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Considerations for Co-location of Aquaculture and Ocean Energy Facilities

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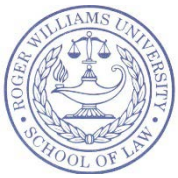

THE UNIVERSITY OF RHODE ISLAND

INTRODUCTION

The United States depends on energy to power its economy. The U.S. produces a substantial amount of its domestic energy in the federal waters of the Outer Continental Shelf (OCS). The OCS is home to over 4,000 facilities used for oil and gas exploration, production and development.[1] The Outer Continental Shelf Lands Act (OCSLA) is the primary federal statute governing the placement, operation, and removal of these facilities.[2] Current federal regulations require removal of OCS facilities once production is unprofitable.[3] Removal costs the industry $300 to $400 million dollars a year, providing ample incentives for owners to avoid or delay decommissioning.[4]

Co-location of aquaculture presents one potential use of unprofitable oil and gas facilities that may extend the decommissioning timeline or allow a facility to remain dormant during a period of depressed prices while simultaneously producing a valuable platform for production of a valuable food product. This study considers the OCSLA regulatory scheme and its implications for co-location of aquaculture and OCS facilities.

PAST DOMESTIC CO-LOCATION OPERATIONS

A. The SeaFish Mariculture Project

The SeaFish Mariculture Project (SeaFish) was the first commercial co-location venture in the OCS. The project was based on an agreement between Shell Offshore Services, Inc. and SeaFish Mariculture, LLC for a platform 48 miles off the coast of Texas in the Gulf of Mexico.[5] The Army Corps of Engineers authorized the project in 1997. SeaFish suspended three cage systems off the side of the platform to rear native red drum fingerlings.[6] The project was abandoned in 1999 after storms damaged the pens and increased gas production on site.[7]

B. The Grace Mariculture Project

The Grace Mariculture Project (Grace) was a co-location venture on Platform Grace, an oil transfer platform located in the Santa Barbara Channel, 10.5 miles from the coast of California.[8] ChevronTexaco, the former platform owner, funded Hubbs-SeaWorld Research Institute (HSWRI)

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[1] Steven Kolian & Paul W. Sammarco, *Mariculture and Other Uses for Offshore Oil and Gas Platform: Rationale for Retaining Infrastructure*, Eco-Rigs of Eco-Endurance Center, at 1-1 (2005), available at http://www.ecorigs.org/mariculture_report_final_lo_res.pdf (last visited Dec. 2, 2016).

[2] OCS facilities are subject to additional legal requirements that are beyond the scope of this study.

[3] 30 C.F.R. § 250.112.

[4] Kolian & Sammarco, *supra* note 1, AT *1-1.

[5] Mark J. Kaiser, Brian Snyder & Allan G. Pulsipher, ASSESSMENT OF OPPORTUNITIES FOR ALTERNATIVE USES OF HYDROCARBON INFRASTRUCTURE IN THE GULF OF MEXICO, OCS Study BOEMRE 2011-028, at 44 (2011).

[6] *Id.*

[7] *Id.*

[8] HUBBS SEAWORLD RESEARCH INSTITUTE, The Grace Mariculture Project: Project Description (undated), *available at* http://gulfcouncil.org/Beta/GMFMCWeb/Aquaculture/GRACEMARICULTUREPROJECT.pdf (last visited Dec. 2, 2016).

to conduct the project.[9] HSWRI leased space on the platform from its owner, Venoco, Inc. with the intention of producing a range of finfish and shellfish species for commercial and stock enhancement purposes in four cages suspended off the sides of the platform.[10] HSWRI planned to seek permits for the project in 2004 and commence grow-out operations in 2005,[11] but operations were abandoned prior to deployment. More recently, HSWRI attentions have focused on siting a new standalone aquaculture facility in federal waters near San Diego.[12]

OCS FACILITY LEASING AND OPERATIONS UNDER OCSLA

In 1953, Congress enacted OCSLA to define a body of law applicable to the seabed, subsoil, and fixed structures located on the OCS—including, but not limited to, oil and gas platforms.[13] Under the Act, DOI has oversight responsibility of the "expeditious and orderly development" of the OCS "in a manner which is consistent with the maintenance of competition and other national needs."[14] The Energy Policy Act of 2005 amended and expanded OCSLA to allow platforms to be used for "marine-related purposes" other than energy production.[15]

The Secretary of the Department of Interior (DOI) is responsible for administration of OCSLA, including issuance of leases and Rights of Use and Easements (RUEs) for alternate use of OCS facilities for marine-related purposes.[16] DOI's management responsibility under OCSLA is currently delegated primarily to the Bureau of Ocean and Energy Management (BOEM) and Bureau of Safety and Environmental Enforcement (BSEE).[17] BOEM regulates "leasing, environmental science, and environmental analysis," while BSEE is responsible for safety and environmental enforcement functions, including "the authority to permit activities."[18] OCS development of conventional energy resources (oil, gas, and sulphur) occurs based on a four-stage process conducted by BOEM, which consists of: (1) planning; (2) leasing; (3) exploration, development, and production; and (4) decommissioning. Renewable resources are separately managed and are not covered in this study.

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[9] *Id.*
[10] *Id.*
[11] *Id.*
[12] *See* Rose Canyon Fisheries, *About*, *at* http://rosecanyonfisheries.com/rose-canyon-fisheries/ (last visited Dec. 2, 2016).
[13] 43 U.S.C. § 1331 *et seq.*; 30 C.F.R. §§ 500-599. Federal jurisdiction begins three nautical miles from the coast and extends out to 200 nautical miles, with the exception of Texas and the Gulf side of Florida where jurisdiction begins nine nautical miles from the coast.
[14] 43 U.S.C. § 1332(3).
[15] 43 U.S.C. § 1337(p)(1)(D).
[16] 30 C.F.R. 585.112; *see also* NOAA et al., A GUIDE TO THE APPLICATION PROCESS FOR OFFSHORE AQUACULTURE IN U.S. FEDERAL WATERS OF THE GULF OF MEXICO 15 (undated), available at http://sero.nmfs.noaa.gov/sustainable_fisheries/gulf_fisheries/aquaculture/documents/pdfs/permit_applicant_guide.pdf (last visited Dec. 2, 2016) [hereinafter PERMIT GUIDE].
[17] Reorganization of Title 30: Bureaus of Safety and Environmental Enforcement and Ocean Energy Management, 76 Fed. Reg. 64,432 (Oct. 18, 2011).
[18] *Id.* at 64,432.

Planning

OCSLA requires BOEM prepare a five-year lease program in coordination with other federal agencies and state and local governments.[19] The program must include the size, timing, and location of proposed lease sales and characterize each leasing activity in order to balance national needs with other environmental sound operations.[20] After the Secretary of DOI approves the program, it is sent to Congress and the President for a sixty-day review period.[21]

The Lease Sale

BOEM conducts lease sales as set out in the five-year lease program.[22] The process includes a Call for Information and Nominations on areas proposed for leasing,[23] followed by a proposed notice of sale that provides the lease form and "contains a description of the area proposed for leasing, the proposed lease terms and conditions of sale, and proposed stipulations to mitigate potential adverse impacts on the environment."[24] For each lease sale, BOEM will conduct a consistency assessment in accordance with the Coastal Zone Management Act (CZMA) to determine if the lease sale is consistent with affected states' coastal zone policies.[25] BOEM then publishes a notice of final sale, which is carried out as a competitive sealed bid process.[26]

Exploration, Development, & Production

After a lease is executed, exploration, development, and production activities on the OCS proceed in stages. Before any activity can occur, lessees must demonstrate required financial assurance in the form of a bond that guarantees compliance with lease terms and conditions.[27] In addition, lessees must develop and receive BOEM approval of separate plans and documents for exploration and for development and production. The precise documents required depend on location and activities, but often include sequential development at least of an Exploration Plan and a Plan of Development, which may take several forms.[28] All plans must meet requirements set out in BOEM regulations and comply with other federal laws, including the CZMA and National Environmental Policy Act.[29] In addition, a permit to drill from BSEE is required prior to drilling a well identified in an Exploration Plan or Plan of Development,[30] and other permitting requirements may also apply.

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[19] 43 U.S.C. § 1344; 30 C.F.R. § 556.200 *et seq*.
[20] *Id.*
[21] *Id.*
[22] *See* 30 C.F.R. § 556.300 *et seq*. (describing lease process for oil and gas resources on the OCS).
[23] 30 C.F.R. § 556.301.
[24] 30 C.F.R. § 556.304.
[25] 30 C.F.R. § 556.305.
[26] 30 C.F.R. § 556.308.
[27] 30 C.F.R. §§ 556.900 *et seq.* (describing financial assurance requirements).
[28] 30 C.F.R. § 550.201 (identifying plans and documents that are required in different locations and for different activities).
[29] *Id*.
[30] 30 C.F.R. § 250.410.

Throughout the term of a lease, BOEM and the leaseholder maintain a working relationship similar to that of a landlord and tenant. If the leaseholder discovers resources within the initial term of the lease, BOEM may extend the lease term and the leaseholder gains the exclusive right to exploit them.[31] Leaseholders may also assign rights under a lease to other parties, including interests in record title and in operating rights and/or operations. BOEM approval is required for such transfers.[32]

Decommissioning and the Alternate Use RUE

When "facilities are no longer useful for operations," leaseholders must comply with decommissioning obligations.[33] These obligations are set out in BSEE regulations and include plugging wells, removing platforms and facilities, decommissioning pipelines, and clearing seafloor obstructions.[34] However, platform decommissioning obligations may be delayed under certain conditions, including based on an "alternative marine use" RUE.[35] Alternate Use RUEs are governed by BOEM regulations and issued by the Bureau and may permit activities at existing facilities that are currently in use and limit activities until the end of production.[36] An Alternate Use RUE is required for "any offshore aquaculture operation that utilizes or tethers to existing oil and gas facilities."[37]

To obtain an Alternate Use RUE, a leaseholder, facility owner, and aquaculture operator must first "reach a preliminary agreement, as to the proposed activity for the use of the existing facility."[38] With that agreement, an application to BOEM is required that details the proposed activity and includes other information, and which BOEM reviews for completeness.[39] Once complete, BOEM "will review the area and determine if there are biological or cultural resources in the proposed area and if there are resources exclusions zone" that require a buffer.[40] Applications are reviewed on a case-by-case basis, and BOEM will determine within 45 days of receipt whether to authorize, reject, or authorize with modifications or stipulations the proposed activity.[41] BOEM will issue a RUE permit contingent on BSEE approval and a decommissioning assessment and adequate

[31] *Id.*
[32] *See* 30 C.F.R. §§ 556.700-556.716 (record title transfers); §§ 556.800-556.810 (operating rights transfers).
[33] 30 C.F.R. § 250.1703.
[34] *Id.*
[35] 30 C.F.R. § 250.1725(a).
[36] 30 C.F.R. § 585.1000.
[37] *See* PERMIT GUIDE, *supra* note 16, at 5.
[38] 30 C.F.R. § 585.1004.
[39] *Id.* § 585.1005.
[40] PERMIT GUIDE, *supra* note 16, at 15.
[41] *Id.*; 30 C.F.R. § 585.1006.

financial assurance that guarantees compliance with the remaining lease obligations.[42] BSEE approval is required.[43]

RUE activities cannot occur until the RUE operator completes and receives BOEM approval of a General Activities Plan (GAP) that describes its proposed operations, the technology to be used, installation plans, decommissioning and site clearance methods, and measures it will use to meet its RUE obligations.[44]

ANALYSIS

OCSLA and BOEM regulations provide a clear structure and framework for issuance of Alternate Use RUEs used to enable co-location of aquaculture with OCS facilities. However, the regulations provide comparatively little guidance on the implementation and administration of that process, such that BOEM and BSEE have substantial discretion for RUE approval and conditions.

Past aquaculture co-location projects offer limited assistance in understanding the practical application of the Alternate Use RUE process. SeaFish and Grace were both proposed (and in the case of SeaFish, completed) prior to both enactment of the Energy Policy Act and the reorganization of DOI's OCS management following the Deepwater Horizon oil spill. As a result, it is not possible to develop a highly nuanced understanding of the current Alternate Use RUE process for aquaculture. However, these projects offer some insight into potential conflicts with RUE approval requirements.

First, aquaculture uses on active platforms may pose safety and/or operational concerns that limit the ability of aquaculture producers to obtain agreements with operating rights holders and leaseholders and to obtain BOEM and BSEE consent during review of RUE applications. Both Grace and SeaFish suspended net pens off the side of the platforms, which may not be fully consistent with ongoing energy operations. For example, SeaFish was required to move its cages to accommodate the oil and gas operator, resulting in fish losses, and it cited increasing oil and gas operations as its reason for suspending operations.[45]

Second, aquaculture co-location with OCS facilities is financially tenuous, requiring substantial capital investment and often remaining subject to the whims of the leaseholder and/or operating rights holder. Grace reportedly received funding from Chevron Environmental Management, including start-up costs and $10 million in funding to cover operations for three years. Additional costs include the costs of OCSLA compliance, including posting of security bond, decommissioning, and OCS rental fees. As in Grace, leaseholders may generate net benefits from postponing

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[42] PERMIT GUIDE, *supra* note 16, at 15; 30 C.F.R. § 585.1012. RUE operators are responsible only for decommissioning related to the alternate use; the leaseholder remains responsible for other required decommissioning. *Id.*

[43] BSEE will review the request to look for any potential conflicts with other uses and operations within the area and will provide recommendations on how to mitigate potential conflicts. *See* PERMIT GUIDE, *supra* note 16, at 16.

[44] 30 C.F.R. §§ 585.640, 585.645.

[45] Kaiser et al., *supra* note 5, at 44.

decommissioning through an RUE, but this funding may not be consistently available, and emergence of a more profitable option may undermine long-term viability. For example, Grace was terminated due to plans for development of liquefied natural gas (LNG) gasification on the platform.[46] Changes in oil and gas prices may also effect the ongoing viability of a platform, potentially resulting in a desire to terminate or restarting operations. Thus, while the extent of the financial risks is subject to speculation, it is clear that substantial financial backing is necessary, most likely from venture capital sources, and aquaculture operators will require strong protections for their investments—protections that may be inconsistent with the desires of OCS facility operators or leaseholders.

CONCLUSION

Though co-location of aquaculture and OCS oil and gas facilities use may feasibly be conducted within the U.S., prospects are limited by existing infrastructure, the high cost of operations and bonds, and the lack of a clear legal foundation for the transfer of liability that taken together could well prohibit the success of platforms to be used for alternative-aquaculture operations. Given the increasing availability of permits for stand-alone offshore aquaculture projects without OCS connections, it is possible that future offshore aquaculture developments will avoid the complications of co-location.

[46] *Id.* at 45.