

United States

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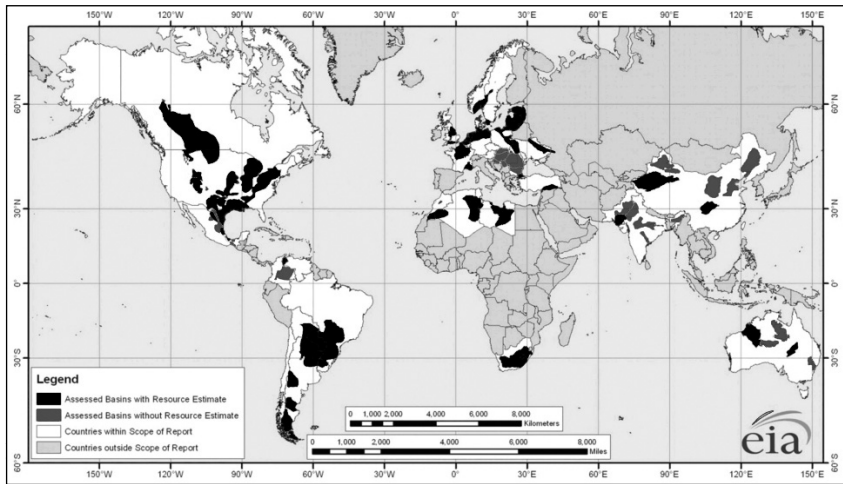
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1. Introduction

After a period where many experts believed that the United States had reached peak oil, and was running out of hydrocarbons, the United States has experienced an energy renaissance due to the development of unconventional resource plays.

According to the Energy Information Administration (EIA), in 2013 US proven reserves reached 36.5 billion barrels of crude oil and 354 trillion cubic feet of natural gas. Since those official statistics were released, production and proven reserves have only continued to increase.

Figure 1: Global oil and gas resource estimates



Source: US Energy Information Administration (EIA)

Decommissioning Guidelines were issued in October 2010 (Decommissioning Guidelines). Under the Decommissioning Guidelines, more than 40% of the estimated 3,500 offshore oil and gas structures in the Gulf of Mexico are expected to require decommissioning by 2020.

This chapter will introduce the most relevant actors and primary laws controlling the offshore oil and gas industry before expounding on the current decommissioning regulatory scheme in the United States.

2. Offshore oil and gas industry background information

2.1 History of the US offshore oil and gas industry

The first recorded discovery of oil and gas in the United States was made by accident as a result of exploration for salt-brine.¹ In fact, the first wildcatters were actually exploring and drilling to increase salt production, which was a valuable commodity in the early 19th century.² In 1814, the Thorla-McKee well of Noble County, Ohio became the first salt-brine well to produce and market oil.³ Originally, oil was sold only as medicine or refined to produce kerosene.⁴ A few years later, William Hart dug the first natural gas well in US history in Fredonia, New York, and after discovering that natural gas could be burned to produce light, buried the first known gas pipeline to a local inn. Known as the 'Father of Natural Gas', Hart's work was quickly duplicated by several other wells in the area, rendering downtown Fredonia a well-lit tourist attraction.⁵ The next industry milestone occurred on 1859 when 'Colonel' Edwin Drake stopped relying on oil seeps or shallow holes dug into the ground and became the first American to drill specifically for oil in the United States. However, it was not until 1896 that offshore exploration and drilling began off the coast of Summerfield, California. The first offshore platforms resembled boardwalks or wooden piers extending up to 1,350 feet from the shoreline and reaching the Pacific floor with 35-foot piles.⁶ After Summerfield's production peaked in 1902, the first offshore venture left behind a beach blackened by oil and marred by rotting piers and derricks.

During the first quarter of the 20th century, the development of the internal combustion engine and the acceleration of the industrial revolution in America exponentially increased the demand for oil. In response, the oil and gas industry significantly improved its offshore drilling technology by substituting unidirectional piledrivers and wooden structures for rotary rigs and steel structures while looking for available hydrocarbons in the Gulf of Mexico.⁷ In 1947, the investment paid off when Kerr-McGee Oil Industries drilled the first productive well beyond the sight of land, located 10½ miles off the Louisiana coast at about 18 feet depth. As the oil companies grew more comfortable operating in the offshore environment, they adapted onshore drilling methods and started developing bigger platforms that could withstand challenging environmental conditions and house technical personnel for extended periods of time.

As the offshore oil and gas industry was taking off based on a state-controlled lease regime where individual states like California, Texas and Louisiana granted subsea drilling leases, the US government disrupted the industry by asserting federal jurisdiction, title and ownership over submerged lands of the continental shelf. In 1950, the federal government's claim was upheld by the US Supreme Court. It was

1 Edgar Wesley Owen, *Trek of the Oil Finders*, AAPG, 1975, pp9–10.

2 *Ibid.*

3 *Ibid.*

4 *Ibid.*

5 *Ibid.*

6 American Oil and Gas Historical Society, *Offshore Petroleum History*, <http://aoghs.org/offshore-history/offshore-oil-history/>.

7 *Ibid.*

not until 1953 that order was restored to the offshore oil and gas industry with the passage of two key laws:

- the Submerged Lands Act which granted individual states rights to the natural resources of submerged lands from their coastline to no more than three nautical miles (5.6 kilometres) (except for Louisiana with three imperial miles and Texas and the west of Florida with a nine nautical miles jurisdiction) from their coasts; and
- the Outer Continental Shelf Lands Act (OCSLA) which gave the US Department of Interior (DOI) the authority to manage and administer the mineral exploration and development of the coastal areas from the applicable state jurisdiction to the seaward limit, known as the Outer Continental Shelf (OCS).⁸

After the implementation of both laws, offshore production rose steadily from 133,000 barrels per day in 1954 to 1.7 million barrels of oil per day by 1971, reaching almost 20% of overall US crude oil production.⁹ Despite numerous attempts to open other OCS areas to petroleum activities, current offshore exploration and production is limited to the coastal regions of six US states: Alabama, Louisiana, Mississippi, Texas, California and Alaska.¹⁰ Only Alabama, Louisiana, Mississippi and Texas provide access to nearly all their offshore energy resources while California and Alaska, for various reasons – mainly political and environmental – do not provide unfettered access to their offshore resources.¹¹ Notwithstanding, the federal government has announced a plan to open parts of the Atlantic OCS for oil leasing during the next decade.¹²

Today, approximately 35.5 million offshore acres are leased by the US government.¹³ Offshore production comes from shallow water leases (less than 1,000 feet), deepwater leases (between 1,000 and 5,000 feet) and ultra-deepwater leases (greater than 5,000 feet).¹⁴ Approximately 50% of all offshore leases are shallow-water leases, 25% are deepwater leases and the remaining 25% are ultra-deepwater leases.¹⁵

8 Seward limit is defined as the furthest of 200 nautical miles seaward of the baseline from which the breadth of the territorial sea is measured or, if the continental shelf can be shown to exceed 200 nautical miles, a distance not greater than a line 100 nautical miles from the 2,500-metre isobath or a line 350 nautical miles from the baseline. Outer Continental Shelf limits greater than 200 nautical miles but less than either the 2,500 metre isobath plus 100 nautical miles or 350 nautical miles are defined by a line 60 nautical miles seaward of the foot of the continental slope or by a line seaward of the foot of the continental slope connecting points where the sediment thickness divided by the distance to the foot of the slope equals 0.01, whichever is furthest.

9 National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, *A Brief History of Offshore Oil Drilling*, <http://oscaction.org/resource-center/staff-papers/>.

10 Joseph R Mason, American Energy Alliance, *The Economic Contribution of Increased Offshore Oil Exploration and Production to Regional and National Economies*, February 3 2009, www.americanenergyalliance.org/images/aea_offshore_updated_final.pdf.

11 *Ibid.*

12 BOEM, *2017–2022 OCS Oil and Gas Leasing Program*, www.boem.gov/Five-Year-Program-2017-2022/.

13 BOEM, *Combined Leasing Report as of December 1, 2011*, December 1 2011, www.boem.gov/uploadedFiles/BOEM/Oil_and_Gas_Energy_Program/Leasing/Combined_Leasing_Status_Report/2011-AnnualLeaseStats.pdf.

14 See Richardson, US Department of the Interior, Mineral Management Service, *Deepwater Gulf of Mexico 2008: America's Offshore Energy Future*, p20, Table 3, May 2008, www.gomr.boemre.gov/PDFs/2008/2008-013.pdf.

15 *Ibid.*

In 2014, offshore production accounted approximately for 1.42 million barrels of oil per day and 1.3 trillion cubic feet (Tcf) of natural gas per year.¹⁶

2.2 Mineral right-granting instrument

Unique among most countries in the world, the United States still gives effect to the Latin *maxim cujus est solum, ejus est usque ad coelom ad infernos* (to whomsoever the soil belongs, he owns also the sky and the depths), which recognises private ownership and exploitation of hydrocarbons and minerals on land that is owned by private individuals. For public lands in the OCS, the DOI has been authorised by the OCSLA to conduct bidding rounds to identify and award offshore blocks to the highest technically qualified bidder by competitive bidding under leases to be signed between the oil and gas company and the government. OCS leases convey mineral rights over offshore parcels to private companies for mineral development. Offshore operators have also produced salt and sulphur from OCS leases.

2.3 Primary legislation

Today, of the 2.3 billion acres of land located within the United States, the DOI administers approximately 30.4% of the subsurface – roughly 700 million acres.¹⁷ The remaining roughly 70% of US subsurface mineral ownership is privately held. As a result, except for Alaska – the only state that owns the minerals and hydrocarbons beneath the surface estate – individual landowners own the minerals located below their land and are able to reap the benefits of production. While the individual state governments are in charge of legislating and regulating most oil and gas industry activities within their borders, and the states themselves own the mineral estate under state lands, the following federal laws and regulations directly control, manage and administer environmental and mineral development and operations across approximately 1.71 billion acres of offshore territories surrounding the United States.¹⁸

(a) *Outer Continental Shelf Lands Act 1953*

As previously stated, OCSLA is the key legislation governing the offshore oil and gas industry in the United States.¹⁹ The act authorises the exploration of and production from OCS lands. It provides jurisdictional authority to the DOI to administer mineral exploration and development in the OCS. In turn, the DOI has appointed and delegated its authority to the Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE), which have worked to establish a sustainable and profitable offshore energy plan through a broad range of regulations and programmes that protect the interests and resources of the United

16 Energy Information Administration, *Annual Energy Outlook 2012: Early Release*, Table 14: Oil & Gas Supply, January 23 2012, www.eia.gov/oiaf/aeo/tablebrowser/#release=EARLY2012&subject=0-EARLY2012&table=14-EARLY2012®ion=0-0&cases=full2011-d020911a,early2012-d121011b.

17 US Department of the Interior, Bureau of Land Management, *Public Land Statistics*, Table 1.3, May 17 2012, www.blm.gov/public_land_statistics/resources.htm.

18 US Department of the Interior, Minerals Management Service, *Budget Justifications and Performance Information, Fiscal Year 2010: Minerals Management Service*, 2010, p13, www.mms.gov/adm/PFD/2010BudgetJustification.pdf.

19 43 USC § 1301.

States. Since its original enactment in 1953, OCSLA has been amended several times, most recently as a result of the Energy Policy Act 2005.²⁰ Amendments have included, for example, the establishment of an oil spill liability fund and the distribution of a portion of the receipts from the leasing of OCS mineral resources to coastal states. In addition to OCSLA's environmental and safety provisions, it also contains economic safeguards for the efficient development of US offshore resources. For example, it provides that the US Attorney General, in consultation with the Federal Trade Commission, may conduct an antitrust review of offshore lease holdings and establishes bonding requirements for operators and lessees.²¹

(b) *Federal Oil and Gas Royalty Management Act 1983 (FOGRMA)*

The FOGRMA requires the development of enforcement practices that ensure prompt and proper collection of oil and gas revenues owed to the United States and Indian lessors.²² It also defines the responsibilities and obligations of lessees, offshore operators and other persons involved in the exploration, development, transportation or sale of oil and gas from the OCS, federal and Indian lands.²³ The Office of Natural Resources Revenue (ONRR) collects, accounts for and disburses mineral revenues from federal (including offshore) and American Indian lands, and contributes to the Land and Water Conservation Fund and other special use funds with more than \$200 billion in disbursements since 1982.²⁴

(c) *Oil Pollution Act 1990 (OPA 90)*

The OPA 90 provides the Secretary of the Interior with authority over offshore facilities and associated pipelines for state and federal offshore waters, with the exception of deepwater ports. The Secretary of the Interior delegated this authority to the BOEM, which is responsible for:

- enforcing spill prevention measures;
- reviewing spill response plans;
- inspecting spill containment and clean-up equipment;
- reviewing spill financial liability limits; and
- certifying spill financial responsibility.

OPA 90 requires oil storage facilities and vessels to submit plans to the federal government detailing how they will respond to any potentially large discharges. The Environmental Protection Agency and Coast Guard have also published regulations for above-ground storage facilities and oil tankers.²⁵

(d) *National Environmental Policy Act 1970 (NEPA)*

The NEPA requires a detailed review in which federal agencies assess the

20 BOEM, *OCS Lands Act History*, www.boem.gov/OCS-Lands-Act-History/.

21 BOEMRE Cooperation with Mexico, § 1336(c)(1).

22 30 USC § 1701.

23 See <http://definitions.uslegal.com/o/oil-and-gas-royalty-management/>.

24 See www.boem.gov/OCS-Lands-Act-History/.

25 See www2.epa.gov/laws-regulations/summary-oil-pollution-act.

environmental impact of and possible alternatives to any proposed plans of oil and gas companies prior to taking major actions. The range of activities covered by NEPA is broad and includes making decisions on permit applications and adopting federal land management actions. Using NEPA guidelines, agencies evaluate the environmental and related social and economic effects of proposed action plans. These evaluations are commonly referred to as Environmental Impact Statements (EISs) or Environmental Assessments (EAs).²⁶

(e) ***Clean Air Act 1970 (CAA)***

The CAA empowers the federal government, through the Environmental Protection Agency (EPA), to regulate the emission of air pollutants from industrial activities. The CAA requires the EPA to set and revise national ambient air quality standards based on the latest technology available. It also requires states to adopt enforceable plans to achieve these standards. State mitigation plans must account for emission of air pollutants that cross state lines. Congress designed the law to help combat the increase in pollution from new and expanded stationary sources (ie, power plants, industrial plants and other facilities that are not mobile). As a general rule, the CAA places higher burdens and requires the use of more sophisticated technology on newer facilities than it does for existing ones, however, requests for expansion of existing facilities will typically have more stringent requirements.²⁷

(f) ***Coastal Zone Management Act 1972 (CZMA)***

The CZMA requires states to develop a State Coastal Zone Management Plan and that any federal agency conducting or supporting activities affecting the coastal zone must do so in accordance with these plans. To comply with CZMA, federal agencies must identify activities that would affect the coastal zone and determine whether those activities are consistent with the applicable State Coastal Zone Management Plan. The federal agency must then provide a detailed report of its determination to the state, including a detailed description of the action, how the activity is consistent with the state plan and any supporting data.²⁸

(g) ***Clean Water Act 1977 (CWA)***

The CWA, through the issuance of the National Pollutant Discharge and Elimination System (NPDES) regulates the discharge of toxic and non-toxic pollutants into the surface waters of the United States. The CWA makes it unlawful to discharge any pollutant from a 'point source' into navigable waters without first obtaining a NPDES permit. Point sources are discernible, confined and discrete conveyances, including pipes, wells, containers and vessels. Industrial facilities must also obtain permits if their discharges go directly to surface waters.²⁹

26 See www2.epa.gov/nepa/what-national-environmental-policy-act.

27 See www2.epa.gov/clean-air-act-overview/clean-air-act-nutshell-how-it-works.

28 See www.fema.gov/coastal-zone-management-act-1972.

29 See www2.epa.gov/laws-regulations/summary-clean-water-act.

(h) Marine Mammals Protection Act 1972 (MMPA)

The MMPA provides for the protection and conservation of all marine mammals and their habitats. The MMPA specifically prohibits the taking of marine mammals in US waters or by US citizens, as well as the importation of marine mammals and their byproducts into the United States. The MMPA does include exemptions in the form of an Incidental Take Authorisation (ITA), for activities related to offshore exploration, development and production. The ITA authorises the unintentional taking of small numbers of marine mammals, provided the activity would have a negligible impact on marine mammals and their subsistence. In the absence of an ITA, offshore operators are liable for any takings that may occur. These takings may result in civil and criminal penalties. BOEM encourages offshore operators to apply for an ITA for activities with the potential for taking marine mammals.

(i) Endangered Species Act 1973 (ESA)

The ESA requires a permit for the taking of any protected species and establishes safeguards against actions that impair or jeopardise protected species or their habitats. The ESA also requires federal agencies to ensure that the actions they authorise, fund or carry out are not likely to jeopardise the continued existence of any protected species or result in the destruction or adverse modification of the designated habitats of such protected species.³⁰

(j) Energy Policy Act 2005 (2005 EPA)³¹

The 2005 EPA encourages hydrocarbon production on federal lands by royalty reductions for marginal oil and gas fields on public lands and in the OCS. The 2005 EPA authorised additional DOI leases on OCS lands and contained additional incentives for further oil and gas exploration in the Gulf of Mexico, including royalty relief for natural gas production from deep wells located in shallow waters, and for both natural gas and oil production from deep waters. Provisions are also included to increase access to federal lands by energy projects – such as drilling activities and gas pipelines. In addition, it has been argued that the 2005 EPA prevents the EPA from regulating hydraulic fracturing to protect drinking water sources.³²

(k) International treaties

The United States is party to many international agreements that affect US environmental and decommissioning policy. Most notably, both the BOEM and the BSEE participate in the US Office of International Programmes, which includes regional offshore environmental programmes from around the world. The United States has also participated in a number of global conventions that have affected its offshore decommissioning policies to varying degrees. First, in 1961 the United States became a member of the 1958 Geneva Convention on the Continental Shelf, which was the first major international convention to require the removal of unused

30 See www2.epa.gov/laws-regulations/summary-endangered-species-act.

31 Pub L 109–58.

32 See www.circleofblue.org/waternews/wp-content/uploads/2010/08/CRS-Summary-of-Energy-Policy-Act-of-2005.pdf.

offshore installations. However, this international agreement was rendered largely obsolete by the United Nations Convention on the Law of the Sea (UNCLOS). The UNCLOS is the primary international agreement governing the decommissioning of offshore installations around the world, however, the United States has yet to ratify the UNCLOS, and consequently is not bound by its terms.

Subsequently, largely based upon the UNCLOS structure, the International Maritime Organisation (IMO) issued the IMO Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone (IMO Guidelines) in 1989. Similar to the US Decommissioning Guidelines discussed herein, the IMO Guidelines require the prompt removal of unused offshore installations, with exceptions for certain extraordinary circumstances as well as artificial reef programmes. It should be noted that the IMO Guidelines are not binding, but instead serve as recommendations to member states. In addition to these treaties, the United States is a member of the 1972 London Dumping Convention, which prohibits the abandonment of platforms or other man-made structures at sea, with the exception of those structures converted to artificial reefs. However, notwithstanding various international treaties and accords, US decommissioning regulations have traditionally been designed and implemented internally to address recognisable national problems, such as risks associated with known weather patterns such as the hurricane season in the Gulf of Mexico, and to avert and address environmental contamination.

(I) *Cross-border issues*

The decommissioning of offshore oil and gas facilities straddling international boundaries poses unique international law issues, and thus is often conducted according to specific treaties between the relevant countries. For example, in June 2000, the United States signed the United States–Mexico Maritime Boundary Treaty, which established a continental shelf boundary separating US and Mexican jurisdictions in portions of the Gulf of Mexico, and provided a 10-year moratorium on oil and gas production in a 1.4 nautical mile buffer zone on each side of the boundary. Under the terms of the treaty, future operations in this zone were to be conducted only after notification to the other party. Such treaty was extended while the United States and Mexico negotiated a more permanent agreement which would incentivise, or at least allow, development of cross-border fields, as opposed to simply delaying any further development. This understanding was established in the Transboundary Agreement regarding environmental and safety practices in the Gulf of Mexico signed by the United States and Mexico in February 2012 (the Transboundary Agreement). However, the implementation and ratification of the Transboundary Agreement is required. The OCS Transboundary Hydrocarbon Agreements Authorisation Act was passed by the House of Representatives on June 27 2013, that added a new section to the OCSLA to authorise implementation of the Transboundary Agreement and empowered the Secretary of the Interior to authorise cross-border unitisation agreements. The Transboundary Agreement itself was ratified by the US Congress in December 2013.

2.4 Relevant actors

US oil and gas exploration and production is regulated by state and federal governments, depending on the location of the resources to be developed. Each state has its own regulatory agency that oversees onshore exploration and production within the state. Additionally, the six states with offshore leasing jurisdiction participate in regulating such activities three nautical miles from their coasts (except for Louisiana, whose jurisdiction extends for three imperial miles, and Texas and Florida, whose jurisdictions extend for nine nautical miles from the high-tide coastline).³³ Outside of state waters, the federal government has exclusive jurisdiction to govern offshore oil and gas activities for the OCS, which is typically at least 200 nautical miles from the coastline.³⁴

(a) *Department of the Interior (DOI)*

The DOI is the federal organisation responsible for the management and conservation of most federal lands and natural resources, including the OCS. The DOI designs, controls, regulates and administers through different governmental agencies all federal oil and gas exploration and production.

In response to the Deepwater Horizon explosion on April 20 2010, and resulting oil spill in the Gulf of Mexico, the DOI underwent a radical reorganisation in 2010, splitting up the Minerals Management Service (MMS), which had managed the nation's natural gas, oil and other mineral resources on the OCS, into three separate, independent federal agencies:

- BOEM, which manages the development of conventional and renewable energy and marine mineral resources on the OCS;
- BSEE, which develops and overlooks environmental standards and regulations for the exploration and development of offshore oil and natural gas on the OCS; and
- Office of Natural Resource Revenue, which manages the revenues generated from the oil and gas leases.³⁵

The new organisational chart on the next page shows the reallocated jurisdictional competencies and oversight responsibilities among the agencies to regulate and manage specialised segments within the offshore oil and gas industry.³⁶

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33 See BOEM, *Outer Continental Shelf*, 2012, www.boem.gov/Oil-and-Gas-Energy-Program/Leasing/Outer-Continental-Shelf/Index.aspx. Florida also has territorial jurisdiction that extends nine nautical miles seaward from its Gulf Coast but no drilling off of the Gulf Coast of Florida is currently permitted.

34 *Ibid.*

35 BOEM, Press Release, *The Reorganization of the Former MMS*, October 11 2011, www.boem.gov/About-BOEM/Reorganization/Reorganization.aspx.

36 Department of the Interior, Secretary of the Interior Order No 3302, *Change of the Name of the Minerals Management Service to the Bureau of Ocean Energy Management, Regulation, and Enforcement*, June 18 2010.

37 BOEM, *The Reorganization of the Former MMS*, available at www.boem.gov/Reorganization/.