil and gas industry is moving into full-scale decommissioning, at least in the North Sea.

As to costs, Wood Mackenzie estimates that future decommissioning in the North Sea will cost some US\$42 billion (2007 prices), with the bulk of that to be spent in Norway (48%) and the United Kingdom (40%).⁹ The International Marine Contractors Association estimates global expenditure on decommissioning to exceed US\$75 billion.¹⁰ It is therefore clear that the costs to be expended by the oil industry (in many

6 Scottish Enterprise, *Gulf of Mexico 2005 Oil and Gas Report*, pp 4 and 38.

7 Wood Mackenzie, *Decommissioning in the North Sea*, Upstream Insights – November 2006.

8 UK Dept of Trade & Industry: www.og.dti.gov.uk/upstream/decommissioning/forecast_rem.htm

9 Wood Mackenzie, *Decommissioning in the North Sea*, Upstream Insights – November 2006.

10 International Marine Contractors Association's Press Release 09/06: <http://www.imca-int.com/core/imca/news/press/0609.html>

cases to be contributed to by host governments, either directly or indirectly through fiscal means) will be sizeable. One question therefore is how the various parties who are to bear the costs of decommissioning, can arrange to do so in a thoroughgoing manner. The issue of how to ensure that there are companies or corporate entities available and able to meet the cost of eventual decommissioning at the end of a field's life, remains problematic in many jurisdictions. This is clearly unfinished business.

4. Relevant and topical issues

4.1 Liabilities

Perhaps among the biggest legal challenges relating to decommissioning activities are the discussions about liability and responsibility for undertaking decommissioning and removal. The issues and questions include:

- Who is to undertake decommissioning activities?
- Who is to bear the costs of the decommissioning activities?
- Do past licence holders retain liability after divestment?
- What about perpetual liability? Do the operator and/or non-operator partners retain liability beyond the end of the decommissioning activities? For example, who will be responsible for deterioration of installations and pipelines, if left *in situ*?
- In a joint venture environment, do all companies' present financial capabilities? What are the consequences if they are jointly and severally liable?
- Uncertainty surrounding cost estimates for future decommissioning.

4.2 Cost recovery, accounting and tax

Accounting for decommissioning costs will vary according to the legislation of each country. The tax treatment of the cost of decommissioning is key to the recoverability of such costs, and this is not always certain. Points helpful to determining the most suitable way of accounting for such costs include whether there are statutory or contractual obligations in place; if there are requirements to contribute to abandonment funds; if such funds are properly secured for future use; whether they will suffice, and so on.

On the tax side, it is desirable that the decommissioning funds set aside for future obligations can be accounted for as expenses. Not all tax regimes allow this, however, considering that costs have not been incurred yet.

4.3 Decommissioning funds and other forms of security

Decommissioning costs are extremely high and to be incurred when the field is no longer producing at its highest level (if at all). Hence, securing funds early for eventual decommissioning activities, and preferably well ahead of time is a good preventive measure. However, in view of questions relating to what type of security is required or accepted and for what period of time, and the tax treatment and the costs of such security, the otherwise sound strategy of providing early security has proved to be problematic in many jurisdictions.

Ordinarily speaking, the best security is a decommissioning fund, by which sums are contributed from time to time during the economic life of the field, in order to build up a cash fund. Such fund will then be utilised to finance removal or decommissioning activities in the future, when production ceases.

Discussions regarding the most efficient form of security are common. Examples of forms of securities are abandonment funds, trust funds, letters of credit, performance bonds, parent company guarantees and so on.

The establishment of a form of security is of interest to licensees and co-venturers with respect to their obligations towards one another. This is also of interest to transferors in the event of a transfer or assignment of a participating interest when past licence holders hold residual liabilities, and to governments to secure compliance with the decommissioning obligations of licensees.

4.4 Process planning

As discussed above, due to the complexity of decommissioning, planning is of the essence if success is to be assured and more easily attained, and potential difficulties reduced or eliminated. Matters relating to decommissioning should be addressed at the early stages of field development and not left until mid or late field life. The field development plan should address decommissioning, provision of financial security, and indicative plans made for addressing liabilities, estimated costs, funding and execution of decommissioning activities.

The mapping of the regulatory framework is an important element of the plan – perhaps as important as the analysis and mapping of the stakeholders to be engaged in the process. A stakeholder engagement plan should be in place and address the required approvals and permits, as well as society's concerns and expectations. The plan should also list the facilities to be decommissioned. This is not an easy task, considering the numerous materials and components and the complexity of their integration.

The decommissioning process itself should begin with the establishment of a dedicated decommissioning team. This team should, as a minimum, include (on a full-time or part-time basis) personnel from both technical and support disciplines, such as finance, operations and maintenance, economics, logistics, well engineering, contracts, external affairs, tax, and legal.

The destination of hazardous materials (eg oil waste, asbestos, chromium) should be properly addressed. Transportation and destination are sensitive matters, especially where it is planned to move waste across international borders. Equally important is the establishment of safe procedures for those workers or contractors who will deal with hazardous materials and those who will, generally speaking, undertake the decommissioning activities in the field. Therefore, a health and safety programme should be put in place, following a risk assessment.

It is also important to organise early engagement with contractors to check their availability and the availability of the vessels, materials, equipment and machinery necessary to undertake the decommissioning. Supply chain has an important role in the overall process, and in particular activities such as subsea studies and site surveys, project management, facility decommissioning, well decommissioning and

abandonment, the disposal of structures and post survey. The number of experienced and specialised contractors, who have the requisite technical capacity to undertake highly complex decommissioning operations, is small when compared to the number of facilities to be decommissioned in the short to medium term.

The decommissioning plan will define the destination and possible usage of the items to be decommissioned. The alternatives include salvage, waste storage, recycling, reuse and so on. Other commercial possibilities will also be assessed (eg carbon capture and storage, gas storage and pipeline reuse).

Decommissioning activities map

