BUDGET JUSTIFICATIONS

The United States
Department of the Interior

and Performance Information
Fiscal Year 2018

BUREAU OF OCEAN ENERGY MANAGEMENT

NOTICE: These budget justifications are prepared for the Interior, Environment and Related Agencies Appropriations Subcommittees. Approval for release of the justifications prior to their printing in the public record of the Subcommittee hearings may be obtained through the Office of Budget of the Department of the Interior.

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BUREAU OF OCEAN ENERGY MANAGEMENT
FY 2018 PERFORMANCE BUDGET

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FY 2018 PERFORMANCE BUDGET

Bureau of Ocean Energy Management

Preface

"In cooperation with … offshore industry, we are committed to responsible energy development that spurs economic opportunities, generates jobs for American workers, and produces revenues for local, state, and federal partners. Expanded … production is critical to America's economic and energy security, and will play a greater role as we move to break our dependence on foreign oil and strengthen the Nation's energy independence."

– Department of the Interior Secretary Ryan Zinke

The Administration's America-First Offshore Energy Strategy calls for boosting domestic energy production to stimulate the Nation's economy and ensure our security, while providing for responsible stewardship of the environment. These goals align closely with the Bureau of Ocean Energy Management's (BOEM) statutory mission. BOEM is responsible for managing the Nation's offshore resources in a balanced way that promotes environmentally and fiscally responsible energy and mineral development through oil and gas leasing, renewable energy development, and marine mineral leasing, all of which are guided by rigorous, science-based environmental review and study. BOEM has a number of programs in place to provide access to resources located on the Outer Continental Shelf (OCS) to help support increased domestic energy production – from continued production of OCS oil and gas resources to facilitating development of renewable energy. BOEM plays an important role in advancing President Trump's comprehensive approach to expanding responsible development of domestic energy resources as part of a broad effort to secure the Nation's energy future, benefit the economy, and create jobs.

The FY 2018 budget will support ongoing efforts and important initiatives that are vital to BOEM's mission and critical to advancing Administration priorities. BOEM's FY 2018 Request is responsive to the implementation of the Administration's America-First Offshore Energy Strategy. BOEM supports the Administration's efforts to expand OCS oil and gas exploration and production, foster energy security and job creation, and ensure conservation stewardship. The FY 2018 Request reflects a careful analysis of the resources needed to advance the Administration's priorities and develop the Bureau's capacity and to execute its functions carefully, responsibly, and efficiently.

With this request, BOEM proposes to focus resources in the following areas:

- ***Implementing an America-First Offshore Energy Strategy*** **(Executive Order) and the** ***America-First Offshore Energy Strategy*** **Secretarial Order 3350.** On April 28, 2017, President Trump announced the *Implementing an America-First Offshore Energy Strategy* Executive Order. The Executive Order directs the Department of the Interior Secretary Zinke to consider revising the schedule of proposed lease sales in the OCS oil and gas leasing program as well as the review of specific offshore energy regulations and processes. In response to the Executive Order, on May 1, 2017, Department of the Interior Secretary Zinke issued Secretarial Order 3350- *America-First Offshore Energy Strategy*. The Secretarial order directs BOEM to "Immediately initiate the development of a new 'Five-Year Outer Continental Shelf Oil and Gas Leasing Program,' with full consideration given to leasing the OCS offshore Alaska, Mid-Atlantic, South Atlantic, and the Gulf of Mexico, in conformity with the provisions of OCSLA as directed by the President's Executive Order." In addition, the Secretarial Order directs BOEM to: work with the National Marine Fisheries Service to expedite approval of Incidental Harassment Authorization requests and streamline permitting for seismic data collection; expedite the review of Atlantic seismic permitting applications; review the Notice to Lessees (NTL) No. 2016-N01 *Notice to Lessees and Operators of Federal Oil and Gas, and Sulfur Leases, and Holders of Pipeline Right-of-Way and Right-of-Use and Easement Grants in the Outer Continental Shelf*; and, provide options for revising or withdrawing the *Offshore Air Quality Control, Reporting, and Compliance* Proposed. Finally, the Secretarial Order requires BOEM to provide a report regarding its progress addressing the directed activities within 21 days of its issuance. These directives are intended to ensure OCS exploration and development is not unnecessarily inhibited or delayed, but rather promoted in a responsible manner that promotes conservation stewardship and energy security.

- **2017-2022 OCS Oil and Gas Leasing Program.** Under the previous Administration, BOEM developed a 2017-2022 OCS Oil and Gas Leasing Program, which was approved by then-Secretary Jewell in January 2017. This program is scheduled to take effect in July 2017 and includes 11 potential lease sales: one sale in the Cook Inlet Program Area offshore Alaska and 10 sales in the Gulf of Mexico Program area.

  Consistent with the direction provided by the *America-First Offshore Energy Strategy* Secretarial Order 3350, during FY 2017 BOEM initiated the development of a new National Five Year OCS Oil and Gas Leasing Program that will evaluate additional areas for possible leasing. In FY 2018, BOEM proposes to realign budgetary resources to support this Administration and Secretarial priority.

- **Renewable Energy.** As Secretary Zinke said, "Renewable energy, like offshore wind, is one tool in the all of the above toolbox that will help power America with domestic energy,

securing energy independence, and bolstering the economy" (Kitty Hawk, NC, on March 16, 2017). In recognition of the role renewable energy can play in securing the Nation's energy independence and supporting economic growth, BOEM will continue to advance renewable energy through an aggressive leasing program. To date, BOEM has issued 12 commercial wind leases along the Atlantic coast. These leases were issued through six competitive lease sales (i.e., auctions) and two through a non-competitive process. In March 2017, BOEM conducted the Nation's seventh competitive lease sale offshore Kitty Hawk, North Carolina, and expects the lease to be executed in spring of 2017. BOEM has also received three commercial wind lease requests from two different companies offshore Hawaii, and one commercial wind lease request from a potential wind developer offshore California. Additionally, BOEM is in the planning stages for additional areas offshore New York, Massachusetts, and South Carolina. In FY 2016, OCS renewable energy leases provided $3.05 million in rent payments, and BOEM estimates annual rent payments of more than $4.1 million in FY 2017. To date, BOEM has generated over $67 million in bonus bids for the renewable energy leases it has issued through the competitive leasing process.

- **Marine Minerals.** As another tenet of its mandate to manage offshore resources, BOEM also oversees the conveyance of OCS marine minerals. These sand and gravel resources are utilized in support of coastal resilience projects through beach nourishment and coastal restoration activities and result in the restoration of hundreds of miles of the Nation's coastline, protecting billions of dollars of infrastructure as well as important ecological habitat. To date, BOEM has conveyed the rights to more than 139 million cubic yards of OCS sediment by executing 52 leases for projects in eight states and that have restored over 303 miles of coastline.

- **Environmental Analysis.** As stated in the Administration's America First Energy Plan, the need for energy must go hand-in-hand with responsible stewardship of the environment. In support of this Plan and the Bureau's mission to manage offshore energy and mineral resources in an environmentally and economically responsible way, BOEM will continue to utilize its environmental science as the foundation for sound policy decisions. BOEM's environmental studies support renewable energy, conventional energy and marine minerals information needs, and funds are leveraged to the maximum extent possible through partnerships with stakeholders to achieve shared research goals. From FY 2012 to FY 2016, BOEM provided over $68 million to Federal partners to conduct BOEM-designed scientific environmental work.

BOEM proposes this FY 2018 Budget Request and the initiatives included herein to advance the Administration's priorities and to continue to support the Bureau's mission to effectively and efficiently manage responsible development of offshore energy resources.

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FY 2018 PERFORMANCE BUDGET

Bureau of Ocean Energy Management

General Statement

Bureau of Ocean Energy Management Mission

The mission of the Bureau of Ocean Energy Management is to manage development of the Nation's offshore energy and mineral resources in an environmentally and economically responsible way.

The core statutory mandate of the Bureau of Ocean Energy Management (BOEM) is provided by the Outer Continental Shelf (OCS) Lands Act, 43 U.S.C. 1331 et seq. The OCS Lands Act, in conjunction with the Submerged Lands Act, 43 U.S.C. 1301 et seq., defines the OCS as "all submerged lands lying seaward and outside" of the seaward boundaries of a state and "subject to the jurisdiction and control of the United States." In practice, this means that the OCS begins either 3 nautical miles offshore a state (9 nautical miles in the case of Texas and Florida's Gulf of Mexico coast) and ends at 200 nautical miles or in some cases more if the continental shelf of the United States as recognized under international law extends further offshore. The OCS Lands Act gives the Secretary of the Interior responsibility and policy guidance for the administration of mineral exploration and development of the OCS. The Energy Policy Act of 2005, Pub.L. 109–58, amended the OCS Lands Act to authorize the Department to manage the development of renewable energy.

To carry out this mission, BOEM manages OCS leasing, resource and economic evaluation, review and administration of oil and gas exploration and development plans, geological and geophysical permitting (G&G), renewable energy development, National Environmental Policy Act (NEPA) analysis, and environmental studies.

As of April 2017, BOEM manages 3,087 active oil and gas leases on 16.3 million OCS acres. Offshore Federal production in FY 2016 reached approximately 582 million barrels of oil and 1.26 trillion cubic feet of gas, almost all of which is produced in the Gulf of Mexico. This accounted for about 18 percent of all domestic oil production and 4 percent of domestic natural gas production. Annually, this production generates billions of dollars in revenue for state and local governments, as well as U.S. taxpayers, while supporting hundreds of thousands of jobs. Revenues generated from offshore conventional energy leasing and production activities are a significant source of revenue for the Federal Government. In FY 2016, over $161 million was

collected in rent, $161.8 million was collected in bonuses, and $2.47 billion was collected in royalties from production.

The Atlantis platform in the Gulf of Mexico

The OCS Lands Act requires the Secretary of the Interior to prepare a National OCS Oil and Gas Leasing Program that includes a schedule of potential oil and gas lease sales over a five-year period and indicates the size, timing, and location of proposed leasing activity as determined by the Secretary to best meet national energy needs, while addressing a range of economic, environmental, and social considerations.

On January 17, 2017, then-Secretary Jewell approved the National OCS Oil and Gas Leasing Program for 2017-2022, following a mandated preparation process that began with a Request for Information and Comments in June 2014. The approved program schedules 11 lease sales in the 2017-2022 time period, ten lease sales of the available acreage in the three Gulf of Mexico Planning Areas and one lease sale in the northern portion of the Cook Inlet Planning Area, offshore Alaska. Costs associated with the implementation of the approved program were presented in the November 2016 Proposed Final Program document. The amounts presented within the Proposed Final Program document reflect nearly all of BOEM's efforts (i.e., leasing and plans, resource evaluation, and all environmental analyses performed in support of these activities). The Proposed Final Program document can be viewed on BOEM's web site at: https://www.boem.gov/2017-2022-OCS-Oil-and-Gas-Leasing-PFP/.

In addition to considering public comment and input from other interested parties, BOEM also prepared a programmatic environmental impact statement (PEIS), which evaluated potential environmental impacts of OCS oil and gas leasing options within the Proposed Final Program and was published in conjunction with the Proposed Final Program in November 2016.

Since the inauguration of President Donald Trump on January 20, 2017, BOEM has been instructed to initiate the development process for a new OCS Oil and Gas Leasing Program, approximately two years ahead of schedule, as a key component of the implementation of President Trump's America-First Offshore Energy Strategy. Additionally, on April 28, 2017, President Trump announced the *Implementing an America-First Offshore Energy* Executive Order, which directs the Department of the Interior Secretary Zinke to consider revising the schedule of proposed lease sales in the OCS oil and gas leasing program as well as the review of specific offshore energy regulations and processes. In response to the Executive Order, on May

1, 2017, Secretary Zinke issued Secretarial Order 3350- *America-First Offshore Energy Strategy*, directing BOEM to immediately initiate the development of a new OCS Oil and Gas Leasing Program. The Secretarial Order also provides additional directives intended to ensure OCS exploration and development is not unnecessarily inhibited or delayed, but rather promoted in a responsible manner that promotes conservation stewardship and energy security. The Executive Order and Secretarial Order promote the Administration's policies, which include expanding production of U.S. domestic oil and gas supplies, both offshore and onshore, and seeking regulatory and oversight efficiencies, to create a more accessible, efficient, and predictable oil and gas leasing environment for government, industry and other stakeholders. The new OCS Oil and Gas Leasing Program's development will commence in the near future with the publication of a Request for Information and Comment. As required by Section 18 of the OCS Lands Act, the Request will be for information on all 26 planning areas as will the analysis included in the subsequent Draft Proposed Program decision document that is expected to be published in early FY 2018. Based on that analysis, Secretary Zinke will make the first decision as to what areas will be considered for possible future leasing during the National Program planning process.

BOEM also supports a comprehensive energy strategy through its significant progress on renewable energy leasing and development. To date, BOEM has issued 12 commercial wind energy leases off the Atlantic Coast, with one additional lease pending for an area offshore Kitty Hawk, North Carolina. In FY 2017, BOEM auctioned two lease areas: one offshore New York and one offshore Kitty Hawk, North Carolina, generating over $51 million in bonus revenue.

The Block Island Wind Farm off the coast of Rhode Island is one recent example of BOEM's support for renewable energy infrastructure. On December 12, 2016, an historic milestone was celebrated: commercial operations commenced for the first offshore wind farm to deliver energy to the American power grid. While the wind farm is in state waters, the transmission cables that transport the project's energy from Block Island to the mainland required a right-of-way on the OCS issued by BOEM. The project is expected to power the equivalent of about 17,000 homes. The lessons learned from the Block Island Wind Farm project will inform future OCS projects' facility design, fabrication, and installation.

BUREAU BUDGET AND ORGANIZATIONAL STRUCTURE

Budget activities for BOEM are funded through the Ocean Energy Management (OEM) account and support resource evaluation, planning, and leasing of the Nation's OCS energy and mineral resources in an appropriately balanced way that promotes economic development, energy independence, and environmental protection. The OEM account is comprised of the following activities:

Conventional Energy. Activities funded through Conventional Energy include: OCS oil and gas leasing, and the development of the National Outer Continental Shelf Oil and Gas Leasing Program; implementing the lease sale process; administering leases; reviewing exploration and development plans and G&G permit applications; and developing and maintaining the OCS cadastre. Resource evaluation is a critical component of the program that provides the information needed to support program decision making. This includes technical and economic analyses; tract evaluation; assessment and modeling; conservation of resources; reserves inventories; G&G data acquisition; and fair market value determinations. Conventional Energy funds the Risk Management Program, which helps protect the Federal government from financial risks related to natural resource development on the OCS. This activity also funds efforts that enable BOEM to provide sand, gravel and shell resources for shore protection, beach nourishment, and coastal habitat restoration, protecting and improving coastal resources and infrastructure locally, regionally, and nationally.

Renewable Energy. This activity funds renewable energy activities for the OCS, including program development; competitive and noncompetitive leasing actions; review of site assessment and construction and operations plans; consultation with state and local governments, Federal agencies, tribes, and other stakeholders; and development of a multipurpose marine cadastre.

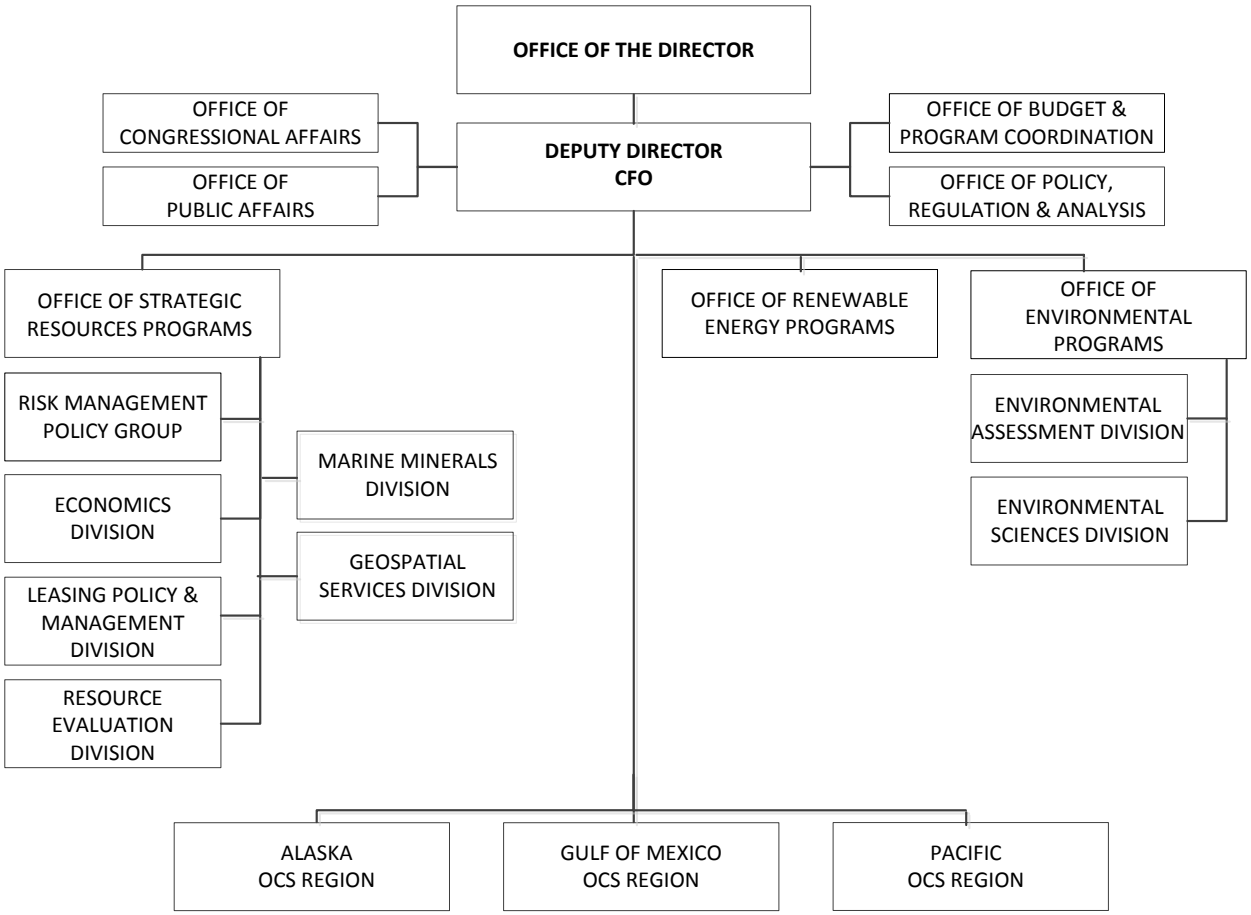
Environmental Programs. This activity funds environmental analyses such as environmental impact statements and environmental assessments needed to assess potential environmental impacts of proposed actions in accordance with NEPA and related regulations. It also supports applied research through the Environmental Studies Program, designed to support policy priorities and ensure that environmental reviews conducted in support of policy decisions incorporate rigorous scientific analysis. Further, this activity funds the environmental consultations under Federal laws.

Executive Direction. This activity funds Bureau-wide leadership, direction, management, coordination, communications strategies, outreach, and regulatory development. It includes functions such as: managing the budget planning and execution processes, managing administrative services, bureau-wide information technology management and governance, congressional and public affairs, policy analysis, and regulations. The Office of the Director is funded within this activity and is responsible for providing policy guidance and overall leadership within the BOEM organization, managing official documents, international affairs, and Freedom of Information Act activities.

Functions and funds within these activities are divided among program offices located at headquarters and regional offices, which are described below. BOEM's organizational structure is designed to advance each of the elements of its mission. The national functions are grouped

into three offices headquartered in the Greater Washington, D.C., area and focus on strategic resource development, environmental analysis and applied science, and offshore renewable energy development. Additionally, BOEM has three regional offices that are responsible for implementing policy through on-the-ground operations. This structure is displayed in the organizational chart in Figure 1 and summarized below.

Figure 1: BOEM Organizational Chart



The Office of Strategic Resources Programs is committed to managing OCS energy and mineral resources to help meet the Nation's energy and resource needs through strategic planning, and resource and economic evaluation. The Office of Strategic Resources Programs develops programs to provide access to resources and ensure a fair return to the American taxpayer for OCS energy and mineral resources. This includes: developing the National OCS Oil and Gas Leasing Program; assessing mineral resource potential, tracking inventories of oil and gas reserves, and developing production projections; economic evaluation to ensure the receipt of fair value through lease sales and lease terms; marine mineral resource management; developing and maintaining an OCS marine cadastre; and protection of the American taxpayer

through a comprehensive Risk Management Program designed to offer a mitigation plan for addressing contingent liabilities on the OCS.

The Office of Renewable Energy Programs advances a sustainable OCS renewable energy future through interactive site planning and environmentally responsible operations and energy generation. Among other things, this office supports a comprehensive energy strategy to facilitate siting, leasing, and construction of new projects, spurring the responsible development of offshore wind resources off the Nation's coasts.

The Office of Environmental Programs conducts and oversees applied science and environmental assessments at every stage of the offshore energy development planning process – for both conventional and renewable energy activities – to inform decisions for environmentally responsible ocean energy and mineral development. BOEM also ensures that it monitors, manages, mitigates, and adapts to the potential consequences of exploring for and developing these resources. As a responsible steward, BOEM must also meet its stakeholder engagement responsibilities. To fulfill these responsibilities, BOEM's environmental programs are comprised of a diverse team of scientists, policy specialists and technical professionals, whose expertise spans archaeology, biology, oceanography, environmental, and social disciplines.

BOEM has three regional offices – Gulf of Mexico, Alaska, and the Pacific – which are located in New Orleans, Louisiana; Anchorage, Alaska; and Camarillo, California, respectively. The regional offices are integrated into the national programs and are integral to all aspects of each program's responsibilities, especially oil and gas resource evaluations, environmental studies and assessments, leasing activities, review and decisions on exploration and development plans, fair market value determinations, G&G permitting, and renewable energy development.

Headquarters and regional offices work together to implement BOEM's various activities. In addition, strong partnerships with other Federal agencies, state and local governments, tribal governments, environmental and other interest groups, the general public, and the oil and gas and renewable energy industries enable BOEM to coordinate development to fulfill its resource management responsibilities.

FY 2018 BUDGET REQUEST

Funding for BOEM is requested through the OEM appropriation account. The OEM appropriation is partially offset by a portion of OCS rental collections and cost recovery fees.

In FY 2018, BOEM requests $171.0 million in total budget authority, an increase of $0.468 million over the FY 2017 continuing resolution (CR) baseline level. BOEM's request includes

$114.2 million in net current appropriations and $56.8 million in offsetting collections, as shown in Table 1.

Table 1: Summary of BOEM Budget Request

BOEM FY 2018 Budget

(Dollars in Thousands)

Bureau of Ocean Energy Management	2016 Actual	2017 CR Baseline	2018 Request	Change from 2017
Net Current Appropriation	100,955	78,658	114,166	+35,508
Offsetting Collections	69,902	91,874	56,834	-35,040
Total Budget Authority	**170,857**	**170,532**	**171,000**	**+468**
Offsetting Collections				
Rental Receipts	68,369	88,319	55,374	-32,945
Cost Recovery Fees	1,533	3,555	1,460	-2,095
Total Offsetting Collections	**69,902**	**91,874**	**56,834**	**-35,040**
Ocean Energy Management				
Renewable Energy	24,278	24,231	21,676	-2,555
Conventional Energy	59,869	59,755	58,123	-1,632
Environmental Programs	68,045	67,916	73,834	+5,918
Executive Direction	18,665	18,630	17,367	-1,263
Total Budget Authority	**170,857**	**170,532**	**171,000**	**+468**

FY 2018 BUDGET HIGHLIGHTS

The 2018 Request reflects funding needed for BOEM to carry out its mission. Changes relative to the FY 2017 CR baseline level are shown in Table 2 and described in greater detail below.

Table 2: List of Budgetary Changes in FY 2018

Bureau of Ocean Energy Management
List of Budgetary Changes*
(dollars in thousands)

Activity	Program Change	Offsetting +	Approp =	Total BA	FTE
BOEM FY 2017 CR BASELINE		**91,874**	**78,658**	**170,532**	**570**
Bureau-Wide	2018 Fixed Costs		+1,301	+1,301	
Conventional Energy	Five Year/National Oil & Gas Leasing Program		+1,550	+1,550	
Environmental Programs	Five Year/National Oil & Gas Leasing Program	+1,500	+7,100	+8,600	
Bureau-Wide	Internal Realignments	-28,086	+28,086	-	
Bureau-Wide	Payroll Lapse from Attrition		-1,965	-1,965	-14
Bureau-Wide	IT Project Development	-4,000	-564	-4,564	
Renewable Energy	Environmental Research	-1,000		-1,000	
Renewable Energy	Stakeholder Outreach	-275		-275	
Renewable Energy	Competitive Leasing Auctions	-630		-630	
Renewable Energy	Delay of Hawaii Lease Sale	-100		-100	
Conventional Energy	Methane Hydrates Assessment & Research	-349		-349	
Conventional Energy	G&G Data Acquisition	-600		-600	
Environmental Programs	Environmental Studies Program	-1,500		-1,500	
FY 2018 Budgetary Changes		-35,040	+35,508	+468	-14
BOEM FY 2018 REQUEST		**56,834**	**114,166**	**171,000**	**556**

* Order of changes listed does not necessarily reflect priority.

Fixed Costs (+$1,301,000). Fixed costs are fully funded in BOEM's FY 2018 Request. These are non-programmatic, mandatory costs that bureaus incur as part of day-to-day operations and include employee pay, changes in Federal health benefits and workers' compensation, rent to the General Services Administration, and payments to the Department through its Working Capital Fund.

Five Year / National Oil and Gas Leasing Program (+$10,150,000; 0 FTE). Increases of $8.6 million in Environmental Programs and $1.55 million in Conventional Energy are requested to support a centerpiece of BOEM's mission critical activities: the National OCS Oil and Gas Leasing Program. The National OCS Oil and Gas Leasing Program, which establishes a schedule of oil and gas lease sales proposed for planning areas of the OCS, specifies the size, timing, and location of potential leasing activity that the Secretary of the Interior determines will best meet national energy needs. The 2017-2022 OCS Oil and Gas Leasing Program was approved by Secretary Jewell on January 17, 2017, and is currently slated to take effect in July 2017. The Program schedules 11 potential lease sales: 10 sales in the combined Gulf of Mexico Program Area, and one lease sale in the Cook Inlet Program Area offshore Alaska. The Program does not include any lease sales for the Arctic, Pacific or Atlantic OCS.

Consistent with the Administration's America-First Offshore Energy Strategy, on May 1, 2017, Secretary Zinke directed BOEM to initiate the development of a new National OCS Oil and Gas

Leasing Program pursuant to Section 18 of the OCS Lands Act. "Following through on the leadership established by President Trump, today's orders will help cement our Nation's position as a global energy leader and foster energy independence and security for the benefit of the American people, while ensuring that this development is safe and environmentally responsible…We will conduct a thorough review of the Outer Continental Shelf (OCS) for oil and gas exploration and listen to state and local stakeholders.," Secretary Zinke has said. Initiating a new National OCS Oil and Gas Leasing Program is a multi-step process that could take several years and involves the development of a Request for Information and three analytic proposals to the Secretary, with multiple public comment periods. In FY 2018, BOEM would allocate resources to support a programmatic environmental analysis, initiate environmental studies, develop economic modeling and resource analyses, and conduct outreach to public stakeholders.

Internal Realignments (+$30,976,000/-$30,976,000; 0 FTE). These realignments reflect a change in the composition of BOEM's budget, specifically a shift in the portion of the budget funded through direct appropriations versus offsetting collections. In FY 2018, BOEM projects a total decline in rental receipt revenue of approximately $32.9 million, and the 2018 Request proposes to offset most of that decline with an increase in appropriated funds. There are no programmatic changes associated with this shift. A more detailed discussion of this issue and the resulting budgetary implications is included in Appendix B.

IT Project Development (-$4,564,000; 0 FTE). This reduction would impact (delay) the schedule of system development, beginning with the deferral of the Risk and Lease Assurance System in FY18 and other projects in FY 2019 and beyond. The Risk and Lease Assurance System is being developed in coordination with the Bureau of Safety and Environmental Enforcement (BSEE) (it includes BSEE's decommissioning functionality) and integrates and manages information associated with financial assurance plan implementation and the tracking of compliance with financial assurance plans. While this system provides additional data capability for the BOEM Risk Management Program, BOEM proposes delaying its development due to evolving requirements associated with the Program's dynamic nature.

Payroll Lapse from Attrition (-$1,966,000; -14 FTE). Consistent with general attrition trends, as well as the Administration's long-term plan to reduce the size of the Federal workforce, BOEM's FY 2018 President's Request assumes a more conservative approach to personnel actions that would result in a reduced hiring rate and the potential for "lapse" due to attrition. The level of attrition BOEM anticipates reflects personnel separations primarily due to retirement or resignations and assumes far fewer transfers to other Federal agencies compared to past years. As fewer new employees are brought on to replace departing ones, BOEM expects savings due to salary "lapse." Lapse is generally defined as the amount budgeted for the salary of a specific position that becomes available for redistribution when the position becomes vacant

(i.e., when the employee leaves). Therefore, BOEM is budgeting for a reduced amount of salary dollars because personnel departures are expected to outpace personnel gains.

Renewable Energy Environmental Research (-$1,000,000; 0 FTE). The results of BOEM's renewable energy environmental research are used to inform policy decisions, environmental analysis, mitigation, and monitoring protocols on environmental and cultural issues. This reduction would result in less baseline data and information on potential impacts from renewable activities for environmental analyses.

Stakeholder Outreach (-$275,000; 0 FTE). BOEM would reduce renewable energy stakeholder outreach. Under the Energy Policy Act of 2005, BOEM is statutorily required to coordinate and consult with Federal, tribal, state and local agencies throughout the renewable energy development process. The reduction would require BOEM to reduce the number of outreach sessions.

Competitive Leasing Auctions (-$630,000; 0 FTE). BOEM utilizes a complex, proprietary, multi-factor online auction format and contract support for its competitive leasing process. This reduction would result in BOEM funding only one planned sale. Holding only one planned sale each year would reduce the collection of bonus bids and reduce future rents to the U. S. Treasury.

Hawaii Lease Sale Delay (-$100,000; 0 FTE). The Department of Defense has expressed significant concern about the wind lease sale proposed offshore Hawaii, concerns which BOEM factors into its decision-making. Due to this and to the need to fund other, higher priority needs, BOEM proposes to delay this particular lease sale. In doing so, BOEM would defer $100,000 in costs associated with the development of the environmental assessment for the lease sale. The primary impact of delaying the sale would be the slowing of the potential advancement of offshore renewable energy in Hawaii.

Methane Hydrate Research (-$349,000; 0 FTE). Methane hydrates have significant potential as an energy source in the future. However, much more research is needed before this energy potential can be realized, and in the face of immediate needs, BOEM must reconsider investments in research on long-term energy sources. At this funding level, BOEM's ability to leverage resources and participate in partnerships and collaborate on efforts to advance scientific progress in this area will be significantly limited.

G&G Data Acquisition (-$600,000; 0 FTE). The acquisition and analysis of geological and geophysical (G&G) data enables BOEM to identify areas favorable for the accumulation of hydrocarbons and develop estimates of resource volumes and economic values of these accumulations. BOEM reimburses the oil and gas industry for reproduction of the G&G data it

physically acquires. BOEM also purchases separate data that includes additional interpretation. If funding for G&G data acquisition is reduced by $600,000, BOEM could continue to operate in the current oil and gas price environment, in which fewer, new seismic surveys are being permitted and conducted, which translates to fewer expenditures.

Environmental Studies Program (-$1,500,000; 0 FTE). To fund environmental studies in support of a new National OCS Oil and Gas Leasing Program, BOEM would defer funding for other studies not directly supporting the planning areas being considered for the new Program.

STRATEGIC OBJECTIVE PERFORMANCE INFORMATION

The FY 2014-2018 Department of Interior (DOI) Strategic Plan, in compliance with the principles of the Government Performance and Results (GPRA) Modernization Act of 2010, provides a collection of mission objectives, goals, strategies and corresponding metrics that provide an integrated and focused approach for tracking performance across a wide range of DOI programs. While the DOI Strategic Plan for FY 2014-2018 is the foundational structure for the description of program performance measurement and planning for the FY 2018 President's budget, further details for achieving the Strategic Plan's goals are presented in the DOI Annual Performance Plan and Report. Bureau and program-specific plans for FY 2018 are fully consistent with the goals, outcomes, and measures described in the FY 2014-2018 version of the DOI Strategic Plan and related implementation information in the DOI Annual Performance Plan and Report.

Bureau Contribution. Within the DOI Strategic Plan for FY 2014–2018, under Mission Area Three: *Powering Our Future and Responsible Use of the Nation's Resources*, BOEM's contributions are primarily through its conventional energy, non-energy mineral development and renewable energy programs. BOEM tracks and reports three GPRA measures, and associated supporting performance measures under Mission Area Three to the Department under the strategies noted below.

Implementation Strategy and Performance Metrics. The following narrative provides insight into the three DOI Strategic Plan strategies BOEM supports as well as the performance metrics associated with those strategies. Please reference the DOI Annual Performance Plan and Report for additional information.

BOEM's conventional energy activities support Goal One: *Secure American's Energy Resources* and Strategy Three: *Manage Conventional Energy Development*. The specific GPRA measure, *Number of offshore lease sales held consistent with the Secretary's Five Year Program*, tracks the quantity of lease sales conducted during the current National OCS Oil and Gas Leasing

Program. The conventional energy GPRA measures and their supporting performance measures are noted in the following table.

Table 3: Performance: Manage Conventional Energy Development

Outputs, Supporting Performance Measures, and/or Milestones	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Plan	2016 Actual	2017 CR Baseline	2018 Request
GPRA Measure: Number of offshore lease sales held consistent with the Secretary's Five-Year Oil and Gas Program	2	3	3	2	3	3	3	2
Number of blocks/tracts evaluated	14,612	12,200	9,184	33,977	15,000	1,798	2,000	2,000
Maintain the ratio of 1.8 to 1 (+/-0.4) of accepted high bids to BOEM's estimated value [1]	2.013 to 1	2.116 to 1	1.84 to 1	1.92 to 1	1.8 to 1 (+/-0.4)	1.53 to 1	1.8 to 1 (+/-0.4)	1.8 to 1 (+/-0.4)
Percent of Environmental Studies Program (ESP) projects rated "Moderately Effective" or better by BOEM internal customers	95% (21/22)	96% (22/23)	100% (16/16)	100% (16/16)	90% (N/A)	90% (N/A)	90% (N/A)	90% (N/A)

[1] This measure compares the accepted high bid on each tract to the government's estimated value for that tract. Industry corporate strategy with respect to acquiring specific acreage could lead to a company raising its bid above this analytical value to improve their chances of winning the lease. BOEM estimates are based on a discounted cash flow analysis of a tract and are not designed to predict the high bid. Therefore, the value of this indicator should always be greater than one to achieve fair value for OCS leases. The annual target ratio of 1.8 to 1 means that on average, the industry bids received are expected to be $1.80 (+/- 0.4) for every dollar of the estimated value for each tract.

BOEM's conventional energy activities also support Goal Two: *Sustainably Manage Timber, Forage, and Non-energy Minerals*, Strategy Three: *Manage Non-energy Mineral Development*. The specific GPRA measure, *Number of sand and gravel requests processed for coastal restoration projects*, tracks the number of non-energy minerals lease requests for OCS sand and gravel that are processed for coastal restoration and resilience projects. Results for this measure are presented in the below table.

Table 4: Performance: Manage Non-energy Mineral Development

Outputs, Supporting Performance Measures, and/or Milestones	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Plan	2016 Actual	2017 CR Baseline	2018 Request
GPRA Measure: Number of sand and gravel requests processed for coastal restoration projects	N/A	N/A	5	5	7	5	7	7

The renewable energy functions support Goal One: *Secure American's Energy Resources* and Strategy Two: *Develop Renewable Energy Potential*. The specific GPRA measure, *Number of megawatts of approved capacity authorized on public land and the OCS for renewable energy development while ensuring full environmental review*, is a cumulative measure that tracks the cumulative number of approved megawatts based on the total capacity of the equipment to be installed, as specified in an approved construction and operations plan. The renewable energy

GPRA measure and its supporting performance measures, which are reported within the DOI Annual Performance Plan and Report, are noted in the following table.

Table 5: Performance: Develop Renewable Energy Potential

Outputs, Supporting Performance Measures, and/or Milestones	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Plan	2016 Actual	2017 CR Baseline	2018 Request
GPRA Measure: Number of megawatts of approved capacity authorized on public land and the OCS for renewable energy development while ensuring full environmental review (cumulative) [1]	468	468	468	498	554	510	510	510
Number of offshore renewable energy leasing or ROW/RUE grant processes initiated (i.e., first public notice issued)	4	5	2	0	2	3	1	1
Number of limited leases issued for offshore renewable energy testing and data collection, including §238 research leases	0	0	1	1	2	0	0	1
Number of commercial leases issued for offshore renewable energy generation	0	3	1	4	3	2	2	3
Number of right-of-way/right-of-use and easement grants issued for offshore renewable energy transmission	0	0	0	1	0	0	0	0
Number of offshore NEPA documents (EIS/EAs) finalized for Renewable Energy	1	4	5	5	8	2	4	7

[1] This measure is tracked as a part of the Department of the Interior Renewable Energy Priority Goal. The actuals and planned targets displayed within the table reflect BOEM's contribution toward the Department-wide Priority Goal.

ACTIVITY-BASED COSTING

BOEM uses activity-based costing (ABC) data to provide its managers data on the cost of current activities required to support the overall mission. BOEM ABC data are continually evaluated and updated to provide management with greater insight into costs, activities and performance measurement targets. The ABC process refinements improve the quality of data available to managers in decision-making in areas such as human capital management, cost recovery, cost control and workload allocation. BOEM is further strengthening the foundation for ABC Management within the Bureau to provide justifiable and defensible management information that supports strategic and tactical decision-making moving the organization forward.

Use of Cost and Performance Data

BOEM continues to refine ABC data to better integrate its budget, cost recovery and performance data into management decision-making. Newer cost data reports will provide more definitive links between ABC codes and internal activities that the staff may utilize to record their payroll time. Greater accuracy in reporting labor hours of various activities for which BOEM has legislative authority to recover costs will enhance future budgeting decisions. Report data is primarily pulled from the Cost and Performance Management Tool utilizing COGNOS data bases using specific search criteria that focus on a suite of ABC codes that, when utilized correctly, capture specific activities for cost recovery efforts. This methodology allows for verifiable, justifiable results to improve the accuracy and consistency of BOEM's cost recovery fees.

FY 2018 PERFORMANCE BUDGET

Bureau of Ocean Energy Management

Bureau Budget Tables

Table 6: Budget at a Glance

Bureau of Ocean Energy Management

Budget at a Glance

(Dollars in Thousands)

Bureau of Ocean Energy Management	2016 Actual	2017 CR Baseline	Internal Transfers (+/-)	Fixed Costs (+/-)	Program Changes from 2017 Baseline (+/-)	2018 Request
Net Current Appropriation	100,955	78,658	+28,086	+1,301	+6,121	114,166
Offsetting Collections	69,902	91,874	-28,086		-6,954	56,834
Total Budget Authority	**170,857**	**170,532**	**-**	**+1,301**	**-833**	**171,000**
Offsetting Collections						
Rental Receipts	68,369	88,319	-25,991	-	-6,954	55,374
Cost Recovery Fees	1,533	3,555	-2,095	-	-	1,460
Total Offsetting Collections	**69,902**	**91,874**	**-28,086**	**-**	**-6,954**	**56,834**
Ocean Energy Management						
Renewable Energy	24,278	24,231	-	+137	-2,692	21,676
Environmental research					*-1,000*	
Stakeholder outreach					*-275*	
Competitive leasing auctions					*-630*	
Hawaii lease sale delay					*-100*	
IT project development					*-480*	
Lapse from attrition					*-207*	
Conventional Energy	59,869	59,755	-	+609	-2,241	58,123
Five Year / National Program					*+1,550*	
Methane Hydrates					*-349*	
G&G data acquisition					*-600*	
IT project development					*-1,922*	
Lapse from attrition					*-920*	
Environmental Programs	68,045	67,916	-	+347	+5,571	73,834
Five Year / National Program					*+8,600*	
Environmental Studies Program					*-1,500*	
IT project development					*-1,005*	
Lapse from attrition					*-524*	
Executive Direction	18,665	18,630	-	+208	-1,471	17,367
IT project development					*-1,157*	
Lapse from attrition					*-314*	
Total Budget Authority	**170,857**	**170,532**	**-**	**+1,301**	**-833**	**171,000**

Full Time Equivalents (FTE)	**570**	**570**			**-14**	**556**

Table 7: Summary of Requirements

Bureau of Ocean Energy Management
Summary of Requirements
(Dollars in Thousands)

	2017 CR Baseline		Fixed Costs	Internal Transfers	Total Program Changes		2018 Request		Total Change from 2017	
	FTE	Amount			*FTE*	Amount	*FTE*	Amount	*FTE*	Amount
Ocean Energy Management										
Renewable Energy	***60***	**24,231**	**+137**	**-**	***-1***	**-2,692**	***59***	**21,676**	***-1***	**-2,555**
Direct Appropriation		9,205	+137	+8,000	*-1*	-207		17,135		+7,930
Offsetting Collections		15,026		-8,000	-	-2,485		4,541		-10,485
Conventional Energy	***267***	**59,755**	**+609**	**-**	***-7***	**-2,241**	***260***	**58,123**	***-7***	**-1,632**
Direct Appropriation		36,178	+609	+12,095	*-7*	+630		49,512		+13,334
Offsetting Collections		23,577		-12,095	-	-2,871		8,611		-14,966
Environmental Programs	***152***	**67,916**	**+347**	**-**	***-4***	**+5,571**	***148***	**73,834**	***-4***	**+5,918**
Direct Appropriation		20,483	+347	+6,991	*-4*	+6,576		34,397		+13,914
Offsetting Collections		47,433		-6,991	-	-1,005		39,437		-7,996
Executive Direction	***91***	**18,630**	**+208**		***-2***	**-1,471**	***89***	**17,367**	***-2***	**-1,263**
Direct Appropriation		12,792	+208	+1,000	*-2*	-878		13,122		+330
Offsetting Collections		5,838		-1,000	-	-593		4,245		-1,593
Total, OEM	***570***	**170,532**	**+1,301**	**-**	***-14***	**-833**	***556***	**171,000**	***-14***	**+468**
Offsetting Collections		**91,874**		**-28,086**		**-6,954**		**56,834**		**-35,040**
Rental Receipts		88,319		-25,991		-6,954		55,374		-32,945
Cost Recovery Fees		3,555		-2,095		-		1,460		-2,095
Net Appropriation, BOEM	***570***	**78,658**	**+1,301**	**+28,086**	***-14***	**+6,121**	***556***	**114,166**	***-14***	**+35,508**

Table 8: Program and Financing

Program and Financing
(dollars in millions)

Treasury Account ID: 14-1917		FY 2016	FY 2017	FY 2018
Obligations by program activity - Direct program				
0001	Renewable Energy		24	22
0002	Conventional Energy		60	58
0003	Appropriations	77		
0004	Offsetting collections	100		
0005	Environmental Programs		68	74
0006	Exectutive Direction		19	17
0192	Total direct program	**177**	**171**	**171**
0799	**Total direct obligations**	**177**	**171**	**171**
0802	Reimbursable support agreements	3	4	4
0900	**Total new obligations (direct & reimbursable)**	**180**	**175**	**175**
Budgetary resources - Unobligated balance				
1000	Unobligated balance brought forward, Oct 1	28	28	29
1021	Recoveries of prior year unpaid obligations	4	3	3
1050	**Total unobligated balance**	**32**	**31**	**32**
Budgetary resources - Budget authority				
1100	Appropriations, discretionary	101	79	114
1160	**Appropriations, discretionary (total)**	**101**	**79**	**114**
1700	Collected - Offsetting collections	75	92	57
1701	Change in uncollected payments, Federal sources	0	2	2
1750	**Offsetting collections, discretionary (total)**	**75**	**94**	**59**
1900	**Total budget authority**	**176**	**173**	**173**
1930	**Total budgetary resources available**	**208**	**204**	**205**
1941	**Unexpired unobligated balance, end of year**	**28**	**29**	**30**

Program and Financing (continued)

(dollars in millions)

Treasury Account ID: 14-1917		FY 2016	FY 2017	FY 2018
Change in obligated balance - Unpaid obligations				
3000	Unpaid obligations, brought forward Oct. 1	118	120	83
3010	Obligations incurred, unexpired accounts	180	175	175
3020	Outlays (gross)	-174	-209	-215
3040	Recoveries of prior year unpaid obligations, unexpired	-4	-3	-3
3050	**Unpaid obligations, end of year**	**120**	**83**	**40**
Change in obligated balance - Uncollected payments				
3060	Uncollected pymts, Federal sources, brought forward Oct.1	-3	-3	-5
3070	Change in uncollected payments, Federal sources, unexpired		-2	-2
3090	**Uncollected pymts, Federal sources, end of year**	**-3**	**-5**	**-7**
3100	Obligated balance, start of year	115	117	78
3200	**Obligated balance, end of year**	**117**	**78**	**33**
Budget authority and outlays, net				
4000	**Budget authority, gross**	**176**	**173**	**173**
4010	Outlays from new discretionary authority	94	126	141
4011	Outlays from discretionary balances	80	83	74
4020	**Outlays, gross (total)**	**174**	**209**	**215**
4030	Offsetting collections from Federal sources	-1	-2	-2
4033	Offsetting collections from non-Federal sources (Rental receipts, cost recovery fees, royalty-in-kind)	-74	-90	-55
4040	**Total offsets against gross budget authority and outlays**	**-75**	**-92**	**-57**
4050	Change in uncollected payments, Federal sources		-2	-2
4070	Budget authority, net discretionary	101	79	114
4080	Outlays, net discretionary	99	117	158
4180	**Total budget authority, net discretionary**	**101**	**79**	**114**
4190	**Total outlays, net discretionary**	**99**	**117**	**158**
Unexpired unavailable Balance: Offsetting Collections				
5090	Unavailable balance, start of year	[5]	[5]	[5]
5091	Unavailable balance, end of year	5	5	5

Table 9: Budget Object Class

Object Classification (MAX Schedule O)
(dollars in millions)

Treasury Account ID: 14-1917		FY 2016	FY 2017	FY 2018
Direct Obligations				
11.1	Personnel Compensation: Full-time permanent	60	60	58
12.1	Civilian personnel benefits	19	19	19
21.0	Travel and transportation of persons	2	1	1
24.0	Printing and reproduction	0	0	0
25.2	Other services from non-Federal sources	82	80	81
26.0	Supplies and materials	1	1	1
31.0	Equipment	2	2	2
41.0	Grants, subsidies, and contributions	11	10	10
99.0	**Subtotal, direct obligations**	**177**	**173**	**172**
Reimbursable Obligations				
25.0	Research and development contracts	2	1	2
41.0	Grants, subsidies, and contributions	1	1	1
99.0	**Subtotal, reimbursable obligations**	**3**	**2**	**3**
99.9	**Total new obligations**	**180**	**175**	**175**

Table 10: Fixed Costs and Internal Realignments

Bureau of Ocean Energy Management

Justification of Fixed Costs and Internal Realignments

(Dollars In Thousands)

Fixed Cost Changes and Projections	2017 Change	2018 Change
Change in Number of Paid Days	-599	+0
This column reflects changes in pay associated with the change in the number of paid days between fiscal years 2017 and 2018.		
Pay Raise	+1,523	+1,525
The change reflects the salary impact of the 2.1% pay raise for 2017 as signed by the President in December 2016, and the estimated 1.9% pay raise for 2018.		
Departmental Working Capital Fund	-105	-36
The change reflects expected changes in the charges for centrally billed Department services and other services through the Working Capital Fund. These charges are detailed in the Budget Justification for Departmental Management.		
Worker's Compensation Payments	+66	-2
The amounts reflect projected changes in the costs of compensating injured employees and dependents of employees who suffer accidental deaths while on duty. Costs will reimburse the Department of Labor, Federal Employees Compensation Fund, pursuant to 5 U.S.C. 8147(b) as amended by Public Law 94-273.		
Unemployment Compensation Payments	-2	+0
The amounts reflect projected changes in the costs of unemployment compensation claims to be paid to the Department of Labor, Federal Employees Compensation Account, in the Unemployment Trust Fund, pursuant to Public Law 96-499.		
Rental Payments	+39	-186
The amounts reflect changes in the costs payable to the General Services Administration (GSA) and others for office and non-office space as estimated by GSA, as well as the rental costs of other currently occupied space. These costs include building security; in the case of GSA space, these are paid to the Department of Homeland Security (DHS). Costs of mandatory office relocations, i.e. relocations in cases where due to external events there is no alternative but to vacate the currently occupied space, are also included.		
Baseline Adjustments for O&M Increases	+0	+0
In accordance with space maximization efforts across the Federal Government, this adjustment captures the associated increase to baseline operations and maintenance (O&M) requirements resulting from movement out of GSA or direct-leased (commercial) space and into Bureau-owned space. While the GSA portion of fixed costs will go down as a result of these moves, Bureaus often encounter an increase to baseline O&M costs not otherwise captured in fixed costs. This category of funding properly adjusts the baseline fixed cost amount to maintain steady-state funding for these requirements.		

Internal Realignments and Non-Policy/Program Changes	**FY 2018**
Renewable Energy - direct appropriations/offsetting collections This realignment reflects a change in the composition of BOEM's budget, specifically a shift in the portion of the budget funded through direct appropriations versus offsetting collections. See Appendix B for additional details.	-8,000/+8,000
Conventional Energy - direct appropriations/offsetting collections This realignment reflects a change in the composition of BOEM's budget, specifically a shift in the portion of the budget funded through direct appropriations versus offsetting collections. See Appendix B for additional details.	-12,095/+12,095
Environmental Programs - direct appropriations/offsetting collections This realignment reflects a change in the composition of BOEM's budget, specifically a shift in the portion of the budget funded through direct appropriations versus offsetting collections. See Appendix B for additional details.	-6,991/+6,991
Executive Direction - direct appropriations/offsetting collections This realignment reflects a change in the composition of BOEM's budget, specifically a shift in the portion of the budget funded through direct appropriations versus offsetting collections. See Appendix B for additional details.	-1,000/+1,000

Total, Fixed Costs and Related Changes in 2018	**+1,301**

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FY 2018 PERFORMANCE BUDGET

Bureau of Ocean Energy Management

Renewable Energy

Table 11: Renewable Energy Budget Summary

		2016 Actual	2017 CR Baseline	Internal Transfers	Fixed Costs	Program Changes	2018 Request	Change from 2017
Renewable Energy	($000)	24,278	24,231	-	+137	-2,692	21,676	-2,555
	FTE	*47*	*60*			*-1*	*59*	*-1*

SUMMARY OF 2018 PROGRAM CHANGES

Program Changes from 2017 CR Baseline	($000)	FTE
Environmental research	-1,000	
Stakeholder outreach	-275	
Competitive leasing auctions	-630	
Hawaii lease sale delay	-100	
IT project development	-480	
Lapse from Attrition	-207	-1
Total Program Changes	**-2,692**	**-1**

The FY 2018 President's Budget request funds BOEM's Renewable Energy budget activity at $21.7 million and 59 FTE, a net decrease of $2.6 million from the FY 2017 CR baseline level. This change is comprised of an increase of $137,000 in fixed costs and the program changes described below.

Renewable Energy Environmental Research (-$1,000,000). Although the need for renewable energy research is expected to continue, BOEM proposes a reduction to renewable energy environmental studies in order to support the Bureau's highest priorities and needs in FY 2018. Areas impacted by a reduction in environmental studies would likely include marine mammals, birds and assessments of noise, as well as BOEM's ability to leverage stakeholder and industry-funded environmental work that can be used to fulfill NEPA and other responsibilities.

Competitive Leasing Auctions (-$630,000). BOEM utilizes a complex, proprietary, multi-factor online auction format and contract support for its competitive leasing process. This reduction would result in BOEM funding only one planned sale, which could slow the

advancement of offshore renewable energy commercial leasing activities on both the Atlantic and Pacific coasts. Additionally, this reduction will result in a lost opportunity to add millions of dollars to the U.S. Treasury annually through the collection of additional bonus bids and future rents.

Stakeholder Outreach (-$275,000). BOEM utilizes meeting facilitation contracts during stakeholder outreach to improve its efficiency, ensure awareness of potential issues and controversy, and optimize the time available for its staff to work on existing leases and other projects. BOEM would reduce the number or the quality of the renewable energy stakeholder outreach sessions.

Hawaii Lease Sale Delay (-$100,000). BOEM proposes to delay the Hawaii offshore lease sale and the development of its associated environmental assessment. Although it may impact the advancement of offshore renewable energy in Hawaii, it also allows BOEM to more fully consider stakeholder feedback.

IT Project Development (-$480,000). BOEM proposes delaying aspects of its IT system development, in order to support BOEM's highest priorities and needs in FY 2018. The amount here reflects the portion of IT project development funded through this activity.

Lapse from Attrition (-$207,000; -1 FTE). Consistent with general attrition trends, as well as the Administration's long-term plan to reduce the size of the Federal workforce, BOEM is budgeting for a reduced amount of salary dollars because personnel departures will likely outpace personnel gains.

Program Performance Change. The FY 2018 budget request supports the accomplishment of the Department's strategic goals. BOEM is making great strides in moving towards the goals it establishes for itself as well as the supporting performance measures. Budgetary changes are not the sole influence on performance measures tracked within this activity. The reductions identified above do not affect programmatic performance, as depicted by the relatively steady targets for the performance measures contained within the table at the end of this chapter.

PROGRAM OVERVIEW

The Outer Continental Shelf (OCS) has significant potential as a source of new domestic energy generation from renewable energy resources. Section 388 of the Energy Policy Act of 2005 gave the Secretary of the Interior the authority to issue leases, easements, and rights-of-way on the OCS for activities that produce or support production, transportation, or transmission of energy from sources other than oil and gas. Section 388 also authorized the Secretary to permit OCS

activities that repurpose facilities currently or previously used for activities authorized under the OCS Lands Act. Renewable energy and alternate use projects may include wind, wave energy, and ocean current projects, as well as projects that make alternative use of existing oil and gas platforms in Federal waters.

Offshore renewable energy wind farm

In 2009, BOEM published its renewable energy regulations, implementing Section 388 of the Energy Policy Act of 2005. These regulations established a framework for the Renewable Energy Program's planning, leasing, and operations authorization processes that would allow for orderly, safe and environmentally responsible OCS renewable energy development and provide for a fair return for use of OCS lands. Also in 2009, the U.S. Department of the Interior and the Federal Energy Regulatory Commission (FERC) signed a memorandum of understanding that provided for joint regulation of potential OCS wave and ocean current projects.

Since these regulations were put in place, BOEM has worked diligently to support renewable energy development spurred by renewable energy goals of coastal states. To date, BOEM has conducted seven competitive wind energy lease sales for areas offshore the Atlantic coast and issued twelve commercial wind energy leases offshore of Delaware, Maryland, Massachusetts, New Jersey, New York, Rhode Island, and Virginia. One additional lease is pending for an area offshore Kitty Hawk, North Carolina, which should be issued in the spring of 2017. Additionally, BOEM is in the planning stages for additional wind leasing off the coast of the Carolinas and has received unsolicited lease requests from two companies seeking to develop offshore wind energy for areas located offshore New York and Massachusetts that were not in response to a formal call for interest. In 2014, BOEM executed its first transmission right-of-way grant offshore Rhode Island for the Block Island Wind Farm, which became the first operational wind facility offshore the U.S. in late 2016. In 2015, BOEM executed the first wind energy research lease in U.S. Federal waters with the Commonwealth of Virginia's Department of Mines, Minerals and Energy.

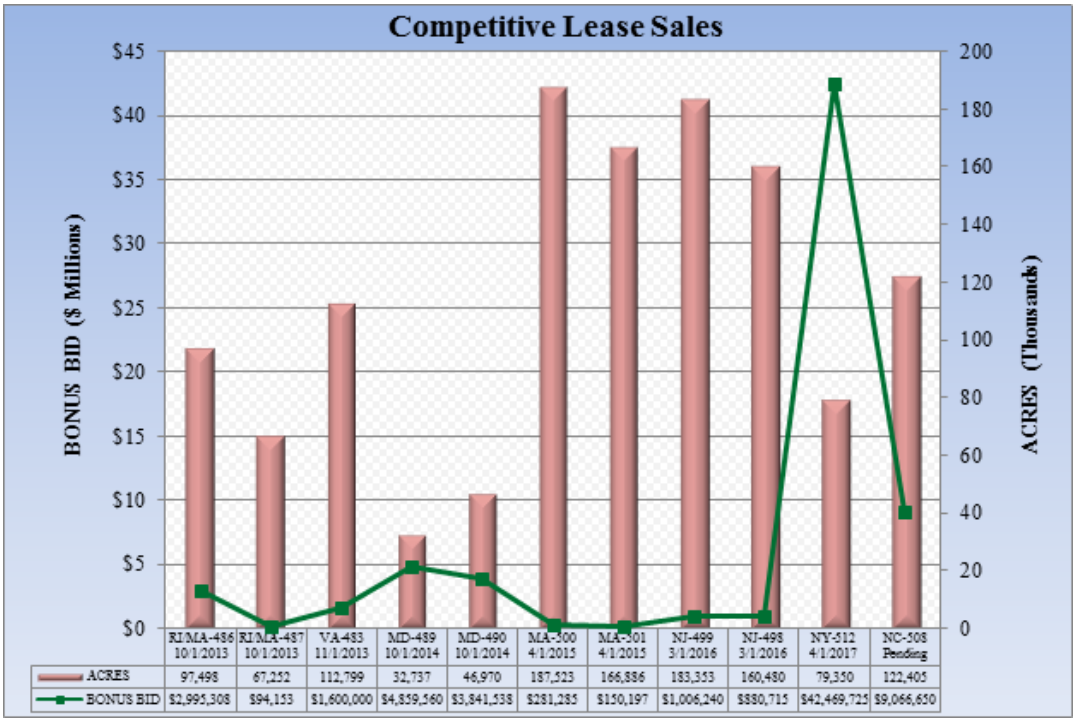
Along the Pacific coast, BOEM received unsolicited lease requests to develop wind facilities offshore Hawaii and California. BOEM is engaged in the planning process for potential lease sales offshore both California and Hawaii. BOEM is currently processing one unsolicited research lease request offshore Oregon for a marine hydrokinetic technology testing facility.

In 2016, BOEM, DOI, and the U.S. Department of Energy (DOE), through its Wind Energy Technologies Office, jointly produced an updated national strategy to facilitate the responsible development of offshore wind energy in the U.S. In doing so, the agencies accounted for progress made since the last National Offshore Wind Strategy released in 2011, and utilized significant input from the offshore wind community. The *2016 National Offshore Wind Strategy* highlights the gaps that need to be addressed by the offshore wind community as a whole, and provides a suite of actions that DOE and DOI are positioned to undertake to address these gaps and help the nation realize the benefits of offshore wind development and foster energy independence.

BOEM also ensures fair value for the American taxpayer for the revenue generated by BOEM's renewable energy activities. As required by the Energy Policy Act of 2005, BOEM has established payment terms to ensure fair return to the U.S. Treasury for the rights conveyed by OCS renewable energy leases and grants. In FY 2016, $3.8 million in rent payments were collected on OCS renewable energy leases. BOEM estimates annual rent payments of more than $4.1 million per year in FY 2017 and 2018, in addition to bonus bids and additional rental payments that may be collected from lease sales held in those years. To date, DOI has generated over $58.8 million in bonus bids for the renewable energy leases it has issued through the competitive leasing process and an additional $9.0 million is pending receipt from its most recent lease sale in March 2017. Actual data from FY 2016 and earlier is generated by the Office of Natural Resources Revenue and can be found at https://statistics.onrr.gov/ReportTool.aspx.

The following figure shows the acres leased and bonus bids received to-date through BOEM's competitive lease sale process (two additional leases were issued through BOEM's non-competitive leasing process). Winning bid amounts exhibit a wide range when compared on a per acre basis. Many factors may influence the revenue received per acre, such as water depth, distance from shore, adjacent coastal state power off-take policies, and other environmental and economic considerations.

Figure 2: BOEM's Competitive Lease Sale Acres and Bonus Bids



Although to-date wind has progressed the furthest of renewable energy sources offshore, in the future, BOEM anticipates development of renewable energy on the OCS could also come from ocean waves and ocean currents.

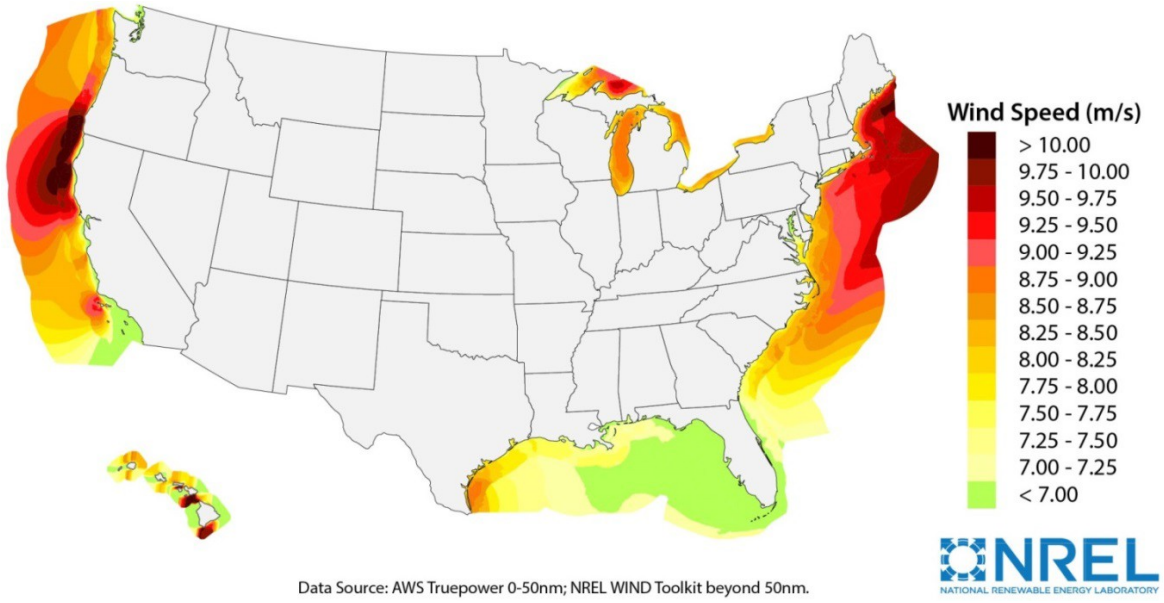
➢ Offshore Wind Energy

Offshore wind turbines are being used in a number of countries to harness the energy of the moving air over the oceans and convert it to electricity. Offshore winds tend to flow at higher sustained speeds than onshore winds, making offshore turbines more efficient than their onshore counterparts. The following figures show areas along the Atlantic and Pacific coasts that have the greatest technical potential for offshore wind energy production by water depths and wind speeds.

Figure 3: Offshore Wind Resources in Gigawatts by Depth in Coastal Areas

Source: National Renewable Energy Laboratory (http://www.nrel.gov/docs/fy16osti/66599.pdf)

Figure 4: Offshore Wind Speeds in Coastal Areas



Source: National Renewable Energy Laboratory (http://www.nrel.gov/docs/fy16osti/66599.pdf)

According to the *National Offshore Wind Strategy*, after considering the available wind resource and the technical limits of current technology, offshore wind has a potential capacity of 2,058 GW. This translates to an energy generation potential of 7,203 terawatt-hours per year, which is almost double the electricity consumption of the U.S.

- **Ocean Wave Energy (Marine Hydrokinetic)**

Ocean wave energy refers to the kinetic energy carried within ocean waves. There is tremendous energy in ocean waves, and technology and project developers are evaluating existing and developing wave technology to garner this energy. Wave power devices extract energy directly from the surface motion of ocean waves. A variety of technologies suitable for deployment on the OCS, such as point absorbers, attenuators, overtopping devices, and terminators, have been proposed to garner that energy. Some of the more promising designs are undergoing demonstration testing. Two sites on the West coast, one in California and one in Oregon, have received funding from DOE to evaluate the site as potential locations for a national wave energy testing facility, with the Oregon site receiving an additional award from DOE in 2016 for permitting and construction. BOEM is currently evaluating a research lease request for the Oregon proposal.

- **Ocean Current Energy (Marine Hydrokinetic)**

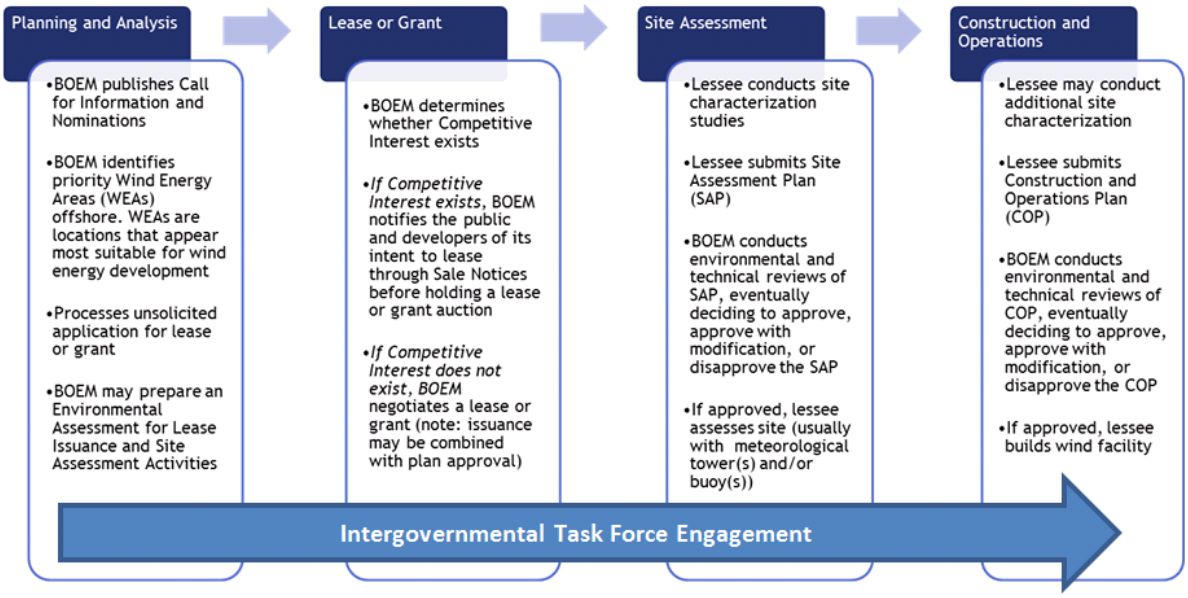
Ocean current energy refers to the kinetic energy carried within ocean currents. Ocean currents contain an enormous amount of energy that can be garnered and converted to a usable form. Some of the ocean currents on the OCS are the Gulf Loop Current, Gulf Stream, Florida Straits Current, and California Current. At this time, the area with the greatest potential for ocean current energy development is the Florida coast as a result of the relatively close proximity of the Gulf Stream and Florida Straits Current to the coast and the significant amount of energy potential they provide. Technology is still at an early stage of development, but it is likely that submerged water turbines conceptually similar to wind turbines may be employed to extract energy from ocean currents in the future.

In December 2014, BOEM established the Florida Intergovernmental Renewable Energy Task Force to facilitate coordination among Federal, state, local and tribal government organizations for potential renewable energy leasing efforts in Federal waters offshore Florida's Atlantic coast. The task force was developed shortly after BOEM issued a lease focused on hydrokinetic technology testing offshore Florida in June of 2014; however, the lessee relinquished its lease in 2016 after discovering seafloor conditions unfavorable to their planned research activities. While this lease is no longer active, it represents the first time a lease has been issued to test ocean current energy equipment in Federal waters.

RENEWABLE ENERGY AUTHORIZATION PROCESS

At present, renewable energy activities on the OCS are focused on wind projects. Under the renewable energy regulations, the identification of Wind Energy Areas, the issuance of leases and subsequent review of energy development activities on the OCS is a staged decision-making process. BOEM's renewable energy authorization process is comprised of four distinct phases: (1) planning and analysis; (2) issuance of a lease, right-of-way grant, or right-of-use and easement grant; (3) site assessment; and (4) construction and operations plans. BOEM involves other Federal agencies (e.g., Department of Defense (DOD), U.S. Fish and Wildlife Service (FWS), U.S. Coast Guard, National Oceanic and Atmospheric Administration (NOAA), Bureau of Safety and Environmental Enforcement (BSEE)) and state, local and tribal governments throughout all phases of renewable energy development. The below figure outlines BOEM's process for authorizing wind energy leases.

Figure 5: Phases of BOEM's Offshore Wind Energy Authorization Process



- The **Planning and Analysis phase** seeks to identify suitable areas for wind energy leasing consideration through collaborative, consultative, and analytical processes that engage stakeholders, tribal governments, and state and Federal agencies. In this phase, BOEM conducts environmental compliance reviews and consultations with tribes, states, and natural resource agencies.

- The **Lease and Grant phase** results in the issuance of a commercial wind energy lease or right-of-way grant for energy transmission projects. Right-of-way grants authorize the holder to install on the OCS cables, pipelines and associated facilities that involve the transportation or transmission of electricity or other energy products from renewable

energy projects. Leases and grants may be issued either through a competitive or noncompetitive process. A commercial lease gives the lessee the exclusive right to subsequently seek BOEM approval for the development of the leasehold. The lease does not provide the lessee the right to construct any facilities; rather, the lease provides the right to use the leased area to develop its site assessment and construction and operations plans, which must be approved by BOEM before the lessee can move on to the next stage of the process.

- The **Site Assessment phase** includes the submission of a site assessment plan, which contains the lessee's detailed proposal for the construction of a meteorological tower and/or the installation of meteorological buoys on the leasehold to conduct site assessment studies. The lessee's site assessment plan must be approved by BOEM before it conducts these activities on the leasehold. BOEM may approve, approve with modification, or disapprove a lessee's site assessment plan. It is during this phase that the lessee would conduct site characterization surveys to support the development of future plans.

- The **Construction and Operations phase** consists of the submission of a construction and operations plan, which details the construction and operation of a wind energy project on the lease. BOEM requires a general activities plan, similar to a construction operations plan, for facilities constructed under a limited lease or right of way. BOEM conducts environmental and technical reviews of these plans and decides whether to approve, approve with modification, or disapprove the plan. At the end of the lease or grant term, the developer must decommission facilities in compliance with BOEM regulations.

PLANNING AND ANALYSIS

Under the Energy Policy Act of 2005, BOEM is statutorily required to coordinate and consult with Federal, tribal, state and local agencies throughout the renewable energy development process. BOEM establishes intergovernmental task forces as a critical component of its planning and outreach activities. The task forces facilitate intergovernmental communications regarding OCS renewable energy activities to ensure that information needs, multiple-use concerns, and associated solutions are identified early in the leasing process. The task forces continue to be a useful tool in helping to

BOEM has established 14 intergovernmental task forces to enable representatives from state, local, and tribal governments and other Federal agencies to provide meaningful input into the OCS renewable energy planning process.

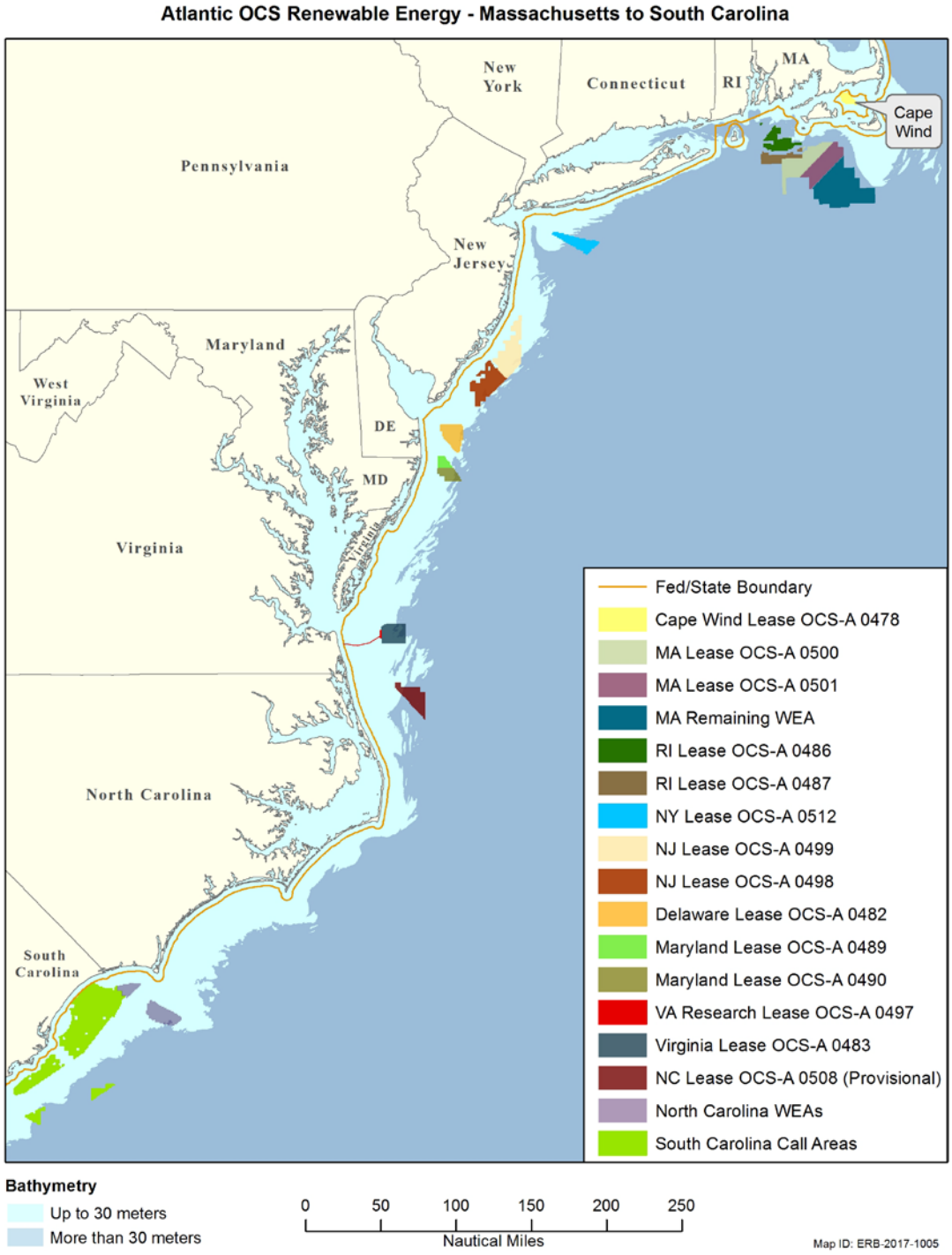
inform decision-making as BOEM considers areas of the OCS for renewable energy leasing and development. Such task forces are established in states where the Governor contacted BOEM to express interest in development of offshore renewable energy or at BOEM's suggestion after receipt of an unsolicited proposal offshore that state. Each task force collects and shares information for all stakeholders for use in its decision-making process. BOEM intergovernmental task forces have been established in Maine, Massachusetts, Rhode Island, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Florida, Oregon, Hawaii, and most recently in California. Task forces have been extremely productive and have helped identify areas of significant promise and interest for offshore development, in addition to providing early identification and steps toward resolution of potential conflicts.

Additionally, BOEM utilizes meeting facilitation contracts during stakeholder outreach to improve its efficiency, ensure awareness of potential issues and controversy, and optimize the time available for its staff to service existing leases and work other projects. The facilitation supports renewable energy task force meetings in the Atlantic and Pacific, public meetings on NEPA documents (e.g., scoping meetings and meetings during the comment period on an environmental assessment or draft environmental impact statement), as well as outreach events. In FY 2018, BOEM proposes to reduce funding for stakeholder engagement – and potentially meeting facilitation – in order to redirect resources to other high-priority activities. Although stakeholder meetings will still occur, BOEM may not be able to provide a trained facilitator at all of these meetings, which could impact their effectiveness. While a reduction in meeting facilitation places a greater burden on BOEM staff for meeting logistics, documentation of meeting proceedings, etc., it's rippling effect results in less staff time for servicing existing leases and working on other projects.

- **Identification of Wind Energy Areas**

A key element of the Planning and Analysis stage is the identification and refinement of Wind Energy Areas, which are areas on the OCS that appear to be particularly suitable for renewable energy development due to fewer potential multiple-use and environmental conflicts, such as conflicts from commercial vessel traffic, fishing or other uses, feeding or calving areas for endangered species, and high concentrations of birds. Through consultation with BOEM's intergovernmental task forces and its Call for Information and Nominations (Call) process, BOEM has identified Wind Energy Areas on the OCS offshore Massachusetts, Rhode Island, New Jersey, Delaware, Maryland, Virginia, North Carolina, and New York. In FY 2017, BOEM expects to initiate efforts to identify Wind Energy Area(s) offshore South Carolina, California, and additional areas offshore New York. The existing Wind Energy Areas and Call Areas along the Atlantic Coast are shown in the following map.

Figure 6: Identified Wind Energy and Call Areas along the Atlantic Coast



Source: BOEM, Office of Renewable Energy Programs

LEASE AND GRANT ISSUANCE

As required by the Energy Policy Act of 2005, BOEM will issue a renewable energy lease or grant on a competitive basis unless it determines that no competitive interest exists in obtaining that lease or grant. To issue competitive renewable energy leases and grants, BOEM will hold an auction, and the lease or grant is awarded to the winning bidder. In contrast, the noncompetitive process takes the form of a negotiation between BOEM and the one developer. In either case, the developer must be qualified to hold an OCS lease or grant. In order to be qualified, developers must demonstrate their legal, technical and financial capability to construct, operate, maintain, and terminate/decommission the project.

To issue competitive leases, BOEM utilizes a complex, proprietary, multi-factor online auction format and contract support. BOEM's base budget of $1.2 million for renewable energy auction support covers the cost of conducting two lease sales per year. However, in FY 2018, BOEM proposes to reduce this level of funding in order to redirect resources to other high-priority needs. Specifically, the proposed reduction of $630,000 for auction support would result in the funding of only one planned sale, which would slow the advancement of offshore renewable energy commercial leasing activities on both the Atlantic and Pacific coasts. The delay of lease sales also fails to provide potential renewable energy developers, affected states, tribal entities, local communities, and interested stakeholders with a consistent and predictable leasing process in which to engage and could negatively impact this important emerging industry.

It should be noted that limiting the number of lease sales will have the unfortunate consequence of also limiting the sales' bonus bid revenue generated for the U.S. Treasury. To date, BOEM's seven competitive lease sales have generated over $67 million in high bids for more than one million acres in federal waters. With the strong interest shown in the recent New York lease sale (i.e., a bonus bid of over $42 million for one lease), we anticipate considerably higher bonus bids than the current average of $6.1 million per lease going forward. Additionally in FY 2017, BOEM anticipates bringing the anticipated annual rental revenue to over $4.1 million dollars per year. Reducing or eliminating further renewable energy leasing will result in a lost opportunity to add millions of dollars to the U.S. Treasury annually.

➢ Commercial Leasing on the Atlantic OCS

As a result of collaboration and coordination with intergovernmental task forces and outreach efforts with relevant stakeholders, BOEM's Renewable Energy Program has made significant progress in its planning and leasing process to date. Although BOEM has jurisdiction over various types of offshore renewable energy, the major interest offshore the Atlantic coast lies in the development of offshore wind energy. In FY 2017, BOEM auctioned two lease areas, one offshore New York and one offshore Kitty Hawk, North Carolina. As of April 1, 2017, BOEM

has issued a total of 12 commercial wind leases and auctioned one additional lease area along the Atlantic coast, covering over 1.3 million acres on the OCS. If fully developed, these 13 leases could generate enough energy to power over 4 million homes.

Prior to issuing commercial wind energy leases, BOEM conducts an environmental review of reasonably foreseeable impacts associated with site characterization surveys and subsequent site assessment activities in a Wind Energy Area. If BOEM reaches a Finding of No Significant Impact, then it may proceed with issuing leases competitively or non-competitively in that Wind Energy Area without further environmental review. For example, BOEM's 2012 environmental assessment for the Wind Energy Areas offshore New Jersey, Delaware, Maryland, and Virginia supported the issuance of leases offshore Delaware (2012), Maryland (2014), Virginia (2013), and New Jersey (2016). Between FY 2013 and FY 2016, BOEM completed similar environmental assessments that supported lease sales for areas offshore: Rhode Island on July 31, 2013, Massachusetts on January 29, 2015, New York on December 15-16, 2016, and North Carolina on March 16, 2017. BOEM anticipates completing a similar environmental assessment for areas offshore South Carolina in 2017.

➢ Limited and Research Leasing on the Atlantic OCS

In 2007, the former Minerals Management Service established an interim policy as a measure to jumpstart resource data collection and technology testing activities on the OCS prior to the promulgation of final regulations. BOEM's policy allowed for limited leasing, resource data collection, and technology testing activities. These leases allowed a person to conduct activities on the OCS that support the production of energy but do not result in the production of electricity or other energy product for sale, distribution, or other commercial use exceeding a limit specified in the lease. These limited leases had a five-year term, required fee payment and provided no subsequent rights to commercial development. BOEM issued five such limited leases, three offshore New Jersey, one offshore Delaware, and one offshore Florida. As a requirement of these limited leases, the lessee was required to submit for BOEM review a project plan that provided details on fabrication methods, engineering specifications, and safety systems for any facility to be installed in Federal waters. The following describes the activities that occurred on BOEM's limited leases.

- **New Jersey:** Two Interim Policy lessees deployed meteorological buoys off the coast of New Jersey. One lease was relinquished in 2012 and the other expired in November 2014.

- **Delaware:** BOEM issued one Interim Policy lease offshore Delaware. This lease was relinquished in 2012.

- **Florida:** In August 2011, Florida Atlantic University submitted its final application to BOEM for an Interim Policy lease to conduct marine hydrokinetic technology testing. Since that time, BOEM published an environmental assessment for public review that considers the environmental impacts of the University's proposed project, which would entail the installation and testing of submerged turbine generators; published a revised environmental assessment that addressed comments received; and as a result of the analysis in the revised environmental assessment, issued a Finding of No Significant Impact for the project. In June 2014, BOEM issued the Interim Policy lease. On April 29, 2016, Florida Atlantic University notified BOEM it was relinquishing the lease due to seafloor conditions unfavorable to their planned research activities. After receiving all necessary information, BOEM approved the relinquishment, effective May 31, 2016.

BOEM also has the authority to issue leases to other Federal agencies and to states for the purpose of conducting renewable energy research activities that support the future production, transportation, or transmission of renewable energy. Research leases require no fees and have a negotiated lease term. In FY 2014, BOEM offered two such research leases offshore Virginia, and executed one of them in FY 2015.

- **Virginia:** During FY 2012, BOEM received an unsolicited application for a research lease from the Virginia Department of Mines, Minerals and Energy, proposing to install meteorological towers to facilitate wind resource assessment within the Virginia Wind Energy Area. In FY 2013, BOEM sought public input on the research proposal and its potential environmental consequences and also determined, based on the responses, that there was no competitive interest in the project. Later that year, BOEM received a second application, also from Virginia, requesting another lease area outside of the western boundary of the Virginia Wind Energy Area to install two six-megawatt, grid-connected wind turbines as a demonstration project. In FY 2014, BOEM determined there was no competitive interest in the area where the Commonwealth proposed to conduct activities. The two determinations of no competitive interest cleared the way for BOEM to proceed with the noncompetitive research lease process for both of the state-proposed projects. Later in FY 2014, BOEM offered two leases to the Virginia Department of Mines, Minerals and Energy. BOEM and Virginia executed one lease in March 2015.

  The Virginia Department of Mines, Minerals and Energy submitted a research activities plan for the Virginia Offshore Wind Technology Assessment Project. The plan details the proposed location and schedule of activities and includes information and data collected to date in support of the planned design, construction, installation operation and maintenance of two 6-megawatt turbines offshore Virginia. The plan also provides information related to the installation of approximately 27 nautical miles of submarine

transmission cable as well as other ancillary facilities and improvements to terrestrial substations required to support the project. On December 2, 2014, BOEM published for public comment an environmental assessment, which analyzed potential impacts of approving the research activities plan. In September 2015, BOEM announced completion of the environmental assessment and issued a Finding of No Significant Impact. On March 23, 2016, OREP approved the research activities plan with modifications.

- **Right-of-Way Grants on the Atlantic OCS**

BOEM also has the authority to issue right-of-way grants that allow developers to build electricity transmission lines that connect renewable energy installations to the onshore electrical grid. In November 2014, after adopting the U.S. Army Corps of Engineers' environmental assessment, the Bureau offered a right-of-way grant for the Block Island Transmission System offshore Rhode Island. The cable project supports a wind project located in Rhode Island State waters, for which transmission lines must cross the OCS. BOEM executed the grant in December 2014. The turbines and cable were installed in the summer of 2016, and the project entered operation in November 2016, making it the first offshore wind project in the U.S.

- **Commercial Leasing in the Pacific Region**

Full-scale prototype of WindFloat device

In January 2015, BOEM received two commercial wind lease requests for areas on the OCS offshore the island of Oahu in Hawaii from AW Hawaii Wind, LLC. In October 2015, BOEM received a third lease request offshore Oahu from Progression Hawaii Offshore Wind, Inc. Since there were two developers with commercial interest offshore Oahu, BOEM published a Call for Information and Nominations (Call) in 2016 to initiate the competitive planning and leasing process. In response to the Call, Statoil Wind US, LLC nominated the entire Call area and BOEM has confirmed there is competitive interest offshore Oahu. BOEM is currently evaluating comments received in response to the Call, including the DOD assessment, in order to determine if a Wind Energy Area is feasible offshore Oahu. The DOD and BOEM are coordinating to determine if the areas requested are compatible with national security and national defense assets. At this time, BOEM proposes to delay the offshore wind lease sale and its associated environmental assessment in order to consider the feedback provided by DOD and also to focus on other priorities during FY 2018. BOEM will continue evaluating the possibility of conducting a Hawaii wind lease sale in the future.

Trident Winds, LLC (Trident Winds) submitted an unsolicited lease request offshore Morro Bay,

California, in January 2016. BOEM published a Request for Interest to determine if there was competitive interest in the area proposed by Trident Winds. In response to the Request for Interest, Statoil Wind US, LLC nominated the area proposed by Trident Winds and BOEM has initiated the competitive planning and leasing process offshore California. BOEM and the State are currently working together to gather data and information from stakeholders in order to inform a decision for an area to use in an upcoming Call for Information and Nominations planned for publication in the summer of 2017, with a planned lease sale in FY 2018.

- **Research Leasing in the Pacific Region**

In November 2013, BOEM received a research lease request from the Northwest National Marine Renewable Energy Center, the research center at Oregon State University, for the Pacific Marine Energy Center-South Energy Test Site project. The proposed project is a grid-connected wave energy test site on the OCS offshore Newport, Oregon. BOEM has determined there is no competitive interest in the requested area and is moving forward with the noncompetitive lease process. Since the project is a wave energy test facility requiring a FERC license, BOEM is a cooperating agency with FERC on the environmental review of the proposal. BOEM is currently an active member of the Pacific Marine Energy Center-South Energy Test Site Collaborative Working Group, a group of Federal, state, and local representatives and stakeholders brought together to assess information needs and facilitate project review and permitting. FERC completed formal scoping in July 2014, and BOEM is continuing to cooperate with FERC as an environmental assessment is prepared. The Northwest National Marine Renewable Energy Center, at Oregon State University, anticipates submitting a draft license application and draft environmental assessment to FERC during 2017, with a planned BOEM lease and FERC license decision in FY 2018.

- **Right-of-Way Grants in the Pacific Region**

BOEM expects to receive requests for right-of-way grants in the future, including one to allow transmission through Federal waters between the islands of Oahu and Maui in Hawaii. One component of the state's Hawaii Clean Energy Initiative is an inter-island cable to transmit power from future renewable energy-producing installations on various islands to Oahu, the main demand center. A portion of this cable will be on the OCS. BOEM has not yet received a right-of-way/right-of-use grant request for a Hawaii inter-island cable and does not expect to receive one until FY 2018 at the earliest.

BOEM will initiate the right-of-way grant process upon receiving a request for an inter-island cable right of way. BOEM will make a competitive interest determination and conduct the appropriate environmental review prior to making a decision on the grant request.

- **Lease or Grant Payments**

As required by the Energy Policy Act of 2005, BOEM has established payment terms to ensure fair return to the U.S. Treasury for the rights conveyed by OCS renewable energy leases and grants. Companies pay a bonus for leases acquired in a BOEM auction, or an acquisition fee for leases issued noncompetitively. All lessees and grantees must pay rent, and lessees must pay an operating fee in lieu of rent when commercial electrical generation commences. The operating fee is based on the installed capacity of the wind turbine generators. Please see the beginning of this chapter for additional information regarding these revenues.

SITE ASSESSMENT

Commercial lease holders have up to approximately five years after lease issuance to conduct site assessment activities and submit a construction and operations plan. When a site assessment plan is submitted, BOEM determines whether the previous environmental assessment for that Wind Energy Area(s) adequately considers the environmental consequences of the activities proposed in the lessee's site assessment plan. If BOEM determines that the analysis in the environmental assessment adequately considers these consequences, then no further NEPA analysis would be required before the site assessment plan is approved. If, on the other hand, BOEM determines that the analysis in the environmental assessment is inadequate for that purpose, BOEM would prepare an additional NEPA analysis before approving the site assessment plan. If a proposed meteorological buoy(s) is found to have no individually or cumulatively significant effect on the human environment, and BOEM determines that no extraordinary circumstances exist under which the buoy may have a significant environmental impact, BOEM may comply with its NEPA obligations through the use of a categorical exclusion applicable to the action being evaluated. In some cases, additional consultation may be necessary, such as consultation under Section 106 of the National Historic Preservation Act for some areas of the Atlantic OCS.

NEPA compliance determinations for a site assessment plan for activities offshore Maryland and a categorical exclusion review for site assessment plan for activities offshore Virginia were completed in FY 2016. Another categorical exclusion review for a site assessment plan for activities offshore Rhode Island was completed in FY 2017, while reviews are currently underway for two site assessment plans submitted for activities offshore Massachusetts.

CONSTRUCTION AND OPERATIONS PLANS

Before any wind energy facility can be built on an OCS lease, the lessee must submit a detailed plan for the construction and operation of the project, along with supporting data. BOEM will

then conduct environmental and technical reviews of the construction and operations plan and mandated consultations, before deciding whether to approve, approve with modification, or disapprove the plan.

The first construction and operations plan submitted to BOEM for an offshore wind energy facility was for the Cape Wind Energy Project, which BOEM approved in April 2011. On July 5, 2016, The U.S. Court of Appeals vacated the 2009 Final Environmental Impact Statement for the Cape Wind Energy Project due to a deficiency regarding the determination as to whether the sea floor could support wind turbine structures at the time the lease was issued. In response, BOEM is preparing a Supplemental Environmental Impact Statement that reanalyzes geotechnical data collected over the past 15 years to demonstrate the ability of the sea floor to support wind turbine structures. BOEM has committed to the Court that the Supplemental Environmental Impact Statement process will be completed by August 2017.

BOEM's lessees have told BOEM to anticipate receiving at least two construction and operations plans in FY 2018 for activities offshore Maryland and Rhode Island. The environmental review of these plans will likely take the form of an environmental impact statement and would provide additional opportunities for public involvement.

INTERGOVERNMENTAL COORDINATION AND COLLABORATION

Offshore wind has the potential to play an integral role in our future energy portfolio. It is therefore critical that Federal Government agencies work together, along with states and other key stakeholders, to ensure the responsible development of this technology.

In addition to the establishment of BOEM intergovernmental task forces, the Department and BOEM are taking additional steps to ensure efficient and effective coordination.

- Memorandums of Understanding relevant to offshore renewable energy coordination have been created with the DOE, FERC, BSEE, FWS, DOD, U.S. Coast Guard, NOAA, and the State of California. BOEM and FERC responsibilities intersect for marine hydrokinetic projects, with BOEM issuing commercial marine hydrokinetic leases and FERC issuing licenses for construction and operation of these projects. The agencies have worked together to achieve efficiencies for both the agencies and potential applicants.

- On September 28, 2015, the White House hosted the Summit on Offshore Wind, a gathering of leading federal, state, and industry stakeholders committed to the long-term and sustainable development of offshore wind in the United States. The Summit

announced the establishment of the White House Interagency Working Group on Offshore Wind to ensure effective coordination among federal agencies working on offshore wind. The White House Council on Environmental Quality and the Domestic Policy Council co-chair the Working Group with participation from the Department of Interior (including the Bureau of Ocean Energy Management, the National Park Service, and the Fish and Wildlife Service), the Department of Energy, the Department of Defense, the Department of Transportation (including the Federal Aviation Administration), the Department of Commerce (including the National Oceanic and Atmospheric Administration and the International Trade Administration), the Environmental Protection Agency, the Department of Homeland Security (including the US Coast Guard), the Army Corps of Engineers, and the Advisory Council on Historic Preservation. To support the Interagency Working Group on Offshore Wind, the Offshore Wind Permitting Subgroup was established to identify opportunities to improve interagency coordination regarding permitting of offshore wind projects. The Subgroup is chaired by the Department of the Interior, led by BOEM, with participation from the agencies listed above, DOI's Office of the Solicitor, and the U.S. Office of Management and Budget. The Subgroup has held monthly meetings since April 2016, and has tentatively planned an in-person meeting for June 2017.

REGULATORY AUTHORITY

The Secretarial Order that created BOEM and BSEE (S.O. 3299A2) did not transfer to BSEE the safety and environmental enforcement functions for renewable energy at the time of the reorganization, delaying that transfer until such time as the Assistant Secretary for Land and Minerals Management "determines that an increase in activity justifies transferring the inspection and enforcement functions" to BSEE. BOEM and BSEE are working together to plan and implement this transition. A BSEE/BOEM transition team is managing the effort to re-designate the renewable energy regulations in 30 Code of Federal Regulations (CFR) Part 585 between the two bureaus. After the re-designation, BOEM and BSEE will revise the renewable energy regulations for OCS operations and update existing interagency memorandums of understanding accordingly. As part of the transition, BOEM and BSEE have collaborated on plans submitted to the Bureau and will continue to do so until the transition has been completed.

RESEARCH, DATA COLLECTION, AND STAKEHOLDER ENGAGEMENT

BOEM's Renewable Energy Program is supported by a substantial investment in research, data collection and stakeholder engagement. In some cases, areas that are appropriate for renewable energy development have likely never been studied for such development; and for some areas,

there is a dearth of information about the physical and biological environment. BOEM has worked closely with a broad spectrum of agencies, universities and stakeholders to identify the critical data gaps and independently or through partnerships sought to fund studies to increase our knowledge about the marine environment in and around potential renewable energy development locations. To benefit from lessons learned, BOEM has also reached out to European countries with more mature renewable energy programs.

The continued need to pursue information to ensure access to the OCS for renewable energy development and to ensure that such development is environmentally appropriate is a high priority for BOEM. Environmental and scientific research supporting BOEM's renewable energy efforts are funded through both BOEM's Renewable Energy and Environmental Programs budget activities. Renewable energy environmental research – funded through the Renewable Energy activity – supplements the studies funded through BOEM's Environmental Studies Program. This research augments what had been done previously for offshore oil and gas and marine minerals, but with an extra interest in renewable energy applications. To ensure full environmental review, BOEM has spent more than $55 million since FY 2007 on environmental studies that address renewable energy issues, either solely or in addition to other OCS resource activities, with an additional $12 million planned for FY 2017. These studies address the issues of the effects of renewable energy development on birds, marine mammals, and seafloor habitats and specific concerns about electromagnetic fields and sound. In FY 2017, studies continued to focus on the collection of data about birds and marine mammals along the southeast coast and tracking of important fish species.

Although the need for renewable energy research is expected to continue, BOEM proposes a slight reduction to renewable energy environmental research in order to support the Bureau's highest priorities and needs in FY 2018. The proposed reduction of $1 million may create temporary data gaps for which BOEM would likely compensate by taking a more conservative approach to renewable energy decisions. Areas impacted by a reduction in environmental studies would likely include marine mammals, birds and assessments of noise, as well as BOEM's ability to leverage stakeholder and industry funded environmental work that can be used to fulfill NEPA and other responsibilities.

- **Data Collection through Cooperative and Interagency Agreements**

In accordance with the OCS Lands Act, BOEM is working cooperatively with states by leveraging funds to collect important information about the offshore environment that meets both the needs of BOEM and the states. In FY 2016, BOEM continued or executed the following cooperative agreements with state partners, through matching funds, and interagency agreements to inform future planning and decision-making:

- BOEM continued a cooperative agreement with the Commonwealth of Massachusetts to collect baseline information on marine mammals, sea turtles, and birds in the Massachusetts and Rhode Island/Massachusetts Wind Energy Areas;

- BOEM continued a cooperative agreement with the University of Rhode Island to support the collection of information about lobsters in the Rhode Island/ Massachusetts and Massachusetts Wind Energy Areas;

- BOEM executed a cooperative agreement with the State of Maryland to study the use of the Maryland Wind Energy Area by Atlantic Sturgeon and other fish species;

- BOEM executed a cooperative agreement with the State of Delaware to study the use of the Delaware Wind Energy Area by Atlantic Sturgeon and other fish species;

- BOEM and the State of New York entered into a cooperative agreement for collection of information about the endangered Atlantic Sturgeon in the New York Bight;

- BOEM and the State of California, in the DOI and State of California December 2016 memorandum of understanding, agree to collaborate and engage in a multi-phase process to collect data to inform planning efforts and to identify one or more areas to use in a Call for Information and Nominations within six months of the memorandum of understanding;

- BOEM continued an Interagency Agreement with NOAA's Office of National Marine Sanctuaries to collaboratively obtain limited baseline archaeological data near and within WEAs to inform decision-making and the bureau's Section 106 reviews; and

- BOEM executed an Inter-Agency Agreement with the National Renewable Energy Laboratory in FY 2016 to perform an offshore renewable energy feasibility study across technology types for the U.S. Gulf of Mexico. Study tasks include a survey of offshore renewable energy technologies, regional economic cost modeling, site-specific economic analysis, jobs and economic development modeling, and outreach materials. This two-year study is being conducted in cooperation with interested Gulf state agencies, including Louisiana Department of Natural Resources and the Texas General Land Office.

➢ Renewable Energy Workshops and Conferences

Stakeholder engagement is integral to BOEM's renewable energy planning and leasing efforts. Following are some highlights of recent and upcoming outreach events.

- **Archaeology and Historic Property Guidelines Workshop.** On April 13, 2015, BOEM hosted an industry workshop with renewable energy lessees and archaeology and historic preservation contractors to provide an overview of the updated *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585* to improve clarity regarding the types of information and quality of data needed to support plan submission.

- **Avian Guidelines Webinar.** BOEM is working to update the *Guidelines for Providing Avian Survey Information for Renewable Energy Development on the Atlantic Outer Continental Shelf*. On September 8, 2016, BOEM held a webinar to discuss proposed changes to the guidelines and give participants the opportunity to provide feedback.

- **Atlantic Offshore Energy and Mineral Science Forum.** BOEM hosted the Atlantic Offshore Energy and Mineral Science Forum on November 16-17, 2016. The purpose of the forum was to share ongoing and recently completed environmental studies with the public and to receive input from the public about future directions for study. The forum had over 100 participants from government, industry, and the general public. Suggestions for studies from the forum will be included in the FY 2018-2020 Environmental Studies Development Plan. Proceedings from the forum were published on the BOEM website in March 2017.

- **Atlantic Steering Committee for Fisheries Research and Monitoring.** In January 2017, BOEM entered into an agreement with the National Academy of Sciences' Ocean Studies Board to establish a steering committee that will assist BOEM in obtaining scientifically credible, independent, and objective perspectives on research and monitoring related to the interaction between offshore renewable energy development and fisheries resources. This important endeavor will allow for a collaborative and transparent approach to establishing fishery-related study priorities with fisheries managers and scientists on the Atlantic coast.

- **Atlantic Fishery Stakeholder Engagement.** BOEM's Office of Renewable Energy Programs continues to regularly engage with fishery stakeholders on the Atlantic coast in regards to offshore renewable energy. BOEM recognizes that fishermen are an important ocean user group that may be affected by offshore renewable energy development. Thus, BOEM solicits their input into project siting, best management practices, and research and monitoring. BOEM accomplishes this engagement through workshops, such as those to develop best management practices held between October 2012 and April 2014, and project specific workshops and meetings such as those held for the Virginia Wind Energy Area in 2015-2016 and for the New York Wind Energy Area in 2015-2016. BOEM also regularly briefs, and solicits comments from the New England, Mid-Atlantic, and South

Atlantic Fishery Management Councils, as well as the Atlantic States Marine Fisheries Commission.

- **Best Management Practices Workshop for Atlantic Offshore Wind Facilities.** BOEM's Office of Renewable Energy Programs hosted a three-day, stakeholder workshop for Atlantic Offshore Wind Facilities on March 7-9, 2017. The workshop discussed best management practices for preventing, reducing, and monitoring impacts to marine protected species from the development of offshore wind on the Atlantic OCS.

- **Offshore Wind Industry Forum.** On January 6, 2017, the BOEM Director and the Assistant Secretary for Land and Minerals Management convened a meeting with offshore wind energy industry representatives and the Secretary of the Interior to discuss what a successful 2017 would look like for offshore wind in the U.S. The meeting sought to facilitate an open and transparent dialogue between DOI and industry as a mechanism for a continuing momentum on development of a viable offshore renewable energy sector. BOEM anticipates an additional meeting later in 2017.

- **Pacific Region California Ocean Renewable Energy (CORE) Conference.** BOEM held a conference, open to all stakeholders, in California in November 2016. The workshop provided California stakeholders' knowledge of the status of offshore renewable energy technologies and shared information the Pacific Region has gathered from our environmental studies program. The Region also conducts numerous stakeholder engagements on a project-specific basis with targeted stakeholders such as commercial fishermen and other state and Federal agencies with permitting and consultation responsibilities.

➢ Guidelines for Developers and Applicants

In FY 2013, BOEM first posted guidelines for providing survey information on avian resources, spatial data, benthic habitats, fish, marine mammals, and sea turtles on the Atlantic OCS. The purpose of these guidelines is to clarify and provide a general understanding of the information that BOEM requires in order to adequately address the impacts of offshore renewable energy projects to the environment. The guidelines were developed with input from FWS, NOAA and the Marine Mammal Commission. The guidelines for avian and benthic habitat surveys were updated in 2013. BOEM plans to publish another update to the avian guidelines in FY 2017. In FY 2015, BOEM updated its guidelines for providing geological and geophysical, hazards, and archaeological information, and published new guidance to lessees in BOEM Atlantic planning areas to help comply with fishery information requirements in renewable energy plans. In March 2017, BOEM published another update to its archaeological guidelines, and anticipates publishing updated avian guidelines in FY 2017.

In October 2014, BOEM revised its "Guidelines for Information Requirements for a Renewable Energy Construction and Operations Plan (COP)." This document provides updated guidance on information requirements for a construction and operations plan for renewable energy activities related to a commercial lease on the OCS. The updated guidelines replace those originally published in December 2010, and address project-specific information, supporting data requirements and information to provide the basis for the analysis of environmental and socioeconomic effects and operational integrity of proposed construction, operation, and decommissioning activities and to assist BOEM in complying with NEPA and other relevant laws when reviewing a construction and operations plan. A lessee's construction and operations plan must demonstrate that the project is being conducted in a manner that conforms to responsible offshore development per 30 CFR 585.621; this includes the demonstration of best management practices. BOEM updated the construction and operations plan guidelines again in April 2016.

- **Technology Assessment and Research Studies**

Recent projects continue to build on the lessons learned from developers of commercial wind projects offshore Europe while focusing on the unique operating environment of the U.S. OCS. International structural design standards have been reviewed and research gaps have been identified that include the anticipated effects of hurricanes and open-ocean breaking waves, as well as the structural integrity of floating wind turbines under reasonably foreseeable ocean conditions.

Meteorological and oceanographic conditions data needs to be obtained across U.S. regions to ensure that these new structures are designed to the appropriate parameters. There are currently four studies being performed for topics that were solicited in FY 2015.

- In FY 2013, two studies were funded: *Design of Wind Turbine Monopiles for Lateral Loads*, and *Fatigue Design Methodologies Applicable to Fixed and Floating Offshore Wind Turbines.* Both of these projects have been completed.

- In FY 2014, four studies were awarded: *Offshore Wind Submarine Cable Spacing Guidance, Offshore Substation Design Standards, Model Testing to Evaluate Degradation of Axial Capacity from Cyclic Loading*, and *Development Met-Ocean Data and Hazard Curves for Wind Energy Areas off the Atlantic Seaboard*. All four studies have been completed.

- In FY 2015, proposals were reviewed for an additional five topics: *Laboratory Testing of Lateral Load Response for Monopiles in Sand, Development of Guidelines for Structural Health Monitoring for Offshore Wind Turbine Towers and Foundations, Breaking Wave Loads on Offshore Wind Turbines, Cyclic Loading on Suction Bucket Foundations,* and

Assessment of Partially verses Fully Coupled Dynamic Analysis of Offshore Wind Turbines. In FY 2016, awards were made with projected completion dates in FY 2017. Of these studies, the *Cyclic Loading on Suction Bucket Foundations* study has been completed.

BOEM has also contracted the development of guidelines for: Geophysical and Geotechnical Investigation Methodology, Unexploded Ordinance (UXO) Survey Methodology, and Metocean Characterization. The first two guideline efforts were awarded in 2015 and will be completed in 2017. The Metocean Characterization Guideline project will be awarded in early 2017 with completion scheduled for later in the year.

OUTLOOK FOR RENEWABLE ENERGY

Through detailed planning and analysis and partnerships with other governmental agencies and stakeholders, BOEM's Renewable Energy Program is meeting the needs of our constituents nationwide and will continue to do so in 2018. Offshore wind energy is poised to generate significant benefits for the U.S. and help the nation achieve energy independence. It is an abundant, low-carbon, domestic energy resource. Located close to major coastal load centers, offshore wind provides an alternative to long-distance transmission or development of onshore electricity generation in these land-constrained regions.

Offshore wind leasing activities, including commercial leases, research leases and right-of-way grants, have increased, contributing to meeting the diverse energy portfolio with domestic renewable energy. Developers are actively moving forward evaluating site conditions to plan their projects, and state interest in pursuing offshore renewable energy development is readily apparent in the increased involvement by the states through BOEM's intergovernmental renewable energy task forces. At the same time, BOEM continues to demonstrate science-informed decision-making through environmental research and studies, though at a reduced level in FY 2018. The studies directly benefit BOEM, other energy and mineral programs, renewable energy stakeholders and individual states.

As Secretary Zinke stated in March 2017 as part of his announcement of the competitive lease sale offshore Kitty Hawk, North Carolina, "Renewable energy, like offshore wind, is one tool in the all of the above energy toolbox that will help power America with domestic energy, securing energy independence, and bolstering the economy."

Table 12: Renewable Energy Program Performance Overview

Mission Area 3, Goal 1: Secure America's Energy Resources								
Strategic Objective Metrics **Strategic Plan Measure / Efficiency or other Bureau-Specific Measure**	**2012 Actual**	**2013 Actual**	**2014 Actual**	**2015 Actual**	**2016 Plan**	**2016 Actual**	**2017 Enacted (CR)**	**2018 Pres. Budget Request**
Strategic Plan Measures								
Number of megawatts of approved capacity authorized on public land and the OCS for renewable energy development while ensuring full environmental review (cumulative)	468	468	468	498	554	510	510	510
Comments: The actuals and planned targets displayed within the table reflect BOEM's contribution toward the Department's renewable energy efforts.								
Contributing Programs: Office of Renewable Energy Programs								
Efficiency or other Bureau-Specific Measures								
Number of offshore renewable energy leasing or ROW/RUE grant processes initiated (i.e., first public notice issued)	4	5	2	0	2	3	1	1
Comments: This metric quantifies the number of leasing processes initiated for renewable energy development. Leasing processes are initiated by publishing either Call/Request for Information or Call for Nominations in the Federal Register.								
Contributing Programs: Office of Renewable Energy Programs								
Number of limited leases issued for offshore renewable energy testing and data collection, including §238 research leases	0	0	1	1	2	0	0	1
Comments: A limited lease is a lease with terms and conditions which allow the lessee to conduct activities on the OCS that support the production of energy but without actually producing energy for sale, distribution, or other commercial use.								
Contributing Programs: Office of Renewable Energy Programs								
Number of commercial leases issued for offshore renewable energy generation	0	3	1	4	3	2	2	3
Comments: A commercial lease is a lease with terms and conditions that allow a person or entity to conduct commercial activities.								
Contributing Programs: Office of Renewable Energy Programs								
Number of right-of-way/right-of-use and easement grants issued for offshore renewable energy transmission	0	0	0	1	0	0	0	0
Comments: This metric quantifies the number of competitive or noncompetitive right-of-way/ right-of-use grants for transmission of renewable energy from the OCS.								
Contributing Programs: Office of Renewable Energy Programs								
Number of offshore NEPA documents (EIS/EAs) finalized for Renewable Energy	1	4	5	5	8	2	4	7
Comments: Comprehensive environmental analyses are an essential but lengthy part of the overall OCS lease planning process.								
Contributing Programs: Office of Renewable Energy Programs								

2018 PERFORMANCE BUDGET

Bureau of Ocean Energy Management

Conventional Energy

Table 13: Conventional Energy Budget Summary

		2016 Actual	2017 CR Baseline	Internal Transfers	Fixed Costs	Program Changes	2018 Request	Change from 2017
Conventional Energy	$0	59,869	59,755	-	+609	-2,241	58,123	-1,632
	FTE	*285*	*267*			*-7*	*260*	*-7*

SUMMARY OF 2018 PROGRAM CHANGES

Program Changes from 2017 CR Baseline	($000)	FTE
Five Year / National OCS Oil and Gas Leasing Program	+1,550	
Methane Hydrates	-349	
G&G data acquisition	-600	
IT project development	-1,922	
Lapse from Attrition	-920	-7
Total Program Changes	**-2,241**	**-7**

The FY 2018 President's Budget Request funds BOEM's Conventional Energy budget activity at $58.1 million and 260 FTE, a net decrease of $1.6 million from the FY 2017 CR baseline level. This change is comprised of an increase of $609,000 in fixed costs and the program changes described below.

National OCS Oil and Gas Leasing Program (+$1,550,000; 0 FTE). An increase of $1.6 million in Conventional Energy is requested to support a centerpiece of BOEM's mission critical activities: the Five Year National Outer Continental Shelf (OCS) Oil and Gas Leasing Program. On April 28, 2017, President Trump announced the *Implementing an America-First Offshore Energy Strategy* Executive Order, which directs Secretary Zinke to consider revising the schedule of proposed lease sales in the OCS oil and gas leasing program. In response to the Executive Order, on May 1, 2017, Secretary Zinke issued Secretarial Order 3350- *America-First Offshore Energy Strategy*, which includes a directive that BOEM immediately initiate the development of a new OCS Oil and Gas Leasing Program. In FY 2017, BOEM initiated the development of a new National OCS Oil and Gas Leasing Program to replace the 2017-2022

Program scheduled to take effect in July 2017. As part of this effort, in FY 2018 BOEM will require additional resources to conduct public meetings, outreach, modeling, comment analysis, and other activities mandated by the OCS Lands Act. These efforts ensure the balancing of economic, social, and environmental impact with resource exploration and development that best meets the Nation's energy needs.

Methane Hydrates Research (-$349,000; 0 FTE). To offset increases for other BOEM priorities, BOEM proposes to reduce funding in lower-priority areas, such as research on long-term energy sources like methane hydrates.

G&G Data Acquisition (-$600,000; 0 FTE). The acquisition and analysis of geological and geophysical (G&G) data enables BOEM to identify areas favorable for the accumulation of hydrocarbons and develop estimates of resource volumes and economic values of these accumulations. BOEM proposes to reduce the amount of funding available for the acquisition of G&G data, in order to offset increases for other BOEM priorities.

IT Project Development (-$1,922,000; 0 FTE). BOEM proposes delaying aspects of its IT system development, in order to support BOEM's highest priorities and needs in FY 2018. The amount here reflects the portion of IT project development funded through this activity.

Lapse from Attrition (-$920,000; -7 FTE). Consistent with general attrition trends, as well as the Administration's long-term plan to reduce the size of the Federal workforce, BOEM is budgeting for a reduced amount of salary dollars because personnel departures will likely outpace personnel gains.

Program Performance Change. The FY 2018 budget request supports the accomplishment of the Department's strategic goals. BOEM is making great strides in moving towards the goals it establishes for itself as well as the supporting performance measures. Budgetary changes are not the sole influence on performance measures tracked within this activity. The reductions identified above do not affect programmatic performance, as depicted by the relatively steady targets for the performance measures contained within the table at the end of this chapter.

PROGRAM OVERVIEW

BOEM promotes energy security, environmental protection and economic development through responsible, science-informed management of offshore conventional and renewable energy and marine mineral resources. Under the OCS Lands Act, the Secretary of Interior is responsible for the administration of mineral exploration and development of the OCS. The Act, as amended, provides guidelines for implementing an OCS oil and gas exploration and development program. In response to the Act, a centerpiece of BOEM's activities includes the development of a

National OCS Oil and Gas Leasing Program. Historically, BOEM referred to the OCS oil and gas exploration and development program as the Five Year Program, because each one spans five years. However, the increasing public awareness and appetite for leasing related information highlights the need for the name to articulate its purpose. The purpose of the Program is to conduct a nationally-focused analysis and decision-making process. The National Program focuses on broadly planning and designing oil and gas lease sales in a way that makes oil and gas resources available, protects communities and the environment, ensures fair value to the American taxpayer, and provides for the diligent development of leases.

Conventional energy development begins with BOEM's commitment to the responsible development of the National Outer Continental Shelf Oil and Gas Leasing Program. BOEM's work includes assessments of the oil and gas resource potential on the OCS, inventories of oil and gas reserves, and economic evaluations of OCS submerged lands to ensure the receipt of fair market value for U.S. taxpayers on OCS leases. Carrying out these responsibilities requires balancing the energy demands and mineral needs of the Nation with the protection of the human, marine, and coastal environments.

The Na Kika platform in deepwater Gulf of Mexico

As the Nation's OCS energy and mineral resource manager, BOEM administers a comprehensive oil and gas leasing program that requires a progressive cycle of resource, economic, and environmental analyses that provide decision makers with the information necessary for making informed decisions on the size, timing, and location of OCS conventional energy leasing. BOEM's responsibilities are broad, beginning with identifying and calculating appropriate boundaries and legal descriptions; identifying, inventorying, and assessing the Nation's OCS energy and mineral endowment; developing a transparent, systematic, and comprehensive schedule for oil and gas resource offerings; developing appropriate financial terms to ensure the Nation receives fair market value for its OCS resources; carefully reviewing requests for approval of industry plans to explore, develop, and produce leased resources; and ensuring that these activities are conducted in compliance with relevant environmental laws and regulations. BOEM also is responsible for the management of all OCS minerals other than oil and gas and plays a unique role in providing coastal resources protection and sustainable management through the conveyance of sand and gravel resources.

BOEM conducts a range of activities in order to successfully manage OCS oil and gas resources. A key initial step is the assessment of undiscovered technically and economically recoverable oil and gas resources of the Nation's OCS. The objective of this assessment is to identify areas on the OCS that offer the highest potential for the occurrence of oil and natural gas resources that may be considered for exploration and development. BOEM utilizes the most up-to-date resource assessment information in the preparation of a five-year schedule of proposed lease sales, which includes establishing the size, timing, and location of lease sales and balancing the potential for environmental impacts, discovery of oil and gas, and impacts on the coastal zone. BOEM also researches, analyzes, and establishes lease terms and conditions that foster competition and ensure receipt of fair market value for the Nation's OCS resources.

BOEM authorizes industry to collect G&G data, which BOEM then may obtain and interpret to inform oil and gas resource assessments and to determine fair market value. Analysis of G&G data allows BOEM to estimate discovered oil and gas reserves, undiscovered resources, and to forecast industry activity levels in a particular region. This supports BOEM's fair market value analysis and determinations of the adequacy of high bids received for individual tracts offered in a lease sale.

As of April 2017, BOEM manages 3,087 active oil and gas leases on more than 16.3 million OCS acres. Offshore Federal production in FY 2016 reached approximately 582 million barrels of oil and 1.26 trillion cubic feet of gas, almost all of which was produced in the Gulf of Mexico. This accounted for about 18 percent of all domestic oil production and 4 percent of domestic natural gas production. Revenues generated from OCS conventional energy leasing and production activities are a significant source of revenue for the Federal Government. In FY 2016, over $161 million were collected in rent, $161.8 million were collected in bonuses, and $2.47 billion were collected in royalties from production.

LEASING

BOEM's leasing and planning activities include preparing the National OCS Oil and Gas Leasing Program, leasing marine minerals, creating maps of the OCS boundaries, implementing the lease sale process, administering leases, and reviewing and approving (when appropriate) exploration and development and production plans.

➢ National OCS Oil and Gas Leasing Program

Under the Outer Continental Shelf Lands Act, the Secretary of the Interior has the responsibility to "prepare and periodically revise, and maintain an oil and gas leasing program" in order to "best meet national energy needs" while still balancing other important factors. The Department

must prepare a long-range, national program that indicates "as precisely as possible, the size, timing, and location" of Federal offshore oil and gas leasing activity to be considered for the five-year period following its approval. The National OCS Oil and Gas Leasing Program identifies the program areas, which are delineated areas of leasing interest where potential leases may be offered, and establishes a schedule of potential lease sales over the five-year period. Ultimately, the National OCS Oil and Gas Leasing Program is designed to achieve the careful balance required under the OCS Lands Act. The effort ensures that "management of the Outer Continental Shelf shall be conducted in a manner which considers economic, social, and environmental values of the renewable and nonrenewable resources contained in the OCS, and the potential impact of oil and gas exploration on other resource values of the Outer Continental Shelf and the marine, coastal, and human environments." BOEM requests comments from partners and stakeholders (including Governors, Federal and state agencies, local communities, federally recognized tribes, energy and non-energy private industry, public interest groups, and the public) to develop a program that offers access to those areas of the OCS with the most promising potential for development of oil and gas resources in an environmentally responsible manner.

The development of a National OCS Oil and Gas Leasing Program begins with the initial request for information and comment, followed by three program proposals, culminating in approval of the Program by the Secretary. Pursuant to the OCS Lands Act, BOEM consults with all interested parties throughout the process, with particular consideration given to suggestions of affected state Governors and interested Federal agencies.

The President's Executive Order 13795, Implementing an America-First Offshore Energy Strategy (April 28, 2017), and Secretary's Order 3350, America-First Offshore Energy Strategy (May 1, 2017), instructed BOEM to initiate a new National OCS Oil and Gas Leasing Program development process, approximately two years ahead of schedule. The Executive Order and Secretarial Order promote the Administration's policies, which include expanding production of U.S. domestic oil and gas supplies, both offshore and onshore, and seeking out regulatory and oversight efficiencies, so as to create a more accessible, efficient, and predictable oil and gas leasing process for government, industry and other stakeholders. The National OCS Oil and Gas Leasing Program's development commences with the publication of a Request for Information and Comment. As required by Section 18 of the OCS Lands Act, the Request will be for information on all 26 planning areas as will the analysis included in the subsequent Draft Proposed Program decision document that is expected to be published in early FY 2018. Based on that analysis, the Secretary will make the first decision as to what areas will be considered for possible future leasing during the National Program planning process.

The National OCS Oil and Gas Leasing Program BOEM plans to initiate in FY 2018 will replace the Program for 2017-2022 that was approved by the prior Administration on January 17, 2017.

That Program included a total of 11 potential lease sales in two planning areas (10 lease sales within the Gulf of Mexico and one lease sale in Cook Inlet off the coast of Alaska). The Program's effective date is July 1, 2017, with the first lease sale, Gulf of Mexico Sale 249, scheduled for August 16, 2017.

The 2012–2017 OCS Oil and Gas Leasing Program, as approved in August 2012, scheduled 15 lease sales in six offshore planning areas with active leases and/or activity underway in Federal or adjacent state waters. One lease sale remains to be held: Cook Inlet Lease Sale 244 is scheduled for June 21, 2017, and BOEM published the Proposed Notice of Sale on February 28, 2017. See Table 14 for the lease sales held and scheduled under the existing 2012-2017 and 2017-2022 OCS Oil and Gas Leasing Programs.

Because of the extensive coordination required, the entire program development process normally takes approximately two-and-a-half to three years. Activities during FY 2018 will likely concentrate on preparation of a new National OCS Oil and Gas Leasing Program for an early replacement of the approved 2017–2022 OCS Oil and Gas Leasing Program, while continuing implementation of the 2017–2022 Program's lease sales scheduled in the years before the new Program is effective. Updates to any models, supporting documents and other analysis used in preparation of the next program as a result of "lessons learned" during preparation of the 2017–2022 OCS Oil and Gas Leasing Program, as well as new initiatives to improve BOEM's analytical documents and decision-making tools, also will occur during FY 2018.

➢ Oil and Gas Lease Sales

BOEM held three lease sales in calendar year 2016: Eastern Gulf of Mexico Sale 226, Central Gulf of Mexico Sale 241, and Western Gulf of Mexico Sale 248. These lease sales resulted in 140 new leases covering 771,238 acres and total bonus payments of over $157 million. Three lease sales are scheduled for calendar year 2017: Central Gulf of Mexico Sale 247 (which was held on March 21, 2017, and garnered almost $275 million in high bids for 163 tracts covering 913,542 acres), Alaska Cook Inlet Sale 244, and Gulf of Mexico region wide Sale 249. The following table includes information on lease sales in the 2012-2017 OCS Oil and Gas Leasing Program and planned lease sales in the 2017-2022 OCS Oil and Gas Leasing Program.

Table 14: Lease Sales in the 2012-2017 and the 2017-2022 National Oil and Gas Leasing Programs

Sale #	Date of Sale	Area	Number of Leases Issued	Number of Acres Leased	Total Bonus for Leased Tracts
Lease Sales Scheduled in the Approved 2012-2017 Program					
229	11/28/2012	Western Gulf of Mexico	116	652,522	$133,767,074
227	3/20/2013	Central Gulf of Mexico	307	1,648,831	$1,199,052,037
233	8/28/2013	Western Gulf of Mexico	54	301,601	$121,473,196
225[a]	3/19/2014	Eastern Gulf of Mexico	0	0	0
231	3/19/2014	Central Gulf of Mexico	320	1,662,203	$845,892,132
238	8/20/2014	Western Gulf of Mexico	80	428,062	$109,086,059
235	3/18/2015	Central Gulf of Mexico	161	879,911	$533,090,640
246	8/19/2015	Western Gulf of Mexico	33	190,080	$22,675,212
226[a]	3/23/2016	Eastern Gulf of Mexico	0	0	0
241	3/23/2016	Central Gulf of Mexico	116	632,998	$139,814,280
237[b]	Cancelled	Chukchi Sea	-	-	-
248	8/24/2016	Western Gulf of Mexico	24	138,240	$18,067,020
247	3/21/2017	Central Gulf of Mexico	163[d]	913,542[d]	$274,797,434[d]
244	6/21/2017	Cook Inlet	TBD	TBD	TBD
242[b]	Cancelled	Beaufort Sea	-	-	-
Lease Sales Scheduled in the Approved 2017-2022 Program					
249[c]	8/16/2017	Gulf of Mexico	TBD	TBD	TBD
250	3/21/2018	Gulf of Mexico	TBD	TBD	TBD
251	8/15/2018	Gulf of Mexico	TBD	TBD	TBD
252	3/20/2019	Gulf of Mexico	TBD	TBD	TBD
253	8/21/2019	Gulf of Mexico	TBD	TBD	TBD
254	3/18/2020	Gulf of Mexico	TBD	TBD	TBD
256	8/19/2020	Gulf of Mexico	TBD	TBD	TBD
257	3/17/2021	Gulf of Mexico	TBD	TBD	TBD
258	2021[e]	Cook Inlet	TBD	TBD	TBD
259	8/18/2021	Gulf of Mexico	TBD	TBD	TBD
261	3/16/2022	Gulf of Mexico	TBD	TBD	TBD

a. Eastern Gulf of Mexico lease sales only include those areas that are not currently subject to moratorium under the Gulf of Mexico Energy Security Act of 2006. Additionally, Eastern Gulf of Mexico Lease Sales 225 and 226 did not receive any bids.

b. Chukchi Sea Lease Sale 237 and Beaufort Sea Lease Sale 242 were cancelled on October 16, 2015, due to low industry interest and market conditions.

c. Gulf of Mexico Sale 249 is the first lease sale scheduled in the 2017-2022 Program.

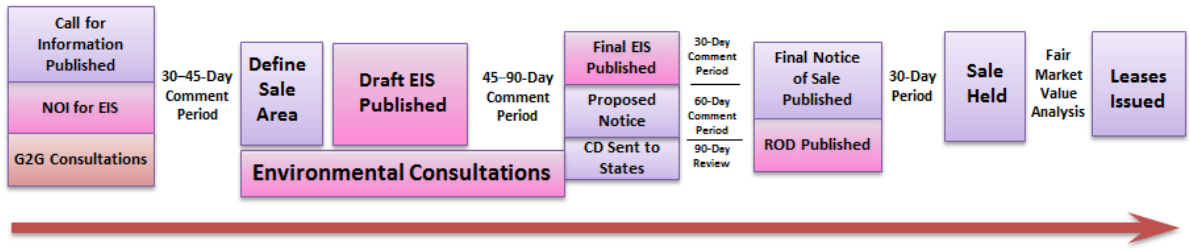
d. These statistics have not yet been finalized. There is a 90-day Fair Market Value review period and statistics are subject to change.

e. The exact date of Cook Inlet Sale 258 has yet to be determined.

➢ Lease Sale Planning Process

Each lease sale in the approved 2017–2022 OCS Oil and Gas Leasing Program will be subject to an established prelease evaluation and decision-making process during which interested and affected parties will have opportunities to comment and provide input. The planning process involves consideration of areas identified for leasing in the National OCS Oil and Gas Leasing Program, and for each individually proposed lease sale, considers reasonable alternatives, modifications, and/or restrictions to the area under consideration. This process culminates in a final decision on the sale's size, timing, and location, as well as decisions on environmental mitigation measures and fiscal terms. The pre-leasing process typically takes two or more years to complete, depending on the nature of the lease sale and the complexities encountered during the planning stages. The major steps and decision points are described below. Figure 7 depicts the typical planning process BOEM has used in recent oil and gas lease sales.

Figure 7: Planning for a Specific Lease Sale



1. **Call for Information and Nominations:** BOEM will request comments from the public on areas of special concern and to provide information on environmental issues that should be analyzed in the area being considered for leasing. Potential bidders are invited to nominate areas of interest within those areas identified for leasing consideration.

2. **Notice of Intent:** BOEM typically issues a notice of intent to alert the public that an environmental review pursuant to the National Environmental Policy Act (NEPA) will be conducted. The notice provides a description of the Proposed Action and possible alternatives to the Proposed Action, as well as a description of the scoping process, and any scheduled meetings for scoping of the NEPA document.

3. **Area Identification:** BOEM will identify the area of the Proposed Action to be analyzed in the NEPA document based on information gathered from the call for information and nominations, and the notice of intent. BOEM is required to publically announce its area identification decision.

4. **NEPA document:** BOEM will prepare a NEPA document (environmental impact statement (EIS) or environmental assessment) to evaluate the potential environmental

impacts of a Proposed Action, alternatives to the Proposed Action, and the potential effectiveness of mitigation measures.

5. **Public Involvement and Comment:** For environmental assessments, BOEM will request public comment on issues that should be addressed in the environmental assessment. If BOEM chooses to solicit public comments on a draft environmental assessment for a lease sale, the draft environmental assessment is available for comment for at least 30 days. For an EIS, the public is invited to participate in the NEPA scoping process and the draft EIS is available for public review for at least 45 days.

6. **Government-to-Government Consultations:** BOEM will consult with federally recognized tribes, and, in Alaska, additionally with Alaska Native Claims Settlement Act Corporations. These consultations are conducted throughout the stages of the OCS oil and gas leasing process.

7. **Environmental Consultations:** BOEM will conduct required consultations with Federal agencies, such as the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service for the Endangered Species Act, the National Marine Fisheries Service for the Magnuson-Stevens Fishery Conservation and Management Act, and state historic preservation officers for the National Historic Preservation Act.

8. **Final NEPA document:** BOEM will incorporate responses to any public comments and update any analysis required prior to issuing a final NEPA document.

9. **Proposed Notice of Sale:** BOEM will publish a Notice of Availability of the Proposed Notice of Sale in the *Federal Register*. The Proposed Notice includes information on the sale's proposed size, timing, and location, as well as a description of proposed blocks being offered, environmental mitigations being considered, and fiscal terms and conditions of the sale.

10. **Consistency Determination:** Consistent with the Coastal Zone Management Act, BOEM will provide coastal states with a determination on whether the proposed lease sale is consistent, to the maximum extent practicable, with the enforceable policies of federally approved state Coastal Zone Management Plans.

11. **Letters to the Governors:** BOEM will send copies of the Proposed Notice of Sale to Governors of affected States for their review. Pursuant to Section 19 of the OCS Lands Act, BOEM will request their comment on the proposed sale's size, timing, and location.

12. **Record of Decision (for an EIS) or Finding of No Significant Impact (for an environmental assessment):** This is the final step in the NEPA process regarding

BOEM's selected action and its decision. The Record of Decision and the Finding of No Significant Impact are signed in conjunction with the Final Notice of Sale and published in the *Federal Register* at least 30 days prior to the lease sale date.

13. **Final Notice of Sale:** BOEM will publish a Final Notice of Sale in the *Federal Register* a minimum of 30 days before the sale is held. The Final Notice of Sale includes information on the sale's size, timing, and location, bid opening, as well as a description of the blocks being offered, applicable environmental mitigations, and fiscal terms and conditions of the sale. Pursuant to Section 19 of OCSLA, BOEM will also send letters to governors of affected States providing written reasons for accepting or rejecting each governor's recommendation and/or implement any alternative means to provide for a reasonable balance between the National interest and the well-being of the citizens of the State.

14. **Lease Sale:** BOEM will open sealed bids submitted by qualified bidders and read them publicly on the day of the sale.

15. **Lease Issuance:** BOEM will issue a lease to the high bidder following completion of BOEM's fair market value analysis and required anti-trust review by the Department of Justice and the Federal Trade Commission.

➢ **Lease Administration**

The lease administration process encompasses a set of discrete business processes, which manage a lease from issuance to relinquishment, termination, or expiration. Once the lease has been officially awarded, lease administration covers the legal modification of the lease contract, its supporting analysis, and services provided by BOEM under the lease contract. Also included within these processes are the qualification of corporate entities and individuals before they can acquire properties or do business on the OCS; the review and acceptance of corporate mergers, corporate changes-of-name, and business conversions; and the assignment of lease interests among qualified entities.

➢ **Risk Management Program**

As a steward of OCS resources, BOEM manages a variety of risks associated with OCS activities. Some of these risks are intrinsically related to financial assurance and loss prevention to the U.S. Government and the American taxpayer. Robust and continuous risk monitoring is necessary to control impacts of financial uncertainty, credit risk, project failures, legal liability, accidents, and natural disasters. Standard mitigation strategies include risk transference, risk avoidance, risk reduction, and planned risk acceptance.

Emerging conditions on the OCS have prompted BOEM to develop enhanced risk management capabilities. Technological advances are outpacing programs, policies, and regulations. In addition, characteristics of the companies operating on the OCS have changed over the years, with large companies transferring sunset properties to small and less experienced companies, and these less experienced companies are now entering the decommissioning market. Accordingly, one central risk is that a company becomes financially insolvent and the U.S. Government and the American taxpayer may be forced to pay for decommissioning a facility.

The cost of decommissioning a facility is based on the type and number of various components (e.g., pipelines, structures, wells), various factors (e.g., water depth, location), condition of the facilities (e.g., age, rust, toppled, damaged), and market conditions (e.g., rig availability and cost). For instance, contingent liabilities associated with the decommissioning of all facilities on the OCS are estimated to be approximately $34.1 billion. In frontier territories, such as the Arctic, the cost of decommissioning a single platform may be twice that of a Gulf of Mexico facility in comparable depth due to climate, sea ice, and remoteness. Meanwhile, a single OCS renewable energy project may include more than 100 offshore structures and miles of buried cable that will be subject to site clearance and costly decommissioning requirements. These are just some examples of the conditions that have spurred the need for the U.S. Government to take a more proactive approach to the development and management of a national risk policy and financial assurance program.

BOEM responded to this need by initiating a comprehensive Risk Management and Financial Assurance Program to effectively manage, mitigate, and monitor Federal contingent liabilities related to energy and natural resource development on the OCS. Currently, companies are allowed to self-insure for their decommissioning liabilities, provided the company meets a set of financial and operational criteria. This means if a company goes bankrupt and there are no associated companies with an obligation for the facility, then the US Government and taxpayers would be ultimately responsible for decommissioning. BOEM is seeking to modernize this program and reduce the risk to taxpayers from over-reliance on self-insurance. By doing so, BOEM will further reduce the chances that taxpayers will have to pay to decommission a facility in the event that a company is unable to meet its financial obligations.

BOEM's current bonding regulations have been in place since the mid-1990s. BOEM is in the process of modernizing the regulations and associated guidance to incorporate current industry and financial institution best practices. In September 2016, BOEM announced the Notice to Lessees (NTL) No. 2016-N01 *Notice to Lessees and Operators of Federal Oil and Gas, and Sulfur Leases, and Holders of Pipeline Right-of-Way and Right-of-Use and Easement Grants in the Outer Continental Shelf*. Pursuant to the Executive Order *Implementing an America-First Offshore Energy Strategy* and the DOI Secretarial Order No. 3350, *America-First Offshore Energy Strategy*, BOEM will review the guidance and develop options for improving the

program. Under BOEM's revised guidance, companies will be able to utilize multiple types of financial assurance instruments to create a tailored plan that uniquely fits their needs to meet their additional security requirements. Since publication of its latest guidance (NTL No. 2016-N01), BOEM has seen a significant increase in workload as it works with companies to tailor specific plans to address total outstanding decommissioning liabilities and ascertain the gap in their financial assurance requirements. As BOEM moves forward with work in this area, it is developing the capacity of the Bureau – and the government as a whole – to identify, analyze, and mitigate financial risk and liability.

PLANS

For existing leases, BOEM conducts in-depth reviews of exploration plans (EPs), development and production plans (DPPs), and development operations coordination documents (DOCDs) for potential approval within required time frames to ensure that planned activities are conducted in accordance with applicable laws, regulations, and lease terms. BOEM works to ensure that the review process is rigorous and efficient, while also being predictable to industry. BOEM designates specific plan coordinators to ensure consistency throughout the review process and is currently developing electronic systems to make the process more user-friendly and the status clear.

In conducting plan reviews, BOEM examines the exploration activities to ensure they conform to regulatory performance standards, comply with federal laws, are safe, conform to sound conservation practices and protect the rights of the U.S. Government, do not unreasonably interfere with other users of the OCS, and do not cause undue harm to the human, marine and coastal environment. BOEM evaluates the potential environmental impacts of the proposed activities pursuant to OCS Lands Act and NEPA. Analyses include reviews of shallow hazards and seafloor features, resource conservation, financial assurance, worst case discharge, air quality, water quality, archaeological concerns, environmental resource concerns, subsistence use concerns, and military and security issues. These analyses provide information to support plan decisions and aid in the development of approval conditions to help protect the environment and facilitate multiple use of the OCS.

BOEM's regional offices coordinate and manage the plan review process and are the decision maker for the plans. BOEM also coordinates its review of plans with the Bureau of Safety and Environmental Enforcement (BSEE), as well as with states that have approved Coastal Zone Management Programs, and with the Governor of each affected state and other appropriate state and Federal agencies. BOEM will accept those recommendations from the Governor that provide a reasonable balance between the national interest and the well-being of the citizens of each affected state.

Figures 8 and 9 illustrate typical processes for exploration and development of OCS oil and gas resources. For development activities proposed for a lease or unit in the Gulf of Mexico west of 87.5° longitude, a DOCD is submitted. For any other OCS area, a DPP is submitted for proposed development activities.

Figure 8: Processes for Exploration Activities

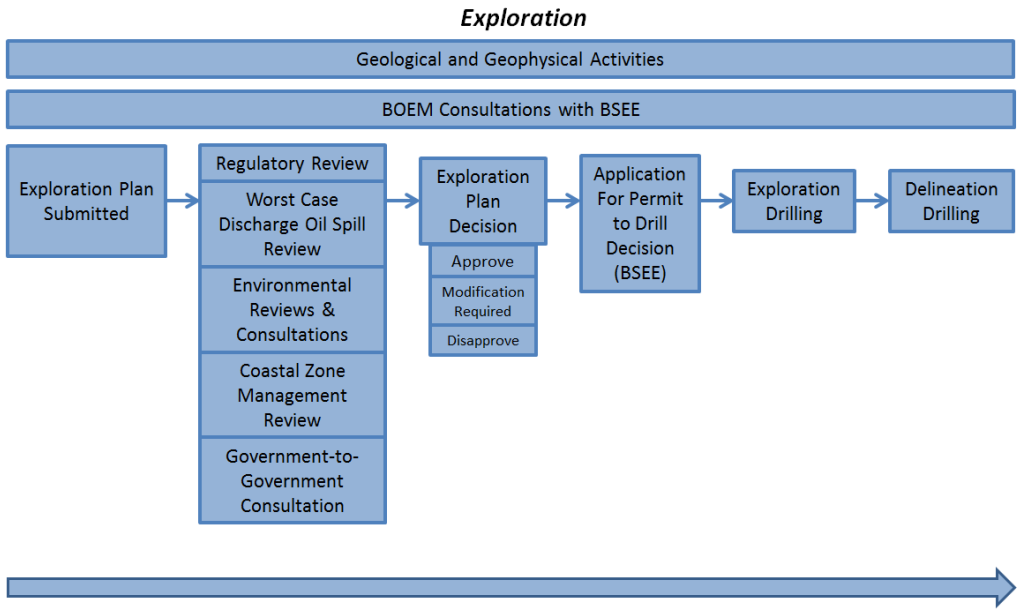
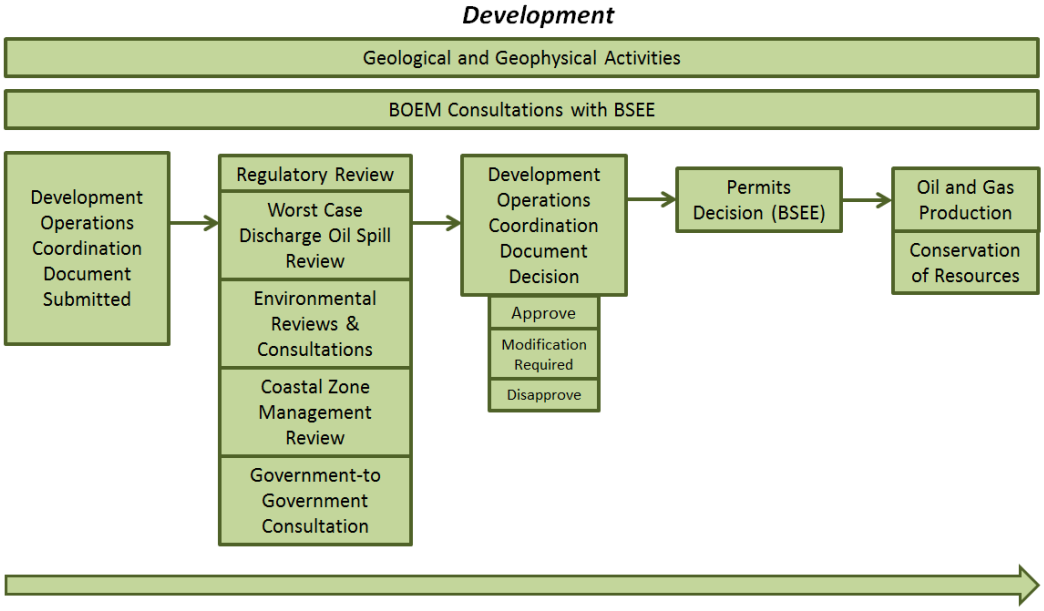


Figure 9: Processes for Development Activities



Note: This figure reflects the process for development plans in the Gulf of Mexico Region. The Alaska Region follows a similar process for development plans and receives DPPs rather than DOCDs.

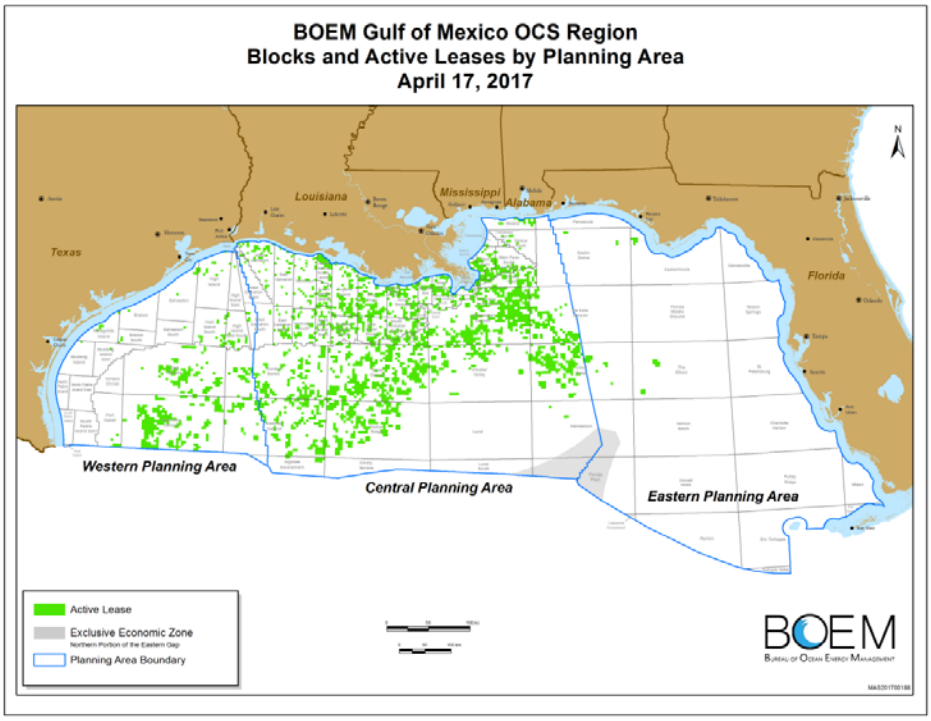
BOEM, in coordination with BSEE, continues to modernize and enhance the Technical Information Management Systems (TIMS) by developing ePlans. TIMS is a web-based platform that supports online reporting and permitting functions and which is utilized by both BOEM and BSEE. Together, the bureaus are working to enhance functionality and service delivery. The ePlans portal will revolutionize the plan submittal and review process for both BOEM and industry. It will automate the plans process and ensure the consistency and efficiency of BOEM's review and approval of industry plans. The system will be dynamic enough to record changes made at all phases of the process, allowing for proper record-keeping and the ability to respond to Congressional, industry, and public requests. It will also allow the plan submission to become part of the TIMS database which can be referenced for future BOEM and BSEE applications and components.

This effort to modernize an important component of BOEM's IT infrastructure will achieve significant gains for both the rigor and the efficiency of plan review. The automation of this process will yield significant savings for industry and increase coordination and opportunities for data-sharing across Federal and state agencies. Not only will industry be able to log into the ePlans system to submit plans, but the states and Federal agencies will be able to log into ePlans to view plans and will receive electronic notifications for those plans affecting their states or agencies. Development of the first two modules (Initial Exploration Plan and Review Exploration Plan) is expected to be completed in early 2017. Development of the third module (Supplemental and Revised Exploration Plans) is expected in mid-2017.

Throughout this process, BOEM has coordinated closely with BSEE, which is simultaneously developing a complementary permit review platform called ePermits. The ePlans portal is a critical component of BOEM's efforts to improve and modernize its core mission processes, and to facilitate coordination and data-sharing between BOEM, BSEE, and other state and Federal regulatory agencies.

Gulf of Mexico Region: As of April 2017, BOEM oversees 29,175 blocks in the Gulf of Mexico Region. Of these, 3,001 blocks are leased including 458 in the Western Planning Area, 2,509 in the Central Planning Area, and 37 in the Eastern Planning Area. Three active leases are shared between the Central and Eastern Planning Areas, yielding a net total of 3,001 active leases within the Gulf of Mexico. The following figure provides a snapshot of the blocks and active leases within the Gulf of Mexico.

Figure 10: Gulf of Mexico Region Blocks and Active Leases by Planning Area



BOEM also reviews and processes all right-of-use and easement applications. Rights-of-use and easements are granted to operators to construct or maintain platforms and other installations at OCS sites on which the operator does not have an OCS lease. In FY 2016, the Gulf of Mexico Region completed 19 right-of-use and easement requests and received 15 requests during this time period. BOEM anticipates approximately 25 requests in each of FY 2017 and FY 2018.

The number of plans reviewed in 2016 decreased from the previous year. This decrease was in the plans submitted for proposed activities in both shallow water and deepwater areas of the Gulf of Mexico. The decline in the price of oil finally impacted the activity in the Gulf of Mexico, and BOEM has seen drilling activity substantially reduced in the past year. Although there has been a decrease in activity, the long term outlook for projects in the Gulf of Mexico remains favorable.

The following table shows all plan submittals – initial, supplemental, revised, modifications, amendments, and post approval – received from 2008 through 2016, as well as plans estimated to be received in calendar years 2017 and 2018.

Table 15: Plan Review Activities in the Gulf of Mexico 2008-2018

Calendar Year	# EPs	# DOCDs
2008	516	444
2009	619	350
2010	408	431
2011*	907	837
2012	170	327
2013	504	616
2014	509	601
2015	542	473
2016	336	248
2017**	380	320
2018**	450	400

* The increase in 2011 is due to heightened standards on information requirements on Exploration Plans (EP) and Development Operation Coordination Documents (DOCD) in the OCS.
** The number of plans noted in 2017 and 2018 are estimated.

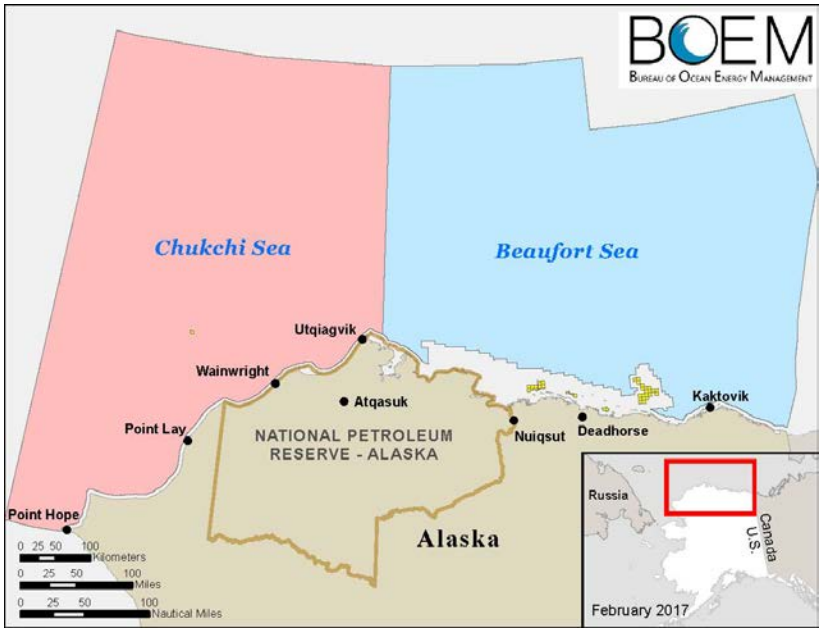
Alaska Region: As of April 1, 2017, the Alaska OCS has 42 active oil and gas leases encompassing approximately 199,247 acres in the Beaufort Sea (42 leases). The decline in the number of active leases from 2016 is the result of leases either expiring or the operators relinquishing the leases. The location of the Alaska OCS leases is shown in the following map. Prior to expiration of the leases (with most in 2017), BOEM anticipates receiving requests to conduct ancillary activities and exploratory drilling on some of the leases.

Despite the region's high resource potential, activities on these U.S. Arctic OCS leases are particularly challenging due to the extreme Arctic conditions, remote location, and lack of infrastructure. As a result of these and other challenges (notably depressed oil markets), as well as the legal challenge to Executive Order 13795's modification of the withdrawal of significant portions of the U.S. Arctic OCS from future leasing opportunities by the prior Administration, industry interest in exploration and development in the U.S. Arctic OCS will likely be uncertain in the coming years.

In 2016, the prior Administration withdrew all of the Chukchi Sea Planning Area and significant portions of the Beaufort Sea Planning Area from future mineral leasing for an indefinite period to protect these ecologically sensitive marine environments from the impacts of any future oil and gas exploration and development. While portions of the Beaufort Sea were not withdrawn, no Beaufort Sea lease sales were included in the 2017-2022 OCS Oil and Gas Leasing Program.

If the new National OCS Oil and Gas Leasing Program that BOEM will prepare pursuant to E.O. 13795 and S.O. 3350 includes the Beaufort Sea or Chukchi Sea for oil and gas leasing in the future, BOEM would expect to see an increase in oil and gas exploration or development plans.

Figure 11: Alaska Region Active Leases



In the Alaska OCS, a single lease (site of Burger J well) comprised of 5,693 acres remains active in the Chukchi Sea, and forty-two leases comprised of 199,247 acres remain active in the Beaufort Sea. The Beaufort Sea leases include 3 leases at the Liberty field, 21 leases in the eastern Beaufort Sea, 13 leases in the newly-formed Nikaitchuq North exploration unit north of the Nikaitchuq development in eastern Harrison Bay, 3 leases in the Northstar Unit (a joint state/Federal unit that is currently producing), and 2 leases north of the Nikaitchuq North Unit.

On December 30, 2014, Hilcorp submitted a DPP for the Liberty Prospect, which is located in OCS waters northeast of Prudhoe Bay. On February 4, 2015, BOEM requested additional information from Hilcorp. After receiving the additional information from Hilcorp, BOEM deemed the DPP submitted on September 18, 2015 and began preparing an EIS for the project. BOEM held public scoping meetings in Alaska (Fairbanks, Kaktovik, Nuiqsut, Barrow (Utqiagvik), and Anchorage) and accepted comments through regulations.gov. In addition, BOEM conducted government-to-government consultations with federally recognized tribes and government-to-Alaska Native Claims Settlement Act corporation consultations. BOEM anticipates publishing the Draft EIS in the fall 2017. The EIS is being coordinated with a number of cooperating agencies, including the State of Alaska, Army Corps of Engineers, Environmental Protection Agency, Fish and Wildlife Service, National Marines Fisheries Service, U.S. Coast Guard, Department of Transportation, Bureau of Land Management, Bureau

of Safety and Environmental Enforcement, and the North Slope Borough. BOEM will not make a decision to approve, disapprove, or require modifications to the DPP until after the completion of the Final EIS, anticipated in 2018.

The Liberty Prospect DPP, if approved and executed, will be the first solely Federal OCS oil and gas complex development in the U.S. Arctic OCS, and its installation is expected to help lay the foundations for all future OCS oil and gas activity in the U.S. Beaufort Sea. Responsible and safe development of the Liberty Prospect will require rigorous oversight by BOEM, BSEE, and other Federal agencies.

Twenty-one leases, initially among a larger group of 41 leases held by Shell in the eastern Beaufort Sea, were acquired in 2016 by the Arctic Slope Regional Corporation. Shell relinquished its other 20 leases in the area, effective June 28, 2016. ASRC also acquired Shell's geologic data for the Sivulliq and Torpedo prospects that were the proposed targets for exploration plans submitted to BOEM in 2010 and 2011. The ASRC leases are scheduled to expire in 2017, with the exception of the two leases on which the Sivulliq and Torpedo wells were proposed, which expire in 2019. With the looming 2017 expiration date, ASRC is investigating options for extending its leases while preparing plans for exploration work.

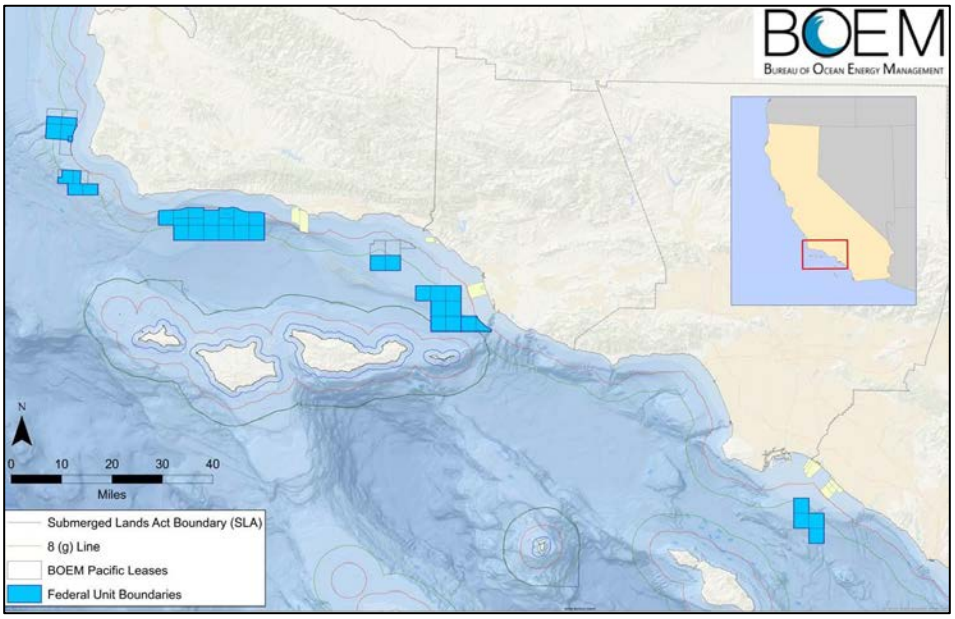
In 2016, Eni U.S. Operating Co. Inc. (Eni), a subsidiary of an Italian multinational oil and gas exploration and development company, initiated discussion with BOEM to explore its 13 OCS leases in the Beaufort Sea, north of Oliktok Point, east of the Colville River Delta. Eni's leases are set expire at the end of December 2017. As a first step toward exploration, Eni requested to unitize the 13 OCS leases, which BSEE approved effective February 24, 2017. The unit is named the Harrison Bay Block 6423 Unit (aka Nikaitchuq North Prospect). Following unitization, Eni filed an exploration plan for the unit with BOEM on March 3, 2017. Based upon the exploration plan, Eni plans to drill one or two extended reach well to OCS leases held by the unit from its existing manmade gravel island in state waters of the Beaufort Sea. To reach the OCS exploration target within the unit, the proposed exploration well(s) will have an estimated measured length of approximately 34,000 feet. BOEM is currently reviewing the exploration plan, and has requested additional information from Eni. BOEM anticipates taking action on the plan after Eni submits all required information.

Review of exploration and development and production plans requires additional environmental consultation with the FWS and the National Oceanic and Atmospheric Administration (NOAA) to ensure compliance with the Endangered Species Act and Marine Mammal Protection Act, as well as other laws protecting the environment. BOEM also consults with NOAA on essential fish habitat, and with the State Historic Preservation Offices on archaeology and historic preservation requirements.

Per Executive Order and DOI policy, BOEM initiates and engages in government-to-government consultations with federally recognized tribes and government-to-Alaska Native Claims Settlement Act corporations in planning activities that may have a substantial direct effect on those entities.

Pacific Region: While neither the current OCS Oil and Gas Leasing Program nor the 2017-2022 OCS Oil and Gas Leasing Program include lease sales in the Pacific Region, BOEM continues to oversee activity on 43 existing leases from previous lease sales. Proposed activities on these active leases periodically require an update or revision to development and production plans. During FY 2016, no review of development and production plans, revisions or supplemental updates took place. However, BOEM anticipates review of one supplemental development and production plan in each of FY 2017 and FY 2018. The following shows the location of the leases off the coast of Southern California.

Figure 12: Pacific Region Active Leases



➢ Oil Spill Financial Responsibility Program

The financial responsibilities associated with the development of OCS resources are enormous. Just as BOEM must protect the American taxpayer from entities that fail to meet their lease, grant, or permit obligations, the Bureau must also ensure that these same entities have the financial resources to pay for cleanup and damages that could be caused by oil discharges from their OCS facilities.

Under the Oil Pollution Act, BOEM is authorized to adjust for inflation the limit of liability for OCS facilities, including pipelines. In December 2014, BOEM published a final rule that increases this cap, based on adjustments for inflation. The new limit of liability for damages from OCS facility spills is capped at $133.65 million effective January 12, 2015 – the maximum allowed under the Oil Pollution Act. The liability cap will be periodically adjusted for inflation. The liability for damages from offshore facility spills will be limited to the current cap amount unless it can be shown that the responsible party was guilty of willful misconduct, gross negligence, a willful failure to report the oil spill incident or to cooperate with removal activities, or that the responsible party violated applicable Federal safety regulations, in which case there would be no limit to any liability for damages. BOEM performs a thorough review and oversight of industry oil spill financial responsibility filings, which are required before any drilling activities are approved. BOEM uses the information to (1) ensure Oil Pollution Act compliance by offshore lessees and owners and operators of covered facilities, (2) establish eligibility of designated applicants for oil spill financial responsibility certification, and (3) establish reference and contact information for potentially responsible parties, their designated agents and guarantors. The program currently oversees approximately 128 companies covering 5,500 facilities with financial coverage in excess of $9 billion.

➢ Worst Case Discharge

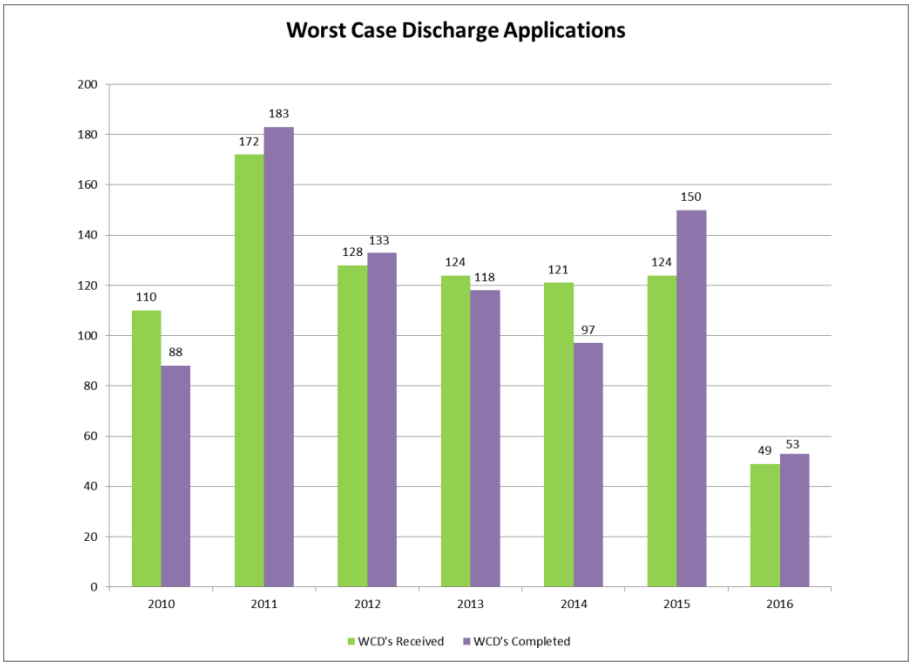
Following the *Deepwater Horizon* oil spill, and the subsequent reorganization of the Minerals Management Service, BOEM instituted new regulations that require operators and lessees to submit worst case discharge calculated volumes and associated data as part of every exploration plan and development plan. BOEM defines a worst case discharge for exploratory and development drilling operations as the daily rate of an uncontrolled flow of oil and gas from all producible reservoirs that are simultaneously exposed to an open wellbore. The package of reservoirs exposed to an open borehole with the greatest discharge potential is considered the worst case discharge scenario.

Each Region is responsible for worst case discharge verifications and decision documentation associated with plans under their jurisdictions. BOEM geoscientists and engineers independently verify the validity of the volume calculations, assumptions, and analogs used by the operator for the worst case discharge. BOEM's worst case discharge model outputs are used by BSEE in reviewing oil spill response plans and making Application for Permit to Drill (APD) decisions.

Gulf of Mexico Region: BOEM made determinations on 53 worst case discharge verifications in FY 2016. During 2017 and 2018, BOEM anticipates the number of worst case discharge analyses to remain the same, though the workload will depend on the level of drilling activity in deepwater. Figure 13 below depicts the number of worst case discharge determination requests received and completed since 2010; the received values in the figure represent the number of

requests received and reviewed for completeness before a team of analysts begins their assessment of the application.

Figure 13: Worst Case Discharge Analyses Completed



BOEM continues to develop trend parameters for deepwater exploration and development drilling for critical reservoir and fluid properties for the worst case discharge analysis in order to enhance the efficiency of the process while maintaining the regulatory oversight needed to ensure an adequate response to an uncontrolled blowout. In FY 2015, BOEM awarded a research contract on Flow Correlation Validation for worst case discharge to improve the accuracy of calculating an uncontrolled blowout volume. The study was completed in FY 2017, and is currently under review for integration into existing worst case discharge workflows. The contractor, the Louisiana State University, will present their recommendations for research integration at the 2017 BOEM internal worst case discharge conference scheduled for mid-calendar year 2017.

Alaska Region: The worst case discharge estimates have heightened importance in Alaska because there are limited oil spill response capabilities for the Arctic marine environment that operators can access and allow sharing of costs. Operators request numerous meetings with BOEM staff to clarify the various input parameters and assumptions in reservoir flow simulation software models used to produce their worst case discharge estimates. During September 2015, the BOEM staff certified the submitted worst case discharge for the Liberty DPP and presented its findings to BSEE on September 21, 2015, for oil spill plan response evaluation. BOEM staff have also reviewed and verified the worst case discharge determination for the proposed Eni

exploration plan for the Harrison Bay Block 6423 Unit (aka Nikaitchuq North Prospect). BOEM is currently reviewing Eni's exploration plan, and has requested additional information from Eni on the plan. BOEM anticipates taking action on the plan after Eni submits all required information.

Pacific Region: Since there is no new leasing, the Region's worst case discharge analyses are for mature fields only. In FY 2016, the Region completed one worst case discharge verification and anticipates a similar level of activity in both FY 2017 and 2018. The Pacific participated in the FY 2016 Worst Case Discharge Internal Control Review (ICR) in conjunction with the Gulf and Alaska regions. Findings and recommendations from this ICR were approved by the BOEM Acting Director on January 30, 2017. The Pacific Region is working to implement recommendations specific to the region based on the FY 2016 Worst Case Discharge ICR.

➢ G&G Reviews

Regulatory reviews using G&G ancillary data are performed to evaluate drilling hazards posed by surface and subsurface geologic conditions and man-made obstructions (30 CFR 550.201-207). In addition, geophysical reviews are performed to evaluate shallow hazards (seafloor and near seafloor) associated with operators' applications for pipeline rights-of-way and associated permits (30 CFR 250.1007 (5)). These reviews include evaluation and verification of operators' interpretations, identification and assessment of potential geohazards in the area affected by exploratory and development drilling, installation of structures, laying pipelines, and other ancillary activities related to the plans. Based on G&G ancillary surveys from operators, BOEM geoscientists identify and evaluate potential risk of shallow faulting, shallow gas zones, shallow water flows, abnormal pressure zones, lost circulation zones, and other natural and manmade hazards. In addition, geoscientists evaluate the potential risk of encountering hydrogen sulfide (H2S). The G&G reviews provide a detailed evaluation of operators' geohazards analyses and shallow hazards assessment and determine mitigations to be applied to plan and permit approvals.

BOEM geoscientists conduct G&G evaluations that include broaching analyses that support BSEE reviews and approvals of operators' APDs for wells. The integrity of the well design is evaluated by BSEE, and if a determination is made that the well may fail at a certain casing point, a broaching analysis is conducted by geoscientists. Typically it takes 1 to 2 weeks, depending on the complexity of the geology, for the geoscientists to evaluate subsurface stratigraphic and structural conditions to determine if escaping hydrocarbons from a failed casing shoe will be trapped in the formations or potentially reach the seafloor at some point in time.

Gulf of Mexico Region: In FY 2016, BOEM conducted approximately 217 geological and 283 geophysical reviews in support of plans and BSEE APD and pipeline responsibilities. Moving

forward, increasingly complex analyses will be required for geohazard reviews due to higher resolution data collected for complex projects, especially those occurring in deepwater, and the additional workload of broaching analyses in support of BSEE well integrity analyses. In FY 2016, broaching analyses were completed on 32 proposed wells in support of BSEE. BOEM anticipates completing approximately the same number of broaching analyses in FY 2017 and FY 2018.

Alaska Region: In Alaska, the Resource Evaluation staff provides the subsurface expertise to BSEE for regulatory review of applications for drilling permits. In FY 2016, BOEM geoscientists and petroleum engineers reviewed geological and geophysical information and provided information to BSEE pertaining to unitization of leases in the Beaufort Sea and expansion of the participating area in the Northstar production unit. The BOEM geoscientists also provided on-call reviews during actual drilling operations when requested by the BSEE Alaska Region. BOEM is currently reviewing geological and geophysical information, including shallow hazards information, for the Liberty development and production plan, as well as the proposed Eni exploration plan in the Beaufort Sea. The analysis done by BOEM for the Liberty DPP will be instrumental in evaluating the reservoir development plan consistent with resource conservation principles, and for the shallow hazards assessment to determine the appropriate location of the man-made gravel island and pipeline corridor.

RESOURCE EVALUATION

BOEM's resource evaluation program conducts analyses to identify areas of the OCS that are the most promising for oil and gas and mineral development. To accomplish this, BOEM:

- Acquires G&G data/information through the regulation of pre-lease exploration of the OCS;
- Delineates and develops estimates of the quantities of undiscovered technically and economically recoverable resources that may exist and the volume of reserves discovered and likely to be produced;
- Tracks the volume of discovered reserves, produced reserves, and the remaining reserves by field;
- Forecasts future industry activity levels and develops scenarios for the leasing program; and,
- Determines the adequacy of high bids received for individual tracts offered for lease to ensure the Nation receives fair market value for the tracts.

BOEM's evaluation of geological, engineering, and geophysical data and information provides the inputs to the economic and statistical analyses that inform leasing policies and program decisions, such as the design of financial terms for lease sales. Program analyses assist in exploration and development plan decisions and help reduce the risk of safety and environmental concerns in OCS development decision-making.

➢ **Resource Assessment**

As one of the first steps in the leasing process, BOEM must identify resources associated with geologic plays and areas on the OCS that offer the highest potential for oil and gas development and production. Following the identification of hydrocarbon plays, BOEM assesses the play's hydrocarbon potential and its economic viability with complex computer models and methodologies. The assessment process incorporates specific geologic, petroleum engineering, and economic data and information. In addition to the estimation of undiscovered hydrocarbon resources, these studies help identify environmental and operational constraints and assist in making leasing decisions. Comparing the data for acreage and resources offered illustrates that BOEM offers access to geologic areas on the OCS that have the highest potential for development of oil and gas. BOEM also estimates the amounts of oil and gas likely to be discovered and produced; and, generates potential scenarios of future exploration, development, and production activities. BOEM measures both the resources and acres offered annually compared to what was planned for the year and analyzes the results to inform the National OCS Oil and Gas Leasing Program and sale decisions. Resource estimates support analyses of potential impacts of policy options, legislative proposals, NEPA analyses, and industry activities affecting OCS oil and gas activities — both current and future.

The scale of the assessment activities range from large (regional or OCS-wide) to lease sale specific, such as individual prospects and lease tracts. In the early stages of this process, the focus is on regional areas, but as more data and information are acquired, the focus shifts to lease sales and prospect-specific areas to be offered for lease, or that are related to a specific issue, (i.e., moratoria, marine sanctuaries, quantitative analysis of legislative proposals). Once a lease sale area has been identified, BOEM's geologists and geophysicists perform detailed subsurface mapping and analyses needed to estimate the resource potential of individual prospects within that area. These prospect-specific data, maps, and analyses are also used to determine parameters for post-sale bid analyses in support of fair market value evaluations.

The 2016 Assessment of Undiscovered Technically Recoverable Oil and Gas Resources of the Nation's Outer Continental Shelf was developed to support the 2017-2022 OCS Oil and Gas Leasing Program. BOEM completed and published the assessment in March 2016. The 2016 Assessment summarizes the results of BOEM's analysis of the undiscovered oil and gas resources for the OCS. It represents a comprehensive appraisal that considers relevant data and

information available as of January 1, 2014, and builds upon previous assessment efforts on the OCS. The assessment estimates a mean of 89.87 billion barrels of undiscovered technically recoverable oil and a mean of 327.49 trillion cubic feet of undiscovered technically recoverable natural gas in the Outer Continental Shelf of the United States. This assessment provides the foundation to support activities related to the development of the 2017-2022 OCS Oil and Gas Leasing Program and forms the basis of the anticipated production which is used in the economic analysis.

Gulf of Mexico Region and Atlantic OCS: In FY 2016, BOEM completed its analyses and updated its estimates of the undiscovered resource potential of the Atlantic OCS and Gulf of Mexico OCS. The assessment includes exploration and development activity scenarios for both the Atlantic OCS and Gulf of Mexico OCS. This up-to-date resource assessment is necessary to ensure that BOEM will be in a position to provide the best resource information available for upcoming analyses and decisions regarding the 2017-2022 OCS Oil and Gas Leasing Program.

Alaska Region: In the 2016 resource assessment, BOEM reassessed the oil and gas potential, but did not make any changes related in UTRR for the Cook Inlet Planning Area, which is under consideration for an OCS lease sale in 2017. BOEM's Alaska Region is responsible for all reservoir and field analyses for BOEM and BSEE in Alaska, and also all the shallow hazard reviews for exploration and development plans and subsequent applications for permit to drill.

Pacific Region: In FY 2016, BOEM completed the 2016 Assessment of Undiscovered Technically and Economically Recoverable Oil and Gas Resources located within the Pacific Outer Continental Shelf. The assessment results are included within the BOEM National Assessment, published on the BOEM webpage. To ensure that the Pacific Region continues to keep abreast of current developments in industry and maintain technical excellence pertaining to resource assessment, the Pacific participated in a GeoX software evaluation meeting/training exercise. The aim of this exercise was to investigate a possible replacement of the current BOEM geologic assessment software program.

➢ **Reserves Inventory Program**

The OCS Lands Act requires the Department to "conduct a continuing investigation…for the purpose of determining the availability of all oil and gas produced or located on the Outer Continental Shelf." In order to meet this requirement, BOEM is required to develop independent estimates of economically recoverable amounts of oil and gas contained within discovered fields by conducting field reserve studies. The reserve estimates undergo continuous revisions to reflect new information obtained from development and production activities. As activity increases on the OCS, so does the workload associated with the reserves inventory program. BOEM is responsible for continually updating volumetric estimates on over 1,300 fields in the

Gulf of Mexico. During FY 2016, nearly 4,600 reservoirs were interpreted, revised, and added to the inventory. Similar reserves inventory workloads are expected in FY 2017 and FY 2018. Reserve studies are critical inputs to determining the Nation's oil and gas endowment on the OCS, conducting resource assessments, generating analog information for bid adequacy determinations, and in the review of industry plans and requests. The geologic and engineering information supports other program activities within the Department, including the development and preparation of the 2017-2022 OCS Oil and Gas Leasing Program as well as through cooperative efforts with the Department of Energy and its Energy Information Administration. For example, BOEM's reserves inventory and resource assessment information serves to support the Energy Information Administration's National Energy Modeling System which is used for preparation of forecasts within its Annual Energy Outlook. In addition, the information is also used by the U.S. Geological Survey (USGS) for the Lower Tertiary assessment.

Gulf of Mexico Region: At the Regional level, reserves inventory personnel review conservation information document submissions. Conservation information documents are required to ensure operators exploit all economic reservoir accumulations discovered rather than producing only the most prolific zones and bypassing marginally economic zones. The review and analysis of company-submitted conservation information documents allows for the maximum ultimate recovery and full development of economic reserves and resources, while ensuring fair monetary compensation for the Federal Government. During FY 2016, BOEM evaluated 11 initial and supplemental conservation information documents and 5 revised conservation information documents resulting in a commitment to develop an additional 39.9 MMBOE in recoverable hydrocarbons that would otherwise not be developed. BOEM anticipates evaluating approximately 15 requests during FY 2017 and 17 during FY 2018.

During FY 2017, BOEM anticipates issuing reports summarizing oil and gas reserves and production from Gulf of Mexico discovered fields. The calendar year 2015 report on "Estimated Oil and Gas Reserves Gulf of Mexico OCS Region" and the associated 2015 "Atlas of Gulf of Mexico Gas and Oil Sands Data" will be published on the BOEM website in FY 2017. In FY 2016, the calendar year 2014 report along with the associated calendar year 2014 "Atlas of Gulf of Mexico Gas and Oil Sands Data" report was published on the BOEM website.

Alaska Region: BOEM continues to support BSEE in the oversight of production allocation issues for the Northstar field production unit operated by Hilcorp, which produces oil from both State of Alaska and OCS leases. For example, BOEM participates in quarterly meetings with Hilcorp and BSEE to discuss and resolve production allocation issues. In late 2016, Hilcorp communicated with the Alaska Oil and Gas Conservation Commission, as well as with BOEM and BSEE, requesting to add potentially productive Kuparuk Oil Pool sands to the Hooligan Participating Area within the Northstar Unit. BOEM would have a role in the determination of well producibility and is responsible for reviewing supplemental OCS plans.

Pacific Region: During FY 2016, BOEM generated its annual Field Reservoir and Reserve Estimates preliminary report, breaking down the Pacific Region's reserves and known resources by field and productive zone. Typically, work on this annual report begins once production data is submitted by companies, which is received by BOEM in the late spring or early summer. BOEM then must verify the data and perform a variety of analyses. The Field Reservoir and Reserve Estimates report provides a brief update on reserves and production between releases of the more comprehensive Estimated Oil and Gas Reserves report.

In FY 2016, BOEM prepared both preliminary proprietary and public versions of the reports. Production data discrepancies were identified during the reserve analyses. The preliminary reports will be finalized and published in FY 2017 once production discrepancies are resolved with BSEE. BOEM anticipates publishing an annual Field Reservoir and Reserve Estimate report during FY 2017 and also FY 2018. Also, during FY 2016, the Pacific Region completed and provided the Pacific OCS Region 11-year Oil and Gas Production Forecast that contributes to BOEM's 11-year estimate of Federal OCS royalty receipts for the 2017 President's Budget Request. BOEM will complete similar forecasts for the 2018 and 2019 President's Budget Requests during FY 2017 and FY 2018.

Also, in 2016, BOEM Pacific Region prepared and delivered a presentation on its reserves field study project conducted in collaboration with BSEE. BOEM staff also prepared a technical paper based on this study, which was presented and published at a 2016 Society of Petroleum Engineers conference.

The Pacific Region also participated in FY 2016 Reserves Inventory Program Internal Control Review (ICR) project in conjunction with the Gulf and Alaska regions. Findings and recommendations from this ICR were approved by the BOEM Acting Director on January 30, 2017. The Pacific is working to implement recommendations specific to the region based on the FY 2016 ICR. Pursuant to the ICR recommendations, the Pacific in FY 2017 is participating in a collaborative effort with the other BOEM regional offices to develop a Probabilistic Reserves estimation methodology.

➢ Permitting of Prelease Exploration

BOEM works to ensure that energy-related prelease exploration, prospecting, and scientific research operations in Federal waters do not interfere with each other, with lease operations, or with other permitted uses of the area. Permits to acquire prelease G&G data identify specific parameters for each activity, including the area of interest, the timing of acquisition, the use of approved equipment and methods, and required environmental compliance measures. For each approved application, the operator receives a signed copy of the permit that outlines policies regarding reporting, submission, inspection and selection of data, reimbursement, disclosure of

information, possible sharing of data with affected states, contact information for coordinating activities with affected stakeholders, and policies regarding permit modifications. Pursuant to the Executive Order *Implementing an America-First Offshore Energy Strategy* and the DOI Secretarial Order No. 3350, *America-First Offshore Energy Strategy*, BOEM is considering approaches to streamline permitting for seismic data collection. Adherence to BOEM's processes and regulations ensures that exploration and research activities will be conducted in a safe and environmentally sound manner.

One example of BOEM ensuring exploration and research activities are performed in a safe manner is through its efforts to mitigate potential effects of seismic surveys on marine animals. BOEM has put in place a Gulf of Mexico Notice to Lessees (2012-G02) that describes mitigation measures, including ramp-up procedures, the use of a minimum sound source, airgun testing and protected species observation and reporting. At least two trained visual observers are required on all seismic vessels to ensure the area within 500 meters of the sound source is clear of protected species for at least 30 minutes prior to beginning activities. Additionally, sound producing activity will be ramped up, meaning a gradual increase in emitted sound levels intended to warn marine mammals and sea turtles of pending seismic operations and to allow sufficient time for those animals to leave the immediate vicinity. The NTL describes in detail how to implement the mitigation measures. This is just one example of BOEM attempting to ensure exploration and research are performed in an environmentally sound and safe manner.

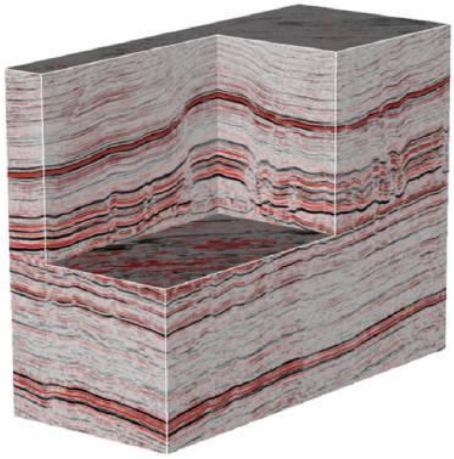
Gulf of Mexico Region: BOEM will continue to issue permits for both oil and gas exploration and marine minerals prospecting activities. During FY 2016, BOEM evaluated and issued 19 permits. During FY 2017, the BOEM anticipates evaluating and issuing approximately 30 permits, as well as various permit modifications, with the majority of the permits issued for high resolution and deep penetration seismic surveys. BOEM estimates it will evaluate and issue approximately 50 permits during FY 2018. The number of permit applications is expected to remain low, reflecting the reduced industry exploration activity resulting from low oil and gas pricing.

Alaska Region: BOEM will continue to issue permits for both oil and gas exploration and marine minerals prospecting activities (e.g. gold). In FY 2016, BOEM issued no G&G seismic permits (one application was submitted for a survey in the Beaufort Sea OCS, but was later withdrawn). Permit activity is expected to remain at one to three permits submitted per year for FY 2017 and FY 2018, primarily for seismic surveys for off-lease exploration. As of February 2017, one G&G seismic permit application has been submitted for a survey in the Beaufort Sea OCS. BOEM ensures that all permittees adhere to statutory requirements (including the Marine Mammal Protection Act and the Endangered Species Act). Also, BOEM conducts government-to-government consultations (e.g., tribal and Alaska Native Claims Settlement Act Corporations). BOEM will acquire any new data as a result of future seismic surveys for BOEM geoscientists to use for resource assessment and fair market value evaluation.

Pacific Region: Although BOEM in recent years has not received or issued G&G seismic permits for prelease oil and gas exploration and marine minerals activities in the Pacific Region, it continues to support post-lease permitting activities. No G&G seismic survey permit applications were submitted in FY 2016. However, in FY 2017, an operator has indicated interest in acquiring new 3D seismic survey data to inform efficient and effective reservoir management decisions. The G&G permit application for this project is expected to be submitted in FY 2017. Evaluation of the application, and the corresponding NEPA analysis, will continue into FY 2018.

➢ G&G Data Acquisition and Analysis

The acquisition and analysis of G&G data are critical to identifying potential resources on the OCS. This enables BOEM to identify areas favorable for the accumulation of hydrocarbons and develop estimates of resource volumes and economic values of these accumulations. These estimates are used to focus OCS leasing on areas of high potential, as well as to help ensure fair market value in lease sale bid evaluations.



Processed 3D seismic data showing oil and gas reservoirs below salt formations in the Gulf of Mexico

The majority of BOEM business processes where oil and gas resources are assessed – such as the reserve inventory program, fair market value analysis, and resource assessment – are based on the analysis of large volumes of G&G data. The primary source of the G&G data BOEM uses is physically acquired by the oil and gas industry. As a condition of the permit that BOEM issues prior to each industry activity (such as seismic data acquisition), companies are required to provide a copy of the G&G data and information to BOEM upon request after completion of data acquisition. BOEM uses these data internally, while maintaining them in a proprietary term that generally ranges from 2 to 25 years. The extensive amount of data and information acquired are used by BOEM and BSEE geologists, geophysicists, and petroleum engineers to perform a variety of analyses leading to resource estimates, reserve inventories, and determining fair market value of the leased tracts.

In FY 2018, BOEM proposes to reduce funding for G&G data acquisition by $600,000 – a roughly 60% reduction to its overall funding level – in order to fund high-priority activities that will directly support the development of a new National OCS Oil and Gas Leasing Program. Even with reduced funding for G&G data acquisition, BOEM can still continue to operate in the current oil and gas price environment because fewer new seismic surveys are being permitted and conducted, which results in reduced overall costs for G&G data. In fact, the number of permits issued between 2015 and 2016 has dropped nearly 70%.

Atlantic OCS: BOEM supports the development of modern, robust scientific information about the scope and location of potential oil and gas resources in the Mid- and South Atlantic and to facilitate resolution of significant potential conflicts between oil and gas activity and other important OCS uses in these areas, including military, fishing, and vessel traffic uses as well as environmental and infrastructure concerns. Pursuant to the DOI Secretarial Order No. 3350, *America-First Offshore Energy Strategy*, BOEM is expediting the "consideration of appealed, new, or resubmitted seismic permitting applications for the Atlantic." To date, two Atlantic G&G permits for airborne gravity/magnetic surveys have been issued and six deep penetration seismic permit applications were denied. All six of the denied applications have been appealed to the Interior Board of Land Appeals. One high resolution seismic application is still pending.

Gulf of Mexico Region: Both BOEM and industry are expanding their use of three-dimensional technology to study and evaluate the complex geologic picture of the Gulf of Mexico OCS. The data provided by this technology is used by decision-makers to inform policies regarding offshore resource development in the Gulf of Mexico.

Because it oversees such a large number of active leases, the Gulf of Mexico Region acquires, analyzes and manages a vast collection of G&G data. BOEM currently manages data from approximately 2,381 three-dimensional surveys, 509 two-dimensional surveys, and other critical data encompassing a total volume of 178 terabytes of 32 bit SEGY data. Of note, the volume of seismic data managed by BOEM increased by 20 terabytes during FY 2016. To effectively manage all this data, BOEM actively invests in data management solutions (servers, disk space, Hierarchical Storage Management, database development) needed to effectively store, archive, manage, and deliver geophysical data to BOEM and BSEE users, as well as other stakeholders (e.g., other Federal agencies and the public).

Alaska Region: BOEM continues to acquire and manage critical G&G data needed to support mission functions, such as National Resource Assessment, development of lease sale environmental impact statement scenarios, National OCS Oil and Gas Leasing Program scenarios, lease sale fair market value determinations, worst case discharge determinations, and review of exploration and development and production plans. As of January 2017, BOEM manages data from approximately 23 three-dimensional seismic surveys, 235 two-dimensional seismic surveys and other critical G&G data, with a total volume of 980 gigabytes of SEGY data plus TIFF images of historical 2-D seismic data.

Pacific Region: In FY 2016, BOEM commenced work on a data management and analysis project involving machine learning. This project is aimed at making quantitative use of G&G data efficient and robust. After encouraging preliminary results, Pacific geoscientists and petroleum engineers are working to expand the scope in FY 2017 to encompass more training data. This project effort will support BOEM's resource evaluation programs such as reserves inventory program, field studies, worst case discharge, etc.

➢ **Fair Market Value Determination**

Ensuring the receipt of fair market value on the OCS is mandated by the OCS Lands Act and is one of BOEM's critical responsibilities. Regional offices, with headquarters coordination and oversight, perform the functions necessary to thoroughly assess the oil and gas potential and fair market value of OCS tracts offered for lease. Only tracts located within leasing areas identified in the National OCS Oil and Gas Leasing Program are available for lease. The bid review process incorporates G&G data along with reserve, resource, engineering, and economic information, which is provided by BOEM economists, into a sophisticated discounted cash flow computer model that estimates economic value of the corresponding tract. The goal of that model is to achieve independent estimates of fair market value on tracts receiving bids.

Since 1984, **bid adequacy** reviews and fair market value determinations have resulted in an average rejection rate of bids of approximately 3.6 percent. Bid adequacy procedures have consistently resulted in higher returns in subsequent sales for tracts bid on in previous sales that have had their high bids rejected on grounds of bid insufficiency. From 1984 through 2016, BOEM rejected total high bids of approximately $632 million. Subsequently, the same blocks were re-offered and drew high bids of about $1.8 billion, for a total net dollar gain of about $1.2 billion, and for a return on rejected high bid amounts of almost 189 percent.

Gulf of Mexico Region: In 2016, BOEM conducted three sales, as indicated earlier in Table 14. The sales were: Central Gulf of Mexico Sale 241, Western Gulf of Mexico Sale 248, and Eastern Gulf of Mexico Sale 226. In addition, Central Gulf of Mexico Sale 247 was held in March 2017. Under the 2017-2022 OCS Oil and Gas Leasing Program BOEM will hold Region-wide Sale 249. In 2018, two Region-wide sales will be held, Sale 250 and 251. Bids received during these lease sales will undergo rigorous fair market value determinations.

Alaska Region: Initially, the 2012-2017 OCS Oil and Gas Leasing Program included three lease sales, but only one lease sale in the Cook Inlet Planning Area (Lease Sale 244) is still planned for 2017. Beaufort Sea Lease Sale 242 and Chukchi Sea Lease Sale 237 were cancelled by the Secretary of the Interior in October 2015.

The approved 2017-2022 OCS Oil and Gas Leasing Program currently includes only one lease sale in Alaska, in the Cook Inlet Planning Area (Lease Sale 258 in 2021). Although no lease sales are planned in the Alaska Region under the currently approved OCS Oil and Gas Leasing Program until 2021, the Region still conducts valuable analyses for other Federal agencies. For instance, BOEM continues to provide the Bureau of Land Management (BLM) with fair market value analyses on National Petroleum Reserve in Alaska lease sales. The BLM's 2016 National

Petroleum Reserve (in Alaska) lease sale, held on December 14, 2016, was BLM's largest annual lease sale since 2004. The BLM received 92 bids on 67 tracts totaling $18.8 million, far greater than the 6 bids totaling $789,000 received in the BLM's 2015 National Petroleum Reserve (in Alaska) sale. It is estimated that this level of activity will return to near pre-2016 levels for National Petroleum Reserve (in Alaska) lease sales scheduled for 2017 and 2018. To improve efficiency, BOEM is evaluating sophisticated software options to replace existing, cash flow modeling programs. Alaska Region Resource Evaluation staff play a lead role in the testing and implementation of this new software across all BOEM regions and have proven its utility for fair market value analyses on BLM's 2016 National Petroleum Reserve (in Alaska) lease sale, clearing the way for additional real-world testing and/or implementation for upcoming BOEM Alaska Region and Gulf of Mexico Region lease sales in 2017.

ECONOMIC EVALUATION

A critical component of BOEM's mission is to ensure the receipt of fair market value for OCS natural resources. To accomplish this, BOEM employs an interdisciplinary team that provides economic analyses for the Department of the Interior, other Federal agencies, and Congress. To ensure fair market value, BOEM develops various resource-economic evaluation approaches along with bid adequacy guidelines and procedures, determines economic inputs for bid adequacy determinations, and coordinates reviews of appeals of bid rejection decisions. BOEM's economic analysis expertise is often called upon to analyze and implement regulatory and legislative actions affecting OCS leasing, exploration, development, and production activities that generate significant supplies of domestic oil and gas and which result in the receipt of billions of dollars each year to the U.S. Treasury. BOEM also undertakes studies, as needed, to analyze and address specific policies and compilations of data affecting overall OCS program responsibilities and initiatives. BOEM's economic functions support all programmatic activities, conventional oil and gas, renewable energy, and marine mineral leasing.

➢ Fair Market Value

BOEM's geoscientists, engineers and economists develop, evaluate, and identify models, policies and parameters designed to ensure receipt of fair market value for the rights to explore and produce OCS energy and mineral resources.

➢ Bid Evaluation

BOEM conducts analyses to support development of regulations and evaluation of policies for lease terms, conditions, and bidding systems for individual oil and gas lease sales, the National OCS Oil and Gas Leasing Program, the Renewable Energy Program, and for the use of sites for construction of liquefied natural gas ports upon request of the U.S. Coast Guard. Under its bid adequacy procedures for oil and gas, BOEM reviews all high bids received and evaluates all blocks using either tract-specific bidding factors or detailed tract-specific analytic factors to ensure that fair market value is received for each OCS lease issued. The bid adequacy process relies on both evidence of market competition and in-house estimates of tract value. If a bid is rejected and a company appeals the rejection, the staff reviews the appeal and makes a recommendation to the Director. In addition to the fiscal terms and bid adequacy process, the Bureau establishes terms and conditions to assure diligent development of leases and environmentally safe and clean operations. BOEM applied bid adequacy procedures in two oil and gas lease sales held in FY 2016 (Lease Sales 241 and 248).

The Bureau uses a post-sale **bid evaluation** process to ensure that fair market value is received for each OCS lease issued. The Bureau reviews all high bids received and evaluates all blocks using tract-specific bidding factors or detailed tract-specific analytical factors. This bid adequacy process relies on both evidence of market competition and in-house estimates of tract value.

➢ Receipt Estimates

BOEM's economic experts review and design policies and methods for forecasting receipts from the offshore energy programs, including the estimation of the manner and rate at which reserves and resources of oil and gas are discovered and produced. Through the economics function, BOEM generates the receipt estimates used to project revenue and offsetting collections amounts identified in the President's annual budget and mid-year review process. The economics experts also annually assess the present value of the future Federal royalty stream of OCS proven reserves for use in the Nation's accounting statements. These estimates also provide a means for forecasting the comparative share of receipts from offshore oil and gas that will be owed to the states under various revenue sharing programs, assist in assessing alternative operator diligence requirements, and contribute to policies for setting timely and efficient requirements for drilling initial wells and the decommissioning of existing wells and structures.

➢ Economic Modeling for Policy and Decision-Making

BOEM's efforts contribute significantly to the development of national energy strategies. The Bureau develops and maintains economic and statistical models and databases that are the basis

for lease sale design, National OCS Oil and Gas Leasing Program formulation, resource evaluation, post-sale and operational activities, rulemaking, revenue sharing, and royalty relief programs. The economic assumptions and scenarios BOEM generates are used in post-sale tract evaluations, national resource assessment studies, and in applications submitted for royalty relief. BOEM also provides economic analyses and fiscal forecasts for energy leasing policies, legal and legislative alternatives, and national energy strategies. Finally, BOEM's economic models inform BOEM's resource needs by projecting rental receipt estimates, which contribute toward BOEM's offsetting collection total.

MAPPING AND BOUNDARY

The Secretary of the Interior is charged by law with the administration of offshore submerged lands on the OCS for offshore energy and minerals leasing purposes. Various court decisions, treaties, laws, policies, and procedures guide the boundary making process on the OCS. The offshore submerged lands of the OCS are subdivided into parcels referred to as OCS blocks. No submerged lands may be offered for lease that are not under the jurisdiction of the Federal Government, and no such submerged federal lands may be offered for lease or sale by either a foreign country or a U.S. Coastal State. For these reasons, accurate OCS boundary lines are a foundational requirement for all BOEM OCS leasing activities. Through its mapping and boundary functions, both in headquarters and in the regions, BOEM is responsible for producing and maintaining the official marine cadastre for the Federal OCS areas of the United States.

The current focus of this work is to modernize the tools and methods used to update block and boundary data in support of leasing for OCS energy and marine mineral purposes. Using Geographic Information System (GIS) software, block and boundary data that is currently stored in TIMS is being transferred to multiple geodatabases (based on location), where it can be updated and maintained in the new Boundary Delineation System. All official boundaries will be updated/maintained, and all official mapping products will be generated using GIS tools. Using GIS for these processes will greatly reduce the time and effort that are required when using the antiquated TIMS mapping tools. These changes in methodology will also allow BOEM to map previously unmapped areas of the Pacific Region, such as Hawaii. BOEM plans to generate the first official maps of the Federal waters surrounding the principal islands of Hawaii in 2017. The new maps will support leasing activities for renewable energy projects.

On December 15, 2014, the U.S. Supreme Court approved a supplemental decree in United States v. California, No. 5 Original, which permanently immobilized ("fixed") the Submerged Lands Act (SLA) boundary, located three nautical miles offshore of California. Fixing the SLA boundary provides certainty to lessors, regulators, lessees, and operators of Federal and state mineral and renewable energy leases and will prevent future litigation concerning the submerged

lands rights of both parties. The SLA boundary was previously fixed for the north coast of Alaska and all of the Gulf of Mexico states except for Florida. A number of states are interested in fixing the SLA boundary. Alaska is interested in fixing the SLA boundary of the Cook Inlet Planning Area, and several Atlantic coast states, including Virginia, Maryland, North Carolina, and South Carolina are also interested in fixing their SLA boundaries. All of the official block diagrams that reflect the SLA boundary offshore of Virginia have been signed by the Commonwealth, which signifies their agreement with the boundary location. A decree to fix the SLA boundary offshore of Virginia has been drafted for the review of the Department of Justice. BOEM is working with all interested coastal states to reach agreement on the location of their respective SLA boundary in anticipation of future efforts to fix other SLA boundaries.

MARINE CADASTRE

The MarineCadastre.gov project, a joint initiative between BOEM and NOAA, is a web-based, integrated marine information system that provides an authoritative source of ocean information, including offshore boundaries, infrastructure, ocean uses, habitat distribution data, energy potential, and other data sets important to large regional ocean planning efforts, as well as project-specific planning. Data is provided as immediate viewable map data, downloadable GIS formatted data, and as map services. Most data are available directly from the authoritative source, or are updated regularly from the source(s). MarineCadastre.gov was created to comply with Section 388 of the Energy Policy Act of 2005, which mandated a comprehensive digital mapping initiative for decision-making on the OCS, and is also providing the geospatial framework needed for broader ocean planning efforts. MarineCadastre.gov has three primary focus areas: web map viewers and ocean planning tools; spatial data registry; and technical support and regional capacity building.

MarineCadastre.gov products were designed for use by Federal regulatory agencies, regional marine planners, state intergovernmental task forces, the offshore wind energy industry and other users of the ocean.

In addition to the data sets provided by other authoritative data providers – such as NOAA, FWS, USGS, U.S. Coast Guard, U.S. Navy, and others – the MarineCadastre.gov includes a variety of BOEM/BSEE data sets. Users inside and outside of BOEM have access to the most up to date versions of lease maps, protraction diagrams, leased blocks, OCS blocks, boundaries, pipelines, wells, and other BOEM/BSEE generated GIS data important to BOEM's stakeholders for marine and energy development planning purposes. The data and services provided through the MarineCadastre.gov project are used by a number of regional ocean portal projects, fulfilling BOEM's vision for the project to be the first place to find authoritative coastal and marine data. Efforts on the MarineCadastre.gov were recognized in 2015 by the Center for Environmental

Innovation and Leadership for "Success through Collaboration" with the NOAA's Coastal Services Center. The Center for Environmental Innovation and Leadership Awards recognize military and Federal teams and programs that have demonstrated exemplary performance in integrating environmental stewardship into day-to-day activities and turned sustainability ideas into reality. Awards highlight excellence in developing and implementing innovative environmental programs to improve environmental quality, reduce greenhouse gas emissions, or increase the use of renewable energy and bio-preferred products. The project has also won an Honorable Mention in the Teams category for the DOI Environmental Achievement award in 2014. It won the Renewable Energy category in 2013 for the similar DOC Energy and Environmental Stewardship Award.

MarineCadastre.gov is constantly evolving and growing to include relevant issue-driven data and tools. Specialized maps in the "Maps" page are divided into three categories: Regional, Thematic, and Story Maps. Ocean planners can create custom data viewers by combining authoritative data from the MarineCadastre.gov Data Registry with locally relevant web map services. BOEM is currently focusing on strengthening biodiversity and ocean use data by helping provide access to data from authoritative sources and educating the users about the data using Story Maps and How To documents. In 2015, many new West Coast data layers were added, covering ocean uses, fisheries, fishery closures, and benthic layers. Also individual high resolution bathymetric layers are now available in many regions, as well as fisheries, undersea cables, Automatic Identification System data to identify and locate vessels, and updates to wells. There are currently 253 data layers available, which appears to be a reduction from 2016. However many individual species layers in the Atlantic have been replaced with new synthesis layers under the Marine Life Data Analysis project to make it easier for planners to look at the bigger picture while still linking to the individual layers.

Currently, MarineCadastre.gov provides custom tools for Automatic Identification System data analysis, Ocean Law Search, and connection to BOEM's Environmental Studies Program Information System project. In FY 2017, a new pilot project for the South Atlantic will be available, currently named the Ocean Reporting Tool. This tool will present easy to understand info-graphics and statistics for custom and pre-generated areas of interest for the non-technical user and OCS stakeholders.

MARINE MINERALS PROGRAM

BOEM's Marine Minerals Program facilitates access to and manages the Nation's OCS non-energy marine minerals, particularly sand and gravel, through environmentally responsible stewardship of resources, prudent assessments of exploration and leasing activities, coordination with governmental partners, engagement of stakeholders, strategic planning, and mission-

focused scientific research to improve decision making and risk management. In addition, BOEM is responsible for the policy and guidance for the development of all OCS minerals other than oil, gas, and sulphur under Section 8(k) of the OCS Lands Act. It is the sole responsible steward of OCS sand and gravel resources critical for the long-term success and cost-effectiveness of many shore protection, beach nourishment, and wetlands restoration projects along the Gulf, Atlantic, and Pacific coasts. The OCS Lands Act, as amended, authorizes BOEM to convey, on a noncompetitive basis, the rights to OCS sediment resources to Federal, state, and local government agencies for shore protection, beach or coastal wetlands restoration projects, or for use in construction projects funded or authorized by the Federal Government. In addition to being a statutory responsibility, activities also reflect a strategic investment in advance planning, sand resource evaluation, sand resource database development, data sharing, stakeholder coordination, and environmental assessment and study so that, when they are needed, OCS sand resources can be made available in a responsible way.

BOEM is responsible for managing the use of mineral resources and ensuring that the conveyance of OCS sand resources does not result in adverse environmental impacts on the marine, coastal, or human environment. Each negotiated agreement requires a NEPA analysis, including endangered species and essential fish habitat consultations with the National Marine Fisheries Service and the FWS, as well as coastal consistency and archaeological resources reviews. BOEM plans to continue to initiate studies to provide information to evaluate the effects of specific proposed dredging operations, as required under current environmental laws, and design mitigation measures that are incorporated, as appropriate, in lease requirements and stipulations for the dredging of OCS sands.

BOEM provides sand and gravel resources to protect and improve coastal infrastructure and the environment locally, regionally and nationally. To date, BOEM has conveyed the rights to more than 139 million cubic yards of OCS sediment by executing 52 negotiated agreements for projects in eight states and that have restored over 303 miles of coastline. As shown in the following figures, the largest number of negotiated agreements have been executed in Florida with the most OCS sand resources allocated to Louisiana.

Figure 14: Number of Negotiated Agreements by State

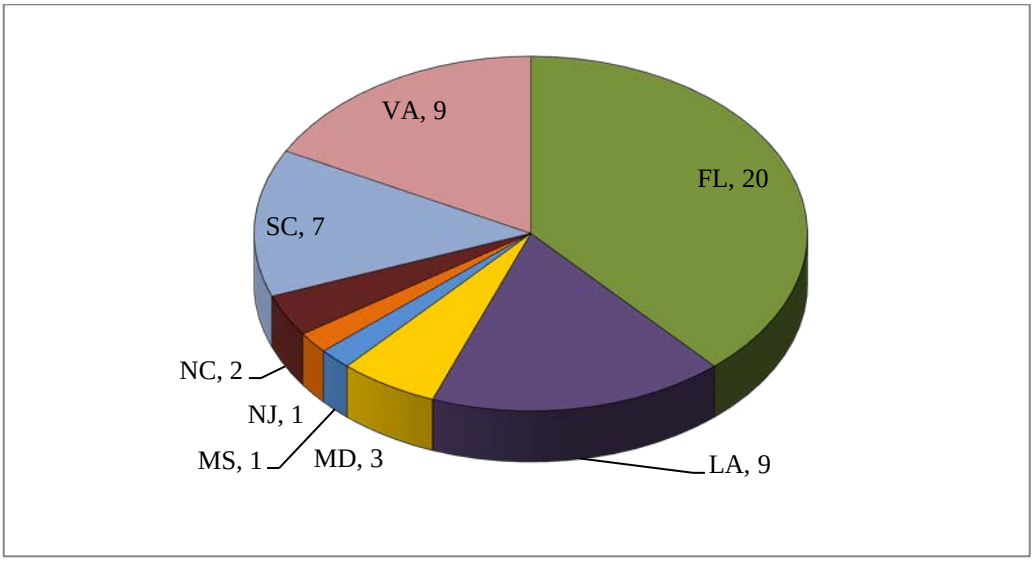
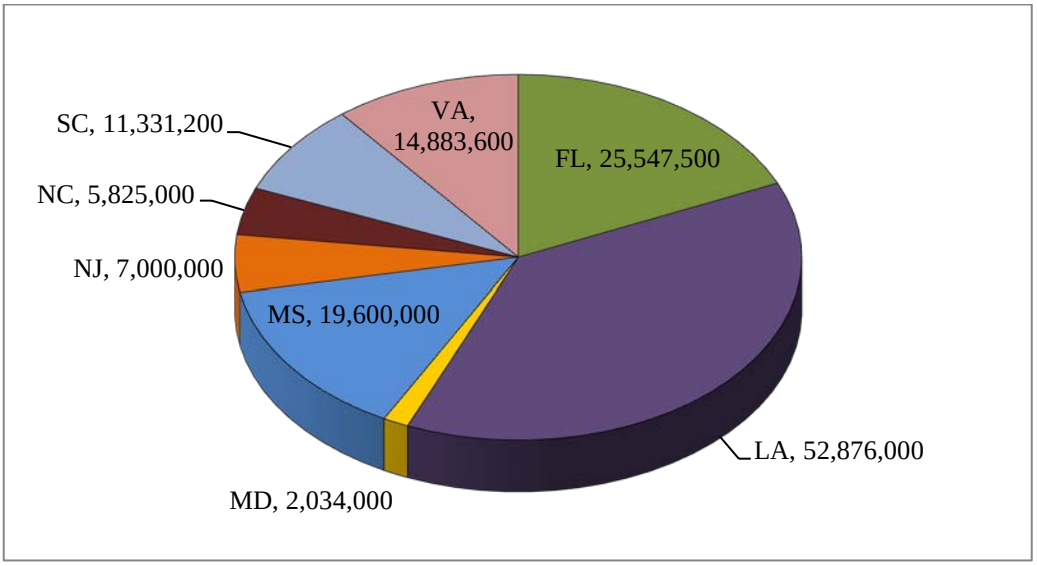


Figure 15: Cubic Yards of OCS Sediment Allocated by State



During FY 2016, BOEM processed five requests for OCS sand coastal restoration and beach nourishment: (1) 19.6 million cubic yards of sediment for the Mississippi Coastal Improvements Program, MS; (2) 1.3 million cubic yards of OCS sand for U.S. Army Corps of Engineers (USACE) Jacksonville District and the City of Jacksonville, FL; (3) 4.85 million cubic yards of OCS sand for Dare County, NC; (4) 1 million cubic yards of OCS sand for USACE Charleston District and Horry County (Myrtle Beach), SC; and, (5) 465,000 cubic yards of OCS sand for Longboat Key, FL.

As shown in the graphs below, over the past 20+ years, BOEM has seen an increasing trend in the number of requests for OCS sediment as well as the volume of OCS of sediment allocated per year.

Figure 16: Number of OCS Sediment Leases Issued

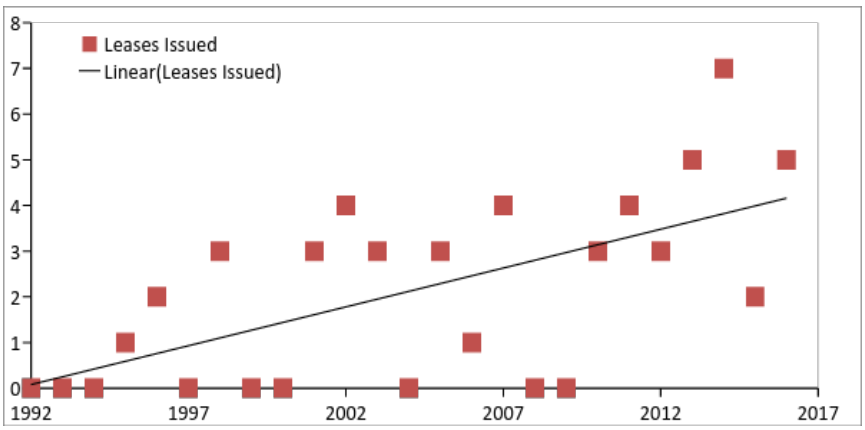
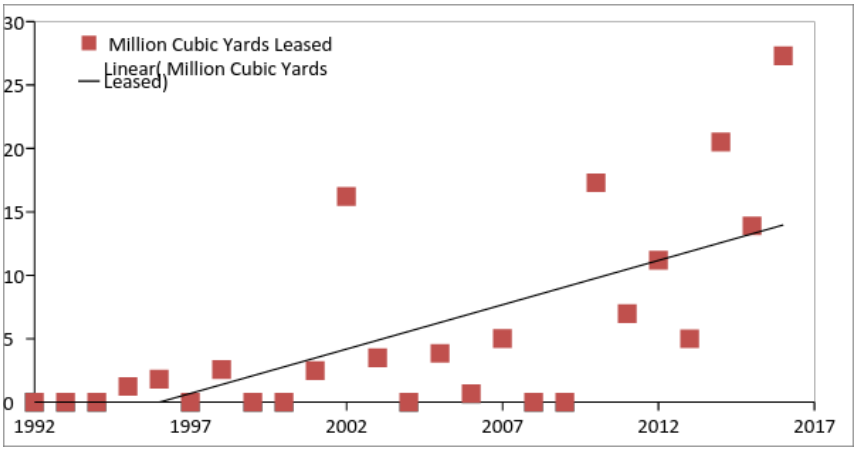


Figure 17: Million Cubic Yards of OCS Sediment Leased



BOEM anticipates a similar or increased number of leases in FY 2017 and FY 2018 as a result of current and anticipated requests for new agreements and amendments from New Jersey, Virginia, North Carolina, South Carolina, and Florida, as well as projects in the Gulf of Mexico. In addition, states in the New England region have expressed a future interest in OCS sand. In the Gulf of Mexico, increased availability of funds associated with fines and penalties from the Deepwater Horizon oil spill and, beginning in FY 2017, increased GOMESA allocation to Gulf coast states has increased the number of coastal restoration projects, many of which are barrier island restoration projects that will use OCS sand. BOEM is presently partnering with USACE for the 19.6 million cubic yards Mississippi Coastal Improvements Program Barrier Island Restoration and with Louisiana on three projects that collectively will use approximately 25 million cubic yards of OCS sand in FY 2017. Additionally, on the Pacific Coast, California's

Coastal Sediment Management Workgroup is interested in OCS sand potential and BOEM, via an Interagency Agreement with USGS, is evaluating offshore sand resources near critical erosion areas.

One of BOEM's objectives is to develop a National Inventory of OCS Sand Resources. On a national scale, an integrated inventory of the character, quantity, and location of sand resources on the OCS and the habitat that they provide for a myriad of high value resources is needed. These sand resources are most critical along the Atlantic and Gulf coasts, with an evolving interest in the Pacific, to support long term coastal resiliency planning initiatives in anticipation of the coastal management challenges associated with sea level rise and increased storm frequency. A comprehensive national sand resource inventory will allow BOEM to meet its mandate as steward of all Federal mineral resources on the OCS. This will allow for BOEM to be informed about location and character of sand reserves in order to identify and manage multiple use conflicts, and understand the biological and physical drivers associated with the resource in order to avoid and/or minimize environmental impacts from dredging. BOEM's stewardship responsibility will be realized by proactively planning for the increasing demands for OCS resources and emergency needs as they arise.

Sand resource identification and delineation are critically important to BOEM because identifying marine mineral resources and determining the sand deposit characteristics (sufficient quantity, appropriate grain size, environmental conditions or proximity to the placement site) enables the responsible management of these resources. Moreover, G&G data with sufficient spatial coverage are important to define OCS sand deposits and effectively manage potential conflicts with other OCS surface activities such as oil and gas or renewable energy infrastructure installation that could make the sand unavailable. Maintaining and expanding the inventory of OCS sand resources is critical to the Nation's coastal restoration and resiliency efforts.

National OCS Sand Inventory

The need for a National Inventory of OCS Sand Resources has dramatically increased over the past few years due to increased coastal erosion from storms, anthropogenic concerns (e.g., *Deepwater Horizon*), and sea level rise. During Hurricane Sandy, shorelines without beach nourishment sustained about three times the economic loss as those protected by beach nourishment. BOEM plays a critical role in providing access to OCS sediment to construct beach nourishment and coastal restoration projects. To fulfill its responsibility, BOEM is looking to develop a National OCS Sand Inventory conducting sand resource evaluations and supporting environmental efforts in the Atlantic, Gulf of Mexico, and Pacific Regions. The sand resource evaluation work along the Atlantic will capitalize on the successful results and partnering efforts to identify new sand resources that were funded as part of the $13.6 million Hurricane Sandy appropriations.

Vibracore Sampling, Split Vibracore, and Significant Sand Resources off Monmouth County, NJ

A critical part of the National OCS Sand Inventory is BOEM's development of a Marine Minerals Information System that provides a framework for historic resource data, current information collected under the Sandy-funded Atlantic Sand Assessment Project (ASAP) and state cooperative agreements, lease-specific information, and future data collection efforts. Additionally, the vibracores collected from the ASAP are being archived at Columbia University's Lamont Doherty Core Repository in Palisades, NY and are available to researchers conducting studies on the OCS.

OUTLOOK ON CONVENTIONAL ENERGY

In FY 2017, BOEM will continue to effectively and responsibly manage OCS oil, gas, and mineral resources. The management of these resources includes allowing for access to those resources, safeguarding a fair return to taxpayers, and applying the necessary environmental protection. Access to OCS energy and mineral resources will continue to be a priority within BOEM, particularly focused on implementation of the approved 2017-2022 OCS Outer Continental Shelf Oil and Gas Leasing Program, development of a new National OCS Oil and Gas Leasing Program, the execution of scheduled oil and gas lease sales, and addressing the increasing need for OCS sand and gravel for the purposes of coastal restoration. Financial responsibilities, reduction of risks, and economic evaluation and analysis of offshore natural resources will continue to be used to ensure the public receives a fair return for OCS energy resources. In addition, BOEM will continue to ensure the appropriate environmental protection measures are included in OCS activities including leasing of oil and gas and marine minerals. Looking forward, BOEM's Conventional Energy activities will continue to meet the high standards set forth by the Administration, Congress and the public through successful planning, execution and protection of the Nation's OCS resources in response to the Nation's energy needs.

Table 16: Conventional Energy Program Performance Overview

Mission Area 3, Goal 1: Secure America's Energy Resources									
Strategic Objective Metrics **Strategic Plan Measure / Efficiency or other Bureau-Specific Measure**	**2012 Actual**	**2013 Actual**	**2014 Actual**	**2015 Actual**	**2016 Plan**	**2016 Actual**	**2017 Enacted (CR)**	**2018 Pres. Budget Request**
Strategic Plan Measures								
Number of offshore lease sales held consistent with the Secretary's Five-Year Oil and Gas Program	2	3	3	2	3	3	3	2
Comments: This measure tracks the quantity of lease sales conducted during the current National Oil and Gas Leasing Program.								
Contributing Programs: Office of Strategic Resources								
Efficiency or other Bureau-Specific Measures								
Number of blocks/tracts evaluated	14,612	12,200	9,184	33,977	15,000	1,798	2,000	2,000
Comments: To determine the potential resources on the OCS and the fair market value of those resources, BOEM must conduct detailed evaluation of the blocks and tracts offered for lease each year as well as conduct regular resource assessment activities.								
Contributing Programs: Office of Strategic Resources								
Maintain the ratio of 1.8 to 1 (+/-0.4) of accepted high bids to BOEM's estimated value	2.013 to 1	2.116 to 1	1.84 to 1	1.92 to 1	1.8 to 1 (+/- 0.4)	1.53 to 1	1.8 to 1	1.8 to 1
Comments: This measure compares the accepted high bid on each tract to the government's estimated value for that tract. Industry corporate strategy with respect to acquiring specific acreage could lead to a company raising its bid above this analytical value to improve their chances of winning the lease. BOEM estimates are based on a discounted cash flow analysis of a tract and are not designed to predict the high bid. Therefore, the value of this indicator should always be greater than one to achieve fair value for OCS leases. The annual target ratio of 1.8 to 1 means that on average, the industry bids received are expected to be $1.80 (+/- 0.4) for every dollar of the estimated value for each tract.								
Contributing Programs: Office of Strategic Resources								
Mission Area 3, Goal 2: Sustainably Manage Timber, Forage, and Non-energy Minerals								
Strategic Objective Metrics **Strategic Plan Measure / Efficiency or other Bureau-Specific Measure**	**2012 Actual**	**2013 Actual**	**2014 Actual**	**2015 Actual**	**2016 Plan**	**2016 Actual**	**2017 Enacted (CR)**	**2018 Pres. Budget Request**
Strategic Plan Measures								
Number of sand and gravel requests processed for coastal restoration projects	N/A	N/A	5	5	7	5	7	7
Comments: This measure tracks the number of non-energy minerals lease requests for OCS sand and gravel processed for purposes of coastal restoration and resilience projects.								
Contributing Programs: Office of Strategic Resources								

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FY 2018 PERFORMANCE BUDGET

Bureau of Ocean Energy Management

Environmental Programs

Table 17: Environmental Programs Budget Summary

		2016 Actual	2017 CR Baseline	Internal Transfers	Fixed Costs	Program Changes	2018 Request	Change from 2017
Environmental Programs	$0	68,045	67,916	-	+347	+5,571	73,834	+5,918
	FTE	*154*	*152*			*-4*	*148*	*-4*

SUMMARY OF 2018 PROGRAM CHANGES

Program Changes from 2017 CR Baseline	($000)	FTE
National OCS Oil and Gas Leasing Program	+8,600	
Environmental Studies Program	-1,500	
IT project development	-1,005	
Lapse from Attrition	-525	-4
Total Program Changes	**+5,570**	**-4**

The FY 2018 President's Budget Request funds BOEM's Environmental Programs budget activity at $73.8 million and 148 FTE, a net increase of $5.9 million from the FY 2017 CR baseline level. This change is comprised of an increase of $347,000 in fixed costs and the program changes described below.

National OCS Oil and Gas Leasing Program (+$8,600,000; 0 FTE). An increase of $8.6 million in Environmental Programs is requested to support a centerpiece of BOEM's mission-critical activities: the National OCS Oil and Gas Leasing Program. On April 28, 2017, President Trump announced the *Implementing an America-First Offshore Energy Strategy* Executive Order, which directs Secretary Zinke to consider revising the schedule of proposed lease sales in the OCS oil and gas leasing program. In response to the Executive Order, on May 1, 2017, Secretary Zinke issued Secretarial Order 3350, which includes a directive that BOEM immediately initiate the development of a new OCS Oil and Gas Leasing Program. In FY 2017, BOEM initiated the development of a new National OCS Oil and Gas Leasing Program to replace the 2017-2022 Program scheduled to take effect in July 2017. As part of this effort, in FY 2018 BOEM will require additional resources to conduct the necessary programmatic environmental analyses, associated public meetings, and comment analysis; funding for

environmental studies specific to the planning areas under consideration; and, costs associated with lease sale NEPA analyses. Lease sale NEPA costs are split between contracted studies under the BOEM Environmental Studies Program and contracting costs for environmental analyses borne by the Regional Offices.

Environmental Studies (-$1,500,000). To fund studies supporting a new National OCS Oil and Gas Leasing Program, BOEM would defer funding for other studies not directly supporting the planning areas under potential consideration.

IT Project Development (-$1,005,000). BOEM proposes delaying aspects of its IT system development, in order to support BOEM's highest priorities and needs in FY 2018. The amount here reflects the portion of IT project development funded through this activity.

Lapse from Attrition (-$525,000; -4 FTE). Consistent with general attrition trends, as well as the Administration's long-term plan to reduce the size of the Federal workforce, BOEM is budgeting for a reduced amount of salary dollars because personnel departures will likely outpace personnel gains.

Program Performance Change. The FY 2018 budget request supports the accomplishment of the Department's strategic goals. BOEM is making great strides in moving towards established goals as well as the supporting performance measures. Budgetary changes are not the sole influence on performance measures tracked within this activity. The reductions identified above do not affect the programmatic performance, as depicted by the relatively steady targets for the performance measure contained within the table at the end of this chapter.

PROGRAM OVERVIEW

BOEM is responsible for assessing the potential environmental and social impacts of, and providing effective environmental safeguards for, the exploration and development of energy and mineral resources on the OCS. This category includes oil and gas, renewable energy resources (e.g., wind, wave, and current energy), and non-energy minerals such as sand and gravel.

BOEM's environmental work on the OCS is guided by key laws such as:

Outer Continental Shelf Lands Act
National Environmental Policy Act
Endangered Species Act
Marine Mammal Protection Act
Coastal Zone Management Act
Magnuson-Stevens Fishery Conservation & Management Act
Clean Air Act
Clean Water Act
National Historic Preservation Act
Migratory Bird Treaty Act
Tribal Consultation Orders and Guidance

BOEM addresses this responsibility through the Environmental Programs activity (Programs). The Programs inform decision-makers and the public about the potential impacts of OCS energy and mineral resource exploration and development on the marine, coastal and human environment. The Programs develop measures for avoiding or reducing harm and long-term monitoring for the effects of activities. This information supports and guides decision-making not just within BOEM, but also by other government authorities, industry, and the public.

The Environmental Programs include the environmental assessment and the environmental studies functions described below. The environmental staff encompasses diverse expertise including marine and coastal biology; chemical, biological, and physical oceanography; avian and marine mammal biology; acoustic science; geology; meteorology; risk modeling; sociology; archaeology; economics; environmental policy; and management. BOEM's environmental functions are organized administratively into the Office of Environmental Programs in the Washington, DC area, including the Environmental Sciences Division and the Environmental Assessment Division; and the three BOEM regions: the Gulf of Mexico, Alaska, and the Pacific. While BOEM's science is managed as a single account through the Environmental Programs budget activity, it is the aim and practice of BOEM environmental staff to work in teams, with leadership provided by those whose backgrounds and capabilities best address the subjects and issues at hand. Furthermore, the Environmental Programs activity is committed to continuous staff improvement through training and feedback and to recruitment and retention of the best available talent. The activity is also committed to partnerships and to genuine, continuing interaction with all partners (Federal, state, and local governments; tribes and other organizations of indigenous peoples) and stakeholders (academia, non-profits, civil society, and business).

ENVIRONMENTAL ASSESSMENTS

BOEM's science and assessment function has a well-developed structure and process, but the core purpose of the program is straightforward: to fulfill the direction of Congress for protecting the Nation's environment as energy and mineral resources are developed. To accomplish this, BOEM's environmental assessment function addresses environmental requirements as defined by statutory mandates, coordinates with other Federal agencies, and performs major cross-cutting and regional assessments. Its work is informed by the best available science, drawing from the Bureau's Environmental Studies Program and other research. The Bureau's environmental work cuts across its conventional energy, renewable energy, and marine mineral programs and includes authorization of geological and geophysical exploration activities, planning for the National OCS Oil and Gas Leasing Program, lease sales, exploration plans, development and production plans, and development operations coordination documents. Similarly, BOEM reviews proposed leasing and site assessment, construction and operation and other plans under the Renewable Energy Program, as well as proposed leasing of sand and gravel resources under the Marine Minerals Program. BOEM also reviews more specific authorizations and permits, including facility decommissioning, which may be approved and enforced by the Bureau of Safety and Environmental Enforcement (BSEE), but whose environmental assessment is supported by BOEM. BOEM's environmental assessments not only take a hard look at potential environmental impacts and alternatives to proposed actions, but also identify measures to mitigate impacts, which can be translated into requirements for operators through regulatory vehicles such as permit conditions, lease stipulations, terms and conditions of plan approval, and notices to lessees.

A cormorant perches near a Pacific OCS platform.

➢ Statutory Mandates

At the very core of BOEM's Environmental Program is its mission to carry out the direction set forth by numerous and diverse statutes. Under the Outer Continental Shelf Lands Act, BOEM considers impacts from OCS development on the marine, coastal and human environments. The impacts include areas within the OCS where energy and minerals resources are explored and produced, and areas well beyond the OCS that may be directly or indirectly impacted by OCS development. The marine environment extends landward to salt marshes and wetlands. The coastal environments include the terrestrial ecosystem from the shoreline inward to the boundaries of the coastal zone, while the human environment includes the physical, social, and economic components that determine the state, condition, and quality of living conditions, employment, and health of those affected.

The OCS Lands Act establishes the overall framework for BOEM's studies, assessments, and standards for environmental protection regarding resource development on the OCS. Environmental standards established by the OCS Lands Act differ with activity, but include various key responsibilities for which BOEM and BSEE are responsible. The Energy Policy Act 2005 authorized BOEM to oversee responsible, renewable energy development and production to be carried out in a manner that provides for protection of the environment.

The National Environmental Policy Act (NEPA) provides BOEM's principal mandate for reviewing potential environmental impacts and ensuring public participation in the review and decision process. In accordance with NEPA and implementing regulations of the Council on Environmental Quality and DOI, BOEM prepares environmental documents to include environmental assessments and environmental impact statements (EISs). An EIS evaluates alternatives before taking a major Federal action that will significantly affect the quality of the natural and physical environment and the relationship of people with that environment. Programmatic EISs may be prepared if a proposed action is broad in nature, or for similar activities that warrant systematic consideration and planning (e.g., region-wide geological and geophysical activities). A programmatic approach may be followed by more specific subsequent environmental reviews (e.g., environmental assessments) that are "tiered" to the programmatic statement. While NEPA is one of the principle statutes that guide BOEM's environmental activities, other Federal laws give protection to specific resources that may be impacted by OCS activities authorized by BOEM. The Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA) provide an important framework for ensuring the health and safety of marine and coastal wildlife and habitats.

A diver studies the shipwreck and ecosystem surrounding the World War II era German U-701 submarine off the coast of North Carolina.

The ESA requires that BOEM not take any action likely to jeopardize the continued existence of any species listed as endangered or threatened or to destroy or adversely modify critical habitats of listed species. If an action by BOEM may affect a listed species, BOEM is required to consult with either the National Marine Fisheries Service (NMFS), for primarily marine species, or the U.S. Fish and Wildlife Service (FWS), for species whose lives are more closely tied to land. As is the case for NEPA assessments, an ESA consultation may be specific or programmatic. If any of the agencies involved believe that a formal consultation is warranted under the ESA, then BOEM will prepare a biological assessment to inform itself and to provide to the NMFS or FWS. These agencies then reply with a biological opinion on whether the action is likely to jeopardize a listed species or adversely modify its critical habitat. Carrying out the

principles espoused by the ESA requires the highest level of scientific depth and quality, clarity in assessment, and coordination with the NMFS and FWS.

The MMPA requires BOEM and other agencies to avoid injuring marine mammals or disrupting their behavior if there is more than "negligible impact" on the species. Avoiding and mitigating the potential harm from geophysical surveys is an area of key focus for BOEM. For example, recent efforts have focused specifically on the effects of air guns in seismic acoustic exploration on cetacean behavior.

BOEM's environmental assessment function also addresses the complex requirements of other laws including: 1) the Coastal Zone Management Act, with state program consistency generally required; 2) the Magnuson-Stevens Fishery Conservation and Management Act, which requires review and protection of "essential fish habitat"; 3) the Clean Air Act, under which Environmental Protection Agency (EPA) regulates OCS emissions other than in the central and western Gulf of Mexico and offshore the North Slope Borough of the State of Alaska (BOEM regulates activities in these areas under OCS Lands Act); 4) the Clean Water Act, administered by EPA at the Federal level; 5) the National Historic Preservation Act, with particular focus on identifying and protecting historic shipwrecks and submerged settlements on the OCS; 6) the Migratory Bird Treaty Act, whose restrictions on taking migratory birds are implemented by FWS; and, 7) tribal consultation requirements established by executive orders and Interior Department orders and guidance.

- **Coordination with the Bureau of Safety and Environmental Enforcement**

Because their missions are interconnected, BOEM coordinates extensively with the BSEE. BOEM is responsible for approval of leasing programs, conducting lease sales (includes stipulations for lessees), approving exploration plans, approving development and production plans, and approving development operations coordination documents. Consistent with BOEM's decisions, BSEE is responsible for the issuance of permits to drill and other specific authorizations, and conditions for operators, as well as enforcement of BOEM's requirements and stipulations.

Both BOEM and BSEE must comply with the laws, including NEPA, the ESA and the MMPA. To ensure maximum efficiency, BOEM and BSEE coordinate to avoid redundant reviews. Pursuant to a memorandum of understanding between the two bureaus, BOEM will undertake or supplement studies, environmental assessments and consultations to provide the information and guidance needed for decisions by both BOEM and BSEE. BOEM prepares environmental documents to support BSEE decisions concerning pipeline applications and applications for structure removals and pipeline decommissioning. BOEM completes environmental documents such as environmental assessments and categorical exclusions for BSEE's decisions on permit

applications. In FY 2016, BOEM prepared the following environmental documents (environmental assessments/categorical exclusions) in the Gulf of Mexico Region for BSEE: approximately 176 structure removals, 113 pipeline decommissioning, and 47 pipeline applications.

In close coordination with BSEE, BOEM also led ESA consultations in the Gulf of Mexico and Alaska Regions. In the Pacific Region, BOEM is leading an effort to update ESA consultation, primarily related to BSEE activities. This interagency relationship requires an enhanced level of effort for coordination and procedural integration. Regular communication between BOEM and BSEE allows staff to identify needs for scientific studies. In FY 2016, BSEE funded a study through BOEM's Environmental Studies Program titled *Net Environmental Benefit Analysis of Pacific Platform Decommissioning Scenarios*. The results of this study will be used in NEPA documents for decommissioning and to fulfill consultation and analysis requirements under the Magnuson-Stevens Fisheries Conservation and Management Act, ESA and MMPA.

- **Programmatic Environmental Assessments**

BOEM's environmental reviews include the development of programmatic environmental analyses and documents for the Bureau's National OCS Oil and Gas Leasing Program and for geological and geophysical (G&G) activities. BOEM's growing role in marine planning is likely to increase the use of programmatic environmental documents and comprehensive planning. Marine planning identifies areas most suitable for various types of OCS activities to reduce conflicts among uses, reduce environmental impacts, facilitate compatible uses, and preserve critical ecosystem services to meet economic, environmental, security, and social objectives.

As part of BOEM's programmatic environmental analyses and comprehensive planning, it follows programmatic documents with more specific reviews, including individual EISs, environmental assessments and, if appropriate, findings of no significant impact. In this phased process, BOEM prepares hundreds of additional site-specific NEPA documents annually for decisions on geophysical survey and geological sampling permit applications, operators' plans for exploration and development, and other related industry activities. In FY 2016, BOEM completed four final EISs and five draft EISs.

BOEM's environmental analyses and comprehensive planning form a centerpiece to the development of a National OCS Oil and Gas Leasing Program. As such, BOEM provides a focused analysis of potential environmental issues and impacts, highlighting areas that may be sensitive to impacts and may warrant consideration of mitigation or protection. In November 2016, BOEM published the 2017-2022 OCS Oil and Gas Leasing Program Programmatic EIS, which the Bureau prepared to address the environmental factors weighed when developing and ultimately determining the 2017-2022 OCS Oil and Gas Leasing Program. Starting in FY 2017,

BOEM began to lay the groundwork for a new National Oil and Gas Leasing Program for an early replacement of the approved 2017-2022 Program. BOEM will continue to provide important information pertaining to environmental issues and impacts and help inform Program options that seek to balance "the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone" (Section 18(a)(3) of OCS Lands Act). In FY 2018, BOEM may prepare an integrated program analysis that communicates important environmental information to the Secretary and the public, or discretionally prepare another programmatic EIS to do the same. In order to support the development of a new National OCS Oil and Gas Leasing Program, BOEM will redirect resources in FY 2018 from its existing budget activities to support specialized technical and geospatial services, planning and holding public meetings, processing of comments, and facilitating government-to-government consultation.

Assessments in the Atlantic: BOEM conducts environmental assessments in the Atlantic for conventional and renewable energy activities, as well as marine mineral activities. In July 2014, BOEM issued a record of decision establishing environmental mitigation measures and safeguards for G&G survey activities off the Mid- and South Atlantic coast to update 30-year old data on the region's OCS resources. As of March 2017, after conducting a site-specific environmental review, BOEM has issued two G&G non-seismic permit in the Atlantic, including one that expired without any data being collected.

Much of BOEM's renewable energy efforts have centered on potential wind energy in the Atlantic. Prior to issuing commercial wind energy leases, BOEM conducts an environmental review of reasonably foreseeable impacts associated with site characterization surveys and site assessment activities (e.g., meteorological towers and buoys) in a Wind Energy Area. If BOEM reaches a Finding of No Significant Impact, then it may proceed with issuing leases competitively or non-competitively in that Wind Energy Area without further environmental review. For example, BOEM's (2012) environmental assessment for the Wind Energy Areas offshore New Jersey, Delaware, Maryland, and Virginia supported the issuance of leases offshore Delaware (2012), Virginia (2013), Maryland (2014), and New Jersey (2016). Between FY 2013 and FY 2016, BOEM completed similar environmental assessments that supported lease sales for areas offshore: Rhode Island, Massachusetts, New York, and North Carolina. BOEM anticipates completing a similar environmental assessment for areas offshore South Carolina in 2017.

When a site assessment plan is submitted, BOEM determines whether the environmental assessment for the Wind Energy Area(s) adequately considers the environmental consequences of the activities proposed in the lessee's site assessment plan. If so, then no further NEPA analysis would be required before the site assessment plan is approved. If, on the other hand, BOEM determines that the analysis in the environmental assessment is inadequate for that

purpose, BOEM would prepare an additional NEPA analysis before approving the site assessment plan. If a proposed meteorological buoy(s) is found to have no individually or cumulatively significant effect on the human environment, and BOEM determines that no extraordinary circumstances exist under which the buoy may have a significant environmental impact, BOEM may comply with its NEPA obligations through the use of a categorical exclusion applicable to the action being evaluated. NEPA compliance determinations of a site assessment plan for activities offshore Maryland and categorical exclusion review for a site assessment plan for activities offshore Virginia were completed in FY 2016. In FY 2017, another categorical exclusion review for a site assessment plan for activities offshore Rhode Island was completed, and reviews are underway for two site assessment plans submitted for activities offshore Massachusetts. If and when a lessee is prepared to propose wind energy generation on its lease, it will submit a construction and operations plan and BOEM would prepare separate site- and project-specific NEPA analyses. BOEM's lessees have told BOEM to anticipate receiving at least two construction and operations plans in FY 2018 for activities offshore Maryland and Rhode Island. The NEPA analyses for these plans will likely take the form of an EIS and would provide additional opportunities for public involvement. In March 2017, BOEM published a draft supplemental EIS for the Cape Wind Energy Project in response to the July 2016 remand order by the U.S. District Court for the District of Columbia. BOEM expects to complete the supplemental EIS process in August 2017.

Another major component of BOEM's environmental assessment work in the Atlantic relates to the conveyance of marine minerals. In FY 2016, the Marine Minerals Program worked cooperatively with the U.S. Army Corps of Engineers (Civil Works and Regulatory Programs) to prepare several environmental documents and conduct independent reviews evaluating the potential impacts from beach nourishment and coastal restoration projects, including dredging OCS sand and placement on recipient beaches. In FY 2016, environmental compliance review and appropriate documentation was completed in support of new and amended non-competitive negotiated agreements for Dare County, North Carolina; Myrtle Beach, South Carolina; Duval County, Florida; Longboat Key, Florida; and the Mississippi Coastal Improvements Program. In FY 2017 and FY 2018, BOEM will continue to support environmental reviews for projects along the Mid- and South Atlantic coasts and Gulf of Mexico, including, Manasquan to Barnegat, New Jersey; Long Beach Island, New Jersey; Sandbridge, Virginia; Bogue Banks, North Carolina; Folly Beach, South Carolina; Patrick Air Force Base, Florida; Martin County, Florida; and St. Lucie County, Florida. During FY 2018, BOEM anticipates the need to prepare programmatic compliance documents to support increased long term coastal resiliency planning efforts along the Atlantic and Gulf coasts and the potential need for OCS sand resources to support multiple emergency beach renourishment and coastal restoration efforts following significant storm events.

Assessments in the Gulf of Mexico Region: In the Gulf of Mexico, BOEM finalized four supplemental EISs for lease sales considering new information following the Deepwater Horizon explosion and oil spill, including available data from the Natural Resource Damage Assessment and Restoration process. In FY 2017, the draft Gulf programmatic EIS on G&G activities was published, and the final is expected to be published in late 2017. Also in FY 2017, BOEM expects to prepare three NEPA documents for decisions on region wide Gulf of Mexico lease sales.

In FY 2016, BOEM prepared NEPA documents for 475 plans, of which 76 required a site-specific environmental assessment; 160 pipeline applications; 35 G&G permit applications, of which 20 required a site-specific environmental assessment; applications for 28 ancillary activities (all site-specific environmental assessments); and, applications for 176 structure removals. For actions not analyzed in environmental assessments, NEPA compliance involved site-specific environmental reviews with extraordinary circumstances consideration and the application of categorical exclusions. In FY 2017 and FY 2018, BOEM anticipates the number of environmental reviews to increase slightly each year.

In FY 2018, BOEM may initiate planning for and preparation of any new lease sale EISs that would be needed if new areas are included in a new National Oil and Gas Leasing Program. To support those efforts, BOEM would redirect resources to cover necessary contractor support, public meetings, and related services and ensure that any lease sales proposed early in a new leasing program could be held on time.

Assessments in the Alaska Region: In FY 2016, BOEM continued work on the Cook Inlet Lease Sale 244 EIS, which was finalized in early FY 2017 (December 2016). Also in FY 2016, BOEM began the NEPA process for the Liberty Development and Production Plan in the Beaufort Sea. BOEM is preparing an EIS with ten cooperating agencies, five of which have subsequent permit authorities. This broad coordination will enable a more holistic NEPA process and facilitate decision-making by other Federal partner agencies. This work is continuing in FY 2017.

Additionally, during FY 2017, BOEM will conduct NEPA analyses in Alaska to support decision-making on an estimated two to three G&G permits and one to two exploration plans.

In FY 2018, BOEM may initiate planning for and preparation for lease sale 258 in the Cook Inlet (scheduled in 2021 as part of the current 2017-2022 OCS Oil and Gas Leasing Program) and any new lease sale EISs that would be needed if Alaska OCS Region lease sales are included in a new National OCS Oil and Gas Leasing Program. To support those efforts, BOEM would redirect resources to cover necessary travel expenses, such as charter aircraft for government-to-government consultations and public meetings and hearings, and related services, and ensure that any lease sales proposed early in a new leasing program could be held on time.

Assessments in the Pacific Region: BOEM's Pacific Region conducts environmental assessments for conventional and renewable energy activities. Here, BOEM's conventional energy assessments focus on development and production from 23 existing OCS facilities, largely in support of BSEE. Support for BSEE includes the development of NEPA documents, assisting in the development and compliance of mitigation measures, and review of the measures' effectiveness.

Orange basket star on top of chemosynthetic *Lophelia* coral.

BOEM will also continue working with agencies and other stakeholders to advance research and commercial renewable energy projects on the Oregon, Hawaii, and California OCS. BOEM has received a research lease request for a grid-connected wave energy test facility on the OCS offshore Newport, Oregon. The lease requires a Federal Energy Regulatory Commission (FERC) license in addition to BOEM approval; BOEM will cooperate with FERC on the environmental review before making a leasing decision. BOEM joined with FERC as a cooperating agency for the environmental assessment being written for the project, with a draft environmental assessment expected in summer 2017.

BOEM has also received three unsolicited lease requests for commercial scale floating wind developments offshore Oahu, Hawaii from two different companies. Currently, the Department of Defense and BOEM are coordinating to determine if the areas requested are compatible with national security and national defense assets. The Department of Defense has expressed concerns about the wind lease sale proposed offshore Hawaii, and BOEM is taking their feedback into account when deciding what to fund during FY 2018. Within the FY 2018 President's Request, BOEM proposes to delay the Hawaii lease sale in addition to deferring its associated environmental assessment in response to these concerns and other BOEM priorities. BOEM will continue evaluating the possibility of conducting a Hawaii wind lease sale in the future.

In California, BOEM has received an unsolicited lease request for an offshore wind project. In response, BOEM published a Request for Interest to determine if there was competitive interest in the area proposed and, finding that there was, initiated the competitive planning and leasing process offshore California. BOEM and the State are currently working together to gather data and information from stakeholders in order to inform a decision for an area to use in an upcoming Call for Information and Nominations planned for publication in the summer of 2017, with a planned lease sale in FY 2018.

ENVIRONMENTAL STUDIES PROGRAM

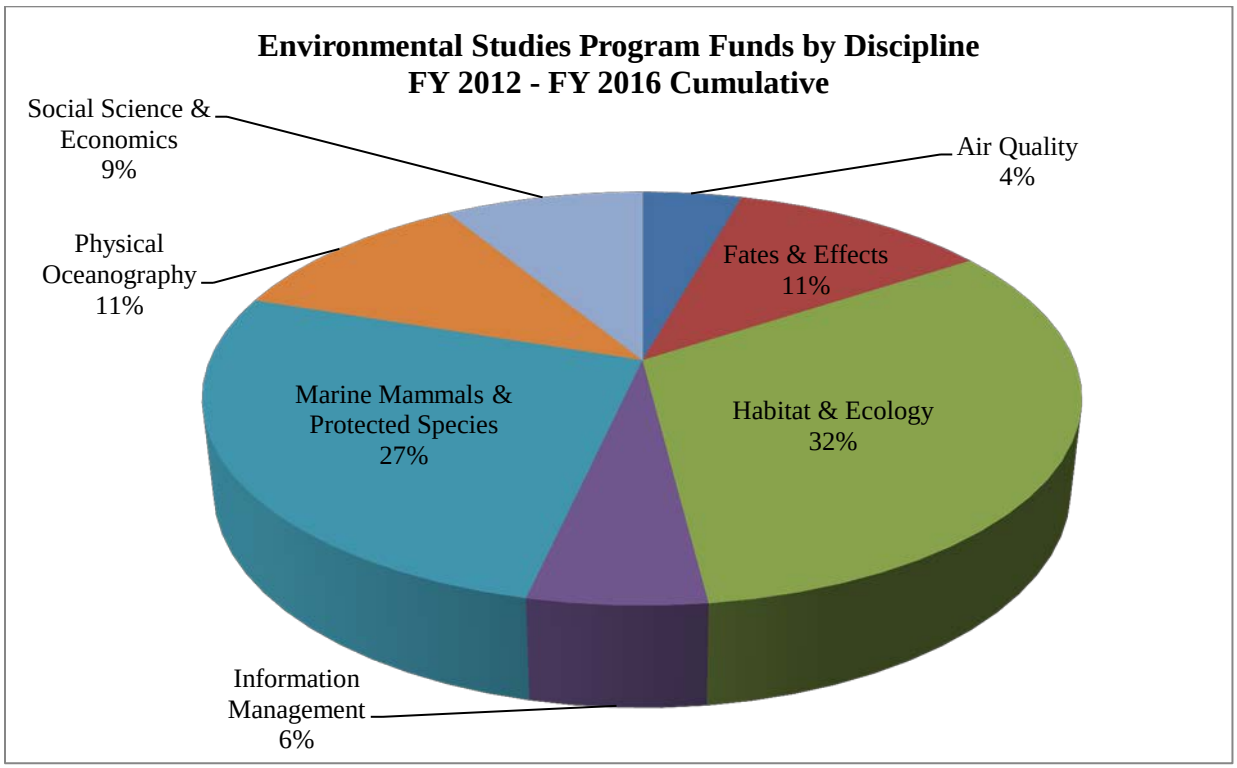
The Environmental Studies Program was initiated in 1973 by Section 20 of the OCS Lands Act to support the OCS oil and gas leasing program. In 1978, the OCS Lands Act was amended and directed the Secretary of the Interior to:

- Establish information needed for the assessment and management of impacts on the human, marine, and coastal environments of the OCS and potentially affected coastal areas.
- Predict impacts on marine organisms resulting from a variety of factors: chronic, low level pollution or large spills associated with OCS production; discharge of drilling muds and cuttings, as well as pipeline emplacement; and offshore and associated onshore development.
- Monitor human, marine, and coastal environments to provide time-series and data trend information for identification of significant changes in the quality and productivity of these environments.

BOEM administers the Environmental Studies Program, and the research it supports addresses each of these mandates. The discoveries and information generated through the Environmental Studies Program inform decisions by BOEM and BSEE concerning implementation of the OCS Lands Act, NEPA, ESA, MMPA, the National Historic Preservation Act, and other applicable laws discussed earlier. The decisions include actions on regulations, measures for impact mitigation, stipulations to leases, notices to lessees, permits, and enforcement.

BOEM works to integrate science needs from multiple disciplines with respect to OCS energy and mineral resources (see the following figure). In addition, BOEM considers studies independently underway to design and implement effective research for decision-making. A major, continuing emphasis is on studies related to the impacts of conventional and renewable energy and mineral development, as well as monitoring efforts and analyses to improve baseline characterizations and to conduct analyses of trends. Research to understand the release, transport, fate, and effects of oil and other materials that may be discharged or spilled in the marine environment and on spill response is also a priority, conducted in close cooperation with BSEE's oil spill program.

Figure 18: Environmental Studies Program Funds by Discipline



Note: This includes obligations for all studies supporting environmental information needs for all energy types and marine minerals.

In FY 2015, BOEM partnered with the National Academies of Sciences, Engineering, and Medicine to establish a new, standing National Academies of Sciences Committee on Environmental Science and Assessment for offshore energy and mineral resources. The committee provides independent information and supports discussion on issues relevant to BOEM's environmental studies and assessment activities. The committee's functions include periodic, comprehensive review of BOEM's environmental programs; addressing questions of particular interest to the Bureau; conducting annual environmental study program reviews; providing peer review; facilitating stakeholder discussions of controversial issues; and informally advising on recruitment. The committee can also conduct workshops relevant to BOEM's environmental programs. The committee held its fifth meeting in March, 2016, and in FY 2017 it plans to review the FY 2018-FY 2020 Studies Development Plan, which is the annually prepared document describing the environmental studies BOEM will consider during that time.

Because of its quality, scale and duration, BOEM's Environmental Studies Program is a leading contributor to the growing body of scientific knowledge about the Nation's marine and coastal environment.

➢ Research Partnerships

BOEM's science is intended to inform decision-makers and the public about potential environmental impacts of OCS energy and mineral resource development, how to prevent or mitigate those impacts, and how to monitor impacts and measures for continued environmental protection. Therefore, the valuable data collected through BOEM's environmental programs are used not only within BOEM but also by stakeholders, including other Federal agencies and state and local governments.

As a key component of its Environmental Studies Program, BOEM utilizes partnerships, including those within the Department, as well as with other Federal agencies, and State and academic institutions, to conduct applied scientific work to support the Bureau's decision-making processes. BOEM leverages its funds and expertise with these stakeholders. By contributing personnel, equipment, facilities and funds, the partners are able to extend the scope of research to enable all partners involved to obtain maximum results from research efforts. BOEM funding enables critical environmental studies that not only support its mission, but also the missions and research efforts of other entities. From FY 2012 through FY 2016, BOEM provided over $68 million to Federal partners to conduct BOEM-designed scientific environmental work for the Bureau. Of that amount, almost $40 million went to partnerships with the National Oceanic and Atmospheric Administration (NOAA) and over $20 million to other bureaus within DOI.

A night time mid-water trawl offshore Rhode Island revealed deep-sea fish, including viper fish, hatchet fish, snipe eel, and Ilex squid.

Many BOEM studies are partnerships, including, for example, research addressing seismic noise impacts on marine mammals, environmental effects of sand and gravel extraction, real-time monitoring of environmental parameters, and long-term ecosystem monitoring in the Gulf of Mexico and in Alaska. Partnerships with Federal agencies are typically established through memoranda of understanding or agreements with individual agencies and also through the National Oceanographic Partnership Program, a collaborative community of Federal agencies working to improve knowledge of the ocean environment. For example, during FY 2017, BOEM is supporting ship-based marine mammal and bird studies in cooperation with FWS and NOAA. The Atlantic Marine Assessment Program for Protected Species is in its second, five-year cycle. The program focuses on collecting seasonal data on the abundance, distribution, ecology and behavior of marine

mammals, sea turtles, and seabirds throughout the U.S. Atlantic Exclusive Economic Zone and providing spatially explicit information in a format that can be used by Federal decision-makers with living marine resource responsibilities. Data are collected using a combination of direct aerial and shipboard surveys, visual and acoustic survey techniques, and animal tagging efforts. The information collected will provide enhanced data to managers by addressing data gaps that are essential to supporting conservation initiatives mandated under NEPA, MMPA, Migratory Bird Treaty Act, and ESA.

In FY 2017, BOEM, through the National Oceanographic Partnership Program, implemented the Atlantic Deepwater Ecosystem Observatory Network with NOAA and the Office of Naval Research as partners. This is an integrated system for long-term monitoring of ecological and human factors on the OCS. BOEM requires a mechanistic understanding of variable biological, physicochemical, and human use dynamics in Atlantic deep waters to address the potential impacts from conventional energy and renewable energy activities. This study was awarded competitively to the University of New Hampshire and is establishing an ecosystem observatory network in Mid- and South Atlantic deep waters to provide baseline measurements and environmental monitoring capabilities across multiple disciplines. The first of five expeditions will occur in November and December 2017, during which physical, chemical, and biological data collection will be conducted, along with initial mooring deployments. Seven moorings will be deployed in deep waters from offshore Virginia down to Florida with a variety of scientific instrumentation clusters. Transit and station sampling during cruise operations will collect additional measurements and data.

Collaborations with the academic community are undertaken through BOEM-supported Coastal Marine Institutes located at the University of Alaska-Fairbanks and at Louisiana State University, as well as through several units within the Cooperative Ecosystem Studies Unit (CESU) Network. The University of Alaska, Fairbanks launched new studies in 2016 on topics such as measurement of wave forces in coastal sea ice, migration of eiders and loons past Point Barrow, and documenting local and indigenous knowledge of sea ice. The Alaska Coastal Marine Institute also initiated a program in FY 2016 of Student Research Awards to support research projects conducted by graduate students on topics of relevance to development of oil and gas on the OCS. Another Coastal Marine Institute study, through the Louisiana State University, will provide a better understanding and quantification of the post-dredging evolution of OCS sediment borrow areas by collecting new physical oceanographic, geological, and geophysical data at two borrow areas offshore Louisiana. The study indirectly benefits the oil and gas program in that it will evaluate how to best utilize Gulf of Mexico OCS sand resources while minimizing the impacts to oil and gas pipeline infrastructure. In FY 2017, investigations were begun to examine the physical oceanography, benthic habitats and food web structure in lower Cook Inlet in anticipation of potential future lease sales, as well as work to better understand the functional diversity of epibenthic communities on the Beaufort and Chukchi Sea

shelves. Additionally, in FY 2017, Coastal Marine Institute research in Louisiana is updating, improving, and expanding upon the existing Gulf of Mexico Infrastructure Factbook. The Factbook includes a wide range of information about oil and gas-related infrastructure assets, as well as a Geographic Information System product that contains locations of onshore infrastructure located across the Gulf (e.g., ports, waste management facilities, platform fabrication yards, and refineries).

Through the CESU Network, BOEM is able to improve the scientific base for managing the OCS through access to a collaborative network of Federal and academic researchers and technical experts. These partnerships allow the contributing parties to leverage resources, extend the scope (both duration and area) of the research, and maximize the utility of results. Partners bring funds, equipment, facilities, and personnel to support collaborative efforts. Many projects include opportunities to train students and contribute to the next generation of environmental science leaders. BOEM's Pacific Region has a number of ongoing studies within the CESU Network that started in FY 2016, primarily with the University of California and the California State University systems. For example, a new study on *Net Environmental Benefits Analysis of Pacific Platform Decommissioning Scenarios*, a joint effort among BOEM, BSEE and the University of California Santa Barbara, is expected to provide valuable information on potential use of a rigs-to-reef program in California. Also in FY 2016, BOEM awarded several studies to CESU institutions to accomplish work ranging from understanding physical and microbial degradation of shipwrecks in the Gulf of Mexico after exposure to hydrocarbons, to continuing the ongoing monitoring of rocky intertidal sites adjacent to OCS production facilities along the Pacific coast, which allows BOEM to directly assess potential and real impacts to the coastline from OCS operations. Within the Gulf of Mexico Region, a CESU university assisted BOEM, NOAA, and the National Academies of Science in conducting a Gulf of Mexico Workshop on International Research between Mexico and BOEM during the Gulf of Mexico Summit in Houston, Texas during March 2017. In FY 2016, BOEM funded $1.9 million and is considering approximately $2.0 to $3.5 million in FY 2017 for new cooperative agreements to CESU institutions.

- **The Studies Development Process**

BOEM's environmental studies include multiple layers of review to ensure that the best projects are selected. Each year BOEM environmental staff solicits input from partners and stakeholders, and identifies priority studies based on relevance to decision-making (including timing), scientific merit, feasibility and cost. Potential studies are presented in an annual studies development plan that addresses a three-year time horizon.

The plan is reviewed internally through subject matter expert teams and others, and external review is provided by the committee established by the National Academies of Sciences to

support BOEM. The study program is designed to be flexible and dynamic to accommodate changing circumstances or requirements. New information needs routinely arise outside the annual planning process, and, in response, proposed studies can be added, removed, or otherwise adjusted. This process of coordination ensures the acceptability of program products in the broader community and the applicability of the results to BOEM information needs, as well as those of BOEM's contributors and partners.

Strategic Science Questions: Beginning in 2017, in response to internal and external reviews of the Environmental Studies Program, BOEM will use the strategic questions below to guide development of its research portfolio over the next five to ten years, at all levels (national, regional, and program) and for both short and long term:

- How can BOEM best assess cumulative effects within the framework of environmental assessments?
- What are the acute and chronic effects of sound from BOEM regulated activities on marine species and their environment?
- What are the acute and chronic effects of exposure to hydrocarbons or other chemicals on coastal and marine species and ecosystems?
- What is the effect of habitat or landscape alteration from BOEM regulated activities on ecological and cultural resources?
- What are the BOEM regulated industry impacts of air emissions to the human, coastal, and marine environment and compliance with the NAAQS and PSD increments?
- How will future ocean conditions and dynamics amplify or mask effects of BOEM regulated OCS activities?
- How does BOEM ensure the adequate study and integrated use of social sciences in assessing the impacts of OCS activities on the human environment?
- How can BOEM better use existing or emerging technology to achieve more effective or efficient scientific results?
- What are affected resources, measures, and systems best used for long-term monitoring?

Criteria for Study Development and Approval: The following seven criteria are used in evaluating the priority of study topics during development and for determining whether profiles for the topics should be included in the BOEM studies development plan or the national studies list.

1. **Need for Information in BOEM Decision-making:** All studies must address a specific knowledge gap, as described above. This requirement is not meant to favor studies

addressing specific impacts (e.g., explosive removal of platforms) as opposed to broader studies whose insights are indirect but important to understanding the impacts of BOEM's activities (e.g., population distribution and abundance, ecosystem dynamics). BOEM studies address both specific research questions and "infrastructure" such as maintenance of museum collections and ocean observing systems which support an array of research projects addressing BOEM information needs. All study profiles must articulate the study's relevance and importance to BOEM decision-making, and the level of need must be considered in setting priority. This criterion accounts for the urgency of information and is intended to provide for a reasonable level of support in each region and across BOEM's three programs: oil and gas, renewable energy, and marine minerals.

2. Contribution to Existing Knowledge: Studies must be designed to contribute significantly to existing knowledge, and profiles should describe how the proposed work will fill gaps in information or will improve, confirm, or challenge current understanding.

3. Research Concept, Design, and Methodology: All study profiles must provide a sound research concept (including questions asked), design, and methodology. This does not require a high level of detail such as would be provided in specific proposals to carry out the work profiled, but the basic proposal concept, design, and methodology must be sound. Quality and innovation are important considerations evaluated in this criterion. Archiving data and curation of collected specimens are considered core components of this criterion.

4. Cost-Effectiveness: Studies must be cost-effective, and the expense of a study is relevant in comparing its value with other study opportunities. This does not mean that costly studies are disfavored if the expense is necessary for important knowledge or leveraged with other funders.

5. Leveraging Funds: Study proposals should explore opportunities for shared funding. These may involve transfer of funds from or to BOEM or contributions to a shared account, but may also be through coordination of separately funded work toward common objectives.

6. Partnerships: Study proposals should support collaboration with native people whenever appropriate and feasible and should explore any opportunities for public outreach and engagement, such as "citizen science" or involvement of aquariums or other non-profits. Partnering is encouraged with other Federal agencies, academic organizations, other non-profits, or commercial enterprises to achieve shared mission needs.

7. Multi-Regional and Strategic Utility: Studies gain priority if they support multi-regional or strategic needs. This does not mean that purely local studies should not be funded if important, rather that everything else being equal, a study serving broader values is

of higher priority for funding than one that does not. Collaboration is encouraged for identifying such needs.

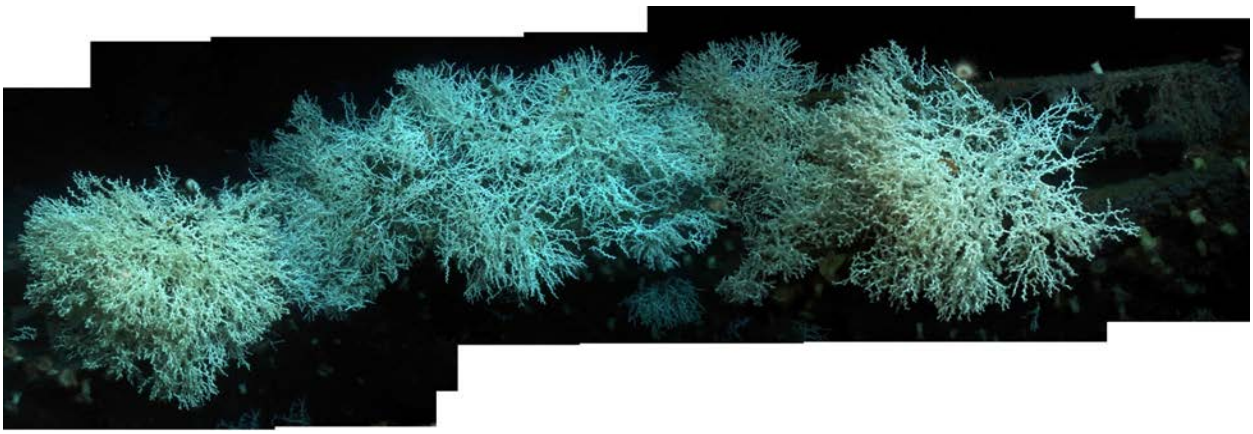
National Studies: The studies development plan includes research relevant to knowledge and decision-making at all levels of government organization, and many studies are of global interest. These studies are currently grouped under the heading of "National Studies" in the development plan and are managed centrally by BOEM's Office of Environmental Programs, though BOEM's regional offices and Office of Renewable Energy Programs staff participate and may lead projects. The fundamental distinction of national studies is their intention to address issues of broad interest rather than specific interest to a region or program.

BOEM's national studies include a long-term partnership with the Smithsonian's National Museum of Natural History to preserve biological specimens acquired from federally-funded research, including sequenceable DNA, and to maintain and provide quality assurance for the research databases associated with the specimens. In collaboration with NOAA, BOEM also supports MarineCadastre.gov, a website that allows visitors to view information concerning marine waters of the United States by geospatial units, including information on boundaries, infrastructure, human uses, energy potential, and other data sets. BOEM is specifically supporting work to enhance the website's public dissemination of environmental data sets, reports, and other study products maintained by BOEM in its Environmental Studies Program Information System and in other systems. These efforts and others support the government-wide Open Data Initiative to make data from research available to the public. BOEM has a long-standing commitment to ensuring that publications and samples are archived so that future information needs benefit from these archival efforts.

Information on the studies BOEM will undertake in FY 2017 is available through the BOEM website (http://www.boem.gov/Environmental-Studies-Planning/). Studies planned in FY 2017 will examine the impacts of conventional and renewable energy and mineral development, improve baseline characterizations, and conduct analyses of trends. A strong, continued focus in FY 2017 is given to the transmission and effects of sound, air quality, and assessments and monitoring of biological resources.

BOEM's renewable energy program works with many agencies, universities, and other partners and stakeholders to identify critical data gaps in assessing the environmental impacts of renewable energy development in areas where it is likely to occur. In FY 2016, BOEM initiated 24 new studies to address Atlantic and Pacific coast science needs for renewable energy development in whole or in part, and 15 additional studies are planned in FY 2017. Current priorities remain marine wildlife and avian distribution and movement along the Atlantic and Pacific coasts. Several ongoing studies are expected to be completed in FY 2017, addressing potential impacts of electromagnetic fields on benthic marine species; social indicators in Arctic

communities; and the habitat use and behaviors of seabirds in the Pacific. The results of these studies will be used to inform policy decisions, environmental analysis, mitigation and monitoring protocols on environmental and cultural issues.



Photomosaic of extensive Lophelia coral growth on the side of the WWII shipwreck Gulfpenn, sunk in 1942.

Gulf of Mexico Region Studies: Long-term environmental monitoring is combined with experimental research to give Gulf of Mexico OCS decisions a firm scientific base. Studies in the Gulf of Mexico Region analyze and explore the ecology of every ocean province – from coastal marsh to ocean abyss – recognizing that oil and gas activities affect all habitats and that new technologies are facilitating activities in deeper waters. BOEM is especially challenged to provide the information and oversight needed for developing these new frontiers where biological and other environmental information currently is sparse and often outdated, and the Bureau emphasizes studies addressing deep waters of the Gulf offshore both the U.S. and Mexico.

During FY 2017, the Gulf of Mexico Region will undertake a variety of environmental studies. A new air quality tracer study will be conducted by the Region in FY 2017 to improve BOEM's understanding of atmospheric dispersion modeling. A series of Gulf of Mexico socio-economic studies will also be initiated, which examine the fiscal impacts of OCS activity, the cumulative impacts of coastal and marine resources, and the production and distribution of subsistence. Another new study will delineate the traditional cultural properties at risk from human activity, while an on-going study examining the impact of hydrocarbon exposure from the Deepwater Horizon on shipwreck corrosion and microbiology has been extended for several more years. A new archaeological workshop will evaluate the submerged paleoindian landscape of the Gulf of Mexico. The Region has also initiated its first renewable

A moray eel and diver come face-to-face in the Gulf of Mexico's Stetson Bank.

energy study; an assessment of the Gulf of Mexico OCS renewable energy potential will be prepared. Several new biology studies are beginning in FY 2017. One study will look at the interactions of avian and bat activity at platforms, while another will analyze changes in deepwater pelagic/benthic communities associated with platforms.

Post-Deepwater Horizon, the proliferation of damage assessments, recovery studies, and restoration projects provides a unique opportunity to develop a long-term comprehensive monitoring network that unifies existing monitoring programs and fills gaps in current monitoring. The challenge is to meet the needs of multiple ocean uses with a large-scale, integrated monitoring system that operates under common scientific goals to protect the environment, detect natural and anthropogenic change, and assess recovery.

Atlantic Studies: In the Mid- and South Atlantic planning areas, BOEM studies are underway and being developed. Baseline studies are of special importance in this frontier region and need to span the relevant geographic area of interest, all the way out to ultra-deep waters, and the variety of biological, chemical/physical, and socioeconomic issues of relevance to BOEM environmental assessments. Partnerships with other Federal agencies play an important role in ongoing baseline studies, including the Atlantic Marine Assessment Program for Protected Species, now in its second phase; and the Mid-Atlantic Deepwater Canyons and Shipwrecks study, involving agencies such as NOAA, FWS, Navy, and U.S. Geological Survey (USGS). In the future, BOEM plans to implement long-term environmental monitoring capabilities in Atlantic deep waters to assess the present state of the environment and possible trends over time, related to natural and/or human-induced variability. An interdisciplinary monitoring approach will be adopted to understand biological species densities and distributions, the physicochemical mechanisms driving change, and human use of the environment. These measurements will test the efficacy of mitigations, such as for minimizing noise impacts on marine mammals, and will contribute to oil spill risk analysis, air quality, and predictive-fisheries modeling.

During FY 2017, a series of studies will be implemented beginning with an Atlantic Offshore Science Forum, where the research needs for human and environmental resources will be assessed. The recently implemented Atlantic Deepwater Ecosystems Observatory Network will provide scientific support capability as an integrated system for long-term monitoring of ecological and human factors on the Mid-Atlantic offshore. This fundamental information will provide the environmental baseline from which environmental and sociological impacts can be measured. Also continuing in FY 2017, Atlantic OCS alternate oil spill occurrences will be estimated in order to support the Oil Spill Risk Assessment Model. For the Southeast Atlantic, a new advanced predictive modeling of deep coral and hard bottom habitats will protect sensitive bottom benthic areas.

Researchers came across this Bowhead whale in Alaska's Beaufort Sea during a BOEM-funded study.

Alaska Region Studies: BOEM's study efforts in the Alaska Region currently focus on foundational research in the Beaufort and Chukchi Seas Planning Areas and the Cook Inlet Planning Area. Strengthening collaborative research opportunities is a priority, including the incorporation of traditional knowledge in decision-making. Other priorities are data synthesis; updating and improving oil spill risk analysis models; enhancing "nowcast" instrumentation; upgrading baseline monitoring of shore-zone habitats; improving ice forecast modeling; and generating a revised baseline for social indicators in North Slope communities.

In FY 2017, the Alaska Region, in collaboration with the North Slope Borough, is implementing a study to identify locally recognized traditional knowledge experts in several Arctic communities and organize expert panels to advance the integration of traditional knowledge into research design and informing management decisions.

In FY 2018, the Wave and Hydrodynamic Observations and Modeling study is planned to begin in the Beaufort Sea. This study will collect data before, during, and after construction and development activities associated with the proposed Liberty Development and Production Island to provide a baseline and help assess effects.

BOEM is also charged to oversee industrial air emissions in the OCS areas of the Beaufort and Chukchi Seas. This responsibility has necessitated an increased focus on Arctic OCS air quality considerations and defining emissions thresholds to assess how OCS facilities effect onshore ambient air concentrations.

The need to identify effects of development in the U.S. Arctic requires a wide variety of studies and the Alaska Region studies continue taking an integrated approach and using new technologies that facilitate research in the harsh Arctic environment to examine and better understand the biological, physical, and social systems and the effects on these critical resources and the people dependent upon them.

Pacific Region Studies: In the Pacific Region, BOEM studies have continued to evolve in response to (1) change in the geographic areas of concern and study, (2) change in the emphasis of disciplines highlighted for research, (3) changing needs for the mature oil and gas producing area, and (4) change to a frontier area for renewable energy production. The Region's responsibility now encompasses ongoing oil and gas operations and potential renewable energy development from both wave and wind energy. The area covered includes the OCS offshore

California, Oregon, Washington, and Hawaii. Partners play a key role in the Pacific Region studies: for FY 2017, BOEM Pacific Region received 23 study ideas from external stakeholders, including key federal partners such as NOAA and USGS, as well as the University of Hawaii, a private contractor, a non-profit organization, and a commercial entity.

BOEM participates in the Pacific Rocky Intertidal Survey and Monitoring of shorelines along southern California.

For conventional energy, the Pacific Region's priorities are oil spill modeling and decommissioning. Studies priorities also include the need for information to regulate future renewable energy projects that may be proposed and implemented in the Pacific Region. These energy projects require studying areas well outside the oil and gas production area of southern California, as interest and resource potential for deep water wind and wave energy facilities exist along the entire U.S. West Coast and offshore Hawaii. Renewable energy study priorities include several issues for the OCS offshore Hawaii, Oregon and California. In Hawaii, BOEM's focus is determining seabird presence and ecology, performing a biogeographic assessment of marine species, locating submerged and shoreline cultural sites, and mapping human uses from the shore to the exclusive economic zone limit. In FY 2016, a study documenting biogeographical information offshore Hawaii was completed, providing baseline information on over 100 physical and biological resources. In California, new expressions of interest for renewable energy development along the south-central coast have led to an increase of proposals for gathering and synthesizing baseline data in the vicinity.

OUTLOOK FOR SCIENCE AND ENVIRONMENTAL PROGRAMS

BOEM decisions and management of OCS oil and gas, marine minerals and renewable energy development will continue to be informed through the environmental analyses, studies and partnerships conducted through BOEM's Environmental Programs. These efforts are vital to ensuring that the potential impacts of OCS activities on the environment are understood and that appropriate protective measures are applied. In direct support of BOEM activities, the Environmental Programs will continue to focus the use of cross-cutting and regional environmental analyses for all OCS regions and activities including renewable energy, conventional energy, and marine minerals. Through its environmental analyses and environmental studies, BOEM will continue to integrate science needs across programs and resources in order to effectively and timely inform decision-makers. To these ends, BOEM will continue to utilize partnerships and will align and develop those partnerships to create an informed collaborative community with interest in OCS resources and a desire to protect the

environment. Looking forward, BOEM's focus and dedication to using the most informative and up-to-date environmental information will continue, providing effective environmental safeguards for the development of OCS energy and mineral resources.

Table 18: Environmental Programs Performance Overview

Mission Area 3, Goal 1: Secure America's Energy Resources								
Strategic Objective Metrics **Strategic Plan Measure / Efficiency or other Bureau-Specific Measure**	**2012 Actual**	**2013 Actual**	**2014 Actual**	**2015 Actual**	**2016 Plan**	**2016 Actual**	**2017 Enacted (CR)**	**2018 Pres. Budget Request**
Efficiency or other Bureau-Specific Measures								
Percent of Environmental Studies Program (ESP) projects rated "Moderately Effective" or better by BOEM internal customers	95% (21/22)	96% (22/23)	100% (16/16)	100% (16/16)	90% (N/A)	90% (18/20)	90% (N/A)	90% (N/A)
Comments: This measure evaluates the effectiveness and timeliness of the Environmental Studies Program's projects. Performance results are very sensitive to the number and types of projects evaluated.								
Contributing Programs: Office of Environmental Programs								

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FY 2018 PERFORMANCE BUDGET

Bureau of Ocean Energy Management

Executive Direction

Table 19: Executive Direction Budget Summary

		2016 Actual	2017 CR Baseline	Internal Transfers	Fixed Costs	Program Changes	2018 Request	Change from 2017
Executive Direction	$0	18,665	18,630	-	+208	-1,471	17,367	-1,263
	FTE	*88*	*91*			*-2*	*89*	*-2*

SUMMARY OF 2018 PROGRAM CHANGES

Program Changes from 2017 CR Baseline	($000)	FTE
IT project development	-1,157	
Lapse from Attrition	-314	-2
Total Program Changes	**-1,471**	**-2**

The FY 2018 President's Budget Request funds the Executive Direction budget activity at $17.4 million and 89 FTE. This reflects a net reduction of $1.3 million and 2 FTE below the FY 2017 CR baseline. It is comprised of an increase of $208,000 for fixed costs and the programmatic changes described below.

IT Project Development (-$1,157,000; 0 FTE). BOEM proposes delaying aspects of its IT system development, in order to support BOEM's highest priorities and needs in FY 2018. The amount here reflects the portion of IT project development funded through this activity.

Lapse from Attrition (-$314,000; -2 FTE). Consistent with general attrition trends, as well as the Administration's long-term plan to reduce the size of the Federal workforce, BOEM is budgeting for a reduced amount of salary dollars because personnel departures will likely outpace personnel gains.

PROGRAM OVERVIEW

The Executive Direction budget activity supports the following BOEM offices: the Office of the Director; the Office of Public Affairs; the Office of Congressional Affairs; the Office of Budget and Program Coordination; and the Office of Policy, Regulation and Analysis.

- **Office of the Director**

The Office of the Director includes the BOEM Director and Deputy Director and their immediate staff, as well as the offices of the Regional Directors and their immediate staff. These components of the BOEM staff are responsible for providing policy guidance and overall leadership within the BOEM organization, managing official documents, international affairs, and Freedom of Information Act requests.

- **Office of Public Affairs**

The Office of Public Affairs is responsible for BOEM's internal communication, traditional and social media relations, communication strategy development and outreach. Public Affairs staff coordinates the implementation of an effective and inclusive outreach program to numerous target audiences, including state and local governments, the energy industry, related trade associations, the environmental community, tribes, energy consumer groups, and the public.

- **Office of Congressional Affairs**

The Office of Congressional Affairs serves as the primary point of contact with Congress and is responsible for the coordination of all communication and outreach with Congressional offices, as well as ensuring the effective exchange of information. The Office of Congressional Affairs serves as the liaison for BOEM on all Congressional and legislative matters that relate to BOEM's programs, including managing coordination with the Department of the Interior and other Federal executive agencies.

- **Office of Budget and Program Coordination**

The Office of Budget and Program Coordination is responsible for managing the budget formulation and execution processes, as well as administrative services. The organization assesses current budgetary resources, provides recommendations for program and budget initiatives to senior BOEM executive staff, manages the personnel allocation system, and formulates and assists in the defense of BOEM's budget submissions to the Department, OMB, and Congress. The organization is responsible for overseeing coordination with administrative service providers in the management of BOEM administrative activities and serves as the point

of contact for any service-related questions. In addition, the office is responsible for emergency management, strategic human capital planning, administrative policies and procedures, talent management, and youth engagement. The Office of Budget and Program Coordination is also responsible for bureau-wide information technology management and governance ensuring that technology aligns with mission delivery requirements. Responsibilities in this area include the oversight of new and ongoing information technology initiatives, improved service delivery through application development, technology refresh, data governance, privacy and records management.

- **Office of Policy, Regulation and Analysis**

The Office of Policy, Regulation and Analysis serves as the principal office to lead and manage BOEM's national regulatory and policy programs and provides the Director with independent review and analysis of programmatic and management issues. Additionally, the Office of Policy, Regulation and Analysis leads, coordinates, and monitors many cross-program initiatives to ensure consistent BOEM-wide implementation that directly supports Congressional, Presidential, Departmental and Bureau directives, laws, orders, guidance, and other mandates. The office also fulfills the Director's responsibilities in several critical areas including regulatory planning, development, and promulgation, policy and directives management, activity-based costing, strategic and performance planning, cost recovery, internal controls, and program evaluation and compliance.

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FY 2018 PERFORMANCE BUDGET

Bureau of Ocean Energy Management

FY 2018 Appropriations Language

In FY 2018, BOEM does not propose any significant changes to the Appropriations language included in Public Law 114-113, Consolidated Appropriations Act, 2016. A full-year 2017 appropriation for this account was not enacted at the time the budget was prepared. Therefore, the budget assumes this account is operating under the Further Continuing Appropriations Act, 2017 (P.L. 114-254). The amounts included for 2017 reflect the annualized level provided by the continuing resolution.

OCEAN ENERGY MANAGEMENT

For expenses necessary for granting leases, easements, rights-of-way and agreements for use for oil and gas, other minerals, energy, and marine-related purposes on the Outer Continental Shelf and approving operations related thereto, as authorized by law; for environmental studies, as authorized by law; for implementing other laws and to the extent provided by Presidential or Secretarial delegation; and for matching grants or cooperative agreements, $171,000,000, of which $114,166,000, is to remain available until September 30, 2019 and of which $56,834,000 is to remain available until expended: Provided, That this total appropriation shall be reduced by amounts collected by the Secretary and credited to this appropriation from additions to receipts resulting from increases to lease rental rates in effect on August 5, 1993, and from cost recovery fees from activities conducted by the Bureau of Ocean Energy Management pursuant to the Outer Continental Shelf Lands Act, including studies, assessments, analysis, and miscellaneous administrative activities: Provided further, That the sum herein appropriated shall be reduced as such collections are received during the fiscal year, so as to result in a final fiscal year 2018 appropriation estimated at not more than $114,166,000: Provided further, That not to exceed $3,000 shall be available for reasonable expenses related to promoting volunteer beach and marine cleanup activities.

Note.—A full-year 2017 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Further Continuing Appropriations Act, 2017 (P.L. 114–254). The amounts included for 2017 reflect the annualized level provided by the continuing resolution.

Justification of Proposed Language Changes
BOEM does not propose any language changes in FY 2018.

Explanation of Appropriations Language
The following provides a provision-by-provision explanation and citation of authority for each component of the appropriations language.

1. ***For expenses necessary for granting leases, easements, rights-of-way and agreements for use for oil and gas, other minerals, energy, and marine-related purposes on the Outer Continental Shelf and approving operations related thereto, as authorized by law;***

This provision authorizes BOEM to expend funds for specific, mission-related purposes pursuant to BOEM's primary authorization, the OCS Lands Act (as amended), as well as myriad additional statutes that guide its activities, such as the National Environmental Policy Act of 1969 (NEPA), the Submerged Lands Act of 1953, the Energy Policy Act of 2005, and others.

2. ***…for environmental studies, as authorized by law;***

This provision authorizes BOEM to expend funds for environmental studies, pursuant to law. Specifically, BOEM's Environmental Studies Program function was established in 1973 by the OCS Lands Act, which directed the Secretary of the Interior, now through BOEM, to –

". . . conduct a study of any area or region included in any oil and gas lease sale or other lease in order to establish information needed for assessment and management of environmental impacts on the human, marine, and coastal environments of the Outer Continental Shelf and the coastal areas which may be affected by oil and gas or other mineral development in such area or region." 43 U.S.C. §1346(a)(1).

". . . to predict impacts on the marine biota which may result from chronic low level pollution or large spills associated with Outer Continental Shelf production, from the introduction of drill cuttings and drilling muds in the area, and from the laying of pipe to serve the offshore production area, and the impacts of development offshore on the affected and coastal areas." 43 U.S.C. §1346(a)(3).

"Subsequent to the leasing and developing of any area or region, [to conduct] such additional studies as he deems necessary and shall monitor the human, marine, and coastal environments of such area or region in a manner designed to provide time-series and data trend information which can be used for comparison with any previously collected data for the purpose of identifying any significant changes in the quality and productivity of such environments, for establishing trends

in the areas studied and monitored, and for designing experiments to identify the causes of such changes." 43 U.S.C. §1346(b).

3. *…For implementing other laws and to the extent provided by Presidential or Secretarial delegation;*

This provision authorizes BOEM to expend funds on activities related to its mission that are delegated to the Bureau by either the President of the United States or the Secretary of the Interior. For instance, Section 388 of the Energy Policy Act of 2005 gives the Secretary of the Interior the authority to issue leases, easements, and rights-of-way on the OCS for activities that produce or support production, transportation, or transmission of energy from sources other than oil and gas. The Secretary has delegated this responsibility to BOEM, and this provision allows BOEM to fund renewable energy activities on the OCS on behalf of the Secretary.

4. *…and for matching grants or cooperative agreements,*

This language provides authority for BOEM to utilize matching grants or cooperative agreements to carry out mission-related functions. BOEM uses cooperative agreements with Federal and non-Federal partners to conduct environmental studies and to implement renewable energy and OCS sand projects.

5. *…$171,000,000, of which $114,166,000 is to remain available until September 30, 2019 and of which $56,834,000 is to remain available until expended:*

This provision identifies the amount of BOEM's total budget authority for FY 2018 ($171,000,000). Of this total budget authority, $114,166,000 is designated as two-year money, to be available from FY 2018 through the end of FY 2019. Meanwhile, $56,834,000 of BOEM's budget authority – the amount associated with offsetting collections – is designated as no-year money with no expiration date. This enables BOEM to use no-year money to fund long-term projects like environmental studies.

6. *…Provided, That this total appropriation shall be reduced by amounts collected by the Secretary and credited to this appropriation from additions to receipts resulting from increases to lease rental rates in effect on August 5, 1993, and from cost recovery fees from activities conducted by the Bureau of Ocean Energy Management pursuant to the Outer Continental Shelf Lands Act, including studies, assessments, analysis, and miscellaneous administrative activities:*

Since 1995, annual appropriations language has provided BOEM (and previously, MMS and BOEMRE) authority to keep rental revenues above the $3.00/acre rate in effect on August 5,

1993, up to an annual cap, to fund current operations. This provision allows BOEM to use these rental receipts – as well as cost recovery fees for specific activities authorized by the OCS Lands Act, is authorized by the Independent Offices Appropriations Act – to partially fund mission-related activities. A listing of the specific cost recovery services and associated fees can be found on BOEM's website in the "Fees for Services" section (http://www.boem.gov/Fees-for-Services/).

7. *…Provided further, That the sum herein appropriated shall be reduced as such collections are received during the fiscal year, so as to result in a final fiscal year 2018 appropriation estimated at not more than $114,166,000:*

This provision pertains to the availability of offsetting collections. The timing difference between the collection of rents and cost recovery fees and the availability of the funding for use as offsetting collections created significant operational challenges for the Bureau, so the language was amended to include this "safety clause" in FY 2014. The language is modeled after the Bureau of Land Management offsetting collections language in the Management of Lands and Resources Account. The language allows BOEM to derive initial funding from the general fund of the Treasury, with amounts returned to the general fund at the end of the year once all collections have been received.

8. *…Provided further, That not to exceed $3,000 shall be available for reasonable expenses related to promoting volunteer beach and marine cleanup activities.*

This provision has been included annually since 1998 (P.L. 105-83) and authorizes BOEM (and previously, MMS and BOEMRE) to expend up to a certain amount for the promotion of volunteer beach and marine clean-up activities.

The language provided below reflects General Provisions that are directly applicable to BOEM. For a complete, detailed discussion of the Department's proposed General Provisions, please refer to the General Provision chapter of the Office of the Secretary FY 2018 budget justification.

GENERAL PROVISIONS

BUREAU OF OCEAN ENERGY MANAGEMENT, REGULATION AND ENFORCEMENT REORGANIZATION

SEC. ___. The Secretary of the Interior, in order to implement a reorganization of the Bureau of Ocean Energy Management, Regulation and Enforcement, may transfer funds among and between the successor offices and bureaus affected by the reorganization only in conformance with the reprogramming guidelines described in the report accompanying this Act.

Purpose: The 2018 Request carries forward this provision, which authorizes the Secretary to transfer funds among and between the successor offices and bureaus affected by the reorganization of the Bureau of Ocean Energy Management, Regulation and Enforcement. Specifically, this enables BOEM to continue to execute the transfer of no-year fund prior year recoveries to BSEE from the Royalty and Offshore Minerals Management (ROMM) appropriations account. Until these legacy accounts are fully closed out, BOEM needs the authority to execute these transfers. Once all transfers from the ROMM account are complete, BOEM will be able to function independently without this special transfer provision.

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FY 2018 PERFORMANCE BUDGET

Bureau of Ocean Energy Management

Proposals for Mandatory Accounts and Offsetting Collections

This chapter describes legislative proposals included in the budget submission that would impact receipts and mandatory spending levels. For a complete, detailed discussion of the Department's proposals, please refer to the General Provision section of the Office of the Secretary FY 2018 Budget Justification. Also discussed below are trends in offsetting collections, including the projected future decline in offsetting rental receipts, which if realized, have the potential to significantly impact future budgets for both BOEM and the Bureau of Safety and Environmental Enforcement (BSEE).

DECLINES IN OFFSETTING RENTAL RECEIPTS

Offsetting collections (including rental receipts, cost recoveries, and, for BSEE, inspection fees) from offshore oil and gas operations currently make up 57 percent of both BOEM's and BSEE's total budget authority. Due in part to actual and projected declines in the price of oil and gas and the associated effects on both the acquisition of new leases and the pace of relinquishing existing leases, offsetting rental receipts have been and are estimated to continue to decline and create budgetary shortfalls. As the table below indicates, total offsetting rental receipts in FY 2018 are anticipated to be $47.3 million below the estimated FY 2017 level, and that funding gap is projected to increase over the coming years.

Overall Rental Revenue Shortfalls

Fiscal Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Baseline/FY17 Budget ($49.08/bbl in FY16)	126.41	126.41	126.41	126.41	126.41	126.41	126.41	126.41	126.41	126.41
FY18 Request ($50.48/bbl)	79.11	68.15	63.53	66.35	65.50	66.38	68.86	70.20	72.82	75.01
Total Shortfall vs. Baseline	*-47.30*	*-58.26*	*-62.87*	*-60.05*	*-60.91*	*-60.03*	*-57.55*	*-56.20*	*-53.59*	*-51.40*

BOEM/BSEE Split of Offsetting Rentals	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
BOEM	55.374	47.706	44.473	46.448	45.847	46.465	48.200	49.143	50.972	52.508
BSEE	23.732	20.445	19.060	19.906	19.649	19.914	20.657	21.061	21.845	22.504

FACTORS CONTRIBUTING TO THE DECLINE

In FY 2016, the Budget assumed higher oil and gas prices than occurred in actuality, and as a result, revenue was significantly below what had been projected. Specifically, the rental receipt total for both BOEM and BSEE was estimated to be $142.36 million (assuming oil prices of

$78.69/bbl) but only $108.52 million was collected, resulting in a shortfall of $33.84 million. In FY 2017, actual collections are also expected to fall short of the amounts estimated in the President's Request. The FY 2017 President's Budget assumed oil prices of $49.08/bbl and estimated total rental receipts of $126.41 million, but estimates used to prepare the FY 2018 Budget suggest FY 2017 actuals of $87.45 million, a shortfall of $38.96 million. Although quickly-outdated price assumptions are partially at fault for the discrepancies between estimates and actuals, there are other factors at play.

For instance, in FY 2016, nearly 800 leases were relinquished ahead of their lease expiration, resulting in millions of forgone offsetting revenues. Unanticipated relinquishments, fewer rent-generating leases, and the natural expiration of a number of leases contributed significantly to the FY 2016 shortfall.

Fewer leases are being sold in the Gulf of Mexico as the area matures and world oil prices decline. The Gulf of Mexico as an oil and natural gas resource basin has been heavily leased and developed for over 50 years. While there are still abundant estimated undiscovered oil and gas resources, finding and developing them is becoming technologically and economically more challenging. For this reason, fewer tracts are expected to be leased. Second, a decline in the number of leases subject to rentals is expected to accelerate because, beginning in 2010, primary terms for leases in 800-1600 meters were shortened from ten years to a "7+3" year approach, wherein a lessee receives an extended initial period (an additional three years) if a well is drilled within the first seven years. BOEM anticipates approximately 90 percent of these leases to be returned after the primary seven year term, resulting in fewer deepwater rent-generating leases around FY 2017. Although many of those areas are likely to be re-leased, their re-acquisition may not keep pace with relinquishment. Third, the downturn is, in some respects, a result of the success of BOEM's leasing strategy. BOEM has modified its fiscal policies in the Gulf of Mexico five times since 2007 to encourage industry to lease and hold fewer non-producing leases, consistent with a policy to encourage diligent development of leases.

MEASURES TO ADDRESS THE DECLINE IN OFFSETTING RENTAL RECEIPTS

As noted above, in FY 2018, offsetting rental revenue for BOEM and BSEE is projected to be $47.3 million below FY 2017 levels. The FY 2018 President's Budget proposes to make up for the shortfall in offsetting rentals with an increase in appropriated funds.

For BOEM, the FY 2018 offsetting collections shortfall of $35 million is offset by an increase of $35.5 million in appropriations. The bulk of the offset is reflected in the FY 2018 Budget as internal transfers or realignments because they are not associated with specific programmatic

changes. The following table shows how BOEM's budget composition would change, including how much is aligned with programmatic versus non-programmatic changes.

Bureau of Ocean Energy Management
List of Budgetary Changes
(dollars in thousands)

Budgetary Change	Offsetting +	Approp =	Total BA
BOEM FY 2017 CR BASELINE	**91,874**	**78,658**	**170,532**
Internal Realignments	-28,086	+28,086	-
Fixed Costs and Programmatic Changes	-6,954	+7,422	+468
FY 2018 Budgetary Changes	**-35,040**	**+35,508**	**+468**
BOEM FY 2018 REQUEST	**56,834**	**114,166**	**171,000**

IN THE OUTYEARS

It is important to note that while rent-producing leases are declining, overall OCS activity does not necessarily follow the same trend. The Gulf of Mexico OCS, as a geologic province, is quite mature in terms of exploration prospects. While activity in shallow water has decreased in recent years, deepwater activity has remained robust, and – according to the U.S. Energy Information Administration – deepwater oil and natural gas production will continue to increase over the rest of this decade. BOEM anticipates that, with this increase in deepwater production, there will also be a corresponding increase in associated plan reviews and environmental work. While the 2018 Request proposes a solution to address the projected 2018 shortfall for BOEM and BSEE, further changes will be necessary in 2019 and beyond if the projected rental receipt trend continues. BOEM and BSEE will continue to work with the Department and OMB to assess future revenue trends and funding options.

CHANGES TO COST RECOVERIES

As indicated, BOEM's offsetting collections also include cost recovery fees. BOEM collects a range of these fees as reimbursement from identifiable applicants/beneficiaries for the costs of performing certain activities. Estimates for cost recoveries are based on actual recoveries from the prior year and projections by subject matter experts on activity levels for the coming year. Based on what the Bureau processed in fiscal years 2016 and 2017 and factoring in anticipated future activity, BOEM estimates application of existing cost recovery fees would generate $1.5 million in FY 2018, approximately $2.1 million less than included in the FY 2017 CR baseline.

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FY 2018 PERFORMANCE BUDGET

Bureau of Ocean Energy Management

Disclosure of Administrative Expenses

This appendix is provided in compliance with Section 403 of Public Law 114-113, the Consolidated Appropriations Act of 2016, which states:

> *DISCLOSURE OF ADMINISTRATIVE EXPENSES*
>
> *SEC. 403. The amount and basis of estimated overhead charges, deductions, reserves or holdbacks, including working capital fund and cost pool charges, from programs, projects, activities and subactivities to support government-wide, departmental, agency, or bureau administrative functions or headquarters, regional, or central operations shall be presented in annual budget justifications and subject to approval by the Committees on Appropriations of the House of Representatives and the Senate. Changes to such estimates shall be presented to the Committees on Appropriations for approval.*

The majority of BOEM's external assessments are associated with the costs of the shared services approach that allow the Bureau to meet its administrative and information technology needs. BOEM implements this approach through reimbursable services agreements with BSEE, which are identified in the table below. Under this arrangement, BSEE provides a full suite of administrative services including acquisition management, equal employment opportunity, finance, human resources, information technology management, management support, personnel security, and support services. Maintaining these critical administrative functions within the Department provides the following benefits:

- Minimizing duplication of administrative entities across multiple organizations and optimizing efficiency.
- Providing a centralized administrative function that can, over time, allow the Department to pursue additional efficiencies.

The Department has strongly supported the expansion of business cross-servicing as a means to strategically expand high-quality, high-value shared services to improve performance and efficiency throughout the government.

Through this effort, BOEM and BSEE support the Department's and the President's efforts to increase the efficiency of core operations, reduce duplication and waste, enable investments in innovation, use shared services and common infrastructure, facilitate agency collaboration and co-funding, and implement innovative approaches to budgeting and resource management. Specifically, this arrangement has the added benefit of implementing standardized practices that

further increase the productivity for highly skilled resources in both bureaus. By utilizing the shared services model, BOEM and BSEE continue to improve their best practices and maximize the use of administrative funds.

BOEM and BSEE regularly evaluate these support arrangements in joint quarterly meetings, and final costs are determined at the end of the year based on FTE levels and hours billed. BSEE's costs to provide these services are also carefully managed and jointly approved by the respective agencies. Because these costs are regularly reevaluated, estimated outyear costs are based on prior year actuals and the stated billing methodology (i.e., based on FTE levels). As such, amounts shown in the table below are estimates only and may not reflect final agreements or end of year obligations. Additionally, because BOEM has no dedicated budget line to pay for its administrative overhead, all external assessments are paid for through internal assessments to the OEM account.

Table 20: Disclosure of Administrative Expenses

Bureau of Ocean Energy Management
Disclosure of Administrative Expenses
(dollars in thousands)

Deductions, Reserves, or Holdbacks	**FY 2018 Estimate**
External Bureau Assessments	
Administrative RSA with BSEE	18,279
IT RSA with BSEE	14,581
Solicitor Support	1,883
Working Capital Fund Centralized Billing	1,937
Working Capital Fund Direct Billing	546
Zantas	35
NARA	65
Subtotal, External Assessments	$ 37,326
Internal Bureau Assessments	
Ocean Energy Management	37,326
Subtotal, Internal Assessments	$ 37,326

IT costs are anticipated to increase slightly in FY 2018 due to increased costs for the Bureaus' IT support contracts. The enhanced IT contract will continue to manage, operate, maintain and enhance the TIMS investment, and it will also benefit customer agencies through an enhanced service catalog, granular control of development, modernization and enhancement work and detailed financial reporting. The contract will be based on a firm fixed price model, which

transfers operational risk to the contractor and provides a means to limit out-of-scope changes to the system.

In addition to the administrative contracts with BSEE, BOEM also contracts with the Office of the Solicitor for legal support. Other external assessments include the Department's Working Capital Fund, which supports Department-wide systems, such as the Financial Business Management System (FBMS), which bureaus use for accounting and finance. Lastly, BOEM is externally assessed for information archiving through Zantas, an IT archiving software system, and the National Archives and Records Administration (NARA).

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FY 2018 PERFORMANCE BUDGET

Bureau of Ocean Energy Management

Employee Count by Grade

(Total Employment)

Table 21: Employee Count by Grade

Bureau of Ocean Energy Management
Employee Count by Grade
(Total Employment)

	2016 Actuals	2017 Estimate	2018 Estimate
Executive Level V	0	0	0
SES	6	7	7
Subtotal	**6**	**7**	**7**
SL - 00	1	1	1
ST - 00	0	0	0
Subtotal	**1**	**1**	**1**
GS/GM -15	46	45	45
GS/GM -14	139	141	137
GS/GM -13	197	193	187
GS -12	89	89	86
GS -11	47	48	47
GS -10	3	3	3
GS - 9	22	22	22
GS - 8	11	11	11
GS - 7	9	9	9
GS - 6	9	8	8
GS - 5	6	6	6
GS - 4	1	1	1
GS - 3	3	3	3
GS - 2	0	0	0
GS - 1	0	0	0
Subtotal	**582**	**579**	**565**
Other Pay Schedule Systems	0	0	0
Total employment (actuals & estimates)	**589**	**587**	**573**

Notes on this table:

- Amounts shown in this table are consistent with amounts reported by the Department of the Interior as of September 30, 2016.

- FY 2017 estimates are a slight decrease from FY 2016.
- FY 2018 estimates show a reduction of 14 employees due to attrition and a more conservative approach to personnel actions, consistent with the Administration's long-term plan to reduce the size of the Federal workforce. The level of attrition BOEM anticipates reflects personnel separations primarily due to retirement or resignations and assumes far fewer transfers to other Federal agencies compared to past years. With significantly limited ability to hire new employees to replace departing ones, BOEM expects savings due to salary "lapse". Lapse is generally defined as the amount budgeted for the salary of a specific position that becomes available for redistribution when the position becomes vacant (i.e., when the employee leaves). Therefore, BOEM is budgeting for a reduced amount of salary dollars because personnel departures are expected to outpace personnel gains.
- All grades presented in this table include career, career-conditional, temporary, and political employees.
- GS refers to employees covered by the General Schedule classification and pay system established under the Classification Act of 1949, as amended. (5 U.S.C. chapter 53, subchapter III, and 5 CFR part 531)
- GM refers to employees covered by the General Schedule classification and pay system who are covered by the Performance Management and Recognition System (PMRS) termination provisions of Public Law 103-89 (former PMRS employees).

FY 2018 PERFORMANCE BUDGET

Bureau of Ocean Energy Management

List of Acronyms

ABC	Activity Based Costing
APD	Application for Permit to Drill
BLM	Bureau of Land Management
BOEM	Bureau of Ocean Energy Management
BSEE	Bureau of Safety and Environmental Enforcement
CESU	Cooperative Ecosystem Studies Unit
CFR	Code of Federal Regulations
CR	Continuing Resolution
DOD	Department of Defense
DOCD	Development Operations Coordination Document
DOE	Department of Energy
DOI	Department of the Interior
DPP	Development and Production Plan
EIS	Environmental Impact Statement
EP	Exploration Plan
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FTE	Full Time Equivalent
FWS	U.S. Fish and Wildlife Service
FY	Fiscal Year
G&G	Geological and Geophysical
GIS	Geographic Information System
GPRA	Government Performance and Results Act
ICR	Internal Control Review
IT	Information Technology
MMPA	Marine Mammal Protection Act
MMS	Minerals Management Service
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NTL	Notice to Lessees and Operators
OCS	Outer Continental Shelf
OEM	Ocean Energy Management
OMB	Office of Management and Budget
PEIS	Programmatic Environmental Impact Statement
P.L.	Public Law

ROW	Right-of-Way
RUE	Right-of-Use and Easement
SEGY	Society of Exploration Geophysicists Y (type of file format)
SLA	Submerged Lands Act
TIFF	Tagged Image File Format
TIMS	Technical Information Management System
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USGS	U.S. Geological Survey