



BUDGET The United States
Department of the Interior
JUSTIFICATIONS

and Performance Information
Fiscal Year 2020

**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 2020 PERFORMANCE BUDGET

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FISCAL YEAR 2020 BUDGET
Bureau of Ocean Energy Management
Preface

“The prudent development of our offshore energy resources is an important component of our economic prosperity. A strong offshore energy program facilitates thousands of well-paying jobs, as well as the affordable and reliable energy Americans need to heat homes, fuel our cars, and power our economy.”

– *Department of the Interior Acting Secretary David Bernhardt, March 1, 2019*

Americans are enjoying the strongest economic growth in more than a decade, in part due to better use of the Nation’s abundant natural resources. The Administration’s America-First Offshore Energy Strategy calls for boosting domestic energy production to stimulate the Nation’s economy and to ensure our energy security, while providing for responsible environmental stewardship. Implementation of these goals aligns with the Bureau of Ocean Energy Management’s (BOEM) mission, the statutory mandate for which is provided principally by the Outer Continental Shelf (OCS) Lands Act, 43 U.S.C. 1331 et seq. BOEM carries out the authority provided by the OCS Lands Act to manage the Nation’s offshore energy and mineral resources in a balanced way that promotes environmentally and fiscally responsible development through oil and gas leasing, renewable energy development, and marine mineral leasing, all of which incorporate rigorous, science-informed review. BOEM supports the Administration’s goal to increase domestic energy production by providing access to resources located on the OCS through programs that enable continued exploration and production. BOEM plays an important role in advancing the Administration’s comprehensive approach to expanding responsible development of all forms of domestic energy resources as part of a broad effort to secure the Nation’s energy future, benefit the economy, enhance national security and create jobs.

BOEM’s FY 2020 budget supports ongoing efforts and important initiatives that are vital to its mission and critical to advancing Administration priorities, including the goal of moving the United States from simply aspiring to energy security to actually achieving it.

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

- **2019-2024 National OCS Oil and Gas Leasing Program.** Pursuant to Executive Order 13795 – *Implementing an America-First Offshore Energy Strategy* – and Secretarial Order 3350 – *America-First Offshore Energy Strategy* – BOEM initiated efforts to develop a new National OCS Oil and Gas Leasing Program (National OCS Program) during FY 2017. These efforts continued through FY 2018 and into FY 2019. For FY 2020, BOEM requires

additional funds to support personnel and contracts necessary to implement the new National OCS Program. The FY 2020 budget does not presume a particular Secretarial decision on the 2019-2024 National OCS Program. Therefore, the full amount required to implement it will need to be reevaluated before the Proposed Final Program is released.

- **Renewable Energy.** “This Administration’s bold vision for our energy future is reflected in its commitment to a diverse energy portfolio” (*Department of the Interior BOEM Acting Director Walter Cruickshank, April 6, 2018*). 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 and by streamlining its permitting and National Environmental Policy Act (NEPA) processes. BOEM continues to work diligently to support renewable energy development spurred by the renewable energy goals of Coastal States.
- **Marine Minerals.** As part of its mandate to manage offshore resources, BOEM oversees the conveyance of OCS marine minerals. The FY 2020 budget emphasizes the importance of BOEM’s work in this area by proposing a new Marine Minerals budget activity. Marine minerals include sand and gravel resources that are utilized for coastal resilience projects, including: hurricane recovery and response, through beach nourishment and coastal restoration activities resulting in the restoration of hundreds of miles of the Nation’s coastline; protecting billions of dollars of coastal infrastructure; and protecting and/or restoring important ecological habitats. Though still a nascent component of BOEM’s marine minerals activities, BOEM seeks funding to initiate an OCS Critical Mineral Inventory to assess the Nation’s supply of critical minerals, potentially reducing the Nation’s vulnerability to economic disruption as well as negative national security impacts caused by a lapse in imports.
- **Environmental Analysis.** As stated in the Administration’s America-First Energy Plan, the need for energy must go hand-in-hand with responsible environmental stewardship. In accordance with Secretarial Order 3355, BOEM is also conducting its environmental analyses in a transparent, coordinated, and streamlined fashion to ensure that decisions regarding potential environmental impacts are informed by the best available science. As the Bureau continues to manage offshore energy and mineral resources in an environmentally and economically responsible way, BOEM will also continue to utilize environmental science as the foundation for sound policy decisions.

The FY 2020 budget request reflects a careful analysis of the resources needed to advance the Administration’s priorities and develop the Bureau’s capacity to execute its mission carefully, responsibly, and efficiently.

FISCAL YEAR 2020 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 extends from three nautical miles offshore a State (nine nautical miles in the case of Texas and Florida's Gulf of Mexico coast) to at least the outer limits of the U.S. Exclusive Economic Zone. 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 (P.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 energy and mineral resources, including: OCS leasing, inventories of oil and gas reserves, resource and economic evaluation, review and administration of oil and gas exploration and development plans, geological and geophysical (G&G) permitting, risk management and financial assurance, conveyance of sand and gravel resources, renewable energy development, National Environmental Policy Act (NEPA) analysis, and environmental studies.

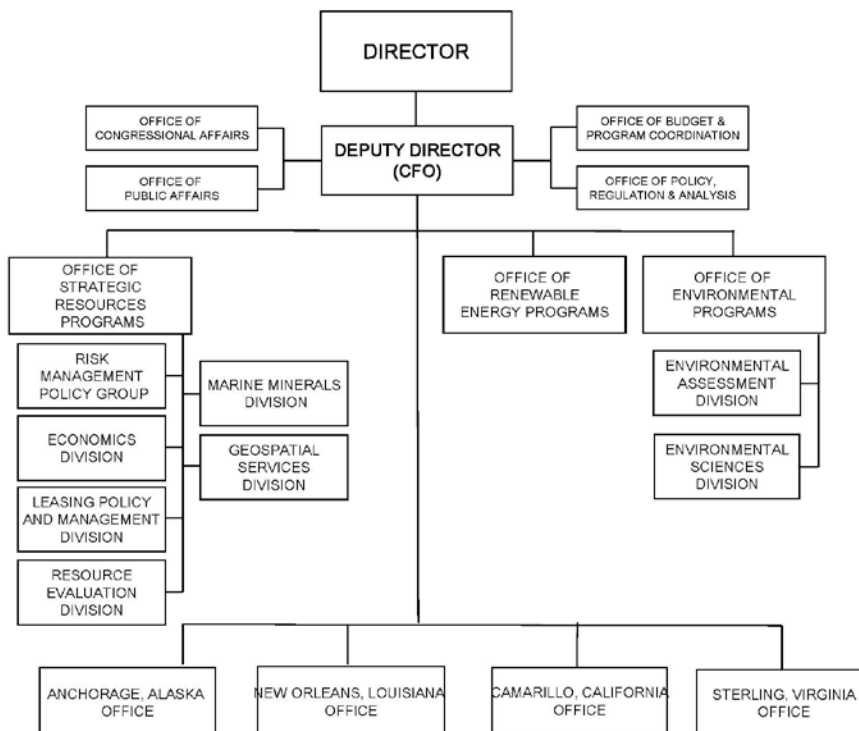
BUDGET AND ORGANIZATIONAL STRUCTURE

Budget activities for BOEM are funded through the Ocean Energy Management account and support resource evaluation, planning, and leasing of the Nation's OCS energy and mineral resources in a balanced way that promotes economic development, energy independence, and environmental protection. The Ocean Energy Management account is comprised of Conventional Energy, Renewable Energy, Environmental Programs, Marine Minerals, and Executive Direction activities.

General Statement

Functions and funds within these activities are divided among program offices located at headquarters and regional offices, as shown in Figure 1 below. Policy and administrative functions for each mission area (conventional energy, renewable energy, and environmental programs) are grouped into three offices headquartered in the Greater Washington, D.C. area and focus on national offshore leasing strategy and the development of comprehensive environmental analyses and science. BOEM’s Anchorage, Alaska Office; New Orleans, Louisiana Office; and, Camarillo, California Office, implement Bureau policy, manage regional leasing activity, conduct region-specific analyses, and coordinate stakeholder outreach and engagement.

Figure 1: BOEM Organizational Chart



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 2020 BUDGET REQUEST

Funding for BOEM is requested through the Ocean Energy Management account, which is made up of net discretionary appropriations and offsetting collections (consisting of a portion of OCS

rental receipts and cost recovery fees). In FY 2020, BOEM requests \$193.4 million in total budget authority. BOEM's Request includes \$136.9 million in net current appropriations and \$56.5 million in offsetting collections, as shown in Table 1.

Table 1: Summary of BOEM Budget Request

Summary of BOEM FY 2020 Budget Request

(Dollars in Thousands)

Bureau of Ocean Energy Management	2018 Actual	2019 CR Baseline	2020 Request	vs. 2019 CR
Net Current Appropriation	119,346	121,184	136,929	+15,745
Offsetting Collections	51,654	49,816	56,497	+6,681
Total Budget Authority	171,000	171,000	193,426	+22,426
Offsetting Collections				
Rental Receipts	50,194	47,455	54,449	+6,994
Cost Recovery Fees	1,460	2,361	2,048	-313
Total Offsetting Collections	51,654	49,816	56,497	+6,681
Ocean Energy Management				
Conventional Energy	58,123	58,123	64,123	+6,000
Renewable Energy	21,676	21,676	21,325	-351
Environmental Programs	73,834	73,834	85,110	+11,276
Marine Minerals			5,729	+5,729
Executive Direction	17,367	17,367	17,139	-228
Total Budget Authority	171,000	171,000	193,426	+22,426

FY 2020 BUDGET HIGHLIGHTS

The 2020 Request reflects funding needed for BOEM to carry out its mission. Changes relative to the 2019 Continuing Resolution (CR) Baseline are shown in Table 2 and described in greater detail below.

Table 2: List of Budgetary Changes in FY 2020

Bureau of Ocean Energy Management Budgetary Changes for FY 2020 President's Budget*						
Activity	Program Change	Offsetting	+	Approp	=	Total BA FTE
BOEM FY 2019 CR BASELINE		49,816		121,184		171,000 562
Multiple Activities	Internal Transfers	+5,691		-5,691		+0
Multiple Activities	Internal Transfers - Marine Minerals**	net zero		net zero		+0 +5
Multiple Activities	2020 Fixed Costs			+1,015		+1,015
Conventional / Env.	National OCS Program	+990		+23,201		+24,191 +43
Renewable Energy	Renewable Energy Leasing	+500				+500
Renewable Energy	Renewable Science & Technology Research			-956		-956
Environmental Programs	Environmental Studies	-500		-2,372		-2,872
Marine Minerals	North Slope Sand Gravel & Critical Minerals			+942		+942 +2
Executive Direction	Staffing			-394		-394 -3
FY 2020 Budgetary Changes		+6,681		+15,745		+22,426 +47
BOEM FY 2020 PRESIDENT'S BUDGET		56,497		136,929		193,426 609

* Changes are not listed in priority order.

** A total of 17 FTE are proposed to transfer to the new budget activity, and the additional base funding will allow the Marine Minerals Program to hire additional staff.

Internal Transfers (+\$5,691,000/- \$5,691,000; 0 FTE). These transfers reflect a change in the composition of BOEM’s budget, due mostly to a shift in the portion of the budget funded through direct appropriations versus offsetting collections. There are no programmatic changes associated with this shift.

Internal Transfers – Marine Minerals (net zero change). A total of \$4.8 million and 17 FTE will be transferred from the Conventional Energy and Environmental Programs budget activities to the new Marine Minerals budget activity.

2020 Fixed Costs (+\$1,015,000). Fixed cost increases are fully funded in BOEM’s FY 2020 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.

The National OCS Oil and Gas Leasing Program (+\$24,191,000; +43 FTE). The 2020 Request provides additional resources needed to implement the new National OCS Oil and Gas Leasing Program: \$8.2 million in Conventional Energy and \$15.9 million in Environmental Programs. This includes funding for: economic and environmental modeling, fair market value tools, coordination and implementation of offshore leasing strategy activities, lease sale and data management, extensive outreach with stakeholders, and environmental studies. This Request

reflects a portion of the total program need and does not presume a particular decision on the new National OCS Program.

Renewable Energy Science and Technology Research (-\$956,000; 0 FTE). In FY 2020, BOEM proposes to redirect funds to invest additional resources in leasing activity.

Renewable Energy Leasing (+\$500,000; 0 FTE). BOEM proposes an increase of \$500,000 to renewable energy in order to hold one additional renewable energy lease auction per year.

Environmental Studies Program (-\$2,872,000; 0 FTE). At the proposed funding level, BOEM will continue to fund studies that support conventional, renewable, and marine mineral leasing activity. This program change is offset by increases for studies directly supporting the new National OCS Oil and Gas Leasing Program, as described above.

North Slope Sand, Gravel, and Critical Minerals (+\$942,000; +2 FTE). In FY 2020, BOEM plans to initiate a marine minerals project offshore the North Slope of Alaska to inventory potentially available resources, such as sand, gravel, and critical minerals. BOEM will utilize increased funding from internal transfers to initiate the work but requests an additional \$942,000 and two FTE to complete the project and manage any leasing activity that results. As offshore activity in the region increases, the need for sand and gravel resources to support infrastructure needs will grow as well. Through this effort, BOEM can more proactively manage OCS marine mineral resources in an area where little is known of the kind, quantity, and location of such resources.

Staffing (-\$394,000; -3 FTE). In FY 2020, BOEM proposes to redirect funds to support National OCS Program efforts in the field.

ADMINISTRATION PRIORITIES

UTILIZING OUR NATURAL RESOURCES

Through early planning, thoughtful mitigation, and the application of sound science, BOEM is working to ensure the Administration's America-First Offshore Energy Strategy is applied in a manner that fosters environmentally and economically responsible development of the Nation's offshore energy and mineral resources, while diligently seeking ways to improve efficiency through the use of technology, shared services, and best practices.

In FY 2017, BOEM initiated efforts to develop a new National OCS Oil and Gas Leasing Program (National OCS Program), pursuant to Executive Order (EO) 13795 – *Implementing an America-First Offshore Energy Strategy* – and Secretarial Order (SO) 3350 – *America-First*

General Statement

Offshore Energy Strategy. These efforts continue through FY 2018 and into FY 2019. On January 4, 2018, the Department announced the 2019-2024 National OCS Oil and Gas Leasing Draft Proposed Program (DPP), which proposes 47 potential lease sales for consideration – the largest number of lease sales ever proposed for the National OCS Program’s five-year lease schedule – in 25 of the 26 OCS planning areas. The next phases in the National OCS Program development include publication of the Proposed Final Program, followed by the approval of the Final Program (occurring at least 60 days after submittal of the Proposed Final Program to the President and Congress). During the development of the new National OCS Program, BOEM will prepare a Programmatic Environmental Impact Statement, pursuant to the National Environmental Policy Act (NEPA), to inform program decisions. Opportunities to comment during this process include the Notice of Intent to prepare the Programmatic Environmental Impact Statement (comment period concurrent with the DPP) and the Draft Programmatic Environmental Impact Statement (comment period is concurrent with the Proposed Program). The planning process for individual lease sales proposed for early in the DPP schedule has already begun and will continue in FY 2020, though the sales would only be held if they remain in the final National OCS Program.

In recognition of the role renewable energy can play in securing U.S. energy independence and supporting national economic growth, BOEM will continue to advance renewable energy through an expanded and targeted leasing program. BOEM continues to work diligently to support renewable energy development spurred by the renewable energy goals of many Coastal States. To date, BOEM has conducted eight competitive wind energy lease sales for areas offshore the Atlantic coast and issued sixteen commercial wind energy leases offshore of Delaware, Maryland, Massachusetts, New Jersey, New York, North Carolina, Rhode Island, and Virginia. Included within this total are the three Massachusetts commercial leases from BOEM’s December 13, 2018 lease sale, which resulted in approximately \$405.1 million in bonus bid revenue. BOEM is in the planning stages to identify additional potential lease areas offshore Hawaii, California, New York/New Jersey, and North/South Carolina. Of note, in working with Coastal States and other stakeholders, BOEM will continue to adhere to EO 13807 – *Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects* – and continue to identify ways to make the construction and operations plan review process as efficient and effective as possible during the authorization process.

BOEM’s offshore resource management mission extends to overseeing the conveyance of OCS marine minerals. Through the Marine Minerals Program, BOEM makes available sand, gravel and critical mineral resources to protect and improve coastal resources. BOEM seeks to identify and mitigate the impacts of conveying OCS marine minerals on the marine, coastal, or human environment. The OCS sand and gravel resources are utilized in support of coastal resilience projects, including hurricane recovery and response, through beach nourishment and coastal

restoration activities. They result in the restoration of hundreds of miles of coastline, protecting billions of dollars of infrastructure, as well as important ecological habitat. As of February 1, 2019, BOEM has conveyed the rights to more than 147 million cubic yards of OCS sediment by executing 54 leases for projects in eight States that have restored over 321 miles of coastline.

Another element of BOEM's marine minerals mandate is the management of critical minerals on the OCS. In response to the directives outlined in EO 13817 – *A Federal Strategy To Ensure Secure and Reliable Supplies of Critical Minerals* – and SO 3359 – *Critical Mineral Independence and Security* – BOEM also proposes to initiate efforts to start the development of a National Offshore Critical Mineral Inventory, beginning in the North Slope, Alaska, in FY 2020. As the sole steward of these finite, public resources, it is imperative that BOEM improve its knowledge where critical mineral resources are available in order to manage their use effectively.

GENERATING REVENUE AND ENSURING FAIR MARKET VALUE

Ensuring the receipt of fair market value for OCS resources 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 Program are available for lease. The bid review process incorporates geological and geophysical 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 of tracts receiving bids. Since 1984, bid adequacy reviews and fair market value determinations have resulted in an average rejection rate of bids of approximately 3.7 percent, and consistently resulted in higher returns in subsequent sales for tracts that have had their high bids in previous sales rejected on grounds of bid insufficiency. From 1984 through 2018, BOEM rejected total high bids of approximately \$637 million. Subsequently, the same blocks were re-offered and drew high bids of about \$1.9 billion, for a total net dollar gain of about \$1.2 billion, an increase of almost 192 percent.

As of February 1, 2019, BOEM manages about 2,623 active oil and gas leases on over 13.8 million OCS acres. As noted above, all of these leases were awarded following completion of the post-sale bid evaluation process to ensure fair market value was received for each lease. Offshore Federal production in FY 2018 reached approximately 619 million barrels of oil (a record high) and 0.97 trillion cubic feet of gas, almost all of which was produced in the Gulf of Mexico. This accounted for about 16 percent of all domestic oil production and 3 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 2018, conventional energy generated \$106 million in rent, \$229 million in bonuses, and \$4.3 billion in royalties from production.

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 a fair return to the U.S. Treasury for the rights conveyed by OCS renewable energy leases and grants. In FY 2018, \$4 million in rent payments were collected on OCS renewable energy leases. BOEM estimates annual rent payments to increase in FY 2019 to over \$5 million per year with three additional leases from the December 2018 lease sale. The Massachusetts sale resulted in approximately \$405.1 million in bonus bid revenue. To date, including the recent Massachusetts renewable energy lease sale, BOEM has generated over \$473 million in bonus bids from renewable energy lease sales it has conducted through the competitive leasing process. Revenue data is generated by the Office of Natural Resources Revenue and can be found at <https://revenue.data.doi.gov/explore/>.

CREATING A CONSERVATION STEWARDSHIP LEGACY AND STRIKING A REGULATORY BALANCE

In the execution of its statutory mission, BOEM seeks to be a model for how the development of energy goes hand-in-hand with responsible stewardship of the environment. Science is critical to BOEM's mission to manage offshore energy and mineral resources in an environmentally and economically responsible way. BOEM strives to streamline and refine its permitting and NEPA processes, consistent with SO 3355 – *Streamlining National Environmental Policy Act Reviews and Implementation of Executive Order 13807*. In accordance with SO 3355, BOEM's priorities will focus on infrastructure investments for exploration and production on the OCS, and environmental analyses will be conducted in a transparent, coordinated, and streamlined fashion to ensure that decisions concerning the environmental impacts of infrastructure projects are informed by the best available science. BOEM facilitates top-quality research by talented scientists from a range of disciplines that is targeted to support BOEM's decision-making and policy needs and priorities. Additionally, BOEM partners with stakeholders to leverage funds and work toward common research interests. The valuable data collected through BOEM's environmental efforts is used not only within BOEM, but also by stakeholders including other Federal agencies and State and local governments.

RESTORING TRUST WITH LOCAL COMMUNITIES

Stakeholder outreach and engagement on all BOEM activities is both statutorily mandated and critically important to both conventional and renewable energy activities. The OCS Lands Act calls for public involvement and comment at multiple points throughout the process of developing a five-year National OCS Oil and Gas Leasing Program, and under the Energy Policy Act of 2005, BOEM is required to coordinate and consult with Federal, Tribal, State, and local

agencies throughout the renewable energy process. BOEM’s Marine Minerals Program also coordinates with governmental partners and stakeholders as it facilitates access to and manages the Nation’s OCS non-energy marine minerals. Thus, communication with local communities is necessary to ensure natural resource decisions reflect the input of citizens potentially affected by proposed activity.

REORGANIZING FOR THE NEXT 100 YEARS

Figure 2: DOI Bureaus- Historical Region Boundaries

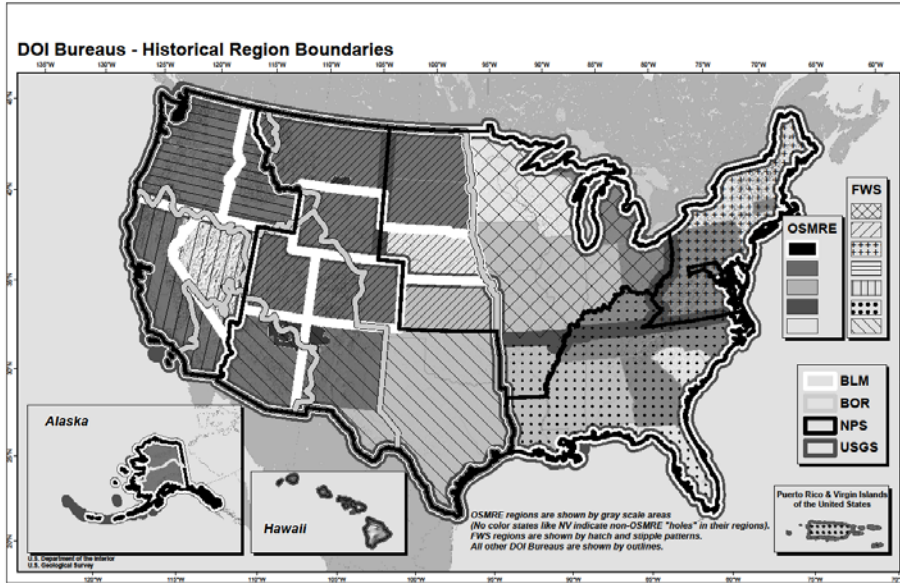


Figure 3: DOI 12 Unified Regions



General Statement

Over many decades, the Department of the Interior experienced new bureaus becoming established on an *ad hoc* basis with their own unique regional organizations. This ultimately resulted in a complicated series of 49 regional boundaries among 8 bureaus. This complexity led to the situation where bureau regional leadership was often focused on different geographic areas, did not have adequate and shared understanding of the needs and perspectives of regional stakeholders, and opportunities to share administrative capacity across bureaus were difficult to recognize and implement. Further, members of the public were often frustrated by problems in inter-bureau decision making where uncoordinated timelines and processes could lead to unnecessarily long delays in reaching a decision. The Department's reorganization is focused on making improvements across each of these areas.

On August 22, 2018, after working closely with stakeholders across the country on options to consolidate Interior's 49 different regions into common regions, the Department announced the designation of Interior's 12 new unified regions. As a result of Tribal consultation, BIA, BIE, and the Office of the Special Trustee for American Indians will not realign their regional field structure.

Establishing unified regions across bureaus is the cornerstone of the reforms designed to improve Interior's service delivery to the public. Within each unified region, bureaus will focus work on the same resources and constituents and improve coordination across the Department. For the public, fewer regions make it easier to do business with Interior, particularly when the public interacts with several bureaus or jurisdictions. Interior will leverage the unified regional structure to improve and streamline business operations using shared services and best practices across the Department focusing primarily on human resources, information technology, and acquisition services. Work is underway in 2019 to plan implementation, conduct analysis, and identify areas for collaboration within the new regions.

GOVERNMENT REFORM

President Trump signed an Executive Order to modernize and reform the executive branch and Interior is leading the way, developing and executing a program that will streamline processes and better serve the American people. The absolute first step in building a better and more efficient executive branch though is fostering a culture of ethics and respect amongst colleagues.

Interior has launched several top management objectives to better achieve Departmental goals and lead the agency moving forward. From day one of this Administration, Interior's leadership has made the work environment a priority. There is zero tolerance for any type of workplace harassment at Interior. The Department is instilling a culture change through clear management accountability, swift personnel actions, reporting procedures for harassment conduct, improved training, and substantive action plans.

In the area of anti-harassment efforts, each bureau and office has made significant headway in putting a diverse set of measures in place to prevent and address unacceptable conduct. Interior has also launched an internal Workplace Culture Transformation Advisory Council to include leadership from across the Department to keep a focus on Interior's commitment to the workplace environment. The Council will look at common issues raised in the Federal Employee Viewpoint Survey, ways to improve employee engagement, and building career paths which cross bureau silos; all with the goal to transform Interior's workplace culture for our employees, so they can realize their individual potential and be their most productive selves for the American people.

Another management priority is creating a strong ethical culture to ensure Interior employees honor the public's trust to manage taxpayer funds responsibly and avoid conflicts of interest. The expectations for appropriate employee conduct have been made clear. The Department has set goals and expectations for qualified ethics officials within Interior sufficient to ensure our operations are conducted ethically and ensure all employees have access to prompt, accurate ethics advice.

STRATEGIC OBJECTIVE PERFORMANCE INFORMATION

The FY 2018-2022 Department of the Interior 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 2018-2022 is the foundational structure for the description of program performance measurement and planning for the FY 2020 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 performance plans for FY 2020 are fully consistent with the goals, outcomes, and measures described in the FY 2018-2022 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 2018–2022 (DOI Strategic Plan), BOEM is responsible for tracking and reporting four GPRA measures under Mission Area Two – *Generating Revenue and Utilizing Our Natural Resources*. This mission area focuses on providing access and managing energy, non-energy minerals, and other resources on public lands and the OCS. It highlights the Department's commitment to responsibly developing energy and ensuring America's economic security. BOEM's measures for this mission area are tracked and reported within two goal areas: *Goal One: Ensure energy and economic security for America;* and *Goal Two: Ensure access to mineral resources.*

Implementation Strategy and Performance Metrics. The following narrative provides an overview of the two goals BOEM supports within the DOI Strategic Plan and the associated performance indicators. Results for the performance indicators are included within the Performance Overview Table located at the back of the Conventional Energy and Renewable Energy chapters, based on which budget activity they support. Additional information on the performance indicators is provided within the DOI Annual Performance Plan and Report.

➤ **Goal 1: Ensure energy and economic security for America**

Goal One highlights the Department’s role as a steward and manager of America’s natural resources. BOEM is responsible for tracking and reporting three performance indicators under *Strategy One – Promote safe and robust oil, gas, coal, and renewable energy development*. The Strategic Plan references this Strategy by stating, “Oil, gas, coal and renewable energy form the cornerstones of our Nation’s energy base, and the DOI will continue to expand access to both offshore and onshore conventional and renewable U.S. energy resources while ensuring safety and reliability through efficient permitting, appropriate standards, assessment and oversight. As demand for energy resources grows, agencies within the DOI, such as Bureau of Indian Affairs, Bureau of Land Management, BOEM, BSEE, Office of Surface Mining Reclamation and Enforcement, and U.S. Geological Survey conduct work that is increasingly critical to understand the exploration, development, quality, supply, and use of our energy resources.” This Strategy echoes BOEM’s mission as do the measures associated with it.

Table 3: Performance: Generating Revenue and Utilizing Our Natural Resources

Key GPRA Performance Indicators	2018 Actual	2019 Target	2020 Target
Number of megawatts of approved capacity authorized on public land and the Outer Continental Shelf (OCS) for renewable energy development while ensuring compliant environmental review. (Annual)	0	800 MW	110 MW
Percentage of Exploration and Development Plan reviews completed within statutory timelines	100%	100%	100%
Percent of offshore lease sale processes completed pursuant to the Secretary’s approved National Outer Continental Shelf (OCS) Oil and Gas Leasing Program (National OCS Program)	100%	100%	100%

➤ **Goal #2: Ensure access to mineral resources**

Goal Two notes the importance of non-energy mineral resources. Within this goal, BOEM’s activities support *Strategy One – Manage non-energy mineral development*. The DOI Strategic Plan states, “DOI promotes energy security, environmental protection, and economic

development through responsible, science-informed management of mineral resources... BOEM’s Marine Minerals Program provides sand and gravel resources to protect and improve coastal infrastructure and the environment locally, regionally and nationally.” BOEM contributes to this Strategy by tracking 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

Key GPRA Performance Indicators	2018 Actual	2019 Target	2020 Target
Number of sand and gravel requests processed for coastal restoration projects	6	7	8

ACTIVITY-BASED COSTING

BOEM strives to use activity-based costing (ABC) data as a means to provide its managers with data on the actual costs of activities performed across the Bureau. BOEM’s ABC data are continually evaluated and updated to provide management with greater insight into costs, activities and performance measurement targets. The ABC data is available for managers in decision-making in areas such as funds management, human capital and workforce planning, cost recovery, and workload allocation.

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FISCAL YEAR 2020 BUDGET
 Bureau of Ocean Energy Management
Bureau Budget Tables

Table 5: Budget at a Glance

Bureau of Ocean Energy Management

(Dollars in Thousands)

Bureau of Ocean Energy Management	2018 Actual	2019 CR Baseline	2020 Internal Transfers	2020 Fixed Costs	2020 Program Changes	2020 Request
Net Current Appropriation	119,346	121,184	-5,691	+1,015	+20,421	136,929
Offsetting Collections	51,654	49,816	+5,691		+990	56,497
Total Budget Authority	171,000	171,000	-	+1,015	+21,411	193,426
Offsetting Collections						
Rental Receipts	50,194	47,455	+5,691	-	+1,303	54,449
Cost Recovery Fees	1,460	2,361	-	-	-313	2,048
Total Offsetting Collections	51,654	49,816	+5,691	-	+990	56,497
Ocean Energy Management						
Conventional Energy	58,123	58,123	-2,728	+494	+8,234	64,123
<i>Transfer to Marine Minerals Activity</i>			<i>-2,728</i>			
<i>Change in Appropriated Dollars</i>			<i>-2,600</i>			
<i>Updated Rental Receipt Estimates</i>			<i>+2,600</i>			
<i>National OCS Program</i>					<i>+8,234</i>	
Renewable Energy	21,676	21,676	-	+105	-456	21,325
<i>Change in Appropriated Dollars</i>			<i>-900</i>			
<i>Updated Rental Receipt Estimates</i>			<i>+900</i>			
<i>Renewable Science and Technology Research</i>					<i>-956</i>	
<i>Renewable Energy Leasing</i>					<i>+500</i>	
Environmental Programs	73,834	73,834	-2,059	+250	+13,085	85,110
<i>Transfer to Marine Minerals Activity</i>			<i>-2,059</i>			
<i>Change in Appropriated Dollars</i>			<i>-3,491</i>			
<i>Updated Rental Receipt Estimates</i>			<i>+3,491</i>			
<i>National OCS Program</i>					<i>+15,957</i>	
<i>Environmental Studies</i>					<i>-2,872</i>	
Marine Minerals (NEW)			+4,787		+942	5,729
<i>Transfer from Conventional Energy</i>			<i>+2,728</i>			
<i>Transfer from Environmental Programs</i>			<i>+2,059</i>			
<i>North Slope Sand/Gravel/Critical Minerals</i>					<i>+942</i>	
Executive Direction	17,367	17,367	-	+166	-394	17,139
<i>Change in Appropriated Dollars</i>			<i>+1,300</i>			
<i>Updated Rental Receipt Estimates</i>			<i>-1,300</i>			
<i>Staffing</i>					<i>-394</i>	
Total Budget Authority	171,000	171,000	-	+1,015	+21,411	193,426
Full Time Equivalents (FTE)	562	562	+5		+42	609

Table 6: Summary of Requirements

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

	2018 Actual		2019 CR Baseline		2020 Fixed Costs	Internal Transfers		Total Program Changes		2020 Request		2020 Request vs. 2019 CR	
	FTE	Amount	FTE	Amount		FTE	Amount	FTE	Amount	FTE	Amount	FTE	Amount
Ocean Energy Management													
Conventional Energy	277	58,123	277	58,123	+494	-8	-2,728	+35	+8,234	304	64,123	+27	+6,000
Direct Appropriation		51,306		48,611	+494	-8	-4,788	+35	+7,244		51,561		+2,950
Rental Receipts		5,357		7,151			+2,060	-	+1,303		10,514		+3,363
Cost Recoveries		1,460		2,361				-	-313		2,048		-313
Renewable Energy	58	21,676	58	21,676	+105	-	-	-	-456	58	21,325	-	-351
Direct Appropriation		14,601		17,135	+105		-900	-	-956		15,384		-1,751
Offsetting Collections		7,075		4,541			+900	-	+500		5,941		+1,400
Environmental Programs	142	73,834	142	73,834	+250	-4	-2,059	+8	+13,085	146	85,110	+4	+11,276
Direct Appropriation		38,525		42,316	+250	-4	-4,240	+8	+13,585		51,911		+9,595
Offsetting Collections		35,309		31,518			+2,181	-	-500		33,199		+1,681
Marine Minerals					-	+17	+4,787	+2	+942	19	5,729	+19	+5,729
Direct Appropriation						+17	+2,937	+2	+942		3,879		+3,879
Offsetting Collections							+1,850	-	-		1,850		+1,850
Executive Direction	85	17,367	85	17,367	+166	-	-	-3	-394	82	17,139	-3	-228
Direct Appropriation		14,914		13,122	+166		+1,300	-3	-394		14,194		+1,072
Offsetting Collections		2,453		4,245			-1,300	-	-		2,945		-1,300
Total, OEM	562	171,000	562	171,000	+1,015	+5	-	+42	+21,411	609	193,426	+47	+22,426
Offsetting Collections		51,654		49,816			+5,691		+990		56,497		+6,681
Rental Receipts		50,194		47,455			+5,691	-	+1,303		54,449		+6,994
Cost Recovery Fees		1,460		2,361			-	-	-313		2,048		-313
Net Appropriation, BOEM	562	119,346	562	121,184	+1,015	+5	-5,691	+42	+20,421	609	136,929	+47	+15,745

Table 7: 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	2019 Change	2020 Change
Change in Number of Paid Days This column reflects changes in pay associated with the change in the number of paid days (+1) between fiscal years 2019 and 2020.	+299	+320
Pay Raise The 2020 request reflects a pay freeze for civilian employees.	+395	+0
Employer Share of Federal Employee Retirement System The change reflects the directed 2.3% increase in the employer contribution to the Federal Employee Retirement System.	+0	+172
Departmental Working Capital Fund 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.	-13	+134
Worker's Compensation Payments 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.	+7	-3
Unemployment Compensation Payments 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.	+0	+9
Rental Payments 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.	-264	+383
Internal Realignments and Non-Policy/Program Changes		FY 2020
Conventional Energy - direct appropriations/offsetting collections This reflects a technical adjustment to to reflect a change in the composition of BOEM's budget, due mostly to a shift in the portion of the budget funded through direct appropriations versus offsetting collections.	-2,600	+2,600
Renewable Energy - direct appropriations/offsetting collections This reflects a technical adjustment to to reflect a change in the composition of BOEM's budget, due mostly to a shift in the portion of the budget funded through direct appropriations versus offsetting collections.	-900	+900
Environmental Programs - direct appropriations/offsetting collections This reflects a technical adjustment to to reflect a change in the composition of BOEM's budget, due mostly to a shift in the portion of the budget funded through direct appropriations versus offsetting collections.	+3,491	-3,491
Marine Minerals - direct appropriations/offsetting collections A total of \$4.8 million and 17 FTE will be transferred from the Conventional Energy and Environmental Programs budget activities to the new Marine Minerals budget activity.	+4,787	-4,787
Executive Direction - direct appropriations/offsetting collections This reflects a technical adjustment to to reflect a change in the composition of BOEM's budget, due mostly to a shift in the portion of the budget funded through direct appropriations versus offsetting collections.	-1,300	+1,300
Total, Fixed Costs and Related Changes in 2020		+1,015

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FISCAL YEAR 2020 BUDGET
 Bureau of Ocean Energy Management
Conventional Energy

Table 8: Conventional Energy Budget Summary

		2019 CR Baseline	Internal Transfers	Fixed Costs	Program Changes	2020 Request	vs. 2019 CR
Conventional Energy	(\$000)	58,123	-2,728	+494	+8,234	64,123	+6,000
	<i>FTE</i>	<i>277</i>	<i>-8</i>		<i>+35</i>	<i>304</i>	<i>+27</i>

BOEM manages the development of offshore energy and mineral resources in an environmentally and economically responsible manner. For conventional energy, this begins with the responsible preparation 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 Outer Continental Shelf (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 from OCS leasing and development. 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 2020 budget for Conventional Energy will support high priority offshore oil and gas development activities, including leasing, plan administration, economic analyses, and resource evaluation.

The 2020 budget will support:

- **National OCS Oil and Gas Leasing Program:** This long-range National OCS Program for offshore oil and gas leasing carefully balances the potential for accessing oil and gas resources, with the potential for adverse impacts from such activity. Historically, this was referred to as the “Five Year Program” however, the increasing public awareness and appetite for leasing related information led BOEM to rename it the “National OCS Oil and Gas Leasing Program” (National OCS Program) to better reflect its purpose.
- **Lease Administration:** The OCS is a significant source of oil and gas for the Nation’s energy supply. BOEM has the responsibility for administering more than 13.8 million OCS acres currently leased. These acres account for about 16 percent of all domestic oil production and 3 percent of domestic natural gas production.
- **Plan Review:** When an exploration or development plan is received by BOEM, it conducts a thorough review of the plan. Exploration plans describe all exploration activities planned by

an operator as well as the timing of these activities. Development plans include the location of each proposed well and an analysis of both offshore and onshore impacts that may occur.

- **Geological and Geophysical Surveys:** These surveys are conducted to: 1) obtain data for oil and gas exploration and production; 2) aid in siting offshore structures (both conventional and renewable energy); and 3) locate marine mineral resources. The data obtained is used to ensure the proper use and conservation of the Outer Continental Shelf energy resources and the receipt of fair market value for the leasing of public lands.
- **Resource Evaluation:** This program supports all BOEM program areas, both energy and non-energy, through critical technical and economic analysis. The primary program objective is to identify areas of the OCS that are most promising for oil and gas development.
- **Fair Market Value:** As mandated by the OCS Lands Act, assuring receipt of fair market value is under the auspices of BOEM. Once a lease sale is completed and the high bidders for each tract are publicly announced, BOEM follows specific bid adequacy procedures to ensure that the government receives its fair market value utilizing a two-phase evaluation process. A determination of adequacy is made within 90 days after the bid.
- **Mapping:** Accurate OCS boundary lines are a foundational requirement for all BOEM OCS leasing activities. Through its mapping and boundary functions, BOEM is responsible for producing and maintaining the official offshore cadastre for the OCS of the United States.
- **Marine Cadastre:** A joint project with BOEM and the National Oceanic and Atmospheric Administration (NOAA), MarineCadastre.gov provides authoritative and regularly updated ocean information, including offshore boundaries, infrastructure, human use, energy potential, and other data sets. As a result, other Federal regulatory agencies, regional marine planners, State intergovernmental task forces, and other government organizations involved in ocean issues use it regularly.

SUMMARY OF 2020 PROGRAM CHANGES

Program Changes from 2019 CR Baseline	(\$000)	FTE
National OCS Oil and Gas Leasing Program	+8,234	+35
Total Program Changes	+8,234	+35

The National OCS Oil and Gas Leasing Program (+\$8,234,000; +35 FTE). An additional \$8.2 million in funding and 35 FTE support a centerpiece of BOEM's mission critical activities: the National Outer Continental Shelf Oil and Gas Leasing Program (National OCS Program). The National OCS Program laid out in the Draft Proposed Program (DPP) includes the largest number of proposed lease sales in the history of the OCS leasing program, and makes available for future exploration and development consideration more than 98 percent of undiscovered, technically recoverable oil and gas resources. The additional resources requested in 2020 will support the necessary and extensive outreach with stakeholders that will be required to implement such a Program. These resources will also support: economic and environmental modeling, determination of fair market value for sale bids as well as enhanced fair market value tools, coordination and implementation of offshore leasing strategy activities, and lease sale and data management. At the time this Request was developed, the Proposed Program had not been published; this Request is not intended to presume the Department's decision on the 2019-2024 National OCS Program.

Internal Transfers (-\$2,728,000; -8 FTE). To support Bureau and Administration priorities, BOEM will realign base resources in FY 2020 through an internal transfer. Funds and FTE associated with the Marine Minerals Program will be transferred to the proposed Marine Minerals budget activity.

PROGRAM OVERVIEW

As the Nation's OCS energy and mineral resource manager, BOEM administers a comprehensive, national 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. This includes: 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 the use of its OCS resources; carefully reviewing requests for approval of industry plans to explore, develop, and produce leased

resources; ensuring lease holders have sufficient resources to fulfill lease obligations, including decommissioning facilities at the end of their productive life; and ensuring that these activities are conducted in compliance with relevant environmental laws and regulations.

All of these activities support the Administration's energy 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.

As of February 1, 2019, BOEM manages 2,623 active oil and gas leases on more than 13.8



The Na Kika platform in deepwater Gulf of Mexico

million OCS acres. Offshore Federal production in FY 2018 reached approximately 619 million barrels of oil and 0.97 trillion cubic feet of gas, almost all of which was produced in the Gulf of Mexico. Revenues generated from OCS conventional energy leasing and production activities are a significant source of revenue for the Federal government. In FY 2018, conventional energy generated \$106 million in rent, \$229 million in bonuses, and \$4.3 billion in royalties from production.

LEASING

BOEM's leasing activities include the development of the National OCS Program, the preparation and holding of the lease sales scheduled in the National OCS Program, and the administration of leases.

National OCS Oil and Gas Leasing Program

Under the OCS 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 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 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 a five-year period. Ultimately, the National OCS Program is designed

to achieve the careful balance of the potentials for discovery of oil and gas, environmental effects, and adverse impact on the coastal zone required under Section 18(a)(3) of the OCS Lands Act. The effort ensures that management of the OCS is “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 OCS and the marine, coastal, and human environments” (43 U.S.C. 1344(a)(1)). 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 help inform the development of 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.

BOEM published the 2019-2024 National OCS Oil and Gas Leasing DPP on January 4, 2018. The DPP is the first in a series of three documents issued by the Department consistent with the OCS Lands Act, before the Department takes final action to approve a National OCS Program. The National OCS Program, laid out in the DPP includes the largest number of proposed lease sales in the history of the OCS leasing program, and makes available for future exploration and development consideration more than 98 percent of undiscovered, technically recoverable oil and gas resources. The breadth of the DPP therefore allows for maximum flexibility, and areas then being considered for leasing may be narrowed at later stages of the National OCS Program development process, after further technical and environmental analysis and critical input and coordination with key stakeholders. Public comments received during the review of the DPP are considered as part of the next stage of the National OCS Program development process: the Proposed Program and associated draft programmatic environmental impact statement, both of which BOEM will release in FY 2019. The final stage of developing the new National OCS Program involves analyzing the program areas identified within the Proposed Program and developing the Proposed Final Program and the final programmatic environmental impact statement. Public comments solicited on the Proposed Program, during a 90-day comment period, are considered in the development of the Proposed Final Program. At least 60 days following publication and submission to Congress and the President of the Proposed Final Program, the Department may approve the National OCS Program, at which point, BOEM may begin to implement it.

Oil and Gas Lease Sales

BOEM held two lease sales in fiscal year 2018: region-wide Gulf of Mexico Sales 250 and 251. These were the second and third sales, respectively, in the 2017-2022 Program. These lease sales resulted in 280 new leases covering over 1.5 million acres and total bonus payments of over \$290 million. Two lease sales are scheduled for fiscal year 2019: region-wide Gulf of Mexico Sale 252 (scheduled for March 20, 2019) and region-wide Gulf of Mexico Sale 253 (scheduled

for August 21, 2019). The following table includes information on lease sales in the 2017-2022 OCS Oil and Gas Leasing Program. Information on sales in previous Programs can be found on BOEM’s website (<https://www.boem.gov/Past-Five-Year-Programs/>).

Table 9: Lease Sales Scheduled in the 2017-2022 National OCS Program

Sale #	Date of Sale	Area	Number of Leases Issued	Number of Acres Leased	Total Bonus for Leased Tracts
249 ^a	8/16/2017	Gulf of Mexico	81	456,256	\$110,878,165
250	3/21/2018	Gulf of Mexico	139	764,924	\$115,329,139
251	8/15/2018	Gulf of Mexico	141	784,009	\$175,489,464
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 ^b	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

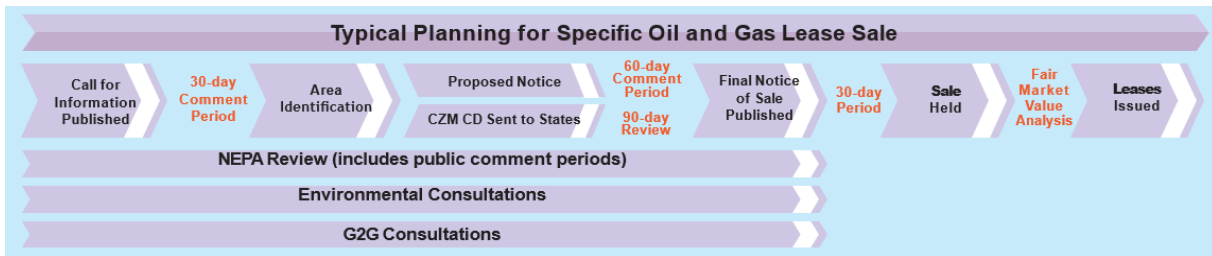
a. Gulf of Mexico Sale 249 was the first lease sale scheduled in the 2017-2022 Program.

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

Lease Sale Planning Process

Each lease sale in an approved OCS Oil and Gas Leasing Program is subject to an established pre-lease evaluation and decision-making process during which interested and affected parties have opportunities to comment and provide input. Once included on the approved National OCS Program’s lease sale schedule, each individual proposed lease sale undergoes evaluations that consider reasonable alternatives, modifications, and/or restrictions to the area under consideration. The final decision on the sale’s size, timing, and location, as well as decisions on environmental mitigation measures and fiscal terms, are reflected in the Final Notice of Sale.

The pre-leasing process has historically taken approximately two years to complete, depending on the nature of the lease sale and the complexities encountered during the planning stages. Departmental requirements call for environmental impact statements to be completed in 12 months, which reduces the overall timeframe of completion of the pre-leasing process to approximately 1.5 years. The following figure and narrative provide an overview of the major steps and decision points in planning for a typical oil and gas lease sale.

Figure 4: Typical Planning for a Specific Oil and Gas Lease Sale

1. **Call for Information and Nominations:** BOEM will request comments from the public on areas of special concern and ask them to provide information on environmental issues they believe should be analyzed in the area being considered for leasing. In addition, potential bidders are invited to nominate areas of interest within those areas identified for leasing consideration.
2. **Area Identification:** Based on information received in response to the Call for Information and Nominations, BOEM identifies an area for further leasing consideration and is required to publicly announce its Area Identification decision in the *Federal Register*.
3. **Notice of Intent:** BOEM typically issues a notice of intent to alert the public that an environmental review pursuant to 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.
4. **NEPA Review:** BOEM will prepare a Determination of NEPA Adequacy based on existing NEPA documents or will prepare a new NEPA document, either an environmental impact statement or environmental assessment, to evaluate the potential environmental impacts of the Proposed Action, alternatives to the Proposed Action, and the potential effectiveness of mitigation measures.
5. **Public Involvement and Comment:** For environmental impact statements or environmental assessments, BOEM will request public comment on issues that should be addressed in the NEPA document. BOEM typically chooses to solicit public comments on environmental assessments for lease sales, for 30 days. For an environmental impact statement, the public is invited to participate in the NEPA scoping process and the draft document is available for public comment for 45 days.
6. **Government-to-Government Consultations:** BOEM will consult with federally recognized Tribes and, in Alaska, with Alaska Native Claims Settlement Act

Corporations. These consultations are conducted throughout the stages of the OCS oil and gas leasing process or anytime upon request.

7. **Environmental Consultations:** BOEM will conduct required consultations with Federal agencies, such as the U.S. Fish and Wildlife Service and National Marine Fisheries Service under the Endangered Species Act and the Marine Mammal Protection Act, the Magnuson-Stevens Fishery Conservation and Management Act, and State or Tribal historic preservation officers for the National Historic Preservation Act.
8. **Final NEPA document:** BOEM will address substantive public comments and as appropriate update the analysis 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. **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.
11. **Consistency Determination:** As required by the Coastal Zone Management Act, BOEM will provide Coastal States, with an approved Coastal Zone Management plan, 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.
12. **Record of Decision (for an environmental impact statement) 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 if a Determination of NEPA Adequacy is not issued. The Record of Decision, or 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* for 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 the OCS Lands Act, 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 online the day of the sale.

15. **Fair Market Value Analysis:** Ensuring the receipt of fair market value for OCS resources is mandated by the OCS Lands Act and is one of BOEM's critical responsibilities. Under its bid adequacy procedures for oil and gas leases, BOEM reviews all high bids received and ensures that a bid on a specific OCS block meets fair market value criteria prior to the issuance of an individual lease.

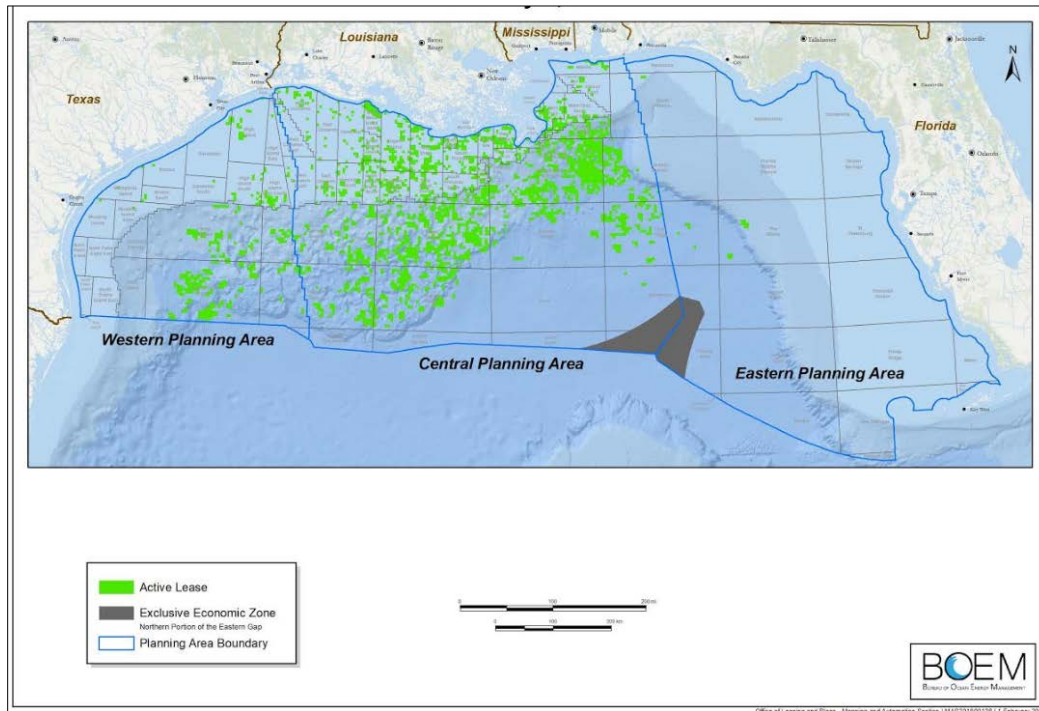
16. **Lease Issuance:** BOEM will issue a lease to the highest qualified bidder following completion of BOEM's fair market value analysis and required antitrust review by the Department of Justice and the Federal Trade Commission.

Lease Administration

The lease administration process encompasses a set of discrete business processes, which manage a lease from issuance to relinquishment, termination, cancellation, 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.

BOEM's New Orleans, Louisiana Office: As of February 2019, BOEM oversees 29,100 blocks in the Gulf of Mexico. Of these, 2,535 blocks are leased including 328 in the Western Planning Area, 2,189 in the Central Planning Area, and 37 in the Eastern Planning Area. The following figure provides a snapshot of the blocks and active leases within the Gulf of Mexico.

Figure 5: Gulf of Mexico Blocks and Active Leases by Planning Area



BOEM's Anchorage, Alaska Office: As of February 2019, the Alaska OCS has 54 active oil and gas leases encompassing approximately 275,474 acres in the Beaufort Sea (40 leases) and Cook Inlet (14 leases). The location of the Alaska OCS leases are shown in the following maps.

Figure 6: Cook Inlet Sea Active Leases

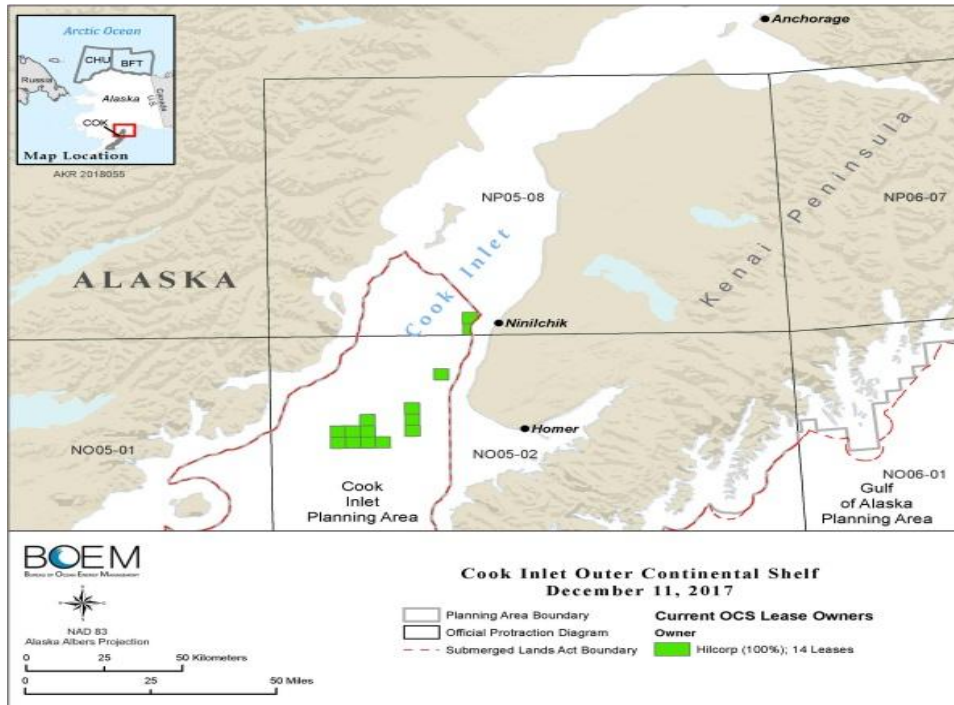
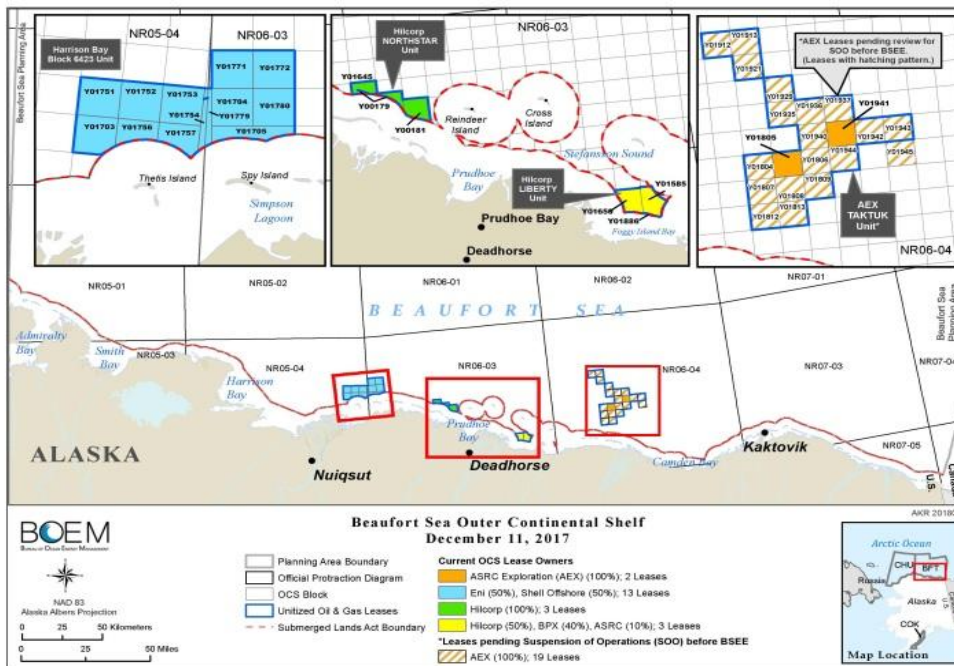


Figure 7: Beaufort Sea Active Leases

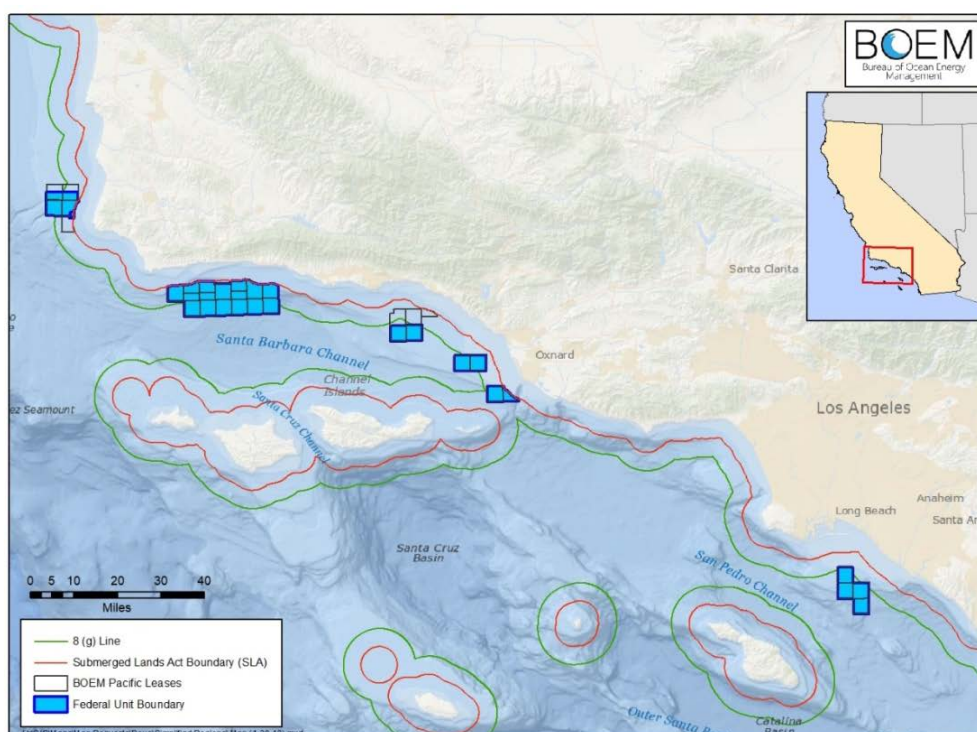


The Beaufort Sea leases include the following: Three leases at the Liberty field; 13 leases in the Harrison Bay Block 6423 Unit (also known as Nikaitchuq North Prospect) north of the

Nikaitchuq development in eastern Harrison Bay; three leases in the Northstar Unit (a joint State/Federal unit that is currently in production); 20 leases in the eastern Beaufort Sea in the Taktuk Unit, and one lease immediately adjacent to the Taktuk Unit. The region has high resource potential, but activities on these U.S. Arctic OCS leases present challenges due to the Arctic conditions, remote location, and limited access to infrastructure.

BOEM's Camarillo, California Office: As of February 2019, BOEM continues to oversee activity on 34 existing leases from previous lease sales. The following map shows the location of the leases off the coast of Southern California.

Figure 8: Camarillo Office Active Leases



Official Boundaries

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 regional offices, BOEM is responsible for producing and maintaining the official offshore cadastre for the OCS 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 tools, block and boundary data that was previously stored only in Technical Information Management System has been transferred to multiple regional geodatabases, where it can be more efficiently updated (e.g., when new boundaries are established) and maintained in the new Boundary Delineation System. Using GIS for these processes has dramatically reduced the time and effort that is required when using the historic Technical Information Management System Block and Boundary mapping tools. These improvements in methodology are allowing BOEM to map previously unmapped areas under the jurisdiction of the Camarillo Office, including the principal islands of Hawaii, which were completed in 2017 using the new methods.

Geospatial Services Coordination

A dedicated Geospatial Information Officer coordinates with all of BOEM's Program Offices and regional offices and relevant Bureau of Safety and Environmental Enforcement (BSEE) Information Technology staff, using the framework of a Geospatial Services Strategic Plan. This work includes ensuring the adequacy of supporting technologies and infrastructures; developing and implementing appropriate mapping/data/metadata standards, and maintaining compliance with applicable Federal directives and requirements, including the Geospatial Data Act of 2018.

PLANS

For existing leases, BOEM conducts in-depth reviews of exploration plans, development and production plans, and development operations coordination documents for potential approval within required timeframes 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, efficient, and predictable. BOEM designates specific plan coordinators to ensure consistency throughout the review process.

In conducting plan reviews, BOEM examines the exploration, development, and production activities to ensure the following: they conform to regulatory performance standards; comply with Federal laws; are safe; conform to sound conservation practices; 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 uses of the OCS.

BOEM's regional offices coordinate and manage the plan review and approval process, including any required coordination with other Federal stakeholders, such as BSEE or the National Oceanic and Atmospheric Administration (NOAA). BOEM also works with and solicits feedback from States that have approved Coastal Zone Management Programs, the Governor of each affected State, and other appropriate stakeholders. BOEM considers the recommendations received and strives to achieve a balance between the national interest and well-being of the citizens of the affected State.

The following figures illustrate typical processes for exploration and development of OCS oil and gas resources.

Figure 9: Processes for Oil and Gas Exploration Activities

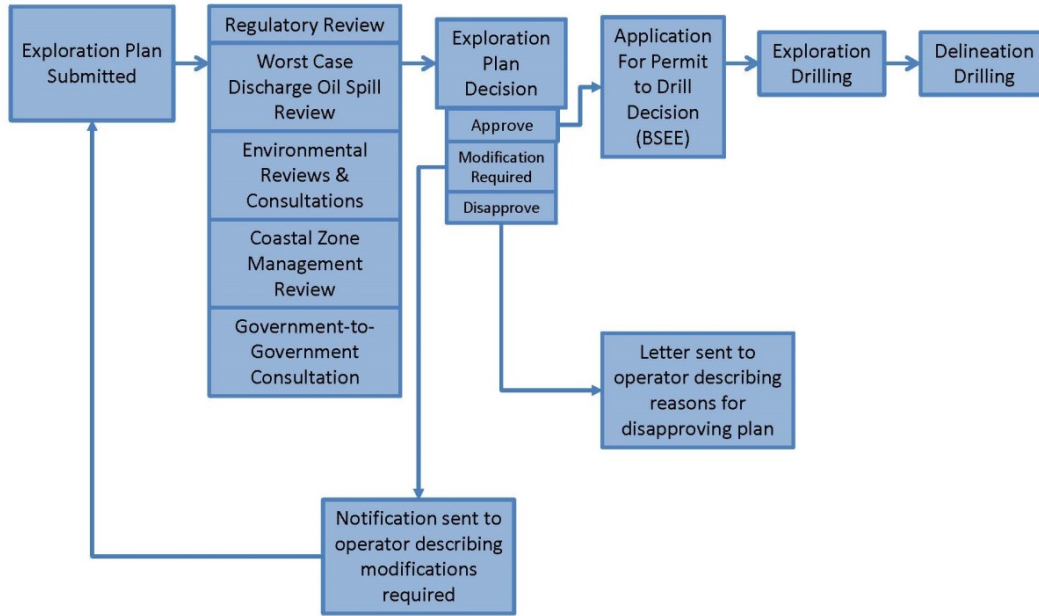
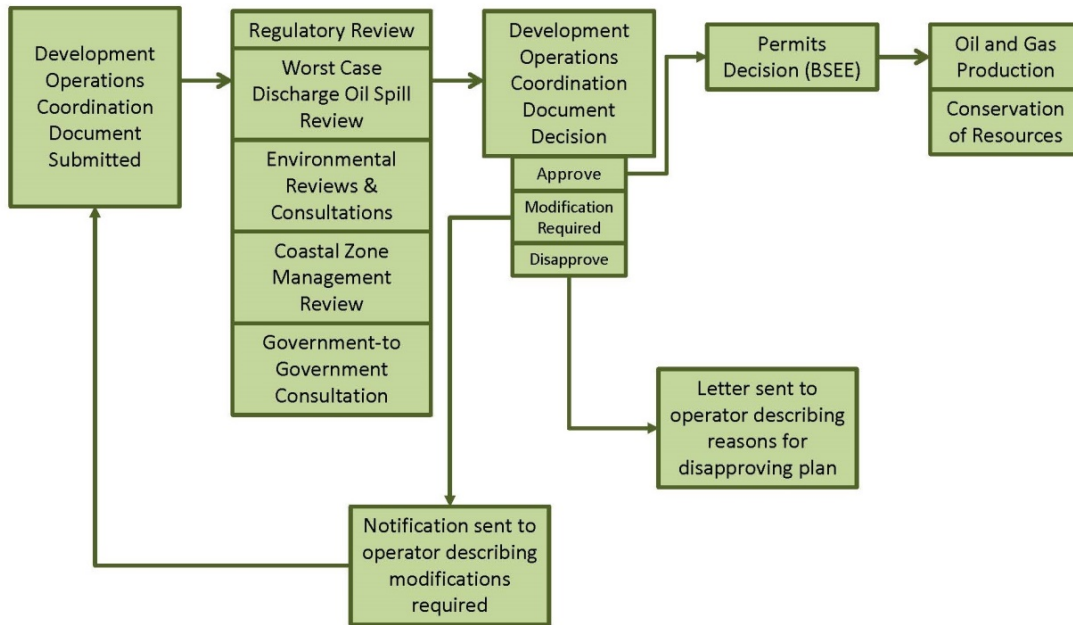


Figure 10: Processes for Oil and Gas Development Activities



Note: This figure reflects the process for development plans in the New Orleans Office. The Anchorage Office and the Camarillo Office follow a similar process for development plans and receive development and production plans rather than development operation coordination documents.

New Orleans Office: The number of plans reviewed in 2018 remained at approximately the same level as the previous year, which was a modest increase over plan activity seen in 2016. There has been an increase in plans being submitted for deepwater activities that include multiple lease blocks, which is a change over previous years where plans routinely included only one or two lease blocks. The price of oil has been increasing and BOEM has seen activity start to rebound since 2016, and although activity continues to remain lower than levels seen in the past, the long-term outlook for projects remains favorable. The following table shows all plan submittals – initial, supplemental, revised, modifications, amendments, and post approval – received from 2010 through 2018, as well as plans estimated to be received in calendar years 2019 and 2020.

Table 10: Plan Review Activities in the Gulf of Mexico 2010-2020

Calendar Year	# EPs	# DOCDs
2010	408	431
2011*	907	837
2012	170	327
2013	504	616
2014	509	601
2015	542	473
2016	336	248
2017	305	423
2018	293	448
2019**	350	500
2020**	350	500

* 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 2019 and 2020 are estimated.

Additional active acreage is created by granting a right-of-use and easement. BOEM reviews and processes all right-of-use and easement applications. Rights-of-use and easement 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, but which facilitate the development of leased resources. Prior to granting a right-of-use and easement request, BOEM must review and approve a plan outlining the proposed activities to ensure these activities conform to sound conservation practices and are carried out in a safe and environmentally sound manner as to prevent harm or damage to any natural resource or human, marine, or coastal environment. In FY 2018, BOEM completed 12 right-of-use and easement requests and received 12 requests. BOEM anticipates approximately 20 requests in both FY 2019 and FY 2020.

Anchorage Office: On October 17, 2018, BOEM approved the development and production plan for the Liberty Prospect, located in OCS waters northeast of Prudhoe Bay. The activities described in the approved development production plan, if executed, will result in the first solely Federal OCS oil and gas complex development in the U.S. Arctic OCS and are expected to help lay the foundation for all future OCS oil and gas activity in the Beaufort Sea. Responsible and safe development of the Liberty Prospect will require continued engagement by BOEM, BSEE, and other Federal agencies.

On August 14, 2017, BOEM approved the exploration plan for the Harrison Bay Block 6423 Unit (i.e., Nikaitchuq North Prospect). Drilling for the first well under the exploration plan commenced on December 25, 2017. On April 13, 2018, BOEM approved a revision to the Beaufort Sea exploration plan, which augmented the multi-year winter-only OCS drilling schedule with additional drilling and related activities that were allowed to take place in the summer of 2018.

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.

Camarillo Office: Proposed activities on active leases periodically require update or revision to approved development and production plans. No plans were submitted to BOEM in FY 2018. BOEM anticipates review of two supplemental development and production plans in FY 2019 and one in FY 2020.

Geological & Geophysical Reviews

BOEM is also responsible by law for reviewing all oil and gas exploration and development plans for potential hazards that may be encountered in conducting the proposed drilling activity. BOEM geoscientists identify and evaluate the potential risks of surface and subsurface geologic hazards (e.g., shallow faults, shallow gas pockets, shallow water flows, abnormal pressure zones, lost circulation zones, seeps, ice gouges, strudel scour, etc.) and man-made obstructions (e.g., pipelines, cables, debris, ship wrecks, etc.). 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. To analyze these applications/requests, BOEM uses geological and geophysical (G&G) data (e.g., 2D and 3D seismic data, and high-resolution side scan sonar data) to understand the geologic and geophysical environment in the area. As part of its review, BOEM evaluates and verifies operators' submissions and interpretations, such as their identification and assessment of potential geohazards and archaeological resources in the area affected by exploratory and development drilling, installation of structures, laying pipelines,

and other ancillary activities related to the plans. The G&G surveys also inform estimates regarding the composition and volume of sand and gravel resources. In addition, geoscientists evaluate the potential risk of encountering hydrogen sulfide. The G&G reviews provide a detailed evaluation of operators' geohazards analyses, shallow hazards assessment, archaeological resources, and are used to 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' Applications for Permit to Drill 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, geoscientists conduct a broaching analysis. A typical broaching analysis takes one to two weeks, depending on the complexity of the geology, and involves the evaluation of subsurface stratigraphic and structural conditions. The purpose of the analysis is 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 (a casing shoe is a short steel sleeve attached to the bottom of a string of casing to help guide and protect the casing when it is installed in a well).

New Orleans Office: In FY 2018, BOEM conducted approximately 121 geological and 132 geophysical reviews in support of exploration plan and development operations coordination document reviews; 14 hi-resolution survey reviews; and 78 reviews of Applications for Permit to Drill and 72 pipeline reviews for BSEE. Moving forward, increasingly complex analyses will need to be conducted to identify potential geohazards, because of the higher resolution data that is being collected for complex projects, especially those occurring in deep-water. As a result, BOEM anticipates the number of reviews required to increase by 10 percent to 20 percent in FY 2020. In FY 2018, broaching analyses were completed on seven proposed wells in support of BSEE. BOEM anticipates zero to five broaching analyses in FY 2019 and FY 2020.

Anchorage Office: In an on-going effort, BOEM provides BSEE, upon request, with subsurface expertise and assistance with regulatory review of applications for drilling permits. In FY 2017 and FY 2018, BOEM geoscientists and petroleum engineers reviewed G&G information and provided information to BSEE pertaining to unitization of leases in the Beaufort Sea. In FY 2018, BOEM geoscientists provided on-call reviews during actual drilling operations when requested by the BSEE Anchorage Office. BOEM reviewed G&G information, including shallow hazards information, for the Liberty development and production plan. The analysis done by BOEM for the Liberty development and production plan was 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. In FY 2020, BOEM geoscientists and petroleum engineers will review G&G information and exploration and development scenarios in support of environmental

impact statements required for upcoming lease sales. Staff will also re-evaluate the geologic and production scenarios of offshore plays to estimate their potential volumes of Technically and Economically Recoverable Oil and Gas Resources in preparation for the upcoming 2021 National Resource Assessment.

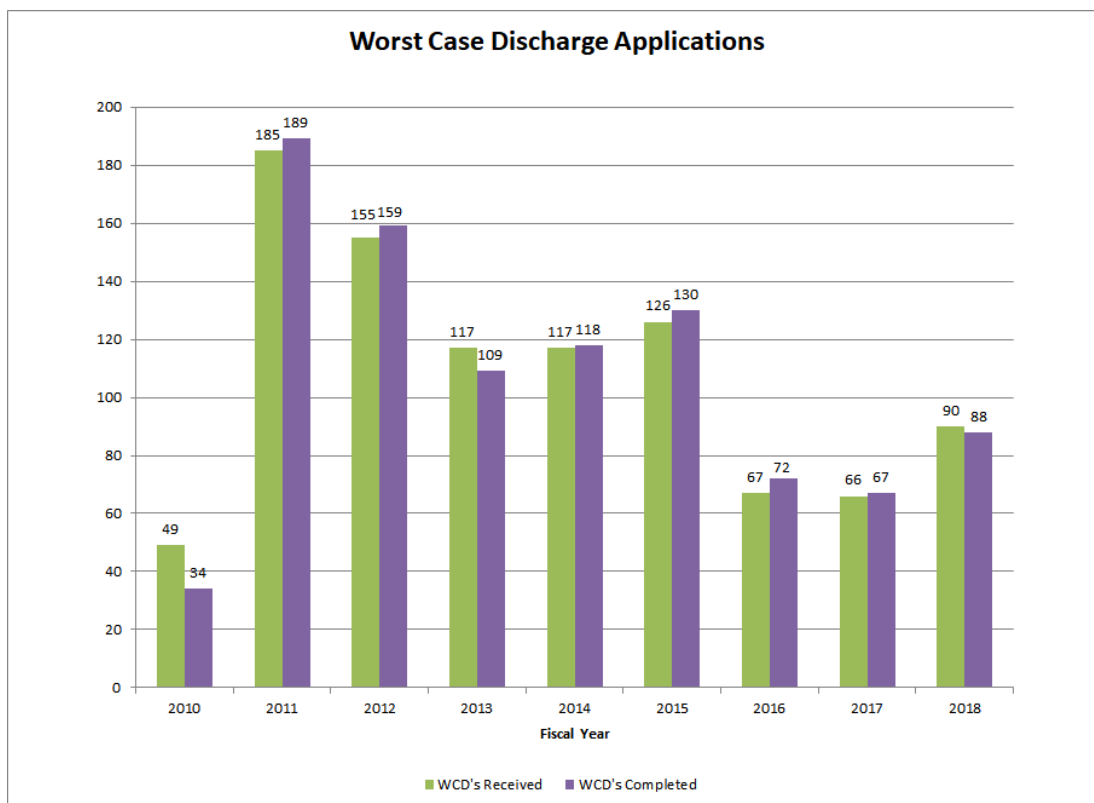
Worst Case Discharge

Operators and lessees are required 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 regional office 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 decisions.

New Orleans Office: BOEM made determinations on 88 worst-case discharge verifications in FY 2018. During FY 2019 and FY 2020, BOEM anticipates the number of worst-case discharge analyses to increase to 100 and 110 respectively, although, the workload will depend on the level of drilling activity in deep-water. The following figure depicts the number of worst-case discharge determination requests received and reviewed for completeness, and the number of analyses completed in each year since the program's inception in 2010.

Figure 11: Worst Case Discharge Analyses Completed in the New Orleans Office



BOEM continues to develop trend parameters for deep-water 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. During the past twelve months, BOEM worked with Louisiana State University and the University of Oklahoma, to research worst-case discharge analysis options and provide recommendations.

BOEM integrated recommendations from a FY 2017 Louisiana State University study to improve the accuracy of calculating an uncontrolled blowout volume as part of its worst-case discharge analyses. BOEM awarded the Louisiana State University another research contract in August 2017, to further the development of the “LSU Flow Model.” The “LSU Flow Model” provided BOEM with wellbore flow models exclusively developed for multiphase flows in large-diameter pipes and high-velocity flows experienced in worst-case discharge analyses. In September 2017, BOEM awarded the University of Oklahoma a contract to investigate the application of sonic velocity to worst case discharge analyses. In October 2018, the University of Oklahoma concluded their study and provided BOEM several reports and a new worst-case discharge tool.

Anchorage Office: There are limited oil spill response capabilities for the Arctic marine

environment that operators can access and that allow for cost sharing. Operators request meetings with BOEM to clarify the various input parameters and assumptions in reservoir flow simulation software models used to produce their worst-case discharge estimates. Recently, BOEM reviewed and verified the worst-case discharge determination for the proposed exploration plan for the Harrison Bay Block 6423 Unit (aka Nikaitchuq North Prospect). BOEM approved this exploration plan on August 14, 2017, and drilling for the first well under the exploration plan commenced on December 25, 2017. The operator suspended operations on its first well in August 2018, but recommenced drilling operations in January 2019, with plans to complete the well by mid-year. Upon completion, the operator will evaluate results of this first well and decide if additional drilling to the prospect is warranted.

Camarillo Office: Since there is currently no new leasing, the worst-case discharge analyses are for mature fields only. This standard operating document will be implemented in FY 2019. In FY 2018, BOEM completed one worst-case discharge verification, and anticipates a similar level of activity in both FY 2019, and FY 2020.

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 of the limit of liability for OCS facilities, including pipelines. The limit of liability for damages from OCS facility spills is capped at \$137.66 million– the maximum allowed under the Oil Pollution Act as of February 20, 2018. 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 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 106 companies covering 4,114 facilities with financial coverage in excess of \$7.6 billion.

RISK MANAGEMENT PROGRAM

BOEM continues to strengthen its risk management capabilities to address changing conditions in industry by tracking the financial profiles of companies in distress and obtaining financial assurance on specific leases as necessary. Through these efforts, along with a full review of the existing financial assurance framework pursuant to Executive Order 13795 and Secretarial Order 3350, BOEM determined that a new regulatory framework is necessary. BOEM has been engaging with industry to discuss relevant issues and concerns and is working to publish a proposed rulemaking in the near future. Through this rule-making effort, BOEM will enhance its comprehensive risk management and financial assurance regulatory framework, with the overall goal of ensuring the U.S. taxpayer does not have to pay for liabilities related to the noncompliance by lessees and grant holders with OCS obligations, including the decommissioning of OCS facilities.

Characteristics of the companies operating on the OCS have changed over the years, with large companies transferring sunset properties to small companies. Since 2009, there have been 25 bankruptcies of corporations with OCS activities. Accordingly, one potential risk is that a company becomes financially insolvent and the U.S. Government and the American taxpayer are 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), the 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 currently estimated to be approximately \$32.8 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 on the continental shelf 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.

As a steward of OCS resources, BOEM manages a variety of financial and physical 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. BOEM performs robust and continuous risk monitoring to help mitigate 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.

RESOURCE EVALUATION

BOEM conducts analyses to identify areas of the OCS that are the most promising for energy and mineral development. To accomplish this, BOEM:

- Acquires G&G data/information through the regulation of pre-lease permitted 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 each 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 lease sale decision-making. 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 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 ranges from large (regional office 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 2016a National Assessment of Undiscovered Oil and Gas Resources of the U.S. Outer Continental Shelf (2016a Assessment) supports the development of BOEM's National OCS Program. It represents a comprehensive appraisal that considers relevant data and the best available information and builds upon previous assessment efforts on the OCS. The assessment estimates a mean of 90.55 billion barrels of undiscovered technically recoverable oil and a mean of 327.58 trillion cubic feet of undiscovered technically recoverable natural gas in the United States OCS. This assessment provides the foundation to support environmental and socio-economic analysis required for the development of the 2019-2024 OCS Oil and Gas Leasing Program. For additional information, the document is available online at: <https://www.boem.gov/2016a-National-Assessment-Fact-Sheet/>.

BOEM typically provides a comprehensive national assessment of undiscovered oil and gas resources in five-year intervals. In FY 2018, BOEM launched the effort for the expected release of a 2021 National Assessment by developing a comprehensive work plan, compiling pricing and economic information, and updating cost databases and taxation assumptions. In FY 2019, BOEM offices will begin to assess the potential for undiscovered oil and gas resources through development of updated geologic play assessments. Updates include compiling information from recent OCS wells, leasing and development trends, global geologic analogs, and significant technology improvements. This work will continue in FY 2020 and culminate in early FY 2021 with national and regional office publications supporting the 2021 National Assessment of Undiscovered Oil and Gas Resources of the U.S. Outer Continental Shelf.

New Orleans Office: In FY 2018, BOEM reviewed the Gulf of Mexico Reserves database of discovered plays, and analog databases of conceptual plays, in anticipation of beginning the 2021 Regional Assessment of both Gulf of Mexico and Atlantic resources. A large work effort with long lead times, typically requiring two to five years, is required to identify and determine if geologic conditions exist for the accumulation of oil and gas, and whether a basin may be oil- or gas-prone. Analysis of geologic history, regional stratigraphy, major geologic trends, major structural features, source rocks, reservoir rocks, seals and trapping mechanisms and petroleum exploration history, will be conducted. In addition, the application of risk and probability theory

and statistical analysis is used to develop resource estimates.

In FY 2018, BOEM published the *U.S. Outer Continental Shelf, Gulf of Mexico Region, Oil and Gas Production Forecast: 2018 - 2027* (OCS Report BOEM 2017-082) report. This report forecasts future oil and gas production over the next ten years. The projections show the Gulf of Mexico is an important basin for the exploration and development of oil and gas resources necessary to meet our Nation's energy needs.

Anchorage Office: The Bureau is responsible for all reservoir and field analyses for BOEM and BSEE in Alaska as well as all of the shallow hazard reviews for exploration and development plans and subsequent applications for permit to drill. In early FY 2017, BOEM completed and published a regional assessment report on the 2016 resource assessment containing detailed geologic play descriptions on the Alaska OCS (OCS Report BOEM 2017-064). This report reflects results from BOEM's FY 2016 reassessment of oil and gas potential on the Alaska OCS, but did not make any changes related to undiscovered, technically recoverable, resources for the Cook Inlet Planning Area, which was under consideration for an OCS lease sale that was successfully held in 2017. In response to Secretarial Order 3352 (issued May 31, 2017), BOEM analyzed recent oil discoveries onshore near the Beaufort Sea coast for purposes of reassessing certain offshore plays in the western Beaufort Sea. The results of that review – an increase in the mean estimate of undiscovered technically recoverable resources of 700 million barrels of oil – are published and a fact sheet is available online at <https://www.boem.gov/2017-Beaufort-Assessment-Fact-Sheet/>.

Camarillo Office: In FY 2018, BOEM developed and delivered the “Pacific Region Exploration and Development Scenarios” and other documents supporting development of the 2019-2024 Proposed Program, focusing on potential resource development in both unexplored areas and expired leases from existing Pacific offshore facilities. Deliverables were based on the results of the 2016 Pacific Outer Continental Shelf Assessment report. In addition, BOEM developed end-of-life forecasts for existing facilities in support of the ongoing National OCS Program. These forecasts were based on the “Pacific 2017 Estimates of Oil and Gas Reserves” report published in FY 2018.

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.” To meet this requirement, BOEM develops 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 reserves inventory program workload. BOEM is responsible for

continually updating volumetric estimates on over 1,300 fields in the Gulf of Mexico. During FY 2018, approximately 5,800 reservoirs were interpreted, revised, and added to the inventory. BOEM anticipates similar reserves inventory workloads in FY 2019 and FY 2020.

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 National OCS 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.

New Orleans Office: Reserves inventory personnel review conservation information document submissions, which BOEM requires 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 2018, BOEM evaluated 17 initial and supplemental conservation information documents and 13 revised conservation information documents resulting in a commitment to develop an additional 6.8 million barrels of oil and 20 billion cubic feet of gas, which will result in additional royalties to the Treasury. During FY 2019 and FY 2020, BOEM anticipates evaluating approximately 15 initial and supplemental conservation information documents and 10 revised conservation information documents annually.

In FY 2018, BOEM published the *Estimated Oil and Gas Reserves, Gulf of Mexico OCS Region, December 31, 2016* (OCS Report BOEM 2018-034) report. This report provides estimates of oil and gas reserves in the Gulf of Mexico OCS, taking into account reserves additions and revisions, and produced volumes. Reserves estimates are derived from individual reservoirs, based on geologic, geophysical and engineering data, and aggregated to the field, protraction, and planning area levels.

Anchorage Office: BOEM continues to support BSEE in the oversight of production allocation issues for the Northstar field production unit, which produces oil from both State of Alaska and Federal OCS leases.

Camarillo Office: During FY 2018, BOEM continued to participate in the collaborative multi-regional effort led by the New Orleans Office to develop a probabilistic reserve methodology.

The project is currently ongoing. BOEM's annual Field Reservoir and Reserve Estimates report, which breaks down the area's reserves and known resources by field and productive zones, provides a brief update on reserves and production between releases of the more comprehensive Estimated Oil and Gas Reserves report. During FY 2018, BOEM completed and published the annual 2017 Field Reservoir and Reserve Estimate report.

In FY 2018, BOEM also completed and provided the Pacific OCS Region 10-year Oil and Gas Production Forecast that contributes to BOEM's 10-year estimate of Federal OCS royalty receipts. During FY 2019 and FY 2020, BOEM will complete similar forecasts for the FY 2020 and FY 2021 President's Budget Request.

Permitting of Prelease/Off-Lease 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 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 requirements 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 EO 13795 and SO 3350, BOEM is considering approaches to streamline permitting for seismic data collection. Adherence to BOEM's processes and regulations ensures exploration and research activities are conducted in a safe and environmentally sound manner.

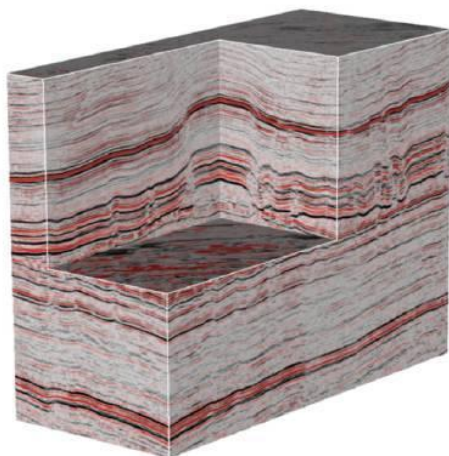
New Orleans Office: BOEM continues to process permits for both oil and gas exploration and marine minerals prospecting activities. During FY 2018, BOEM evaluated and issued 37 permits. During FY 2019, BOEM anticipates evaluating and issuing approximately 40 permits, and various permit modifications, 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 2020. BOEM anticipates the number of permit applications to remain low, reflecting the reduced industry exploration activity resulting from projected oil and gas prices.

Anchorage Office: BOEM will continue to process permits for both oil and gas exploration and marine minerals prospecting activities. In FY 2018, BOEM approved an application for a G&G permit to conduct an aero-gravity and magnetic survey in Cook Inlet and started a review of a permit application from TGS-NOPEC for a 3D on-bottom-node seismic survey in the Beaufort Sea. In FY 2019, BOEM anticipates the permits will be issued. Permit activity is expected to remain at one-to-three permits per year, primarily for seismic surveys for off-lease exploration. In FY 2019, BOEM is currently reviewing a 3D seismic survey application in the Cook Inlet

Planning Area. BOEM ensures that all permittees adhere to statutory requirements (including the Marine Mammal Protection Act and the Endangered Species Act) and conducts required 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.

Camarillo Office: In FY 2018, an operator submitted a G&G permit application to acquire new 3D seismic data to inform reservoir management decisions. BOEM conducted a completeness review of the G&G application and deemed it submitted (complete). BOEM has commenced a compliance review, part of which is to develop a NEPA document to analyze the potential environmental effects of the proposal. The operator is currently obtaining additional information for use in BOEM's pending environmental review. Evaluation of the application, and the corresponding NEPA analysis, will continue through FY 2019. The proposed survey is tentatively scheduled for FY 2020.

G&G Data Acquisition and Analysis



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

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.

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.

Atlantic OCS: BOEM supports the development of modern, robust scientific information about

the scope and location of potential oil and gas resources in the 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. As directed by Secretarial Order 3350, 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. NOAA issued Incidental Harassment Authorizations on November 30, 2018, for five deep penetration seismic surveys proposed off the Atlantic coast. BOEM expects to issue its permit decisions for at least some of these surveys in FY 2019. There is currently a lawsuit challenging issuance of the NOAA authorizations in the U.S. District Court for South Carolina. It is expected that BOEM's permit decisions may be challenged in that pending case and/or in other separate actions if and when permits are issued.

New Orleans Office: Both BOEM and industry are expanding their use of 3D technology to study and evaluate the complex geologic picture of the Gulf of Mexico. The data provided by this technology is used by decision-makers to inform policies regarding offshore resource development.

Because it oversees such a large number of active leases, BOEM acquires, analyzes, and manages a vast collection of G&G data. BOEM currently manages data from approximately 2,698 three-dimensional surveys, 527 two-dimensional surveys, and other critical data encompassing a total volume of 204 terabytes of 32-bit SEG Y data. Of note, the volume of seismic data managed by BOEM increased by 8.3 terabytes during FY 2018. 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).

Anchorage Office: BOEM continues to acquire and manage critical G&G data needed to support mission functions, such as the review of exploration and development and production plans, the development of the National Assessment, lease sale environmental impact statement scenarios, National OCS Program scenarios, lease sale fair market value determinations, and worst case discharge determinations. As of January 2018, BOEM’s Anchorage Office manages data from approximately 23 3D seismic surveys, 235 2D seismic surveys and other critical G&G data, with a total volume of 980 gigabytes of SEG Y data plus TIFF images of historical 2D seismic data. In FY 2017, BOEM began the transition to the Petrel interpretive software, which provides very robust, state-of-the-art tools for analyzing the G&G data. BOEM completed the transition to the Petrel interpretive software platform in FY 2018.

Camarillo Office: In FY 2018, BOEM completed a cooperative agreement with California State University Northridge Center for Geospatial Studies Technology. A geospatial database was

constructed by converting vintage data into a format for efficient retrieval and analysis. This project will support BOEM's resource evaluation efforts such as the development of the National Assessment, the Reserves Inventory Program, and worst-case discharge determinations. In FY 2019, BOEM intends to continue implementation of its Data Strategy to make data readily useable and accessible.

Fair Market Value and Bid Adequacy

Ensuring the receipt of fair market value for OCS resources is mandated by the OCS Lands Act and is one of BOEM's critical responsibilities. Under its bid adequacy procedures for oil and gas leases, BOEM reviews all 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. 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. If a bid is rejected and a company appeals the rejection, the staff reviews the appeal and makes a recommendation to the Director.

Since 1984, **bid adequacy** reviews and fair market value determinations have resulted in an average rejection rate of bids of approximately 3.7 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 2018, BOEM rejected total high bids of approximately \$637 million. Subsequently, the same blocks were re-offered and drew high bids of about \$1.9 billion, for a total net dollar gain of about \$1.2 billion, and for a return on rejected high bid amounts of almost 192 percent.

New Orleans Office: In 2018, BOEM conducted two sales: Gulf of Mexico region-wide Sale 250 and Gulf of Mexico region-wide Sale 251. Under the 2017-2022 OCS Oil and Gas Leasing Program, BOEM will hold two region-wide Sales in 2019, Sales 252 and 253. Bids received during these lease sales undergo rigorous fair market value determinations. This process is conducted within a 90-day period following each sale. The G&G Section analyzes all available engineering and geologic data in addition to the current economic parameters to determine value of the resources on the tract. BOEM uses a proprietary computer model that incorporates the Monte Carlo (range-of-values) technique to calculate the fair market value.

Anchorage Office: One lease sale was held in the Cook Inlet Planning Area (Lease Sale 244) on

June 21, 2017. The approved 2017-2022 OCS Oil and Gas Leasing Program currently includes one lease sale in Alaska, in the Cook Inlet Planning Area (Lease Sale 258 in 2021). BOEM continues to provide the Bureau of Land Management with fair market value analyses for National Petroleum Reserve-Alaska lease sales and may provide similar services for any proposed future sales in the 1002 area of the Coastal Plain of the Arctic National Wildlife Refuge. To improve efficiency, BOEM is evaluating sophisticated software options to replace existing, cash flow modeling programs. BOEM staff play a lead role in the testing and implementation of this new software across all BOEM offices, and have proven its utility for fair market value analyses for the Bureau of Land Management's 2016 National Petroleum Reserve-Alaska lease sale, and BOEM's Cook Inlet Lease Sale 244.

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 receipt of fair market value, BOEM designs fiscal and lease terms for OCS lease sales; develops various resource-economic evaluation approaches; prepares bid adequacy guidelines, procedures and economic inputs; 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, resulting 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.

Economic Analysis and Revenue Estimates

BOEM conducts economic analyses to support the development of regulations, evaluation of policies for lease terms, and conditions and bidding systems for oil and gas and renewable energy lease sales. The Bureau also supports the development of the National OCS Program, and the assessment of fair market rental value of sites for construction of liquefied natural gas ports, at the request of the U.S. Department of Transportation. 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. BOEM generates the receipt estimates used to project revenue and offsetting collections amounts identified in the President's annual budget process and mid-year review process. The Bureau's 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.

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 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, regulatory 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.

MARINECADASTRE.GOV

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. While originally 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, the MarineCadastre.gov is now also providing the geospatial framework needed for broader ocean planning. BOEM's MarineCadastre.gov program has repeatedly been recognized for its collaborative stewardship efforts, and is constantly evolving and growing to include relevant issue-driven data and tools. The project was recently awarded the Federal Geographic Data Committee Doug Nebert Geospatial Champion of the Year award. It is also specifically mentioned in the President's *Ocean Policy to Advance the Economic, Security, and Environmental Interests of the US* (EO 13840) as the type of geospatial data portal that should be used to make agency data available for



The MarineCadastre.gov website provides comprehensive geospatial data and information to facilitate ocean planning efforts.

regional ocean planning. BOEM's MarineCadastr.gov project team has been tasked to work with the White House Ocean Policy Committee to develop an analysis of regional data needs via a "Data Scoping Study." This study will inform the newly established Ocean Policy Committee's efforts to guide agency data providers in making the most needed geospatial data available to the public so that these data can be searched via MarineCadastr.gov and/or other regional data providers.

MarineCadastr.gov information is provided as immediately 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). MarineCadastr.gov has three primary focus areas: web map viewers and ocean planning tools; spatial data registry; and technical support and regional capacity building.

In addition to the data sets provided by other authoritative data providers – such as NOAA, U.S. Fish and Wildlife Service, U.S. Geological Survey, U.S. Coast Guard, and others – the MarineCadastr.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. A number of regional ocean portal projects use the data and services provided through the MarineCadastr.gov project. This fulfills BOEM's vision for the project to be the first place to find authoritative coastal and marine data.

The MarineCadastr.gov project has also created some widely used data tools. These include four Automatic Identification System vessel data tools, BOEM Environmental Studies Program Information System, Ocean Law Search, and the Ocean Reporting Tool.

As of September 2018, MarineCadastr.gov is managing 28 data collections and 272 individual data layers; 10 data layers were internally developed (BOEM) and/or maintained; and 30 data layers externally added or updated (NOAA or other agency). The Automatic Identification System data was made available for all months of 2015-2017. Two Story Maps were published: *Beyond the Original Intent - Seismic Survey* and *Tropical Cyclone Exposure in the United States*. Requests for MarineCadastr.gov map services have been consistent for 2018 between 600,000 - 1,000,000 service hits per month.

OUTLOOK FOR CONVENTIONAL ENERGY

In FY 2020, BOEM will continue to, effectively and responsibly, manage OCS oil and gas resources. The management of these resources includes allowing for access to those resources,

Conventional Energy

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 the 2020-2025 National OCS Oil and Gas Leasing Program. In addition, the Bureau will continue with the enhancement of the Risk Management Program. 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.

FISCAL YEAR 2020 BUDGET
 Bureau of Ocean Energy Management
Renewable Energy

Table 11: Renewable Energy Budget Summary

		2019 CR Baseline	Internal Transfers	Fixed Costs	Program Changes	2020 Request	vs. 2019 CR
Renewable Energy	(\$000)	21,676	-	+105	-456	21,325	-351
	FTE	58			-	58	-

Renewable energy development activities include the siting and construction of offshore wind farms on the Outer Continental Shelf, as well as other forms of renewable energy such as wave and current energy. In FY 2020, BOEM will continue to advance renewable energy through an aggressive leasing program and streamlining of its permitting and NEPA processes. BOEM continues to support renewable energy development spurred by the renewable energy goals of Coastal States.

The 2020 budget will support:

- **Competitive Lease Auctions/Sales:** A commercial lease gives the lessee the exclusive right to subsequently seek BOEM approval for the development of the leasehold and does not automatically give the lessee the right to construct any facilities. BOEM has conducted 8 lease sales and has issued sixteen commercial wind energy leases, including three commercial leases in FY 2019 from its December 2018 Massachusetts lease sale. BOEM plans to hold two lease sales in FY 2020, one in the Atlantic in the New York Bight and one in the Pacific offshore California.
- **Review of Site Assessment and Construction and Operations Plans:** A Site Assessment Plan contains the lessee's detailed proposal for the construction of a meteorological tower and/or the installation of meteorological buoys on the leasehold. A Construction and Operations Plan is a detailed plan for the construction and operation of a wind energy project on the lease. BOEM must conduct environmental and technical reviews of any plan and decide whether to approve, approve with modification, or disapprove the plan.
- **Stakeholder Engagement:** By meeting with and engaging stakeholders, BOEM is able to ensure awareness of potential issues and controversy as well as improving efficiency and the opportunity to resolve these issues in a timely manner. Through this consultation, areas

suitable for renewable energy development can be identified while mitigating multiple-use and environmental conflicts in a particular area.

- **Intergovernmental Coordination/Collaboration:** To help inform BOEM’s planning and leasing process, BOEM has established 14 intergovernmental renewable energy task forces that consist of Federal agencies and State, local, and Tribal governments. It also chairs an interagency permitting workgroup to ensure a coordinated approach to reviewing project plans. In addition, Memoranda of Understanding exist with the Department of Energy, the Federal Energy Regulatory Commission, the Bureau of Safety and Environmental Enforcement, the U.S. Fish and Wildlife Service, the Department of the Defense, the U.S. Coast Guard, NOAA, and the State of California. Through this coordination, BOEM is able to achieve efficiencies for both the agencies and the applicants as they navigate the leasing and planning process.
- **Science and Technology Research:** The Renewable Energy Program is supported by a substantial investment in research. Projects include those aimed at setting design standards for offshore renewable energy facilities appropriate for U.S. waters. The results of BOEM’s scientific and technology research are used to inform policy decisions, environmental analysis, mitigation, and monitoring protocols on environmental and cultural issues.

SUMMARY OF 2020 PROGRAM CHANGES

Program Changes from 2019 CR Baseline	(\$000)	FTE
Renewable Science & Technology Research	-956	
Renewable Energy Leasing	+500	
Total Program Changes	-456	+0

Renewable Energy Science and Technology Research (-\$956,000; 0 FTE). In FY 2020, BOEM proposes to redirect funds from renewable energy science and research in order to invest additional resources in leasing activity.

Renewable Energy Leasing (+\$500,000). The funding proposed in FY 2020 enables BOEM to plan for a second renewable energy lease sale per year, potentially in BOEM’s Pacific planning areas, thereby advancing offshore renewable energy commercial leasing on both the Atlantic and Pacific coasts. It will also provide an opportunity to add millions of dollars to the U.S. Treasury annually through the collection of additional bonus bids and future rents.

PROGRAM OVERVIEW

The 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.



Block Island Wind Farm (Deepwater Wind)

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, and ocean current energy projects, as well as projects that make alternative use of existing oil and gas platforms in Federal waters.

In 2009, BOEM published its renewable energy regulations, implementing section 388 of the Energy Policy Act of 2005. These regulations established a framework 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 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 eight competitive wind energy lease sales for areas offshore the Atlantic coast and there are fifteen active commercial wind energy leases offshore of Delaware, Maryland, Massachusetts, New Jersey, New York, North Carolina, Rhode Island, and Virginia.

Additionally, BOEM is in the early planning stages to identify additional potential lease areas off the coasts of New York, New Jersey, and the Carolinas.

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.



Block Island Wind Farm
(*Deepwater Wind*)

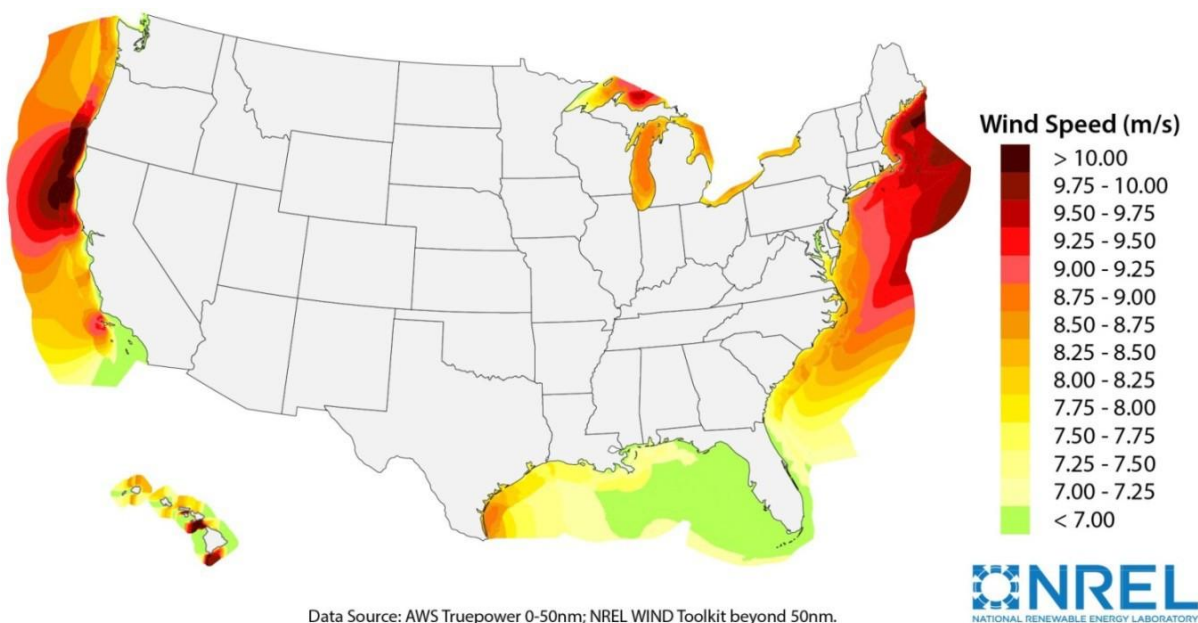
Along the Pacific coast, BOEM received unsolicited lease requests to develop wind facilities offshore Hawaii and California. BOEM is engaged in the planning process for potential lease sales offshore both of those States. A Call for Information and Nominations has been published to begin the leasing process offshore California. BOEM is currently processing one unsolicited research lease request offshore Oregon for a marine hydrokinetic technology testing facility.

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 a fair return to the U.S. Treasury for the rights conveyed by OCS renewable energy leases and grants. In FY 2018, \$4 million in rent payments were collected on OCS renewable energy

leases. BOEM estimates annual rent payments to increase in FY 2019 to over \$5 million per year with three additional leases from the December 13, 2018 Massachusetts renewable energy lease sale. The Massachusetts sale resulted in approximately \$405.1 million in bonus bid revenue. To date, including the recent Massachusetts renewable energy lease sale, BOEM has generated over \$473 million in bonus bids from renewable energy lease sales it has conducted through the competitive leasing process. Revenue data is generated by the Office of Natural Resources Revenue and can be found at <https://revenue.data.doi.gov/explore/>.

➤ **Offshore Energy Sources**

Wind is currently the predominant source of renewable offshore energy being developed in the United States. Offshore winds tend to flow at higher sustained speeds than onshore winds, making offshore turbines more efficient than their onshore counterparts. The following figure shows areas along the coasts of the Atlantic, Pacific, and Gulf of Mexico that have the greatest technical potential for offshore wind energy production based on wind speeds.

Figure 12: Wind Speed Map for the U.S. Technical Resource Area (100m Height)

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

According to the National Renewable Energy Laboratory's (NREL's) *2016 Offshore Wind Resource Assessment for the United States*, 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.

Although to date wind energy 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. BOEM is currently evaluating a research lease request for a national wave energy testing facility in Oregon, and the Bureau issued a lease (which has since been relinquished) in 2014 focused on hydrokinetic technology testing offshore Florida.

RENEWABLE ENERGY AUTHORIZATION PROCESS

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 or grant; (3) site assessment; and (4) construction and operations. BOEM involves other Federal agencies (e.g., Department of Defense, FWS, U.S. Coast Guard, NOAA, and BSEE) and State, local and Tribal governments throughout all phases of renewable energy development. The figure below outlines

BOEM’s process for authorizing wind energy leases.

Figure 13: 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 **Leasing 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 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 particular 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. 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, detailing 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 inform decision-making as BOEM considers areas of the OCS for renewable energy leasing and development and as BOEM evaluates project plans on existing leases. 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. To date, BOEM has established a total of 14 intergovernmental task forces in Maine, Massachusetts, Rhode Island, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Florida, Oregon, Hawaii, and 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. In response to a request from the Governor of New Hampshire, in FY 2019 BOEM intends to work with the State of New Hampshire and other States within the region to establish an additional task force.

Additionally, BOEM utilizes professional meeting facilitation support 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 contracts support 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 stakeholder engagement events.

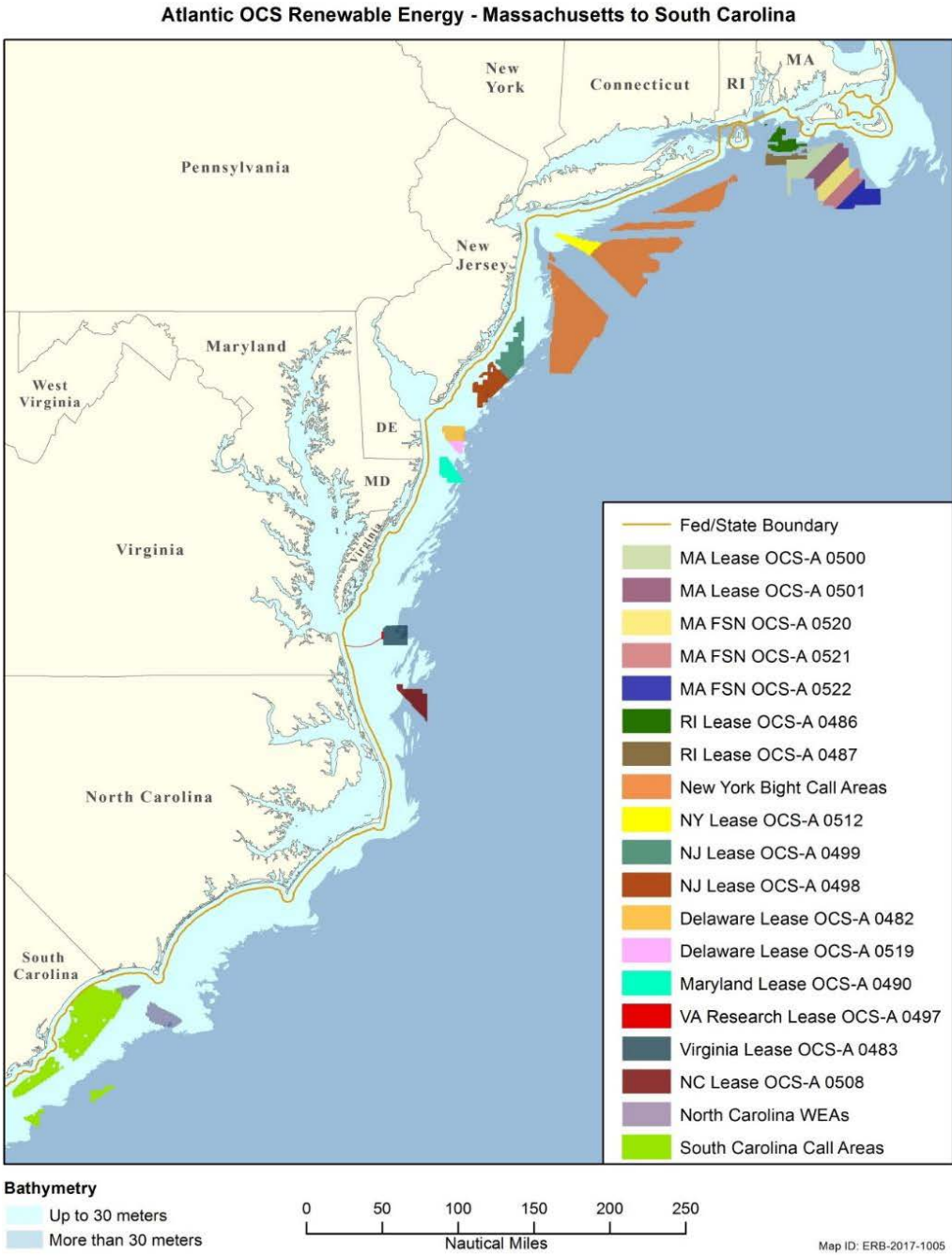
During FY 2018, BOEM leveraged the use of webinars to replace some of its in-person meetings moderated by trained facilitators as one example of its effort to reduce the cost and time demands that frequent in-person meetings place upon the government and the stakeholder community. BOEM plans to continue this practice in FY 2019.

➤ **Identification of Wind Energy Areas**

A key element of the Planning and Analysis phase 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 process, BOEM has identified Wind Energy Areas on the OCS offshore Massachusetts, Rhode Island, New York, New Jersey, Maryland, Virginia, North Carolina, and California.

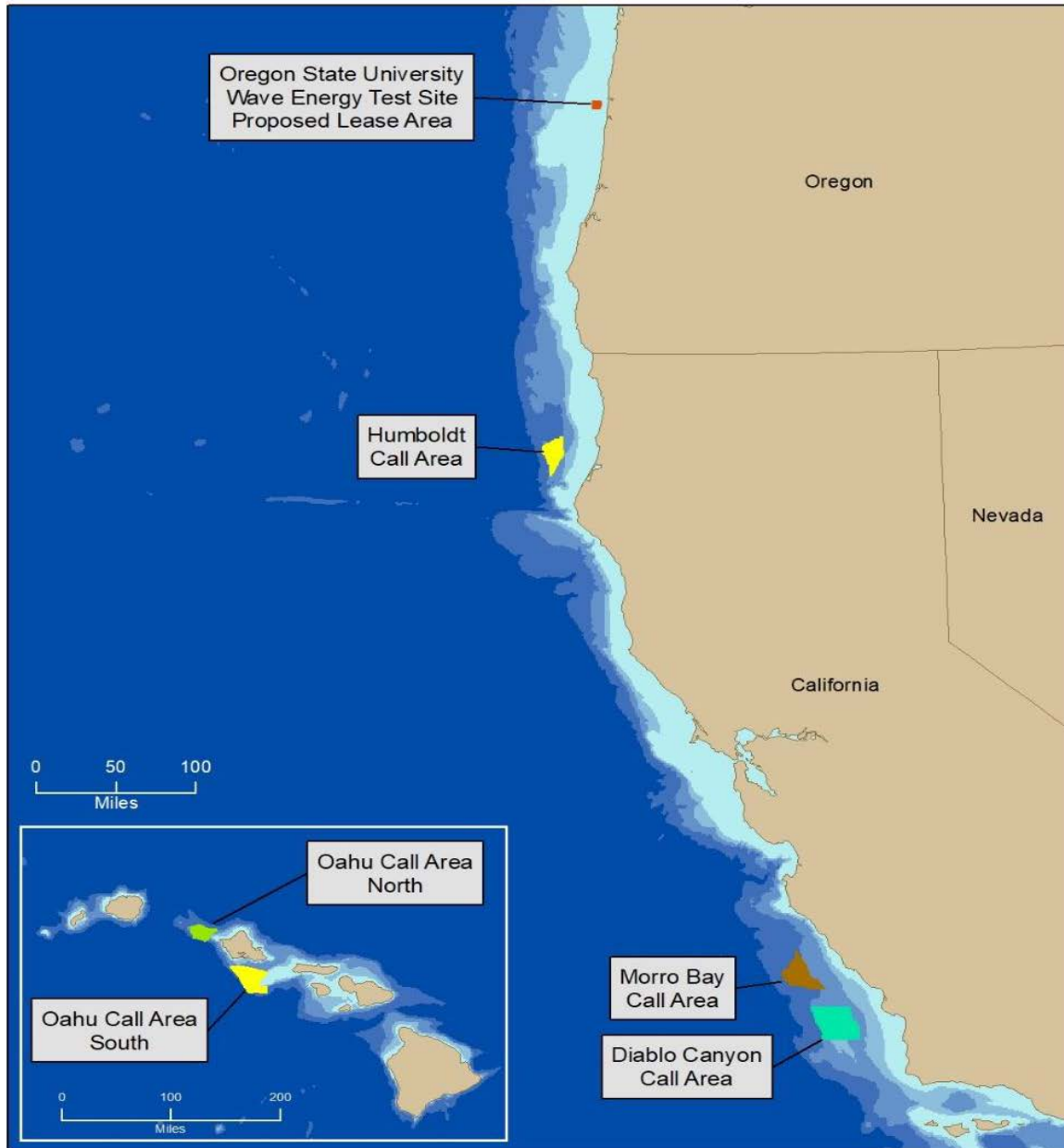
In FY 2018, BOEM made significant progress within the New York Bight offshore New York and New Jersey through publication of a Call for Information and Nominations, Task Force meetings, and additional stakeholder engagement. In FY 2019, BOEM expects to complete efforts to identify Wind Energy Area(s) within the New York Bight and offshore California. In addition, BOEM will continue planning and leasing efforts offshore North Carolina, South Carolina, and Oregon in FY 2019 and FY 2020. The existing leases, Wind Energy Areas, and Call for Information and Nominations Areas along the Atlantic and Pacific coasts are shown in the following maps.

Figure 14: Renewable Energy Leases, Wind Energy Areas, and Call Areas along the Atlantic



BOEM, Office of Renewable Energy Programs

Figure 15: Proposed Renewable Energy Leases and Call Areas Along the Pacific



BOEM, Office of Renewable Energy Programs

LEASE AND GRANT ISSUANCE

➤ Activity on the Atlantic OCS

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 2019, BOEM will hold one auction for three lease areas offshore Massachusetts. BOEM is currently in the planning phase for identifying additional lease areas in the New York Bight, with leasing activities expected to occur in early FY 2020. Through FY 2018, BOEM managed 12 active commercial wind leases along the Atlantic coast, covering over 1.3 million acres on the OCS. If fully developed, these 12 leases could generate enough energy to power over 4 million homes. In FY 2019, BOEM added three additional active leases, containing nearly 390,000 additional acres, offshore Massachusetts. If fully developed, these leases could support approximately 4.1 gigawatts of power to supply nearly 1.5 million homes.

BOEM has the authority within its existing regulations to issue limited leases to other Federal agencies and to States for the purpose of conducting research that supports the future production, transportation, or transmission of renewable energy. Research leases require no fees and have a negotiated lease term. BOEM has one active research lease offshore the Virginia coast and the review of facility design and installation reports will extend through FY 2019, with construction and operations of two wind turbines proposed as soon as FY 2020.

BOEM is authorized to issue right-of-way grants that allow developers to build electricity transmission lines that connect renewable energy installations to the onshore electrical grid. The first producing offshore wind project in the U.S. is in Rhode Island State waters and includes transmission lines that cross the Federal OCS. BOEM is currently evaluating two unsolicited right-of-way grant requests proposing the transmission of renewable energy on OCS lands to determine if the competitive or non-competitive process is appropriate to consider grant issuance.

➤ Leasing Outlook in the Gulf of Mexico

BOEM's New Orleans, Louisiana Office has begun to lay the foundation for potential offshore renewable energy development in the Gulf of Mexico. The first step was to understand the current climate for renewable energy development by meeting with the Gulf Coast States to assess their interest. Meetings with the States of Texas, Louisiana, Mississippi, and Alabama were very positive and began the initial steps of opening communications for future renewable energy development, but have not yet led to any policy decisions. BOEM has also initiated its first renewable energy study to prepare an assessment of the Gulf of Mexico OCS renewable energy potential. This study will provide a comprehensive survey across the various types of

offshore renewable energy technologies and will include an assessment of their technical, economic, and environmental feasibility to inform the Bureau’s strategic planning.



Fabrication of Block Island Foundations by Gulf Island Fabricators, in Houma, LA

Meanwhile, BOEM is also working with industry on alternative use ideas for existing oil and gas infrastructure. Section 388 of the Energy Policy Act of 2005 provides the Secretary of the Interior’s authority to allow an offshore oil and gas structure, previously permitted under the OCS Lands Act, to remain in place after oil and gas activities have ceased so that the structure can be used for other energy and marine-related activities such as research, renewable energy production, and aquaculture.

Currently the Gulf of Mexico OCS contains over 3,000 offshore oil and gas structures in it, making this a possible option to continue the use of existing infrastructure. BOEM continues to meet with industry that has presented differing alternative use ideas.

The Gulf of Mexico has many offshore oil and gas support services companies (boat yards, fabrication yards, etc.) that could be utilized to support the U.S. offshore renewable energy industry. This has already been witnessed, as Gulf Island Fabricators in Houma, Louisiana built the foundations for the Block Island Project (Rhode Island) and a met tower supporting U.S. Wind’s proposed activities in the Atlantic offshore Maryland. The area also has a very large workforce with training and experience in the marine environment. This offers the offshore oil and gas industry opportunities to diversify and further its economic and job-creating investments in local communities.

➤ **Activity in BOEM’s Camarillo, California Office**

With several commercial wind lease requests active in Hawaii, BOEM published a Call for Information and Nominations in 2016 to initiate the competitive planning and leasing process. BOEM continues to work in coordination with State partners, Federal agencies, and interested stakeholders to determine if any Wind Energy Area is feasible offshore Hawaii and on a path forward for offshore wind planning.

In California, BOEM received two unsolicited lease requests for offshore wind projects, one near Morro Bay on the central coast, and one on the north coast near Humboldt Bay. BOEM has initiated the competitive leasing and planning process offshore California with publication of a Call for Information and Nominations in October 2018. BOEM expects there to be competitive interest in all of the Call Areas and plans to hold a lease sale in FY 2020.

In Oregon, BOEM is cooperating with FERC to review a research lease request for a grid-connected wave energy test site on the OCS offshore Newport. 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. Further processing awaits receipt by FERC of the license application and draft environmental assessment being prepared by the applicant, which is expected to be filed in 2019. A BOEM lease and FERC license decision may then be expected in FY 2020.

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 an existing Departmental categorical exclusion for nondestructive data collection. 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.

BOEM has approved seven site assessment plans to date offshore Rhode Island, Maryland, Virginia, New Jersey, and New York; while reviews are currently underway for a site assessment plan submitted for activities offshore Delaware.

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.

Two construction and operations plans were submitted to BOEM in FY 2018. Current lessees have told BOEM to anticipate receiving up to five more construction and operations plans through FY 2019. The environmental review of these plans will likely take the form of an environmental impact statement and would provide additional opportunities for public involvement. These reviews will be conducted consistent with EO 13807 (*Establishing Discipline and Accountability in Environmental Review and Permitting Process for Infrastructure Projects*) and SO 3355 (*Streamlining National Environmental Policy Act Reviews and Implementation of Executive Order 13807*).

BOEM initiated environmental impact statements for the Vineyard Wind Project and South Fork Wind Farm in FY 2018 and FY 2019, respectively. These environmental impact statements will consider the reasonably foreseeable impacts on physical, biological, and socioeconomic resources from the construction, operation, maintenance, and decommissioning of these projects, and include multiple 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. For instance, BOEM has Memoranda of Understanding with the Department of Energy, FERC, BSEE, FWS, Department of Defense, 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.

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 and is focused on more effective and efficient collaboration around the Federal review and approval of construction and operating plans, as BOEM is currently processing two construction and operating plans and anticipates receiving up to five more construction and operating plans in FY 2019. Information collected from the group will allow BOEM to develop a detailed regulatory roadmap for the development of offshore wind, and streamline the review and approval process.

As another example of collaboration, BOEM and BSEE developed guidance for industry about the processes to select certified verification agents and create facility design reports and plans for fabrication and installation of renewable energy facilities. In addition, BOEM and BSEE coordinated the selection of renewable energy technology research projects, the results of which will be critical in creating design standards for offshore renewable energy facilities based on the unique atmospheric and oceanographic conditions of the U.S. offshore areas.

RESEARCH, DATA COLLECTION, AND STAKEHOLDER ENGAGEMENT

BOEM's Renewable Energy Program is supported by investments in research, data collection and stakeholder engagement. In some cases, areas that are appropriate for renewable energy development have 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 to learn from their experience.

The continued need to pursue information to facilitate 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.



Information gathering through the Real-time Opportunity for Development Environmental Observations program

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 specific focus on renewable energy applications.

To ensure full environmental review, BOEM has spent more than \$65 million since FY 2008 on environmental studies that address renewable energy issues, either solely or in addition to other OCS resource activities. These studies address the issues of: the effects of renewable energy development on fishing and fisheries including economic effects, baseline fishery information, and endangered Atlantic Sturgeon. In FY 2019, studies will continue ongoing work to monitor bird movements around wind turbines, evaluate fish and cetaceans response to sound, and collect baseline information about the distribution of birds, marine mammals, and other species in the marine environment. During FY 2020, BOEM intends to continue funding baseline monitoring, wildlife tracking, and development of post-construction monitoring techniques.

➤ **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 2018, BOEM continued or executed cooperative agreements with State partners through matching funds and interagency agreements to inform future planning and decision-making. For instance, BOEM’s studies collect socioeconomic, oceanographic, biologic, and feasibility information necessary to support appropriate siting of Wind Energy Areas and the potential impacts that must be considered.

➤ **Renewable Energy Workshops and Conferences**

Stakeholder engagement is integral to BOEM’s renewable energy planning and leasing efforts. When BOEM needs input from stakeholders and experts on a particular topic, it will host a workshop to bring together representatives from industry and from academic and government sectors. The following are some highlights of recent events.

- BOEM has continued to reach out to the fishing community in regards to current and future renewable energy development activities. Specifically, BOEM presented at six regional fishery management council meetings, held four “open office” events concurrent with fishery management council meetings, and participated in seven issue-based meetings in cooperation with State partners.
- In November 2017, BOEM sponsored, through the National Academies of Sciences, Engineering, and Medicine Fisheries Steering Committee, a workshop of experts to focus on fisheries interactions with offshore wind. Topics included a discussion of

the potential impacts to fisheries, results of studies of U.S. Wind Energy Areas (regional benthic habitat assessments, fish telemetry studies), and the European experience balancing fisheries and offshore renewable energy development. The resulting report from the National Academies, “Atlantic Offshore Renewable Energy Development and Fisheries Proceedings of a Workshop—in Brief,” provides beneficial guidance in our continuing dialog with States and affected fisheries regarding monitoring potential impacts of offshore wind energy development to fisheries resources.

- BOEM, in collaboration with the U.S. Coast Guard, held the first ever Offshore Wind and Commercial Vessel Traffic Industry Knowledge Exchange in March 2018 that assembled Federal and State agencies, vessel operators, harbor and port administrators, industry associations and, offshore wind energy developers to develop a common understanding of operational challenges and potential for coexistence facing both industries. A summary of the presentations and group discussions was distributed to attendees in October 2018. The workshop materials and summary report are both available on BOEM’s website (www.boem.gov).
- BOEM participated in two externally sponsored Offshore Wind Executive Summits, held in Houston, Texas during 2017 and 2018. These were the first events focused exclusively on bringing the well-established U.S. oil and gas industry together with the nascent U.S. offshore wind industry.

In addition to these events, BOEM partners with State governments to keep them engaged and apprised of potential and upcoming activities off their coasts. Partnerships ensure the inclusion of all appropriate stakeholder groups when moving through various stages of development.

➤ **Guidelines for Developers and Applicants**

BOEM issues guidelines to clarify and provide a general understanding of the information required in order to adequately address the impacts of offshore renewable energy projects to the environment. The guidelines for survey information on avian resources, spatial data, benthic habitats, fish, marine mammals, and sea turtles on the Atlantic OCS were developed with input from FWS, NOAA, and the Marine Mammal Commission. BOEM published updates to the avian and archaeological guidelines in FY 2017.

In FY 2018, BOEM anticipates publishing updates for site assessment plans and several of its survey guidelines to address specific data requirements for meteorological buoys. In addition, BOEM published drafted guidance for industry regarding the use of design envelopes in construction and operations plans in January 2018. In FY 2019, BOEM plans to publish guidelines for marking and lighting renewable energy structures offshore. These guidelines

result from interagency collaboration and review of existing installations in FY 2017. BOEM will host a webinar to obtain industry input before finalizing guidance posted on BOEM's website.

➤ **Technology Assessment and Research Studies**



A full-scale prototype of the WindFloat device

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. Data on meteorological and oceanographic (“metocean”) conditions need to be obtained across U.S. regions to ensure that these new structures are designed to the appropriate parameters.

Results of BOEM's technology assessment and research studies will be used to provide guidance to industry regarding their data collection activities in support of project development, assist the industry in refining engineering designs for offshore wind foundations for the varying geologic and oceanographic conditions that exist offshore the U.S., and ensure greater long term stability and survivability of wind farm facilities. This increased reliability enhances BOEM's ability to achieve mission goals of safe and reliable production of offshore wind energy.

Results from a metocean data measurement study provide data necessary to develop a U.S. based standard for incorporation of metocean data into a wind farm facility design. The work with the National Renewable Energy Laboratory updates existing recommended practices (AWEA OCRP 2012) and developed new recommended practices for the following areas of offshore wind farm design: metocean data measurement, geotechnical and geophysical data collection, and floating technologies. This multi-year effort initiated in October 2017 assembled more than 100 experts across the spectrum of the offshore wind industry for online collaboration throughout the year and face to face meetings in April and October 2018. Online and remote collaboration is ongoing and we project that this effort will culminate in 2020 in an approved design standard endorsed by the American National Standards Institute for the U.S. offshore wind industry.

BOEM contracted the 2018 study “Survey and Assessment of the Ocean Renewable Energy Resources in the U.S. Gulf of Mexico” to provide a comprehensive feasibility assessment of multiple offshore renewable energy technologies in the Gulf of Mexico and to inform BOEM's

strategic plans related to possible OCS renewable energy leasing activities. In coordination with Gulf Coast States, this study also includes analysis of offshore renewable energy potential in State waters for future energy planning. The goal of the study was to survey potential offshore renewable energy sources in the Gulf of Mexico and quantify their feasibility relating to resource adequacy, technology maturity, and the potential for competitive cost. This study is under review and will be complete in FY 2019. It will consider, in the assessment, the potential advantages of using Gulf infrastructure, existing supply chains, and workforce, as well as analyze future areas of renewable development and job creation potential.

Alaska represents an important proving ground for developing cost effective marine wave and tidal renewable energy technologies. In FY 2018, the “Alaska Wave Energy Converter Impact Assessment” study was awarded and involves BOEM, in partnership with the University of Alaska, Fairbanks, assisting the State of Alaska in its effort to assess the feasibility and potential environmental effects of a wave energy converter project in the Gulf of Alaska.

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 2020. Offshore wind energy is poised to generate significant benefits for the U.S. and help the nation create jobs and achieve energy security. It is an abundant domestic energy resource that could contribute significantly to meeting State Renewable Portfolio Standards and to economic growth and job creation. Located close to major coastal load centers, offshore wind provides an alternative to long-distance transmission or development of onshore electricity generation in land-constrained regions.

Offshore wind leasing activities, including commercial leases, research leases, and right-of-way grants, have increased, contributing domestic renewable energy to a diverse energy portfolio and enhancing economic activity in a diverse array of sectors that will supply and support the construction, service, and maintenance of the facilities. Developers are actively moving forward preparing construction and operations plans for their projects along the Atlantic coast, and State interest in pursuing offshore renewable energy development is readily apparent in States’ increased involvement in BOEM’s intergovernmental renewable energy task forces. Additionally, recent technological advances and successful deployment of floating wind turbines has spurred increased activity on the Pacific coast. BOEM continues to demonstrate science-informed decision-making through environmental research and studies, which directly benefit BOEM, other energy and mineral programs, renewable energy stakeholders, and individual States.

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FISCAL YEAR 2020 BUDGET
 Bureau of Ocean Energy Management
Environmental Programs

Table 12: Environmental Programs Budget Summary

		2019 CR Baseline	Internal Transfers	Fixed Costs	Program Changes	2020 Request	vs. 2019 CR
Environmental Programs	(\$000)	73,834	-2,059	+250	+13,085	85,110	+11,276
	FTE	142	-4		+8	146	+4

BOEM's Environmental Programs activity informs decision-makers and the public about the potential impacts of OCS energy and mineral activities on the marine, coastal, and human environment. Funding supports scientific research needed to inform policy decisions regarding energy and mineral development on the OCS. Focus on environmental science ensures transparent and accessible integration of applied science with BOEM's environmental analyses in support of programmatic decisions. The 2020 budget will support:

- **National OCS Oil and Gas Leasing Program:** The planning and execution of proposed lease sales outlined in the National OCS Program will require environmental studies, which provide the foundation for science-based decisions within the new National OCS Program, as well as environmental analyses, outreach, and coordination with stakeholders. Funding will also support activities such as: NEPA analyses; Endangered Species Act Section 7 and Essential Fish Habitat consultations; and Coastal Zone Management Act coordination. The National OCS Program, and its environmental component, is a priority area for BOEM and supports the President's desire for environmentally and economically responsible development of domestic energy resources.
- **Environmental Assessments and NEPA Reviews:** The framework mandate for reviewing potential environmental impacts, NEPA, ensures public participation in the review and decision process and provides transparency about environmental effects to both public and private entities. BOEM's NEPA analyses are in accordance with NEPA implementing regulations of the Council on Environmental Quality and the Department of the Interior. Additionally, BOEM's environmental assessments provide essential environmental information for decisions related to conventional energy activities, renewable energy activities, and the proposed leasing of sand and gravel resources.
- **Environmental Studies Program:** As outlined in the OCS Lands Act, BOEM works to integrate the science data needs from multiple disciplines with respect to energy and mineral

resources on the OCS. Understanding the impacts of conventional and renewable energy as well as mineral development upon the OCS remains the key emphasis within this program.

- **Partnerships:** To pool resources for more information to be generated at a lower cost, BOEM leverages funds and expertise through partnerships within the Department and with other Federal agencies, States, and academic institutions. By contributing funds and in-kind resources, BOEM and its partners are able to extend the scope of their research to obtain more and better information. From FY 2013 to FY 2018, BOEM provided over \$80 million to Federal partners to conduct BOEM-designed scientific environmental work for the Program. In FY 2018, the Program finalized 24 studies, 9 of them through partnerships.

SUMMARY OF 2020 PROGRAM CHANGES

Program Changes from 2019 CR Baseline	(\$000)	FTE
National OCS Leasing Program	+15,957	+8
Environmental Studies Program	-2,872	
Total Program Changes	+13,085	+8

The National OCS Oil and Gas Leasing Program (+\$15,957,000; +8 FTE). An additional \$15.9 million in funding and 8 FTE support a centerpiece of BOEM’s mission critical activities: the National OCS Oil and Gas Leasing Program (National OCS Program). The planning and execution of anticipated lease sales requires environmental studies, which provide the foundation for science-based decisions within the new National OCS Program, as well as environmental analyses, outreach, and coordination with stakeholders. Due to the potential scope of the new National OCS Program, which is larger than the current National OCS Program and includes frontier areas, more environmental studies are necessary to address data gaps in baseline information within frontier areas, in addition to the studies needed within more mature areas, such as the Gulf of Mexico. These resources will also support NEPA analyses, stakeholder engagement on sale-related environmental impact statements, Endangered Species Act Section 7 and Essential Fish Habitat consultations, and Coastal Zone Management Act coordination. The National OCS Program, including its environmental component, is a priority area for BOEM and supports the President’s policy of encouraging offshore energy exploration and production, while ensuring that any activity is safe and environmentally responsible.

Environmental Studies Program (-\$2,872,000). At the proposed funding level, BOEM will continue to fund studies that support conventional, renewable, and marine mineral leasing activity. This program change is offset by increases for studies directly supporting the new

National OCS Program, as described above.

Internal Transfers (-\$2,059,000; -4 FTE). To support Bureau and Administration priorities, BOEM will realign base resources in FY 2020 through an internal transfer of funds and personnel to the new Marine Minerals budget activity. As discussed later in the Marine Minerals chapter, these amounts and associated personnel are a part of the base funding for the Marine Minerals Program, and the creation of a new budget activity requires appropriately identifying the funds and FTE currently supporting the Program.

PROGRAM OVERVIEW

BOEM assesses the potential environmental and social impacts of, and effective environmental safeguards for, the exploration and development of energy and mineral resources on the OCS: conventional energy sources (i.e., oil and gas), renewable energy resources (i.e., wind, wave, and current energy), and non-energy minerals such as sand and gravel. The Program develops, funds, and manages scientific research and conducts long-term monitoring to facilitate identification and implementation of relevant measures for avoiding or reducing impacts of activities. This information supports and guides decision-making not just within BOEM, but also by other government authorities, industry and the public.

The Program includes the environmental assessment function and environmental studies function, organized administratively into the Office of Environmental Programs in the Washington, DC, area (comprising the Environmental Sciences Division and the Environmental Assessment Division), and includes components within the Office of Renewable Energy Programs and three BOEM offices (New Orleans, Louisiana Office; Anchorage, Alaska Office; and, Camarillo, California Office; Atlantic OCS environmental studies and assessments are addressed through headquarters and the New Orleans Office). BOEM's environmental science program is managed as a single account through the Environmental Programs budget activity.



U.S. OCS Regions

The environmental staff works in teams, with leadership provided by those whose backgrounds and capabilities best address the issues at hand. The Program is committed to continuous staff improvement and recruitment and retention of the best available talent. BOEM employs staff in

diverse fields: marine and coastal biology; chemical, biological, and physical oceanography; avian and marine mammal biology; acoustic science; geology; meteorology; risk modeling; sociology; marine archaeology; anthropology; economics; and environmental policy. The Program is committed to partnerships with Federal, State, and local governments; federally recognized tribes and other organizations of indigenous peoples; and other stakeholders, including academia, non-profit organizations, and businesses.

➤ **Statutory Mandates**

At the very core of BOEM’s Environmental Program is its mission to implement numerous and diverse statutes and executive orders, including, but not limited to the following:

Outer Continental Shelf Lands Act (OCS Lands Act)
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, and further amended in 1978. The OCS Lands Act directs BOEM to consider impacts from OCS development on the marine, coastal, and human environments. 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. The human environment includes the physical, social, cultural, and economic components that determine the state, condition, and quality of living conditions, employment, and health of those affected.
National Environmental Policy Act (NEPA)
Provides BOEM’s framework mandate for reviewing potential environmental impacts, ensuring public participation in the review and decision process, and providing transparency about environmental effects to decision-makers and public alike.
Endangered Species Act (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 or its designated critical habitat, BOEM is required to consult with either the National Marine Fisheries Service (NMFS) or the U.S. Fish and Wildlife Service (FWS), depending on the species and habitat potentially affected, to assess the level of potential effect of an action and what protective measures must be put in place for the action to occur. Such analyses require significant levels of scientific depth and quality, clarity in assessment, and coordination with the NMFS and FWS.
Marine Mammal Protection Act (MMPA)
Requires BOEM and other agencies to avoid injuring marine mammals or disrupting their behavior if there is more than a “negligible impact” on the species. Avoiding and mitigating the potential harm from geophysical surveys is a key area of focus for BOEM.

Other Laws
Coastal Zone Management Act
Magnuson-Stevens Fishery Conservation and Management Act
Clean Air Act
Clean Water Act
National Historic Preservation Act
Sunken Military Craft Act
Migratory Bird Treaty Act
Tribal consultation requirements established by Executive Orders and DOI orders and guidance

ENVIRONMENTAL ASSESSMENTS

BOEM’s environmental assessments provide essential information for decisions related to conventional energy activities, such as authorization of geological and geophysical exploration activities; planning for the National OCS Program; lease sales; exploration and development plans; as well as more specific authorizations and permits, including decommissioning. 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’s environmental analyses not only evaluate potential environmental impacts and alternatives to proposed actions, but also identify measures to mitigate impacts and potentially incorporate into requirements through regulatory vehicles such as permit conditions, lease stipulations, terms and conditions of plan approval, and notices to lessees.



Environmental information supports BOEM decision-making

➤ Programmatic Environmental Analyses

BOEM’s environmental analyses and comprehensive planning form a centerpiece to the development of a National OCS Program. BOEM prepares documents such as environmental impact statements (EISs) – a document that describes potentially significant environmental effects of a proposed action as well as alternative actions – and environmental assessments (EAs) – a document that outlines non-significant environmental impacts of a project, plan, policy or program associated with a proposed project – in compliance with NEPA to provide 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 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. These documents may be EAs or EISs, depending upon the nature of the action in question, or the significance of potential impacts associated with the action. In FY 2018, BOEM completed two EISs: Final Gulf of Mexico 2018 Lease Sale EIS and Final Liberty Development and Production Plan (Beaufort Sea) EIS.

In FY 2018 and FY 2019, BOEM worked closely with the Council on Environmental Quality and the DOI Office of Environmental Policy and Compliance to implement the environmental streamlining efforts under EO 13807 and SO 3355. This work entailed the examination of timelines associated with environmental analyses and reviews, as well as determination of which of BOEM's Federal actions would be considered major infrastructure projects and would require enhanced coordination. In FY 2020, the Program will continue to conduct effective environmental analyses in a timely, coordinated, and transparent manner.

To support the development of the 2019-2024 National OCS Program, BOEM prepared a draft programmatic environmental impact statement (Programmatic EIS) that provided additional analyses and incorporated comments received by BOEM on the Draft Proposed Program (DPP) and Notice of Intent. During FY 2019, BOEM will continue to develop environmental analyses in support of the National OCS Program, specifically a final Programmatic EIS. During FY 2019 and FY 2020, in addition to providing environmental reviews for oil and gas lease sales under the 2017-2022 oil and gas program, BOEM's Environmental Program will be preparing four new environmental impact statements for the lease sales that are planned in 2020 or early 2021, to include the Beaufort Sea, the Mid- and South Atlantic, Southern California, and Chukchi Sea. Ongoing supplemental EIS work will also continue in support of the Gulf of Mexico Program Area 1 sales.

BOEM's review of lease sales, site-specific projects, and other proposals requires advanced coordination with other expert stakeholders, such as NMFS and FWS. Consultation with resource agencies helps BOEM identify effective mitigation practices to avoid or minimize harm to protected or managed species and habitat. BOEM must incorporate the output of these consultations within its decisions and authorizations. Additionally, geological and geophysical permits issued by BOEM require operators to obtain incidental take authorizations for marine mammals from NMFS. BOEM and NMFS have been working together to improve the efficiency of these processes and implement the streamlining imperative identified in EO 13795 and SO 3355. BOEM has drafted a memorandum of agreement with NMFS focused on seismic permit streamlining, and developed a proposed framework of specific actions that both agencies will take to expedite incidental take authorization requests that may be needed for privately funded seismic data research and collection on the OCS.

➤ **Assessments in the Atlantic OCS**

BOEM conducts environmental analyses in the Atlantic OCS for conventional and renewable energy activities and marine mineral activities.

In FY 2018, BOEM initiated planning and preparation for new lease sale EISs for conventional energy that may be needed if new areas are included in the new National OCS Program. To support these efforts, BOEM held public meetings in support of the development of the National OCS Program.

Much of BOEM’s renewable energy efforts have centered on potential wind energy in the Atlantic OCS. Currently, BOEM has issued 12 active commercial wind energy leases in the Atlantic OCS, held a lease sale on December 13, 2018 for three more, and approved 7 Site Assessment Plans to date. For each sale held and/or lease issued, BOEM also completes an environmental assessment. In FY 2019 and FY 2020, BOEM is planning environmental assessments for potential lease sales in the New York Bight and offshore California. In addition to considering impacts of the site characterization surveys that would result from lease issuance, these environmental analyses also programmatically consider site assessment activities (i.e., installation and operation of meteorological towers and buoys). BOEM conducts NEPA analysis on construction and operations plan submissions, which take the form of EISs. BOEM currently is processing two construction and operations plans for commercial-scale wind energy facilities offshore Rhode Island and Massachusetts and anticipates receiving up to five construction and operations plans in FY 2019 for commercial-scale wind energy facilities offshore Maryland, Delaware, New York, Rhode Island, and Massachusetts. The EISs for the Vineyard Wind Project and the South Fork Wind Farm were initiated in FY 2018 and FY 2019, respectively.



Block Island Wind Farm offshore Rhode Island

BOEM also conducts the environmental analysis required for its role in managing the conveyance of marine minerals. In FY 2018, BOEM worked cooperatively with the Civil Works and Regulatory Programs of the U.S. Army Corps of Engineers 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 2018, BOEM served as a cooperating agency for six active leases in the Atlantic and eight pre-lease projects. Additionally, in response to Hurricanes Harvey, Irma, and Maria, the Bipartisan Budget Act of 2018 was signed into law on February 9, 2018, which provided the U.S. Army Corps of Engineers with disaster relief funds to expedite construction



Naples, FL, restored in 2005

for coastal resiliency projects. A significant volume of OCS sand will be required to support construction of multiple projects in Florida. BOEM is currently working as a cooperating agency with the U.S. Army Corps of Engineers as lead agency in the preparation of ongoing environmental compliance documentation for multiple pending lease requests in Florida with anticipated completion in FY 2019.

In FY 2018, BOEM completed environmental compliance reviews and appropriate documentation in support of new and amended non-competitive negotiated agreements for Duval, Brevard, and Martin Counties, Florida; Long Beach Island, New Jersey; Bogue Banks, North Carolina; and Myrtle Beach, South Carolina. In FY 2019 and FY 2020, BOEM will continue to support environmental reviews for hurricane recovery projects in

Florida and planned nourishment projects along the Mid- and South Atlantic Coasts. During FY 2020, BOEM anticipates the need to prepare programmatic compliance documents to support increased long-term coastal resiliency planning efforts along the Atlantic Coast and the potential need for OCS sand resources to support multiple emergency beach renourishment and coastal restoration efforts following significant storm events. In FY 2019, BOEM anticipates completing an ongoing programmatic environmental assessment for sand survey activities.

➤ Assessments in the Gulf of Mexico Planning Area

Due to the high volume of oil and gas activity, BOEM prepares hundreds of NEPA documents and completes thousands of resource-specific reviews every year. The need for OCS sand and gravel for coastal restoration and beach renourishment projects in the Gulf of Mexico have also increased in recent years, leading to an increase in the preparation and reviewing of NEPA documents in support of these activities. In FY 2018, BOEM published the *Gulf of Mexico OCS Lease Sale Final Supplemental Environmental Impact Statement 2018*, which considered new information following the *Deepwater Horizon* explosion and oil spill, including available data from the Natural Resource Damage Assessment and Restoration process. BOEM also completed the *Draft Environmental Assessment, Sand Survey Activities for BOEM's Marine Minerals Program, Atlantic and Gulf of Mexico* in June 2018.

In FY 2018, BOEM ensured NEPA compliance and prepared NEPA documents for 540 plans, of which 47 required a site-specific environmental assessment; 162 pipeline applications; 59 geological and geophysical permit applications, of which 31 required a site-specific environmental assessment; applications for 19 ancillary activities (all site-specific environmental analysis); and applications for 118 structure removals. For actions not analyzed in NEPA

documents, NEPA compliance involved site-specific environmental reviews with extraordinary circumstances consideration and the application of categorical exclusions. In FY 2019 and FY 2020, BOEM anticipates the number of environmental reviews to increase slightly each year.



Killer whale observed in the Gulf Stream

➤ **Assessments in the Alaska Planning Area**

The 2019–2024 DPP identifies 23 lease sales in 11 planning areas offshore Alaska that have not been assessed in many years. Consequently, BOEM is working to evaluate what information is available to support the required NEPA analysis associated with future oil and gas activities.

In FY 2018, BOEM finalized the Beaufort Sea Outer Continental Shelf Liberty Development and Production Plan final EIS (August 2018), and the Record of Decision was signed in October 2018. The Liberty Development Project was BOEM's first Fixing America's Surface Transportation Act project and was completed approximately one month ahead of schedule. If developed, the Liberty Development Project would be the first oil or gas production facility in Federal waters off Alaska. It would consist of a nine-acre artificial gravel island built in the shallow waters of the Beaufort Sea, about 20 miles east of Prudhoe Bay and about five miles off the coast. The facility would be similar to the four oil-and gas-producing artificial islands currently operating in the area's State waters: Spy Island, Northstar Island, Endicott Island, and Oooguruk Island. The peak production is estimated to be 60,000–70,000 barrels of oil per day, and the economic life of the proposed development is anticipated to be 15-20 years.

Additionally, in FY 2018, BOEM completed an environmental assessment for a geological and geophysical permit in Cook Inlet; an environmental assessment in support of a BSEE Government Initiated Unannounced Exercise (GIUE) to help evaluate industry oil spill response capabilities in the Beaufort Sea; and a Determination of NEPA Adequacy review for a revision to an exploration plan in the Beaufort Sea. BOEM also initiated work on EISs for the Beaufort Sea and Chukchi Sea lease sales, as both are identified to occur early in the 2019–2024 DPP. In FY 2019, BOEM will continue this work and in accordance with the new timelines established in the Departmental guidance on streamlining the NEPA process, is planning to complete the Final EIS for the Beaufort Sea lease sale and the Draft EIS for the Chukchi lease sale.

Also in FY 2019, BOEM anticipates conducting NEPA analyses to support decision-making on geological and geophysical and/or exploration activities on some of the 14 leases in Cook Inlet and the 40 leases in the Beaufort Sea. Finally, BOEM expects to receive a supplemental or

revised development and production plan for an existing development in the Beaufort Sea, requiring the appropriate level of environmental analysis.

➤ **Assessments in the Pacific Planning Area**

BOEM's Camarillo Office conducts environmental analyses for conventional and renewable energy activities. At the beginning of FY 2019, 14 OCS platforms out of 23 existing OCS facilities are actively producing oil and gas. BOEM's conventional energy assessments continue to focus on development and production from the 14 operating platforms as well as anticipating upcoming decommissioning proposals, an anticipated geological and geophysical seismic survey, and participation in the National OCS Program. These NEPA activities will support both BOEM and BSEE and include the development of NEPA documents, assisting in the development of and compliance with mitigation measures, and review of the measures' effectiveness.

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 received a research lease request for a grid-connected wave energy test facility on the OCS offshore Newport, Oregon. The lease requires a license from the Federal Energy Regulatory Commission (FERC) 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 associated with the project. A preliminary draft environmental assessment was published in the summer of 2018, and the final environmental assessment is expected near the end of FY 2019.

BOEM received three unsolicited lease requests for commercial-scale floating wind developments offshore Oahu, Hawaii, from two different companies. The Department of Defense and BOEM are coordinating to determine if any wind energy areas are feasible offshore Hawaii. Accordingly, BOEM plans to delay the environmental assessment for an offshore wind lease sale and will continue evaluating the possibility of conducting a Hawaii wind lease sale in 2019 or later.

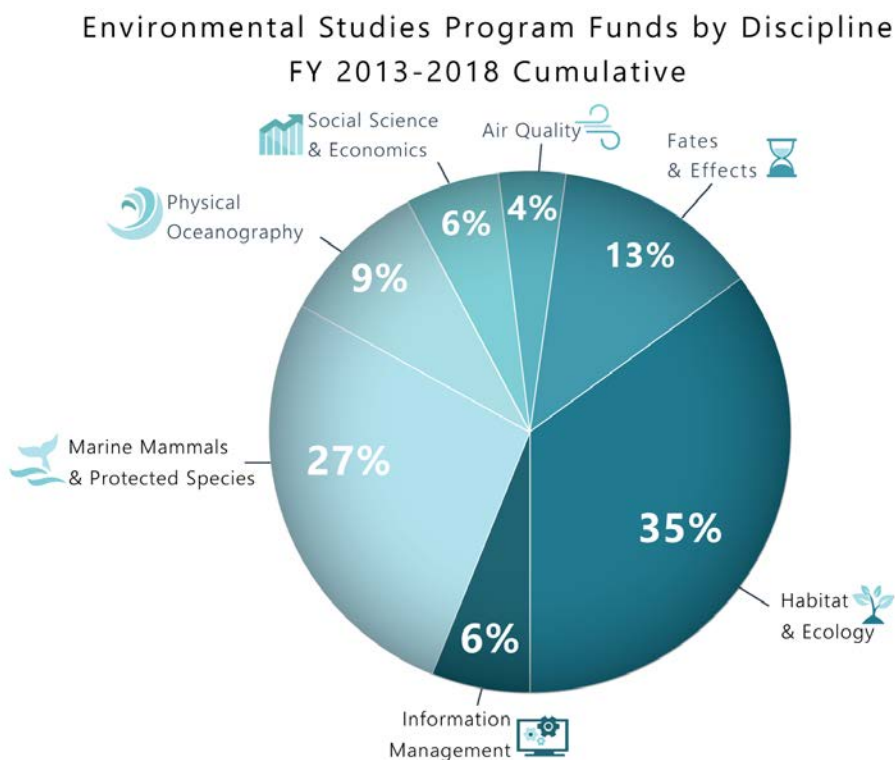
In California, BOEM received two unsolicited lease requests for offshore wind projects, one near Morro Bay on the central coast, and one on the north coast near Humboldt Bay. In October 2018, BOEM published a Call for Information and Nominations in response, identifying potential wind energy leasing areas and is working toward an environmental assessment followed by a potential lease sale in FY 2020.

ENVIRONMENTAL STUDIES PROGRAM

Created by the OCS Lands Act in 1973, BOEM's Environmental Studies Program is a leading contributor to the growing body of scientific knowledge about the Nation's marine and coastal environment. BOEM provides a large amount of the baseline information available for the assessments and management of impacts on the human, marine, and coastal environments of the OCS and affected coastal areas. BOEM monitors these environments through the collection of data and the identification of changes. Using the information gathered, BOEM works to identify potential impacts on marine organisms and the environment resulting from potential OCS activity.

BOEM follows a Strategic Framework that asks three key questions: what does BOEM need to know, what strategic questions should be posed, and what criteria should be used to prioritize studies for addressing these questions? To ensure that selected studies address these questions, BOEM carefully evaluates potential studies and works with the National Academy of Science's Committee on Offshore Science and Assessment to develop its annual studies development plan. To make available the best possible information, the scope of BOEM's environmental studies extend across multiple disciplines with respect to OCS energy and mineral resources (see figure below). In addition, BOEM considers studies independently underway to design and implement effective research for decision-making. A major, continuing emphasis is on 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. The Environmental Studies Program's *Strategic Framework*, which provides the details of the studies development process, can be found at <https://www.boem.gov/Strategic-Framework-2017/>.

Figure 16: Environmental Studies Program Funds by Discipline, FY 2013–2018 Cumulative



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

➤ **Research Partnerships**

The valuable data collected through BOEM’s Environmental Studies Program are used not only within BOEM but also by stakeholders, including other Federal agencies and State and local governments. To generate more information at a lower cost by pooling resources, BOEM leverages funds and expertise through partnerships within the Department and with other Federal agencies, States, and academic institutions. Combining and leveraging resources to satisfy common scientific needs is a central component of BOEM’s approach to gathering robust scientific information for its decisions and consultation processes. Considering BOEM does not possess assets such as ships, autonomous underwater vehicles, etc., partnerships are necessary in order to achieve BOEM’s applied science mission. By contributing personnel, equipment, facilities, and funds, BOEM and its partners can extend the scope of research to obtain maximum results. From FY 2013 to FY 2018, BOEM provided over \$80 million to Federal partners to conduct BOEM-designed scientific environmental work for the Program. In FY 2018, the Program finalized 24 studies, 9 of which were done through partnerships.

Partnerships with Federal agencies, such as the National Oceanic Atmospheric Administration (NOAA), FWS, and NSF are typically established through memoranda of understanding and also through the National Oceanographic Partnership Program (NOPP), a collaborative community of Federal agencies working to improve knowledge of the ocean environment.

For example, during FY 2019 and into FY 2020, BOEM is continuing to support ship-based and aircraft surveys in the western Atlantic in cooperation with the FWS and NOAA. The Atlantic Marine Assessment Program for Protected Species 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. Between FY 2015 and FY 2017, the study surveyed more than 80,000 km and detected approximately 45,000 cetaceans, 4,000 sea turtles, and 7,000 seabirds. Data are collected using a combination of direct airplane and shipboard surveys employing visual and acoustic survey techniques, passive monitoring from moorings, and satellite-tracked animal tags. Eight passive acoustic monitoring buoys deployed along the U. S. Atlantic shelf break in early 2017 provide essential information on the offshore movements of protected species under changing environmental conditions. During FY 2019, the project will put satellite-tracked tags on beaked whales to study habitat use and migration patterns.



A young, molting Pomarine Jaeger observed over the Atlantic Ocean

In FY 2019, BOEM continues its partnership with NOPP, NOAA, and the Office of Naval Research on the Atlantic Deepwater Ecosystem Observatory Network (<https://adeon.unh.edu/>). This study is establishing an ecosystem observatory network in Mid- and South Atlantic deep waters to provide baseline measurements and long-term environmental monitoring capabilities across multiple disciplines. The observatory will be part of the new generation of biologically enabled ocean observing systems that can provide long-term measurements of plankton, fish, and marine mammal distributions.

Another example of a successful NOPP partnership is the Arctic Marine Biodiversity Observation Network. This project covers marine biodiversity from microbes to whales. The project builds on existing data and time series with the goals of continued sampling and closing current gaps in taxonomic coverage – such as microbes – in biodiversity observations on the U.S. Arctic shelf. This multi-agency study includes BOEM, NOAA, NSF, FWS, the University of Maryland, the University of Washington, and the University of Alaska Fairbanks.

BOEM also supports collaborations with the academic community through the Coastal Marine Institutes located at the University of Alaska Fairbanks and Louisiana State University. As part

of the Alaska Coastal Marine Institute, the University of Alaska Fairbanks is beginning the process of identifying new studies for 2019, as well as continuing projects on topics such as coastal community vulnerability indices, measuring wave forces along Alaska's coastal sea ice, and nearshore food web structure on the OCS in Cook Inlet, Alaska. Another Coastal Marine Institute study through Louisiana State University is providing 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 will evaluate how to best utilize Gulf of Mexico OCS sand resources while minimizing the impacts to oil and gas pipeline infrastructure. BOEM funded \$664,000 in FY 2018 and plans on funding approximately \$313,000 in FY 2019 for continuing cooperative agreements with Coastal Marine Institute partners. For additional information on Coastal Marine Institutes, please visit BOEM's web site (<https://www.boem.gov/Environmental-Stewardship/Environmental-Studies/Gulf-of-Mexico-Region/GOMR-Coastal-Marine-Institute.aspx>).

Through the Cooperative Ecosystem Studies Unit (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. Many projects include opportunities to train students and contribute to the next generation of environmental science leaders. BOEM's Camarillo Office has a number of ongoing studies within the CESU Network, primarily with the University of California and the California State University systems. For example, a continuing 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. Another study awarded to a CESU institution monitored rocky intertidal sites adjacent to OCS production facilities along the Pacific coast, allowing BOEM to directly assess potential and real impacts from OCS operations. The Anchorage Office has a number of ongoing studies within various CESUs. Highlighted studies include work on the *Boulder Patch and Other Kelp Communities in the Beaufort Sea*, and *Wave and Hydrodynamic Observations and Modeling in the Nearshore Beaufort Sea*. BOEM funded \$4.6 million in FY 2018 and plans on funding approximately \$1.5 to \$2.0 million in FY 2019 for continuing cooperative agreements with CESU institutions.

➤ **National Studies**

The studies development plan includes research relevant to knowledge and decision-making at all levels of government organizations, and many studies are of global interest. These national studies in the development plan are managed centrally by BOEM's Office of Environmental Programs, though BOEM's 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. BOEM's long-term partnership with the Smithsonian National Museum of Natural History provides valuable information, in particular with regard to invertebrates that allow deep sea benthic ecology to be conducted to ensure these sensitive ecosystems are avoided during the leasing and development process. Many of these invertebrates have not had DNA sequencing and thus must be identified and archived appropriately for scientific posterity.



Spiny Lobster in Coral

BOEM has enhanced the public dissemination of environmental data sets, reports, and other study products maintained by BOEM on its website, the Environmental Studies Program Information System (<https://marinecadastre.gov/espis/>). 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 to meet future information needs.

BOEM works with many agencies, universities, 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 2018 BOEM initiated two new studies to address Atlantic and Pacific coast science needs for renewable energy development, in whole or in part, and continued these studies in FY 2019. Current priorities remain on marine wildlife and avian distribution and movement along the Atlantic and Pacific coasts. Several ongoing studies are expected to be completed in FY 2019 to address offshore usage by the endangered Atlantic Sturgeon as determined by telemetry, tagging studies of the listed roseate tern and piping plover; observations from the first offshore wind facility; and the habitat use and behaviors of seabirds in the Pacific. Results from these studies will inform policy decisions, environmental analyses, and mitigation and monitoring protocols on environmental and cultural issues.

➤ **Atlantic OCS Studies**

In the Mid- and South Atlantic planning areas, BOEM continues to plan and conduct studies. 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 relevant to BOEM environmental analyses. 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 NOAA, FWS, Navy, and the U.S. Geological Survey. 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 human-induced variability. An interdisciplinary monitoring approach will be adopted to understand biological species densities and distributions, the physiochemical 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 2019, BOEM will focus studies on the interaction of offshore wind development and commercial fishing activities to address concerns raised by fishermen. These studies will include research on the economic implications to fishing activities, on environmental changes that may affect fish, and for increasing baseline understanding of fish in areas of potential wind development. The Atlantic Deepwater Ecosystems Observatory Network (ADEON) continues into FY 2020 and beyond to provide an integrated system for long-term monitoring of ecological and human factors on the Mid-Atlantic offshore. The Atlantic Deepwater Ecosystems Observatory Network's collection of passive acoustic data serves the dual purpose of providing both animal distributions and baseline soundscapes and includes contributions from human activities. Overall, the network provides much-needed baseline data within this area and will provide capability for monitoring long-term environmental changes and testing BOEM mitigations. ADEON serves the advancement of the Renewable Energy Program and the Oil and Gas Program by providing needed environmental and socio-economic information to inform future development.

In order to meet the information needs for future lease sales, BOEM began updating the database on the "Onshore Oil and Gas Infrastructure to Support Development in the Atlantic OCS Region." Once completed in FY 2019, this study will help BOEM understand the existing onshore infrastructure within the Atlantic planning area and the capacity of this infrastructure to support new offshore energy projects. For future development in FY 2020 and beyond, this infrastructure data is critical to the assessment of the types and scale of onshore OCS-related

effects, particularly during project development (e.g., labor demand or land-loss from new infrastructure construction).

For FY 2020, BOEM will continue to collect baseline information about the marine environment in support of future offshore energy development. Studies will address key questions in support of post-construction onsite environmental mitigation measures for offshore wind. BOEM will continue to collect information about the environment to support oil and gas leasing and post-leasing activities and support oil spill modelling.

➤ **Gulf of Mexico Planning Area Studies**

Long-term environmental monitoring is combined with experimental research to give OCS decisions a firm scientific base. Studies analyze and explore the ocean ecology 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, as biological and other environmental information currently is sparse and often outdated.

In FY 2019 and FY 2020, BOEM will continue a variety of studies. The long-term coral reef monitoring program at the Flower Gardens Banks National Marine Sanctuary is in the process of being extended to FY 2022. This long-standing monitoring program has demonstrated that oil and gas production can co-exist with a healthy, productive marine coral ecosystem, ensuring the long-term health of the sanctuary. A passive acoustic monitoring (PAM) study through FY 2020 has started to establish a long-term PAM database using moored acoustic recorders at permanent stations throughout the Gulf of Mexico. Knowledge gained from using PAM to observe sperm whale populations will contribute to the protection of the species while allowing seismic activity to proceed in the Gulf in an environmentally sound manner. The ongoing Gulf of Mexico Marine Assessment Program for Protected Species (GoMMAPPS) study continues surveying important protected seabirds, sea turtles, and marine mammals. GoMMAPPS focuses on collecting seasonal data on the abundance, distribution, and behavior of marine mammals, sea turtles, and seabirds throughout the Gulf of Mexico exclusive economic zone, providing spatially explicit data to inform decisions. GoMMAPPS is closely coordinating its activities with ongoing PAM studies. GoMMAPPS study results will inform FY 2020 studies and beyond with up-to-date survey information about protected seabirds, sea turtles, and marine mammals so that on-going oil and gas production can proceed with minimal impact to the environment.



Close-up of the fire coral in the East Flower Garden Bank

Several new studies implemented in FY 2019 and continuing into FY 2020 will assess air quality modeling, seafloor adaptive management strategies, and recreational use of OCS infrastructure. The information from these studies will support multiple aspects of all three BOEM programs and inform future studies. A preliminary study examining coastal ambient air quality monitoring will inform environmental analyses for future NEPA and help BOEM evaluate air quality model predictions used to determine compliance with the National Ambient Air Quality Standards. This information will increase the accuracy of the air quality model and clarify the actual impact at the shoreline, producing a more realistic understanding of the contribution of OCS oil and gas production. A wind-tunnel study will conduct experiments to obtain information on oil platform downwash in order to simulate and model air flow and air dispersion in the atmospheric boundary layer. Results from this study will produce better impact predictions and provide for realistic regulatory recommendations. A socioeconomic study will examine the recreational uses of OCS infrastructures, improving BOEM's cumulative analyses of overall decommissioning trends and recreational impacts. The information collected from this study will support the environmental analyses of future decommissioning activities and provide a better understanding of the economic impacts of all decommissioning activities including the Rigs-to-Reef program.

➤ **Alaska Planning Area Studies**

BOEM's studies in the Anchorage Office currently focus on foundational research in the Beaufort Sea, Chukchi Sea and the Cook Inlet Planning Areas, and identifying baseline information in other Alaska planning areas that have future lease sales identified in the 2019–



Walrus in sea ice

2024 DPP. Strengthening collaborative research opportunities is a priority, including the incorporation of traditional knowledge in decision-making. Other priorities include 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 subsistence activities in North Slope communities.

To identify effects of development in the U.S. Arctic and other lease areas, BOEM continues to develop a wide range of studies, taking an integrated approach and using new technologies that facilitate research in the harsh Arctic environment to understand the effects on these critical resources and the people dependent upon them.

In FY 2019, BOEM is initiating a study to monitor for potential impacts from sedimentation on the Boulder Patch Community in the Beaufort Sea before, during, and after construction of the proposed Liberty Development and Production Island, anticipated in 2020. This project will

complement the recently started Wave and Hydrodynamic Observations and Modeling study. Studies considered for 2020 will seek to extend the monitoring conducted in several recently completed projects in the Beaufort and Chukchi Seas (trace metal concentrations, marine mammal movements and behavior, subsistence activities and effects from changes in ocean currents and sea ice, etc.).

The studies considered for 2020 will also address anticipated activities in the Cook Inlet area. Potential impacts to the endangered beluga whale population; effects of oil and gas exploration and development activities on commercial, recreational, and subsistence fisheries; and concerns from local communities continue to be predominant topics of concern.

➤ **Pacific Planning Area Studies**

Within the Pacific Planning Areas, which include the OCS offshore California, Oregon, Washington, and Hawaii, BOEM studies continue to evolve in response to the changes in: (1) the geographic areas of activity and study; (2) the emphasis of disciplines highlighted for research; (3) the needs for the mature oil- and gas-producing area offshore California; and (4) focus to frontier areas for renewable energy offshore California, Oregon, and Hawaii. The Camarillo Office’s responsibility encompasses ongoing oil and gas operations and potential renewable energy development from wind and hydrokinetic marine energy. Partners play a key role in these studies. For FY 2019, the Camarillo Office received 49 study ideas from stakeholders, including public and private academic institutions; the general public; consultants; Tribal governments; Federal agencies such as NOAA and the U.S. Army Corps of Engineers; and the State agencies of Oregon and Washington.



BOEM intertidal study monitoring mussels in Northern California

For conventional energy, the Camarillo Office’s study priorities include continued monitoring of environmental conditions adjacent to oil and gas activities offshore California, and collecting environmental and socioeconomic information to prepare for decommissioning. Other study priorities include refining information about environmental conditions and biological communities in areas of potential renewable energy development offshore California, and obtaining baseline information in areas of renewable energy potential offshore Hawaii.

OUTLOOK FOR ENVIRONMENTAL PROGRAMS

Looking forward, BOEM will continue to manage OCS oil and gas, marine minerals, and renewable energy development using the best available 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. 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 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. BOEM's focus and dedication to using the best available and most up-to-date, science-based environmental information will continue, providing effective environmental safeguards for the development of OCS energy and mineral resources.

FISCAL YEAR 2020 BUDGET
 Bureau of Ocean Energy Management
Marine Minerals

Table 13: Marine Minerals Budget Summary

		2019 CR Baseline	Internal Transfers	Fixed Costs	Program Change	2020 Request	vs. 2019 CR
Marine Minerals	(\$000)	-	+4,787	-	+942	5,729	+5,729
	FTE		+17		+2	19	+19

The OCS Lands Act designates BOEM as the sole authority to manage non-energy minerals on the OCS and authorizes the Bureau to convey, on a noncompetitive basis, the rights to those 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. Through its Marine Minerals Program, BOEM facilitates access to and manages 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.

The 2020 budget will support:

- **Conveyance of Sand Resources:** BOEM is the sole responsible steward of OCS sand and gravel resources management. As of February 1, 2019, BOEM has conveyed the rights to more than 147 million cubic yards of OCS sediment by executing 54 negotiated agreements for projects in eight States that have restored over 321 miles of coastline.
- **National Offshore Sand Inventory:** One of BOEM's objectives is to develop a National Offshore Sand Inventory. 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. A National Offshore Sand Inventory will enable BOEM to be informed about the 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.

- Marine Mineral Information System:** In support of the National Offshore Sand Inventory, BOEM is developing a Marine Minerals Information System (MMIS), which serves as a central repository of marine minerals data. The MMIS provides a means for BOEM to collect, process, analyze, maintain, store and disseminate marine minerals data. Through the MMIS, BOEM will become the authoritative source of reliable and credible information on sand and gravel resources on the OCS. BOEM will continue developing the MMIS during FY 2020.

PROPOSED BUDGET ACTIVITY

To emphasize the importance of the Marine Minerals Program and the role it plays in restoration efforts, BOEM proposes the creation of a Marine Minerals budget activity in FY 2020. The revised budget structure would not change BOEM’s existing authority with respect to marine or critical minerals; it merely reflects a change in how the funds are presented and accounted for within the budget. Currently, BOEM funds its Marine Minerals Program through the Conventional Energy and Environmental Programs budget activities. In FY 2020, these resources would be transferred from those activities into the new Marine Minerals activity. As part of this realignment, BOEM requests additional FTE in order to conduct more environmental work in-house. The transfers required to create the new activity are shown in the table below.

Crosswalk to Marine Minerals Activity in FY 2020

(\$ in thousands)

	2018 Actual		2019 CR Baseline		2020 Request	
	\$	FTE	\$	FTE	\$	FTE
Conventional Energy						
Marine Minerals Program	2,728	8	2,728	8	-2,728	-8
Environmental Programs						
Marine Minerals Program	2,059	4	2,059	4	-2,059	-4
Marine Minerals					5,729	19
MMP (formerly Conventional)					+2,728	+8
MMP (formerly Environmental)*					+2,059	+9
Increase for Critical Minerals					+942	+2
TOTAL	4,787	12	4,787	12	5,729	19

* In FY 2020, BOEM proposes to hire additional FTE to conduct more environmental work in-house (versus through contracts or agreements).

The table above cross-walks funds from the FY 2018 enacted level to the proposed budget structure in FY 2020. As previously noted, to support Bureau and Administration priorities BOEM will realign base resources in FY 2020 through two internal transfers. BOEM proposes an internal transfer of funds and FTE from where they have been funded in the Conventional

Energy (\$2,728,000; 8 FTE) and Environmental Programs (\$2,059,000; 4 FTE) budget activities to the new Marine Minerals budget activity. By consolidating marine mineral activities into a single line item, BOEM will separate the non-energy mineral activities from the conventional energy activities. It will also enable BOEM to capture non-energy related environmental activities within the same funding stream.

Creating a separate budget activity for marine mineral activities raises the visibility of BOEM's Marine Minerals Program by highlighting the Bureau's non-energy activities. Identifying marine mineral work as a separate and independent budget activity emphasizes the Marine Minerals Program's significance. Greater public awareness of the role BOEM plays in coastal resilience can benefit BOEM, its partners, and the communities served by the resulting projects.

SUMMARY OF 2020 PROGRAM CHANGES

Program Changes from 2019 CR Baseline	(\$000)	FTE
North Slope Sand/Gravel/Critical Minerals	+942	+2
Total Program Changes	+942	+2

North Slope Sand, Gravel and Critical Minerals (+\$942,000; +2 FTE). An additional \$942,000 and two FTE are requested to initiate a marine minerals project offshore the North Slope of Alaska to inventory potentially available resources, such as sand, gravel, and critical minerals. This project will support area infrastructure needs and the Administration's efforts to secure critical minerals, as outlined in EO 13817 – *A Federal Strategy To Ensure Secure and Reliable Supplies of Critical Minerals* – and SO 3359 – *Critical Mineral Independence and Security*. As offshore activity in the region increases, the need for sand and gravel resources to support infrastructure needs will grow as well. When BOEM assesses sand and gravel resource potential in the area, it will simultaneously assess critical mineral resources, which are either known or potentially present at several locations offshore Alaska. Through this effort, BOEM can more proactively manage OCS marine mineral resources in an area where little is known of the kind, quantity, and location of such resources.

PROGRAM OVERVIEW

Funding for the Marine Minerals Program is nominal given the scope of its role and workload. With a base budget of \$4.8 million, BOEM is able to:

- Identify potential resources and develop a National Offshore Sand Inventory;

- Develop a Marine Minerals Information System (MMIS);
- Manage OCS sand and gravel resources;
- Discuss potential projects with stakeholders (e.g., the U.S. Army Corps of Engineers);
- Conduct NEPA reviews and consultations (e.g., Endangered Species Act);
- Design dredge plans and associated stipulations (e.g., other sea floor uses);
- Develop lease agreements, which incorporate the dredge plans;
- Oversee pre- and post-bathymetric surveys;
- Collect and store marine mineral project data (e.g., character, quantity and location of sand resources) within BOEM’s Marine Minerals Information System (MMIS).

On average, BOEM executes approximately six agreements and amendments per year within its existing annual operating budget and staff. Project scope and costs can vary depending on factors like the borrow site proximity to the project location and whether sufficient environmental studies and data are available.

GROWING DEMAND FOR MARINE MINERALS

OCS sand and gravel resources are 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. Over the past 20 years, BOEM has seen an increasing trend in the number of requests for OCS sediment, as well as a commensurate increase in the volume of OCS of sediment allocated per year. These trends are driven by diminishing resources in State waters and a high frequency of recent storms along the Atlantic and Gulf of Mexico coasts (e.g., Hurricanes Florence and Michael in 2018). Increasingly, BOEM is asked to provide access to these resources to support critical restoration and recovery efforts in the aftermath of natural disasters. Increasingly, BOEM is asked to provide access to these resources to support critical



**Sand placement work
NASA Wallops Island Flight Facility, Virginia**

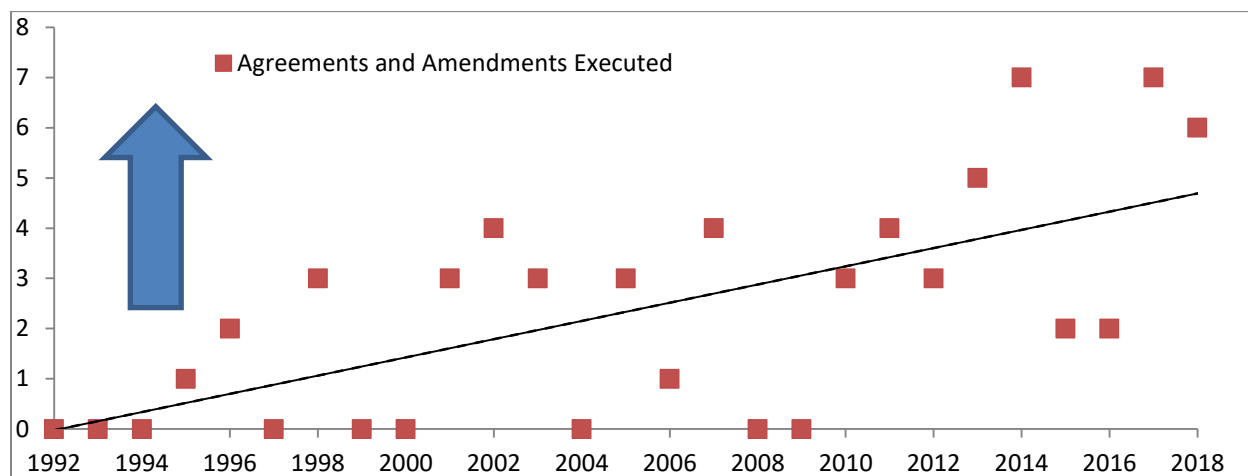
restoration and recovery efforts in the aftermath of natural disasters. At the same time, proponents of planned infrastructure projects are requesting higher volumes of OCS sediment.

The availability of proven, technically recoverable sands and sediments is limited in comparison to current needs, and as resources in State waters are depleted, there is increased pressure on

resources in Federal waters. Effectively responding to requests for OCS sediment for planned activities as well as following natural disasters requires BOEM to proactively identify, quantify, and characterize OCS marine minerals resources. Knowing where resources are and how much material is available up front reduces project construction times, as sources do not have to be identified as part of a project's schedule. Through early identification of critical resources, BOEM is able to facilitate the restoration and protection of shoreline infrastructure vital to the Nation's security, economy, and ecosystems, as well as beach and coastal wetlands restoration projects, following natural disasters. As the entity responsible for managing these finite resources, BOEM seeks to balance the needs of coastal communities with its obligation to ensure environmentally responsible stewardship. This is impossible to do prudently without a quantification of the volume of available resources. BOEM continues to address this need through the development of the National Offshore Sand Inventory, which it populates with data as it completes marine mineral projects. BOEM continues to work proactively with partners such as the U.S. Army Corps of Engineers as well as State and local governments in identifying and providing sand for projects so that communities can recover quickly from storms and be prepared for future events.

The following figure illustrates the growing demand for OCS sediment for infrastructure projects and beach and dune construction along the Atlantic and Gulf coasts for use in planned projects as well as in response to damage resulting from natural disasters. In FY 2018, BOEM managed 13 active lease agreements, including 1 new agreement and 5 amendments to existing agreements, for OCS sand for beach nourishment and coastal restoration projects. BOEM anticipates receiving 7 to 11 requests for new agreements and amendments in both FY 2019 and FY 2020, as a result of anticipated projects in Virginia, North Carolina, South Carolina, Louisiana, and Florida, as well as 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 2018, increased Gulf of Mexico Energy Security Act revenue sharing with Gulf Coast States have increased the number of coastal restoration projects, many of which are barrier island restoration projects that will use OCS sand. To date, BOEM has conveyed the rights to more than 147 million cubic yards of OCS sediment by executing 54 negotiated agreements for projects in eight States that have restored over 321 miles of coastline.

Figure 17: Number of Agreements and Amendments Executed Nationally Since 1992



BOEM is responsible for ensuring that the conveyance of OCS 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 U.S. Fish and Wildlife Service, as well as coastal consistency and archaeological resources reviews. BOEM plans to continue to initiate studies (funded through the Environmental Programs budget activity) to provide information to evaluate the effects of specific proposed dredging operations, as required under current environmental laws, and design onsite mitigation measures that are incorporated, as appropriate, in lease requirements and stipulations for the dredging of OCS sands. BOEM has invested more than \$40 million over the past 20 years on world-class scientific research that informs environmental assessment and leasing decisions concerning the use of OCS sand resources. While this research supports programmatic activities, it also helps inform decisions before and after major events that affect the Nation’s coastline to ensure the OCS resources are made available in a responsible way.

➤ **National Offshore Sand Inventory**

One of BOEM’s objectives is to develop a National Offshore Sand Inventory that will constitute a comprehensive catalog of the location and character of sand reserves. This inventory will allow BOEM 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. Maintaining and expanding the inventory of OCS sand resources is critical to the Nation’s coastal restoration and resiliency efforts. Through the National Offshore Sand Inventory, BOEM will proactively plan for the increasing demands for OCS resources and emergency needs as they arise.

To support its National Offshore Sand Inventory, BOEM is developing the Marine Minerals Information System (MMIS), which is a central repository of marine minerals data. It provides BOEM a means to collect, process, analyze, maintain, store, and disseminate marine minerals data. BOEM seeks to make the MMIS the authoritative source of reliable and credible information on sand and gravel resources on the OCS. The MMIS will help to resolve or prevent future marine use conflicts, such as submarine fiber optic cables and transmission lines from future offshore wind farms that may cross sand resource areas. Ultimately, the MMIS supports Bureau and stakeholder decisions regarding the use and sustainability of offshore sand resources by proactively identifying potential locations and amounts of sand that shorten recovery efforts after hurricanes and other natural disasters.

➤ **Responding to Natural Disasters**

Through its marine mineral responsibilities, BOEM is a key player in restoration and recovery activities along coastlines following natural disasters. BOEM's primary role in responding to emergency events is that of a steward for this finite resource, and immediate areas of focus include: communicating with stakeholders in areas of need, site analysis and resource availability, and identifying environmental concerns in preparation of potential projects. In the aftermath of a hurricane, the scale and volume of requested projects typically increases by 30 percent. This is because post-disaster projects generally encompass larger project areas and require a larger volume of resources to mitigate significant storm related losses and support additional protection measures (i.e., dunes) to reduce future damages. Consequently, the scope of information needed to process project requests increases substantially after major storms.

In FY 2013, demand for marine minerals increased dramatically due to recovery and restoration efforts related to Hurricane Sandy. Under the Disaster Relief Appropriations Act of 2013, BOEM received \$16.3 million in supplemental appropriations, to identify and convey sand resources offshore the Atlantic Coast for beach and habitat restoration projects. BOEM acted quickly to coordinate with partners, identify needs, and execute projects. Hurricane Sandy supplemental funds enabled BOEM to immediately support four projects in New Jersey, Virginia, and Florida. It also allowed BOEM to advance its National Offshore Shore Inventory in an effort to get ahead of demands from future storms. The data acquisition efforts supported by Hurricane Sandy funds have helped identify resources for subsequent projects being planned in Virginia, North Carolina, South Carolina, and Florida.

➤ **Protecting Federal Infrastructure and National Defense**

For over 20 years, BOEM has partnered with coastal communities, States and other Federal agencies to facilitate critical coastal infrastructure projects, including some that are key to national defense and the national economy. These include –

- Caminada Headlands (Grand Isle, Louisiana): this project protects the petroleum storage, transport, and support facilities associated with Port Fourchon, which services over 90 percent of the Gulf of Mexico deepwater oil production.
- National Aeronautics and Space Administration (NASA) Wallops Island Flight Facility (Wallops Island, Virginia): this project protects approximately \$1 billion in assets, including launch pads and associated infrastructure, test and training facilities.



NASA Wallops Island, VA, before shoreline restoration (2010) NASA Wallops Island, VA, after shoreline restoration (2014)

- Navy Dam Neck Facility (Virginia Beach, Virginia): this project protects approximately \$135 million of assets, including training facilities, housing and support facilities.
- Patrick Air Force Base (Canaveral, Florida): this project protects the Air Force base as well as State infrastructure.
- Long Beach Island (Long Beach Island, New Jersey): this project encompasses approximately 12 miles of shoreline that protects public streets, utilities, and maintains the public beach.
- U.S. Army Corps of Engineers South Atlantic Coastal Study: this study, which began in April 2018, covers coastal areas from North Carolina to Mississippi. BOEM will be coordinating with the Corps on offshore sand investigation and resource identification. The study is designed to proactively address flood and coastal storm risks of vulnerable coastal populations, including the economies, infrastructure, property, and ecosystems along the coastline.

➤ Interagency Coordination

BOEM often works with other DOI bureaus to assist in beach renourishment, coastal and wetlands restoration and infrastructure efforts. For instance, the National Park Service reached out to BOEM for technical guidance in identifying compatible offshore sand resources to support efforts to restore Padre Island National Seashore habitat for sea turtle nesting along the Gulf Coast of Texas. It is crucial that the Seashore renourishment utilize OCS sand similar to the existing habitat. Sand color dictates the sand temperature, which dictates the gender of the sea turtles hatching on the beaches. This example highlights the importance of matching OCS sand characteristics to those of the native beach.

The U.S. Geological Survey (USGS) is another important BOEM partner and collaborator on offshore sand resource data efforts. USGS activities are typically aimed at regional geologic mapping efforts, while BOEM activities are project/site-specific. Most recently, BOEM and USGS have discussed potential projects for restoration efforts resulting from Hurricane Florence. USGS is looking to conduct regional scale high resolution mapping of submarine ridges, rocky hard grounds and buried channels offshore North Carolina. BOEM-proposed efforts are targeted at geophysical and geological data acquisition to identify specific resource areas that can be used in support of recovery projects. Regional geologic mapping and modelling help to narrow the potential sand resource locations.

CRITICAL MINERALS

Critical minerals are a new focal area for BOEM's Marine Minerals Program. Pursuant to Executive Order 13817 – *A Federal Strategy To Ensure Secure and Reliable Supplies of Critical Minerals* – and Secretarial Order 3359 – *Critical Mineral Independence and Security* – BOEM is collaborating with the USGS to determine which of 35 identified critical minerals are located on the OCS. Critical minerals are mineral resources that are essential to the economic and national security of the U.S. and for which the supply chain is vulnerable to disruption.

In FY 2020, BOEM proposes initiating the development of an OCS Critical Mineral Inventory that would be focused on areas of industry interest. Despite the rising interest from industry in offshore critical minerals, the quantity and characteristics of the resources are uncertain. There is an urgent need to identify areas that have high economic potential but low ecological value, making them suitable for further exploration and leasing. Domestically sourced critical minerals could reduce the Nation's vulnerability to economic disruption and negative national security impacts caused by a break in imports used in manufacturing and other sectors.

OUTLOOK FOR MARINE MINERALS

The role of BOEM as the Nation's steward of OCS mineral resources is expected to grow over the next five years. As described previously, BOEM expects interest in OCS sand to continue to increase. Ongoing development along the coast, storm activity, sea level rise, and diminishing sand sources in state waters contribute to the expected increasing demand. In the next five years, BOEM expects new requests from States that have not previously used OCS sand as well as continuing requests from historic users. The value and utility of the MMIS is expected to expand as potential conflicts between sand sources and other uses of the seafloor such as submarine fiber optic cables, oil and gas pipelines, and electric transmission lines arise. Continued future development of the National Offshore Sand Inventory and MMIS are critical to support BOEM's environmental stewardship role. In addition, the Nation's search for secure and reliable domestic sources of critical minerals presents BOEM with expanded responsibilities. BOEM's critical mineral activities will support the long term goals of reducing dependence on foreign imports, improving the balance of trade, supporting job creation, generating royalty income, and improving national security.

FISCAL YEAR 2020 BUDGET
 Bureau of Ocean Energy Management
Executive Direction

Table 14: Executive Direction Budget Summary

		2019 CR Baseline	Internal Transfers	Fixed Costs	Program Changes	2020 Request	vs. 2019 CR
Executive Direction	(\$000)	17,367	-	+166	-394	17,139	-228
	FTE	85			-3	82	-3

This activity funds Bureau-wide leadership, direction, management, coordination, communications strategies, outreach, and regulatory development. It includes functions such as: international affairs, Freedom of Information Act activities, overseeing official documents, 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 2020 budget will support:

- **Strategic Leadership:** Bureau-wide policy guidance and leadership, including the implementation of administrative priorities and policies.
- **International Affairs:** Continue advancing BOEM’s Office of International affairs, which fosters cooperation with other Nations and enables access to their institutional knowledge for conventional and renewable energy. By doing so BOEM has been able to adapt certain best practices to further streamline regulations in emerging energy sectors as well as establishing points of contact with governments whom the waters of the United States border.
- **Freedom of Information Act:** FOIA officers within BOEM work to ensure the timely resolution to any request as well as staying up to date with any legislative actions that pertain to FOIA policy.
- **Public Affairs:** Coordinate internal and external communications, including outreach to State and local governments and other stakeholders.
- **Congressional Affairs:** Liaise for BOEM on all Congressional and legislative matters that relate to BOEM’s programs, including coordination with the Department of the Interior and other Federal executive agencies.

- **Budget:** Manage the budget formulation and execution processes, from the development of the annual budget justification through the expenditure of appropriated funds, in conformance with all necessary policies, regulations, and statutes.
- **Program Coordination:** Oversee and coordinate Bureau-level programs with BOEM offices and regions, including administrative policies and procedures. In FY 2020, BOEM will continue implementing its strategic human capital plan, including improved onboarding for new employees and programs for employee development, such as the Navigating Leadership Program. BOEM will also continue the implementation and evaluation of progress made towards goals identified in the Corrective and Preventative Action Plan to prevent and eliminate harassment.
- **Information Technology:** Bureau-wide information technology management and governance ensuring that technology aligns with mission delivery requirements.
- **Regulatory and Policy Coordination:** Manage BOEM’s national regulatory policy and provide analysis of programmatic and management initiatives.

SUMMARY OF 2020 PROGRAM CHANGES

Program Changes from 2019 CR Baseline	(\$000)	FTE
Staffing	-394	-3
Total Program Changes	-394	-3

Staffing (-\$394,000; -3 FTE). In FY 2020, BOEM proposes to redirect funds to support National OCS Program leasing efforts in the field.

PROGRAM OVERVIEW

➤ 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, and talent management. 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 oversee BOEM’s national regulatory, policy, and evaluation programs and provides the Director with independent review and analysis of programmatic and management initiatives. The Office of Policy, Regulation and Analysis leads and provides oversight for Bureau cross-program initiatives to ensure consistent BOEM-wide implementation that directly support Congressional,

Presidential, Departmental, and Bureau directives, laws, orders, guidance, proposals, and mandates. The Office of Policy, Regulation and Analysis provides BOEM oversight in several critical areas including regulatory planning, development, and promulgation, inter-agency coordination, policy and directives management, activity-based costing, strategic and performance planning, cost recovery, internal control management, program evaluation, and compliance.

FISCAL YEAR 2020 BUDGET
Bureau of Ocean Energy Management
Appropriations Language

Below is the Appropriations language for the Ocean Energy Management account within BOEM. In FY 2020, BOEM proposes no changes to this language. However, BOEM does propose changes to existing General Provisions.

OCEAN ENERGY MANAGEMENT

For expenses necessary for granting and administering 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, \$193,426,000, of which \$136,929,000, is to remain available until September 30, 2021 and of which \$56,497,000 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 2020 appropriation estimated at not more than \$136,929,000: 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 2019 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2019 (Division C of P.L. 115–245, as amended). The amounts included for 2019 reflect the annualized level provided by the continuing resolution.

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 and administering 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. ...\$193,426,000, of which \$136,929,000 is to remain available until September 30, 2021 and of which \$56,497,000 is to remain available until expended:

This provision identifies the amount of BOEM's total budget authority for FY 2020 (\$193,426,000). Of this total budget authority, \$136,929,000 is designated as two-year money, to be available from FY 2020 through the end of FY 2021. Meanwhile, \$56,497,000 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 its predecessor bureaus) 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, as 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 2020 appropriation estimated at not more than \$136,929,000:

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 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 to expend up to a certain amount for the promotion of volunteer beach and marine clean-up activities.

GENERAL PROVISIONS

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 section of the Office of the Secretary FY 2020 budget justification.

➤ **BUREAU OF OCEAN ENERGY MANAGEMENT, REGULATION AND ENFORCEMENT REORGANIZATION**

In FY 2020, BOEM proposes to strike the following General Provision:

BUREAU OF OCEAN ENERGY MANAGEMENT, REGULATION AND ENFORCEMENT REORGANIZATION

SEC. 108. 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.

Explanation of Proposed Change: Since the reorganization of the Minerals Management Service (MMS), the annual appropriations language has carried the above general provision authorizing the transfer of legacy MMS and Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) recoveries between the Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement. All funds were recovered at the end of FY 2018, and no additional transfers will be necessary. Therefore, BOEM proposes terminating the authority in FY 2020 by removing it from the Department's General Provisions. This proposal has no budgetary or scoring impact, nor does it reflect any change in policy or program strategy.

➤ **DECOMMISSIONING ACCOUNT**

BOEM requires companies operating on the OCS to provide financial assurance to cover lease obligations, primarily for decommissioning of facilities when they are no longer supporting production. Through the OCS Lands Act (43 U.S.C. 1338a), BOEM is further authorized to call for the forfeiture of that financial assurance and collect bonds or other security forfeitures from an OCS permittee, lessee or right-of-way holder that does not fulfill the requirements of its permit, lease, or right-of-way or does not comply with the regulations of the Secretary. Such forfeitures cover the cost to the U.S. of any improvement, protection, or rehabilitation work rendered necessary by the action or inaction that lead to the forfeiture. The determination to call

for the forfeiture of a bond or security is made by the Regional Director for the BOEM regional office where the lease, permit or right-of-way is managed. Once collected, forfeited moneys are credited to BOEM's Ocean Energy Management (OEM) account to remain available until expended, and any funds in excess of the amount expended in performing the necessary work are returned to the permittee, lessee, or right-of-way holder.

During the reorganization of the Minerals Management Service into three separate entities, the specific authorities regarding bond forfeitures were not clearly assigned or updated. As a result, BOEM has the authority to call bonds and collect the associated funds, but BSEE is responsible for ensuring the necessary decommissioning work is done. Because the statute identifies the ROMM account (which is now the OEM account, i.e., BOEM's operating account) as the one in which funds would be collected, BSEE does not have the authority to spend the money. While BOEM can utilize a reimbursable service agreement to effectively transfer funds from the OEM account to BSEE, this is neither a practical nor efficient long-term solution. Finally, there is a concern that because the forfeitures collected thus far are credited to BOEM's operating account, they inappropriately appear as technically available funding despite being legally unavailable except for the limited uses specified in OCS Lands Act at 43 U.S.C. 1338a. To date, the funds in the OEM account are in excess of \$31 million, with millions more anticipated in the coming years.

Proposal: BOEM proposes to separate these monies from the appropriations in its OEM account and administer them through a new Treasury account. To accomplish this, BOEM requests authority to transfer forfeitures currently held in the OEM account to this new account and to direct all future such funds to the new account as well. BOEM will work with the Department, OMB, and Treasury to establish the Treasury account in which decommissioning funds can be managed, but in order to utilize this new account for the collection and administration of funds specific to decommissioning activities, the underlying statute will need to be amended. Therefore, BOEM requests the following language be included either as an administrative or general provision:

SEC. 114. The fifth and sixth provisos under the amended heading "Royalty and Offshore Minerals Management" for the Minerals Management Service in Public Law 101-512 (104 Stat. 1926, as amended) (43 U.S.C. Sec. 1338a) are further amended by striking and replacing them with –

"Notwithstanding section 3302 of title 31, any moneys hereafter received as a result of the forfeiture of a bond or other security by an Outer Continental Shelf permittee, lessee, or right-of-way holder that does not fulfill the requirements of its permit, lease, or right-of-way or does not comply with the regulations of the Secretary, or as a bankruptcy distribution or settlement associated with such failure or noncompliance, shall be credited to a separate account established in the Treasury for decommissioning activities and shall be available to the Bureau of Ocean Energy

Management without further appropriation or fiscal year limitation to cover the cost to the United States of any improvement, protection, rehabilitation, or decommissioning work rendered necessary by the action or inaction that led to the forfeiture or bankruptcy distribution or settlement, to remain available until expended: Provided further, That amounts deposited into the decommissioning account may be allocated to the Bureau of Safety and Environmental Enforcement for such costs: Provided further; That any moneys received for such costs currently held in the Ocean Energy Management account shall be transferred to the decommissioning account: Provided further, That any portion of the moneys so credited shall be returned to the bankruptcy estate, permittee, lessee, or right-of-way holder to the extent that the money is in excess of the amount expended in performing the work necessitated by the action or inaction which led to their receipt or, if the bond or security was forfeited for failure to pay the civil penalty, in excess of the civil penalty imposed.”

Explanation of Proposed Change: The requested language would do the following:

- 1) Clarifies the treatment of funds from bankruptcy settlements in addition to bond forfeitures.
- 2) Amend this provision in the OCS Lands Act (43 USC 1338a) to add the word “decommissioning” to the list of purposes for which the funds in this account can be collected and used. This is because “decommissioning” is the term used in the BSEE and BOEM regulations and by the oil and gas industry, and adding it to the statute clarifies the purposes for which the funds in this new account shall be used.
- 3) Allow BOEM to transfer existing funds from OEM (current account) to the new account.

This proposal seeks to simplify how these funds are accounted for in the U.S. Treasury, and it would have no impact to Federal revenues or budgetary scoring.

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FISCAL YEAR 2020 BUDGET
Bureau of Ocean Energy Management
Disclosure of Administrative Expenses

This appendix is provided in compliance with Section 403 of Public Law 115-141, the Consolidated Appropriations Act of 2018, 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 allows the Bureau to meet its administrative and information technology needs. BOEM implements this approach through reimbursable services agreements with the Bureau of Safety and Environmental Enforcement (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 Administration'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 out-year costs are based on prior year actuals and the stated billing methodology. Amounts shown in the table below are estimates 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 Ocean Energy Management account.

Table 15: Disclosure of Administrative Expenses

Bureau of Ocean Energy Management		
Disclosure of Administrative Expenses		
<i>(dollars in thousands)</i>		
Deductions, Reserves, or Holdbacks	FY 2019 Estimate	FY 2020 Estimate
External Bureau Assessments		
Administrative RSA with BSEE	21,050	21,682
IT RSA with BSEE	16,257	17,069
Solicitor Support	1,900	1,980
Working Capital Fund Centralized Billing	1,862	2,023
Working Capital Fund Direct Billing	805	829
NARA	67	69
Total, External Assessments	\$ 41,941	\$ 43,652
Internal Bureau Assessments		
Ocean Energy Management	41,941	43,652
Total, Internal Assessments	\$ 41,941	\$ 43,652

Multiple IT support contracts provide operations, maintenance, management, and enhancement services to the Enterprise and the TIMS investment. 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, which bureaus use for accounting and finance. BOEM is also externally assessed for information archiving through the National Archives and Records Administration (NARA).

FISCAL YEAR 2020 BUDGET
 Bureau of Ocean Energy Management
Employee Count by Grade
 (Total Employment)

Table 16: Employee Count by Grade

Bureau of Ocean Energy Management			
Employee Count by Grade			
(Total Employment)			
	2018	2019	2020
	Actuals	Estimate	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	44	45	45
GS/GM -14	147	148	150
GS/GM -13	180	186	196
GS -12	81	90	98
GS -11	41	43	49
GS -10	2	2	2
GS - 9	28	30	33
GS - 8	10	10	10
GS - 7	8	8	8
GS - 6	9	9	9
GS - 5	1	1	1
GS - 4	0	0	0
GS - 3	0	1	1
GS - 2	0	0	0
GS - 1	0	0	0
Subtotal	551	573	602
Other Pay Schedule Systems	0	0	0
Total employment (actuals & estimates)	558	581	610

Notes on this table:

- 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 termination provisions of Public Law 103-89 (former Performance Management and Recognition System employees).
- Both the FY 2019 and 2020 estimates show increased employee levels associated principally with BOEM's requests for additional FTE to support the 2019-2024 National OCS Oil and Gas Leasing Program.
- Estimates for both FY 2019 and 2020 assume the hiring of a new BOEM Director.

FISCAL YEAR 2020 BUDGET
 Bureau of Ocean Energy Management
List of Acronyms

ABC	Activity Based Costing
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
DOI	Department of the Interior
DPP	Draft Proposed Program
EIS	Environmental Impact Statement
EO	Executive Order
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
IT	Information Technology
LSU	Louisiana State University
MMIS	Marine Minerals Information System
MMPA	Marine Mammals Protection Act
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOPP	National Oceanographic Partnership Program
NTL	Notice to Lessees and Operators
OCS	Outer Continental Shelf
P.L.	Public Law
SEG Y	Society of Exploration Geophysicists Y (type of file format)
SO	Secretarial Order
TBD	To Be Determined
TIFF	Tagged Image File Format
U.S.C.	United States Code
USGS	U.S. Geological Survey

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