



2024–2029 National Outer Continental Shelf Oil and Gas Leasing Proposed Final Program

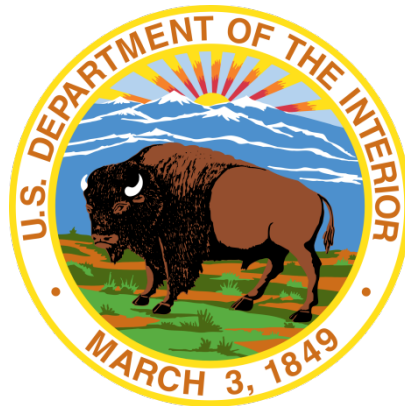
SEPTEMBER 2023

BOEM
Bureau of Ocean Energy
Management



2024–2029
NATIONAL OUTER CONTINENTAL SHELF
OIL AND GAS LEASING

Proposed Final Program



September 2023



Suggested Citation: Bureau of Ocean Energy Management. 2023. 2024–2029 National Outer Continental Shelf Oil and Gas Leasing Proposed Final Program. BOEM 2023-058. <https://www.boem.gov/2024-2029-Proposed-Final-Program>. September 2023.

Part I: PROPOSED FINAL PROGRAM:

Final Proposal on the Size, Timing, and Location of
OCS Lease Sales



Part I: Proposed Final Program

Final Proposal on the Size, Timing, and Location of OCS Lease Sales

Introduction

Under Section 18 of the Outer Continental Shelf (OCS) Lands Act, the Secretary of the Interior (Secretary) is responsible for establishing a schedule of lease sales for a 5-year period in a National OCS Oil and Gas Leasing Program (National OCS Program) by evaluating specified attributes of OCS areas. The Secretary is authorized to select the size, timing, and location of proposed OCS lease sales that best meet national energy needs and that balance, to the maximum extent practicable, the potential for environmental damage, discovery of oil and gas, and adverse impact on the coastal zone.

National OCS Program Development Process

The Bureau of Ocean Energy Management (BOEM) in the U.S. Department of the Interior (USDOl) is responsible for advising the Secretary on the National OCS Program and administering it once adopted. The development of the National OCS Program includes a Request for Information, followed by three analytical phases. The three phases used to develop a new National OCS Program include: issuance of the (1) Draft Proposed Program (DPP), including the Draft Proposal; (2) Proposed Program, including the Second Proposal; and (3) Proposed Final Program (PFP), including this Final Proposal. This National OCS Program development process begins with the broadest consideration of areas available for leasing (i.e., all 26 OCS planning areas), and the areas under consideration can be narrowed at each stage throughout that development process. See [Figure 1](#) for a depiction of the National OCS Program development process.

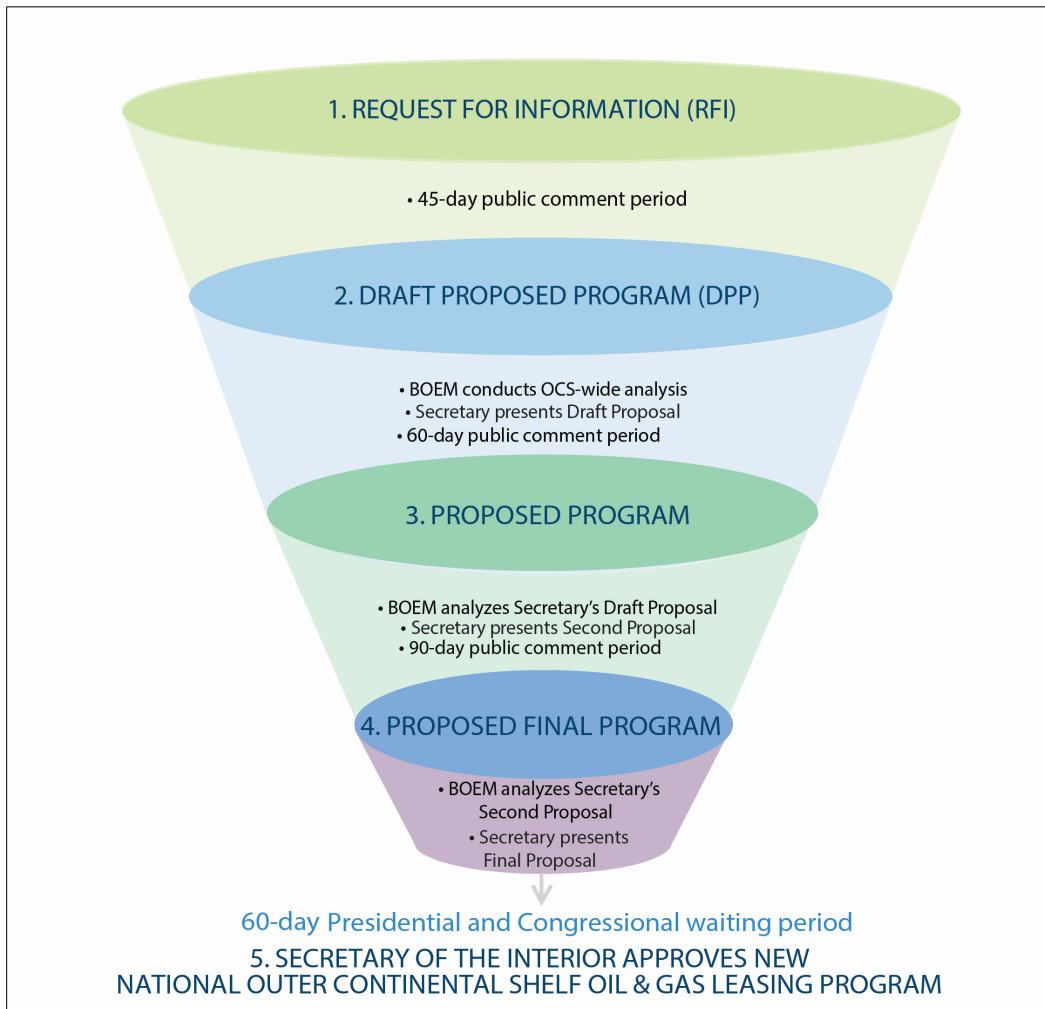
In January 2018, BOEM published the first of the three analytical phases, the DPP, which

included a proposed schedule of 47 lease sales in all four OCS regions and 25 of the 26 planning areas. The subsequent Proposed Program, published in July 2022, had a proposed schedule of up to 11 lease sales in two program areas. Following the publication of the DPP, BOEM received more than 2 million comments, and following the publication of the Proposed Program and the companion Draft Programmatic Environmental Impact Statement (Programmatic EIS), BOEM received approximately 760,000 comments. Diverse stakeholders and partners commented, including governors, Federal agencies, state agencies, local agencies, energy and non-energy industries, Tribal governments, non-governmental organizations and advocacy groups, and the public (see [Chapter 11](#) and [Appendix A](#) for more information).

The PFP, including this Final Proposal, and the companion Final Programmatic EIS present the analysis of the Proposed Program schedule of lease sales, referred to as the Second Proposal, and incorporate input received during the public comment period. Although analysis under the National Environmental Policy Act is not required at the National OCS Program development stage, BOEM chose to prepare a Programmatic EIS to aid in the evaluation of certain environmental, sociocultural, and socioeconomic impacts associated with the Second Proposal.

The PFP and Final Programmatic EIS analyses present a comprehensive picture of the environmental, cultural, economic, and hydrocarbon resource considerations to aid the Secretary in determining the size, timing, and location of potential lease sales evaluated in this PFP for 2024–2029.

Figure 1: National OCS Program Development Process



Proposal Framework

The OCS Lands Act grants the Secretary discretion in weighing the specific Section 18 requirements and factors (see [Chapter 2](#)).

The size, timing, and location of the areas and potential lease sales presented in this Final Proposal reflect the Secretary's balancing of the potential for the discovery of OCS oil and gas resources with the potential for environmental damage and adverse impact on the coastal zone, as required by Section 18(a)(3).

The inclusion of an area in this Final Proposal is not, however, a final determination that the area will ultimately be offered in a future lease

sale and the Secretary may decide in the future to delay or not conduct a lease sale that was included in the approved National OCS Program.

Once this National OCS Program has been approved, there are additional requirements at the lease sale stage for lease sale size, timing, and location analyses, environmental review, and public comment (see [Figure 1-9](#)).

Meeting national energy needs for the 5-year period following approval of a new National OCS Program is a stated purpose of the OCS Lands Act. The need to confront the climate crisis through reducing greenhouse gas emissions is relevant to how national energy

needs are met. BOEM continues to review research on potential net-zero emissions pathways and implications for the National OCS Program and has reviewed available data to refine its analysis in this PFP. Importantly, the Secretary may conduct new environmental and technical analyses on an ongoing basis to help inform lease sale decisions. These additional decision points allow the Secretary to consider new information about national energy needs, policy direction, or other factors when choosing whether to hold any lease sale.

The Inflation Reduction Act (IRA, P.L. 117-169) was enacted on August 16, 2022, shortly after the Proposed Program was published. The IRA offers funding, programs, and incentives designed to accelerate the transition to a clean energy economy and drive significant deployment of new clean energy resources. The Energy Information Administration (EIA) forecasts for the effects of certain IRA provisions have been incorporated into the forecasts used in the analysis presented herein and considered by the Secretary in making this Final Proposal.

Final Proposal: 2024–2029 Lease Sale Schedule

After carefully considering public input and the OCS Lands Act Section 18(a)(2) factors, this Final Proposal includes three potential OCS oil and gas lease sales in the Gulf of Mexico (GOM) Program Area, which includes the Western GOM Planning Area and the portions of the Central and Eastern GOM planning areas not currently under Presidential withdrawal (see [Section 4.6](#)), where more than 99% of current OCS production occurs. Notwithstanding this Final Proposal, the Secretary retains the discretion at the lease sale stage to determine whether, when, and under what terms, a lease sale should be held and the precise acreage to be offered.

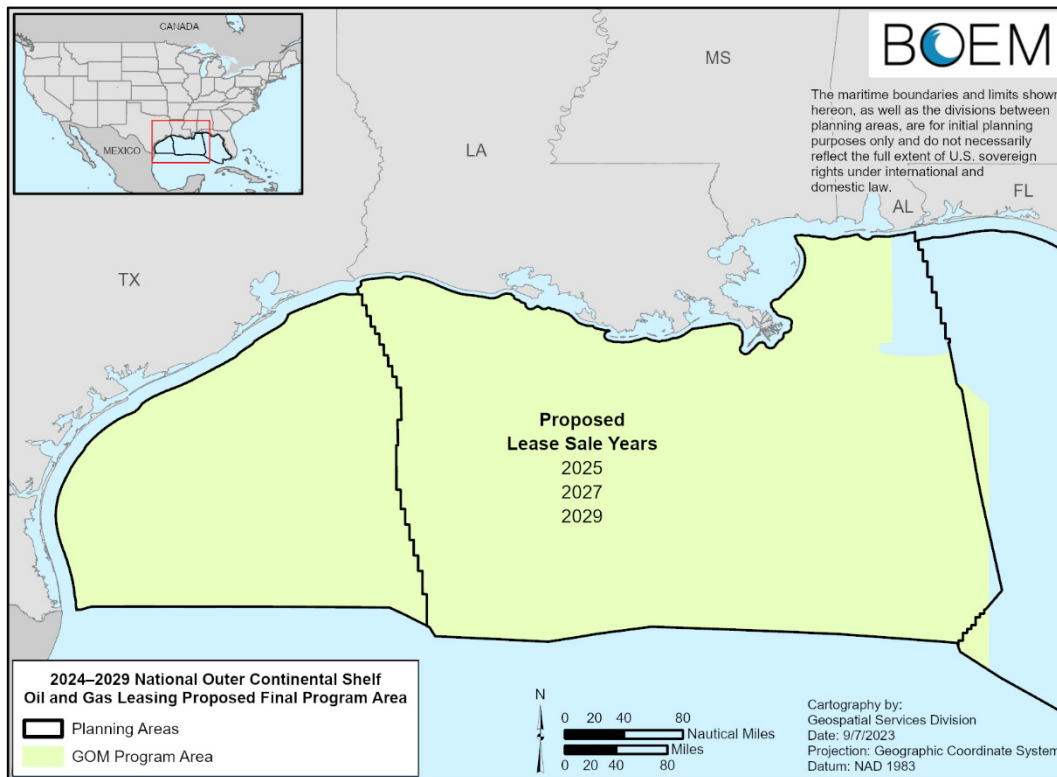
An option for a potential lease sale in the northern portion of the Cook Inlet Planning Area was identified in the Second Proposal and analyzed as part of the PFP and Final Programmatic EIS. Based on consideration of Section 18 requirements and factors, a Cook Inlet lease sale is not included in this Final Proposal.

Table 1 reflects the schedule of potential lease sales for 2024–2029. **Figure 2** depicts the program area remaining in this National OCS Program.

Table 1: 2024–2029 Proposed Final Program Lease Sale Schedule

Count	Sale Number	Sale Year	OCS Region and Program Area
1	262	2025	Gulf of Mexico: GOM Program Area
2	263	2027	Gulf of Mexico: GOM Program Area
3	264	2029	Gulf of Mexico: GOM Program Area

Figure 2: 2024–2029 Proposed Final Program Area



Programmatic Mitigation of Topographic Features and Pinnacle Trends

Under this Final Proposal, the Secretary requires that all leases issued under this National OCS Program employ mitigation measures to protect sensitive seafloor features. **Figure 3** shows the location of these sensitive areas.

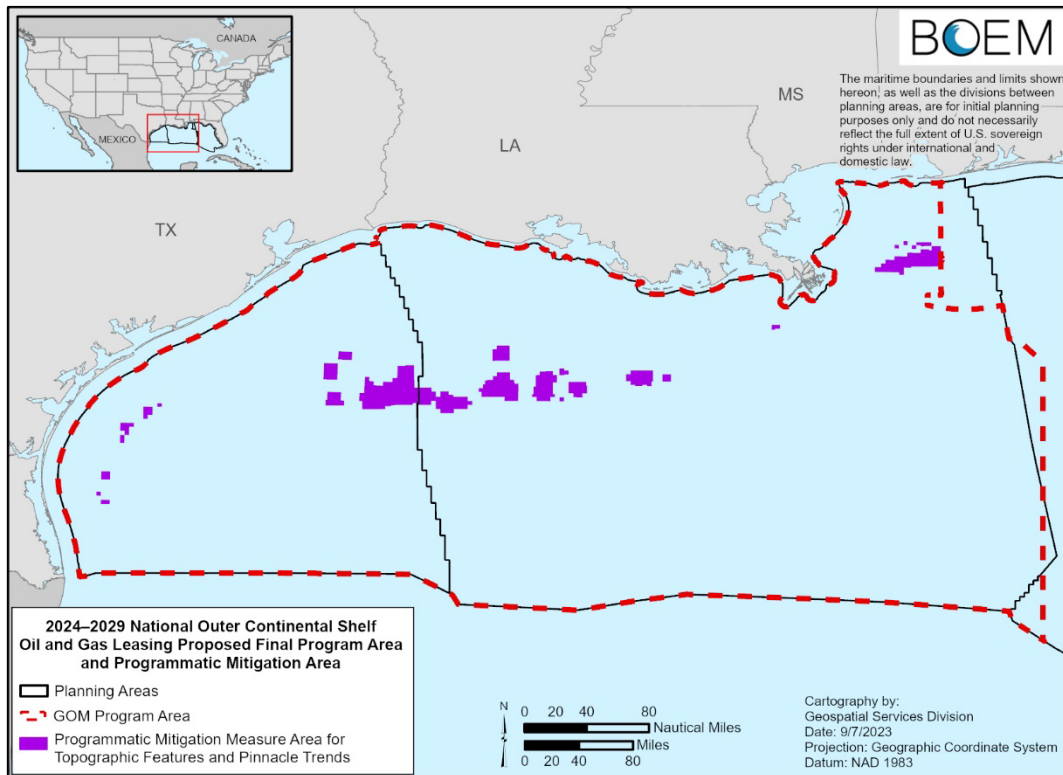
BOEM and its predecessor agencies have required avoidance of sensitive bottom habitats in the GOM for decades. A topographic features stipulation was first applied in 1974 and has been used consistently since April 1996 in all lease sales where the sale area included known topographic features. Similarly, the Live Bottom (Pinnacle Trend) stipulation was first applied in May 1983 and has been used for all applicable sales since 1990. In the Record of Decision approving the [2017–2022 Program](#),

the Secretary adopted the Topographic Features and Live Bottom (Pinnacle Trend) lease stipulations as required mitigation for any leases issued in applicable GOM blocks.

These stipulations are designed to avoid or minimize harm from seafloor-disturbing activities to these sensitive and unique underwater features. The existing Topographic Features stipulation covers 38 topographic banks, which excludes all bottom-disturbing activity in the most sensitive biological areas defined via bathymetric contours (generally 85 meters [279 feet]). A progression of buffer distances around all banks (e.g., 1 mile [1.6 kilometers], 3 miles [4.8 kilometers], and 4 miles [7.4 kilometers]) establishes different levels of protection.

The Live Bottom (Pinnacle Trend) stipulation currently applies to 74 blocks in the northeastern portion of the Central GOM Planning Area. Lessees with a block subject to this stipulation would be required to assess

Figure 3: Programmatic Mitigation Areas



live bottom habitat in the block and undertake measures to protect the live bottom features. These measures could include relocation of operations, shunting of fluids and cuttings, and monitoring to assess the impact of the activity on the live bottom areas.

Applying these stipulations at the National OCS Program development stage is consistent with current practice and continues the effective protection of these biologically sensitive areas, should they be offered in the three potential lease sales scheduled under this Final Proposal.

Secretarial Consideration of the OCS Lands Act Section 18 Requirements and Factors

This Final Proposal narrowed the schedule of potential lease sales from the Second Proposal's maximum of 11 potential sales in two program areas to three potential sales in one program area as best to meet national

energy needs after careful consideration and balancing of all Section 18 factors, including the potential for environmental damage, discovery of oil and gas, and adverse impact on the coastal zone.

One way the Secretary considers economic, social, and environmental values in managing non-renewable resources on the OCS is through estimates of the domestic benefits to society from the potential oil and natural gas production that could result from the proposed lease sales and the domestic environmental and social costs associated with anticipated exploration, development, and production activities. BOEM also considers similar benefits and costs of substitute energy sources that would be consumed in the absence of new OCS leasing. BOEM's analysis finds that there are potential net benefits of a National OCS Program with lease sales in the GOM Program Area for 2024–2029. Based on current and projected

demand and consumption patterns, a National OCS Program with no lease sales for 2024–2029 would result in lower net benefits for the American public because substitute energy sources would be needed to meet projections for continued domestic oil and natural gas demand, and reliance on these sources is estimated to result in less net economic value, greater environmental and social costs, and reduced net consumer surplus (see [Chapter 5](#)). Absent OCS lease sales in the 5 years following National OCS Program approval, OCS oil and gas production would continue only from existing leases. Production from existing OCS leases currently constitutes 15% of domestic oil production and 2% of domestic natural gas production (BSEE 2022, EIA 2022a, 2022b, 2022c). Based on the number of active, non-producing leases and BOEM's recent production forecast for the GOM (see [Section 5.2](#))—which quantifies future contributions from existing proved reserves, discovered resources not already developed, and undiscovered resources—the Secretary determined that three potential lease sales in the GOM Program Area provide adequate access to the region's oil and gas resources to meet national energy needs.

Consideration of national energy needs includes the current energy landscape as well as the possibility of an energy market significantly transformed by transitioning to a net-zero emissions economy. The long-term nature of OCS oil and gas development, such that production on a lease may not begin for a decade or more after lease issuance and can continue for decades, makes consideration of net-zero pathways relevant to the Secretary's determinations on how the National OCS Program best meets the Nation's energy needs. The net-zero emissions pathways introduced in [Section 1.2](#) illustrate the potential for less dependence on oil and gas as the electricity sector de-carbonizes.

[Chapter 5](#) summarizes analysis from the Economic Analysis Methodology Paper

([BOEM 2023](#)) on the impacts of potential net-zero emissions pathways on BOEM's analysis of OCS leasing. For example, BOEM's analysis shows that, in a future where the U.S. makes significant progress towards its net-zero emissions goals, a reduction in reliance on OCS oil and gas production would occur. This reduction will result in greater energy substitution from renewable sources and a greater reduction in consumption than is currently projected using baseline data from the EIA. In these alternative scenarios, BOEM would expect less reliance on imports and domestic onshore oil and gas production in the absence of OCS production.

As the amount of energy produced from renewable sources and the consumption of such energy increases, the continued ability to issue leases for offshore renewable energy is another important consideration as the Secretary seeks to balance national energy needs with the impacts of climate change and other potential for environmental damage and impacts to coastal zones.

Section 50265(b)(2) of the IRA requires BOEM to offer at least 60 million OCS acres for oil and gas leasing within the 12 months prior to issuing an offshore wind lease. The three lease sales in this Final Proposal have the potential to meet national energy needs along projected energy consumption and net-zero emissions pathways, while providing other national benefits in terms of balance of payments of trade, energy security, technology advancement, lower carbon-intensity crude oil and natural gas production, public revenues, and employment (see [Section 1.2.3](#)).

The Secretary has considered the eight [Section 18\(a\)\(2\)](#) factors and concluded that three potential lease sales in the GOM Program Area reflects a proper balance of the potential for environmental damage, discovery of oil and natural gas, and adverse impact on

the coastal zone. The Gulf Coast region has the most throughput of crude oil and petroleum products because it has the most production, refining capacity, and an extensive import and export infrastructure. The region has the greatest ability to use its resource potential to supply the Nation's energy needs. The GOM Program Area is adjacent to robust refining and natural gas processing capacity, and Gulf Coast refineries have access to domestically produced oil from the OCS, state waters, and onshore, as well as imported oil, and can blend oil of various grades and qualities to obtain the best prices given their specific equipment and facilities.

While the GOM region is sensitive to the environmental impacts of development, there are many commercial, recreational, and subsistence uses within the area, including non-energy marine minerals and the potential development of renewable energy. In recent decades, Gulf Coast states have received most of the developmental benefits and borne most of the environmental risks associated with developing OCS resources because most OCS oil and gas activities occur in the GOM. **Chapter 9** discusses the equitable sharing of benefits and risks of implementing the Second Proposal across regions, recognizing that significant infrastructure for oil and gas development already exists in and near the GOM. Therefore, lower levels of new development would be required, potentially avoiding or reducing environmental risks associated with new coastal development. In addition, the current, extensive onshore infrastructure contributes to local and state economies and helps fund government services. Continued Federal oil and gas leasing in the GOM is supported by the governors from the Gulf Coast states of Alabama, Louisiana, Mississippi, and Texas.

Under a No Sale Option, the consequences for the GOM region could include losses of employment and business opportunities for

communities that have been providing goods, services, and labor to support OCS activities. However, the ultimate effects of the No Sale Option depend on the prevailing economic environment, including factors such as energy prices, resource discoveries, and the evolution of the economy to support new economic and employment opportunities.

There is flexibility at the lease sale stage to adopt a targeted approach such that the GOM Program Area could be narrowed by removing, among other options, acreage that has not recently had extensive bidding, exploration, or development activity, or which does not contain actively pursued geologic plays or areas of recent seismic acquisition and processing. Such flexibility could also allow for the removal of biologically sensitive areas and areas of potential conflict with other uses and users of the marine environment. This targeted approach would only offer lease sales in areas with high resource potential while appropriately weighing environmental protection, other uses of the ocean and seabed, and other considerations, consistent with the policy of the OCS Lands Act to make OCS oil and gas resources available for expeditious and orderly development while considering safeguards for the human, marine, and coastal environment.

The No Sale Option was selected for the Cook Inlet Program Area due to limited expressed interest of potential oil and gas producers, the lack of development on existing OCS leases, and the potential for higher environmental risks associated with new leasing in relatively undeveloped areas as described in the Final Programmatic EIS. The Cook Inlet Program Area has recently seen low levels of industry interest. No specific indications of interest were received from oil and gas companies in response to the Call for Information and Nominations for Lease Sale 258; this sale was ultimately held in 2022 as directed by the IRA and resulted in one lease on one tract. There

is no current crude oil or natural gas production from the 15 currently active Cook Inlet OCS leases.

Given Alaska's relatively small population and lack of industrialization, a large percentage of the goods and services needed for oil and gas development in Cook Inlet would likely be imported from other parts of the country and world markets. The need to import these goods and services could result in increased shipping traffic, and the lack of onshore infrastructure required for OCS oil and gas operations would necessitate new construction along the coast. The Final Programmatic EIS concludes, since the area is relatively undeveloped, that potentially significant adverse impacts are likely from any new leasing in the Cook Inlet Program Area, particularly for cultural practices, subsistence uses, recreation, and tourism. Selection of the

No Sale Option for Cook Inlet means that no increased environmental risks from coastal construction or OCS exploration, development, and production activities from new leases would occur in this area.

The three potential lease sales in this Final Proposal are included by the Secretary because they have the greatest resource potential and net benefits with the least potentially significant impacts and costs to society. The Secretary believes that this proposed schedule will meet national energy needs for the next 5 years under existing laws and policies, while also recognizing that progress along a net-zero emissions pathway will be a consideration when evaluating the appropriateness of future sales.

References

- BOEM. 2023. Economic Analysis Methodology for the 2024–2029 National Outer Continental Shelf Oil and Gas Leasing Proposed Final Program. Available online at <https://www.boem.gov/2024-2029-Economic-Analysis-Methodology>. BOEM-2023-059.
- BSEE. 2022. Outer Continental Shelf Oil and Gas Production. Available online at <https://www.data.bsee.gov/Production/OCSProduction/Default.aspx>. Accessed August 1, 2023.
- EIA. 2022a. Crude Oil: U.S. Field Production of Crude Oil (Thousand Barrels). Available online at <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPUS1&f=M>. Accessed September 2022.
- EIA. 2022b. Natural Gas: U.S. Natural Gas Marketed Production. Available online at <https://www.eia.gov/dnav/ng/hist/n9050us2m.htm>. Accessed September 2022.
- EIA. 2022c. Natural Gas: Natural Gas Gross Withdrawals and Production. Available online at https://www.eia.gov/dnav/ng/ng_prod_sum_dc_nus_mmcf_m.htm. Accessed August 1, 2023.
- EIA. 2023. Annual Energy Outlook 2023. Available online at <https://www.eia.gov/outlooks/aeo/>. Accessed August 1, 2023.

Part II: Analysis of the Secretary's Second Proposal





Overview

Management of the oil and gas resources of the Outer Continental Shelf (OCS) is governed by the OCS Lands Act (43 U.S. Code [U.S.C.] §§ 1331 et seq.). The OCS Lands Act sets forth procedures to administer leasing, exploration, development, and production of those resources. Section 18 of the OCS Lands Act (43 U.S.C. § 1344) calls for the preparation of a nationwide OCS oil and gas leasing program that sets forth a 5-year schedule of potential lease sales designed to best meet the Nation’s energy needs for the 5 years following approval of a new National OCS Oil and Gas Leasing Program (generally referred to as the National OCS Program). The Bureau of Ocean Energy Management (BOEM), within the U.S. Department of the Interior (USDOl), is responsible for implementing the requirements of the OCS Lands Act related to preparing the leasing program.

BOEM has nearly completed the process of preparing the 2024–2029 National OCS Program to follow the [2017–2022 National OCS Program](#). Throughout this document, the 2024–2029 National OCS Oil and Gas Leasing Program title is sometimes shortened to “2024–2029 Program” and past National OCS Programs referred to as a variation of this shorthand (e.g., 2017–2022 Program). The 2024–2029 Program will be the tenth National OCS Program to be approved. This document consists of the following parts:

Part I: Final Proposal on the Size, Timing, and Location of OCS Lease Sales

This part of the document presents the Secretary’s Final Proposal, the third of three stages of the National OCS Program development process. The Final Proposal results from the Secretary’s consideration of the analysis contained in **Part II** of this document, as well as the Final Programmatic Environmental Impact Statement (Final Programmatic EIS), which is being published concurrently with this document. **Part I** contains the potential lease sale schedule and program areas to be included in this National OCS Program. This part also summarizes the rationale behind the Final Proposal.

Part II: Analysis of the Secretary’s Second Proposal

Chapters 1 through **4** describe the framework for developing a new National OCS Program. These chapters discuss the substantive and procedural requirements to prepare a National OCS Program under Section 18 of the OCS Lands Act and describe BOEM’s approach to meeting those requirements. This includes a discussion of the Section 18 requirements and factors relating to OCS oil and natural gas resources and the environmental, economic, and social considerations that Section 18 requires be considered when deciding where and when to

schedule lease sales. Also included in **Chapter 2** is a summary of the judicial guidance from court decisions regarding the National OCS Program.

Chapters 5 through **10** present the Section 18 analyses of the Second Proposal. The Secretary uses the Section 18 analyses to inform the Final Proposal.¹ **Chapter 11** presents the approach to public outreach and a snapshot of the comments received on the [Proposed Program](#).

Appendix A: Summaries of Public Comments summarizes the comments BOEM received and considered in response to the [Proposed Program](#) issued on July 6, 2022 (83 FR 829), which requested comments from all interested parties. **Appendix B** is the estimate of staff and appropriations needed to implement the Final Proposal. **Appendix C** contains a glossary of terms used in this document. **Appendix D** contains the reference list.

Figure 1 shows the document organization for **Part II** and highlights that **Part II** consists of three main categories:

1. process and foundation,
2. analysis, and
3. outreach and engagement.

¹ The **Draft Proposed Program**, published in January 2018, contained the analysis of all 26 OCS planning areas and the Draft Proposal resulting from that analysis. The **Proposed Program**, published in July 2022, contained the analysis of the Draft Proposal and the resulting Second Proposal. This PFP contains the analysis of the Second Proposal (Part II) and the resulting Final Proposal (Part I).

Figure 1: Part II Document Organization



Note: Not shown on this graphic are Appendix B: Appropriations and Staffing Estimates, Appendix C: Glossary, and Appendix D: References.

Table of Contents

Overview	i
Chapter 1 OCS Oil & Gas Leasing Program Development Process.....	1-1
1.1 Introduction	1-1
1.2 National Energy Needs.....	1-2
1.2.1 Crude Oil and Natural Gas: Contribution to and Consumption within the U.S. Economy.....	1-3
1.2.2 Energy Policy Considerations for Net-Zero Pathways	1-8
1.2.3 Other Components of National Energy Needs	1-9
1.2.3.1 Balance of Payments and Trade.....	1-9
1.2.3.2 Energy Security	1-10
1.2.3.3 Technology	1-10
1.2.3.4 Low GHG Intensity of OCS Production	1-10
1.2.3.5 Employment and Public Revenues.....	1-11
1.2.4 OCS Role in Meeting National Energy Needs.....	1-12
1.3 Oil and Gas Leasing, Exploration, Development, and Production Process on the OCS	1-13
1.3.1 National OCS Program Development Process.....	1-13
1.3.1.1 Request for Information and Comments.....	1-18
1.3.1.2 Draft Proposed Program and Notice of Intent to Prepare a Programmatic Environmental Impact Statement	1-18
1.3.1.3 Proposed Program and Draft Programmatic EIS.....	1-18
1.3.1.4 Proposed Final Program and Final Programmatic EIS.....	1-19
1.3.1.5 National OCS Program Approval and Record of Decision	1-19
1.3.2 Lease Sale Process	1-20
1.3.3 Exploration and Development Process	1-23
Chapter 2 Section 18 Requirements & Factors	2-1
2.1 BOEM’s Approach to Analyzing Program Areas	2-1
2.2 Section 18(a): Energy Needs	2-3
2.3 Section 18(a)(2): Factors for Determining Size, Timing, and Location of Leasing	2-3
2.4 Section 18(a)(3): Balancing the Potential for Environmental Damage, Discovery of Oil and Gas, and Adverse Impact on the Coastal Zone	2-7
2.5 Section 18(a)(4): Assurance of Fair Market Value.....	2-7
2.6 Section 18(a)(1): Economic, Social, and Environmental Values.....	2-8
2.6.1 Economic Value.....	2-8
2.6.2 Social Value.....	2-9
2.6.3 Environmental Value.....	2-10
2.7 Judicial Guidance	2-10
Chapter 3 Proposed Final Program Options for Analysis.....	3-1
3.1 Lease Sale Options.....	3-1
3.2 Subarea Options.....	3-1
3.2.1 Targeted Leasing	3-3
3.2.2 15-Mile Baldwin County No Leasing Zone	3-3
3.3 No Sale Option	3-4
3.4 Analysis of the PFP Options in the Final Programmatic EIS.....	3-4

Chapter 4	Background, Leasing History, and Status of OCS Planning Areas	4-1
4.1	Summary of Historical Leasing Statistics	4-1
4.2	Areas Currently Restricted from OCS Oil and Gas Leasing	4-3
4.2.1	National Marine Sanctuaries	4-5
4.2.2	North Aleutian Basin Planning Area	4-5
4.2.3	Chukchi Sea and Beaufort Sea Planning Areas	4-6
4.2.4	Northern Bering Sea Climate Resiliency Area	4-6
4.2.5	Northeast Canyons and Seamounts Marine National Monument	4-7
4.2.6	Atlantic Canyons	4-7
4.2.7	Majority of the Eastern GOM and a Portion of the Central GOM; Straits of Florida; South Atlantic	4-7
4.2.8	Straits of Florida Planning Area	4-8
4.2.9	South Atlantic Planning Area	4-8
4.2.10	Portion of the Mid-Atlantic	4-8
4.3	Areas Formerly Restricted from OCS Oil and Gas Leasing	4-8
4.3.1	Washington/Oregon Planning Area	4-8
4.3.2	Northern California Planning Area	4-8
4.3.3	Central California Planning Area	4-8
4.3.4	Southern California Planning Area	4-9
4.3.5	Mid-Atlantic Planning Area	4-9
4.3.6	North Atlantic Planning Area	4-9
4.4	Alaska Region Planning Areas	4-9
4.4.1	Beaufort Sea Planning Area	4-13
4.4.2	Chukchi Sea Planning Area	4-13
4.4.3	Hope Basin Planning Area	4-14
4.4.4	Norton Basin Planning Area	4-14
4.4.5	Navarin Basin Planning Area	4-14
4.4.6	St. George Basin Planning Area	4-14
4.4.7	Cook Inlet Planning Area	4-14
4.4.8	Gulf of Alaska Planning Area	4-15
4.4.9	Other Alaska Planning Areas with No Historical Lease Sales	4-15
4.5	Pacific Region Planning Areas	4-16
4.5.1	Washington/Oregon Planning Area	4-16
4.5.2	Northern California Planning Area	4-16
4.5.3	Central California Planning Area	4-17
4.5.1	Southern California Planning Area	4-17
4.6	Gulf of Mexico Region Planning Areas	4-19
4.6.1	Western Gulf of Mexico Planning Area	4-21
4.6.2	Central Gulf of Mexico Planning Area	4-21
4.6.3	Eastern Gulf of Mexico Planning Area	4-21
4.7	Atlantic Region Planning Areas	4-22
4.7.1	Straits of Florida Planning Area	4-22
4.7.2	South Atlantic Planning Area	4-24
4.7.3	Mid-Atlantic Planning Area	4-24

4.7.4	North Atlantic Planning Area	4-24
Chapter 5	Valuation of Program Areas	5-1
5.1	Estimating Hydrocarbon Resources	5-1
5.2	Introduction to Hydrocarbon Resources	5-3
5.2.1	Resource Commodities Assessed	5-3
5.2.2	Sources of Data and Information	5-5
5.2.3	Geophysical Data Collection (Seismic Surveys)	5-5
5.2.4	Uncertainty in Resource Assessment.....	5-6
5.2.5	Resource Assessment Methodology and Output	5-7
5.2.6	Second Proposal and Potential Production	5-8
5.2.7	Second Proposal Exploration and Development Scenarios.....	5-9
5.2.8	No New Leasing Exploration and Development Scenarios.....	5-11
5.3	Net Benefits Analysis.....	5-14
5.3.1	Methodology	5-15
5.3.1.1	Energy Market Substitution: Lease Sale Option vs No Sale Option.....	5-16
5.3.1.2	Net Benefits Components.....	5-18
5.3.2	Net Benefits Results.....	5-19
5.3.2.1	Net Economic Value	5-19
5.3.2.2	Environmental and Social Costs.....	5-21
5.3.2.3	Social Cost of Upstream Greenhouse Gas Emissions.....	5-24
5.3.2.4	Consumer Surplus Net Producer Transfer.....	5-26
5.3.2.5	Incremental Net Benefits Analysis.....	5-27
5.3.3	Net Benefits and Life Cycle GHG Emissions	5-31
Chapter 6	National and Regional Energy Markets.....	6-1
6.1	National Energy Markets.....	6-1
6.1.1	Recent Developments	6-1
6.1.1.1	Developments in Crude Oil Markets.....	6-2
6.1.1.2	Developments in Domestic Natural Gas Markets.....	6-3
6.1.2	Future Energy Market Changes.....	6-5
6.1.3	The Contribution of OCS Oil and Natural Gas.....	6-6
6.2	Regional Energy Markets and the Location of OCS Regions.....	6-10
6.2.1	Regional Production and Refinery Consumption	6-11
6.2.2	Regional Transportation	6-11
6.2.3	Regional Energy Prices.....	6-15
6.2.4	Alaska Regional Energy Markets.....	6-15
6.2.5	Gulf of Mexico Regional Energy Markets	6-16
6.3	Possible OCS Production Substitutes	6-17
6.4	Energy Markets Conclusion.....	6-17
Chapter 7	Other Uses of the OCS	7-1
7.1	Cook Inlet Program Area	7-2
7.1.1	Commercial, Recreational, and Subsistence Uses.....	7-4
7.1.2	Ports, Marine Navigation, Sea Lanes, and Submarine Cables	7-5
7.1.3	Military and NASA Uses.....	7-5
7.1.4	Renewable Energy.....	7-6

7.1.5	Non-energy Marine Minerals.....	7-6
7.2	Gulf of Mexico Program Area	7-7
7.2.1	Commercial, Recreational, and Subsistence Uses.....	7-7
7.2.2	Ports, Marine Navigation, Sea Lanes, and Submarine Cables	7-11
7.2.3	Military Uses	7-12
7.2.4	Renewable Energy.....	7-14
7.2.5	Non-Energy Marine Minerals	7-15
Chapter 8	Environmental Consideration Factors and Concerns	8-1
8.1.1	Summary of Methodology	8-1
8.2	Relative Environmental Sensitivity.....	8-2
8.2.1	Methods.....	8-2
8.2.2	Geographic Scope.....	8-2
8.2.3	Selection of Impacts, Species, and Habitats.....	8-5
8.2.4	Impact-independent Modifiers	8-11
8.2.5	Results and Discussion.....	8-12
8.3	Marine Productivity	8-13
8.3.1	Background	8-13
8.3.2	Methods.....	8-14
8.4	Results and Discussion.....	8-14
Chapter 9	Equitable Sharing Considerations.....	9-1
9.1	Definition	9-1
9.1.1	Assumptions and Limitations	9-2
9.1.2	Deciding on Areas to Offer for Lease: Benefits and Risks	9-2
9.1.3	Overview of Equitable Sharing.....	9-3
9.1.3.1	Phases of an OCS Oil and Gas Project.....	9-4
9.1.3.2	Jobs and Increased Wages	9-4
9.1.3.3	State and Local Government Revenues.....	9-5
9.1.3.4	Proximity of Energy Production to Refineries and Consumers.....	9-6
9.1.3.5	Environmental Risks.....	9-6
9.1.3.6	Domestically Produced Oil Exports	9-8
9.2	Regional Benefits and Risks.....	9-9
9.2.1	Alaska Region.....	9-9
9.2.1.1	Lease Sale Options.....	9-9
9.2.1.2	Subarea Options.....	9-10
9.2.1.3	No Sale Option.....	9-11
9.2.2	Gulf of Mexico Region	9-11
9.2.2.1	Lease Sale Options.....	9-12
9.2.2.2	Subarea Options.....	9-13
9.2.2.3	No Sale Option.....	9-14
9.3	Widely Distributed Benefits and Risks.....	9-16
9.3.1	Widely Distributed Benefits.....	9-16
9.3.2	Widely Distributed Risks	9-19
9.4	Conclusion.....	9-20
Chapter 10	Consideration of the Value of OCS Leases and Assurance of Fair Market Value	10-1

10.1	Timing of OCS Lease Sales and Related Activities.....	10-1
10.1.1	Information and Uncertainty	10-2
10.1.1.1	Option Value.....	10-3
10.1.1.2	Considering Uncertainties for the National OCS Program.....	10-4
10.1.1.3	Resource Uncertainty	10-5
10.1.1.4	Capital and Operating Cost and Extractive Technology Uncertainty.....	10-6
10.1.1.5	Environmental and Social Cost Uncertainty	10-7
10.1.1.6	Regulatory and Legal Environment Uncertainty and Policy Changes	10-9
10.1.1.7	Price Uncertainty	10-9
10.1.2	Hurdle Prices	10-10
10.2	Leasing Framework.....	10-13
10.2.1	Size of a Lease Sale.....	10-13
10.2.2	Frequency of Lease Sales	10-15
10.3	FMV: Lease Terms and Bid Adequacy.....	10-15
10.3.1	Bidding Systems.....	10-15
10.3.2	Fiscal and Lease Terms	10-16
10.3.2.1	Minimum Bid and Bonus Bid Amounts	10-18
10.3.2.2	Bid Adequacy.....	10-18
10.3.2.3	Primary Term.....	10-20
10.3.2.4	Rentals	10-21
10.3.2.5	Royalties.....	10-21
10.4	Conclusion.....	10-21
Chapter 11 Outreach and Coordination		11-1
11.1	Public Comment Process	11-1
11.2	Public Meetings for the National OCS Proposed Program and Draft Programmatic EIS.....	11-3
11.3	Industry Interest	11-6
11.4	Tribal Coordination and Consultation.....	11-6
11.5	Laws, Goals, and Policies of Affected States	11-7
11.6	Next Steps.....	11-8
Appendix A Summaries of Public Comments on the Proposed Program.....		A-1
Appendix B Appropriations and Staffing Estimates.....		B-1
Appendix C Glossary.....		C-1
Appendix D References.....		D-1

List of Tables

Table 1-1:	Typical NEPA Assessments for the National OCS Oil & Gas Leasing Program	1-17
Table 3-1:	Second Proposal—Lease Sale Schedule.....	3-2
Table 4-1:	OCS Regions Acreages	4-1
Table 4-2:	General Leasing History Statistics per OCS Region (as of September 2023).....	4-3
Table 4-3:	Areas Currently Restricted from OCS Oil & Gas Leasing.....	4-4
Table 5-1:	Potential Production by Program Area.....	5-10
Table 5-2:	Potential Production from the Cumulative NNL Scenario.....	5-14

Table 5-3: No Sale Option: Estimated Substitutions of Other Energy Sources (Mid-Activity Level)	5-17
Table 5-4: Assumed Prices for each Activity Level	5-19
Table 5-5: Lease Sale Option: Net Economic Value (\$ Billions)	5-20
Table 5-6: No Sale Option: Net Economic Value (\$ Billions)	5-21
Table 5-7: Lease Sale Option: Environmental and Social Costs (\$ Billions)	5-23
Table 5-8: No Sale Option: Environmental and Social Costs (\$ Billions)	5-23
Table 5-9: Lease Sale Option: Social Cost of Upstream GHG Emissions (\$ Billions)	5-25
Table 5-10: No Sale Option: Social Costs of Upstream GHG Emissions (\$ Billions)	5-25
Table 5-11: Domestic Consumer Surplus Net of Producer Transfers by Program Area (\$ billions)	5-27
Table 5-12: Lease Sale Option: Net Benefits (\$ billions)	5-28
Table 5-13: No Sale Option: Net Benefits (\$ billions)	5-29
Table 5-14: Incremental Net Benefits by Program Area (\$ Billions).....	5-30
Table 5-15: Social Costs of Mid- and Down-stream GHG Emissions by Program Area (\$ Billions)	5-32
Table 5-16: Incremental Social Costs of Full Domestic Life Cycle GHG Emissions by Program Area (\$ Billions)	5-33
Table 6-1: 2022 Crude Oil Shipments by Tanker, Pipeline, Barge, & Rail (million barrels).....	6-13
Table 6-2: 2022 Petroleum Product Shipments by Tanker, Pipeline, Barge, & Rail (million barrels).....	6-14
Table 7-1: Other Uses of the OCS within Cook Inlet	7-4
Table 7-2: Other Uses of the OCS within the Gulf of Mexico Program Area	7-7
Table 7-3: Top Ports Near the GOM Program Area by Tonnage, 2020.....	7-12
Table 8-1: Species Selected that Differ from the 2014 Environmental Sensitivity Analysis.....	8-8
Table 8-2: Ecosystem Change Impacts Score by BOEM Ecoregion	8-11
Table 8-3: Environmental Sensitivity Score by BOEM Ecoregion.....	8-12
Table 8-4: Net Primary Productivity Rates.....	8-15
Table 9-1: FY 2022 8(g) and GOMESA State Disbursement Summary.....	9-6
Table 10-1: NSV Hurdle Prices.....	10-12
Table 11-1: National OCS Program Development Approximate Public Comments Received.....	11-2
Table 11-2: Public Meetings for the 2024–2029 Program and Draft Programmatic EIS	11-3
Table 11-3: Description of BOEM’s Approach to the Virtual Open House Public Meetings	11-5

List of Figures

Figure 1: Part II Document Organization	iii
Figure 1-1: OCS Oil and Gas Leasing Planning Areas and U.S. Exclusive Economic Zone	1-2
Figure 1-2: U.S. Energy Expenditures.....	1-4
Figure 1-3: Energy Consumption by Sector & Source, 2022 and 2050.....	1-5
Figure 1-4: Petroleum and Other Liquids—Consumption and Production.....	1-6
Figure 1-5: Energy Consumption by Source, 2022 and 2050	1-7
Figure 1-6: Total Energy-Related Carbon Dioxide Emissions	1-7
Figure 1-7: National OCS Oil & Gas Leasing Program and Development Process.....	1-14
Figure 1-8: National OCS Oil & Gas Leasing Program Analytical Flow Process	1-15
Figure 1-9: OCS Lease Sale Process.....	1-20
Figure 1-10: OCS Exploration Plan and Drilling Review Process.....	1-23
Figure 1-11: OCS Development and Production Plan Review Process	1-24

Figure 2-1: OCS Lands Act Section 18 Factors.....	2-2
Figure 3-1: Program Areas Included in the Second Proposal	3-2
Figure 3-2: Subarea Option: 15-Mile Baldwin County No Leasing Zone in GOM Program Area	3-4
Figure 4-1: Number of Proposed Lease Sales Included in Approved National OCS Programs by Planning Area.....	4-2
Figure 4-2: Beaufort and Chukchi Seas Planning Areas Leasing History.....	4-10
Figure 4-3: Western Alaska Planning Areas Leasing History.....	4-11
Figure 4-4: Southwestern Alaska Planning Areas Leasing History.....	4-11
Figure 4-5: Southeastern Alaska Planning Areas Leasing History	4-12
Figure 4-6: Number of OCS Exploratory Wells Drilled per Year in the Alaska Region, 1975–2023.....	4-12
Figure 4-7: Washington/Oregon and Northern California Planning Areas Leasing History	4-18
Figure 4-8: Central and Southern California Planning Areas Leasing History	4-18
Figure 4-9: GOM Region Leasing History.....	4-20
Figure 4-10: South Atlantic and Straits of Florida Planning Areas Leasing History.....	4-23
Figure 4-11: North and Mid-Atlantic Planning Areas Leasing History.....	4-23
Figure 5-1: Oil and Gas Development Timeline for Frontier and Deepwater Areas	5-2
Figure 5-2: Extent of Geologic Plays in the Cook Inlet Program Area.....	5-4
Figure 5-3: Extent of Geologic Plays in the Gulf of Mexico Region Program Area.....	5-4
Figure 5-4: Leases by Status in the Gulf of Mexico.....	5-12
Figure 5-5: Net Benefits Analysis Calculation for Lease Sale Option and No Sale Option.....	5-18
Figure 5-6: Traditional Incremental Net Benefits Analysis Calculations	5-19
Figure 5-7: Second Proposal: Potential Production and Incremental Net Benefits	5-30
Figure 6-1: Crude Oil Production in the Contiguous U.S. by API Gravity.....	6-2
Figure 6-2: U.S. Crude Oil Imports by API Gravity	6-3
Figure 6-3: U.S. Electricity Generation by Fuel Source.....	6-5
Figure 6-4: Historical and Forecasted U.S. Crude Oil Production.....	6-7
Figure 6-5: Historical and Forecasted U.S. Dry Natural Gas Production	6-8
Figure 6-6: U.S. Crude Oil Production, 2022	6-8
Figure 6-7: Petroleum Administration Defense Districts	6-10
Figure 6-8: Crude Oil Production by PADD, 2021.....	6-12
Figure 6-9: Crude Oil Refinery Consumption by PADD, 2021	6-12
Figure 6-10: Natural Gas Production by PADD, 2021	6-12
Figure 6-11: Natural Gas Consumption by PADD, 2021	6-12
Figure 6-12: Product Supplied for Finished Petroleum Products, 2021.....	6-13
Figure 6-13: Crude Oil Exports, 2022.....	6-14
Figure 7-1: Other Uses of the Outer Continental Shelf: Cook Inlet Program Area	7-3
Figure 7-2: Other Uses of the Outer Continental Shelf: Gulf of Mexico Program Area	7-8
Figure 7-3: Commercial Fishing Value and Landings for the Gulf of Mexico Region, 2019.....	7-9
Figure 7-4: Aquaculture in the Gulf of Mexico.....	7-10
Figure 7-5: Proposed DOD Exclusion Areas.....	7-13
Figure 8-1: Environmental Sensitivity Score Methodology	8-2
Figure 8-2: Relative Environmental Sensitivity for Gulf of Alaska Ecoregion.....	8-4
Figure 8-3: Relative Environmental Sensitivity for Western and Central GOM Ecoregion	8-4
Figure 9-1: Distribution of Total Jobs Supported by FY 2022 OCS Oil and Gas Activities	9-18

Figure 11-1: Number of Proposed Program and Draft Programmatic EIS Comment Letters by Commenter Category.....11-2

Figure 11-2: Virtual Open House and Public Meetings..... 11-4

Figure 11-3: Coastal State Governor or State Agency Response to the Proposed Program 11-8

Abbreviations and Acronyms

°	degree
§	Section
2-D (2D)	two-dimensional
3-D (3D)	three-dimensional
2021 National Assessment	<i>2021 Assessment of Undiscovered Oil and Gas Resources of the Nation's Outer Continental Shelf</i>
2019–2024 Program	2019–2024 National OCS Oil and Gas Leasing Program
2024–2029 Program	2024–2029 National OCS Oil and Gas Leasing Program
AEO	Annual Energy Outlook
Agreement	<i>Agreement between the United States of America and the United Mexican States Concerning Transboundary Hydrocarbon Reservoirs in the Gulf of Mexico</i>
ANCSA	Alaska Native Claims Settlement Act
API	American Petroleum Institute
Area ID	Area Identification
Areawide Leasing Study	<i>Policies to Affect the Pace of Leasing and Revenues in the Gulf of Mexico</i>
BBO	billion barrels of oil
BBOE	billion barrels of oil equivalent
BLM	Bureau of Land Management
BOE	barrel of oil equivalent
BOEM	Bureau of Ocean Energy Management
bpd	barrels per day
BSEE	Bureau of Safety and Environmental Enforcement
BTU	British thermal unit
Call	Call for Information and Nominations
CBD	Center for Biological Diversity et. al. v. Department of the Interior
CER	categorical exclusion review
CFR	Code of Federal Regulations
CH ₄	methane
CMP	Comprehensive Master Plan
CO ₂	carbon dioxide
COVID-19	2019 novel coronavirus
CSE	<i>Center for Sustainable Economy v. Jewell</i> , 779 F.3d 588 (D.C. Cir. 2015)
CZM	Coastal Zone Management
D.C.	District of Columbia

Decommissioning PEIS	<i>Draft Programmatic Environmental Impact Statement for Oil and Gas Decommissioning Activities on Pacific Outer Continental Shelf</i>
DNA	Determination of NEPA Adequacy
DOD	Department of Defense
DPP	Draft Proposed Program
Draft Proposal	Initial decision on the proposed schedule of lease sales based on the DPP analysis
E&D	exploration and development
E.O.	Executive Order
EA	environmental assessment
EAM	Economic Analysis Methodology
Economic Inventory Report	<i>Economic Inventory of Environmental and Social Resources Potentially Impacted by a Catastrophic Discharge Event within OCS Regions</i>
EEZ	Exclusive Economic Zone
EIA	Energy Information Administration
EIS	environmental impact statement
EJ	environmental justice
ESA	Endangered Species Act of 1973
ESC	environmental and social costs
ESI	environmental sensitivity index
ESP	Environmental Studies Program
ESPIS	Environmental Studies Program Information System
FEMA	Federal Emergency Management Agency
Final Proposal	Final decision on the proposed lease sale schedule based on the PFP analysis
FMV	fair market value
FONSI	finding of no significant impact
FY	fiscal year
G&G	geological and geophysical
GAO	Government Accountability Office
GAOA	Great American Outdoors Act
GDP	gross domestic product
GHG	greenhouse gas
GOM	Gulf of Mexico
GOMESA	Gulf of Mexico Energy Security Act of 2006
GRASP	Geologic Resource Assessment Program
H ₂	hydrogen
HPF	Historic Preservation Fund

IPCC	Intergovernmental Panel on Climate Change
IPF	impact-producing factor
IRA	Inflation Reduction Act
IWG	Interagency Working Group
kg	kilograms
km ²	square kilometers
LME	Large Marine Ecosystem
LNG	liquified natural gas
LWCF	Land and Water Conservation Fund
<i>MarketSim</i>	Market Simulation Model
MC	Mississippi Canyon
mcf	thousand cubic feet
MMP	Marine Minerals Program
MWA	military warning area
N ₂ O	nitrous oxide
National OCS Program	National OCS Oil and Gas Leasing Program
NASA	National Aeronautics and Space Administration
NASCA	North American Submarine Cable Association
NEPA	National Environmental Policy Act of 1969
NEV	net economic value
nm	nautical miles
NMFS	National Marine Fisheries Service
NMS	National Marine Sanctuary
NNL	no new leasing
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOS	Notice of Sale
NPP	net primary productivity
NPS	National Park Service
NRDC	Natural Resources Defense Council
NSV	net social value
OCS	Outer Continental Shelf
OECM	Offshore Environmental Cost Model
OPAREA	Operational Area
P.L.	Public Law
PADD	Petroleum Administration for Defense District
Programmatic EIS	Programmatic Environmental Impact Statement
PFP	Proposed Final Program
RFI	Request for Information and Comments
ROD	Record of Decision

Second Proposal	Second decision on the proposed schedule of lease sales based on the Proposed Program analysis
Secretary	Secretary of the Interior
Tcf	trillion cubic feet
t C km ⁻² yr ⁻¹	metric tons of carbon per square kilometer per year
UERR	undiscovered economically recoverable resources
UNCLOS	United Nations Convention on the Law of the Sea
U.S.	United States
U.S.C.	United States Code
USCG	United States Coast Guard
USDOJ	United States Department of the Interior
USFWS	United States Fish and Wildlife Service
UTRR	undiscovered technically recoverable resources
VGPM	Vertically Generalized Production Model
<i>Watt I</i>	<i>California v. Watt</i> , 688 F.2d 1290 (D.C. Cir. 1981)
<i>Watt II</i>	<i>California v. Watt</i> , 712 F.2d 584 (D.C. Cir. 1983)
WEA	wind energy area
WEB3	When Exploration Begins model, version 3

Chapter 1

OCS Oil and Gas
Leasing Program
Development
Process





Chapter 1 OCS Oil & Gas Leasing Program Development Process

1.1 Introduction

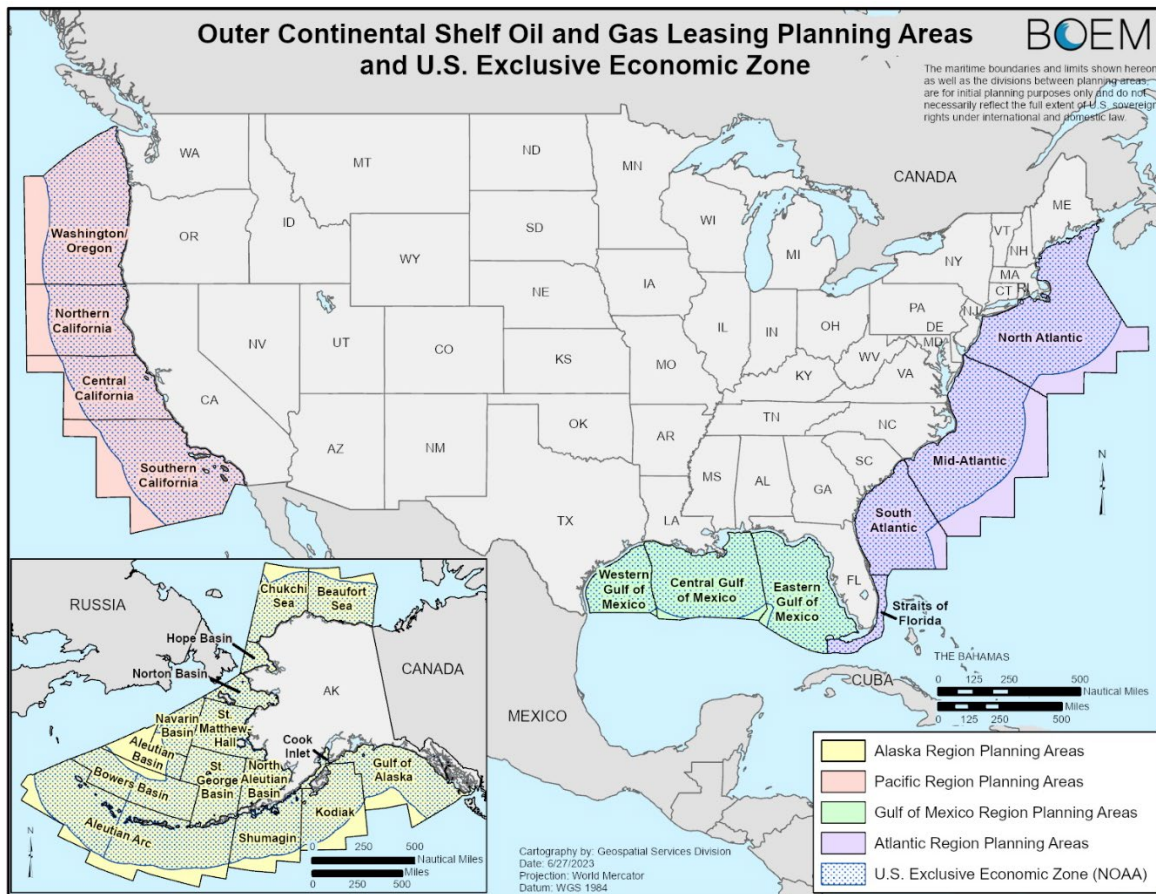
Section 18 of the Outer Continental Shelf (OCS) Lands Act (43 U.S.C. § 1344) requires the Secretary of the Interior (Secretary) to prepare and maintain a schedule of proposed OCS oil and gas lease sales, referred to as the National OCS Oil and Gas Leasing Program (National OCS Program), that “best meet national energy needs for the five-year period following its approval or reapproval.” The proposed National OCS Program must be prepared and maintained in a manner consistent with the procedures and criteria specified in Section 18 of the OCS Lands Act. Those criteria, and the way in which they have been considered in preparing this 2024–2029 Proposed Final Program (PFP) (also referred to as the 2024–2029 Program), are summarized in [Chapter 2](#).

The OCS is defined in the OCS Lands Act (43 U.S.C. §1331) and consists of all submerged lands, subsoil, and seabed lying seaward and outside of the lands beneath navigable waters. In most cases, the OCS extends from 3 nautical miles (nm) from the coastline to the seaward extent of the jurisdiction of the United States (U.S.), which is at least 200 nm, and beyond in some cases, from the coastline (see [Figure 1-1](#)).²

Section 18 of the OCS Lands Act requires that the proposed schedule of lease sales be based upon a comparative analysis of the oil and gas-bearing regions of the OCS. For administrative and planning purposes, the Bureau of Ocean Energy Management (BOEM) has established four OCS Regions composed of 26 planning areas. The four OCS Regions are Alaska, Pacific, Gulf of Mexico (GOM), and Atlantic. Administratively, the Pacific Region includes the State of Hawaii, but for the purpose of developing this National OCS Program, the Pacific Region is only composed of the four planning areas off the U.S. West Coast.

² State jurisdictions for Texas and Florida’s Gulf Coast extend 9 nm from the coastal baseline. Louisiana’s jurisdiction extends to 3 imperial miles, reflecting boundaries at the time these states joined the U.S. In 1983, President Reagan proclaimed the sovereign rights and jurisdiction of the U.S. over submerged lands and seas adjacent to the U.S. within the Exclusive Economic Zone (EEZ), as it was understood to be under international law. The United Nations Convention on the Law of the Sea (UNCLOS) subsequently addressed the continental shelf in Article 76, providing that it extends to at least 200 nm and beyond in some cases. The U.S. is not a party to UNCLOS but recognizes the rules in Article 76 as customary international law, which the U.S. follows.

Figure 1-1: OCS Oil and Gas Leasing Planning Areas and U.S. Exclusive Economic Zone



1.2 National Energy Needs

Meeting national energy needs is a stated purpose of the OCS Lands Act Amendments of 1978 (Public Law [P.L.] 95-372). The 1978 Amendments added Section 18 of the OCS Lands Act, requiring the Secretary to formulate a National OCS Program to “best meet national energy needs for the five-year period following its approval or reapproval” (Section 18(a), 43 U.S.C § 1344(a)).³ Since passage of the OCS Lands Act Amendments, the U.S. energy outlook has changed, prices have dramatically varied, and technology has advanced.

³ Section 18 also requires the Secretary to consider “the location of such regions [oil- and gas-bearing physiographic regions] with respect to, and the relative needs of, regional and national energy markets” (Section 18(a)(2)(c), 43 U.S.C. §1344(a)(2)(c)). [Chapter 6](#) contains the energy markets analysis conducted to help the Secretary meet that requirement.

The Biden-Harris Administration outlined several goals for a clean energy economy and set national emissions targets. A key priority of the Biden-Harris Administration is to achieve carbon-free electricity by 2035 and net-zero emissions for the U.S. economy by 2050. The Administration also set a target to achieve a 50–52% reduction from 2005 levels in economy-wide net greenhouse gas (GHG) pollution by 2030.

In making decisions on the National OCS Program, the Secretary considers how future OCS crude oil and natural gas leasing factors into national energy needs and energy-related goals. This section considers the broad interpretation of domestic energy needs recognized in the language of the OCS Lands Act and applicable case law, such as *Center for Sustainable Economy v. Jewell*, 779 F.3d 588, 607 (D.C. Cir. 2015) (*CSE*). As such, BOEM’s assessment of the Nation’s energy needs for purposes of Section 18 extends beyond “meeting current demand for domestic consumption.” This section considers energy needs under both the current national energy landscape and the possibility of an energy market that is significantly transformed by transitioning to a clean energy economy.

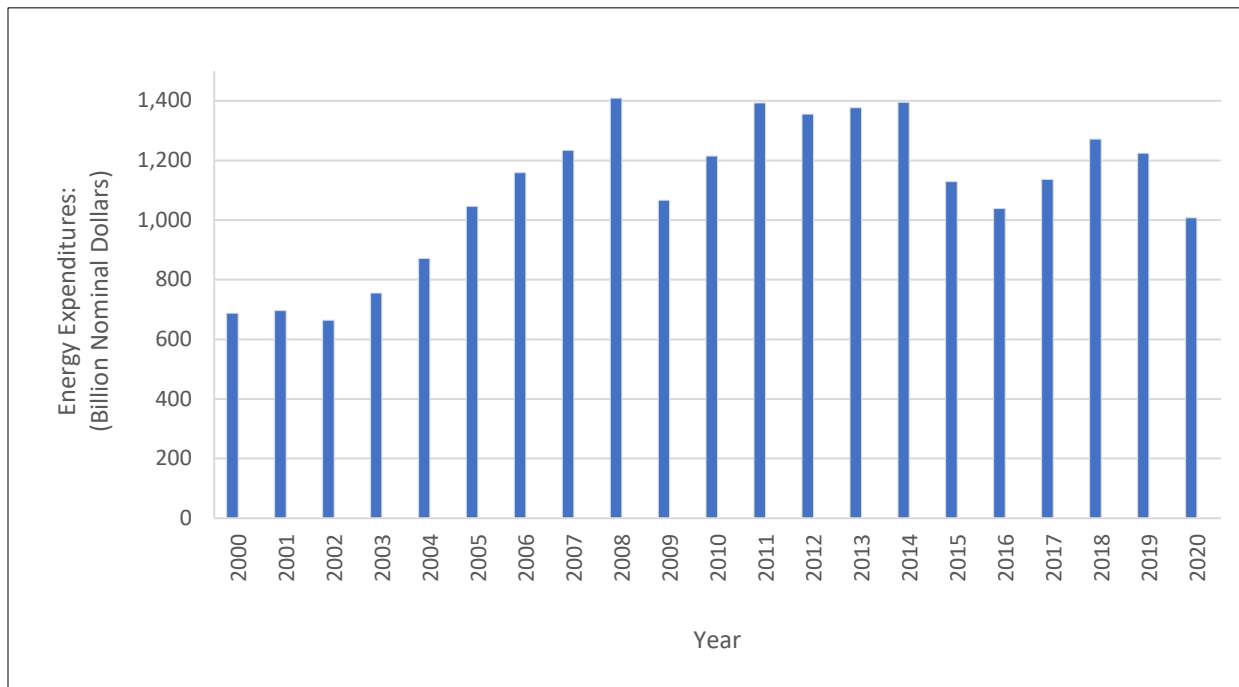
1.2.1 Crude Oil and Natural Gas: Contribution to and Consumption within the U.S. Economy

Americans have spent more than \$1 trillion a year on energy since 2005 (EIA 2023g) as illustrated in [Figure 1-2](#). In 2020, approximately 63% of those expenditures was attributable to natural gas and petroleum expenditures (EIA 2021g). Although the United States consumes more than just crude oil and natural gas to fulfill its energy demand, these fuels contribute to powering the U.S. economy and are expected to continue to do so in the future—as can be seen through the lens of the Energy Information Agency’s (EIA) 2023 Annual Energy Outlook (AEO) reference case.

This section considers projections based on the EIA’s 2023 AEO reference case,⁴ where projections rest solely on laws and regulations that are currently in place and actively enforced. Using policy-neutral projections allows decisionmakers to assess the potential impact of a specific decision against the policy baseline, which incorporates currently enforced policy, technological and legal conditions, trends, and constraints into the future. Importantly, the EIA modeled numerous provisions of the Inflation Reduction Act (IRA) into the 2023 AEO, including, (1) the extension and modification of clean energy tax credits, (2) tax credits for zero-emission vehicles, (3) new production tax credit for existing nuclear power plants, and (4) a separate clean fuel production tax credit (EIA 2023f). However, given its complexity and uncertainty over select implementation details, not every IRA provision could be modeled in the 2023 AEO release.⁵

⁴ The definition for the reference case can be found in the [2023 AEO narrative](#) at the website.

⁵ Specific information regarding the IRA provisions modeled in the EIA’s 2023 AEO can be found in [Table 1 of the EIA’s 2023 AEO Appendix](#).

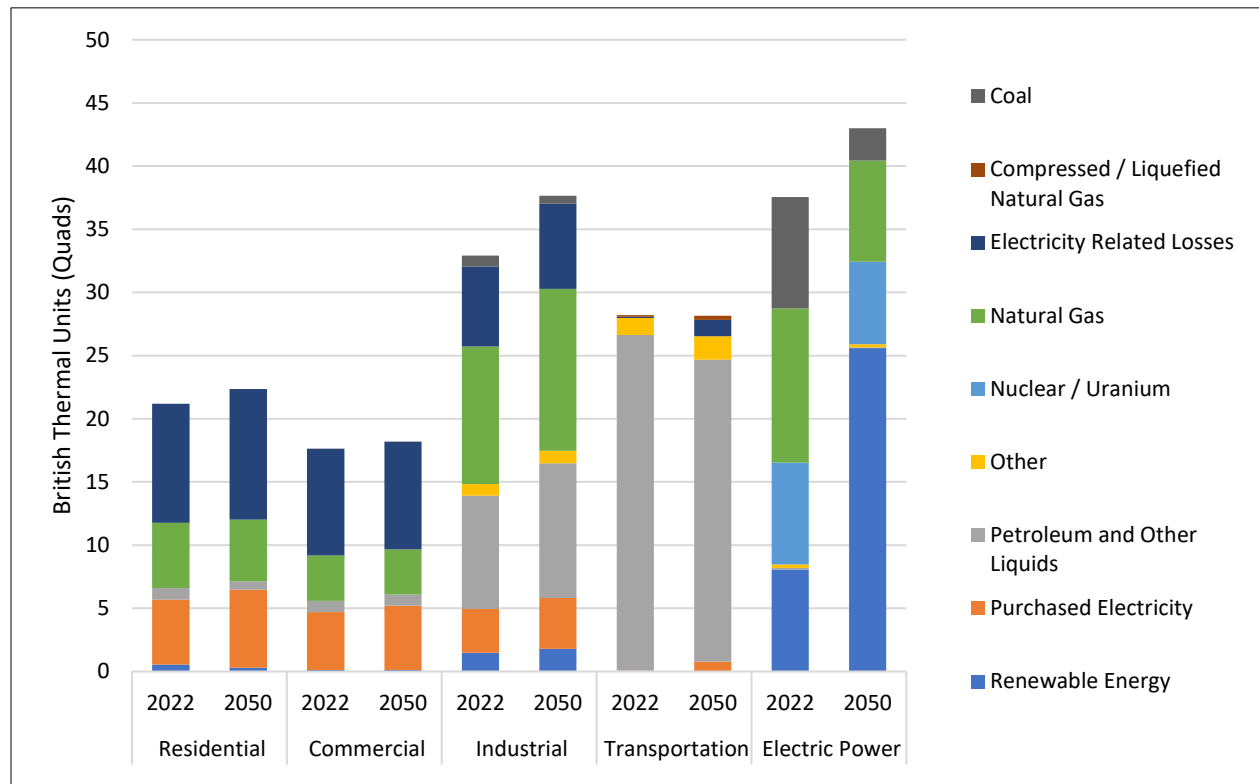
Figure 1-2: U.S. Energy Expenditures

Source: EIA (2023g)

While AEO projections for 2050 are meant to capture “ranges and trends” and “robust insights rather than precise numbers” (EIA 2023c), the projections could change depending on various factors, including alternative energy market pathways adopted for addressing climate change. In addition to the reference case, the 2023 AEO models 12 side cases that cover different assumptions. These assumptions include high and low ranges for: crude oil and natural gas supply, crude oil price, economic growth, zero-carbon technology cost, and a few combination cases. One goal of side-case comparisons to the reference case is to demonstrate a “cone of uncertainty” within the forecasts (EIA 2023c). This analysis focuses on the reference case but includes some insights from the side cases.

[Figure 1-3](#) shows energy consumption by sector and source in the U.S. for 2022 and the 2023 AEO’s forecast of energy consumption by sector and source in 2050 from the reference case. Of note is the predominance of petroleum and other liquids in the transportation sector. Recent changes in energy markets have affected consumption of different fuels, but petroleum remains the dominant fuel for transportation. While advancements in electric vehicle technology, alternative fuels, and fuel efficiency improvements will likely reduce petroleum’s share of transportation energy demand, petroleum is still needed to meet a large majority of future total transportation energy demand under AEO’s baseline scenario.

Figure 1-3: Energy Consumption by Sector & Source, 2022 and 2050



Note: The “other” category represents biofuels heat and co-products for the industrial sector; hydrogen, natural gas used to liquefy gas for export, and pipeline and distribution fuel natural gas for the transportation sector; and electricity imports and non-biogenic municipal waste for the electric power sector.

Source: EIA (2023d)

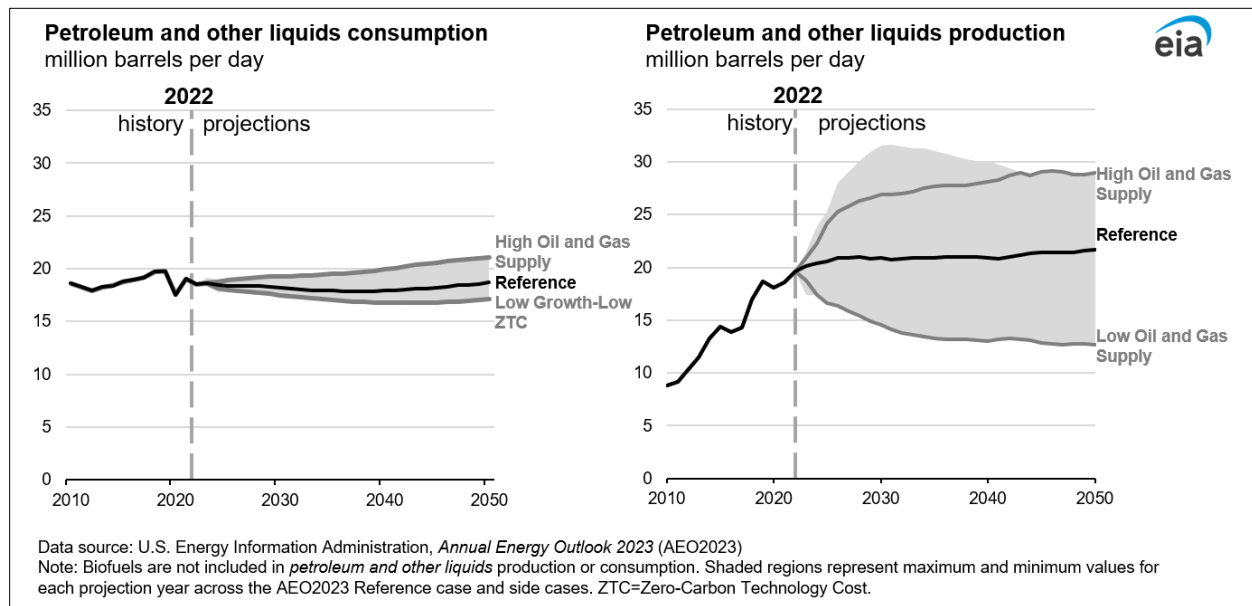
In 2022, petroleum and other liquids accounted for approximately 95% of transportation fuel. The 2050 AEO reference case projection shows that petroleum and other liquids will power 90% of the transportation energy market with the overall domestic consumption of petroleum and other liquids falling 3.6% between 2022 and 2050. The predominance of petroleum and other liquids for transportation is consistent across all the AEO side cases as well.

Despite the decline in petroleum and other liquids in the transportation sector, the increase in the use of petroleum and other liquids in the industrial sector nearly offsets the transportation sector reductions in AEO’s reference case in 2050.

Shifts in fuel consumption sources are most apparent in the electricity sector, where increases in renewables offset declines in coal and natural gas. Domestically, the share of electricity generation from renewable sources is projected to more than double from 21.5% in 2022 to 59.5% in 2050. The 2023 AEO reference case also projects an increase in electricity demand through 2050 of roughly 15% (EIA 2023c).

As described, the AEO highlights the projections' uncertainty and the various assumptions that could impact the results. [Figure 1-4](#) shows EIA's forecasted uncertainty cone around future petroleum and other liquids consumption and production. For demand, assumptions including low economic growth and low costs of zero-cost carbon technologies result in the largest decline in petroleum and other liquids use through 2050.

Figure 1-4: Petroleum and Other Liquids—Consumption and Production



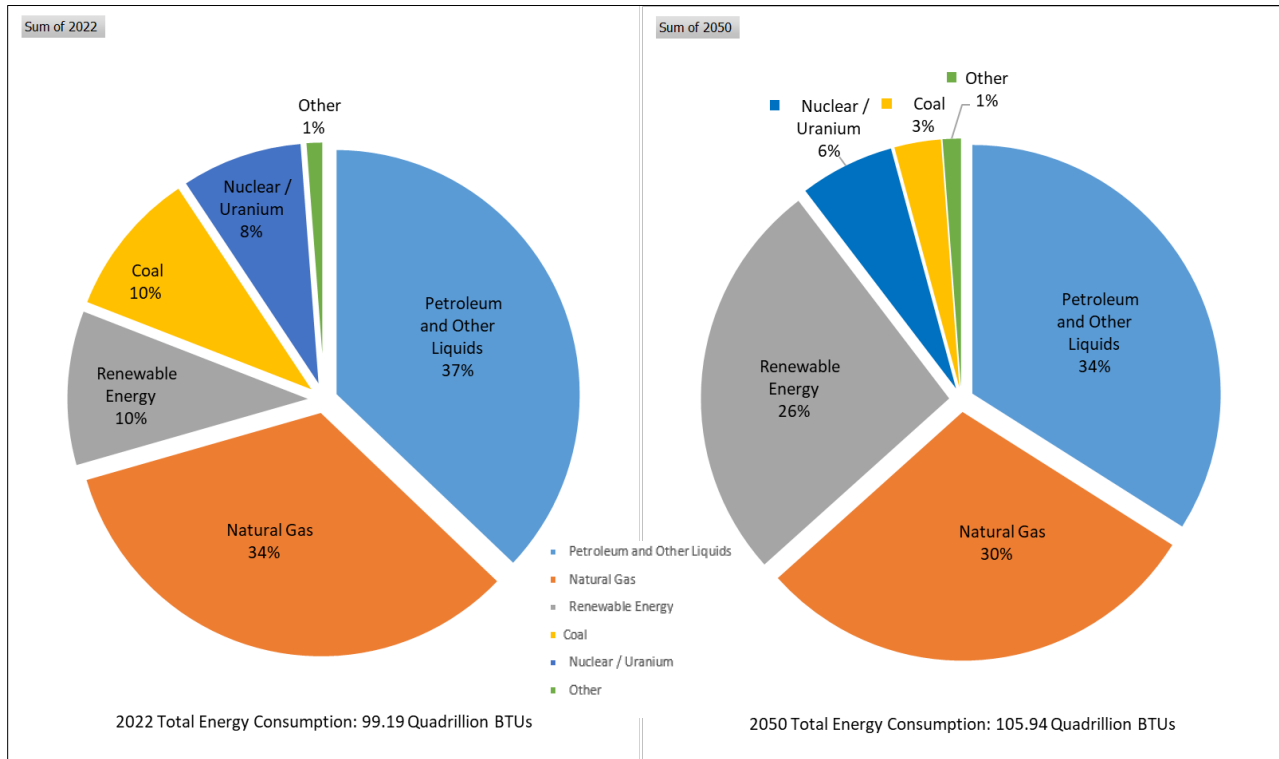
Source: EIA (2023c). Reprinted with permission.

[Figure 1-5](#) shows EIA's projections of total energy consumption by source between 2022 and 2050. Although the petroleum and natural gas share of overall energy consumption shrinks from 2022 to 2050, both still represent a substantial share of consumption. The renewable energy share of energy consumption greatly increases by 2050, while the shares of nuclear and coal significantly shrink. [Section 6.2.1](#) provides more information on crude oil and natural gas consumption.

As a result of the energy consumption and energy mix changes, the 2023 AEO projects lower carbon dioxide (CO₂) emissions by 2050 in its reference case (see [Figure 1-6](#)). The increase in renewable energy technologies, increased electrification, and more efficient equipment leads to emissions reductions; however, this reduction is offset by the EIA's forecast of longer-term growth in transportation and industrial activity (EIA 2023b).

For the various side cases, the AEO projects that energy-related CO₂ emissions could range from 25% to 38% below 2005 levels by 2030. The AEO shows that long-term assumptions for economic growth and the cost of zero-carbon generation technology are the most significant drivers in emissions reductions.

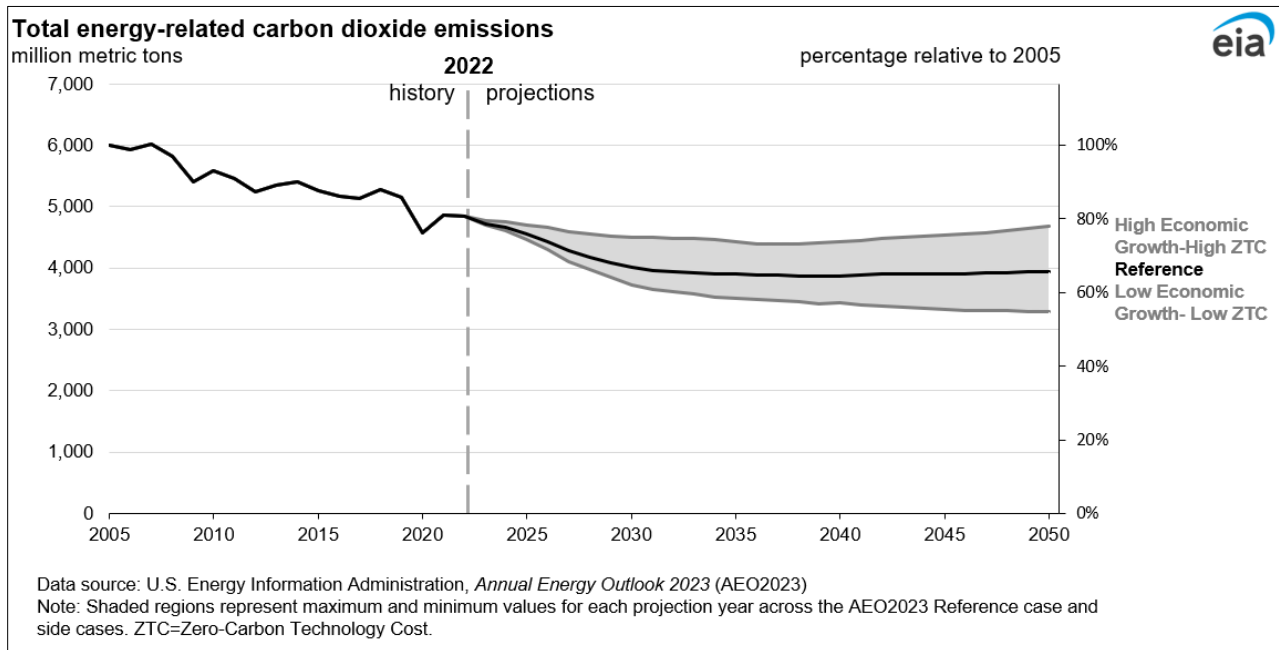
Figure 1-5: Energy Consumption by Source, 2022 and 2050



Note: The “other” category includes biofuels, hydrogen, non-biogenic municipal waste, and electricity imports. BTU represents British thermal unit.

Source: EIA (2023d)

Figure 1-6: Total Energy-Related Carbon Dioxide Emissions



Source: EIA (2023c). Reprinted with permission.

1.2.2 Energy Policy Considerations for Net-Zero Pathways

EIA's 2023 AEO data indicate that, absent major policy changes, energy consumption will increase slightly from today, with substantial crude oil and natural gas consumption continuing through 2050. However, the AEO also notes that policies can and often do change, which would result in different future energy patterns. In viewing policy change within a net-zero framework, the [Final Economic Analysis Methodology \(EAM\) paper](#) (BOEM 2023b) provides additional information on net-zero pathways including Princeton University's Net-Zero America study (Larson et al. 2021).

While there are many factors that play a role in addressing climate impacts and numerous pathways to meet net-zero emissions goals, the Princeton study outlines five domestic pathways that share multiple features but differ in several important respects. The key differences are the assumptions made about the degree of electrification, supply constraints for various energy sources, and use of carbon sequestration.

One example of the differences is the role for nuclear power under some, but not all, of the Princeton pathways. However, the most critical common feature shared by the Princeton study's five pathways is the varying role and importance of clean electricity. Other common features between the pathways include the following:

- Coal use is essentially eliminated by 2030 in all pathways with no new capacity added.
- Biomass⁶ expands rapidly after 2030 and is widely used by 2050.
- Electricity and hydrogen (H₂) use increase across all pathways,⁷ with H₂ from biomass⁸ being a key and relatively low-carbon fuel using carbon capture technology.
- The deployment of agricultural and/or forestry land sink enhancement measures.⁹

All net-zero pathways face challenges in achieving domestic net-zero emissions by 2050. Of particular importance, and independent of any National OCS Program decision, is the immediate need to mobilize capital and ensure political and public commitment to effectively (1) deploy mature technologies quickly, (2) build key infrastructure, and (3) improve and establish less mature technologies. For example, three of the five Princeton pathways require an aggressive conversion to electric vehicles by 2050. This contrasts with EIA's reference case, where the U.S. only has 15% of light duty transportation electrified by 2050.

⁶ As defined by the EIA, biomass is "organic non-fossil material of biological origin constituting a renewable energy source."

⁷ H₂ under these pathways can be made by reforming natural gas (without or with CO₂ capture), gasifying biomass (with CO₂ capture), or electrolyzing water. Each pathway takes a different approach or combination of approaches.

⁸ Biomass plays a particularly critical role because it removes CO₂ from the atmosphere as it grows and can be converted to H₂ while capturing and permanently sequestering its carbon.

⁹ "Land sinks" are areas where carbon is removed from the air and permanently stored in soil or trees to offset positive GHG emissions from elsewhere in the economy. This helps to reduce the cost of emissions reductions.

1.2.3 Other Components of National Energy Needs

The OCS Lands Act mandates that the Secretary determine how to best meet “national energy needs.” Additionally, the court elaborated in the *CSE* decision that such a determination can look beyond those considerations that “meet current demand for domestic consumption” *CSE*, 779 F.3d at 607. Specifically, the Secretary may, when proposing and finalizing the National OCS Program, account for the fact that there are both direct and indirect benefits to issuing leases during the next National OCS Program, which could affect national energy needs. The direct benefits of OCS leasing include ensuring an adequate energy supply and the corresponding effects on crude oil, refined products, and natural gas prices.

Another associated benefit of the National OCS Program is the continued ability for BOEM to issue offshore wind leases. In addition, Section 50265(b)(2) of the IRA requires BOEM to offer at least 60 million OCS acres for oil and gas leasing within the 12 months prior to issuing an offshore wind lease. This requirement is effective until August 16, 2032.

Offshore wind leases will help meet the clean energy needs of the Nation. Additional indirect benefits, which are discussed in further detail below, include improved balance of payments, energy security, technology advancement, the comparatively low GHG-intensity of OCS production compared to onshore and most foreign production, domestic employment, and the additional public revenues generated by leasing.

1.2.3.1 Balance of Payments and Trade

The country’s transition away from being a net importer of energy continues to improve the balance of trade and provide positive contributions to gross domestic product (GDP). In contrast to the \$945.3 billion trade deficit (BEA 2022) for all U.S. goods and services in 2022, petroleum consisting of crude oil, refined petroleum products, and natural gas liquids, had a trade surplus of \$14.1 billion (BEA 2023). That surplus represents a dramatic shift in the energy trade balance for petroleum products, which showed a deficit of approximately \$189 billion in 2014, one year before the crude oil export ban was lifted (USCB 2021).

A positive trade balance in crude oil, refined petroleum products, and liquified natural gas (LNG) also contributes to increased GDP because the value of exports counts toward domestic product while the value of imports is excluded from GDP. As a significant source of crude petroleum (and to a lesser extent natural gas), OCS production contributes to this positive balance of trade in crude oil, refined petroleum products, and LNG. Long-term projections by the EIA following current laws and policies show the U.S. as a net energy exporter through 2050 (EIA 2023g).

1.2.3.2 Energy Security

Domestic energy production, including OCS production, has the potential to enhance U.S. national security by reducing U.S. dependence on imported crude oil. Maximizing domestic crude oil and natural gas production can contribute to both U.S. and worldwide energy security by providing adequate supply that can help limit the impact of foreign supply shocks and reduce future price volatility (Krauss 2018).

Crude oil and LNG are global commodities sold in a competitive world market; a reduction in supply (or an increase in demand) in one part of the world causes shifts in global prices. The continuing possibility of high and volatile prices raises important energy policy issues about supply options and their economic as well as environmental effects. As the U.S. progresses in transitioning to a new energy economy to meet climate goals, it will rely less on crude oil and natural gas and be less susceptible to global crude oil and natural gas supply shocks. However, during the transition to new energy sources, the U.S. will continue to rely on crude oil and natural gas supply to ensure continued energy security.

1.2.3.3 Technology

New technologies employed by the crude oil and natural gas industry are, in large part, responsible for making the U.S. the world's top producer of crude oil and natural gas. Many of these technological advances include offshore technology developed in the GOM that have greatly expanded offshore resources accessible for production, especially in deeper water depths. In addition, the OCS crude oil and natural gas industry has reduced deepwater (200 meters or greater) project costs through greater equipment standardization.

Higher quality geological and geophysical (G&G) data—achieved through state-of-the-art acquisition methods and processing—has aided in the identification of prospects and effective well placement, which improves the probability for commercial discoveries. Consequently, companies are able to drill fewer wells per discovery in the best prospects (Raval 2018). Advanced composite materials and materials engineering have improved OCS structures and moorings to better withstand the operating environment. These and other technologies developed for crude oil and natural gas operations have contributed (and continue to contribute) to U.S. leadership in the crude oil and natural gas industries, while supporting U.S. economic growth and helping to meet domestic and global energy needs.

1.2.3.4 Low GHG Intensity of OCS Production

Technological advancements and a strong regulatory framework have contributed to reducing the carbon profile of the OCS. Based on current research, data suggest that deepwater GOM production has among the lowest carbon intensities of crude oil projects. The deepwater GOM's low GHG intensity is due to several factors including restrictions on venting and flaring of OCS

natural gas, the medium American Petroleum Institute (API) gravity crude oil that is prevalent in the area, and the efficiencies available with larger development facilities.

Using independent data sources and building upon BOEM's *Year 2017 Emissions Inventory Study* (BOEM 2019), BOEM incorporated additional independent data sources to compare upstream GHG intensities of OCS crude oil and natural gas production with the production of non-OCS crude oil and natural gas. The available data suggests that deepwater GOM production has low GHG-intensity profiles relative to oil produced elsewhere (Cooney et al. 2016). The data sources also indicate that heavy crude oil production (such as in Canada or Venezuela) has the highest GHG intensity by far, followed by conventional onshore crude oil production.

A subsequent estimate of GHG intensities for worldwide crude oil and natural gas production was prepared by Rystad Energy, an energy research company. A comparative analysis of BOEM's *Year 2017 Emissions Inventory Study* and Rystad Energy's data found that, in 2017, 83% of GOM deepwater production was below Rystad Energy's estimated total U.S. average upstream GHG intensity of 12 kilograms per barrel of oil equivalent (kg/BOE). Additionally, 94% of GOM deepwater production was less than Rystad Energy's estimated global average upstream GHG intensity of 18 kg/BOE (Rystad Energy 2020). BOEM analysis calculated that the GHG intensity for crude oil produced in the deepwater GOM, where BOEM expects almost all future OCS production to occur, was approximately 11.5 kg/BOE in 2017. In addition, production from the GOM was estimated to have the lowest GHG intensity within the domestic crude oil consumption mix (Cooney et al. 2016).

In general, the highest GHG-intensity projects are those that produce heavy crude oil, flare or vent substantial amounts of natural gas, are late in their production lifecycle, or use inefficient technologies. Crude oil projects tend to have higher GHG intensities than natural gas projects, although this seems to be primarily driven by the extent of natural gas flaring and venting (Masnadi et al. 2018).

1.2.3.5 Employment and Public Revenues

The domestic energy industry is an important component of the U.S. economy through its contribution to GDP, employment, and public revenues. Production of domestic crude oil provides employment at higher-than-average wages to industry employees, but also supports domestic jobs in other industries that supply goods and services for exploration, development, production, and domestic transportation of crude oil and natural gas.

While the crude oil, natural gas, and supporting services industries create higher-paying jobs, the amount of those jobs supported annually has declined since reaching a recent high in 2014.¹⁰ This decline is due in part to lower crude oil and natural gas prices and industry adaptations to cut

¹⁰ This is evidenced in employment trends reported by the Bureau of Labor Statistics' Series IDs: CEU1021100001, for All Employees, Oil and Gas Extraction, and CEU1021311201, Support Activities for Oil and Gas Activities.

costs and streamline activities. The impact of the OCS crude oil and natural gas industry on GDP and employment is discussed in [Chapter 9](#) in the context of the geographical distribution of developmental benefits and environmental risk, which also describes the revenues available to the local, state, and Federal governments. In general, OCS leasing and production provide the following public revenues:

- funds to the U.S. Treasury
- funding for the Historic Preservation Fund
- funding for the Land and Water Conservation Fund (LWCF)
- OCS Lands Act Section 8(g) and Gulf of Mexico Energy Security Act (GOMESA) revenue sharing payments to states¹¹
- Great American Outdoors Act (GAOA) funding up to \$1.3 billion per year from Fiscal Year (FY) 2021 through FY 2025

1.2.4 OCS Role in Meeting National Energy Needs

Although leasing decisions made in this National OCS Program are not guaranteed to result in new production for several years, the development and production would eventually contribute to meeting national energy needs. This increased national energy supply would also provide other national benefits in terms of the balance of payments and trade, energy security, technology advancement, lower carbon-intensity crude oil and natural gas production, public revenues, and employment. Absent future lease sales, OCS production is expected to continue to occur from existing leases. [Section 5.2.8](#) discusses the potential for crude oil and natural gas development from existing leases. Without future lease sales or additional opportunities for project expansions, tie-back fields, or new developments, OCS production would ultimately decline.

BOEM’s responsibility to develop a National OCS Program requires consideration of the size, timing, and location of lease sales over a 5-year period, with the understanding that leasing could have impacts for decades. While activities associated with new leases will generate years of economic opportunities, crude oil and natural gas production from new leases will likely not commence until approximately 5 years (for shallow water production) to 10 years (for deep water production) following a lease award.

The Secretary may also re-evaluate national energy needs when deciding whether to hold any individual lease sales included in the approved National OCS Program. These additional decision

¹¹ Section 8(g) of the OCS Lands Act provides for the Federal government to share with any coastal state adjacent to OCS oil and gas activity 27% of revenues earned from OCS leases within 3 nm seaward of the state’s submerged lands boundary. The shared revenues are referred to as “8(g) revenues.” In 2006, Congress passed the GOMESA, which mandates that the states of Texas, Louisiana, Mississippi, and Alabama receive a portion of revenues from new oil and natural gas development in Federal waters adjacent to these states.

points allow the Secretary to consider new information about U.S. energy needs, progress toward net-zero emissions, or other factors when choosing whether to hold individual lease sales.

1.3 Oil and Gas Leasing, Exploration, Development, and Production Process on the OCS

BOEM has oversight responsibility for OCS oil and gas leasing and development (see [Figure 1-7](#)), starting with the development of the National OCS Program. Section 18 requires the Secretary to prepare an oil and gas leasing program that consists of a 5-year schedule of proposed lease sales that the Secretary determines best meets national energy needs (see [Section 1.3.1](#)).

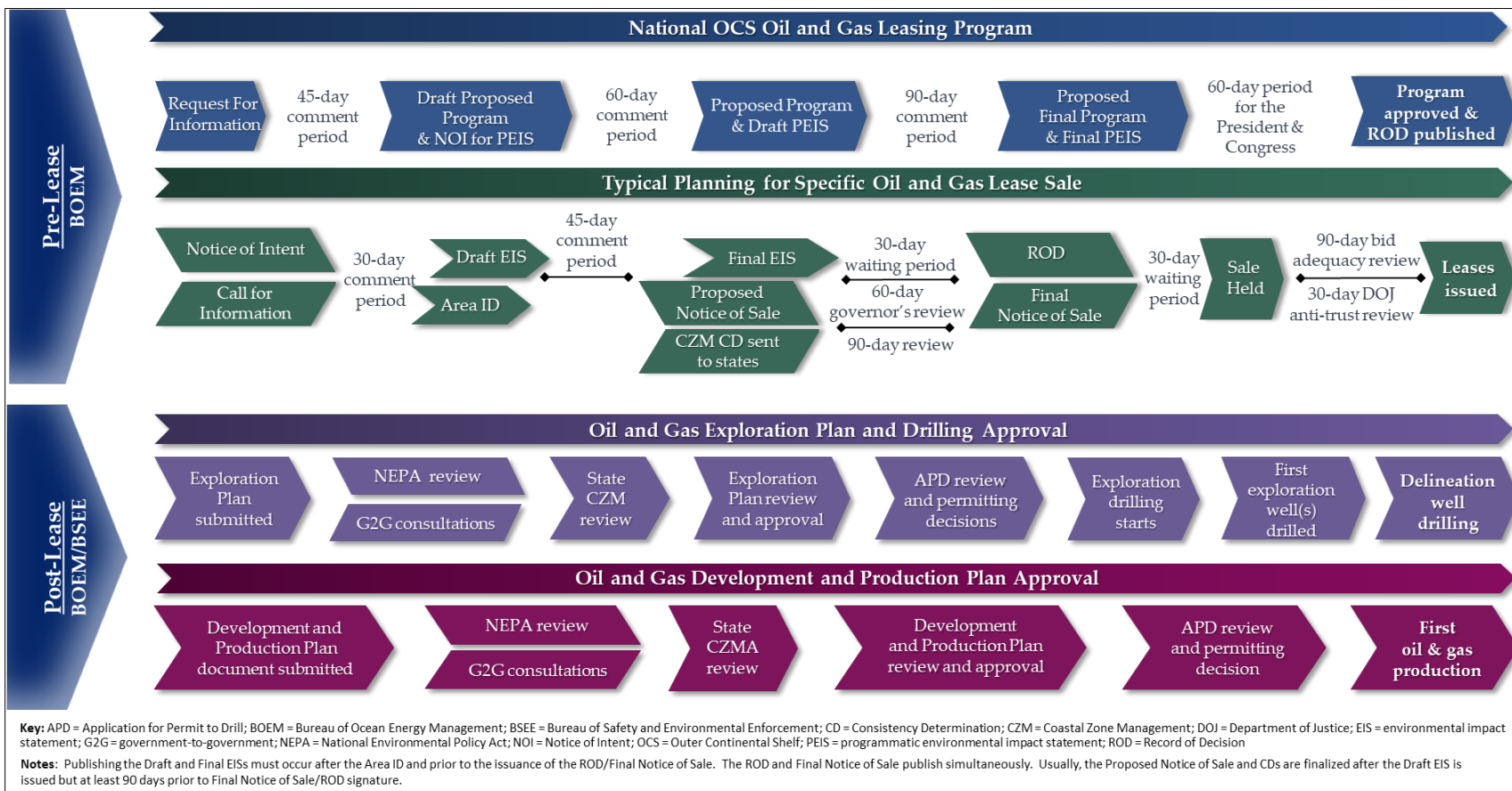
For any specific lease sale to be held, it must be included in an approved National OCS Program. A lease sale cannot be added later to an existing National OCS Program without an act of Congress. Whether a lease sale is held depends on sale-specific analysis (see [Section 1.3.2](#)). Following a lease sale, BOEM performs a review and either accepts or rejects bids within 90 days.

Once granted, an oil and gas lease conveys the exclusive right to explore, develop, and produce oil and/or gas for a specific initial period (for a minimum of 5 and maximum of 10 years) from a specific OCS block. All exploration, development, and production plans are carefully reviewed by BOEM (see [Section 1.3.3](#)). Following plan approval, the Bureau of Safety and Environmental Enforcement (BSEE) exercises primary oversight of specific permitting and operational activities (e.g., drilling and production) on OCS leases.

1.3.1 National OCS Program Development Process

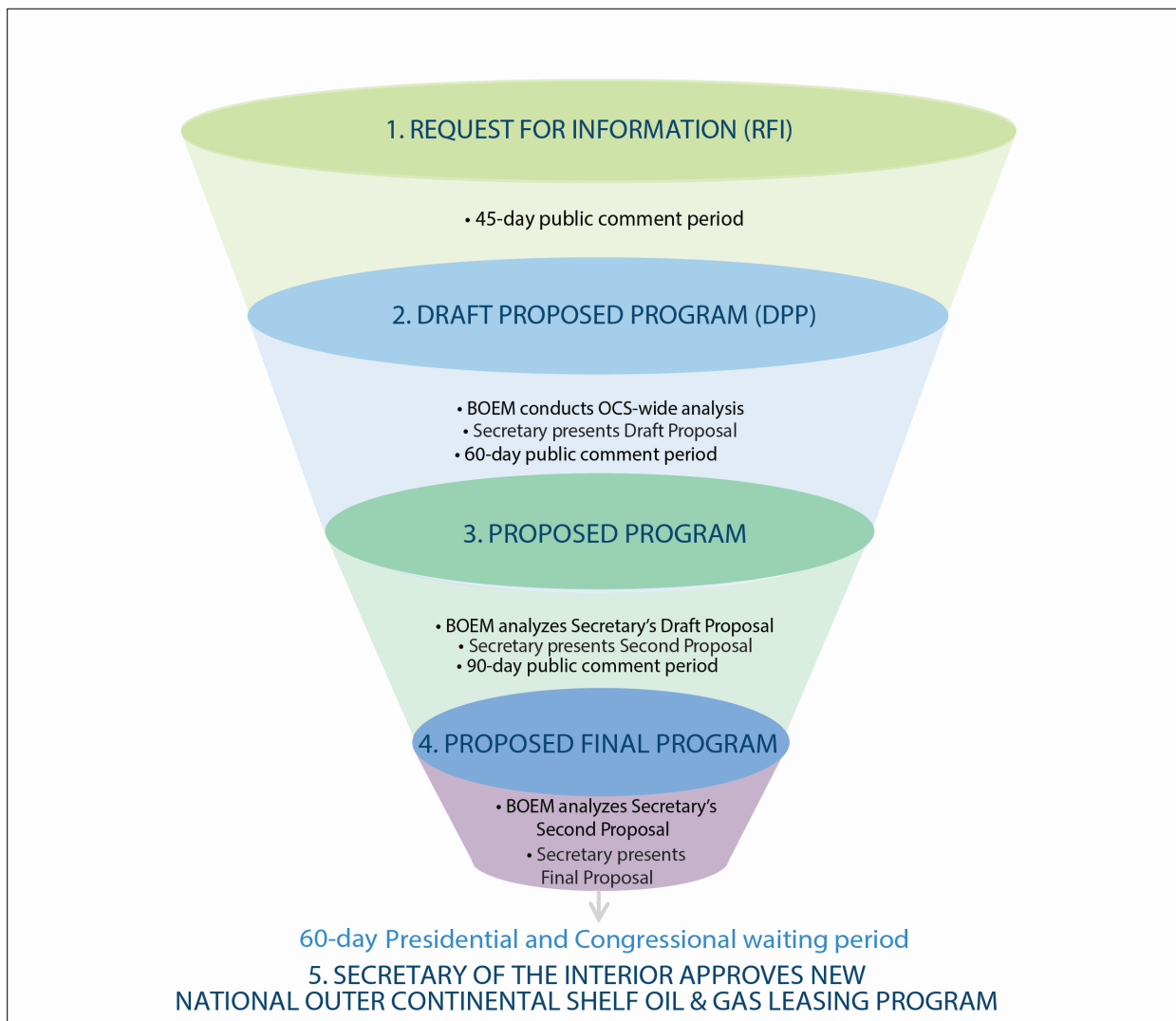
Multiple Section 18 steps are required to prepare a new National OCS Program. The National OCS Program development process begins with the publication of the Request for Information (RFI) followed by three analytical stages: (1) the Draft Proposal, resulting from the analysis of all 26 OCS planning areas and published as part of the [Draft Proposed Program](#) (DPP); (2) the Second Proposal, resulting from the analysis of the Draft Proposal and published as part of the [Proposed Program](#); and (3) the Final Proposal resulting from the analysis of the Second Proposal and published as part of this PFP. Approval of a new National OCS Program may occur no earlier than 60 days after publication of the PFP. [Figure 1-7](#) shows the analytical flow process. This PFP includes the Final Proposal and the third of three analyses resulting in a proposed schedule of lease sales for the 2024–2029 timeframe.

Figure 1-7: National OCS Oil & Gas Leasing Program and Development Process



As shown in [Figure 1-8](#), the National OCS Program development process starts with the broadest RFI and consideration of all 26 OCS planning areas and can be narrowed throughout the National OCS Program development and associated lease sale processes. Once a defined area is included during the National OCS Program development process, it becomes known as a program area. Program areas are therefore the portions of the original OCS planning areas that remain under leasing consideration during the National OCS Program development process. For example, the Cook Inlet Program Area in the [2017–2022 Proposed Program](#) included only the northern portion of the larger Cook Inlet Planning Area that was originally considered for leasing in the [2017–2022 DPP](#). The initial Draft Proposal in this instance included 25 of 26 planning areas across all OCS Regions, which have since been narrowed to all or portions of four planning areas (three in the GOM and one offshore Alaska).

Figure 1-8: National OCS Oil & Gas Leasing Program Analytical Flow Process



Section 18(a)(2) of the OCS Lands Act lists eight factors that the Secretary must consider when determining the size, timing, and location of oil and gas leases among the different OCS areas (see [Chapter 2](#)). The analysis contained in the [DPP](#) examined and compared all 26 OCS planning areas regarding the Section 18(a)(2) factors for consideration, as well as the balancing mandated by Section 18(a)(3). The National OCS Program development process is typically a winnowing process, and only those program areas and Subarea Options that the Secretary decides are appropriate to carry forward for further analysis are included in the next analytical document. The Second Proposal narrowed the scope of this National OCS Program to the area of the GOM not under withdrawal (i.e., the Western GOM Planning Area, most of the Central GOM Planning Area, and a small portion of the Eastern GOM Planning Area); and to the northern portion of the Cook Inlet Planning Area.

BOEM has decided to prepare a Programmatic EIS in accordance with the National Environmental Policy Act (NEPA) (42 U.S.C. §§ 4321 *et seq.*) and its implementing regulations as a vehicle for conducting and disclosing the environmental analyses for the National OCS Program. BOEM's decision to prepare the Programmatic EIS is discretionary because the U.S. Court of Appeals for the District of Columbia has ruled that the approval of a National OCS Program does not constitute an irreversible and irretrievable commitment of resources, and that, in the context of BOEM's multiple stage leasing program, the obligation to fully comply with NEPA does not mature until the lease sale stage (*Center for Biological Diversity v. Department of the Interior*, 563 F.3d 466 (D.C. Cir. 2009); *Center for Sustainable Economy v. Jewell*, 779 F.3d 588 (D.C. Cir. 2015)). [Figure 1-7](#) shows the key steps in preparing a new National OCS Program under Section 18 of the OCS Lands Act and the Programmatic EIS under Section 102(2)(C) of NEPA.

The program areas included in the Secretary's Second Proposal are further analyzed in this PFP document and in the *2024–2029 National OCS Oil and Gas Leasing Program Final Programmatic Environmental Impact Statement* (BOEM 2023a). [Chapter 3](#) provides additional detail on what is included in the PFP analyses. The NEPA analysis includes an evaluation of the potential environmental and related socioeconomic impacts associated with the proposed lease sale schedule, and how those impacts could vary depending on the areas or regions that are included in the National OCS Program. The NEPA process is introduced in the discussion of Factor (H), relevant environmental and predictive information for different areas of the OCS, in [Section 2.3](#); a more detailed description is also contained in the Programmatic EIS.

The Programmatic EIS identifies sensitive subareas that could warrant exclusion from this National OCS Program due to potential environmental impacts from oil and gas lease exploration and development. The Programmatic EIS addresses the effects of lease sales under the new National OCS Program, which includes those lease sale effects that could be experienced beyond BOEM program area boundaries, such as potential impacts on migratory animals.

The Programmatic EIS considers potential geographic exclusions and restrictions on lessee activities for this National OCS Program. The final decision on the National OCS Program can adopt any analyzed exclusions within program areas otherwise included that are sufficiently identifiable at the Programmatic stage. In addition, the Secretary may determine not to offer sensitive subareas at subsequent stages, such as at the lease sale stage.

[Table 1-1](#) shows the NEPA documentation associated with the various stages of National OCS Program and lease sale development.

Table 1-1: Typical NEPA Assessments for the National OCS Oil & Gas Leasing Program



Program Level	Program Stage	NEPA Documentation	Geographic Scope	Focus and Scope
Planning	National OCS Program	Programmatic EIS (NEPA is discretionary at this stage)	National	Inform choice of program areas and number of sales for the schedule of lease sales in the National OCS Program. Consider National OCS Program-level environmental impacts and identify mitigation measures.
Lease Sale	Lease Sale	NEPA Review (EIS, EA, or DNA)	Program Area	Assess potential environmental impacts and mitigation measures (EIS or EA) to inform choice of parcels to be offered, or determine that these are adequately covered in a previously prepared NEPA document (DNA)
Project	Exploration	DNA, CER, EA, or EIS	Portion of lease block(s)	Assess effects of proposed activities to inform decision to approve, disapprove, or approve with mitigation measures
	Production	DNA, CER, EA, or EIS	Portion of lease block(s)	
	Decommissioning	DNA, CER, EA, or EIS	Specific facility within a lease block	

Note: The level of NEPA analysis at the project level is determined by the complexity of the project, risk factors associated with the project, project location relative to other uses or environmentally important areas, technologies proposed for use, and other factors.

Key: CER = categorical exclusion review; DNA = Determination of NEPA Adequacy; EA = environmental assessment; EIS = environmental impact statement.

Additionally, BOEM informs federally recognized Tribal governments that a National OCS Program is being prepared, to include the steps in the National OCS Program development process and where to find additional information on meetings and opportunities to provide comments (see [Section 11.1](#)). BOEM recognizes the unique relationship between the U.S. and

Tribes and invites requests for government-to-government consultation. This consultation can occur at the National OCS Program stage as well as during the subsequent stages of the process (e.g., lease sales, plan reviews). Consultation and coordination with other Federal agencies, and state and Tribal governments, as required under specific environmental statutes, occur at subsequent stages of the leasing process.

1.3.1.1 Request for Information and Comments

In developing this National OCS Program, BOEM analyzed, among other items, regional and national energy needs; leasing interest as expressed by potential oil and gas producers; applicable laws, goals, and policies mentioned in the comments of affected states; comments and concerns of local governments and Tribes; public input; competing uses of the OCS; relative environmental sensitivity and marine productivity among OCS Regions; and the equitable sharing of benefits and risks among OCS Regions.

On July 3, 2017, BOEM published in the *Federal Register* the [RFI](#) regarding the preparation of a 2019–2024 Program (82 FR 30886). Simultaneously with the release of the RFI, BOEM also sent letters to all governors and the heads of interested Federal agencies requesting their input during a 30-day comment period. Pursuant to OCS Lands Act Section 18, BOEM requested that governors and oil and gas companies provide updated information regarding state laws and policies or industry interest, respectively.

1.3.1.2 Draft Proposed Program and Notice of Intent to Prepare a Programmatic Environmental Impact Statement

After considering the analyses associated with the Section 18 factors and principles for all 26 planning areas, former Secretary Zinke issued the [Draft Proposal](#), which was the initial proposal for this new National OCS Program. BOEM announced the availability of, and requested comments on, the [DPP](#) in the *Federal Register* on January 8, 2018 ([83 FR 829](#)).

That *Federal Register* notice also announced the Notice of Intent (NOI) to prepare a discretionary Programmatic EIS, which signaled the initiation of scoping for the NEPA document. The [DPP](#) was distributed to interested and affected parties for a 60-day comment period and transmitted to all 50 governors and relevant Federal agencies. [Chapter 11](#) provides a more detailed discussion on public involvement and outreach for the National OCS Program and Programmatic EIS.

1.3.1.3 Proposed Program and Draft Programmatic EIS

The [Proposed Program](#) analysis focused on former Secretary Zinke’s Draft Proposal, as well as other Program Options identified when making the Draft Proposal. These analyses provide information relevant for consideration of required Section 18 factors (see [Chapter 2](#)) and comments received by BOEM on the [DPP](#) and NOI. OCS areas identified for potential leasing in

the Draft Proposal were also analyzed in the [Draft Programmatic EIS](#). The [Proposed Program](#) and [Draft Programmatic EIS](#) analyses informed the Secretary’s Second Proposal.

On July 8, 2022, BOEM announced in the *Federal Register* (87 FR 40859) the publication of the Proposed Program and Draft Programmatic EIS. This included an associated request for comments and feedback on the Proposed Program and Draft Programmatic EIS from other interested and affected parties during a 90-day comment period. In addition, the Proposed Program was submitted to governors and relevant Federal agencies. BOEM sent written responses to the Proposed Program comments from governors and other state officials commenting on behalf of governors, in conjunction with transmittal of the Proposed Program and Draft Programmatic EIS.

1.3.1.4 Proposed Final Program and Final Programmatic EIS

The third and last analytical stage of the National OCS Program development process, the preparation of this PFP, is based on analysis of the Second Proposal and comments BOEM received on the Proposed Program and Draft Programmatic EIS. Additionally, a Final Programmatic EIS that informs the Secretary’s Final Proposal has been prepared and released in conjunction with this PFP document. The OCS areas identified for potential leasing in the Final Proposal are described in **Part I** of this PFP document.

BOEM has announced publication of the PFP in the [Federal Register](#) and will submit it to the President and Congress. BOEM provides the President and Congress with the [Final Programmatic EIS](#) along with the PFP because the Programmatic EIS contains information and analyses that address Section 18 factors. Copies of all comments received throughout the National OCS Program development process have been submitted to the President and Congress, as required. BOEM also sent written responses to all comments received throughout the National OCS Program development process from governors and other state officials commenting on behalf of governors, in conjunction with transmittal of the PFP and Final Programmatic EIS per Section 18(c)(2) of the OCS Lands Act.

1.3.1.5 National OCS Program Approval and Record of Decision

In accordance with Section 18(c)(2), the Secretary will not approve the PFP until at least 60 days after sending it to the President and Congress. At the time of approval, the Secretary’s decision is described in the combined decision memo and record of decision (ROD) that is made publicly available; this marks the final step in the Section 18 and NEPA processes. In general, the ROD identifies the schedule of potential lease sales to occur during the 2024–2029 period (i.e., the Department’s selected alternative under NEPA), presents the basis for the decision, and identifies methods to avoid, minimize, or otherwise mitigate environmental impacts. The ROD could also adopt any programmatic mitigation measures or restrictions on leasing activities that the

Secretary considers necessary for environmental protection and that are sufficiently identifiable at the programmatic stage.

1.3.2 Lease Sale Process

Approval of a National OCS Program does not constitute final approval of the lease sales scheduled in that National OCS Program. Each potential lease sale scheduled in a National OCS Program is subject to separate established pre-lease sale decision processes, including environmental review and analysis.

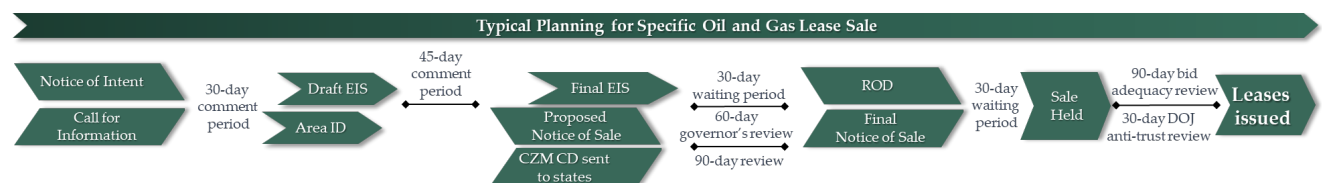
During the lease sale process, the Secretary may further define the area available for leasing. For example, the Secretary could choose an areawide approach, in which all available unleased acreage in a program area is offered for lease, or a targeted leasing approach, which is designed to result in a more focused lease area configuration.

A targeted approach could, for example, only offer lease sales in areas with high hydrocarbon resource potential while appropriately weighing environmental protection.

Other potential considerations could include biologically sensitive subareas, and areas of potential conflict with other users or uses of the marine environment, such as subsistence hunting and fishing activity. This is consistent with the policy of the OCS Lands Act to make OCS oil and gas resources available for development while considering safeguards for the human, marine, and coastal environments.

As shown in [Figure 1-9](#), interested and affected parties have multiple opportunities to participate and comment prior to any decision to hold a specific lease sale. The lease sale process has traditionally taken about 2 years to complete and contains multiple steps and decision points along the way.

Figure 1-9: OCS Lease Sale Process



Key: CD = Consistency Determination; CZM = Coastal Zone Management; DOJ = Department of Justice; EIS = environmental impact statement; ROD = Record of Decision

Notes: Publishing the Draft and Final EISs must occur after the Area ID and prior to the issuance of the ROD/Final Notice of Sale. The ROD and Final Notice of Sale publish simultaneously. Usually, the Proposed Notice of Sale and CDs are finalized after the Draft EIS is issued but at least 90 days prior to Final Notice of Sale/ROD signature.

While a lease sale may not occur until an approved National OCS Program is in place, in some cases, lease sales occurring early in a National OCS Program schedule require steps to be taken in the pre-lease sale process prior to final National OCS Program approval. This is not a pre-judgment by the Secretary concerning any area that may be made available for leasing, only an initiation of the statutory and analytical steps required to hold a lease sale on time should it

remain in an approved National OCS Program.¹² The full process for a typical lease sale is described below in more detail.

- 1. Call for Information and Nominations (30 Code of Federal Regulations [CFR] 556.301)**—In the first step of the lease sale process, BOEM issues a Call for Information and Nominations (Call) in the *Federal Register* on an area proposed for leasing. Potential bidders are invited to submit nominations or indications of interest in specific OCS blocks within the Call Area. The Call also solicits comments about geological conditions; archaeological sites; potential multiple uses of the area including navigation, recreation, and fisheries; socioeconomic, biological, and other environmental information; and asks the public for information on areas of special concern that should be analyzed.
- 2. Area Identification (30 CFR 556.302)**—Area Identification (Area ID) is the second major step in BOEM’s oil and gas lease sale process. During Area ID, BOEM uses information and comments received in response to a Call, and in consultation with appropriate Federal agencies, develops a recommendation to the Secretary for the area(s) to be subject to further leasing consideration and environmental analyses. The Area ID decision is announced in the *Federal Register*.
- 3. Review under NEPA**—BOEM performs a NEPA review for each lease sale. This typically includes an EIS that considers the impacts associated with oil and gas activities for a given region or program area. The NEPA for subsequent lease sales in the same region or program area may rely on that EIS as appropriate, after BOEM confirms through a DNA or EA that EIS supplementation is not required.
- 4. Government-to-Government Consultations**—Under Executive Order (E.O.) 13175 and the *Department of the Interior Policy on Consultation with Indian Tribes*, BOEM is obligated to engage in government-to-government consultations with Tribes on any Departmental action with Tribal implications. This includes federally recognized Tribes with current and historic interests in coastal areas of Alaska, the Pacific, the GOM, and the Atlantic. In Alaska, BOEM additionally consults with Alaska Native Claims Settlement Act (ANCSA) Corporations. These consultations are conducted on additional approvals (e.g., plans and permits) as appropriate throughout the life of an OCS oil and gas lease.
- 5. Environmental Consultations**—Consultations under various environmental statutes occur, such as the Endangered Species Act (ESA) of 1973 (16 U.S.C. §§ 1531 *et seq.*) and Section 305(b) of the Magnuson--Stevens Fishery Conservation and Management Act (16 U.S.C. §§ 1801 *et seq.*). Pursuant to these environmental statutes, BOEM is required to consult with agencies such as the U.S. Fish and Wildlife Service (USFWS)

¹² Solicitor’s M Opinion 36954, *Whether the Department May Issue a Call for Information & Nominations for Outer Continental Shelf Lease Sale 91*, 93 I.D. 125 (1986).

and National Marine Fisheries Service (NMFS). BOEM also consults, as appropriate, under Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108).

- 6. Proposed Notice of Sale (NOS) (30 CFR 556.304)**—The proposed NOS describes the timing, size, and location of a proposed oil and gas lease sale. It also provides potential bidders with information on proposed economic terms and conditions and any proposed mitigation measures (i.e., lease stipulations), which are typically designed to reduce potential conflicts with other ocean uses and to protect the environment. BOEM publishes a notice of availability of the proposed NOS in the *Federal Register*.
- 7. Coordination with Governors of Affected States (30 CFR 556.304-307)**—Section 19 of the OCS Lands Act (43 U.S.C. § 1345) requires BOEM to solicit input on the size, timing, and location of lease sales from governors of affected states. BOEM sends the proposed NOS to governors of affected states requesting their recommendations on the proposed size, timing, and location of the lease sale. The governors have 60 days to submit their recommendations to BOEM. Prior to holding the lease sale, BOEM sends each governor written reasons for USDOJ’s determination to accept or reject that governor’s recommendation.
- 8. Consistency Determination (30 CFR 556.305(b))**—All Federal activities affecting the coastal zone, including OCS oil and gas lease sales, must be consistent to the maximum extent practicable with the enforceable policies of an affected state’s coastal zone management (CZM) program (see 16 U.S.C. § 1456(c)(1) and (2)). BOEM provides coastal states with a consistency determination on whether the proposed lease sale is consistent, to the maximum extent practicable, with the enforceable policies of federally approved state Coastal Management Plans. That is not done, however, for Alaska lease sales since the State of Alaska no longer has a federally approved Coastal Management Plan. For more information on BOEM’s CZM work, see <https://www.boem.gov/Coastal-Zone-Management-Act/>.
- 9. Issuance of a ROD (EIS-level), Finding of No New Significant Impact (FONSI; EA-level) or DNA**—Upon completion of the NEPA review for each individual lease sale, a determination is made as to the significance, or lack thereof, of potential environmental impacts. Depending on the type of NEPA review undertaken for a lease sale, the NEPA review process is completed through the issuance of a ROD, a FONSI, or a DNA.
- 10. Final NOS (30 CFR 556.308(a))**—BOEM will publish a final NOS at least 30 days before a lease sale is held. The final NOS includes information on how to submit bids; the date, time, and location of the bid opening and reading; the OCS blocks being offered; and terms and conditions of the lease sale, including lease stipulations.
- 11. Holding the Lease Sale (30 CFR 556.516)**—BOEM opens the sealed bids at the place, date, and hour specified in the final NOS for the sole purpose of publicly announcing and recording the bids. BOEM does not accept or reject any bids at that time.

- 12. Lease Issuance (30 CFR 556.520-522)**—Before a lease can be issued, high bids are subject to evaluation regarding the receipt of fair market value (FMV) and analysis confirming that the award of any tract to the highest bidders in the lease sale would not create or maintain a situation inconsistent with anti-trust laws. BOEM will issue a lease following completion of its FMV analysis and the anti-trust review conducted by the Department of Justice in consultation with the Federal Trade Commission.

1.3.3 Exploration and Development Process

Areas with mature oil and gas development, such as the GOM, generally have more recent and therefore more sophisticated seismic data available (e.g., three-dimensional [3-D] seismic surveys) to assess oil and gas resources. Frontier areas of the OCS generally only have older, less sophisticated seismic data (e.g., two-dimensional [2D] seismic surveys) available. If leasing and related activities increase in frontier areas, new seismic data will be collected, and more detailed information will become available. On the U.S. OCS, seismic data are typically acquired both prior to lease issuance (through the issuance of a permit) and after a lease is in effect.

After BOEM issues a lease, a lessee typically accelerates the process to explore for oil and gas accumulations. In some cases, potential oil and gas resources could already be identified through analysis of existing data and information. Prior to exploration activities on the lease, an exploration plan is submitted to BOEM for environmental review and consideration for approval (see [Figure 1-10](#)).

Figure 1-10: OCS Exploration Plan and Drilling Review Process



Key: APD = Application for Permit to Drill; CZM = Coastal Zone Management; G2G = government-to-government; NEPA = National Environmental Policy Act

High-resolution geophysical surveys on a lease are performed prior to exploration plan submittal to identify natural and man-made hazards, areas of potentially sensitive benthic habitat such as hard bottom habitat and coral reefs, and significant cultural resources such as historic shipwrecks or inundated occupation sites on or below the seabed. The next phase of exploration involves drilling an exploration well that targets the interpreted oil or gas trap in the subsurface to determine if an oil or gas resource exists. If oil or gas is discovered in quantities appearing to be economically favorable, one or more follow-up delineation wells could be drilled to help define the amount of the resource or the extent of the reservoir.

Delineation and production wells are sometimes both termed development wells. If a lessee wishes to drill a development well, a development and production plan must be submitted to BOEM so that BOEM can perform environmental review and consider plan approval (see [Figure 1-11](#)).

Figure 1-11: OCS Development and Production Plan Review Process

Key: APD = Application for Permit to Drill; CZM = Coastal Zone Management; G2G = government-to-government; NEPA = National Environmental Policy Act

Assuming that hydrocarbon resources are discovered and successfully delineated, a production facility could be installed at the site. The number of wells to be served by a single facility varies according to the type of production facility used, the prospect site, and the drilling and production strategy deployed. Oil and gas resources are brought to market via a system of pipelines and processing facilities or through production into a floating system.

Exploration plans and development and production plans are subject to focused, site-specific environmental analyses under NEPA and other environmental statutes, as well as the requirement for an operator to certify consistency of the proposed activities with the enforceable policies of a state's CZM program, as appropriate.

For more information about the exploration and development process, see BOEM's web pages on the status of oil and gas plans for the Alaska Region (<https://www.boem.gov/akplans>), GOM Region (<https://www.boem.gov/Status-of-Gulf-of-Mexico-Plans/>), and Pacific Region (<https://www.boem.gov/Pacific-Lease-Management/>). For more information about BOEM's oil and gas resource evaluation program, see the web page: <https://www.boem.gov/Resource-Evaluation-Program/>.



Chapter 2

Section 18
Requirements &
Factors



Chapter 2 Section 18 Requirements & Factors


2.1 BOEM’s Approach to Analyzing Program Areas

Section 18(a) of the OCS Lands Act contains four subsections that set forth principles and factors to guide the National OCS Program development process. This chapter provides the foundation for BOEM’s analysis and subsequent proposed options (Program Options) for a potential lease sale schedule. The Secretary may select from these Program Options “indicating, as precisely as possible, the size, timing, and location of leasing activity which [the Secretary] determines will best meet national energy needs for the five-year period following [Program] approval...” (43 U.S.C. §1344(a)). This chapter also presents a brief overview of those Section 18 requirements as well as guidance provided in court decisions on prior National OCS Programs (see [Section 2.7](#)).

Analysis of the Second Proposal (Lease Sale Option), No Sale Options, as well as Subarea Options (collectively called the PFP Options) identified by the Secretary for further analysis under the principles and factors in Section 18 of the OCS Lands Act are key elements that inform the Secretary’s Final Proposal. These principles and factors include the eight factors listed in Section 18(a)(2) of the OCS Lands Act (see [Section 2.3](#) and [Figure 2-1](#)). The PFP Options are also considered throughout the Final Programmatic EIS. See [Chapter 3](#) for a full description of the PFP Options.

The analyses underlying this National OCS Program use the best available information at the time.

Previous studies and analyses are augmented by the latest documents, reports, and studies available, along with pertinent information provided in public comments on the [Proposed Program](#). Additionally, BOEM reviews and reinterprets existing oil and gas resource data as necessary.



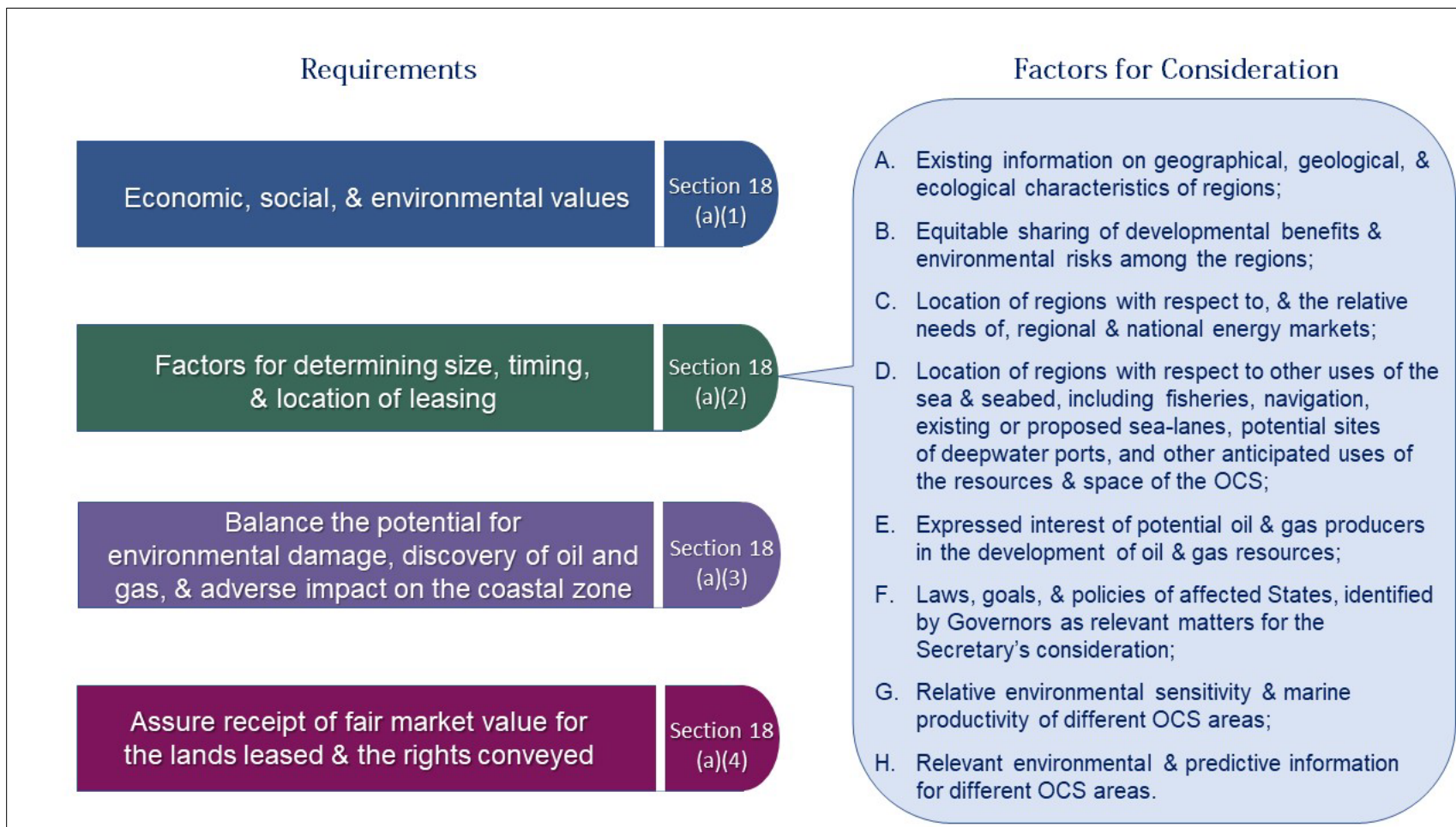
Proposed Final Program Options

Lease Sale Option: Lease sale for each program area contained in the Second Proposal.

Subarea Option: Option that subtracts acreage available for subsequent lease sales and represents a potential exclusion within a program area.

No Sale Option: No lease sale in a program area.

Figure 2-1: OCS Lands Act Section 18 Factors



2.2 Section 18(a): Energy Needs

As stated in Section 18(a) of the OCS Lands Act, the purpose of the National OCS Program is to help meet the future energy needs of the U.S. for the five-year period following its approval or reapproval. [Section 1.2](#) presents an analysis of anticipated energy needs in the context of meeting anticipated energy needs of consumers of all types.

2.3 Section 18(a)(2): Factors for Determining Size, Timing, and Location of Leasing

As stated above, Section 18(a) of the OCS Lands Act states that a 5-year leasing program must be prepared and maintained by the Secretary consistent with principles set forth in the section. Section 18(a)(2) lists eight factors that the Secretary must consider when determining the size, timing, and location of oil and gas leasing activity among the different areas of the OCS. While some of these factors lend themselves to quantification to facilitate the comparison among program areas, others cannot readily be quantified and so are qualitatively considered. Each of the eight factors provided in Section 18(a)(2)(A) through (H) is introduced below:

A) Geographical, Geological, and Ecological Characteristics

The main sources of information on geographical, geological, and ecological characteristics of the program areas considered in preparing this PFP analysis are the [2024–2029 Final Programmatic EIS](#) as well as information contained in other recently completed environmental documents and information related to the following:

- leasing and operational activities
- BOEM oil and gas resource assessments and associated regional geologic and reserves reports
- Indigenous traditional knowledge
- scientific study results (including those reported in BOEM’s Environmental Studies Program Information System [ESPIS])
- information submitted or cited by commenters.

Discussion of such information can be found across this document (e.g., geological characteristics in [Chapter 5](#) and geographical and ecological characteristics in [Chapter 8](#)), as well as Chapter 4 in the [Final Programmatic EIS](#).

B) Equitable Sharing of Developmental Benefits and Environmental Risks

[Chapter 9](#) presents the analysis for the equitable sharing of developmental benefits and environmental risks associated with oil and gas leasing activities. The chapter provides a

discussion of the developmental benefits and risks accruing in regions near existing and potential OCS oil and gas production and the benefits that are widely distributed throughout the U.S.

The onshore areas adjacent to the regions possessing substantial oil and gas resources tend to receive a high proportion of the benefits from, and be subject to, the associated environmental risks of developing those resources. Developmental benefits analyzed include increased wages, additional jobs, increased tax collection, Federal revenues, revenue sharing (with states, localities, and grant programs) where applicable, company profits, and proximity of supply to consumers of energy.

This PFP, along with the [Final Programmatic EIS](#), identifies and discloses potential impacts associated with the PFP Options. Environmental risks include the potential for activities stemming from the PFP to adversely affect the following:

- the quality of the human environment (e.g., water quality, air quality, accidental or catastrophic discharge events)
- resources with cultural and recreational value (e.g., coastal tourism, commercial fisheries, subsistence harvest)
- cultural and archaeological resources
- access to subsistence resources
- species and habitats that are protected by Federal environmental laws and regulations
- other species and habitats, including those that are commercially valuable
- overall marine productivity that could affect or diminish ecosystem services (see [Section 8.2](#)).

By discussing the impacts affecting both regional and national interests, [Chapter 9](#) provides the Secretary with information on the sharing of developmental benefits and environmental risk. The chapter also includes a discussion of the developmental benefits and environmental risks associated with substitution of other energy sources that would be anticipated if the No Sale Option were chosen in any of the program areas.

C) Location with Respect to Regional and National Energy Markets and Needs

The analyses in [Chapter 6](#) focus on recent developments in energy markets, regional energy markets as related to the location of OCS planning areas, and trends in regional production and consumption.¹³

¹³ [Section 1.2](#) also addresses energy needs but with respect to the overriding purpose of the National OCS Program “to best meet national energy needs” As noted above, the focus of [Chapter 6](#) is on providing information to allow the Secretary to meet the requirements of Section 18(a)(2)(C).

Chapter 3 of the [Final Programmatic EIS](#) describes the human environment on a national level, in addition to each OCS Region and nearby onshore areas, as appropriate. Existing oil and natural gas infrastructure and its relationship to new leasing is also discussed. Recent OCS oil and gas lease sale EISs and other NEPA documents provide relevant information related to the regional distribution and processing of OCS oil and natural gas.¹⁴

D) Location with Respect to Other Uses of the Sea and Seabed

[Chapter 7](#) discusses multiple uses of the OCS and includes information received from Federal, state, and local government agencies; Tribal governments; environmental and other organizations; and regional fishery management bodies. This information, also found in [Appendix A](#), is further supplemented by data and information provided by BOEM’s Marine Minerals and Renewable Energy programs in [Chapter 7](#).

E) Interest of Potential Oil and Gas Producers

[Section 11.3](#) describes industry interest as indicated in response to the [Proposed Program](#). [Appendix A](#) summarizes the comments received from oil and natural gas companies and associations in the exploration and production sector of the energy industry.

F) Laws, Goals, and Policies of Affected States Identified by Governors

[Section 11.5](#) summarizes relevant laws, goals, and policies—including policies of federally approved CZM programs—that state governments identified when responding to BOEM’s request for comments. As required by Section 18(c)(1), BOEM sent letters to the governors of all 50 states requesting their suggestions and asking them to identify any relevant state laws, goals, and policies for the Secretary’s consideration. [Appendix A](#) summarizes the comments received on the [Proposed Program](#), including those from governors and state government agencies.

G) Relative Environmental Sensitivity and Marine Productivity

[Chapter 8](#) contains an analysis of the environmental sensitivity and marine productivity for the program areas. As in previous National OCS Programs, BOEM defines the term “sensitivity” as sensitivity to potential impacts from oil and gas exploration and development as measured by indicators of vulnerability and/or resilience to impact. Additional information on the plants, animals, habitats, and human activities that could affect the sensitivity of an area is provided in the Programmatic EIS.

This PFP document provides estimates of OCS marine productivity. Productivity is defined in terms of biomass production per unit of time. In the marine environment, primary production through photosynthesis determines the total amount of biomass available to higher trophic

¹⁴ See <https://www.boem.gov/environment/environmental-documents> to access BOEM’s environmental review documents.

levels. However, the relationship between primary and secondary, or higher-level, production is not straightforward or uniform across marine ecosystems (Pomeroy 1991). Higher-level productivity is difficult to estimate, especially across a geographically large and ecologically diverse area such as the OCS (Balcom et al. 2011).

Measurements of biomass for the BOEM ecoregion areas were produced using satellite-based measurements of chlorophyll-*a*, available light, and photosynthetic efficiency (Balcom et al. 2011). These measurements allow BOEM to directly compare different areas. For the analysis of environmental sensitivity in this PFP, the OCS was divided into nine BOEM ecoregions using an ecosystem-based approach.

H) Environmental and Predictive Information

The [Final Programmatic EIS](#) describes the environmental setting and potential impacts of leasing activities on physical, biological, and human resources in each program area. Information is presented on potential environmental impacts from the PFP Options as well as additional alternatives.

The Programmatic EIS analysis is used to inform OCS Lands Act considerations, including those addressing social, environmental, and human concerns. The Programmatic EIS and appendices are available at www.boem.gov/National-OCS-Program.

The environmental impact analysis in the Programmatic EIS is used when considering the environmentally focused Section 18 factors in the OCS Lands Act, particularly the following:

- Section 18(a)(1): consideration of economic, social, and environmental values of renewable and non-renewable OCS resources and the impact of oil and gas exploration on other resource values of the OCS and the marine, coastal, and human environments
- Section 18(a)(2)(A): existing information concerning the geographical, geological, and ecological characteristics of such regions
- Section 18(a)(2)(H): relevant environmental and predictive information for different areas of the OCS.

This PFP references the Final Programmatic EIS, as appropriate, particularly with respect to the three Section 18 factors above, so readers can easily find pertinent, detailed environmental information and impact analyses that address each of these environmentally relevant Section 18 factors.

The PFP also addresses the Section 18(a)(2)(B) environmentally focused factor of the equitable sharing of developmental benefits and environmental risks among the various regions (see [Chapter 9](#)). Section 18(2)(G) outlines the relative environmental sensitivity and marine productivity of different areas of the OCS and is further discussed in [Section 8.2](#).

The [Final Programmatic FIS](#) and PFP together present a comprehensive picture of environmental, cultural, economic, and resource considerations to aid the Secretary in performing the balance required by Section 18(a)(3) and to inform the Secretary’s proposal on the 2024–2029 lease sale schedule regarding the size, timing, and location of leasing activities.

2.4 Section 18(a)(3): Balancing the Potential for Environmental Damage, Discovery of Oil and Gas, and Adverse Impact on the Coastal Zone

After considering all the Section 18(a)(2) factors, Section 18(a)(3) requires the Secretary, when making decisions on the size, timing, and location of OCS leasing, to strike a balance among the potential for environmental damage, the discovery of oil and gas, and adverse impacts on the coastal zone. The Secretary’s balancing effort is informed by an analysis of all the Section 18(a)(2) factors.

This PFP document presents a comparative analysis of the PFP Options considered by the Secretary and includes an estimation of societal net benefits for each program area, derived by calculating the value of potential production from the PFP Options minus the economic cost of obtaining that production and the environmental and social costs (ESCs) of developing the produced resources. The analysis also considers costs and benefits of the energy substitutes that would probably be obtained in the absence of lease sales in any or all of the program areas. BOEM refers to the results of this analysis as the incremental net benefits (see [Section 5.3](#)). A description of the various types of value can be found in [Section 2.6](#).

The program areas are also considered in the comparative analysis according to quantified information relating to environmental sensitivity and marine productivity (see [Section 8.2](#)) and relating to the interests of potential oil and natural gas producers (see [Section 11.3](#)). Other Section 18(a)(2) factors, including geographical, geological, and ecological characteristics, and laws, goals, and policies of affected states, do not lend themselves to quantification and are therefore treated qualitatively.

The comparative analysis also examines additional qualitative information pertaining to the findings and purposes of the OCS Lands Act, the comments and recommendations of interested and affected parties, and other information relevant to striking a balance under Section 18(a)(3). The OCS Lands Act does not specify how the factors in Section 18(a)(2) should be weighed to achieve the balancing required by Section 18(a)(3), leaving it to the Secretary’s discretion to reach a reasonable determination under the existing circumstances.

2.5 Section 18(a)(4): Assurance of Fair Market Value

Section 18(a)(4) of the OCS Lands Act requires receipt of FMV from OCS oil and gas leases. BOEM’s two-phase, post-sale bid evaluation process used since 1983 assures the FMV

requirement is met for the issuance of individual leases. Under its bid adequacy procedures, BOEM reviews all high bids received and evaluates all blocks to ensure the receipt of FMV for each lease issued. In addition to the assurance of FMV in the National OCS Program development and implementation process, BOEM continues to assess market and resource conditions as each lease sale approaches and designs the lease sale fiscal terms to achieve FMV. Additional information on, and analysis of, FMV is contained in [Chapter 10](#), which also considers the uncertainties surrounding OCS oil and gas leasing, and how these uncertainties could impact the value of OCS acreage.

2.6 Section 18(a)(1): Economic, Social, and Environmental Values

Section 18(a)(1) of the OCS Lands Act requires the Secretary to manage the OCS “in a manner which considers economic, social, and environmental values of the renewable and non-renewable resources contained in the outer Continental Shelf...” The PFP analyses presented in this document are conducted to ensure that economic, social, and environmental values associated with exploration, development, and production of OCS resources are considered as important aspects of the National OCS Program’s development.

The OCS Lands Act also requires the Secretary to consider potential impacts of oil and gas activities on other resource values of the OCS and on the marine, coastal, and human environments. The analyses in the PFP and [Final Programmatic EIS](#) assist the Secretary with meeting these requirements (including the balancing requirement described in [Section 2.3](#), Section 18(a)(3): Balancing the Potential for Environmental Damage, Discovery of Oil and Gas, and Adverse Impact on the Coastal Zone).

The Programmatic EIS describes the environmental setting and potential impacts on environmental and socioeconomic resources from the Second Proposal’s schedule of lease sales and alternatives to that schedule. [Appendix A](#) contains summaries of comments received in response to the Second Proposal, including issues or concerns that were identified by commenters.

2.6.1 Economic Value

Economic value will be realized from decades of oil and natural gas exploration, development, and production that results from leases awarded during the implementation of the next National OCS Program. Several metrics are used to calculate economic value, such as the net economic value (NEV) of the extracted oil and natural gas resources, which includes government receipts of cash

bonuses, rentals, royalties, and taxes, and the economic contribution consideration of estimates of employment from oil and natural gas activity.¹⁵

BOEM also considers the adverse economic impacts associated with oil and gas production, such as those from air pollution and potential oil spills. Economic values are discussed primarily in the Net Benefits Analysis ([Section 5.3](#)), National and Regional Energy Markets ([Chapter 6](#)), Equitable Sharing Considerations ([Chapter 9](#)), and Consideration of the Value of OCS Leases and Assurance of Fair Market Value ([Chapter 10](#)). BOEM provides additional methodological details and analysis in the [Final EAM paper](#).

2.6.2 Social Value

Social value is realized when OCS resources are combined with inputs or processes to generate improvements in the lives of people or benefits to society. Social values include cultural and community values, but also broad evaluations of a wide array of factors, many of which could be considered economic or environmental effects. Components of social value are reflected in the substantive requirements analyses prepared in support of this PFP. BOEM considers cultural and community values within Chapters 2 and 4 of the [Final Programmatic FIS](#). [Section 5.3](#) monetizes the impacts on several social values in the net benefits analysis, including the monetized impacts on recreational fishing, beaches (recreation), and the aesthetic disruption along the coast from offshore oil and gas development. [Section 5.3.2.3](#) also presents the social costs from GHG emissions. These costs represent the monetized impacts on society from climate change associated with GHG emissions from incremental OCS leasing. Finally, Chapter 5 of the [Final EAM paper](#) discusses OCS leasing's non-monetized benefits and costs to social value. When OCS resources are used to maximize social value, the National OCS Program is being efficiently managed. Social value can be negatively impacted (i.e., a social welfare loss) when OCS resources are not developed in accordance with the principles of conservation¹⁶ or when oil and gas activities result in adverse consequences to society, such as a highly damaging event like a large oil spill. At the same time, energy substitutes for forgone OCS oil and gas production can also cause social welfare losses, resulting from such things as spills of imported oil or air pollution from increased onshore production.

Oil spill studies in the GOM have found that impacts are experienced differently across communities, and access to resources varies depending on the socioeconomic, political, and legal status of individuals. The severity of oil spill impacts is compounded by recurring natural and economic disasters in the region (e.g., hurricanes, flooding, and economic recessions) (Austin et

¹⁵ Consistent with standard practices in cost-benefit analysis, the analysis in [Chapter 5](#) treats employment, wages, and income as costs necessary to obtain the oil and natural gas that provide economic value. However, in general, these results of OCS development are widely viewed as benefits to society given the income and economic activity they generate. They are treated as such in [Chapter 9](#).

¹⁶ In this context, conservation refers to the responsible development of oil and gas resources by preventing waste and maximizing recovery of economically producible reservoirs (MMS 2007).

al. 2014a, Austin et al. 2014b, Austin et al. 2022). Within this larger context, the effects on vulnerable communities are more difficult to overcome than those in other communities with greater economic and social resources.

2.6.3 Environmental Value

Environmental value is the worth society places on the intrinsic natural capital in the OCS's renewable and non-renewable resources. Natural capital provides goods and services from nature, including marine productivity, quality of aesthetic resources, human-ecological connectivity, and air and water quality.

The analyses presented in [Chapter 8](#) discuss environmental sensitivity and marine productivity, and the important effect of relevant environmental impacts on environmental value. Section 18(a)(2)(G) calls for the consideration of the relative environmental sensitivity and marine productivity of the OCS. BOEM sponsored the development of a new method to perform the corresponding assessment for the 2017–2022 Program, the results of which were first presented in the [2017–2022 DPP](#). Feedback from internal and external reviews of this new approach was incorporated into the analysis for the [2017–2022 PFP](#), as well as the analysis presented in Chapter 8 of this document (see [Section 2.3](#) (G) and [Chapter 8](#) for methodological explanations).

2.7 Judicial Guidance

This National OCS Program will be the tenth National OCS Program prepared by the Department. Section 23(c)(1) of the OCS Lands Act provides that any action of the Secretary to approve a leasing program pursuant to Section 18 of the OCS Lands Act shall be subject to judicial review only in the United States Court of Appeals for the District of Columbia. The 1980–1985, 1982–1987, 1987–1992, 2007–2012, and 2012–2017 Programs prepared and approved under Section 18 were challenged in court. No lawsuits were filed with respect to the approved 1992–1997, 1997–2002, 2002–2007, or 2017–2022 Programs.

This National OCS Program is being prepared consistent with applicable court rulings. A brief description of such decisions and how they have guided preparation of the National OCS Programs over time follows.

California v. Watt, 688 F.2d 1290 (D.C. Cir. 1981) (*Watt I*) — In this case, the State of California challenged the 1980–1985 Program, which was the first to follow the passage of the OCS Lands Act Amendments of 1978 that added the Section 18 requirement for a leasing program. The court stated that the Secretary must consider all eight factors and not defer consideration of required factors to later stages because more information might be available. It accepted the use of a cost-benefit type analysis and recognized that certain analyses could be qualitative.

The court found that the three balancing factors in Section 18(a)(3) were not inherently equal, and the Secretary had discretion in weighing them as long as the decision was not arbitrary. The case was remanded to consider those of the eight factors not previously considered, better quantify environmental costs, and present a coherent explanation of how NEV is determined and the possible value of deferring leasing. However, because a new National OCS Program for 1982–1987 was already in preparation, the 1980–1985 Program was not revised.

California v. Watt, 712 F.2d 584 (D.C. Cir. 1983) (*Watt II*) — In this case, the court held that the 1982–1987 Program met the requirements found lacking in the 1980–1985 Program. The court upheld the methodology and assumptions used for the net social value (NSV) analysis. The court reiterated the “pyramidal” nature of the entire leasing process and upheld the first use of areawide leasing because exact tracts (blocks) do not need to be identified at the National OCS Program stage. It found that receipt of FMV does not mean “maximization of revenues” and validated the post-sale bid evaluation methodology. The court also stated that once the determination has been made to not consider an area for leasing, that area does not need to be analyzed further.

Natural Resources Defense Council (NRDC), et al. v. Hodel, 865 F.2d 288 (D.C. Cir. 1988) — In this case, the court remanded the 1987–1992 Program for a more thorough analysis of the cumulative impacts resulting from simultaneous development in different planning areas. The court validated the use of administratively established planning areas as the basis for comparing “oil- and gas-bearing physiographic regions,” a term used, but not defined, in the OCS Lands Act. As in the previous cases, the court upheld the cost-benefit methodology and assumptions used. The court stated that while the Secretary was required to receive and consider nominations for the exclusion of areas, there was no requirement to exclude nominated areas. Should a decision be made to exclude an area, the court agreed with the Secretary that such exclusion decisions must be reasoned, and their basis identified, but there is no “formula” for such decisions, meaning a full Section 18 analysis is not a prerequisite. The court cited *Watt I* (at 1321–22) to explain that the Secretary’s duty as to the exclusion decisions is “simply to identify his legal or factual basis and to explain why he acted as he did.” Once an area is excluded from availability for leasing, “[t]he Secretary need not perform a Section 18 analysis” on that area (*Watt II* at 608).

Center for Biological Diversity, et al. v. Department of the Interior, 563 F.3d 466 (D.C. Cir. 2009) — In this case, the court remanded the 2007–2012 Program for failure to consider the relative environmental sensitivity and marine productivity of “different areas of the outer Continental Shelf,” not just the shoreline, and

required the Secretary to rebalance under Section 18(a)(3) using the revised analysis along with the other seven factors. The court determined that the OCS Lands Act does not require the agency to consider the impacts from consuming OCS oil and gas as part of its National OCS Program decision. Further, the Court determined that the NEPA claims at issue were not ripe because an agency's NEPA obligations mature only once it reaches a critical stage of a decision, which will result in irreversible and irretrievable commitments of resources that will affect the environment. The court reasoned that in the case of the National OCS Program, the point of irreversible and irretrievable commitment of resources and the concomitant obligation to comply with NEPA does not occur until the lease sale stage.

Center for Sustainable Economy v. Jewell, 779 F.3d 588 (D.C. Cir. 2015) — The court found CSE's NEPA challenges to the 2012–2017 Program unripe because the Department makes no irreversible and irretrievable commitment of resources at the National OCS Program stage such that NEPA would be triggered. The Court also upheld the Department's chosen methods of cost-benefit analysis as reasonable and consistent with the statute. For example, the Court upheld: (1) the Secretary's decision to assess costs of energy substitutes where they would occur, and to attribute a proportionate share of those costs to each planning area, (2) the Secretary's decision not to track which proportion of OCS energy was consumed by the American public, and (3) the Secretary's qualitative assessment of the informational value in delaying leasing because there was not yet a sufficiently well-established methodology for quantifying it.



Chapter 3

Proposed Final
Program
Options for
Analysis



Chapter 3 Proposed Final Program Options for Analysis

This PFP presents the analysis of the Second Proposal, which includes a schedule of up to a maximum of 11 potential lease sales in two OCS Regions: up to 10 lease sales in the GOM and up to 1 lease sale offshore Alaska (see [Table 3-1](#) and [Figure 3-1](#)). [Table 4-3](#) lists and describes all areas that are currently unavailable for OCS oil and gas leasing.

The Proposed Final Program Options (PFP Options) described within this chapter collectively consist of Lease Sale Options, Subarea Options, and No Sale Options. Additionally, these PFP Options are analyzed in the [Final Programmatic EIS](#).¹⁷ The Secretary may choose any of the PFP Options or any combination of options to form the Final Proposal.

3.1 Lease Sale Options

The **Lease Sale Options** are the potential lease sales for each of the program areas contained in the Second Proposal. The Lease Sale Options consist of up to 10 lease sales in the GOM Program Area and up to one lease sale in the Cook Inlet Program Area.

The GOM Program Area contains the Western GOM Planning Area and the portions of the Central and Eastern GOM planning areas not currently under Presidential withdrawal (see [Figure 3-1](#)). In the [Proposed Program](#), both GOM Program Area 1 and GOM Program Area 2 were analyzed.¹⁸ Because only GOM Program Area 1 remains under consideration for leasing, this PFP refers to that area simply as the GOM Program Area. The Cook Inlet Program Area is confined to the upper portion of the Cook Inlet Planning Area (see inset in [Figure 3-1](#)).

3.2 Subarea Options

A Subarea Option is an option that omits acreage or constitutes a potential exclusion within a program area. A Subarea Option could also represent leasing methods to avoid or minimize impacts on areas of important environmental, subsistence, or multiple use value. In some instances, these are areas where potential conflict could occur between oil and gas development and ecologically important or sensitive habitats; maintenance of social, cultural, and economic resources is at risk; and/or military operations and training occur.

¹⁷ In *NRDC v. Hodel*, 865 F.2d 288, 300 (D.C. Cir. 1988), the D.C. Circuit described the OCS Lands Act's standard of review as "deferential;" one that "require[s] that the record show that the Secretary's factual determinations are based upon substantial evidence, that the Secretary's policy judgments are based upon rational consideration of identified, relevant factors, and that the Secretary's construction of the statute is permissible."

¹⁸ See Figure 3-2 in the [Proposed Program](#) for a depiction of the GOM program areas.

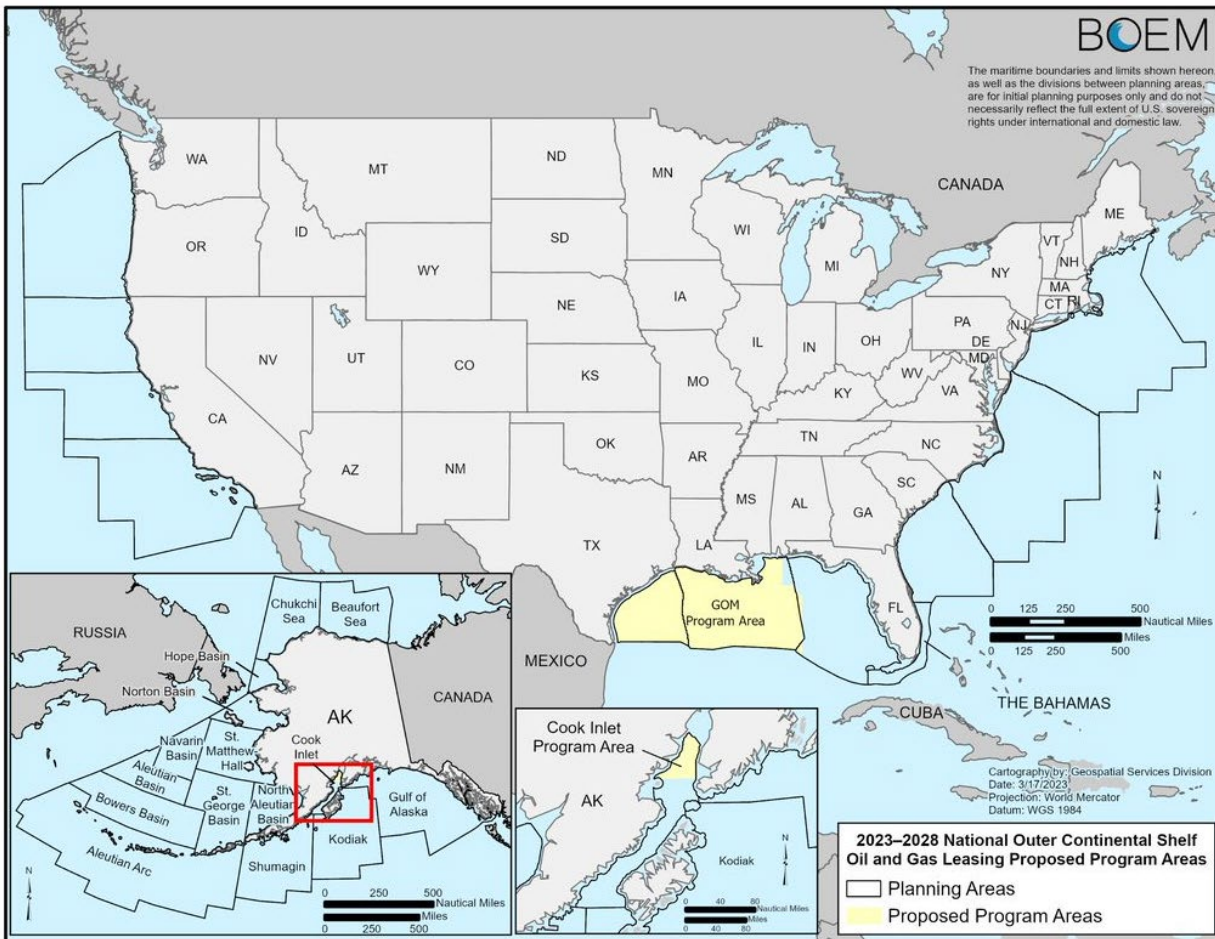
Table 3-1: Second Proposal—Lease Sale Schedule



Count	Sale Number	Sale Year*	OCS Region and Program Area
1	262	2024	Gulf of Mexico: GOM Program Area
2	263	2025	Gulf of Mexico: GOM Program Area
3	264	2025	Gulf of Mexico: GOM Program Area
4	265	2026	Gulf of Mexico: GOM Program Area
5	266	2026	Gulf of Mexico: GOM Program Area
6	267	2026	Alaska: Cook Inlet Program Area
7	268	2027	Gulf of Mexico: GOM Program Area
8	269	2027	Gulf of Mexico: GOM Program Area
9	270	2028	Gulf of Mexico: GOM Program Area
10	271	2028	Gulf of Mexico: GOM Program Area
11	272	2029	Gulf of Mexico: GOM Program Area

Notes: The Second Proposal outlined a lease sale schedule consisting of 10 lease sales in the GOM Program Area starting in 2023 and one in the Cook Inlet Program Area in 2026. Due to the timing of National OCS Program approval and associated leasing steps, the first lease sale in the new National OCS Program would not occur until at least 2024.

Figure 3-1: Program Areas Included in the Second Proposal



There are no Subarea Options identified for the Cook Inlet Program Area. There is only one specific **Subarea Option** included in the Second Proposal for the GOM Program Area, a 15-mile no leasing zone near Baldwin County, Alabama. A second, more general, Subarea Option to be analyzed for the GOM Program Area is the use of a targeted leasing strategy.

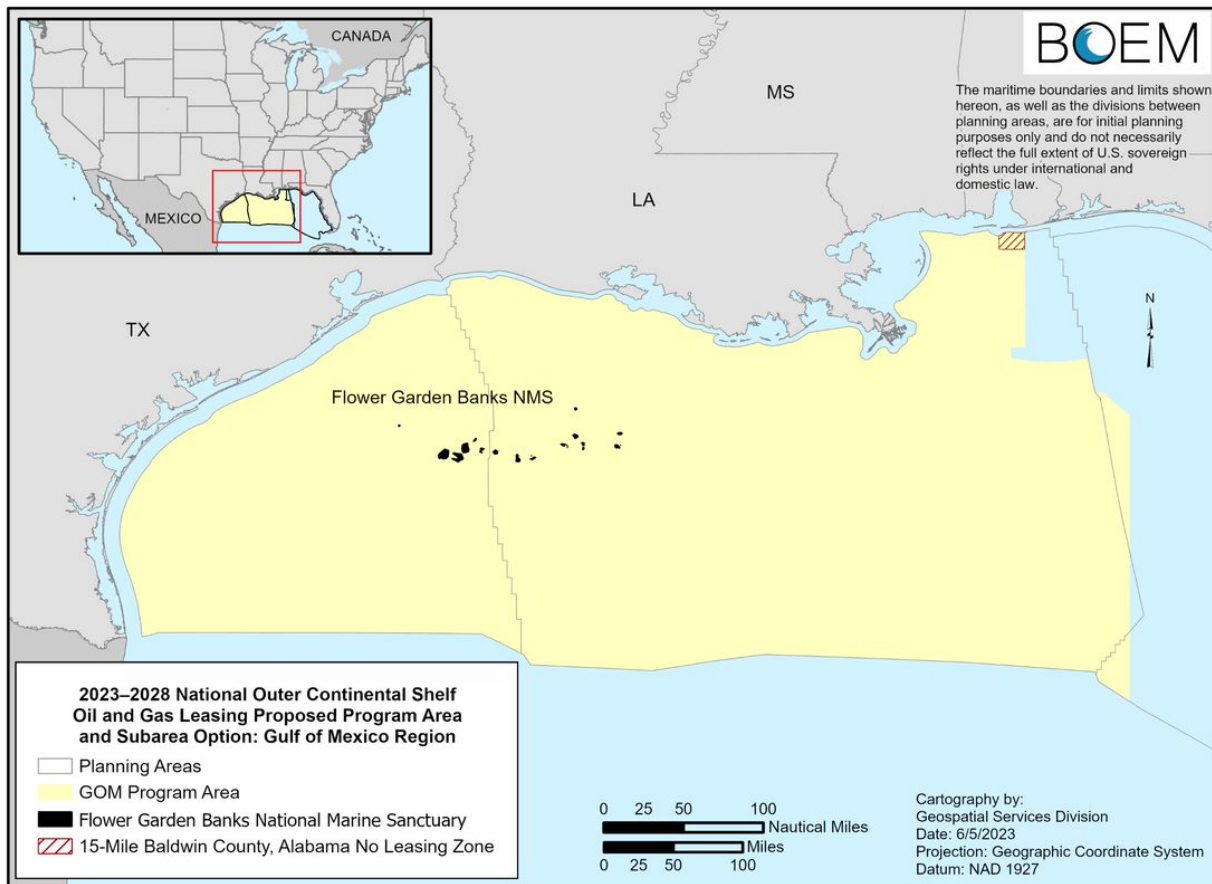
3.2.1 Targeted Leasing

This Subarea Option continues the targeted leasing strategy first set forth in the 2012–2017 Program, which means that any subset of the program area could be included in a particular lease sale. Targeted leasing strategies will be fully analyzed and refined at the lease sale stage when more regional and site-specific information is available. Lease sales could be tailored to offer areas that have hydrocarbon resource potential while appropriately weighing environmental protection, subsistence use needs, multiple use challenges, and other considerations.

BOEM will continue to obtain and evaluate additional information regarding environmental issues, subsistence use needs, infrastructure capabilities, and results from any exploration activity associated with existing leases. Consequently, updated scientific information and feedback from stakeholders, partners, and the public will be sought so BOEM can proactively determine, in advance of any potential lease sale, the specific areas offering the greatest resource potential while minimizing potential conflicts associated with the environment, subsistence activities, and other uses of the OCS. In addition, Section 50265(b)(2) of the IRA requires BOEM to offer at least 60 million OCS acres for oil and gas leasing within the 12 months prior to issuing an offshore wind lease. This requirement is effective until August 16, 2032.

3.2.2 15-Mile Baldwin County No Leasing Zone

The 15-Mile Baldwin County No Leasing Zone Subarea Option offshore Alabama is analyzed as a potential exclusion area that, if adopted, would not be available for leasing under this National OCS Program (see [Figure 3-2](#)). This Subarea Option was requested by Alabama Governor Kay Ivey in response to the 2018 Draft Proposal. The purpose of this Subarea Option is to reduce visual impacts of OCS oil and gas activities in the GOM from the shore at Baldwin County, Alabama. Due to the small geographic size of this area, few to no meaningful analytical differences are noted throughout this document or the [Final Programmatic EIS](#). If the Secretary chooses to further analyze this Subarea Option at the lease sale stage rather than making a decision at this National OCS Program stage, detailed analysis will further focus discussions regarding this option, as appropriate.

Figure 3-2: Subarea Option: 15-Mile Baldwin County No Leasing Zone in GOM Program Area

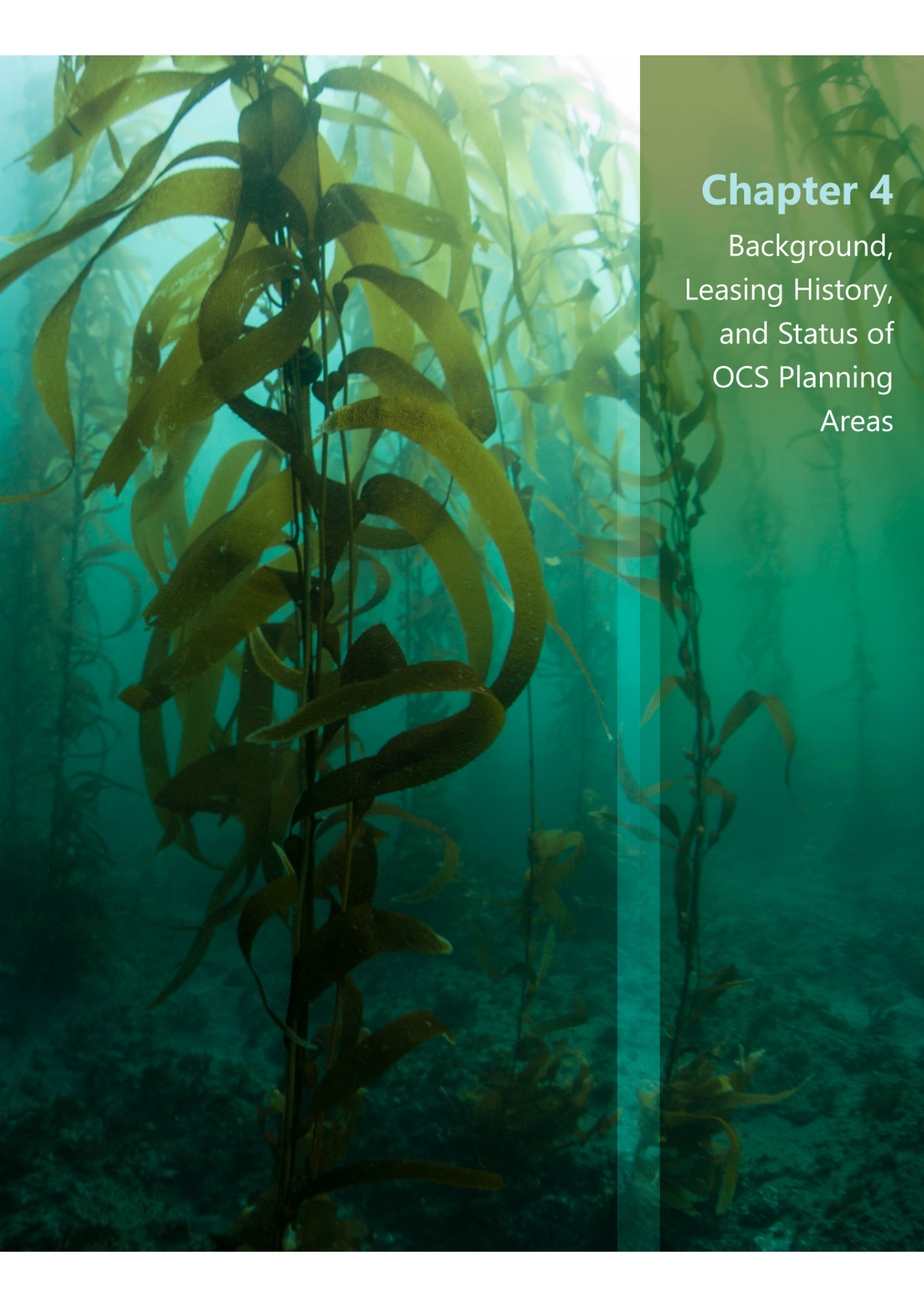
3.3 No Sale Option

A **No Sale Option** is analyzed for each of the program areas (Cook Inlet and GOM) remaining in the Second Proposal and presents the analysis of the anticipated effects of holding no lease sales in a specific program area.

3.4 Analysis of the PFP Options in the Final Programmatic EIS

The [Final Programmatic EIS](#) provides information on the geographical, geological, and ecological characteristics of the program areas in the Second Proposal, including Subarea Options and additional possible environmentally focused exclusion areas. Section 4.1 of the Programmatic EIS contains the analysis for the program areas included in the Second Proposal, and Section 4.5 presents the analysis for the Subarea Options and other potential exclusion areas. A No Action Alternative (Alternative A) analysis has been conducted for each program area, and Section 4.2 of the Programmatic EIS has the alternatives analysis.

The alternatives have not changed from the [Draft Programmatic EIS](#) (with the exception of incorporating the Final Proposal as the Proposed Action); BOEM still analyzes all 25 planning areas as stated in the Draft Proposal. Therefore, additional OCS Regions and program areas are included in the EIS analysis beyond those areas included in the Second Proposal, which are the primary focus of this PFP document.



Chapter 4

Background,
Leasing History,
and Status of
OCS Planning
Areas



Chapter 4 Background, Leasing History, and Status of OCS Planning Areas

This chapter contains the background and history of each planning area. As part of the National OCS Program development process, BOEM begins with the broadest consideration of areas available for leasing, which are, in general, narrowed throughout the National OCS Program development and associated lease sale processes. The initial Draft Proposal in this instance included 25 of 26 planning areas across all OCS Regions, which have since been narrowed to all or portions of four planning areas (three in the GOM and one offshore Alaska).

Although most of this PFP analysis focuses only on those program areas still under consideration for future BOEM oil- and gas-related activities, for completeness, this chapter describes the foundational history and leasing background for all OCS Regions. This chapter also discusses the PFP Options deemed suitable by the Secretary in the Second Proposal for further analysis for potential oil and gas leasing with respect to size, timing, and location.

[Table 4-1](#) contains the acreage of OCS Regions and the number of planning areas in each region. The environmental setting of an area where oil and gas leasing activities could occur is defined by its geological, geographical, and ecological characteristics.

Table 4-1: OCS Regions Acreages



Region	Acres (Millions)	Number of Planning Areas	PFP Program Area
Alaska	1,035	15	1 (Cook Inlet)
Pacific	248	4	0
Gulf of Mexico	160	3	1 (Gulf of Mexico)
Atlantic	269	4	0

The planning areas were initially established for administrative convenience to implement the OCS Lands Act Amendments of 1978. They have been reconfigured several times over the years, most recently to correspond to the administrative lines announced in the *Federal Register* in January 2006 (71 FR 127) and included in the DPP for the [2007–2012](#) National OCS Program. Unless otherwise noted, references to a planning area in this document correspond to that 2006 configuration. See [Section 4.2](#) for information on areas under restriction.

4.1 Summary of Historical Leasing Statistics

[Figure 4-1](#) shows the trends in lease sale offerings for each approved National OCS Program. [Table 4-2](#) shows general leasing history statistics for each OCS Region.

Figure 4-1: Number of Proposed Lease Sales Included in Approved National OCS Programs by Planning Area

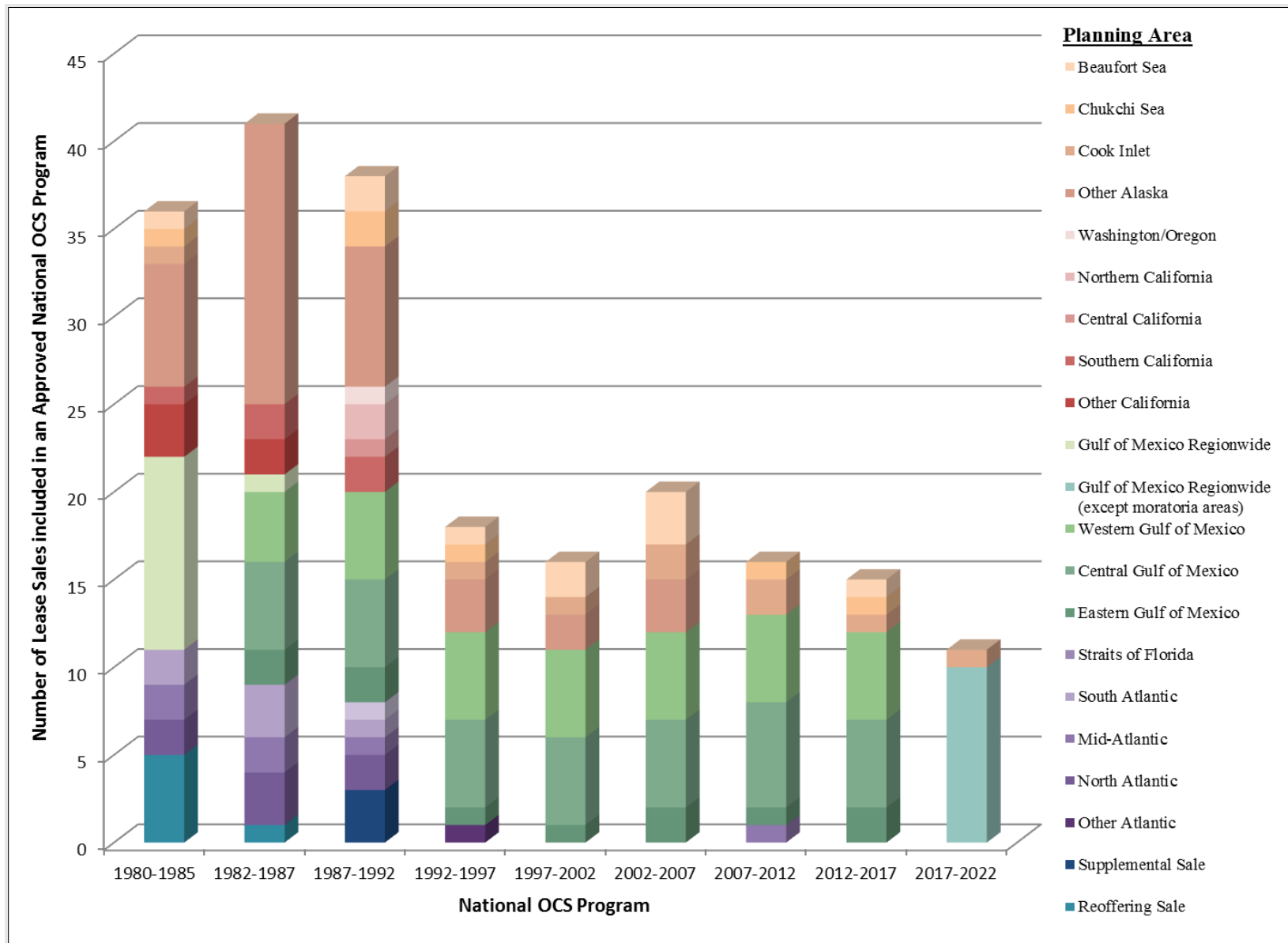


Table 4-2: General Leasing History Statistics per OCS Region (as of September 2023) 

Region	Existing Leases	First Lease Sale	Most Recent Lease Sale
Alaska	Total: 21 Beaufort Sea: 6 Cook Inlet: 15	1976 (Gulf of Alaska)	2022 (Cook Inlet)
Pacific	Total: 30 (Southern California)	1963 (Northern, Central, and Southern California)	1984 (Southern California)
Gulf of Mexico	Total: 2,249 Western GOM: 398 Central GOM: 1,838 Eastern GOM: 13	1954	2023 (GOM)*
Atlantic	0	1959 (Straits of Florida)	1983 (Mid-Atlantic, South Atlantic)

Key: * = Does not include areas withdrawn from leasing consideration under Section 12(a) of the OCS Lands Act (43 U.S.C. §1341(a)).

4.2 Areas Currently Restricted from OCS Oil and Gas Leasing

Restrictions on OCS leasing can originate outside the National OCS Program development process. Areas may be withdrawn by the President under Section 12(a) of the OCS Lands Act, 43 U.S.C. § 1341(a), and are referred to as Presidential withdrawals (also called executive withdrawals). Additionally, areas can be withdrawn or otherwise made unavailable for leasing by the President under the Antiquities Act, or by Congress by statute (e.g., the now-expired GOMESA moratorium).

[Table 4-3](https://www.boem.gov/oil-gas-energy/leasing/areas-under-restriction) lists the areas under restriction from OCS oil and gas leasing and the status of the restriction. Additional information on areas under restriction and maps can be found at <https://www.boem.gov/oil-gas-energy/leasing/areas-under-restriction>.

Table 4-3: Areas Currently Restricted from OCS Oil & Gas Leasing

OCS Region	Area/Feature	Withdrawal Date	Status
Various	National Marine Sanctuaries (within the boundaries designated as of July 14, 2008)	July 14, 2008	Unavailable for OCS oil and gas leasing, pursuant to Section 12 of the OCS Lands Act, 43 U.S.C. § 1341(a)
Alaska	North Aleutian Basin Planning Area	December 16, 2014	Unavailable for OCS oil and gas leasing, pursuant to Section 12 of the OCS Lands Act, 43 U.S.C. § 1341(a)
Alaska	Chukchi Sea Planning Area	December 20, 2016 (reinstated January 20, 2021)	Unavailable for OCS oil and gas leasing, pursuant to Section 12 of the OCS Lands Act, 43 U.S.C. § 1341(a)
Alaska	Majority of Beaufort Sea Planning Area and the Northern Bering Sea Climate Resilience Area	December 20, 2016 (reinstated January 20, 2021)	Unavailable for OCS oil and gas leasing, pursuant to Section 12 of the OCS Lands Act, 43 U.S.C. § 1341(a)
Alaska	Nearshore area of Beaufort Sea Planning Area not previously withdrawn	March 13, 2023	Unavailable for OCS oil and gas leasing, pursuant to Section 12 of the OCS Lands Act, 43 U.S.C. § 1341(a)
Atlantic	Northeast Canyons and Seamounts Marine National Monument	September 15, 2016	Unavailable for OCS oil and gas leasing, pursuant to designation under the Antiquities Act (54 U.S.C. § 320301)
Atlantic	Atlantic Canyons (portions of Mid- and North Atlantic planning areas)	December 20, 2016 (reaffirmed January 20, 2021)	Unavailable for OCS oil and gas leasing, pursuant to Section 12 of the OCS Lands Act, 43 U.S.C. § 1341(a)
Atlantic	Portion of the Mid-Atlantic Planning Area	September 25, 2020	Unavailable for oil and gas OCS leasing, from July 1, 2022, to June 30, 2032, pursuant to Section 12 of the OCS Lands Act, 43 U.S.C. § 1341(a)
GOM and Atlantic	Majority of the Eastern GOM and a portion of the Central GOM, Straits of Florida, South Atlantic planning areas	September 8, 2020	Unavailable for oil and gas OCS leasing, from July 1, 2022, to June 30, 2032, pursuant to Section 12 of the OCS Lands Act, 43 U.S.C. § 1341(a)

4.2.1 National Marine Sanctuaries

The National Marine Sanctuaries Act (16 U.S.C. §§ 1431 et seq.) was enacted in 1972 and is the legislative mandate that governs the National Oceanic and Atmospheric Administration’s (NOAA) Office of National Marine Sanctuaries and the National Marine Sanctuary (NMS) System. Under the Act, the Secretary of Commerce is authorized to designate and manage areas of the marine environment as NMSs. Such designation is based on attributes of special national significance, including conservation, recreation, ecological, historical, scientific, cultural, archaeological, educational, or aesthetic qualities.

Whole OCS lease blocks and portions of these blocks that lie within the boundaries of the NMSs designated prior to July 14, 2008, are withdrawn from disposition for leasing. Additionally, rules and regulations governing the designation and management of a specific NMS may restrict or prohibit certain activities within the sanctuary, such as leasing, exploration, and production of oil and gas resources. Additional information can be found in BOEM’s OCS regulatory framework document at <https://www.boem.gov/OCS-Regulatory-Framework/>. There are no NMSs in the Alaska Region. The Pacific Region includes the Olympic Coast, Greater Farallones, Cordell Bank, Monterey Bay, and Channel Islands NMSs. The GOM Region includes the Flower Garden Banks and Florida Keys NMSs. The Atlantic Region includes the Stellwagen Bank, Gray’s Reef, and Monitor NMSs.

4.2.2 North Aleutian Basin Planning Area

There was one lease sale in the North Aleutian Basin in 1986 with 23 leases issued in 1988 after litigation resolution concerning the lease sale. However, those leases were relinquished in the subsequent 1995 settlement. There has been no exploratory activity and there are no existing leases in this area. One lease sale was scheduled for this area in the 2007–2012 Program. However, pursuant to Section 12(a) of the OCS Lands Act, the area was withdrawn from leasing consideration through June 30, 2017, by President Obama on March 31, 2010. While a lease sale was included in the original 2007–2012 National OCS Program, it was not included in the revised version (published in December 2010) that followed the remand by the District of Columbia Circuit Court of Appeals (see [Section 2.7](#) for further information).

Pursuant to Section 12(a) of the OCS Lands Act, 43 U.S.C. § 1341(a), in March 2014, President Obama withdrew the Bristol Bay area of the North Aleutian Basin, and then on December 16, 2014, he revoked the March decision and withdrew the entire North Aleutian Basin Planning Area, including Bristol Bay, from future leasing consideration for a period without specific expiration (see [Figure 1-1](#)).

4.2.3 *Chukchi Sea and Beaufort Sea Planning Areas*

Pursuant to Section 12(a) of the OCS Lands Act, 43 U.S.C. § 1341(a), on December 20, 2016, President Obama withdrew the entire Chukchi Sea Planning Area and the majority of the Beaufort Sea Planning Area in the Alaskan Arctic from future oil and gas leasing consideration for a period without specific expiration ([Figure 4-2](#)). On April 28, 2017, President Trump issued E.O. 13795, in an attempt to rescind this withdrawal in Alaska and retain only those withdrawals for the North Aleutian Basin and NMSs that were designated as of July 14, 2008.

On May 3, 2017, several environmental groups filed suit in the U.S. District Court for Alaska (*League of Conservation Voters et al. v. Trump*) claiming that the OCS Lands Act does not authorize the President to reverse a prior withdrawal made under Section 12 of the Act. On March 29, 2019, the Alaska District Court issued a decision on this case, vacating Section 5 of E.O. 13795, and effectively leaving in place the 2016 withdrawals of OCS areas by President Obama. Under President Trump, the U.S. appealed that decision to the Ninth Circuit Court of Appeals.

On January 20, 2021, President Biden issued E.O. 13990, reinstating the December 20, 2016, withdrawals, thereby restoring the original withdrawal of the entire Chukchi Sea Planning Area and the majority of the Beaufort Sea Planning Area. On April 13, 2021, the Ninth Circuit Court of Appeals declared the appeal moot and remanded the case to the District Court for dismissal. The District Court dismissed the case on April 16, 2021.

On March 13, 2023, President Biden issued a memorandum withdrawing the nearshore area in the Beaufort Sea Planning Area pursuant to Section 12(a) of the OCS Lands Act, 43 U.S.C. § 1341(a), that had not been previously withdrawn.

4.2.4 *Northern Bering Sea Climate Resiliency Area*

Pursuant to Section 12(a) of the OCS Lands Act, on December 20, 2016, President Obama created the Northern Bering Sea Climate Resiliency Area, withdrawing from oil and gas leasing consideration the area encompassing the Norton Basin Planning Area and the OCS lease blocks within the St. Matthew-Hall Planning Area lying within 25 nm of St. Lawrence Island (see [Figure 4-3](#)). On April 28, 2017, President Trump issued E.O. 13795, reducing existing Presidential withdrawals in Alaska to include only those for the North Aleutian Basin and NMSs that were designated as of July 14, 2008. This area was likewise subject to the May 3, 2017, litigation, and subsequent decision to vacate the portion of the order removing the withdrawal.

On January 20, 2021, President Biden issued E.O. 13990, reinstating the December 20, 2016, withdrawals, thereby restoring the original withdrawal of the Northern Bering Sea Climate Resiliency Area.

4.2.5 Northeast Canyons and Seamounts Marine National Monument

The Northeast Canyons and Seamounts Marine National Monument was established by Presidential Proclamation on September 15, 2016, pursuant to the Antiquities Act (54 U.S.C. § 320301). Exploring for, developing, or producing oil and gas or minerals, or undertaking any other energy exploration or development activities within the monument, is prohibited.

4.2.6 Atlantic Canyons

Pursuant to Section 12(a) of the OCS Lands Act, on December 20, 2016, President Obama withdrew, for a period without specific expiration, the areas of the OCS associated with 26 major canyons and canyon complexes offshore the Atlantic Coast lying within the North Atlantic and Mid-Atlantic planning areas.

E.O. 13795, issued by President Trump on April 28, 2017, attempted to rescind the withdrawal of the canyons. This area was likewise subject to the May 3, 2017, litigation and subsequent decision to vacate the portion of the order removing the withdrawal.

On January 20, 2021, President Biden issued E.O. 13990, reinstating the December 20, 2016, withdrawals, thereby restoring the original withdrawal of the Atlantic Canyons.

4.2.7 Majority of the Eastern GOM and a Portion of the Central GOM; Straits of Florida; South Atlantic

On December 20, 2006, President George W. Bush signed GOMESA into law. GOMESA established a moratorium on leasing, pre-leasing, or any related activity for designated areas until June 30, 2022. However, on September 8, 2020, President Trump, using his authority under Section 12(a) of the OCS Lands Act, withdrew this area from leasing consideration for an additional 10 years, until June 30, 2032. There are existing leases in both the currently available and unavailable portions of the Eastern GOM. Those in the unavailable portion pre-date GOMESA. The GOMESA (and now withdrawal) areas are shown at <https://www.boem.gov/GOMESA-Map/> and are described as follows:

- the area within 125 miles of the State of Florida in the Eastern GOM Planning Area
- the 181 Area in the Central GOM Planning Area that is within 100 miles of the State of Florida
- the area east of the Military Mission Line (86°41' West longitude).

4.2.8 Straits of Florida Planning Area

Pursuant to Section 12(a) of the OCS Lands Act, on September 8, 2020, President Trump withdrew this area from consideration for any leasing for purposes of exploration, development, or production during the 10-year period beginning on July 1, 2022, and ending on June 30, 2032.

4.2.9 South Atlantic Planning Area

The area was subject to Presidential withdrawal pursuant to Section 12(a) of the OCS Lands Act from 1998 to July 2008 and to Congressional leasing moratoria included in annual appropriations bills from FY 1999 through FY 2008. On September 8, 2020, President Trump withdrew this area from consideration for any leasing for purposes of exploration, development, or production during the 10-year period beginning on July 1, 2022, ending on June 30, 2032.

4.2.10 Portion of the Mid-Atlantic

The area was subject to Presidential withdrawal pursuant to Section 12(a) of the OCS Lands Act from June 1998 to July 2008 and to Congressional leasing moratoria included in annual appropriations bills from FY 1999 through FY 2008. Pursuant to Section 12(a) of the OCS Lands Act, on September 25, 2020, President Trump withdrew a large portion of the planning area from consideration for any leasing for purposes of exploration, development, or production during the 10-year period beginning on July 1, 2022, and ending on June 30, 2032. A map depicting this area is available at <https://www.boem.gov/oil-gas-energy/leasing/areas-under-restriction>.

4.3 Areas Formerly Restricted from OCS Oil and Gas Leasing

Several OCS planning areas were formerly restricted from OCS oil and gas leasing activities but are currently not subject to either Congressional or Presidential restrictions on new leasing.

4.3.1 Washington/Oregon Planning Area

The area was under Congressional leasing moratoria included in annual appropriations bills from FY 1991 through FY 2008, and under Presidential withdrawal from June 1990 to July 2008.

4.3.2 Northern California Planning Area

The area was under Congressional leasing moratoria included in annual appropriations bills from FY 1982 through FY 2008, and under Presidential withdrawal from 1990 to July 2008.

4.3.3 Central California Planning Area

The area was under Congressional leasing moratoria included in annual appropriations bills from FY 1991 through FY 2008, and under Presidential withdrawal from 1990 to July 2008.

4.3.4 *Southern California Planning Area*

Much of the area was under Congressional leasing moratoria included in annual appropriations bills for new lease sales from FY 1985 through FY 2008, and under Presidential withdrawal from 1990 until July 2008.

4.3.5 *Mid-Atlantic Planning Area*


The area was subject to Presidential withdrawal pursuant to Section 12(a) of the OCS Lands Act from June 1998 to July 2008, and to Congressional leasing moratoria included in annual appropriations bills from FY 1999 through FY 2008.

4.3.6 *North Atlantic Planning Area*

This planning area was under Congressional leasing moratoria included in annual appropriations bills from FY 1984 through 2008, and under Presidential withdrawal pursuant to Section 12(a) of the OCS Lands Act from 1990 through July 18, 2008. Additional detail on the current withdrawals (Northeast Canyons and Seamounts Marine National Monument, and the Atlantic Canyons area) within this planning area are provided in [Section 4.2.5](#) and [Section 4.2.6](#).

The northern section of this planning area is adjacent to the offshore waters of the Canadian province of Nova Scotia, where there are existing exploratory oil and gas permits. However, some of those abutting the U.S.-Canada boundary are within the Georges Bank Prohibited Zone, as declared by Canada and Nova Scotia provincial governments, where no activity can occur in Canadian waters through the end of 2032.

4.4 **Alaska Region Planning Areas**



Since 1976, the Alaska Region has issued almost 2,400 leases resulting in more than 12 million acres leased and generating \$9.2 billion of revenue for the U.S. government.

As of September 2023, there are a total of 21 active leases, with 6 in the Beaufort Sea and 15 in the Cook Inlet planning areas.

The Alaska Region is the largest OCS Region, covering more than 1 billion acres, with water depths ranging from less than 10 feet to more than 25,000 feet. Alaska OCS planning areas begin 3 nm offshore and extend seaward to approximately 200 nm. The Alaska OCS is composed of 15 planning areas surrounding the state (see [Figure 1-1](#)). Lease sales have been held in eight different planning areas over the years, the most recent of which was held in December 2022 in the Cook Inlet Planning Area (Lease Sale 258).

As of September 2023, there were a total of 21 existing Federal leases in Alaskan planning areas, with 6 in the Beaufort Sea Planning Area and 15 in the Cook Inlet Planning Area. Federal production is occurring in a joint

Federal/state unit known as Northstar in the Beaufort Sea Planning Area. Four of the planning areas—Aleutian Arc, Aleutian Basin, Bowers Basin, and St. Matthew-Hall—have been determined to have negligible oil and gas resource potential. Only one Alaska program area, in the northern portion of the Cook Inlet, is analyzed in this PFP document.

Figure 4-2 through Figure 4-5 show the leasing history in each area. Outside of the Beaufort Sea and Cook Inlet, there is little, if any, existing oil and gas infrastructure and activity offshore Alaska. See Chapter 5 for information on the oil and gas resource potential in Alaska. Figure 11-3 shows the general position on OCS oil and gas production stated by the Governor of Alaska in comments on the Proposed Program. Figure 4-6 shows the number of wells drilled per year in the Alaska Region.

Figure 4-2: Beaufort and Chukchi Seas Planning Areas Leasing History

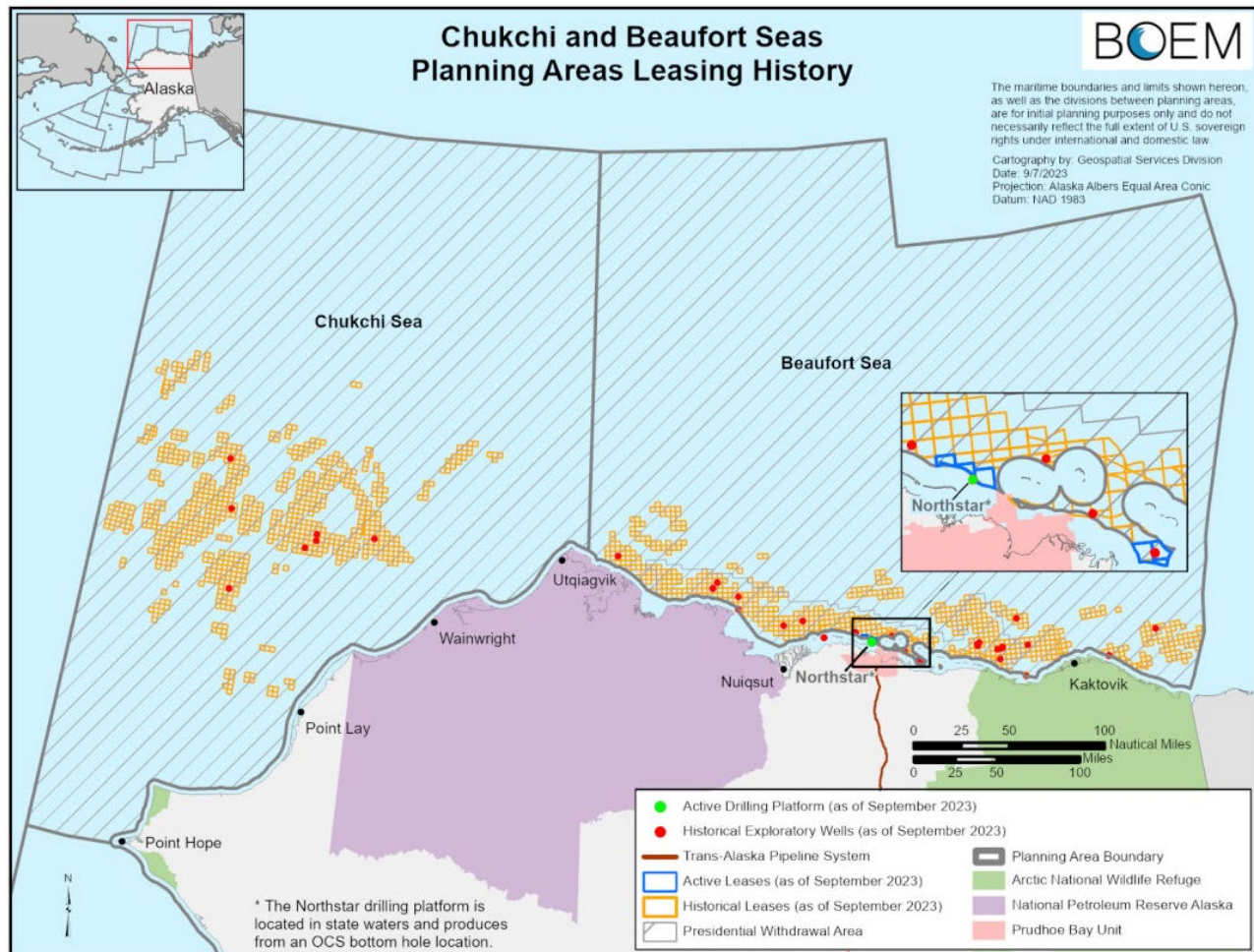


Figure 4-3: Western Alaska Planning Areas Leasing History

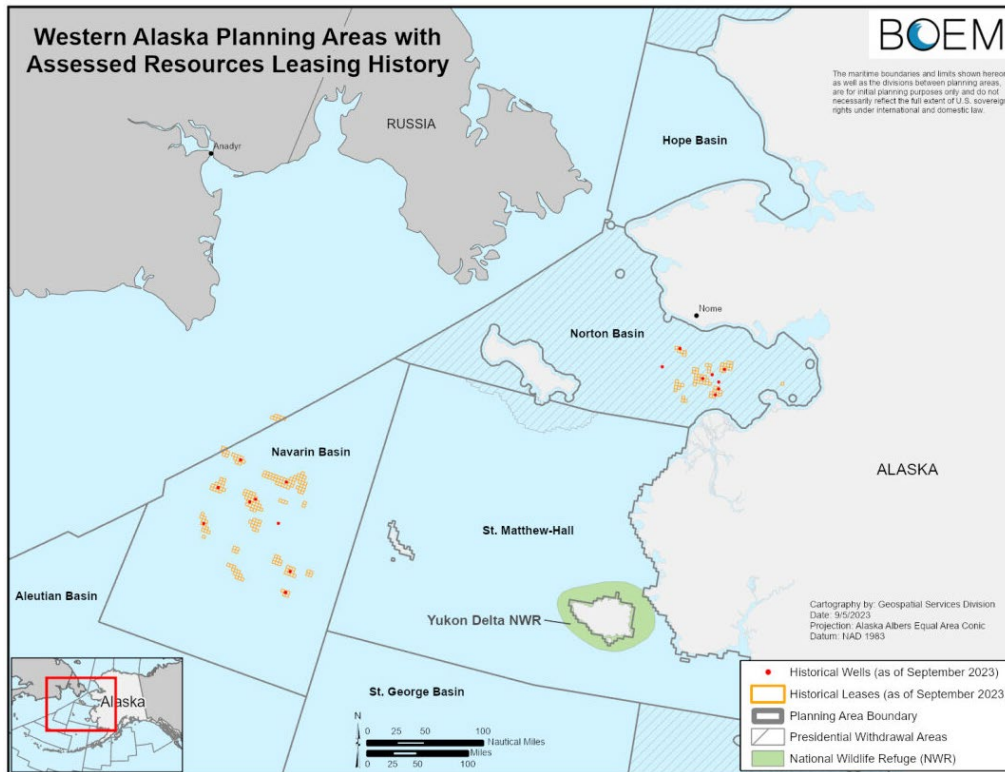


Figure 4-4: Southwestern Alaska Planning Areas Leasing History

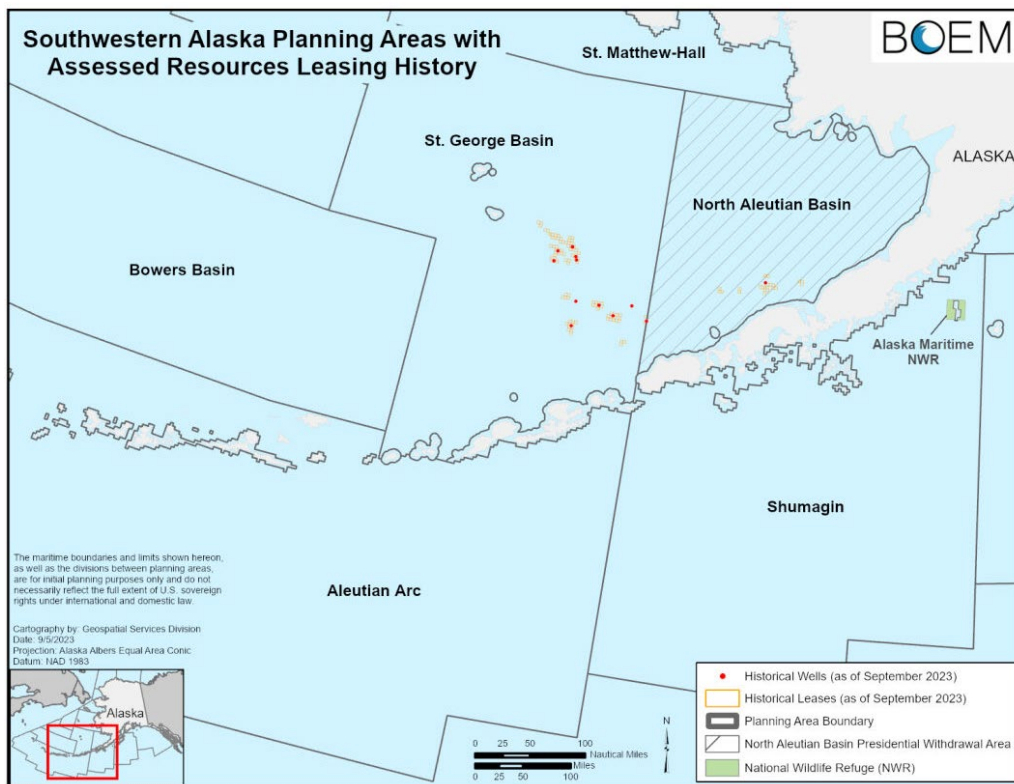


Figure 4-5: Southeastern Alaska Planning Areas Leasing History

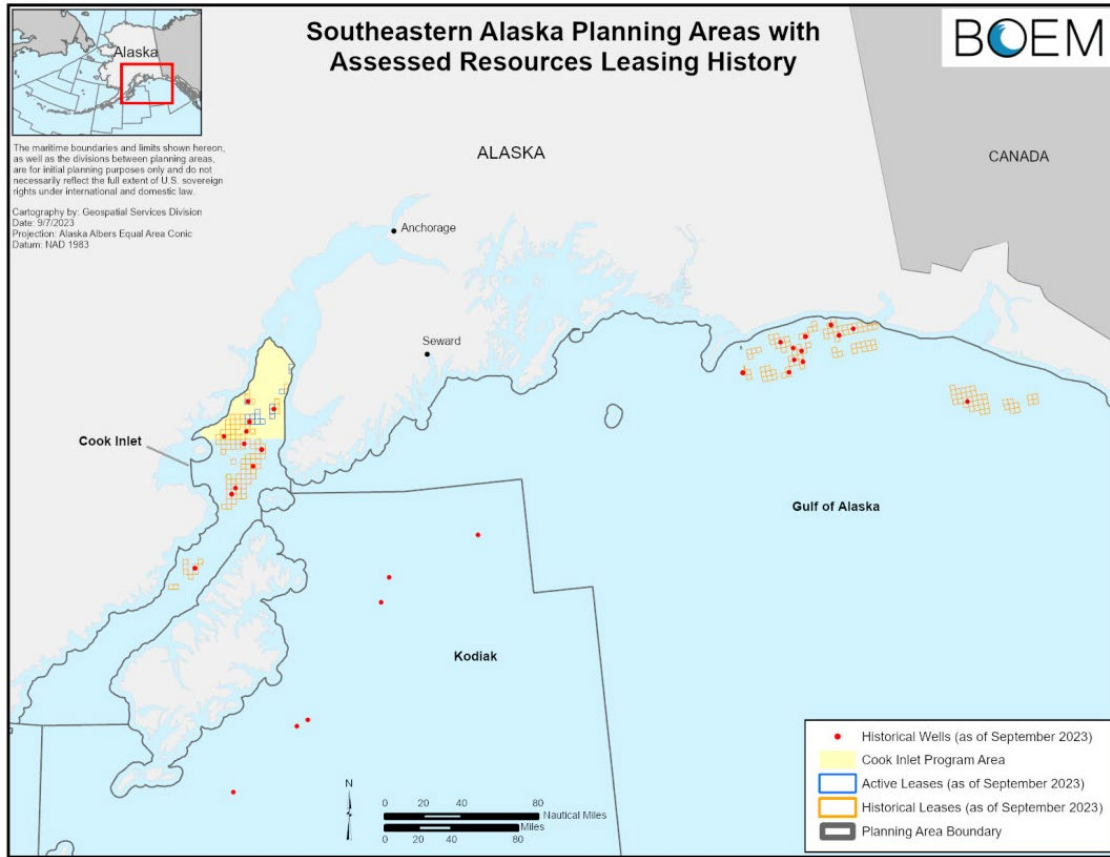
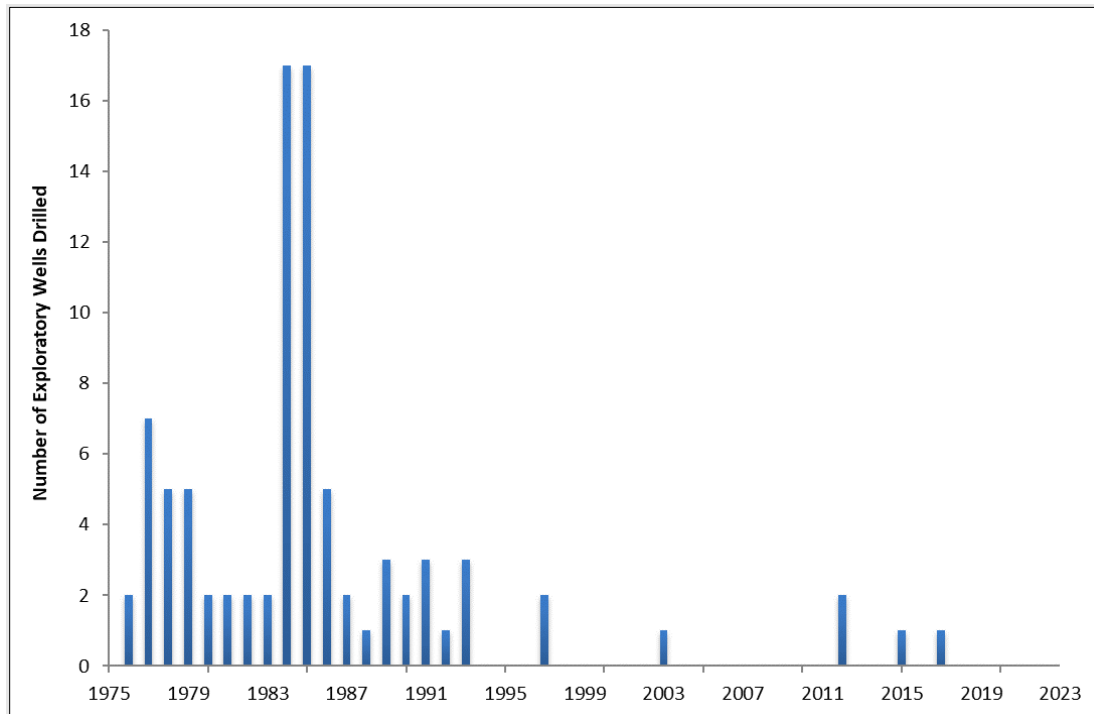


Figure 4-6: Number of OCS Exploratory Wells Drilled per Year in the Alaska Region, 1975–2023



4.4.1 *Beaufort Sea Planning Area*

Ten lease sales have been held in this area since 1979. One lease sale was scheduled in the 2012–2017 Program but was subsequently cancelled on October 16, 2015, due to existing market conditions. One lease sale was planned in the [2017–2022 Proposed Program](#) but was subsequently removed in the [2017–2022 PFP](#) decision.

In October 2018, BOEM approved an oil and gas development and production plan in the Beaufort Sea associated with the Liberty Project. The Ninth Circuit’s ruling in *Center for Biological Diversity v. Bernhardt*, 982 F.3d 723 (2020) vacated the approval and remanded the action to BOEM. On December 26, 2019, BSEE issued a suspension for the three leases constituting the Liberty Unit. This suspended status was renewed in 2021 for a period of up to 3 years. On May 9, 2022, the operator for Liberty informed BOEM that it would provide an amendment to the development and production plan after it updates the oil spill response plan.

As of September 2023, there were six existing OCS leases in the Beaufort Sea Planning Area. Thirty-one exploratory and seven development wells have been drilled.¹⁹ The most recently drilled wells were drilled in 2015 and 2017. In preparation for the proposed 2019 Beaufort Sea Lease Sale, as included in the [DPP](#) lease sale schedule, BOEM published a Call on March 30, 2018, and an NOI on November 16, 2018.²⁰ The State of Alaska annually holds areawide lease sales in the adjacent state waters, and there is active production from state acreage adjacent to existing OCS leases. The most recent Beaufort Sea lease sale in state waters was in November 2022, where 11 bids were received on 9 tracts.

4.4.2 *Chukchi Sea Planning Area*

Three lease sales have been held in this area since 1988. Five exploratory wells were drilled prior to 1992 on leases issued in earlier lease sales; all have since been plugged and abandoned. An uneconomic gas discovery was made in 1990 in the Burger prospect and the well was plugged and abandoned. One exploration well was drilled in 2012 but was also plugged and abandoned without being drilled to total depth. In 2015, one exploration well was drilled to total depth and has been plugged and abandoned. Lease Sale 193, the most recent in this area, was held in February 2008 and was the largest lease sale in the history of Alaska OCS leasing, generating more than \$2.6 billion in bonus revenues. However, all 487 leases issued in Lease Sale 193 were subsequently relinquished by the leaseholders.

¹⁹ The 31 wells include a top-hole well drilled in 2012, which is not considered a well drilled to completion.

²⁰ The first lease sale scheduled in the 2019–2024 Draft Proposal was the 2019 Beaufort Sea lease sale. However, due to adjustments in timing to the National OCS Program, that lease sale did not occur.

There are no existing leases in the Chukchi Sea Planning Area. One lease sale was scheduled in the 2012–2017 Program, but subsequently cancelled on October 16, 2015, due to lack of industry interest and existing market conditions. One lease sale was scheduled in the [2017–2022 Proposed Program](#) but was removed in the [2017–2022 PFP](#) decision.

4.4.3 Hope Basin Planning Area

No lease sales have been held in the Hope Basin Planning Area. The area was included in the 1997–2002 Program as a simultaneous U.S./Russia OCS lease sale, but that lease sale was cancelled. Subsequently, this area was included in the 2002–2007 Program as a special interest lease sale, meaning that multiple Calls would be issued to determine if there was interest in a lease sale, in conjunction with the Chukchi Sea Planning Area. However, no interest was expressed for the Hope Basin in response to three Calls issued during the 2002–2007 Program timeframe, so the lease sale was cancelled.

4.4.4 Norton Basin Planning Area

One lease sale was held in 1983 in Norton Basin. Six exploratory wells have been drilled with no commercial discoveries. There are no existing leases. The area was included in the 2002–2007 Program as a special interest lease sale. Four Calls were issued with no expressions of interest, so no lease sale was held.

4.4.5 Navarin Basin Planning Area

One lease sale was held in 1983 in the Navarin Basin. Eight exploratory wells were drilled with no commercial discoveries. There are no existing leases and the area has not been included in an approved lease sale schedule since the 1987–1992 Program.

4.4.6 St. George Basin Planning Area

One lease sale was held in 1983 in the St. George Basin Planning Area ([Figure 4-4](#)). Ten exploratory wells were drilled, with no commercial discoveries. There are no existing leases in this area. One lease sale was scheduled in the 1992–1997 Program, but it was cancelled. The area has not been included in a proposed lease sale schedule since that National OCS Program.

4.4.7 Cook Inlet Planning Area

There have been six lease sales in this area since 1977 ([Figure 4-5](#)). Prior to the most recent lease sale, there were 14 existing leases in the planning area, all of which were issued in Lease Sale 244 held June 21, 2017. As of September 2023, a completed exploration plan has not been submitted for these leased areas. Secretary Haaland decided not to hold Lease Sale 258, scheduled as part of the 2017–2022 National OCS Program, due to lack of industry interest in the area. However, as directed by the IRA, BOEM held Cook Inlet Lease Sale 258 on December 30, 2022. One bid was

received on one block. The bid, in the amount of \$63,983, was submitted by Hilcorp Alaska, LLC; the lease was issued in March 2023 and is now active. Thirteen exploratory wells have been drilled on leases issued through earlier lease sales with no commercial discoveries to date.

The upper Cook Inlet is a mature basin in which extensive exploration and development in state submerged lands have occurred during the past 40 years. The State of Alaska schedules annual areawide lease sales in state submerged lands, the most recent of which was held in December 2022, with six bids received on six tracts. Existing infrastructure in the upper portion of Cook Inlet includes 17 platforms in state waters, associated oil and gas pipelines, and onshore drill pads, processing facilities, and support facilities.

4.4.8 Gulf of Alaska Planning Area

Three lease sales were held from 1976 to 1981 in the Gulf of Alaska. Twelve exploratory wells were drilled, but no commercial discoveries were found. The lease sale scheduled in the 1997–2002 Program was cancelled, primarily due to low oil and gas prices and low industry interest. There are no existing leases in this planning area.

4.4.9 Other Alaska Planning Areas with No Historical Lease Sales

The following planning areas have had no lease sales and no wells have been drilled:

- Aleutian Arc
- Aleutian Basin
- Bowers Basin
- Hope Basin
- Kodiak
- Shumagin
- St. Matthew-Hall.

4.5 Pacific Region Planning Areas

The Pacific OCS planning areas encompass more than 248 million acres and include the Pacific offshore area extending north to the Canadian border and south to the Mexican border (see [Figure 1-1](#)).²¹ Pacific OCS planning areas begin 3 nm offshore and extend seaward to approximately 200 nm, with water depths ranging from approximately 30 feet to more than 17,500 feet.

For purposes of the National OCS Program, the Pacific Region is comprised of four planning areas: Washington/Oregon, Northern California, Central California, and Southern California. Lease sales have been held in all four planning areas; the most recent of which was held in the Southern California Planning Area in 1984 (see [Figure 4-7](#) and [Figure 4-8](#)). As of September 2023, there are 30 existing leases and 23 platforms, with 6 platforms in the process of being decommissioned, all of which are in the Southern California Planning Area. See [Chapter 5](#) for information on the Pacific Region oil and gas resource potential.



Since 1963 in the Pacific Region, there have been 476 OCS blocks leased covering more than 2.5 million acres and generating \$4.2 billion in high bids.

As of September 2023, there are 30 active leases in the Southern California Planning Area, covering more than 150,000 acres.

4.5.1 Washington/Oregon Planning Area

One lease sale was held in 1964 in the Washington/Oregon Planning Area. Twelve exploratory wells were drilled, with no commercial discoveries. The Olympic Coast NMS overlies parts of the areal extent of three geologic plays containing assessed hydrocarbon resources within the Washington/Oregon Planning Area.

4.5.2 Northern California Planning Area

One lease sale was held in 1963 in Northern California. Seven exploratory wells were drilled, with no commercial discoveries. An NMS overlies parts of the areal extent of nine geologic plays containing assessed hydrocarbon resources within the Northern California Planning Area.

²¹ Administratively, the Pacific Region includes the State of Hawaii. However, for the National OCS Program analysis purposes, the Pacific Region only includes the four planning areas adjacent to the U.S. West Coast.

4.5.3 Central California Planning Area

One lease sale was held in 1963 in Central California. Twelve exploratory wells were drilled, with no commercial discoveries. Most of the OCS closest to the coast is designated as NMSs and the boundaries of the NMSs as they existed on July 14, 2008, are under Presidential withdrawal for a period without specific expiration. The NMSs overlie parts of the areal extent of nine geologic plays containing assessed hydrocarbon resources within the Central California Planning Area (see [Figure 4-8](#)).

4.5.1 Southern California Planning Area

Ten lease sales were held from 1963 through 1984 in Southern California. More than 1,500 exploratory and development wells have been drilled. As of September 2023, there are 30 active oil and gas leases, 14 of which are producing.²² On October 12, 2022, BSEE [announced](#) the availability of the *Draft Programmatic Environmental Impact Statement for Oil and Gas Decommissioning Activities on Pacific Outer Continental Shelf* (Decommissioning PEIS). Release of the Decommissioning PEIS initiated a 45-day public comment period to solicit further input from industry and the public relating to the decommissioning of facilities, pipelines, and other equipment or obstructions in accordance with governing regulations and lease conditions. The Final Decommissioning PEIS is anticipated to publish by the end of 2023.

BOEM is assisting BSEE in preparing the environmental analysis for the Decommissioning PEIS and will maintain information on the project website but has no role in approving the decommissioning activities. Twenty-three California OCS oil and gas platforms, all installed between the late 1960s and 1990, are subject to eventual decommissioning.

There are producing leases in state waters, although no new state leases have been issued since 1969.

²² A producing lease is an active lease that has produced product (i.e., oil or gas, or both). A non-producing lease is an active lease that has not produced product. However, there can be a difference in the definition for producing and non-producing leases between BOEM and Office of Natural Resources Revenue (i.e., time lag, fiscal versus calendar year, etc.) because of different purposes in collecting data (i.e., operations versus revenue collection).

Figure 4-7: Washington/Oregon and Northern California Planning Areas Leasing History

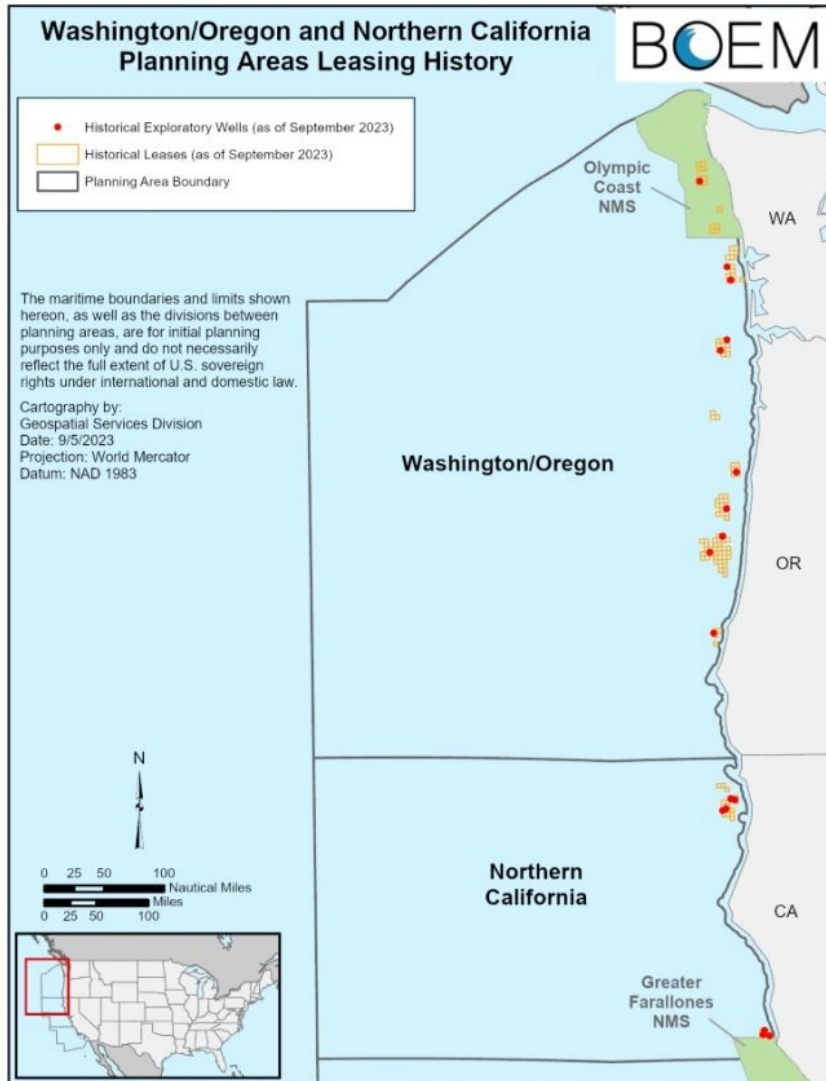
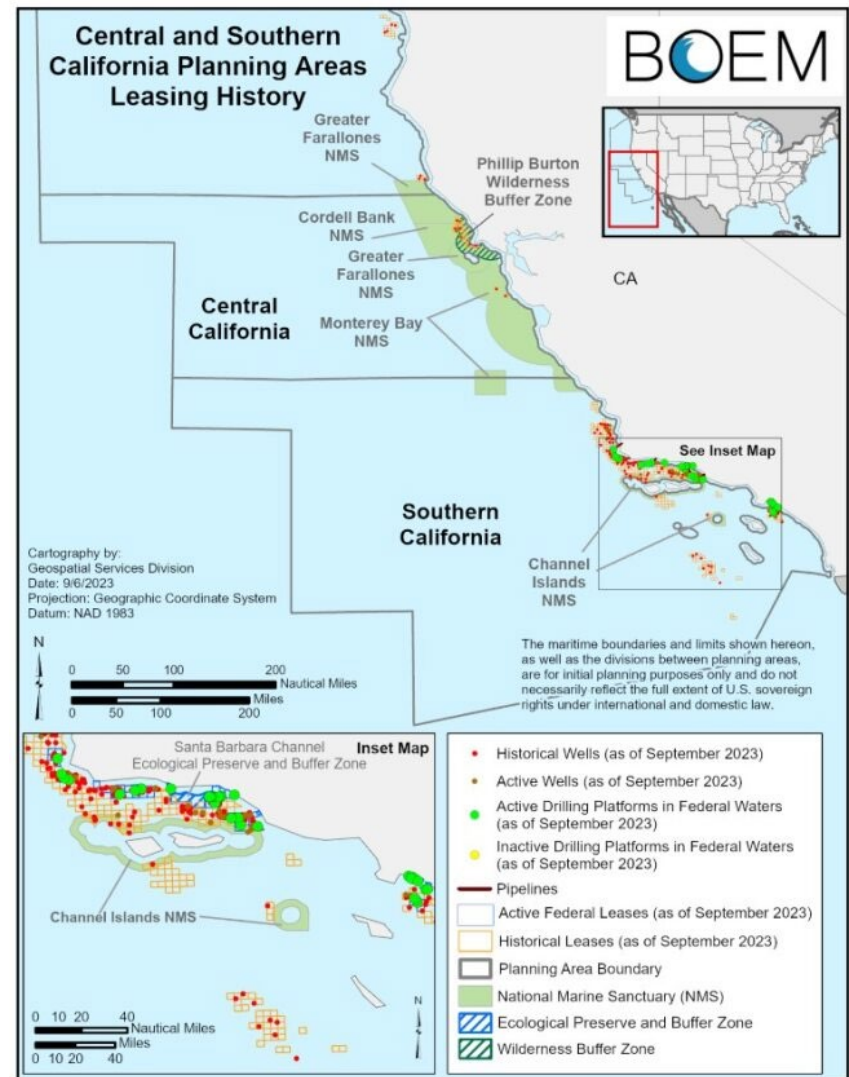


Figure 4-8: Central and Southern California Planning Areas Leasing History



4.6 Gulf of Mexico Region Planning Areas

The GOM Region is on the southern margin of the U.S. and contains approximately 160 million acres in three planning areas: the Western, Central, and Eastern GOM planning areas (see [Figure 4-9](#)). State jurisdictions for Texas and Florida’s Gulf Coast extend 9 nm from the coastal baseline. Louisiana’s jurisdiction extends to 3 imperial miles, reflecting boundaries at the time these states joined the U.S. State jurisdictions for Mississippi and Alabama extend 3 nm from the coastline to 200 nm. Water depths range from less than 30 feet to greater than 11,000 feet. The Western and Central GOM planning areas are the most mature and active of all 26 OCS planning areas, with extensive existing infrastructure and production having been underway for more than 60 years. The Western and Central GOM planning areas, consisting of the OCS offshore Alabama, Mississippi, Louisiana, and Texas, remain the primary offshore source of oil and gas for the U.S., generating about 99% of all OCS oil and gas production. This high level of production and activity is supported by an oil and gas industry that includes hundreds of large and small companies, and an expansive onshore network of coastal infrastructure.

Annual planning areawide lease sales in these two areas had been typical for the past 30 years. The 2017–2022 Program instituted semi-annual, regionwide lease sales in the Western, Central, and Eastern GOM planning areas. As of September 2023, there was a total of 2,249 existing Federal leases in all three planning areas. For information on offshore renewable energy and marine minerals activity in the GOM, refer to [Chapter 7](#).

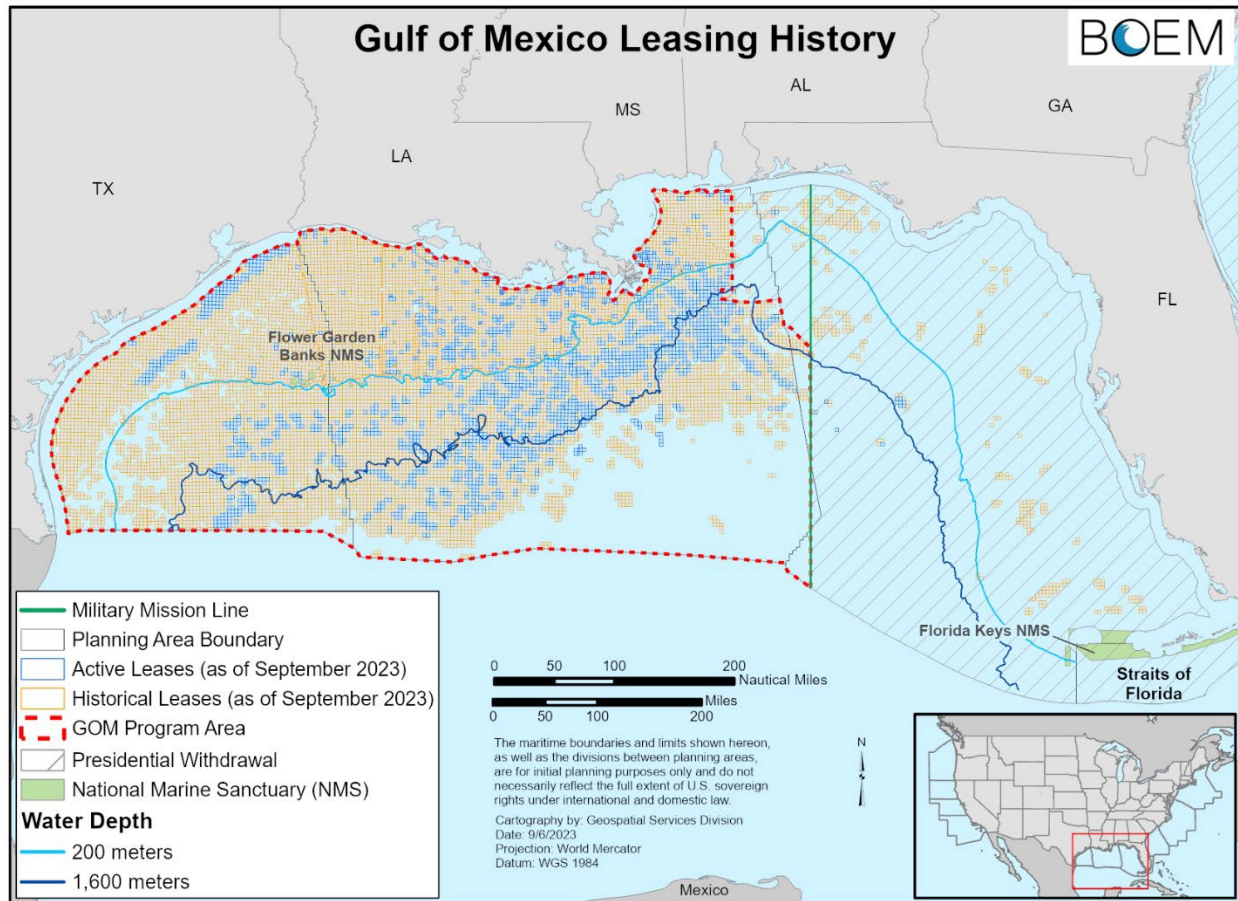
The geology of the GOM basin and the complexity and abundance of its salt structures provides the setting that makes the GOM one of the richest oil and natural gas regions in the world. The greatest undiscovered resource potential in the region is assessed to exist in the deep and ultra-deep waters of the GOM.

There have been more than 100 lease sales in the GOM Region since 1954. There is commercial production in the Western and Central GOM planning areas, but as of September 2023, no commercial production has occurred from leases anywhere in the Eastern GOM Planning Area. See [Chapter 5](#) for geologic play maps and a discussion of estimated oil and gas resources by planning area.



Since 1954 in the GOM Region, almost 29,000 tracts have been leased, covering more than 151 million acres and generating approximately \$68 billion in high bids.

As of September 2023, there are 2,249 active leases in the GOM Region.

Figure 4-9: GOM Region Leasing History

Internationally, the U.S. and Mexico signed the *Agreement between the United States of America and the United Mexican States Concerning Transboundary Hydrocarbon Reservoirs in the Gulf of Mexico* (Agreement) in February 2012. It entered into force in July 2014. The Agreement sets out a framework for cooperating on joint exploration and exploitation of geological hydrocarbon structures and reservoirs that extend across the maritime boundary of the U.S. and Mexico, and the entirety of which are beyond 9 nm from the coastline.

Accordingly, the U.S. and Mexico notify each other of planned activities within 3 statute miles of the delimitation line. Mexico made constitutional amendments in December 2013, followed by legislation in August 2014, which opened oil and natural gas markets to foreign investments, including from entities that are active in the GOM. The first leases in the area covered by this Agreement on the U.S. side were issued from Western GOM Lease Sale 238, held in August 2014. The opening of Mexican waters could provide for long-term expansion of U.S.-Mexico energy trade and opportunities for U.S. companies, but also could result in a short- or longer-term shift in investment focus to the Mexican waters from the OCS.

4.6.1 *Western Gulf of Mexico Planning Area*

As of September 2023, there were approximately 398 existing leases in the Western GOM Planning Area. More than 7,800 wells have been drilled. Regionwide Lease Sale 257 was held on November 17, 2021, but was vacated by the U.S District Court for the District of Columbia.²³ However, as directed by the IRA, BOEM accepted 307 high bids for Lease Sale 257 and issued leases on September 14, 2022. The final two GOM regionwide lease sales scheduled in the [2017–2022 Program](#), Lease Sales 259 and 261, did not advance prior to the expiration of the 2017-2022 Program due to delays from factors including conflicting court rulings that impacted work on these proposed lease sales. However, as directed by the IRA, BOEM held Lease Sale 259 on March 29, 2023, which generated \$263,801,783 in high bids for 313 tracts covering 1.6 million acres in the GOM. The IRA also directed BOEM to hold Lease Sale 261 by September 30, 2023. BOEM has scheduled Lease Sale 261 to be held September 27, 2023. The State of Texas administers an oil and gas program in state submerged lands adjacent to this area.

4.6.2 *Central Gulf of Mexico Planning Area*

As of September 2023, there were approximately 1,838 existing leases in the Central GOM Planning Area. More than 44,000 wells have been drilled. As described above, Lease Sale 259 was the most recent lease sale in this area. BOEM has scheduled Lease Sale 261 to be held September 27, 2023. The states of Louisiana and Alabama administer oil and gas programs in state submerged lands adjacent to this area. There are currently no Mississippi state submerged lands leases.

4.6.3 *Eastern Gulf of Mexico Planning Area*

As of September 2023, there were 13 existing leases in this area. Twenty-two lease sales have been held in this planning area as it has been configured over the years and more than 100 wells drilled, with significant discoveries of natural gas. However, there has been no commercial production in the planning area. Lease Sale 224 in March 2008, a lease sale mandated by GOMESA, resulted in leases awarded for 36 OCS blocks with bonuses totaling \$64.7 million.


As described above, Lease Sale 259 was the most recent lease sale in the portion of the area not subject to Presidential withdrawal. BOEM has scheduled Lease Sale 261 to be held September 27, 2023.

²³ On January 27, 2022, the U.S. District Court for the District of Columbia vacated Lease Sale 257 because the Court found a deficiency in the NEPA documentation for the lease sale. *Friends of the Earth v. Haaland*, 583 F.Supp.3d 113, 162 (D.D.C. 2022). On April 28, 2023, the U.S. Circuit Court for the District of Columbia Circuit vacated the decision of the District Court as moot given passage of the IRA requiring the Department to issue the Lease Sale 257 leases. *Friends of the Earth v. Haaland*, Op. No. 22-5036 (D.C. Cir. Apr. 28, 2023).

4.7 Atlantic Region Planning Areas

The Atlantic OCS encompasses nearly 270 million acres and includes the Atlantic offshore area extending north to Canada, and south to the offshore territorial waters of Cuba. The area begins 3 nm off the Atlantic Coast and extends to the EEZ and beyond, where the continental shelf extends beyond the EEZ. Water depths in the Atlantic OCS range from approximately 12 feet to more than 18,000 feet.

The Atlantic Region comprises four planning areas (North Atlantic, Mid-Atlantic, South Atlantic, and the Straits of Florida) that have undergone numerous boundary changes over the years. There have been 10 Federal oil and gas lease sales throughout this region, the most recent of which was held in 1983 (see [Figure 4-10](#) and [Figure 4-11](#)). A total of 433 leases were issued in the Atlantic, but there have been no active oil and gas leases since the mid-1990s. Although 51 wells were drilled, there has been no hydrocarbon production from the Atlantic OCS.



Since 1959 in the Atlantic Region, there have been 433 tracts and almost 2.5 million acres leased for oil and gas development, generating more than \$2.8 billion in high bids.

As of September 2023, there are no active leases in the Atlantic Region.

4.7.1 Straits of Florida Planning Area

From 1960–1961, three exploratory wells were drilled, with no commercial discoveries. As of September 2023, there are no existing oil and gas leases and the area has not been included in a National OCS Program since the 1987–1992 Program.

There are historic wells and existing exploratory licenses offshore Cuba and the Commonwealth of the Bahamas in the waters adjacent to this planning area. While drilling activity has been nearly non-existent for the past 35 years, in 2020, a prospective well was spudded offshore the Bahamas' northern territorial waters. Although highly anticipated, the well failed to show commercially viable volumes of hydrocarbon resources.

Licensing rounds in the Caribbean region have been relatively scarce. Most recently (June 2019), Cuba announced a Licensing Round for Offshore Blocks in the Cuban EEZ of the GOM. This licensing round called on oil and gas companies interested in exploration and exploitation activities in the Cuban EEZ to present offers for one or more blocks under Production Sharing Agreements. Cuba offered 24 blocks in its 2020 License Round, but the round failed to garner interest, and no licenses were issued. The timing of additional leasing and drilling activity in the area remains uncertain.

Figure 4-10: South Atlantic and Straits of Florida Planning Areas Leasing History

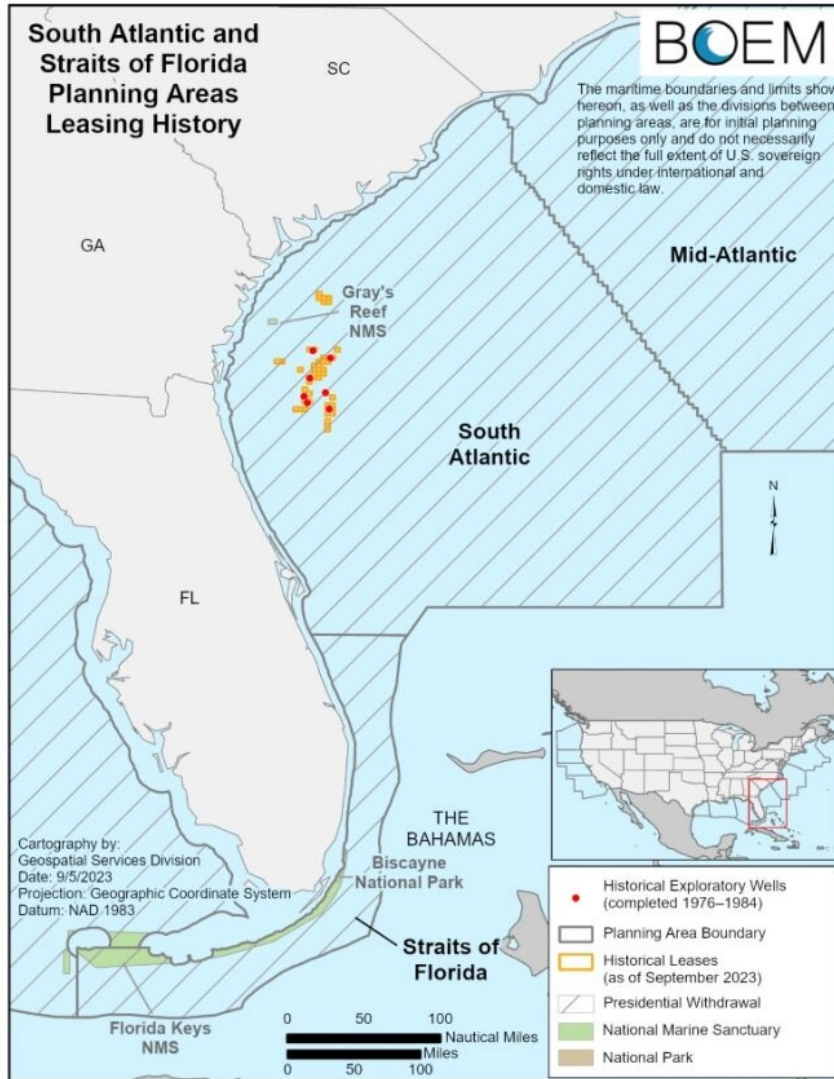
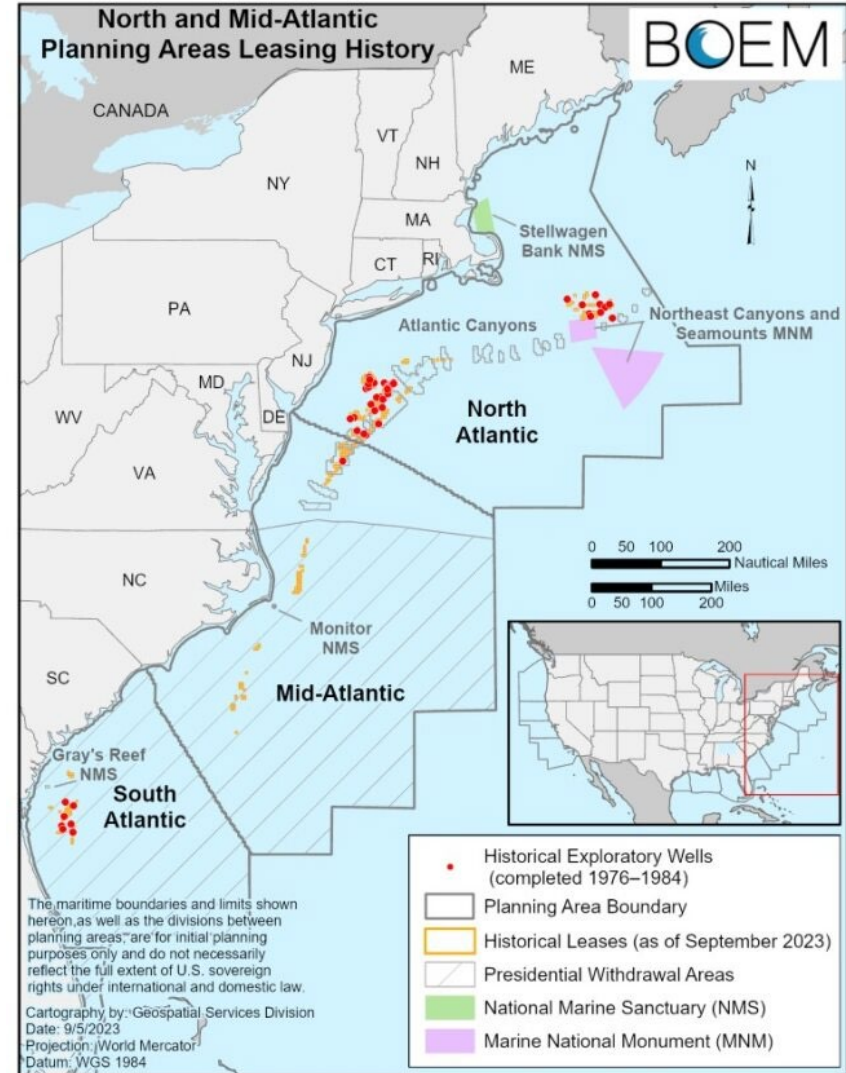


Figure 4-11: North and Mid-Atlantic Planning Areas Leasing History



4.7.2 South Atlantic Planning Area

Between 1979 and 1980, seven exploratory wells were drilled in the current planning area with no commercial discoveries. As of September 2023, there are no existing oil and gas leases.

This planning area was analyzed in the [Atlantic G&G Programmatic EIS](#) and the [Draft Programmatic EIS for the 2017–2022 Program](#). A potential lease sale for a portion of this planning area was included in the [2017–2022 DPP](#) decision, but subsequently removed in the [2017–2022 Proposed Program](#) decision.

4.7.3 Mid-Atlantic Planning Area

In 1984, one exploratory well was drilled in the current planning area, with no commercial discoveries. There are no existing oil and gas leases. A special interest lease sale for an area offshore Virginia was scheduled for 2011 in the [2007–2012 Program](#); however, the lease sale was cancelled by Secretary Salazar in May 2010. This planning area was analyzed in the [Atlantic G&G Programmatic EIS](#) and the Draft Programmatic EIS for the [2017–2022 Program](#).

A potential lease sale for a portion of this planning area was included in the [2017–2022 DPP](#) decision, but subsequently removed in the [2017–2022 Proposed Program](#) decision.

4.7.4 North Atlantic Planning Area

Between 1976 and 1984, 43 exploratory wells were drilled in the currently configured planning area with no commercial discoveries. There are no existing oil and gas leases.

An underwater photograph showing a large school of small fish swimming in a blue, slightly murky water. A diver's leg, wearing a dark wetsuit, is visible in the lower right foreground, extending towards the center. The lighting is dim, creating a sense of depth and mystery.

Chapter 5

Valuation of Program Areas



Chapter 5 Valuation of Program Areas

This chapter provides information on the valuation of program areas and considers economic, environmental, and social value, as required by Section 18(a)(1). Taking into account the lease sale schedule included in the Secretary’s Second Proposal, the analysis provides valuable information for the Secretary to consider when balancing the factors under Section 18(a)(3) of the OCS Lands Act.

This chapter first provides information on how BOEM estimates hydrocarbon resources and then provides information on BOEM’s E&D scenarios. These scenarios provide a range of oil and gas production and associated activities that could conceivably occur if leasing were to take place. BOEM then uses these scenarios in [Section 5.3](#) to estimate the net benefits associated with the potential activities. The E&D scenarios and net benefits analysis assume that industry will explore for, and develop, economically recoverable oil and gas resources if they are made available, but explicitly are not predictions, forecasts, or BOEM’s view of what will happen.

5.1 Estimating Hydrocarbon Resources

Oil and gas resource assessments are critical components of energy policy analysis and provide important information about the relative potential of U.S. offshore areas as sources of oil and natural gas. Resource assessments provide the Secretary with information on the geological characteristics of OCS Regions, as required by Section 18(a)(2)(A) of the OCS Lands Act. For the [DPP](#) analysis, BOEM considered the amount of undiscovered economically recoverable oil and gas resources (UERR) available on unleased blocks in each of the OCS planning areas as part of the valuation and ranking process.

For the [Proposed Program](#) analysis, BOEM focused on the volume of oil and gas resources that could be leased, discovered, and produced under the Draft Proposal. The PFP analysis focuses on the volume of oil and gas resources that could be leased, discovered, and produced under the Second Proposal, which included both the Cook Inlet Program Area in Alaska and the GOM Program Area. BOEM’s approach to resource assessment is designed to account for the uncertainty in estimating the volume of undiscovered resources and the timing of potential production.

In general, uncertainty in undiscovered oil and natural gas estimates is greatest for frontier areas that have had little or no past exploratory effort (e.g., the Cook Inlet Planning Area). For areas that have been extensively explored and are in a mature development stage (e.g., the Central GOM Planning Area), many of the geological and developmental risks have been reduced and the degree of uncertainty reflected in the range of possible outcomes has been narrowed.

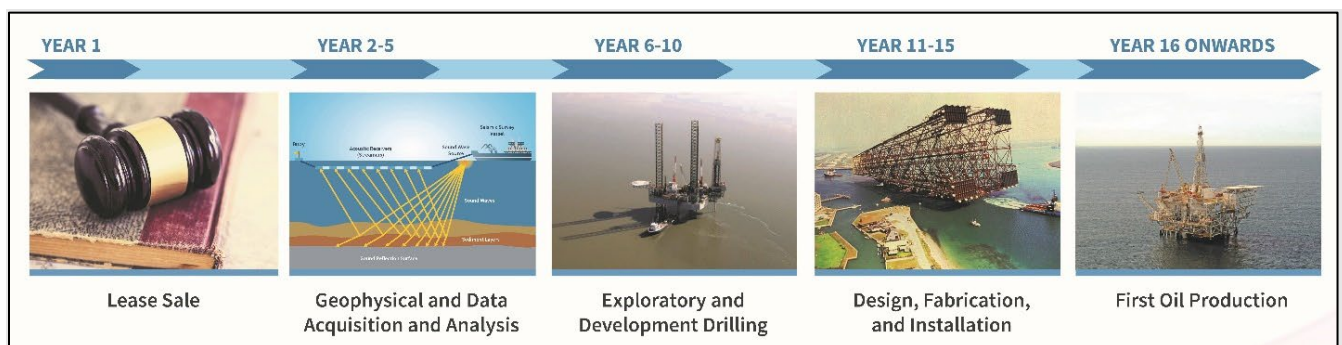
In conducting resource assessments, BOEM quantifies uncertainty by using ranges of values for input data that are sampled through multiple iterations of assessment model trials. Additionally, BOEM applies risk (i.e., the probability that oil and gas will not be found) to geologic plays and assessment units that do not have a proven petroleum system.

BOEM subsequently reports estimates of undiscovered technically recoverable resources (UTRR) as “risked.” The information from exploratory wells in frontier areas can provide the empirical evidence necessary to determine the presence of hydrocarbons within the assessment units or geologic plays. If hydrocarbon resources are encountered, these geologic play risks would be eliminated, resulting in an increase in UTRR estimates reported by BOEM. For example, based on the *2021 National Assessment of Undiscovered Oil and Gas Resources of the Nation’s Outer Continental Shelf* (BOEM 2021b) referred to as the “2021 National Assessment,” the elimination of all petroleum system risk from conceptual plays on the Atlantic OCS could increase BOEM’s reported UTRR in that region.

Where possible, BOEM considers recent geophysical, geological, and technological information to estimate the potential presence and amount of technically recoverable oil and gas resources on the OCS. BOEM also considers economic parameters, such as exploration and development costs and oil and gas prices, to estimate the economically recoverable resources on the OCS. Current BOEM oil and gas resource estimates are published in the 2021 National Assessment (BOEM 2021b).

The life cycle of OCS oil and gas activities often includes a multi-year process consisting of several phases. The initiation and duration of activities varies by water depth and by OCS Region, with a more rapid pace expected in mature areas like the shallow water GOM where significant oil and gas information and infrastructure already exist. [Figure 5-1](#) depicts a schematic timeline of development activities for frontier and deepwater areas, where first production is often not achieved until 10 years or more after lease award. Once production begins, it can continue for several decades.

Figure 5-1: Oil and Gas Development Timeline for Frontier and Deepwater Areas



5.2 Introduction to Hydrocarbon Resources

Each of the OCS Regions includes geologic characteristics and petroleum system elements that provide an opportunity for the existence of oil and gas resources. These petroleum system elements are not ubiquitous across the entire OCS. Thus, the assessment of hydrocarbon resources requires geologic plays delineation, which allows for the incorporation of petroleum system elements that reflect local geologic conditions. A geologic play is a group of geologically related potential or known hydrocarbon accumulations that have a commonality of hydrocarbon generation, accumulation, and entrapment in a reservoir. BOEM defines two types of geologic plays in its resource assessment, as follows:

- established play: geologic play in which hydrocarbons have been discovered and a petroleum system has been proven to exist.
- conceptual play: geologic play in which hydrocarbons have not been discovered and the petroleum system has not been proven to exist.

Geologic plays consist of oil and gas pools, where a pool is defined as a discovered or undiscovered accumulation of hydrocarbons. In many instances, a prospect (if undiscovered) or a field (if discovered) will comprise one or more pools. A prospect or field is an area consisting of a single reservoir or multiple reservoirs all grouped on, or related to, a shared geologic structural feature or stratigraphic trap.

[Figure 5-2](#) and [Figure 5-3](#) show the established and conceptual geologic plays assessed in the 2021 National Assessment for the Cook Inlet and GOM, respectively. Most plays are defined based on reservoir rock stratigraphy and are delineated by the extent of the reservoir rocks; however, a few plays are defined based on structural characteristics of prospective traps. Geologic plays often spatially overlap because they exist at different depths below the seafloor and, in many cases, are stacked on top of each other in the subsurface. Therefore, the figures showing geologic play outlines do not represent the full 3-D extent of an individual geologic play. In both the Cook Inlet and GOM program areas, the entirety of the OCS contains one or more geologic plays.

5.2.1 Resource Commodities Assessed

BOEM assesses crude oil, natural gas liquids (condensate), and natural gas that exist in conventional reservoirs and are producible with conventional recovery techniques. Crude oil and condensate are reported jointly as billion barrels of oil (BBO); natural gas is reported in aggregate as trillion cubic feet (Tcf) of gas. Oil-equivalent gas is a volume of gas expressed in terms of its energy equivalence to oil (i.e., 5,620 cubic feet of gas per barrel of oil). The combined volume of oil and oil-equivalent gas resources is referred to as barrel of oil equivalent (BOE) and is reported in units of BBO-equivalent (BBOE).

Figure 5-2: Extent of Geologic Plays in the Cook Inlet Program Area

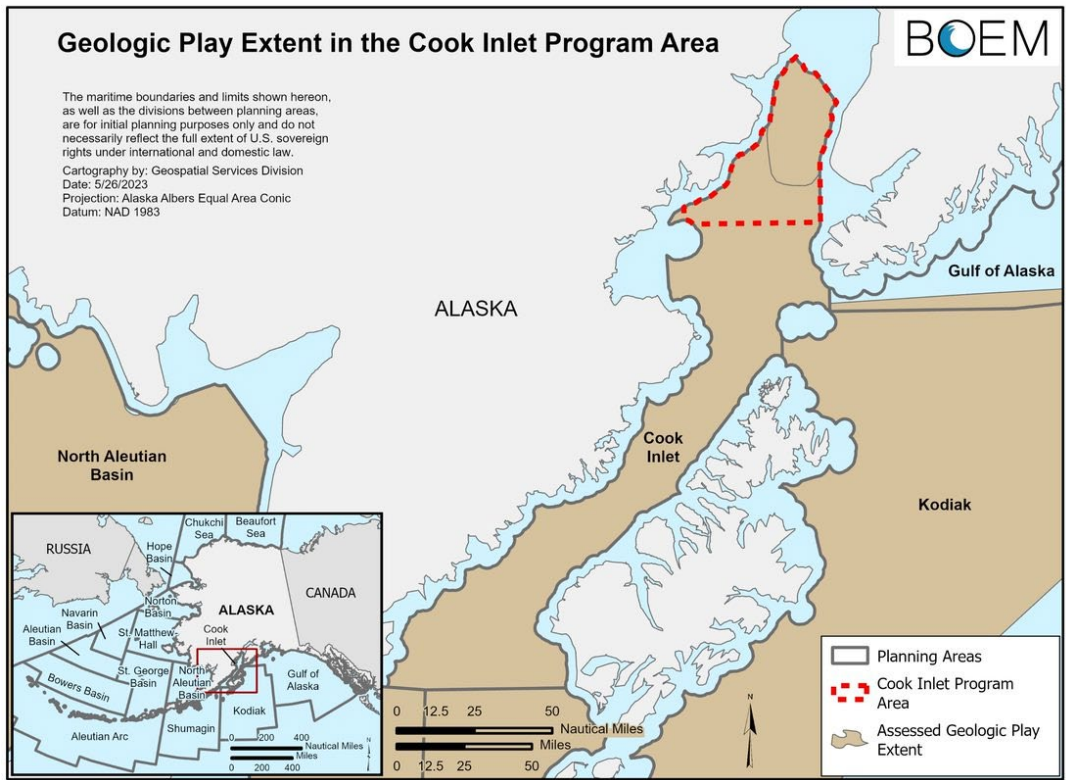
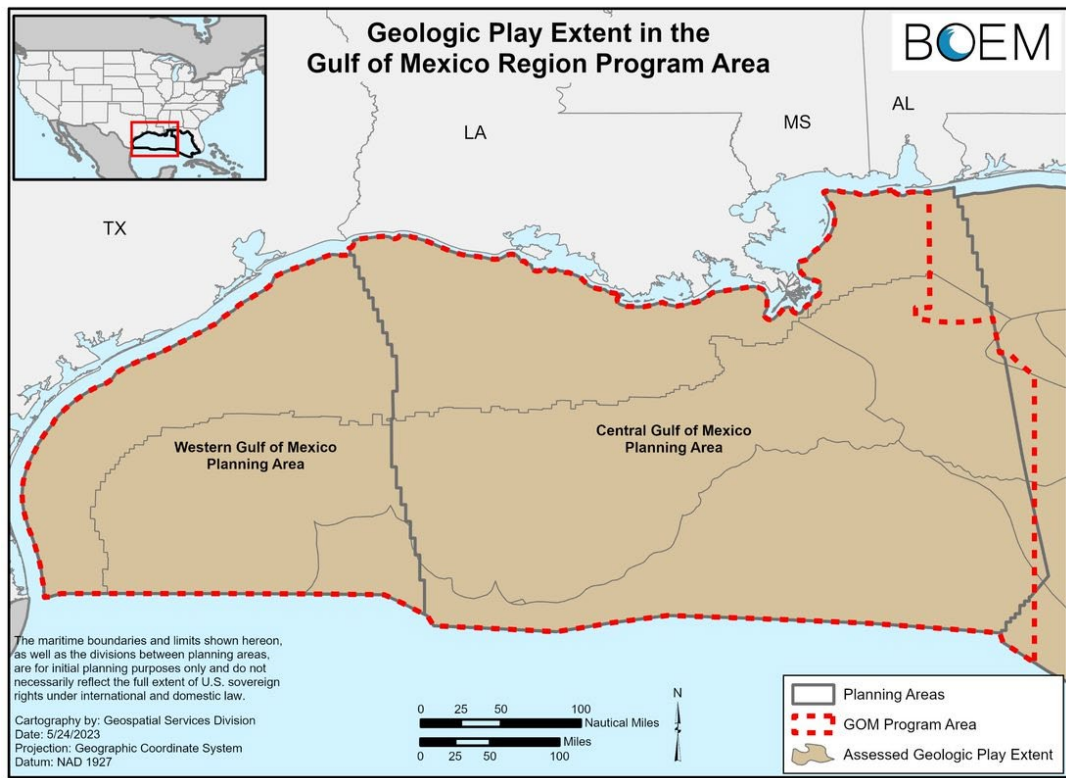


Figure 5-3: Extent of Geologic Plays in the Gulf of Mexico Region Program Area



The technically and economically recoverable resources reported by BOEM do not include potentially large quantities of hydrocarbon resources that could be recovered by enhanced recovery techniques. For example, the injection of CO₂ into an oil reservoir can increase recoverability significantly, but the technique is not currently in use on the U.S. OCS, and the economics have not been evaluated. Furthermore, these assessments do not consider gas in geopressured brines, methane hydrates, or oil and natural gas that could be present in insufficient quantities or quality (i.e., low-permeability, “tight” reservoirs) to be economically produced by conventional recovery techniques.

5.2.2 Sources of Data and Information

Estimating undiscovered oil and gas resources on the OCS is a complex process and requires the incorporation of a variety of geological, geophysical, economic, and engineering data along with the application of professional judgment. The petroleum geologic play characteristics (i.e., volumes and qualities of source rocks, reservoir rocks, and traps) are defined using play-specific information from wells, seismic reflection profiles, and analogous information from geologically similar reservoirs in other parts of the world. In areas where oil and gas production is from mature plays (such as established plays in the GOM), data and information typically are derived from producing reservoirs and fields within the play. In these cases, volumetric estimates of discovered oil and gas pools within the play are used to develop probability distributions for the size and number of undiscovered pools and fields in assessment areas.

Due to sparse data directly associated with many of BOEM’s conceptual plays, analog-based parameters are developed using professional judgment to cover the range of uncertainties associated with these plays. The analog development process includes extensive research into the geological, geophysical, geochemical, and lithological characteristics of productive oil and gas discoveries in analogous plays. Specific information analyzed within analog plays includes the style of oil and gas traps, reservoir depositional environment and lithology, reservoir age, and analysis of existing drilling and well bore information. Conceptual play models are developed using regional G&G data and global analogs.

5.2.3 Geophysical Data Collection (Seismic Surveys)

There are many types of geophysical data collected for oil and gas exploration, but the primary type collected is seismic reflection data. Seismic surveying is a method of imaging below the seafloor using sound waves. The sound source is generated using acoustic energy from air guns that release sound waves. These bursts of compressed air are reflected from rock layers below the seafloor and recorded. Geophysicists use these data to identify areas most suitable for the accumulation of hydrocarbons. Geophysical surveys are conducted subject to appropriate conditions of approval and use mitigation and monitoring measures to limit impacts on marine mammals and protected species.

Geophysical data provide important information for oil and gas resource assessments. Two-dimensional (2-D) seismic surveys often are designed to cover thousands of square miles or entire geologic basins to assess large areas for hydrocarbon potential. In contrast, 3-D surveys can focus on a few to several hundred OCS blocks and provide higher resolution to evaluate hydrocarbon potential in structurally complex areas that could be poorly imaged on 2-D seismic surveys. In general, the acquisition and processing of marine seismic data is a complex process that often requires significant time and investment measured in years and millions of dollars.

BOEM maintains an inventory of industry seismic data that includes more than 377,000 OCS blocks of 3-D coverage and 3.4 million line-miles of 2-D coverage (BOEM 2022a). The distribution of seismic data over OCS Regions is generally coincident with the maturity of existing oil and gas development in the regions. For example, more than 99% of the 3-D seismic data and approximately 70% of the 2-D seismic data on the OCS have been acquired in the GOM. BOEM publishes an annual *Geological and Geophysical Data Inventory* (BOEM 2022a), which provides information on the various types of data collected on the OCS and describes those data in the BOEM inventory.

The National OCS Program does not authorize collection of G&G data on the OCS, and its approval is not a prerequisite to collect G&G data. Existing regulations (30 CFR Part 551) govern the process for approval of G&G exploration for oil, gas, and sulphur resources on unleased OCS lands or OCS lands leased to third parties, including the issuance of permits to acquire 2-D and 3-D seismic data. Seismic data acquisition by lessees or operators on their existing oil and gas leases may be authorized as part of their lease rights (i.e., as ancillary activities) or as part of an exploration plan (e.g., for airgun surveys in the GOM).

5.2.4 Uncertainty in Resource Assessment

All methods of assessing potential quantities of technically and economically recoverable resources are efforts in quantifying a value that will not be reliably known until the resource is nearly depleted. Thus, there is considerable uncertainty intrinsic to any estimate, and resource estimates should be used as general indicators and not predictors of absolute volumes. There is uncertainty regarding, among other things, the presence and quality of petroleum source rocks, reservoir rocks, seal rocks, and traps; the timing of hydrocarbon generation, migration, and entrapment; and the location, number, and size of accumulations. The value and uncertainty regarding these petroleum geologic factors are often qualitatively expressed. However, to develop volumetric resource estimates, the value and uncertainty regarding these factors must be estimated quantitatively. Each of these factors, and the volumetric resource estimate derived from them, is expressed as a range of values, with each value having a corresponding probability.

5.2.5 Resource Assessment Methodology and Output

The general methodology that BOEM uses to assess undiscovered OCS oil and natural gas resources is a multi-step process using existing empirical data, professional judgment of geologic play teams, and probability distributions in conjunction with the BOEM Geologic Resource Assessment Program (GRASP) model. GRASP is a geologic play-based model that compiles oil and gas play data to generate a range of values of undiscovered resources for each geologic play.

The execution of the GRASP model is comprised of the following steps to assess OCS oil and gas resources:

1. Compile play data
2. Generate a cumulative probability distribution of pool sizes from probabilistic distributions of reservoir parameters
3. Generate a number of pools probability distribution
4. Determine the probabilities for individual oil, natural gas, and mixed pool types
5. Establish individual pool size estimates and compare to the ranked sizes of discovered pools
6. Generate potential resources of the play (i.e., estimate volume of hydrocarbons)


Volumetric estimates of UTRR and UERR are based on the geologic and petroleum engineering information developed through petroleum geological analysis and quantified through play analysis. These estimates are developed in two stages. First, UTRR are assessed for each play, where UTRR are defined as oil and gas that could be produced using conventional extraction techniques without any consideration of economic viability. Secondly, following assessment of the UTRR, economic and petroleum engineering factors are determined for each assessment area to estimate the portion of the UTRR that is economically recoverable over a broad range of commodity prices. UERR are defined as the portion of the UTRR that is economically recoverable under specified economic and technologic conditions, including prevailing prices and costs. The economic portion of the assessment incorporates a wide range of oil and gas price points²⁴ and uses a relationship between the cost of exploration and development and commodity prices. Estimates of UERR are derived for each designated oil-gas price pair using the following methodology:

- subjecting the distributions to multiple computer iterations simulating the development of the hydrocarbon accumulations associated with the areas
- performing a discounted cash-flow analysis to determine the area's economically recoverable resources using specified economic parameters.

²⁴ Because oil and gas typically are produced together, BOEM estimates UERR at specific combinations of oil and gas prices, or “price pairs.”

BOEM publishes a formal, national-scale assessment of undiscovered oil and gas resources every five years. A complete description of the BOEM methodology and a summary of the results is available in BOEM's most recent assessment, *2021 National Assessment of Undiscovered Oil and Gas Resources of the Nation's Outer Continental Shelf* (BOEM 2021b).

5.2.6 Second Proposal and Potential Production



BOEM prepares the **exploration & development (E&D) scenarios** to provide a framework that describes and analyzes a range of potential E&D activities that could occur without assigning a given likelihood to a particular outcome.

E&D scenarios do not constitute predictions or forecasts and do not reflect BOEM's views of what will happen, but are scenarios that encompass all the types of activities that could conceivably occur.

The PFP analysis is similar to the [Proposed Program](#) analysis in that it is based on the volume of oil and gas that could be leased, discovered, and produced under a specific leasing proposal. The potential oil and gas production in the PFP analysis for any one program area is typically significantly less than the UTRR for the corresponding area.

The schedule of lease sales in the Second Proposal (zero to one lease sale in the Cook Inlet Program Area and zero to ten lease sales in the GOM Program Area) is used to estimate potential oil and gas production in this document. In addition to estimates of potential production, BOEM develops E&D scenarios, which reflect the quantification of the timing and scale of the potential exploration, development, and production activities.

BOEM estimates a range of potential production for each program area using estimates of undiscovered resources and historical field production data to consider which resources might be produced from the leases sold as a result of this National OCS Program. BOEM does not assume that every lease produces hydrocarbons. Instead, the method used is consistent with the reality that only a subset of all leases will be drilled, and only a subset of those will have resources that are discovered and ultimately produced, due to the geologic and economic risk of not finding commercial oil and gas accumulations on a given lease. The BOEM E&D scenarios are based on a variety of factors, including estimates of recoverable resources in unleased blocks and historical oil and gas activities. For both mature and frontier areas, these E&D scenarios of future development and activity are generated for analytical purposes only.

The availability of historical data for developing E&D scenarios varies greatly between mature and frontier areas. The GOM, for example, is a mature region where oil and gas leasing and development have been occurring for more than 60 years. Therefore, most E&D scenarios for the GOM program areas are the result of assessing historical patterns of activity that are established for the GOM Region.

In contrast to the abundant oil and gas development on the GOM OCS, there has been no development activity in most other OCS planning areas (see [Chapter 4](#)). In the Cook Inlet Program Area, there are fifteen active leases and a number of existing exploratory wells, but no established oil or gas production. Therefore, the potential production in the Cook Inlet is largely based on the BOEM 2021 National Assessment (BOEM 2021b), and the engineering assumptions in the E&D scenario activity are calibrated to local analog fields.

Oil and natural gas prices are often volatile and accurately predicting the magnitude and timing of the change in prices throughout the potential production life of leases acquired under the new National OCS Program is not possible.²⁵ Therefore, the E&D scenario analysis is conducted using three representative activity levels and corresponding sets of resource estimates but are not tied directly to any specific oil or gas prices. For the PFP analysis, the potential production represents what could be leased, developed, and produced as a result of leasing in each program area during the implementation of the new National OCS Program.

5.2.7 Second Proposal Exploration and Development Scenarios

For this analysis, BOEM constructs E&D scenarios for each of the two program areas included in the Second Proposal. The E&D scenarios describe the development and production activities required to explore for, extract, and transport to market the resources estimated within a program area. The E&D activities incorporate historical trends and regional differences. To estimate the social value of program area resources, it is necessary to calculate both the economic value and the social costs of finding and developing hydrocarbon resources. BOEM uses these scenarios for the comprehensive analyses that describe the range of direct and indirect social, economic, and environmental impacts that could result from lease sales proposed in the National OCS Program.

BOEM considers several factors when developing the E&D scenarios, and in particular, the estimates of potential production. Fluctuations in market conditions, changes in consumer demand, volatility in oil and gas prices, and variability in activity levels and activity costs lead to a great deal of uncertainty in analyzing future oil and gas activity. To manage this uncertainty, BOEM develops E&D scenarios for three activity levels—a low, a mid-, and a high level. There are no modeled dependencies between the scenarios in the two program areas; that is, an assumption of any one activity level in a program area has no modeled relation to an activity level in the other program area.

Typically, lower activity levels would be associated with lower oil and gas prices, and higher activity levels would be associated with higher oil and gas prices. However, oil and gas prices are just one of many factors that ultimately influence the future activity in each program area. The

²⁵ The April 2023 EIA Short-Term Energy Outlook (EIA 2023b) includes a wide confidence interval range for natural gas prices for one-year out; oil and gas production from any potential leases in the 2024–2029 Program could extend for a period of close to 50 years.

activity levels are influenced by various economic parameters, including oil and gas price trends, oil and gas activity costs, oil and gas supply and demand, and equipment availability. Creating these different activity levels enables BOEM to analyze the different benchmarks of potential industry activities likely to occur from offering lease sales. A detailed description of the E&D scenarios can be found in the [Final EAM paper](#) (BOEM 2023b).

In the Second Proposal, the Secretary identified “...a range of potential OCS oil and gas lease sales from zero lease sales anywhere on the OCS to up to ten potential lease sales in the Gulf of Mexico (GOM) Region Program Area 1 (i.e., up to two annual lease sales) and one potential lease sale in the northern portion of the Cook Inlet Program Area” (BOEM 2022c). To characterize the oil and gas resources and activity that could occur within this range of potential lease sales in the GOM Program Area, BOEM analyzed both a 5-sale and 10-sale scenario. [Table 5-1](#) shows the potential production generated from the 5-sale and 10-sale E&D scenarios in the Cook Inlet Program Area and the GOM Program Area.

Table 5-1: Potential Production by Program Area



Program Area Scenario	Production Category	Low Activity Level	Mid-Activity Level	High Activity Level
Cook Inlet	Oil (billion barrels)	0.00	0.19	0.19
	Gas (Tcf)	0.23	0.07	0.30
	BOE (billion barrels)	0.04	0.21	0.25
GOM 5-Sale Scenario	Oil (billion barrels)	0.57	2.41	3.72
	Gas (Tcf)	0.86	3.12	4.93
	BOE (billion barrels)	0.72	2.97	4.60
GOM 10-Sale Scenario	Oil (billion barrels)	0.57	3.22	7.45
	Gas (Tcf)	0.86	4.16	9.87
	BOE (billion barrels)	0.72	3.96	9.20

Note: These ranges are provided for purely analytical purposes and do not constitute predictions or forecasts, given the inherent uncertainties associated with market conditions at any given time. In order to highlight these uncertainties, BOEM will generally use the term “potential production” instead of the previously used term “anticipated production.”

BOEM used a single, representative sale in the 10-sale scenario and scaled it for low-, mid-, and high-activity environments to analyze how potential production volumes may differ in a 5-sale scenario, without assigning a given likelihood to a particular outcome. This is a simplified assumption that necessarily cannot account for complex analysis and actions taken by bidders in future sales. BOEM believes it is possible that a similar total number of leases could be sold over the span of the 2024–2029 National OCS Program whether 5 or 10 sales are conducted. BOEM will reassess potential production estimates and other effects of relevant proposed actions at the lease sale stage, including any pre-sale analyses.

The potential production estimates are shown for the three different activity levels to account for uncertainties in market conditions, price volatility, consumer demand, and variable cost

conditions. To represent the wide range of potential oil and gas production, the low activity level represents the minimum production potential from a National OCS Program with a regular and predictable schedule of lease sales, while the high activity level represents the highest level of potential production from any single GOM lease sale scaled by the number of sales. While the zero-sale case would include no new oil or gas production or activity associated with the new National OCS Program, the production and activity associated with existing leases is described in [Section 5.2.8](#) and analyzed in [Section 5.3](#).

The production estimates are important for identifying areas with respect to the magnitude of resource development potential (higher versus lower resource development potential). BOEM's production estimates in [Table 5-1](#) are not designed to be forecasts, but rather provide a range of potential production volumes for the different leasing options. In addition, these estimates form the basis of the calculation for the net benefit analysis (as described in [Section 5.3](#)). The resulting net benefits analysis is used as a tool to assist the Secretary in balancing the considerations required by Section 18(a)(3) of the OCS Lands Act.

5.2.8 No New Leasing Exploration and Development Scenarios

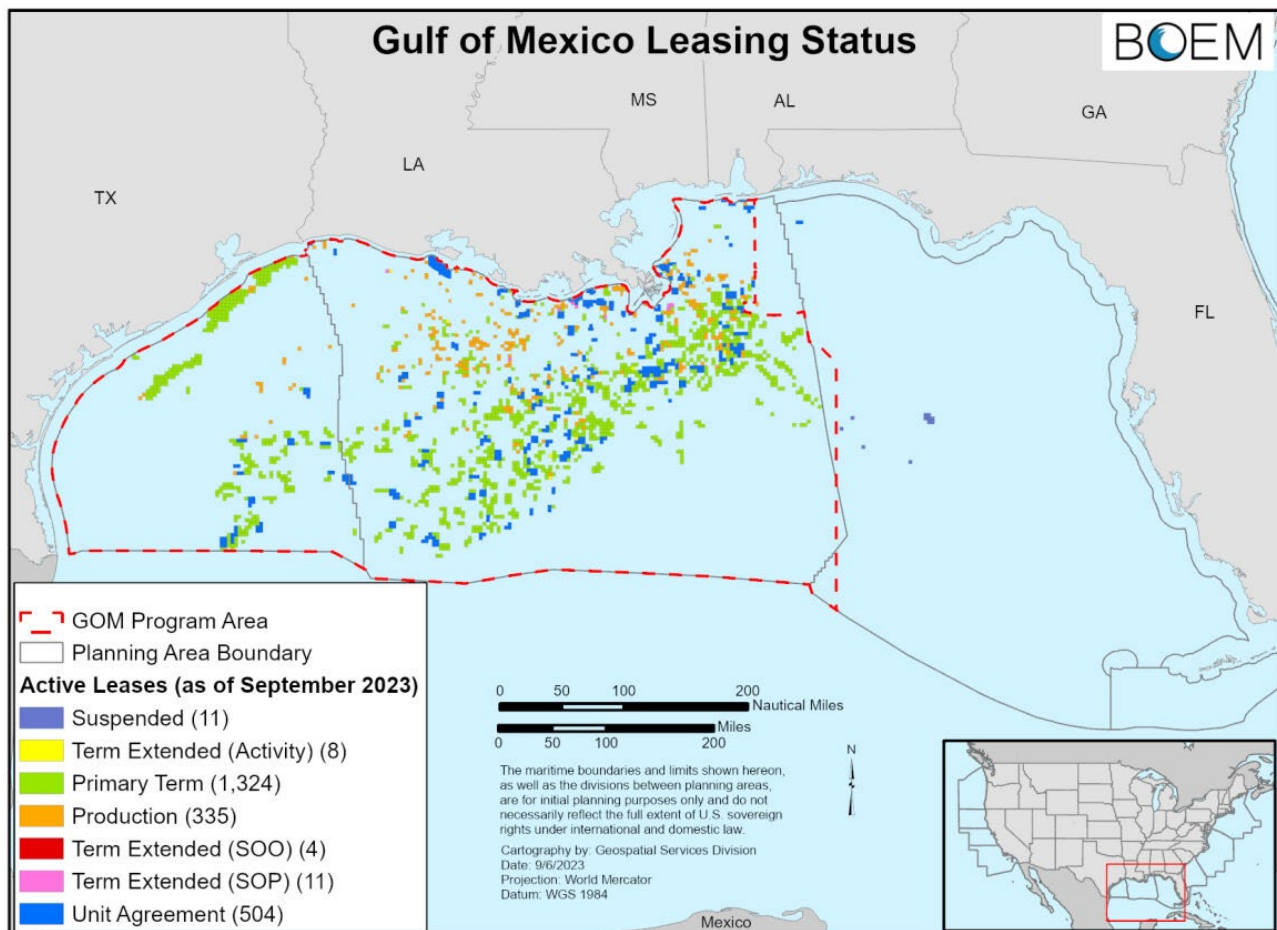
In addition to the potential production analysis resulting from the Second Proposal's lease sale schedule ([Section 5.2.6](#)), BOEM also developed potential production estimates for a case where no lease sales are held and no new leases are awarded in the 2024–2029 Program or any future National OCS Program. The no new leasing (NNL) scenario incorporates the existing state of OCS oil and gas production in the GOM and the impact on future operator decisions, activity, and production in a geologic basin where no future leasing will occur.

In the absence of new OCS oil and gas lease sales, future contributions to oil and gas production will only come from discovered and undiscovered resources on existing OCS leases, some of which may already be producing oil and gas. Approximately 60% of the almost 2,100 active leases in the GOM Program Area are in their primary term ([Figure 5-4](#)) and have varying levels of exploration and subsurface resource characterization, including geophysical data analysis and drilling activities. Production from existing OCS leases currently constitutes 15% of domestic oil production and 2% of domestic natural gas production (BSEE 2022b, EIA 2022a, e, b).

BOEM has identified both discovered and undiscovered oil and gas resources on some of these tracts and expects that some fraction of these resources will be produced in the future, regardless of future lease sales. The primary term leases will generally be relinquished or expire in the next 10 years if the leases do not change to production status (leases that are producing oil or gas in commercial quantities), unit status (leases in an approved unit agreement that may be producing or non-producing), or some other suspension of the lease term occurs (leases that are extended beyond their primary term).

The BOEM NNL scenarios consider future oil and gas production from existing leases, including proved reserves, contingent resources (discovered resources that are not already developed), and undiscovered resources. The NNL scenarios use BOEM-internal information from discovered field characterization and undiscovered prospect analysis to generate estimates of potential production. Similar to the new National OCS Program scenarios, NNL scenarios are prepared using a low, mid-, and high activity case assumption to account for uncertainty in both timing and magnitude of future production.

Figure 5-4: Leases by Status in the Gulf of Mexico



Key: SOO = suspension of operations; SOP = suspension of production.

Note: The regulatory authority to grant suspension is listed in 30 CFR 250.168 to 30 CFR 250.177.

To develop the NNL E&D scenario, BOEM made broad expected-case assumptions of how existing inventories of oil and gas resources and reserves would be produced. Oil and gas reserves are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions. Reserves must further satisfy the following four criteria: they must be discovered, recoverable, commercial, and remaining.

For the NNL scenarios, BOEM assumes that all reserves will still be produced using existing or modeled decline-curve projections. BOEM generates in-house estimates for all reserves on the OCS using proprietary data and provides periodic reporting updates (for example, BOEM (2021d)). For both contingent resources²⁶ and undiscovered resources,²⁷ the BOEM NNL scenario projects some level of reduction in exploration, development, and production activity from what could take place in a leasing environment where predictable future opportunities to acquire additional acreage are available.

In an NNL scenario, some currently undeveloped discoveries could look less profitable to operators as new leasing and exploration would not be available to provide satellite and tie-back opportunities for a large-investment production hub. Conversely, smaller deepwater discoveries become financially challenging to develop in the absence of a large hub production facility. Delays in project sanctioning or development could lead to lease relinquishment, termination, or expiration.

BOEM further assumes that operators could re-evaluate capital investments in exploratory efforts and scrutinize more carefully a final investment decision on new developments in a geologic basin where adding future production from new leases is no longer a possibility. Large deepwater projects often rely on out-year discoveries to fill capacity as the initial field volumes begin to decline, as is seen by the prevalence of new leasing and investments around existing discoveries and infrastructure. For example, the Mississippi Canyon (MC) 807 field in the GOM was discovered in 1989 and the initial production facility was installed in 1996 with a capacity of 100,000 barrels of oil per day (bpd) (BOEM 2021c). The MC 807 field now includes a total of 15 OCS leases, including at least one that was awarded 25 years after the initial discovery (BOEM 2023c). An additional production facility that added 100,000 bpd capacity to the field was installed in 2013 (BOEM 2021c).

The potential production for the low, mid-, and high activity NNL scenario is shown in [Table 5-2](#). The potential production will come from existing leases only and represents a cumulative volume that could be produced over a period exceeding 30 years.

²⁶ Contingent resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations by application of development projects but which are not currently considered to be commercially recoverable due to one or more contingencies.

²⁷ Undiscovered resources are resources postulated, based on geologic knowledge and theory, to exist outside of known fields or accumulations. Included also are resources from undiscovered pools within known fields to the extent that they occur within separate plays.

Table 5-2: Potential Production from the Cumulative NNL Scenario

Program Area	Production Category	Low Activity Level	Mid-Activity Level	High Activity Level
GOM	Oil (Billion Barrels)	5.81	9.56	12.31
	Gas (Tcf)	6.71	11.33	15.56
	BOE (Billion Barrels)	7.01	11.58	15.08

5.3 Net Benefits Analysis

The net benefits analysis examines the domestic benefits to society from the potential oil and natural gas production that could result from the proposed lease sales and the domestic ESCs associated with potential exploration, development, and production activities. The net benefits analysis includes modeling results designed to inform decisionmaking about the size, timing, and location of future OCS lease sales under consideration by providing a quantitative evaluation of economic, social, and environmental factors as required in Section 18(a)(1). Net benefits estimates are provided as a tool to assist the Secretary in balancing the considerations required by the OCS Lands Act in Section 18(a)(3).²⁸ The net benefits analysis is one of many factors that the Secretary considers when deciding whether to include an area in a lease sale in the Final Proposal.

This analysis considers the benefits and costs that could occur from the lease sales being considered under this National OCS Program and does not include any benefits or costs associated with previously leased resources. Production from current leases continues to bring benefits and costs, but that production is not part of the Secretary’s decision and therefore is not included in the net benefits analysis.

As part of the National OCS Program development process, BOEM receives multiple rounds of public comment. BOEM specifically requested comments on certain aspects of its net benefits analysis. Partially in response to comments received, BOEM has updated this PFP net benefits analysis as appropriate with updated information and has expanded the analysis where applicable. One notable addition to this chapter is the inclusion of mid- and down- stream GHG emissions associated with OCS leasing under the Second Proposal (the Lease Sale Option) and the No Sale Option. This expands the GHG analysis in the [Proposed Program](#), which only included upstream

²⁸ As the court stated concerning Section 18(a)(3) in *Watt I*, “[i]t is reasonable to conclude that within the section’s ‘proper balance’ there is some notion of ‘costs’ and ‘benefits,’ recognizing that ‘costs’ in this context must be a term of uncertain content to the extent it is meant to stand for environmental and social costs.” The court upheld this methodology in *Watt II* and in *NRDC*, endorsing in the latter case the Secretary’s interpretation of this section to instruct a cost-benefit analysis that begins with a calculation of each planning area’s NSV. NSV is calculated using the NEV (the market value of expected resources less the cost of production and transportation) minus “social costs” (environmental and social costs). The analysis described in this chapter builds on this concept of the NSV analysis and presents an expanded accounting of costs and benefits to society from oil and natural gas production.

emissions, to allow for a full accounting of potential GHG-related impacts in comparison to BOEM’s estimates of the net benefits for each program area.

BOEM also revised its analysis of the impacts of a net-zero GHG emissions economy on the net benefits analysis. BOEM includes a more quantitative analysis than that in the [Proposed Program](#) concerning what might happen as the U.S. transitions to a net-zero emissions economy. The full analysis is included in Chapter 4 of the [Final FAM paper](#) (BOEM 2023b).

5.3.1 Methodology

This section provides a brief description and overview of BOEM’s net benefits methodology. A detailed discussion of the models and methodology is provided in Chapters 1, 2, and 3 of the [Final FAM paper](#).

The Second Proposal, a National OCS Program with anywhere from 0 to 11 lease sales (0 to 1 in the Cook Inlet Program Area and 0 to 10 in the GOM Program Area), is modeled using three sets of potential lease sale scenarios. For the GOM Program Area, two scenarios are modeled: one with 10 lease sales and another with 5 lease sales. A third scenario involves the one potential lease sale in the Cook Inlet Program Area.

The net benefits analysis is conducted using the levels of potential production discussed in [Section 5.2.6](#). The activity level estimates are designed to provide program area-specific information to the Secretary on the value of OCS resources under three very different market conditions. The ultimate level of leasing and resulting activities and production are dependent on many factors including market and political events, new technologies, weather, geopolitical unrest, economic changes, policy changes, industry interest, and others. Instead of attempting to forecast specific activity levels or production, this PFP includes an analysis of the net benefits at three different activity levels. The activity levels do not represent strict upper or lower bounds of potential activity but serve the purpose of providing some general range of outcomes to allow for quantitative analysis.

The net benefits modeling conducted for this PFP assumes that leasing begins in 2024, but a different start year would not meaningfully impact the analysis and conclusions. All values in the net benefits analysis are discounted using a social discount rate of 3%, consistent with guidance from the U.S. Office of Management and Budget Circular A-4 on the social rate of time preference.²⁹

²⁹ BOEM recognizes there are ongoing efforts to update the discount rate downward, both for Circular A-4 and to calculate the social cost of GHG emissions specifically. However, BOEM will continue to use the official discount rate of 3% until such time as those efforts are finalized by the U.S. Office of Management and Budget and the Interagency Working Group on the Social Cost of Greenhouse Gases.

5.3.1.1 Energy Market Substitution: Lease Sale Option vs No Sale Option

The decision of whether to include a specific area in a National OCS Program does not result in one-for-one change to U.S. energy demand. Instead, the decision to have leasing in an area affects prices, which is factored through energy markets until prices and supply reach equilibrium. For example, adding new OCS oil and gas production would not be met with an equivalent increase in oil and gas demand; rather, this new OCS production would cause a slight decline in prices, which would be met with some increased consumption, but also a reduction in other (likely onshore or imported) oil and gas production resulting from the now-lower prices.

Similarly, a reduction in leasing and production activity in the GOM would not be met with an equivalent reduction in oil consumption. Instead, absent additional lease sales, the resulting decline in production would lead to a slight rise in prices and a corresponding decline in quantity demanded. However, most of the demand that would otherwise be met by the forgone OCS oil and natural gas would be met by increased supplies of substitute sources of energy. Therefore, the net benefits analysis is adjusted to account for the net benefits of these substitute sources. BOEM first conducts the net benefits analysis on the costs and benefits that could stem from a National OCS Program if exploration and production occurred (described in [Section 5.2.6](#)), referred to as the Lease Sale Option, but then also calculates these similar impact categories on the energy substitutes, or the No Sale Option.

BOEM uses its Market Simulation model (*MarketSim*) to estimate the substitutions for OCS oil and gas production that would occur in the No Sale Option in each of the program areas. *MarketSim* calculates the additional imports, onshore production, fuel switching, and reduced consumption of energy that would occur, substituting for the forgone production in each program area, as well as the associated change in net domestic consumer surplus, should the No Sale Option be selected.

Recent updates to *MarketSim*, as described in [Consumer Surplus and Energy Substitutes for OCS Oil and Gas Production: The 2023 Revised Market Simulation Model](#) (Industrial Economics Inc. 2023a), have been made in response to public comments and ongoing efforts to improve the model. *MarketSim*'s estimations of energy market responses to new OCS supply are used as inputs for each of the four components of the net benefits analysis. These responses are conveyed via the substitution rates calculated by *MarketSim*.

BOEM updated *MarketSim* with a current baseline adapted from a special run of the EIA's National Energy Modeling System and their 2023 AEO. The results presented in [Section 5.3.2](#) assume energy consumption patterns as projected by EIA and include impacts from modeled IRA provisions.³⁰ As noted in [Chapter 1](#), meeting U.S. climate goals will require significant changes to

³⁰ Due to the complexities of the IRA, not all provisions were modeled in the AEO given uncertainty over the structure of implementation details. EIA has additional information on the IRA provisions in the AEO Appendix.

national and worldwide economies beyond those projected by the 2023 AEO. A sensitivity analysis on the impacts of net-zero emissions pathways is summarized in [Section 5.3.2.5](#), with further detailed discussion in Chapter 4 of the [Final EAM paper](#).

The total amount of estimated substitution is directly related to the volume of potential oil and natural gas production that would be forgone under the No Sale Option. [Table 5-3](#) shows how the forgone OCS oil and natural gas production would be replaced by other energy sources in the mid-activity level for the GOM and Cook Inlet program areas. Chapter 4 of the [Final EAM paper](#) (BOEM 2023b) describes how the ratio of potential OCS oil to natural gas production for each program area impacts the energy market substitutions.

Table 5-3: No Sale Option: Estimated Substitutions of Other Energy Sources (Mid-Activity Level)



Energy Substitution Category	GOM Program Area*	Cook Inlet Program Area
Onshore Production	23%	18%
Onshore Oil	12%	13%
Onshore Natural Gas	11%	5%
Imports	58%	66%
Oil Imports	57%	65%
Natural Gas Imports	1%	**
Production from Existing State/Federal Offshore Leases	**	**
Coal	**	**
Electricity from sources other than Coal, Oil, & Natural Gas	1%	1%
Other Energy Sources***	7%	8%
Reduced Demand (i.e., Consumption)	10%	7%

Notes: The percentages in this table represent the percent of forgone BOE of production that is replaced by a specific energy source (or in the case of reduced demand/consumption, not replaced) if the No Sale Option is selected. These substitution rates are for the combined production of oil and natural gas in each area. Numbers for a specific area could differ slightly given the relative amount and timing of oil or natural gas production in the activity scenario. See the [Final EAM paper](#) for the substitution rates specific to oil and natural gas.

Key: *= These substitution rates are illustrative for the GOM Program Area for both the 5-sale and 10-sale scenarios. While there are slight differences in substitution rates between the two scenarios, they are no more than 0.01% in any category.

**= These substitution rates are less than 0.5%.

***= The 'Other Energy Sources' substitution category includes biofuels, other natural gas, and other oil. Other oil is by far the largest component and is comprised of refinery processing gain, product stock withdrawal, natural gas plant liquids, and liquids from coal. Roughly 80% of the other oil category are natural gas plant liquids.

BOEM's *MarketSim* model provides estimates under current demand and consumption patterns and in the absence of new OCS production. Under the No Sale scenario, approximately 10% and 7% of the forgone OCS production for the GOM and Cook Inlet program areas, respectively, would not be replaced by other energy sources but instead would represent reduced demand.

For the GOM Program Area, approximately 32% of the forgone production would be met by domestic substitutes (23% with increased onshore oil and natural gas production, less than

1% with fuel switching to coal, 7% other sources [e.g., oil, natural gas, and biofuels not captured elsewhere], 1% electricity, and less than 1% from increased activity on existing offshore leases). Approximately 58% of the forgone production would be met with additional oil and natural gas imports.³¹

5.3.1.2 Net Benefits Components

For each program area and scenario being analyzed, BOEM’s net benefits analysis is conducted for four individual components, depicted in [Figure 5-5](#), each with its own intermediate calculations. These components are individually described in [Section 5.3.2](#). Note that in the net benefits analysis, the NEV, ESCs, and social cost of GHG emissions are calculated for upstream activity. Consideration of mid- and down-stream social cost of greenhouse gases (SC-GHGs) are included separately in [Section 5.3.3](#).

Figure 5-5: Net Benefits Analysis Calculation for Lease Sale Option and No Sale Option



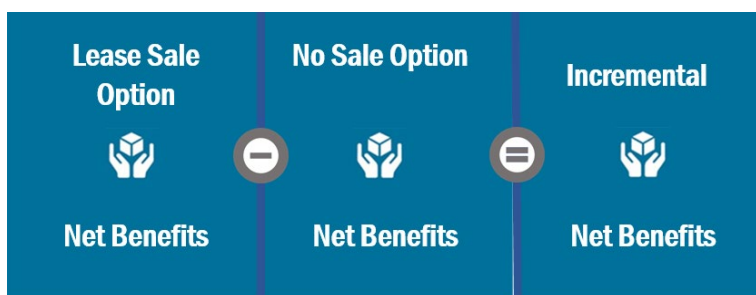
BOEM’s net benefits analysis first monetizes impacts associated with a Lease Sale Option scenario and calculates the associated net benefits. BOEM then considers the impacts associated with the energy substitutes that would replace the new OCS production under the No Sale Option and calculates the corresponding No Sale Option net benefits. Note that the change in consumer surplus net of producer transfers is attributed fully to the leasing scenario and thus does not have estimates under the No Sale Option. BOEM then estimates the incremental net benefits by subtracting the No Sale Option net benefits from the Lease Sale Option net benefits as summarized in [Figure 5-6](#). The incremental net benefits represent the costs and benefits of the Lease Sale Option adjusted for the costs and benefits from substitute energy sources under the No Sale Option.

In all instances throughout this chapter, estimates of No Sale Option values represent the value of the substitute energy sources that replace the associated quantity of forgone production, i.e., it does not measure impacts against a base case independent of potential OCS lease sales. Because BOEM models a different production for 10 forgone sales and 5 forgone sales in the mid- and high

³¹ Independent rounding can result in numbers not summing to 100%.

activity levels, the “no sale” estimates for each number of sales—like the estimates for the “sale” scenario—are predictably not identical.

Figure 5-6: Traditional Incremental Net Benefits Analysis Calculations



5.3.2 Net Benefits Results

This section describes the results for each of the four components of net benefits for the Lease Sale Option and the No Sale Option.

5.3.2.1 Net Economic Value

The first component of the analysis is the NEV and is the value to society derived from developing hydrocarbon resources on the OCS. Consistent with standard practices in benefit-cost analyses, the NEV equals the discounted gross revenues from the produced oil and natural gas minus the private costs required to realize the economic value of the resources.

The NEV estimates gross revenue by multiplying the potential oil and natural gas production by their respective prices. Given the uncertainty and volatility in prices, the analysis of the Second Proposal evaluates the production and activity in each of the three activity levels with the corresponding price levels as shown in [Table 5-4](#). These price levels are not meant to imply or represent price expectations, forecasts, or even upper and lower bounds of possible prices. The price levels are simply meant to provide a representative range of possible oil prices, which could occur over the life of this National OCS Program, to allow for the quantitative analysis of net benefits. The revenue is discounted back to present value using a 3% discount rate.

Table 5-4: Assumed Prices for each Activity Level



Low Activity Level	Mid-Activity Level	High Activity Level
\$40/barrel of oil \$2.14/mcf of gas	\$100/barrel of oil \$5.34/mcf of gas	\$160/barrel of oil \$8.54/mcf of gas

Key: mcf = thousand cubic feet

The costs subtracted from that gross revenue include the discounted costs of exploring for, developing, producing, and transporting oil and natural gas to the market. A portion of the NEV goes to the U.S. Government as lessor and steward for the public in the form of bonus bids, rents,

royalties, and taxes. The lessees, as private firms, retain the remainder of NEV as economic profits that could be distributed to shareholders.³²

The NEV analysis treats the private expenditures on exploration, development, production, and transportation as costs. In a broader macroeconomic context, this spending is sometimes treated as a benefit. For example, use of labor and capital to search for and extract oil and natural gas resources contributes to the national income. Also, this spending generates regional economic impacts and multiplier effects arising from the creation of jobs, investment in infrastructure, and other activities, which are discussed in more detail in [Chapter 8](#).

Lease Sale Option: Net Economic Value Results

[Table 5-5](#) shows the estimate of NEV of the potential production in each program area. The GOM Program Area has a positive NEV for each activity level. The Cook Inlet Program Area has a negative NEV in the low activity level, due to the fact that the only potential production in the Cook Inlet Program Area Low Activity Scenario is from a natural gas reservoir. For the NEV modeling, BOEM uses a single national price for natural gas. However, Alaskan natural gas can receive locally higher prices that could make this discovery economic.

Table 5-5: Lease Sale Option: Net Economic Value (\$ Billions)



Program Area Scenario	Low Activity Level	Mid-Activity Level	High Activity Level
Cook Inlet	(0.69)	2.29	5.33
GOM (5-sale scenario)	0.10	50.84	163.33
GOM (10-sale scenario)	0.10	69.88	324.08

No Sale Option: Net Economic Value Results

Rather than attempt to calculate the NEV from the increased production associated with onshore natural gas, oil, and other domestic production that would occur in the absence of OCS lease sales, BOEM instead employs a simplifying assumption that the NEV of these domestic energy substitutes is equivalent to that of OCS production on a per-BOE basis.³³ All domestic substitutes would provide NEV under the No Sale Option, and only the Lease Sale Option NEV over and above this amount represents an incremental benefit to the Nation. This estimate of No Sale Option NEV is based on *MarketSim* substitution rates presented in [Table 5-3](#). See the [Final](#)

³² The [Final EAM paper](#) discusses the adjustment factor applied to the NEV to account for (remove) profits going to foreign shareholders (BOEM 2023b). This adjustment to NEV means that what remains, and what is considered in this PFP analysis, is an estimate of the domestic value only.

³³ BOEM realizes this is likely an overestimate of the NEV of these sources because they are replacements for OCS production and only extracted because of non-price decisionmaking (i.e., the decision not to offer OCS acreage is a policy decision not directly tied to profitability), and thus would be less valuable than production that would occur instead if not for the non-market constraints.

[EAM paper](#) for more detail on the NEV calculation. The No Sale Option NEV for each program area is shown in [Table 5-6](#).

Table 5-6: No Sale Option: Net Economic Value (\$ Billions)



Program Area Scenario	Low Activity Level	Mid-Activity Level	High Activity Level
Cook Inlet	*	0.66	1.85
GOM (5-sale scenario)	0.04	17.27	55.19
GOM (10-sale scenario)	0.04	23.74	108.26

Key: *= The Cook Inlet Lease Sale Option Low Activity level has a negative NEV. BOEM's methodology to calculate No Sale Option NEV, also results in a negative No Sale Option NEV for substitutes. However, BOEM assumes the No Sale Option NEV is zero and the resulting incremental NEV is equivalent to the Lease Sale Option NEV.

5.3.2.2 Environmental and Social Costs

The second component of the net benefits calculation is the ESCs, exclusive of the SC-GHGs, which are evaluated separately. BOEM uses the Offshore Environmental Cost Model (OECM) to calculate the ESCs associated with OCS oil and gas activity, as well as costs of energy substitutes realized domestically. The ESCs in this net benefits analysis consider those costs to bring the oil and gas to shore, but do not address the impacts associated with final consumption. The OECM was initially developed in 2001 and has undergone several successive revisions. A discussion of recent revisions that affect this analysis are discussed in the [Final EAM paper](#) (BOEM 2023b). More detailed descriptions of the models are included in the OECM documentation [Forecasting Environmental and Social Externalities Associated with Outer Continental Shelf \(OCS\) Oil and Gas Development – Volume 1: The 2023 Revised Offshore Environmental Cost Model \(OECM\)](#) (Industrial Economics Inc. 2023b) and [Volume 2: Supplemental Information to the 2018 Revised Offshore Environmental Cost Model \(OECM\)](#) (Industrial Economics Inc. 2018).

The OECM is designed to model the impact of typical activities associated with OCS production and oil spills (other than possible catastrophic oil spills, which are analyzed separately) occurring on the OCS. The model uses economic inputs, environmental resource estimates, and E&D scenarios as the basis for calculations. Costs are calculated for six categories: (1) recreation; (2) air quality; (3) property values; (4) subsistence harvests; (5) commercial fishing; and (6) ecological impacts. In this section, regarding air quality, only the impacts associated with criteria pollutants are considered. For both the Lease Sale Option and No Sale Option environmental and social cost estimates, the OECM considers the dispersion of offshore and onshore emissions of criteria pollutants to estimate the magnitude of potential effects on air quality and resulting monetizable effects, including respiratory and other human health effects. GHG emissions impacts are considered separately in the net benefits analysis. Further, outside of the net benefits analysis, BOEM considers the GHG impacts from mid- and down-stream activities in [Section 5.3.2.3](#).

While the model captures a wide range of ESCs, it is not designed to represent impacts on unique resources. Impacts on unique resources, such as endangered species, are discussed in the [Final Programmatic EIS](#). Further, impacts on unique resources could be subject to mitigation measures at later lease sale stages. The OEMCM and resulting cost estimate do not include nor monetize other conceivable effects such as impacts from onshore infrastructure, non-use values, equity impacts, national energy security, among others. Additional information on unique resources and OEMCM limitations, including a discussion of non-market values, is available in the [Final EAM paper](#) (BOEM 2023b).

The OEMCM is also not designed to represent impacts from catastrophic oil spill events. The OEMCM only considers a range of oil spills up to 100,000 barrels. Historically, the number of catastrophic spills has been low, and they have occurred under a wide range of conditions with a broad range of impacts. The lack of robust data and the unpredictable nature of catastrophic oil spills, including the many factors that determine their severity, make efforts to quantify their costs much more uncertain than those to quantify other measures considered in the net benefits analysis. In addition to the difficulty in calculating the cost of the potential impacts of a catastrophic spill, there are similar difficulties in calculating the risk. For these reasons, the risks and impacts of catastrophic oil spills are not considered in the net benefits analysis but are discussed in the [Final EAM paper](#) (BOEM 2023b) and the [Final Programmatic EIS](#) (BOEM 2023a). Additional information is also available in the [Economic Inventory of Environmental and Social Resources Potentially Impacted by a Catastrophic Discharge Event within OCS Regions](#) (BOEM 2014a) hereafter referred to as the Economic Inventory Report.

The most recent version of the OEMCM reflects improvements and refinements relative to the version used for the analysis of the Draft Proposal. These changes, which affect the analysis of both the Lease Sale Option and the No Sale Option, are discussed briefly in the [Final EAM paper](#) (BOEM 2023b) and the OEMCM documentation (Industrial Economics Inc. 2018, 2023b). All the assumptions in the model are based on historical information and do not account for future improvements in technology and decreasing rates of emissions and oil spills for both OCS production as well as substitute sources of energy.

Lease Sale Option: Environmental and Social Costs Results

[Table 5-7](#) shows the monetized ESCs, exclusive of SC-GHGs, associated with the potential activity and production volumes for each activity level. The [Final Programmatic EIS](#) also includes a comprehensive review of environmental impacts (BOEM 2023a).

Table 5-7: Lease Sale Option: Environmental and Social Costs (\$ Billions)

Program Area Scenario	Low Activity Level	Mid-Activity Level	High Activity Level
Cook Inlet	*	0.01	0.01
GOM (5-sale scenario)	0.11	0.42	0.63
GOM (10-sale scenario)	0.11	0.56	1.24

Key: * = This area has ESCs between -\$5 million and \$5 million, rounding to \$0.00 billion.

No Sale Option: Environmental and Social Costs

[Table 5-8](#) shows the ESCs, exclusive of SC-GHGs, associated with the energy market substitutions described in [Section 5.3.1.1](#), which use the EIA baseline and continuation of current laws and policies. The OEMC calculates certain upstream ESCs of specific energy substitutes (e.g., air emissions from increased onshore production, additional oil spill risk from increased numbers of tankers). Monetizable effects from substitute oil imports are also included in the No Sale Option results, once they enter U.S. waters. BOEM's model results indicate that emissions from the alternative energy sources that could replace OCS production are often closer to affected populations and thus result in larger costs on human health and environment than air emissions generated by OCS production often many miles offshore.

Table 5-8: No Sale Option: Environmental and Social Costs (\$ Billions)

Program Area Scenario	Low Activity Level	Mid-Activity Level	High Activity Level
Cook Inlet	0.03	0.43	0.47
GOM (5-sale scenario)	0.30	1.19	1.81
GOM (10-sale scenario)	0.30	1.59	3.56

The OEMC calculates the domestic ESCs from the No Sale Option for each program area based on the areas in which those costs are expected to occur. For example, if the Cook Inlet Program Area were to have significant oil and natural gas production, substitute energy sources would be reduced by the approximate percentages shown in [Table 5-3](#). However, the environmental and social cost impacts would be experienced in other places (e.g., port cities receiving imports and communities near onshore natural gas production). Costs are calculated in the locations they are expected to occur, but for [Table 5-8](#), they appear as Cook Inlet Program Area No Sale Option costs. Since the net benefits analysis is a national analysis, this approach allows for a transparent assessment of the national tradeoffs in decisions regarding timing, size, and location of lease sales.³⁴ Additional information on the No Sale Option costs locations is provided in [Chapter 9](#).

³⁴ This approach allows the Secretary to see, in a single table, the effect on net benefits from a decision to offer lease sales for each program area. It was upheld by the D.C. Circuit Court in *Center for Sustainable Economy v. Jewell* 779 F.3d 588 (D.C. Cir. 2015). The court noted that the national perspective of the net benefits analysis and distribution of the No Sale Option costs to the program area in the absence of leasing are both reasonable and consistent with Section 18(a) of the OCS Lands Act.

The OECM does not assign any ESCs to other potential substitutes such as upstream renewables, biofuels, or nuclear energy. Examples of these costs include emissions from construction and operation, wildlife impacts, and visual impacts on property values. Costs from these substitutes are not included in the model as the rate of substitution for these categories is small. However, as the U.S. progresses towards net-zero emissions pathways and consumes significantly more renewable or nuclear energy, the substitution rates could increase and would have a more meaningful impact on the results. Additional information on the OECM’s estimation of ESCs is included in the [Final FAM paper](#) as well as the OECM model documentation (Industrial Economics Inc. 2018, 2023b).

5.3.2.3 Social Cost of Upstream Greenhouse Gas Emissions

The third component of the analysis is the upstream GHG emissions. In response to direction in E.O.s 13990 and 14008, BOEM expanded its net benefits analysis to include the social cost of the upstream GHG emissions. Consistent with the calculation of ESCs, the net benefits analysis only considers the upstream GHG emissions (i.e., those associated with exploration and production). Supplemental analysis providing the social cost estimates of mid- and down- stream GHG emissions is provided in [Section 5.3.3](#).

BOEM calculates the emissions of the three main GHGs (CO₂, methane [CH₄], and nitrous oxide [N₂O]) using the OECM and the same forecast of exploration and development activities used throughout the net benefits analysis. After estimating upstream GHG emissions for a particular program area, BOEM monetizes the social costs of those GHG emissions. BOEM uses the February 2021 Interagency Working Group’s (IWG)³⁵ per-unit SC-GHG estimates to monetize the costs of those GHG emissions (Interagency Working Group 2021).

For the net benefits analysis, BOEM used the 3% discount rate and average level of statistical damages to estimate the social cost of GHG emissions. The social cost estimates increase over time. For emissions occurring in 2024, the social cost estimates are \$61.89 per metric ton of CO₂, \$1,870 per metric ton of CH₄, and \$22,534 per metric ton of N₂O (in 2022 dollars) (Interagency Working Group 2021). More detailed discussion of the IWG’s estimates of SC-GHG, the assumption of discount rates and statistical levels of damages, considerations for uncertainty, and BOEM’s application of them can be found in Chapter 2 of the [Final FAM paper](#).

Lease Sale Option: Social Cost of Upstream Greenhouse Gas Emissions

[Table 5-9](#) shows the upstream costs associated with the potential production.

³⁵ Section 5 of E.O. 13990 emphasized how important it is for Federal agencies to “capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account” and established an Interagency Working Group on the Social Cost of Greenhouse Gases (the “IWG”). In February 2021, the IWG published *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide; Interim Estimates* under E.O. 13990 (Interagency Working Group 2021).

Table 5-9: Lease Sale Option: Social Cost of Upstream GHG Emissions (\$ Billions)

Program Area Scenario	Low Activity Level	Mid-Activity Level	High Activity Level
Cook Inlet	0.03	0.16	0.19
GOM (5-sale scenario)	0.14	0.48	0.81
GOM (10-sale scenario)	0.14	0.66	1.58

The results are consistent with the analysis discussed in [Chapter 1.2.3.4](#), that OCS oil production has one of the lowest GHG intensities³⁶ compared to domestic onshore and other global producers of oil.

No Sale Option: Social Cost of Upstream Greenhouse Gas Emissions

For the No Sale Option, BOEM models the upstream emissions from the energy substitutes. While most of BOEM's net benefits analysis is conducted to only consider domestic impacts, BOEM analyzes the GHG emissions from international production of substitute energy sources that are imported, given the global nature of GHG emissions. BOEM includes both emissions from production of imported oil and natural gas under the No Sale Option as well as the GHG emissions from transport of that oil and natural gas by tanker to the U.S. These emissions are derived using BOEM's substitutions estimates. [Table 5-10](#) shows the model results for each program area and scenario for upstream GHG emissions.

The increase in social cost of upstream GHG emissions associated with the No Sale Option represents the greater per-barrel GHG emissions that result from substitute sources other than OCS production. The fossil fuel energy sources that substitute for OCS oil and gas typically have higher GHG intensities than those of OCS production. Imports result in additional emissions during transport to the U.S. and because, in many cases, there are less restrictive emissions standards in the producing countries.

Table 5-10: No Sale Option: Social Costs of Upstream GHG Emissions (\$ Billions)

Program Area Scenario	Low Activity Level	Mid-Activity Level	High Activity Level
Cook Inlet	0.04	0.50	0.54
GOM (5-sale scenario)	1.58	6.64	10.15
GOM (10-sale scenario)	1.58	8.85	20.16

The GHG emissions associated with the No Sale Option would vary greatly if there were different assumptions regarding future energy substitutions and future energy demand under net-zero goals and technology advancements. In such a future, the social costs of GHG emissions under the No Sale Option would similarly shift.

³⁶ GHG intensity is a volume-weighted ratio of GHGs emitted while producing a given unit of oil.

5.3.2.4 Consumer Surplus Net Producer Transfer

The fourth component of the net benefits analysis is an estimate of the change in domestic consumer surplus net of producer transfer. This is the shift in consumer welfare that results from a change in energy prices minus the loss to domestic energy producers from the same price change. If energy prices decline, U.S. consumers receive a benefit from paying those lower prices, measured as a gain in consumer surplus, whereas U.S. producers incur losses from receiving lower prices on existing production, measured as a loss in producer surplus (i.e., reduced profits).³⁷

New OCS oil and natural gas production increases the supply of oil and natural gas, which lowers the price consumers pay and producers receive. The National OCS Program analysis focuses on the gains and losses within the U.S. only, and thus only the domestic portion of this welfare change is included in the net benefits analysis.³⁸ The National OCS Program leads to a reduction in the price of all consumed oil and natural gas, which benefits consumers. While consumers benefit from lower prices on all oil and natural gas as a result of the National OCS Program, a portion of the gain in consumer surplus is offset by a loss in domestic producer surplus.³⁹

Lease Sale Option: Domestic Consumer Surplus Net of Producer Transfer Results

To estimate the change in consumer surplus net of producer transfer, BOEM uses *MarketSim* to calculate the price changes in energy markets resulting from new OCS leasing and associated production. Given the potential production estimates in the GOM Program Area 5-Sale Scenario, BOEM estimates that the average annual price decrease over the years of production is \$0.26 per barrel of oil and \$0.01 per thousand cubic feet (mcf) of natural gas in 2022 dollars.⁴⁰ The estimates for these welfare changes resulting from the National OCS Program are provided in [Table 5-11](#).

³⁷ Consumer surplus is the difference between the price charged for a service or product and the highest price consumers are willing to pay for a service or product. Similarly, producer surplus is the difference between the actual price producers receive and the minimum price they are willing to accept (their marginal cost).

³⁸ BOEM's consideration of GHG emissions does go beyond domestic impacts as BOEM does consider the upstream GHG emissions from imported oil under the energy substitutes and also uses the full SC-GHG which includes global impacts. However, in the other components of the analysis, the impacts are restricted to domestic impacts.

³⁹ Now that the U.S. is expected to be a net exporter of petroleum products and crude oil (when combined) over the productive life of this National OCS Program, the lower prices caused by National OCS Program-related additions to oil supply should result in (net) lower profits on existing production for domestic companies exporting oil. This analysis is confined to estimates of consumer surplus net of producer transfer resulting from domestic consumption.

⁴⁰ Under the potential production associated with the Cook Inlet mid-activity level, BOEM estimates the price decrease for oil is \$0.02 per barrel and less than \$0.01 per mcf of natural gas.

**Table 5-11: Domestic Consumer Surplus Net of Producer Transfers
by Program Area (\$ billions)**



Program Area Scenario	Low Activity Level	Mid-Activity Level	High Activity Level
Cook Inlet	0.02	0.08	0.10
GOM (5-sale scenario)	0.37	1.47	2.69
GOM (10-sale scenario)	0.37	1.97	5.55

No Sale Option: Domestic Consumer Surplus Net of Producer Transfer Results

Estimates of incremental consumer surplus net of producer transfer attributable to leasing exist entirely within the modeling of the Lease Sale Option scenario. Thus, unlike the other three net benefits components, there are no adjustments made under a No Sale Option scenario.

5.3.2.5 Incremental Net Benefits Analysis

Lease Sale Option: Net Benefits

To calculate the net benefits associated with the lease sales in the Lease Sale Option, BOEM takes the NEV, subtracts the ESCs and upstream GHG emissions, and then adds the change in domestic consumer surplus net of producer transfers. [Table 5-12](#) shows the Lease Sale Option net benefits which shows the estimated impacts of the Lease Sale Option, before considering the impacts associated with the energy market substitutions under the No Sale Option. These benefits are conditional on industry undertaking the leasing and development in each of these program areas and on the assumption that the potential production estimates are realized. In addition to the net benefits monetized here, there would be other impacts which are not monetized in this analysis (e.g., impacts from onshore infrastructure development). Other non-monetized components of this analysis are discussed in Chapter 2 of the [Final FAM paper](#).

Table 5-12: Lease Sale Option: Net Benefits (\$ billions)

Program Area	Net Benefit Component	Low Activity Level	Mid-Activity Level	High Activity Level
Cook Inlet	NEV	(0.69)	2.29	5.33
	Environmental and Social Costs	0.00	0.01	0.01
	Social Cost of Upstream GHG	0.03	0.16	0.19
	Domestic Consumer Surplus Net of Producer Transfer	0.02	0.08	0.10
	Net Benefits	(0.71)	2.20	5.22
GOM (5-sale scenario)	NEV	0.10	50.84	163.33
	Environmental and Social Costs	0.11	0.42	0.63
	Social Cost of Upstream GHG	0.14	0.48	0.81
	Domestic Consumer Surplus Net of Producer Transfer	0.37	1.47	2.69
	Net Benefits	0.23	51.42	164.58
GOM (10-sale scenario)	NEV	0.10	69.88	324.08
	Environmental and Social Costs	0.11	0.56	1.24
	Social Cost of Upstream GHG	0.14	0.66	1.58
	Domestic Consumer Surplus Net of Producer Transfer	0.37	1.97	5.55
	Net Benefits	0.23	70.63	326.80

Key: * = These areas have ESCs between -\$5 million and \$5 million, rounding to \$0.00 billion.

No Sale Option: Net Benefits

[Table 5-13](#) shows the estimates of each of the net benefits components for the energy market substitutions estimated under the No Sale Option.

Incremental: Net Benefits

The incremental net benefits represent the costs and benefits of OCS leasing minus those that would be experienced in the absence of that leasing. This analysis assumes that current laws, policies and trends will continue and does not account for any major shift in energy consumption patterns beyond what is reflected in the 2023 AEO. Absent major policy or technological changes, the decision of whether or not to lease on the OCS is not expected to play a major role in changing energy consumption patterns. However, as the U.S. takes additional steps to meet its climate goals, major new changes could greatly alter demand for oil and gas. In such a scenario, substitution rates could be substantially different from those reflected in this analysis, and any forgone OCS oil and gas production would likely not be replaced to the same extent assumed in this analysis.

Table 5-13: No Sale Option: Net Benefits (\$ billions)

Program Area	Net Benefit Component	Low Activity Level	Mid-Activity Level	High Activity Level
Cook Inlet	NEV	*	0.66	1.85
	Environmental and Social Costs	0.03	0.43	0.47
	Social Cost of Upstream GHG	0.04	0.50	0.54
	Net Benefits	(0.07)	(0.27)	0.84
GOM (5-sale scenario)	NEV	0.04	17.27	55.19
	Environmental and Social Costs	0.30	1.19	1.81
	Social Cost of Upstream GHG	1.58	6.64	10.15
	Net Benefits	(1.84)	9.45	43.23
GOM (10-sale scenario)	NEV	0.04	23.74	108.26
	Environmental and Social Costs	0.30	1.59	3.56
	Social Cost of Upstream GHG	1.58	8.85	20.16
	Net Benefits	(1.84)	13.30	84.53

Notes: This table does not contain a Domestic Consumer Surplus Net of Producer Transfer row. This is because the incremental consumer surplus net of producer transfer attributable to leasing is modeled entirely within of the Lease Sale Option scenario.

Key: *= Cook Inlet has a negative NEV in the low activity level. Due to the simplifying assumption BOEM makes when calculating the No Sale Option NEV, this would result in a negative No Sale Option NEV for substitutes. To err on the side of conservatism, rather than include a negative estimate of No Sale Option NEV for Cook Inlet at the low activity level, BOEM made it zero such that the incremental value of NEV for the Cook Inlet equals that of the -\$0.69 billion NEV in the Lease Sale Option low activity level.

[Table 5-14](#) shows the incremental net benefits by component. This is the Lease Sale Option component ([Table 5-12](#)) less the No Sale Option component ([Table 5-13](#)).

Potential production and the associated incremental net benefits are shown together in [Figure 5-7](#). The net benefits results are calculated based on the range of lease sales included in the Second Proposal and do not consider any Subarea Options or future reductions in leasing areas, such as those that might be considered as part of a targeted leasing approach. The potential impacts of removing any of the program areas depends on the extent to which the removed area represents a large overlap with the oil and gas resource base. Should enough of the resource base be removed such that the program area could no longer receive significant interest, the resulting net benefits would be similar to the No Sale Option. The effect of other more nuanced reductions would be dependent on the level of remaining industry interest.

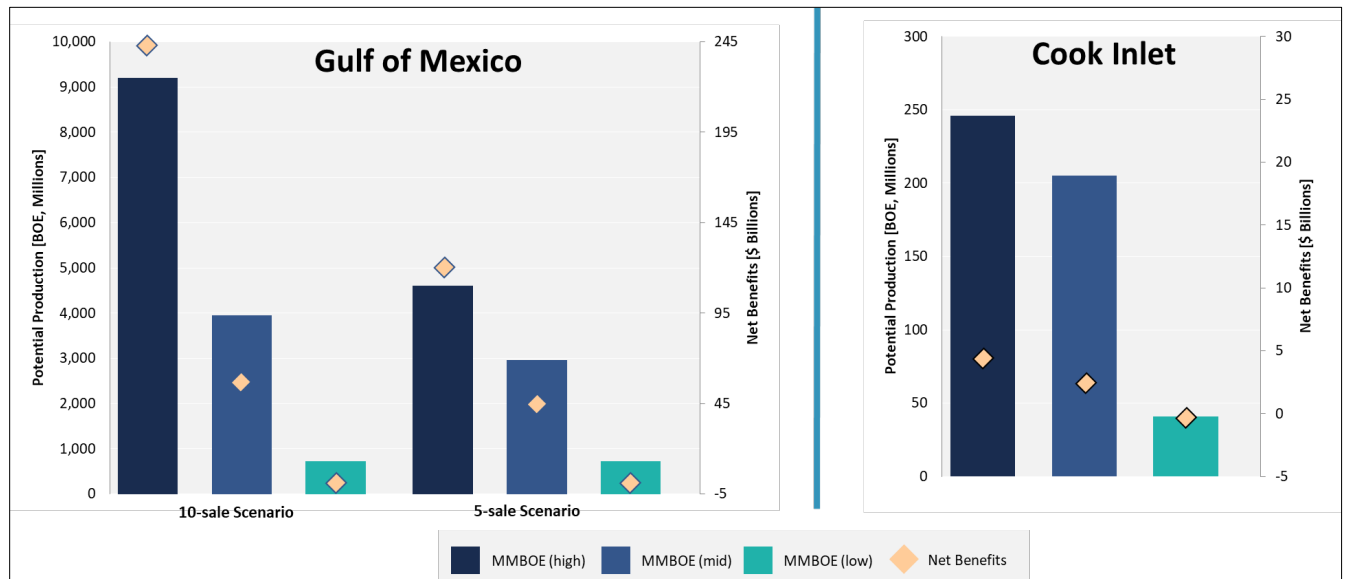
Table 5-14: Incremental Net Benefits by Program Area (\$ Billions)



Program Area	Net Benefit Component	Low Activity Level	Mid-Activity Level	High Activity Level
Cook Inlet	NEV	(0.69)	1.63	3.48
	Environmental and Social Costs	(0.03)	(0.42)	(0.46)
	Social Cost of Upstream GHG	*	(0.34)	(0.34)
	Domestic Consumer Surplus Net Producer Transfer	0.02	0.08	0.10
	Net Benefits	(0.64)	2.48	4.38
GOM (5-sale scenario)	NEV	0.07	33.57	108.14
	Environmental and Social Costs	(0.19)	(0.77)	(1.17)
	Social Cost of Upstream GHG	(1.44)	(6.16)	(9.35)
	Domestic Consumer Surplus Net Producer Transfer	0.37	1.47	2.69
	Net Benefits	2.07	41.98	121.35
GOM (10-sale scenario)	NEV	0.07	46.15	215.82
	Environmental and Social Costs	(0.19)	(1.02)	(2.32)
	Social Cost of Upstream GHG	(1.44)	(8.19)	(18.58)
	Domestic Consumer Surplus Net Producer Transfer	0.37	1.97	5.55
	Net Benefits	2.07	57.34	242.27

Key: * = These areas have costs between -\$5 million and \$5 million, rounding to \$0.00 billion.

Figure 5-7: Second Proposal: Potential Production and Incremental Net Benefits



Notes: The Cook Inlet Program Area has slightly negative estimates of NEV and net benefits in the low activity level. Please also note the smaller scale of the axes for the Cook Inlet Program Area relative to the GOM Program Area side of the figure.

Uncertainties in the Net Benefits Analysis

BOEM's net benefits analysis is subject to uncertainty regarding several key variables, and changes in inputs will lead to shifts in estimates. [Chapter 10](#) provides general information on some of the uncertainties surrounding oil and gas production and consumption, all of which could affect the production and net benefits that are realized because of this National OCS Program. BOEM goes into more details of how uncertainty can impact the net benefits analysis in Chapter 4 of the [Final EAM paper](#). In particular, Chapter 4 highlights uncertainties pertaining to the future composition of energy markets and how these could impact the supply and demand for OCS oil and natural gas, as well as the substitutes of OCS oil and gas. BOEM provides a qualitative discussion focusing on domestic net-zero pathways and their challenges.

As described, the net benefits analysis in [Section 5.3.2](#) is conducted assuming a continuation of current policies and baseline supply and demand reflected in EIA's 2023 AEO (EIA 2023b). Should the U.S. and other nations move more aggressively towards a net-zero future, long-term supply and demand for energy sources could be much different than those projected in the 2023 AEO ([Section 1.2.1](#)). As laws, policies, and technology changes to a net-zero baseline, BOEM's estimates of energy market substitutions would likely differ. Changes in elasticities will then change the incremental net benefits and GHG emission estimates.

For the Second Proposal, BOEM requested stakeholder comments, specifically data that would allow for the incorporation of the net-zero transition in its analysis. Based on the comments received, BOEM conducted two sensitivity analyses that demonstrate the effects of the net-zero pathways on energy market substitutions. The testing included varying elasticity values and using alternate baseline data for two specific emissions pathways from Princeton's Net-Zero America report (Larson et al. 2021). Both pathways (an aggressive pathway and a more moderate pathway) see a shift in the energy market substitutions, especially with respect to oil imports and reduced demand's share of total substitution. The analysis shows that under these alternative baseline assumptions, where the U.S. is successful in its net-zero emissions goals, the energy market substitutions will see a greater percentage of reduced demand and electricity substitution and smaller percentages of substitutions from imports and onshore oil and gas production. These changes would likely lead to a reduction in No Sale Option ESCs as well as a reduction in upstream greenhouse gas emissions as modeled in [Section 5.3.2.2](#) and [Section 5.3.2.3](#). Detailed results of the sensitivity tests are provided in Chapter 4 of the [Final EAM paper](#). Ultimately, the analysis shows that in a future where BOEM is successful in meeting its net-zero goals, emissions associated with the No Sale Option would be less than in the standard baseline given that there would be less substitution with imports and a greater reduction in reduced demand.

5.3.3 Net Benefits and Life Cycle GHG Emissions

In *Center for Biological Diversity et. al. v. Department of the Interior* (CBD), the court determined that the OCS Lands Act does not require the agency to consider the impacts from consuming

OCS oil and gas as part of its National OCS Program decision. An expanded discussion of these and other possible impacts of fossil fuel consumption is provided in Chapter 2 of the [Final EAM paper](#) (BOEM 2023b).

Since the CBD decision in 2009, however, the legal and policy environment has changed. BOEM has received stakeholder comments suggesting that the net benefits analysis should include the social costs of mid- and down- stream GHG emissions. Accordingly, and recognizing the importance of greenhouse gas emissions, BOEM has provided an estimate of the SC-GHG for mid- and down- stream emissions. BOEM does not consider the mid- and down- stream costs of other types of emissions, nor the mid- and down- stream benefits and costs of the other components of the net benefits analysis (e.g., environmental and social benefits and costs from OCS oil and natural gas, or their substitutes).

[Table 5-15](#) compares the social cost of mid- and down- stream GHG emissions of the Lease Sale Option and the No Sale Option and shows the resulting Incremental emissions (Lease Sale Option costs less No Sale Option costs). The Lease Sale Option results in higher mid-and down-stream GHG emission social costs than the energy substitutes under the No Sale Option. This is in part because under the No Sale Option, there is some demand reduction, which results in no mid- and down- stream emissions.

**Table 5-15: Social Costs of Mid- and Down-stream GHG Emissions
by Program Area (\$ Billions)**



Program Area	Scenario	Low Activity Level	Mid-Activity Level	High Activity Level
Cook Inlet	Lease Sale Option	0.63	3.01	3.62
	No Sale Option	0.42	2.75	3.16
	Incremental	0.21	0.26	0.46
GOM (5-sale scenario)	Lease Sale Option	10.80	44.43	67.88
	No Sale Option	9.43	39.00	59.43
	Incremental	1.37	5.43	8.45
GOM (10-sale scenario)	Lease Sale Option	10.80	59.24	134.96
	No Sale Option	9.43	51.99	117.67
	Incremental	1.37	7.25	17.28

Note: As shown, the incremental social costs may not exactly equal the difference between the Lease Sale Option and the No Sale Option due to rounding.

However, as shown in [Section 5.3.2](#), the upstream costs associated with the Lease Sale Option are lower than those associated with the No Sale Option. Summing the incremental upstream and incremental mid- and down- stream social costs of GHG emissions results in the incremental domestic life cycle GHG emissions shown in [Table 5-16](#). In each area, the upstream emissions have negative costs (i.e., benefits) as the Lease Sale Option results in fewer emissions than the No Sale Option. However, the mid- and down- stream result in Lease Sale Option costs as the Lease Sale Option GHG emissions are higher than the No Sale Option costs. In net, the incremental costs are all very close across the different program areas and activity levels. For

some of the activity levels, the emissions from the No Sale Option are higher (shown as a negative value), and in other instances, the emissions from the Lease Sale Option are higher (shown as a positive value).

Chapters 2 and 4 of the EAM paper explain the life cycle GHG results and additional uncertainties in more detail. Chapter 4 also provides information on how the lifecycle GHG analysis would differ under a net-zero energy economy. In the event of greater reductions in demand or greater fuel switching to electricity because of a faster transition to net-zero emissions, BOEM would see the No Sale Option result in relatively fewer emissions than the Lease Sale Option.

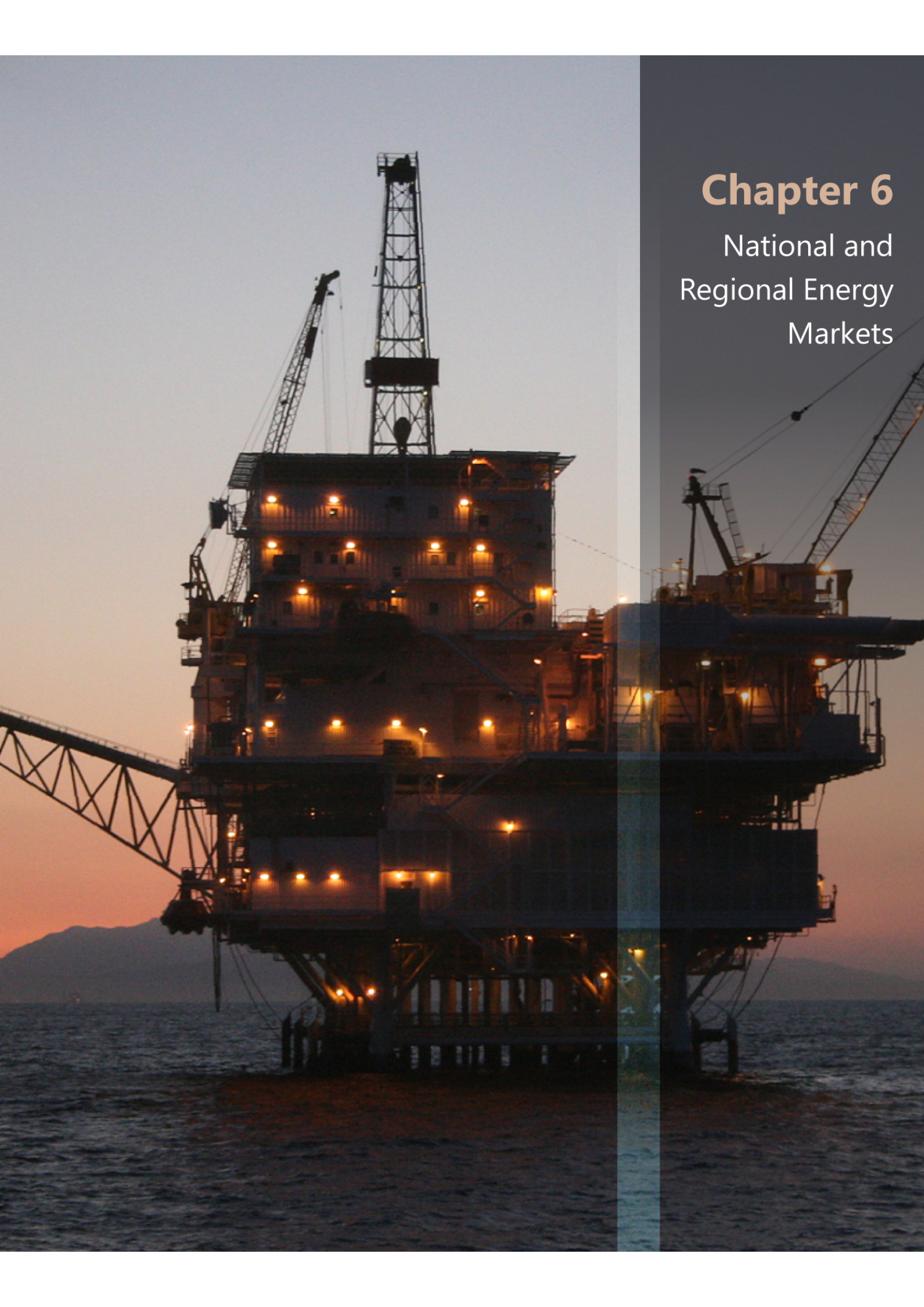
Table 5-16: Incremental Social Costs of Full Domestic Life Cycle GHG Emissions by Program Area (\$ Billions)



Program Area	Life Cycle Stage	Low Activity Level	Mid-Activity Level	High Activity Level
Cook Inlet	Upstream	*	(0.34)	(0.34)
	Mid- and Down-stream	0.21	0.26	0.46
	Full Life Cycle	0.21	(0.08)	0.12
GOM (5-sale Scenario)	Upstream	(1.44)	(6.16)	(9.35)
	Mid- and Down-stream	1.37	5.43	8.45
	Full Life Cycle	(0.07)	(0.73)	(0.90)
GOM (10-sale Scenario)	Upstream	(1.44)	(8.19)	(18.58)
	Mid- and Down-stream	1.37	7.25	17.28
	Full Life Cycle	(0.07)	(0.94)	(1.30)

Note: As shown, the full life cycle social costs may not exactly equal the sum of the upstream and the mid- and down-stream due to rounding.

Key: * = Social costs of GHG emissions are between -\$5 million and \$5 million, rounding to \$0.00 billion.

A large offshore oil rig is shown at sunset. The rig is illuminated with warm lights, and its complex structure of steel beams and cranes is silhouetted against the orange and blue sky. The rig is situated in the middle of the ocean, with a dark sea in the foreground and distant mountains on the horizon.

Chapter 6

National and Regional Energy Markets



Chapter 6 National and Regional Energy Markets

Chapter 6 includes a discussion of regional and national energy markets as required by the OCS Lands Act Section 18(a)(2). The Secretary must consider regional and national energy needs when determining the location for National OCS Program lease sales. [Section 6.1](#) presents National Energy Markets and [Section 6.2](#) presents Regional Energy Markets.

6.1 National Energy Markets

As the U.S. implements policies to reduce GHG emissions and move toward its net-zero emissions goals, the energy structure of the Nation will likely change, impacting all energy markets. To assist the Secretary in decisions about the size, timing, and location of lease sales, this chapter includes an analysis of the markets for crude oil, natural gas, and refined petroleum products.⁴¹ The following sections discuss national energy markets and the location of OCS program areas relative to the needs of national energy markets, a factor the Secretary must consider under Section 18(a)(2)(C).


6.1.1 Recent Developments

Over the past several years, the markets for crude oil and natural gas have experienced supply and demand volatility and associated price fluctuations. For example, the 2019 novel coronavirus (COVID-19) pandemic in 2020 reduced supply and demand for both commodities, leading to low prices; however, as the economy recovered, both supply and demand increased. Further developments are described in the following sections.

⁴¹ Petroleum products (e.g., gasoline, diesel fuel, jet fuel, kerosene) are the output of refineries and made from crude oil. The OCS Lands Act focuses on crude oil and natural gas; nevertheless, petroleum, or “refined” products, are included in this analysis primarily because they represent the form in which end users consume oil that, in its crude form, is used only by refineries.

6.1.1.1 *Developments in Crude Oil Markets*

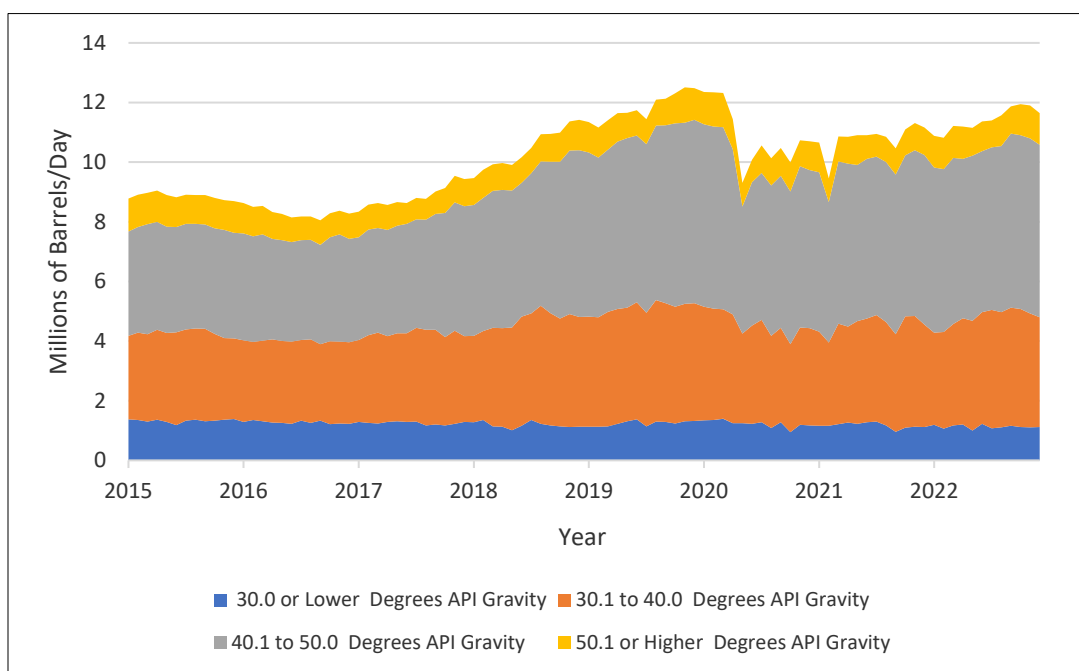
Major structural changes, such as the significant increase in onshore U.S. crude oil and natural gas production, as well as the elimination of the U.S. ban on crude oil exports, have resulted in the U.S. becoming a net exporter of crude oil and petroleum products (combined). The increase in domestic crude oil production has also led to a shift in the quantities of the different types of crude oil produced. [Figure 6-1](#) shows crude oil production in the contiguous U.S. (excluding Alaska) by API gravity (a measure of crude oil density) since 2015. Most of the crude oil produced from tight (onshore) formations is light, sweet crude oil with a higher API gravity. This contrasts with the heavier, sour crude oil with a lower API gravity that generally comes from other domestic production, including offshore, and imported sources.



Is All Crude Oil the Same?

Density and sulfur content are two important characteristics of crude oil. Density ranges from light to heavy, and sulfur content is characterized as sweet (low sulfur) or sour (high sulfur).

Figure 6-1: Crude Oil Production in the Contiguous U.S. by API Gravity



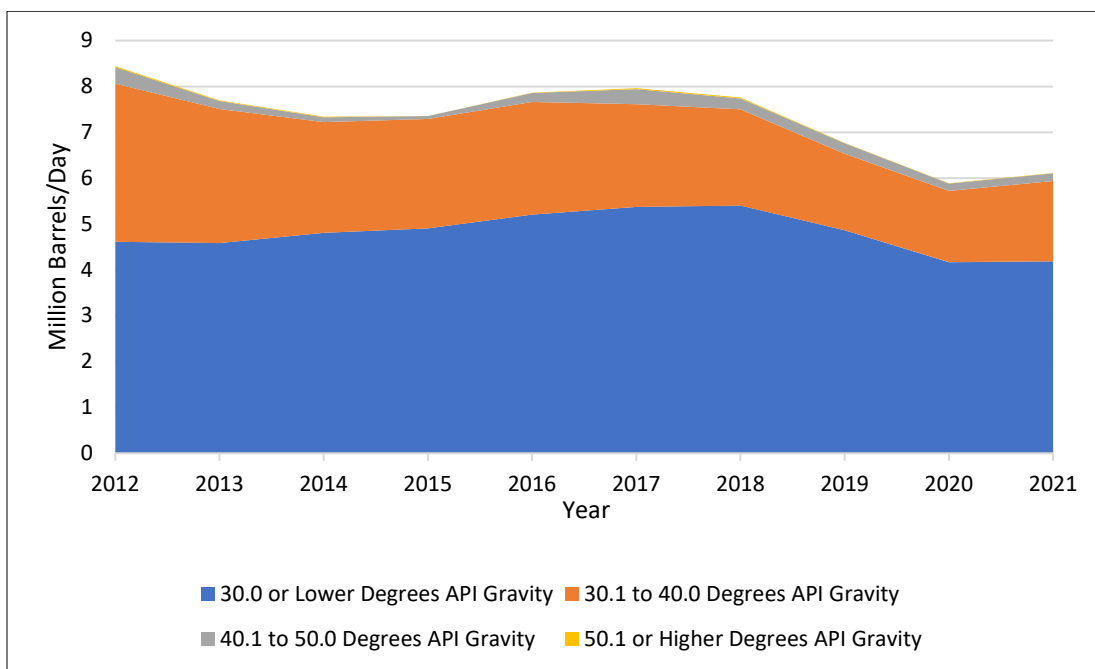
Source: EIA (2023I)

The structural changes allowed the U.S. to reach a record production high of 12.3 million barrels of crude oil per day in 2019 (EIA 2021d). Although U.S. crude oil production fell significantly in 2020 due to the COVID-19 pandemic, the U.S. continues to experience a significant decline in dependence on imported crude oil as domestic production levels recover (EIA 2021c). By 2022, U.S. crude oil imports were at the lowest level since 1992, down approximately 38% since peaking in 2005 (EIA 2022d).

Petroleum refineries are the primary market for crude oil. Refineries use crude oil as feedstock to create various refined petroleum products that are transported to domestic and international markets. Typically, refineries are designed to refine specific grades and qualities of crude oil, and the expensive investments required to change that refining capacity usually prompt refineries to mix crude oil of different grades to achieve the cheapest blends suited to their facilities.

Refineries along the Gulf Coast typically process medium-to-heavy crude oil, while East Coast refineries are tailored for light, sweet crude. [Figure 6-2](#) shows U.S. imports of light, medium, and heavy crude oil since 2012. U.S. imports of light and medium crude oil have decreased over the past decade, while heavy crude oil imports have not substantially changed. As of 2021,⁴² crude oil with an API gravity of 30.0 or lower represents approximately 68% of imports, while crude oil with an API gravity between 30.1 and 40.0 represent approximately 29% of imports (EIA 2023q).

Figure 6-2: U.S. Crude Oil Imports by API Gravity



Source: EIA (2023q).

Note: Derived by dividing annual data by 12 months and average number of days per month.

6.1.1.2 *Developments in Domestic Natural Gas Markets*

The increased use of new technology to develop large onshore tight formation geologic plays initially focused on natural gas. This early success led to significant downward pressure on domestic natural gas prices, to the point that producers began to target projects that yielded the more valuable liquids associated with natural gas. Less expensive natural gas reduced

⁴² This is the latest available data from Form EIA-814 that incorporates final revisions.

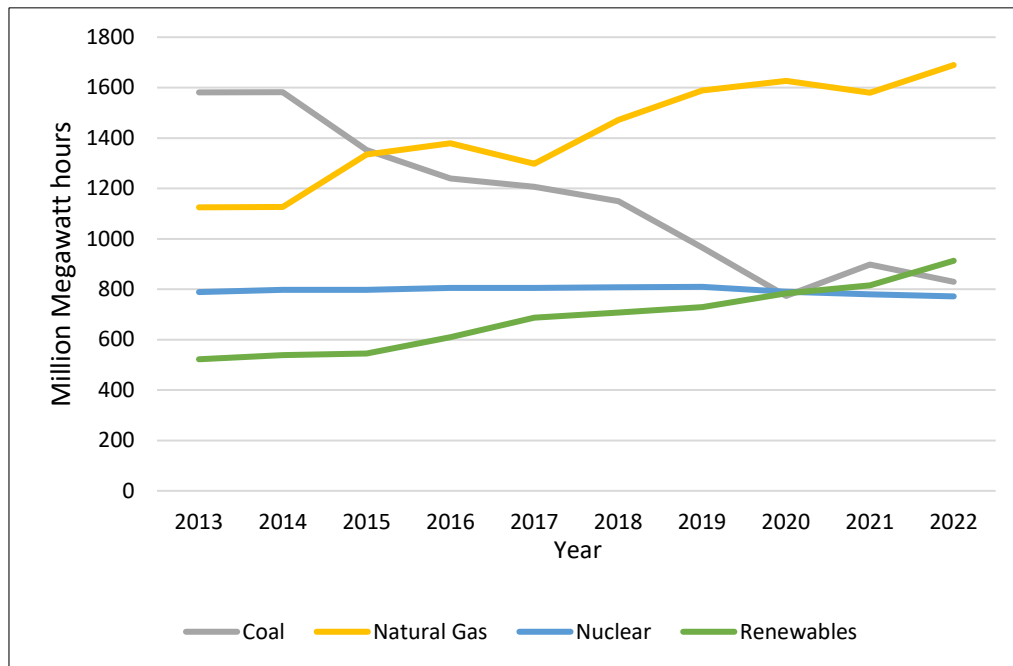
manufacturing energy and feedstock costs and enabled manufacturing companies to increase U.S. operations.

With this surge in production, the U.S. produced 37.33 Tcf of natural gas in 2021 (EIA 2022c).⁴³ Of that total, Federal offshore withdrawals were approximately 2%. Federal offshore marketed production has been in a steady decline since 1997 based on EIA figures that include the GOM when it represented approximately 26% of the marketed production total. During the same period, domestic marketed production increased nearly 88%.

Given the plentiful supply of natural gas and the differences between world prices and domestic prices, natural gas exports have also increased. In 2021, the U.S. exported 6.65 Tcf of natural gas (EIA 2023j). Of those exports, 3.09 Tcf (approximately 46%) were exported by pipeline (to Canada and Mexico), while 3.56 Tcf of natural gas was exported as LNG (EIA 2023j). LNG exports have grown rapidly during the past few years as new LNG export facilities have come online. After 2021, exports continued to increase in part due to ongoing geopolitical disruptions as the U.S. shifted its LNG exports towards Europe (EIA 2023u).

Additionally, the increase in domestic natural gas production and moderate natural gas prices facilitated a transition away from coal as a domestic fuel source. U.S. coal-fired electricity generation peaked in 2007, and much of that capacity has been converted to or replaced by natural gas (EIA 2021f). Although coal fell to third place as an electricity source in 2020 (after natural gas and renewable energy), higher natural gas prices in 2021 improved the economics of coal and led to an increase in coal consumption (EIA 2021f, 2022f). [Figure 6-3](#) shows the composition of electricity generation by source for the U.S electric power sector.

⁴³ This value represents marketed production, which equals gross withdrawals less gas used for (1) re-pressuring, (2) quantities vented and flared, and (3) non-hydrocarbon gases removed in treating or processing operations (EIA Undated).

Figure 6-3: U.S. Electricity Generation by Fuel Source

Source: EIA (2023e)

6.1.2 Future Energy Market Changes

Many factors influence crude oil and natural gas production, prices, and consumption. Examples include domestic and foreign GDP growth rates; technology development (affecting the supply and/or demand side); geopolitical events; access to crude oil and natural gas resources; and changes in laws, regulations, and policies.

EIA's 2023 AEO reference case forecast finds that even with the provisions of the IRA, the U.S. will continue to rely heavily on crude oil and natural gas to meet its energy needs. This is highlighted, as discussed in [Section 1.2](#), by the EIA 2023 AEO reference case showing an increase in the use of petroleum and other liquids in the industrial sector that nearly offsets transportation sector reductions in 2050. The forecast also shows the level of crude oil consumption remains relatively stable on an absolute basis, with the crude oil share of total energy consumption declining slightly. Additionally, the forecast shows significant growth of natural gas exports, with most of that growth occurring through LNG exports with some growth via pipeline. The EIA bases this forecast partly on increased international natural gas demand and competitive U.S. LNG pricing (EIA 2023h).

[Section 1.2](#) also highlights expectations of future crude oil and natural gas demand and discusses potential pathways to net-zero emissions that could impact demand. In each pathway considered by Princeton's *Net-Zero America Project*, crude oil and natural gas consumption declines over time but remains a component of U.S. energy consumption through 2045 (Larson et al. 2021). However, with the five pathways, there is considerable uncertainty regarding how the supply and

demand for crude oil evolves as the U.S. embarks on achieving net-zero emissions. The Secretary has flexibility to re-evaluate the Nation’s energy needs and market developments and can revise lease sale offerings in accordance with the Section 18 process.

6.1.3 The Contribution of OCS Oil and Natural Gas

An important factor when considering national energy markets in the context of the Section 18 factors is how the National OCS Program fits in with future climate policies as the U.S. transitions to a clean energy future. Of particular importance is the timeline when any production from areas included in the National OCS Program might occur and how this relates to energy markets and future needs. As described, the U.S. still consumes significant volumes of crude oil and natural gas and is anticipated to do so in the future absent further policy changes. However, this could change as the U.S. adapts to climate change and strengthens efforts to achieve net-zero emissions.

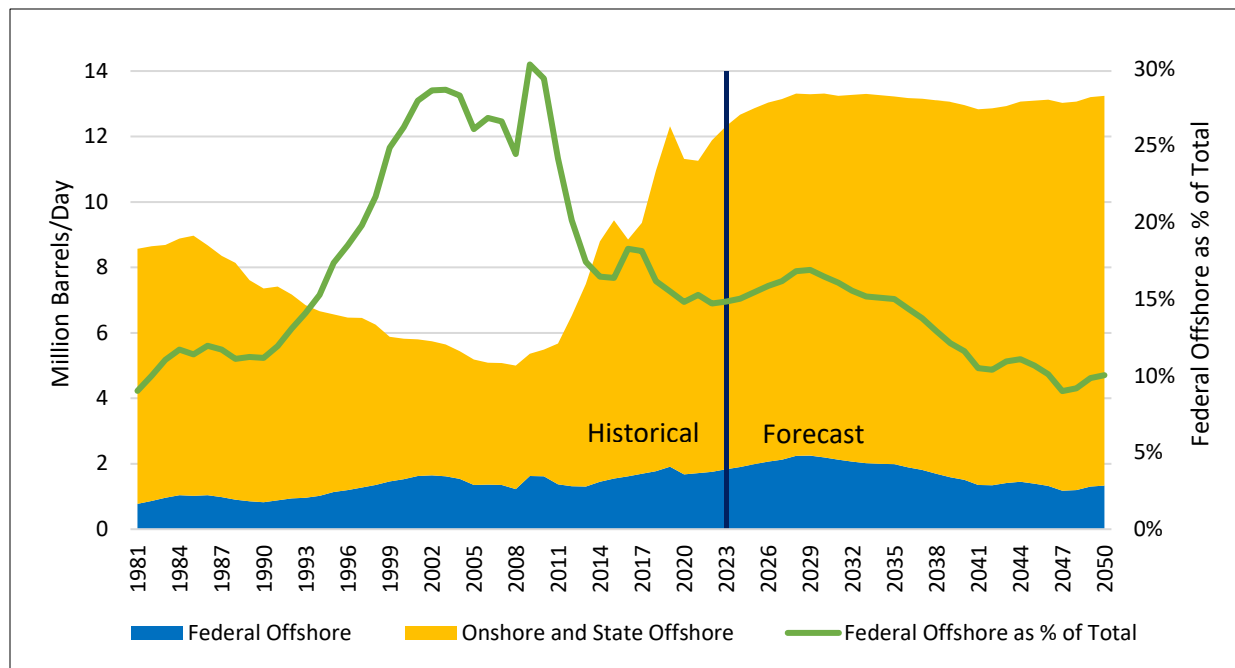
The National OCS Program planning process is designed to support decisions regarding long-term energy needs. To the extent energy consumption remains relatively constant or future demand increases, National OCS Program advanced planning is necessary to ensure future lease sales can support these needs. Absent new legislation, adding areas that were excluded from a National OCS Program would require a multi-year process prior to providing leasing opportunities. Implementing new production would similarly take time, even in mature areas like the GOM Program Area. [Figure 5-1](#) illustrates the timeline for crude oil and natural gas development for frontier and deepwater areas.

Alternatively, to the extent future demand decreases as the U.S. transitions toward greater reliance on renewable energy, less OCS crude oil and natural gas production would be expected. If new policies are implemented or demand for OCS resources substantially falls, the Secretary can respond accordingly by cancelling or limiting any scheduled lease sales. Continued progress towards achieving net-zero emissions targets, coupled with revised energy policies and new regulations, could also prompt companies to bid on fewer leases, develop fewer projects, or abandon fields sooner, regardless of the decisions made on this National OCS Program.

Currently, the OCS, primarily in the GOM, is a major long-term supplier of conventional crude oil, and, to a much lesser extent, natural gas. In recent years, crude oil production on the OCS has increased, reaching a record high 1.9 million barrels per day in 2019 (EIA 2023t). Although production was slightly lower in 2020 and 2021 (EIA 2023t) given significant market disruptions, production continued to increase through 2022 and neared 2018 levels. The EIA anticipates several new projects coming online in 2023 and another likely record production year (EIA 2023t).

As [Figure 6-4](#) displays, the EIA 2023 AEO reference case forecasts that OCS crude oil production will peak in 2029 and then decline through 2050. Total domestic crude oil production is forecast to peak in 2030 and remain relatively flat through 2050 (EIA 2023t).⁴⁴

Figure 6-4: Historical and Forecasted U.S. Crude Oil Production



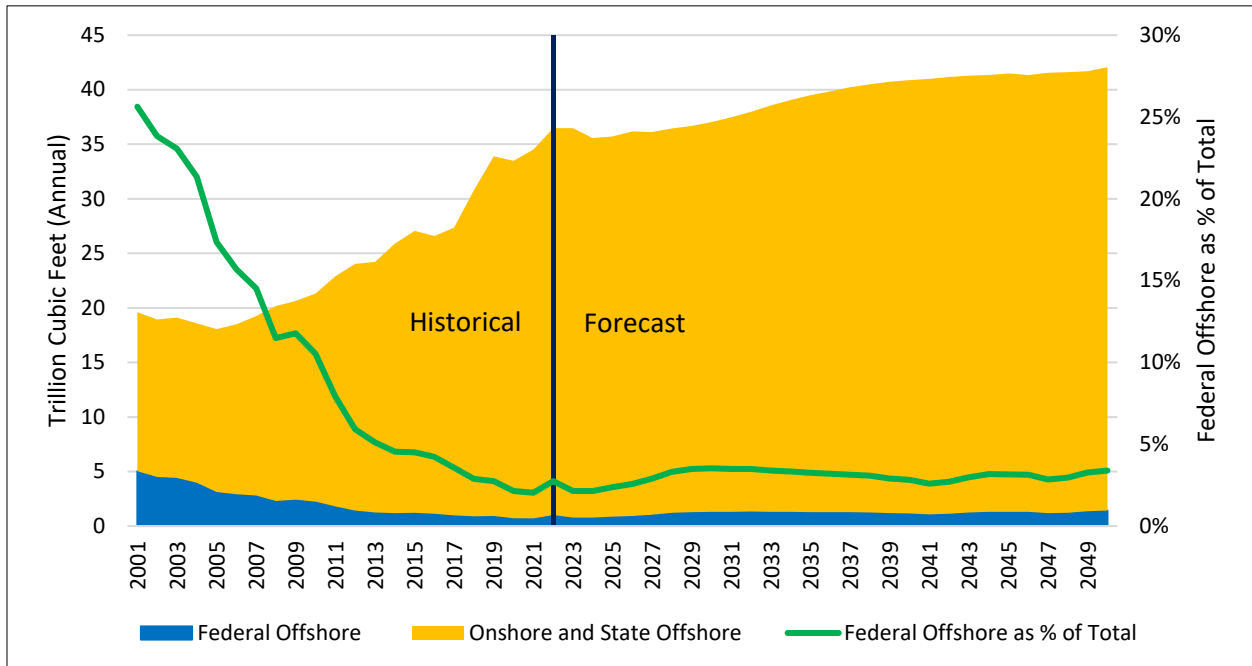
Sources: EIA (2023g)

[Figure 6-5](#) shows that dry natural gas production (consumer-grade natural gas) will continue to grow through 2050, although OCS production remains stable throughout most of the forecasted period. [Figure 6-6](#) highlights the relative contribution of OCS crude oil to domestic production. In 2022, the OCS contributed 15% of U.S. crude oil production and ranked second only to Texas (42%) when compared to U.S. states.

However, OCS production is not as responsive to price changes as is production from onshore tight formations given a longer lead time required for investments to translate into offshore production. Both from a government planning perspective and an engineering perspective, it takes several years, and in some cases, more than a decade, before industry can begin production on new OCS leases.

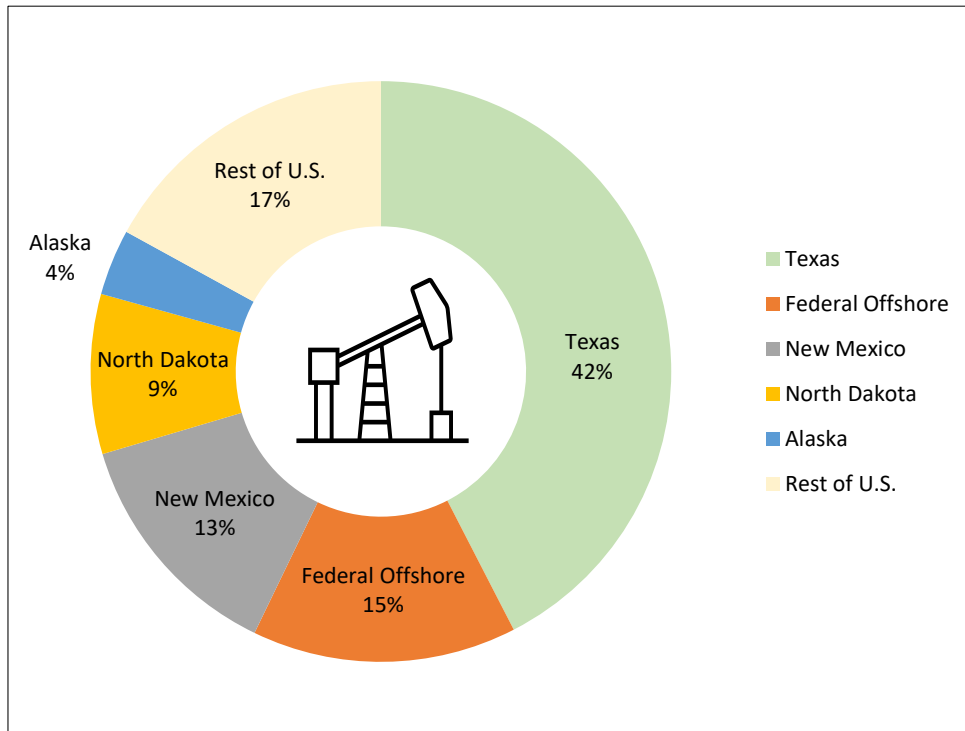
⁴⁴ Slight increases to onshore and state offshore production offsets OCS production declines.

Figure 6-5: Historical and Forecasted U.S. Dry Natural Gas Production



Sources: EIA (2023g)

Figure 6-6: U.S. Crude Oil Production, 2022



Source: EIA (2023g)

Additionally, production on the OCS cannot increase quickly enough to mitigate the effects of an unforeseen national energy emergency, such as a large portion of the world's crude oil supply being taken offline. Successful OCS production requires complex planning and multiple years to complete, and production can be delayed by uncertainties such as rig availability, engineering challenges, and weather impacts (e.g., hurricanes). The statutory and regulatory processes for OCS planning, leasing, exploration, and development are lengthy and robust, making it difficult to quickly increase production in response to rapidly changing energy needs. However, as seen previously in the historical section of [Figure 6-4](#), OCS crude oil production has steadily increased over time, while onshore (including state-based production) has fluctuated.

Historically, OCS crude oil production has provided a stable “baseload” source of supply that is less sensitive to short-term oil price fluctuations. While crude oil price declines might result in reduced onshore production in a relatively short time, OCS production would typically continue, particularly given the front-loaded capital investments incurred with OCS development. While this inelasticity of production can have some downsides (for example, to companies if they are forced to temporarily produce at a loss), there have been benefits from maintaining diverse sources of crude oil supplies and lowering the volatility of crude oil production.

Any increase in OCS crude oil production due to this National OCS Program would likely lead to an increase in exports of U.S. crude oil and refined petroleum products. BOEM uses *MarketSim* to estimate the increase in exports due to the potential OCS production from the Second Proposal. In the mid-activity levels for the three PFP analysis scenarios, the model estimates that crude oil exports would increase over baseline forecasted exports by roughly 0.64% – 0.70% of new OCS production, while refined petroleum product exports would increase by roughly 1.98% – 2.01% of the new OCS crude oil production. More information about the assumptions and calculations in the model is included in the [Final EAM paper](#) (BOEM 2023b) and [MarketSim documentation](#) (Industrial Economics Inc. 2023b).

Even with increased exports, there are several factors influencing why the U.S. might export crude oil to some countries while importing crude oil from others, including logistics (e.g., lack of pipelines to transport crude oil to certain U.S. regions, Jones Act restrictions),⁴⁵ crude oil type (e.g., refinery feedstock needs), international market pressures, and others. As previously mentioned, the medium-to-heavy sour crudes produced from the OCS are mainly processed in GOM refineries, which are primarily equipped for those types of crudes rather than the light, sweet crude being produced onshore.

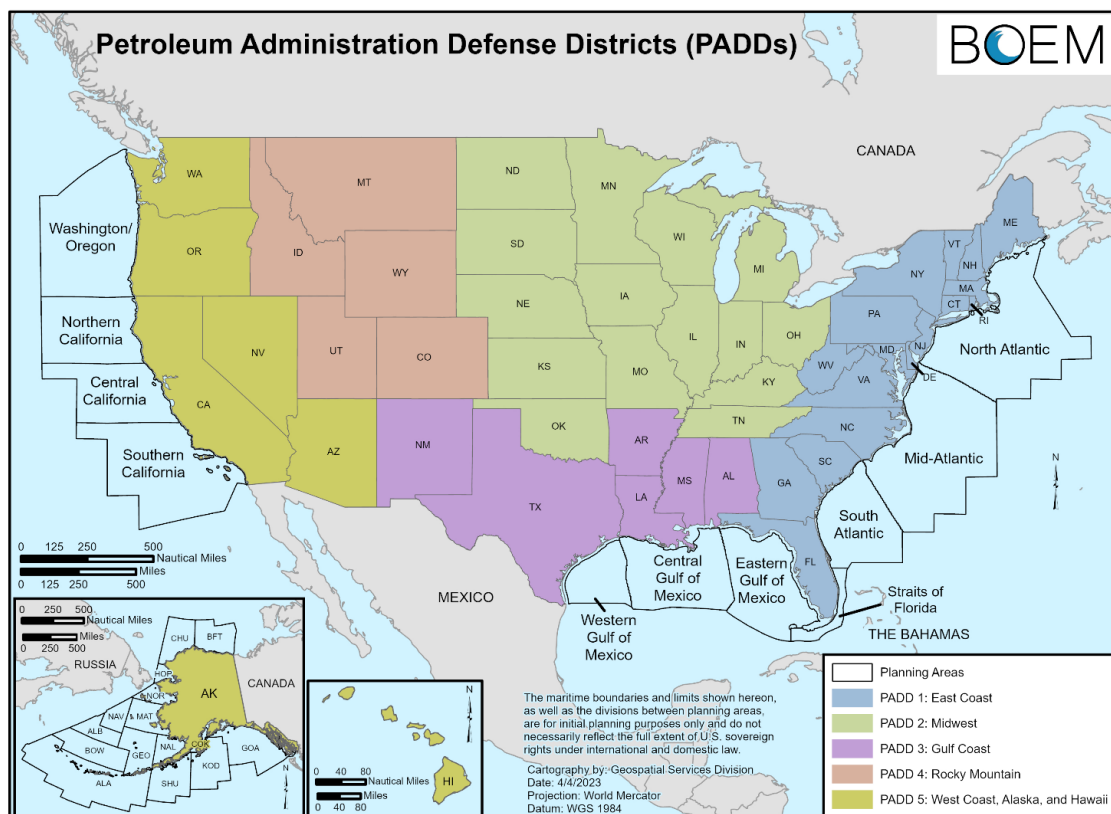
⁴⁵ The Merchant Marine Act of 1920, also known as the Jones Act, requires that all goods transported by water between U.S. ports be carried on ships that are U.S.-flagged, are constructed in the U.S., and are owned and crewed by U.S. citizens (and/or U.S. permanent residents).

6.2 Regional Energy Markets and the Location of OCS Regions

In making decisions about the size, timing, and location of OCS crude oil and natural gas leasing for the National OCS Program, the Secretary must consider “...the location of [OCS] regions with respect to, and the relative needs of, regional and national energy markets” (Section 18(a)(2)(C) of the OCS Lands Act). The following regional energy considerations provide information on the markets for crude oil and natural gas as well as overall energy production and consumption.

To analyze energy markets regionally, BOEM uses Petroleum Administration Defense Districts (PADDs), which groups all 50 states into five separate districts. The PADDs, shown in [Figure 6-7](#), allow users to analyze regional movements of natural gas and petroleum. This analysis considers energy markets broadly, and how, if production occurred, it would impact regional energy markets. Any discussion about production from lease sales in the National OCS Program is conditional on lease sales occurring and companies choosing to lease, explore, and develop any resources from those leases.

Figure 6-7: Petroleum Administration Defense Districts



Source: EIA (Undated)

6.2.1 Regional Production and Refinery Consumption

Regional energy markets are defined by the amount of crude production, refining, and consumption that occurs in each region. [Figure 6-8](#) and [Figure 6-9](#) show proportional crude oil production and refinery consumption by domestic region. Crude oil refinery consumption is proportional to the U.S. refining capacity by region. [Figure 6-10](#) and [Figure 6-11](#) similarly show production and consumption by PADD for natural gas.

6.2.2 Regional Transportation

Since there are differences between the production and consumption levels of every PADD, resources must be transported inter-regionally to ensure that each PADD is able to meet its consumption needs. Crude oil and natural gas are rarely suitable for consumption without a refining or processing stage during which various final products are extracted; hence refineries and natural gas processing facilities are the primary crude oil and natural gas markets. Additionally, crude oil and natural gas are fungible commodities, even more so once refined and processed, making location less relevant at later stages. Therefore, intra-regional refinery and plant capacity is a key component of each region's ability to fulfill not only its own demand but national energy demand as well.

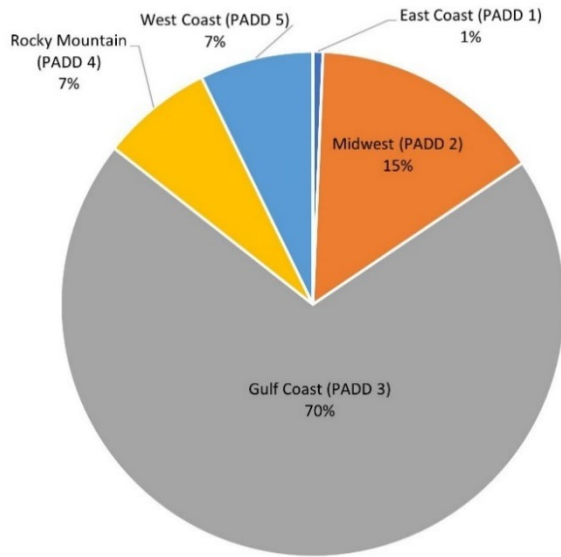
To fulfill regional energy demand, a network of pipelines, trains, trucks, and barges is required to transport resources to refineries and then ultimately to the consumer. The Gulf Coast produces 70% of the Nation's crude oil, accounts for 53% of the refining, but only consumes 20% of the refined finished petroleum products. The additional petroleum products are transported to other PADDs, such as the East Coast, which accounts for 5% of total U.S. crude oil consumption by refineries, but accounts for 31% of domestic product supplied for finished petroleum products, as shown in [Figure 6-12](#).

Each of the PADD regions has access to crude oil and petroleum products in three different ways: production within the region, regional imports, and foreign imports. Similarly, most of the regions have at least some regional and foreign exports. The Gulf Coast PADD has the most throughput of crude oil and petroleum products because it has the most production, refining capacity, and an extensive import/export infrastructure.

Examining regional trade patterns, [Table 6-1](#) shows the 2022 inter-PADD movements of crude oil. [Table 6-2](#) shows the 2022 inter-PADD movement of petroleum products by tanker, pipeline, barge, and rail.⁴⁶ Approximately 49% of the petroleum product movements by tanker, pipeline, barge, and rail originated in the Gulf Coast PADD, which includes the GOM OCS. Approximately 80% of these shipments from the Gulf Coast PADD went to the East Coast PADD. While these tables show the inter-PADD movements, the U.S. also exports crude oil, as shown in [Figure 6-13](#).

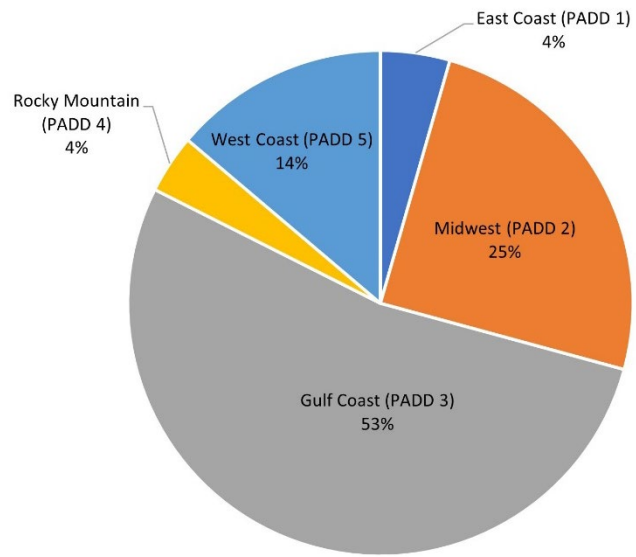
⁴⁶ EIA does not track petroleum products transport by truck.

Figure 6-8: Crude Oil Production by PADD, 2021



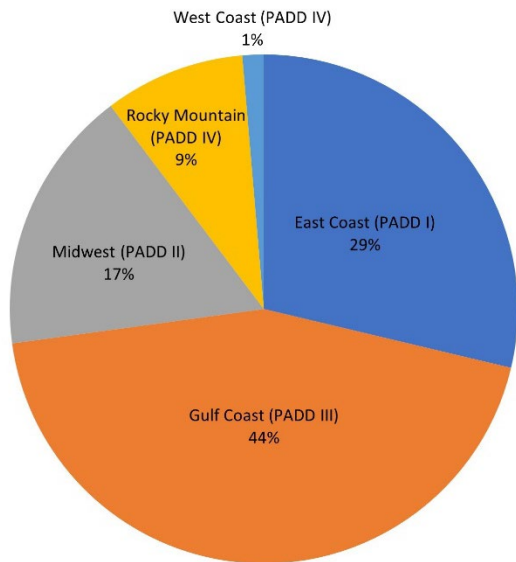
Source: EIA (2023m)

Figure 6-9: Crude Oil Refinery Consumption by PADD, 2021



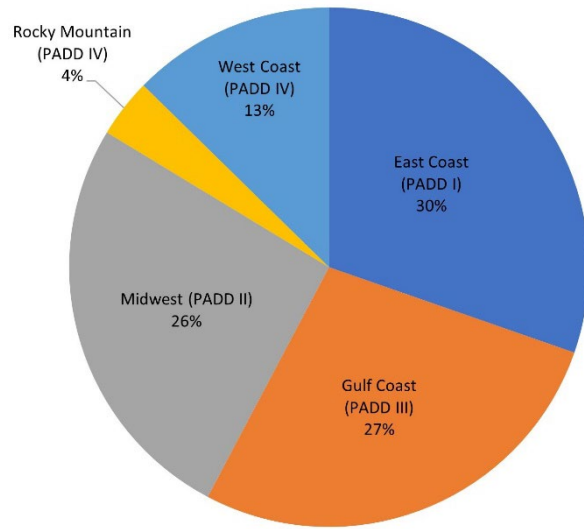
Source: EIA (2023s)

Figure 6-10: Natural Gas Production by PADD, 2021



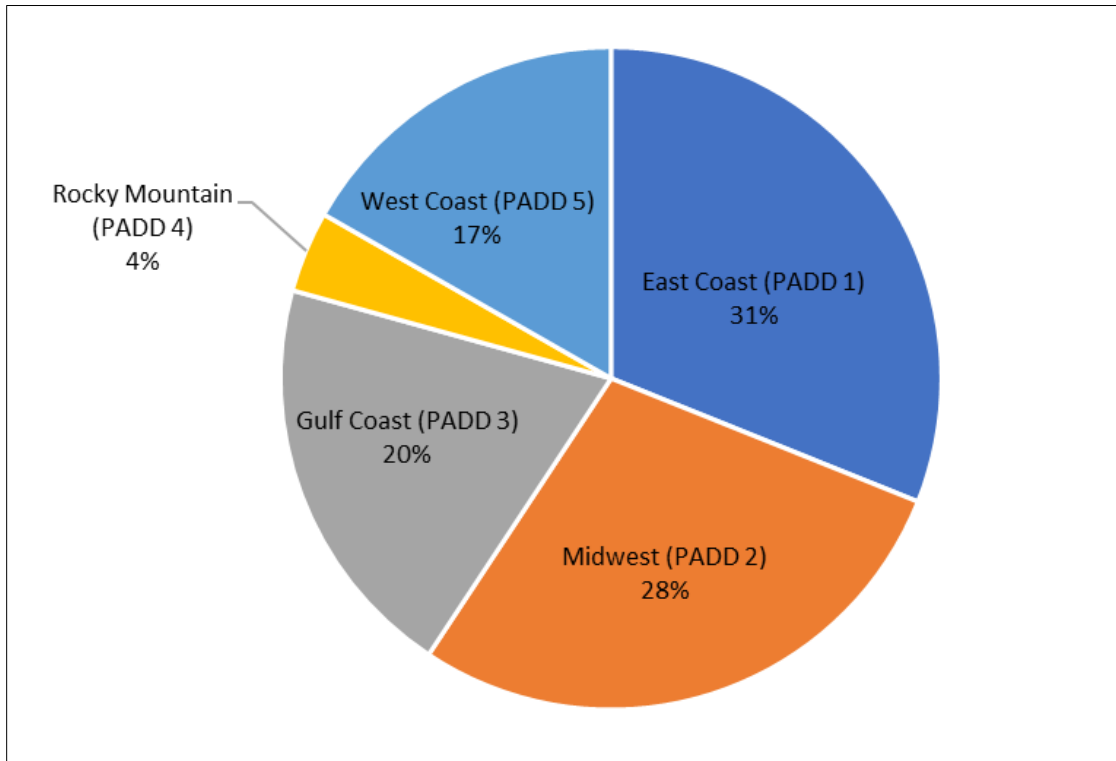
Source: EIA (2023k)

Figure 6-11: Natural Gas Consumption by PADD, 2021



Source: EIA (2023i)

Figure 6-12: Product Supplied for Finished Petroleum Products, 2021



Source: EIA (2023r)

Table 6-1: 2022 Crude Oil Shipments by Tanker, Pipeline, Barge, & Rail (million barrels)



PADD	From PADD 1	From PADD 2	From PADD 3	From PADD 4	From PADD 5	Total Receipts
To PADD 1 (East Coast)	–	15	24	0	0	40
To PADD 2 (Midwest)	4	–	227	298	0	530
To PADD 3 (Gulf Coast)	2	613	–	12	0	627
To PADD 4 (Rocky Mountain)	0	75	0	–	0	75
To PADD 5 (West Coast)	0	30	0	0	–	30
Total Shipments	6	733	252	310	0	1,302

Source: EIA (2023n)

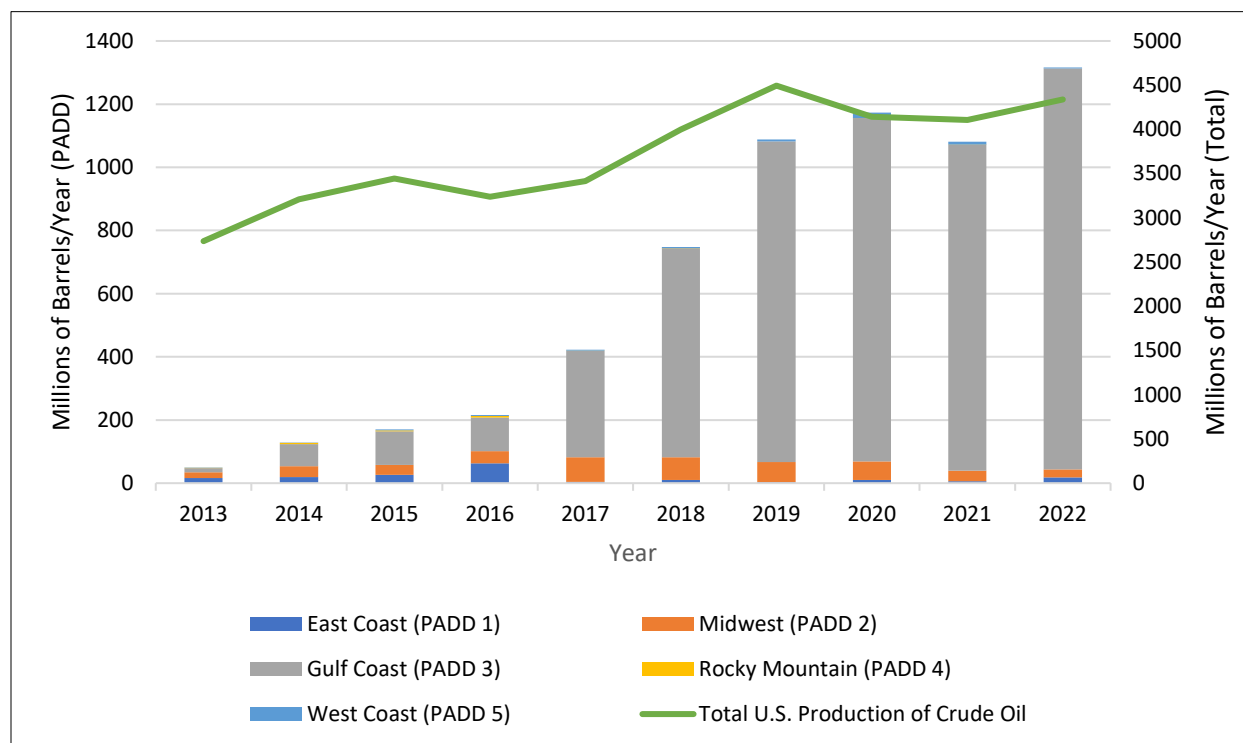
**Table 6-2: 2022 Petroleum Product Shipments by Tanker, Pipeline, Barge, & Rail
(million barrels)**



PADD	From PADD 1	From PADD 2	From PADD 3	From PADD 4	From PADD 5	Total Receipts
To PADD 1 (East Coast)	–	255	1,212	0	0	1,467
To PADD 2 (Midwest)	201	–	241	256	0	698
To PADD 3 (Gulf Coast)	1	554	–	56	1	612
To PADD 4 (Rocky Mountain)	0	166	0	–	1	166
To PADD 5 (West Coast)	0	58	68	27	–	153
Total Shipments	202	1,033	1,521	338	2	3,096

Source: EIA (2023n)

Figure 6-13: Crude Oil Exports, 2022



Sources: (EIA 2023m, o)

Given the interconnectedness of national and international markets, domestically produced fuel has a direct impact on U.S. energy markets, even if it is consumed abroad. BOEM does not track the portion of OCS-derived fuels that is domestically consumed, but instead considers the impact of OCS production on domestic and international markets. This approach was upheld in *Center for Sustainable Economy v. Jewell*, 779 F.3d 588 (D.C. Circuit 2015). The court found that “what matters in determining whether OCS-derived fuel meets national needs is not whether the additional OCS fuel is consumed domestically, but whether it helps to satisfy domestic needs for fuel security and net supply, both in aggregate and over time” (*CSE* at 609).

6.2.3 Regional Energy Prices

Regional consumption proximity to production areas and existing transportation constraints can affect regional prices for petroleum and natural gas products. For gasoline, the largest factor affecting prices is the cost of crude oil. The EIA estimates that from 2013 through 2022, on average, approximately 55% of the price of a gallon of gasoline was the cost of crude oil, 17% was from Federal and state taxes, 14% was from refining costs and profits, and 14% was distribution and marketing (EIA 2023f). Since crude oil inputs vary by region and the gasoline characteristics of output⁴⁷ also differ by region, prices can greatly vary. After refining, gasoline is usually sent from the refinery by pipeline to terminals and then distributed to gasoline stations by tanker truck. Thus, the distance from refinery to consumption point can affect the cost of refined fuels such as gasoline (EIA 2017).

6.2.4 Alaska Regional Energy Markets

In 2020, Alaska was tied for the second-highest energy per capita consumption of all the U.S. states (EIA 2021h). Alaska’s crude oil production steadily declined from its peak of 2 million barrels per day in 1988 to 448,000 barrels per day in 2020 (EIA 2021d). Alaska has five operating refineries, and both imports and exports petroleum products (EIA 2021e). In 2020, Alaska produced approximately 317 Bcf of dry natural gas with natural gas production being relatively stable over the past few years (EIA 2021b). A large portion of natural gas produced within the state is not sold. Some of the natural gas produced from the North Slope is used in the region, but a large portion is reinjected back into the field to increase crude oil production. Currently, there is no pipeline to transport natural gas production from the North Slope to the rest of the state or for export. Natural gas produced elsewhere in Alaska is used within the state or exported as LNG (EIA 2018a).

The Cook Inlet is close to commercial markets and infrastructure in the Anchorage area. Federal production, along with current state production, could help fulfill the region’s energy needs,

⁴⁷ States and some local jurisdictions have responded to air quality requirements with varying standards for gasoline composition, creating the need for refineries to modify their output for specific markets. Specific refineries produce only a subset of gasoline varieties required for different markets.

particularly since the region’s ability to import energy from outside the region is limited.⁴⁸ In particular, most of Anchorage’s electrical generation is fueled by natural gas from state leases in Cook Inlet (Deerstone Consulting 2017). However, a 2022 State of Alaska study estimated that due to a shrinking resource base, Cook Inlet gas production from state lands can only meet the estimated south-central Alaska demand, around 70 Bcf per year, until 2027 (Redlinger et al. 2018). This demand and supply imbalance has caused at least one utility company to consider an alternative to Cook Inlet natural gas to support natural gas customers in Fairbanks (ADNR 2016). Although BOEM has 15 active Federal leases in the Cook Inlet, there is no active crude oil or natural gas production and no development and production plans have been received. Any new OCS natural gas production would primarily be locally consumed and could further ease natural gas prices in the Anchorage area. OCS crude oil production would support local economic activity and the crude oil could be refined in Alaska or moved by tanker to other West Coast refineries.

6.2.5 Gulf of Mexico Regional Energy Markets

The states surrounding the GOM are a major centralized location for domestic energy production and transportation. The region has, by far, the greatest ability to use its resource potential to supply crude oil and natural gas to the United States. Not only do these states produce energy and have the infrastructure to transfer energy throughout the U.S., both for imports and exports, these states are heavily reliant upon energy for processing, refining, and transporting crude oil and natural gas. Given the varying qualities of crude oil discussed earlier, production from the OCS is critically important to U.S. energy markets to fulfill the demand at the Gulf Coast refineries for medium-to-heavy and sour crudes.

In comparison to all other state and Federal offshore production in 2022, Texas was responsible for approximately 42% of U.S. crude oil production and 27% of U.S. natural gas production (EIA 2023q, k). With 32 petroleum refineries (EIA 2023p) that provide valuable petroleum products domestically and internationally, including the Houston-Galveston port district, which is the largest refining center in the United States, Texas ranks first in energy consumption and sixth in per capita energy usage (EIA 2023v). Texas also consumes more natural gas than any other state, driven by the industrial sector and has an extensive natural gas pipeline system for distributing natural gas throughout the Nation and abroad via LNG terminals.

Louisiana ranks second in energy use per capita, largely due to its industrial uses related to the chemical, petroleum, and natural gas industries (EIA 2021h). With 15 petroleum refineries, the state has extensive pipeline networks that ship refined petroleum products throughout the U.S. (EIA 2021e). Similarly, the state has significant natural gas storage facilities and pipeline networks, which provide natural gas to other states. Excluding the crude oil and natural gas

⁴⁸ There is an LNG liquefaction and terminal complex on the Cook Inlet. According to the EIA, the Federal Energy Regulatory Commission approved a request to convert the facility to allow for imports by December 2025 (EIA 2023a).

production that flows to Louisiana from the OCS, the state ranks third in natural gas production and tenth in crude oil production.

Although it has relatively small crude oil and natural gas production onshore and in state waters, Mississippi has an extensive pipeline network that transports crude oil, natural gas, and refined petroleum products to domestic and international markets (EIA 2018b). Similarly, Alabama has little onshore and state waters crude oil and natural gas production, but also receives petroleum products and natural gas from other states. Both Mississippi and Alabama have three petroleum refineries (EIA 2021e).

6.3 Possible OCS Production Substitutes

OCS production is one of many sources of energy supply for the U.S. that fits into the energy market landscape described in this chapter. Changes in OCS production do not directly lead to changes in demand. Rather, a change in OCS production would likely lead to changes in crude oil prices, which could prompt responses by other suppliers (producers or importers), and eventually consumers.

[Section 5.3.2.5](#) discusses the energy substitutes that could be expected in the absence of new OCS leasing. These estimates are calculated using current laws, regulations, and technology assumptions inherent in the AEO's 2023 reference case, including certain provisions of the IRA. Incorporating the IRA provisions in BOEM's analysis was among the key stakeholder comments received for the Proposed Program. Further, the Bipartisan Infrastructure Law (P.L. 117-58) provided significant investments in electric vehicle charging stations, clean energy school buses, and public transit. These policies are encouraging renewable energy and, together with technological change, could substantially increase the use of renewable energy sources and decrease the need for crude oil and natural gas during the life of this National OCS Program.

6.4 Energy Markets Conclusion

The U.S. has complex energy markets designed to efficiently supply the Nation with energy. The OCS Lands Act requires long-term planning for OCS crude oil and natural gas lease sales in the form of a National OCS Program. At any point during the 5-year span of the National OCS Program, the Secretary has the authority to limit the number of lease sales or areas available for lease for many reasons, thereby allowing re-evaluation of specific lease sale schedule proposals once new information is available (e.g., prices, industry interest, future policies). Although domestic energy markets have undergone major changes in recent years with an abundance of new onshore crude oil and natural gas production coming online, the OCS remains a meaningful source of comparatively stable energy production.



Chapter 7

Other Uses of
the OCS



Chapter 7 Other Uses of the OCS

Section 18(a)(2)(D) requires the Secretary to consider OCS Regions “with respect to other uses of the sea and seabed, including fisheries, navigation, existing or proposed sea lanes, potential sites of deepwater ports, and other anticipated uses of the resources and space of the outer Continental Shelf.” This chapter provides a discussion about other uses of the OCS within the areas remaining under consideration for inclusion in the Final Proposal, including the following:

- commercial, recreational, and subsistence uses
- ports, marine navigation, sea lanes, and submarine cables
- military and National Aeronautics and Space Administration (NASA) uses
- renewable energy
- non-energy marine minerals, including sand
- foreseeable developments in carbon capture and storage.

Unless otherwise noted, the principal source of information on the economic and public uses of the OCS and the adjacent coastal regions for the different program areas is BOEM’s Economic Inventory Report (BOEM 2014a). See the full Economic Inventory Report for detailed information and data on the economic and public use categories for each of the program areas.

Additionally, this discussion provides information on the status of BOEM’s renewable energy leasing and non-energy marine minerals leasing in the program areas. In 2009, USDOJ announced the final regulations for the OCS Renewable Energy Program, which was authorized by the Energy Policy Act of 2005. These regulations provide a framework for issuing leases, easements, and rights-of-way for OCS activities that support energy production and transmission from sources other than oil and natural gas. Further directives pertaining to offshore wind development were included as part of P.L. 117–169, the IRA. Section 50265(b)(2) of the IRA requires BOEM to offer at least 60 million OCS acres for oil and gas leasing within the 12 months prior to issuing an offshore wind lease. This requirement is effective until August 16, 2032. As new laws, policies, and regulations have been enacted, BOEM has diligently worked to oversee responsible renewable energy development on the OCS.

The OCS Lands Act assigns USDOJ responsibility for leasing OCS non-energy minerals such as sand for shore protection, beach restoration, and coastal wetland restoration; this responsibility has been delegated to BOEM. Section 8(k) of the OCS Lands Act sets forth requirements for this activity. To date, noncompetitive agreements have been negotiated and leases issued for sand for beach nourishment and coastal restoration projects by BOEM’s Marine Minerals Program (MMP). OCS resources dredged for these projects are typically in water depths of less than

100 feet. Section 11 of the OCS Lands Act also allows BOEM to oversee G&G exploration to identify new potential mineral resources.

In addition to conveying access to OCS sand and other sediments, the MMP is also responsible for competitive leasing for non-energy minerals, including but not limited to cobalt, copper, lead, manganese, zinc, gold, platinum, and rare earth minerals. While there is currently no active leasing for these minerals on the OCS, the MMP is gathering more information about mineral locations, characteristics, and the associated ecosystems. BOEM is working with other agencies and academia to increase the scientific information it has in areas with the highest potential for resources. For more information, see <https://www.boem.gov/marine-minerals/offshore-critical-mineral-resources>.

In addition to renewable energy and marine minerals activity, BOEM is involved in the nascent carbon capture and sequestration industry for the United States. The passage of the Infrastructure Investment and Jobs Act on November 15, 2021, gave the Secretary the authority to grant a lease, easement, or right-of-way on the OCS for long-term CO₂ sequestration that would otherwise be emitted into the atmosphere and contribute to further climate change.

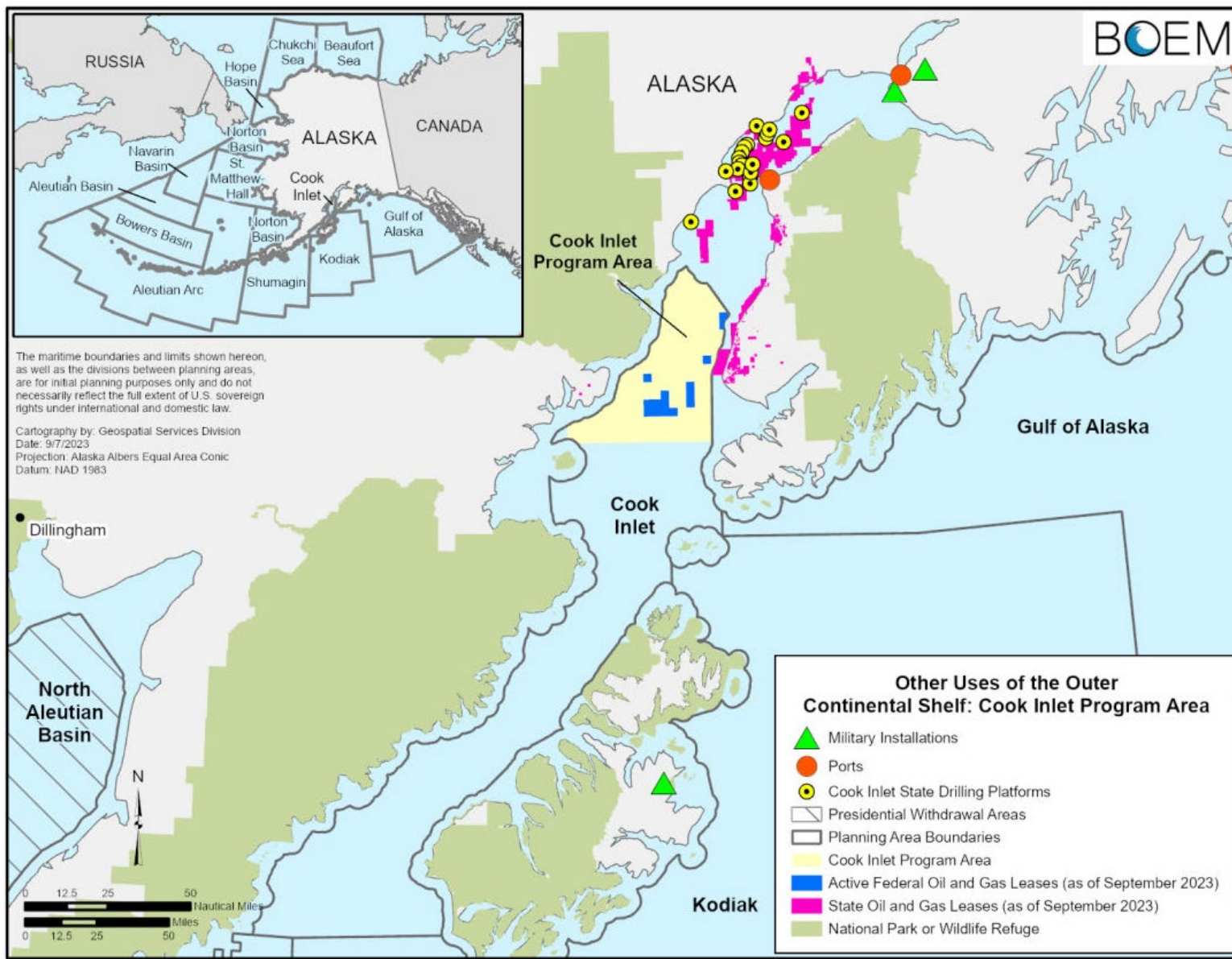
BOEM and BSEE are working to draft a proposed rule establishing carbon sequestration regulations for the OCS, which will be published and available for public comment once complete. BOEM's analysis of existing data demonstrates that the geology of the GOM offshore could be suitable to store large amounts of CO₂ in subsurface saline aquifers and depleted oil and gas reservoirs. Similar storage potential in other areas could be assessed by BOEM to establish safe and long-term CO₂ storage on the OCS.

Appendix A contains a summary of the individual comments that BOEM received in response to the [Proposed Program](#) related to other uses of the OCS and potential conflicts between these other uses and oil and gas leasing activities. Many of the comments received from Federal agencies, state agencies, governor's offices, and environmental advocacy groups highlight the critical importance of other existing, diverse coastal and ocean uses to both regional and statewide economies and requested that BOEM fully consider any potential use conflicts.

7.1 Cook Inlet Program Area

The one program area being analyzed in the Alaska Region, Cook Inlet, is found in the Pacific Margin subregion, which includes the Cook Inlet, Gulf of Alaska, Shumagin, Kodiak, and Aleutian Arc planning areas. [Figure 7-1](#) and [Table 7-1](#) show the other current uses of the OCS for the Cook Inlet Program Area.

Figure 7-1: Other Uses of the Outer Continental Shelf: Cook Inlet Program Area



**Table 7-1: Other Uses of the OCS
within Cook Inlet**



Activity	Cook Inlet
Commercial Fishing	✓
Recreational Fishing	✓
Subsistence	✓
Tourism	✓
Ports/ Shipping Routes	✓
Federal Agency Activity	
State Oil and Gas Activity	✓
Current OCS Oil and Gas Activity	✓
OCS Renewable Energy	
Potential OCS Marine Minerals Activity	

7.1.1 Commercial, Recreational, and Subsistence Uses

Commercial fishing, seafood harvesting and processing, tourism and recreation, and commercial shipping are all important industries in and adjacent to the Pacific Margin subregion. Other commercial activities include oil and gas production in state waters adjacent to the Cook Inlet Program Area.

The Cook Inlet Drift Gillnet Fishery, the only commercial salmon fishery in the Federal waters of Cook Inlet, had 500 drift permit holders in 2022 (Poux 2022). This fishery is designated each year by the Alaska Department of Fish and Game and usually operates from mid-June to mid-August. A gillnet is a wall of netting that hangs in the water column, typically made of monofilament or multifilament nylon. Federal oil and gas leases in Cook Inlet include a stipulation to protect this fishery by prohibiting lessees from conducting on-lease marine seismic surveys during the fishing season and requiring coordination with the United Cook Inlet Drift Association.

Cook Inlet includes recreational fisheries for five species of Pacific salmon. Non-commercial, personal use fisheries are present for sockeye salmon and smelt. Halibut, razor clams, and several species of hard-shell clams are harvested on the western side of Cook Inlet where minor fisheries for Tanner and Dungeness crab are present (ADF&G Undated). King salmon are caught year-round, while coho, sockeye, and pink salmon are typically caught July through September. Sport fishing for halibut occurs February 1 through December 31 annually, along with other groundfish including lingcod and rockfish.

A commercial activity that could impact use of the OCS adjacent to the Cook Inlet area is the development of the Donlin Gold Mine, about 10 miles from Crooked Creek Village near the Kuskokwim River. This mine uses both marine and air transport, and a new dock and pipeline are planned adjacent to upper Cook Inlet. Drilling at the mine commenced in February 2020 (Barrick Novagold 2020). On July 20, 2022, the Alaska Department of Natural Resources granted land use

rights for a proposed 315-mile-long natural gas pipeline along the western side of Cook Inlet to supply power for the site (Ebertz 2021.).

Tourism is a key component of the Cook Inlet area's economy. This area is popular for outdoor recreational activities, particularly fishing, hiking, boating, hunting, and wildlife viewing. Subsistence fishing and hunting are critically important public uses of coastal and marine resources in and adjacent to the Cook Inlet Program Area. While species of salmon are the primary subsistence source in and near the Cook Inlet Program Area, halibut and shellfish (particularly crab) are also important. Subsistence fishing and hunting make up a substantial portion of many communities' annual diets. As described in the Final EIS for Cook Inlet Lease Sale 244, data indicate that large amounts of subsistence foods are harvested in the geographic areas adjacent to the Cook Inlet Program Area (BOEM 2016).

7.1.2 Ports, Marine Navigation, Sea Lanes, and Submarine Cables

Cook Inlet has six deep draft ports, including Anchorage, Port MacKenzie, Nikiski Industrial Facilities, Port of Homer, City of Seldovia, and Drift River Oil Terminal. The Port of Alaska, formerly called the Port of Anchorage, on the eastern end of Cook Inlet is the third largest port in Alaska. This port is essential for many Alaska residents since it provides approximately 90% of fuel and freight to Alaska's population (Port of Anchorage 2016). Vessel types include cargo ships, tankers, tugs, cruise ships, commercial fishing boats, and research vessels.

In 2006, the Port of Alaska was designated a Department of Defense (DOD) National Strategic Seaport and can provide deployment and staging areas to respond to war or national emergencies (Port of Anchorage 2011). The Port of Alaska also made the 2018 list of the top 25 U.S. ports for container capacity (20-foot equivalent units) (BTS 2019). Activities and vessel calls at ports, harbors, and terminals in Cook Inlet are likely to increase over the next 40 to 50 years once several port expansion projects are completed and economic activity increases (BOEM 2016).

Globally important infrastructure is present in ocean waters, including in the Cook Inlet Program Area, connecting the U.S. and other countries. More than 95% of submarine cables carry international voice, data, and internet traffic of the U.S., and have been deemed critical infrastructure (Carter et al. 2009). Coordination between ocean users and submarine cable operators is important prior to conducting OCS operations. For more information on submarine cables, refer to Carter et al. (2009) and the North American Submarine Cable Association (NASCA) at <https://www.n-a-s-c-a.org/>, including September 2022 cable maps. There could also be other existing cables not identified on NASCA maps from non-NASCA members.

7.1.3 Military and NASA Uses

For the Cook Inlet Program Area, no specific conflicts were identified; however, DOD requested coordination to deconflict with activities that are conducted in the area. DOD and USDOJ will

continue to coordinate extensively under a 1983 Memorandum of Agreement, which states that the two parties shall reach mutually acceptable solutions when the requirements for mineral exploration and development and defense-related activities conflict. Analysis of DOD uses of the OCS has been considered in the development of the PFP.

Previously identified DOD activities involving OCS areas, including Cook Inlet, consist of transit of military vessels through OCS waters, submarine activities, aircraft overflights, and related maneuvers. The U.S. Air Force conducts flight training and systems testing over extensive areas on the OCS. The U.S. Coast Guard (USCG) conducts search and rescue missions and coordinates with the U.S. Navy to conduct ice thickness and acoustic surveys. NASA did not provide comments on the Cook Inlet Program Area.

7.1.4 Renewable Energy

BOEM has not yet received any applications for renewable energy leasing in the Cook Inlet Program Area. However, recent efforts have been made to evaluate the potential for hydrokinetic and wind power. During summer 2021, the National Renewable Energy Laboratory collected detailed tidal resource measurements in Cook Inlet state waters, north of the Cook Inlet Program Area. Physical characteristics of this area provide potentially significant tidal power resources, with an estimated capacity of 6–18 gigawatts of theoretical tidal power (NREL 2021). Future research activities involving marine hydrokinetic energy in Cook Inlet are possible. Additionally, efforts are being made to evaluate the potential for other viable renewable OCS energy projects. Preliminary results of a BOEM-funded study indicate that significant wind energy resources exist in lower Cook Inlet (NREL Study number AK-21-x07).

7.1.5 Non-energy Marine Minerals

Although BOEM has not issued any leases for non-energy minerals in the Alaska planning areas, there have historically been inquiries regarding potential prospecting for and competitive leasing of mineral resources such as gold. However, no such interest has been expressed within the Cook Inlet Program Area. It is unlikely that competitive leasing for gold or other strategic mineral resources would be further developed within the timeframe of this National OCS Program.

7.2 Gulf of Mexico Program Area

The most notable other uses within the GOM Program Area in terms of economic contribution are coastal tourism and recreation, commercial fishing and seafood harvesting, and commercial shipping. [Table 7-2](#) and [Figure 7-2](#) show the other uses of the OCS within the GOM Program Area.

Table 7-2: Other Uses of the OCS within the Gulf of Mexico Program Area



Activity	GOM Program Area
Commercial Fishing	✓
Recreational Fishing	✓
Subsistence	✓
Tourism	✓
Ports/Shipping Routes	✓
Federal Agency Activity	✓ (DOD)
State Oil and Gas Activity	✓
Current OCS Oil and Gas Activity	✓
OCS Renewable Energy	✓
OCS Marine Minerals Activity	✓

7.2.1 Commercial, Recreational, and Subsistence Uses

The GOM Program Area contains the Western GOM Planning Area and the portions of the Central and Eastern GOM planning areas not currently under Presidential withdrawal; however, the information included in this section was only available by planning area. Information on activity in the Eastern GOM Planning Area is included because some of the activities overlap with the GOM Program Area.

The GOM commercial fishery sector is largest in Louisiana, followed by Texas and then Florida. However, Florida's seafood industry contributes most to GDP because of its contributions further along the seafood supply chain (e.g., processors, retailers). In 2020, ports in Intracoastal City and Empire-Venice in Louisiana ranked sixth and seventh in the U.S. for seafood landing weight, with 234 and 209 million pounds, respectively. The GOM Region contributed 14% of landings and 15% of value for U.S. commercial fisheries (NOAA 2020). [Figure 7-3](#) shows the comparison between the GOM planning areas for commercial fishing landings and value for 2019.

Figure 7-2: Other Uses of the Outer Continental Shelf: Gulf of Mexico Program Area

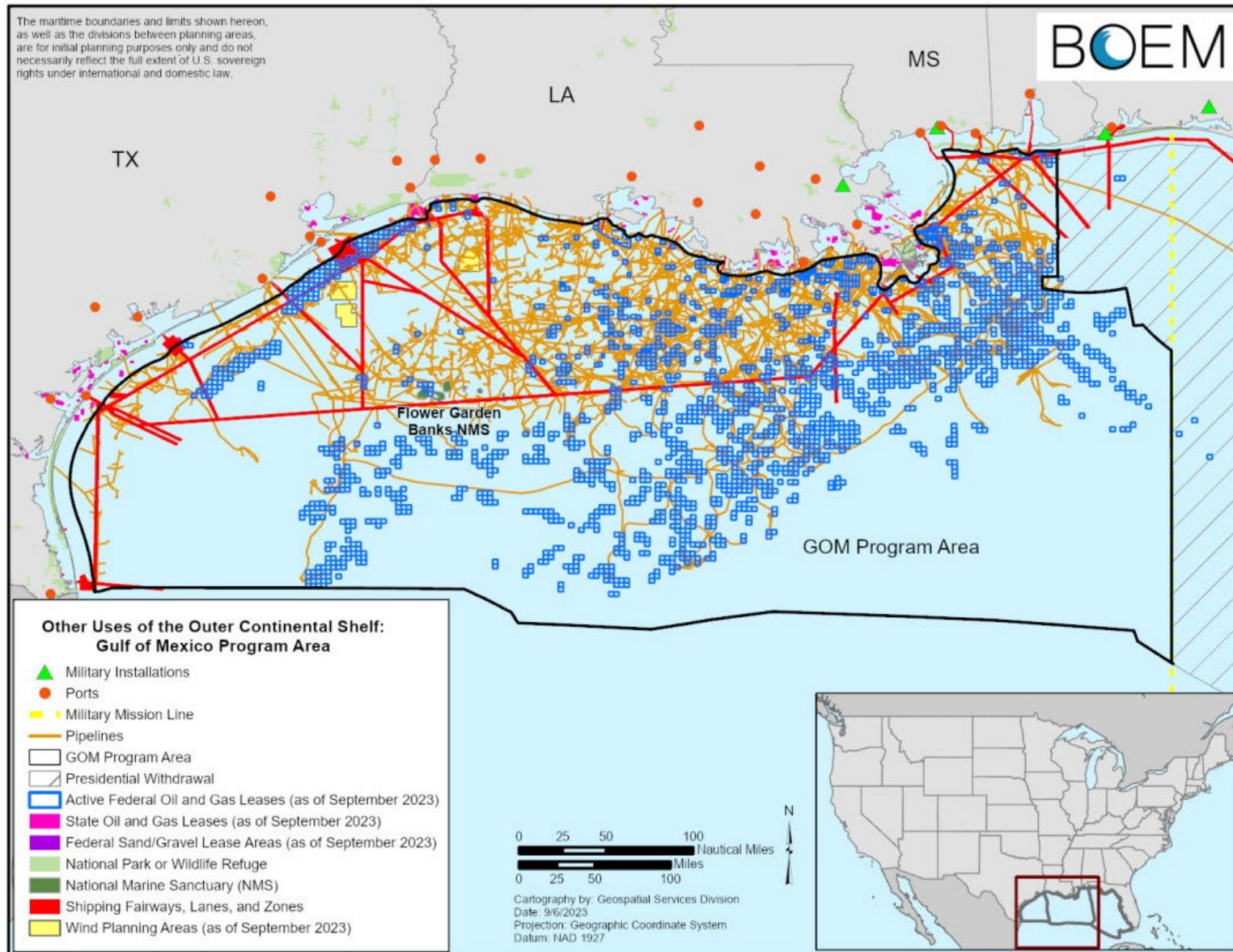
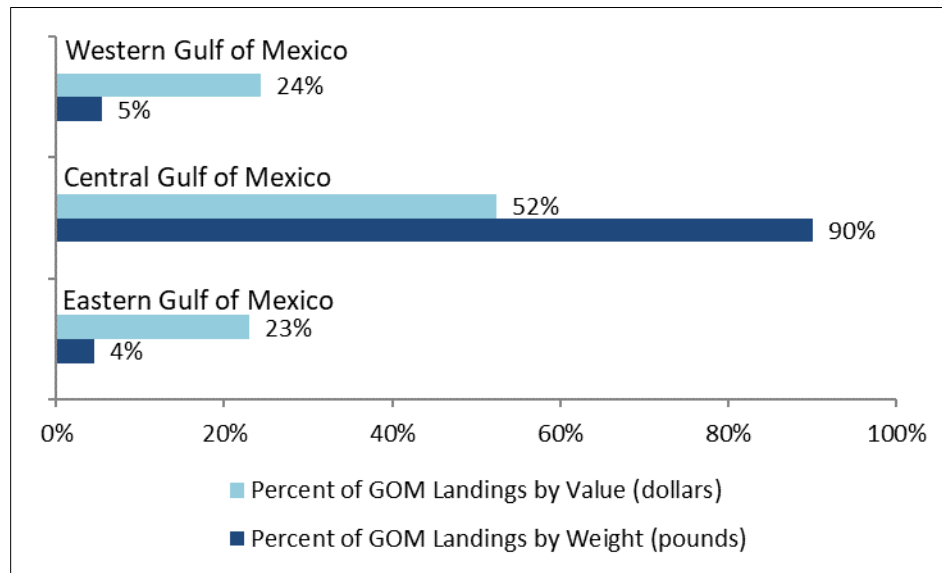
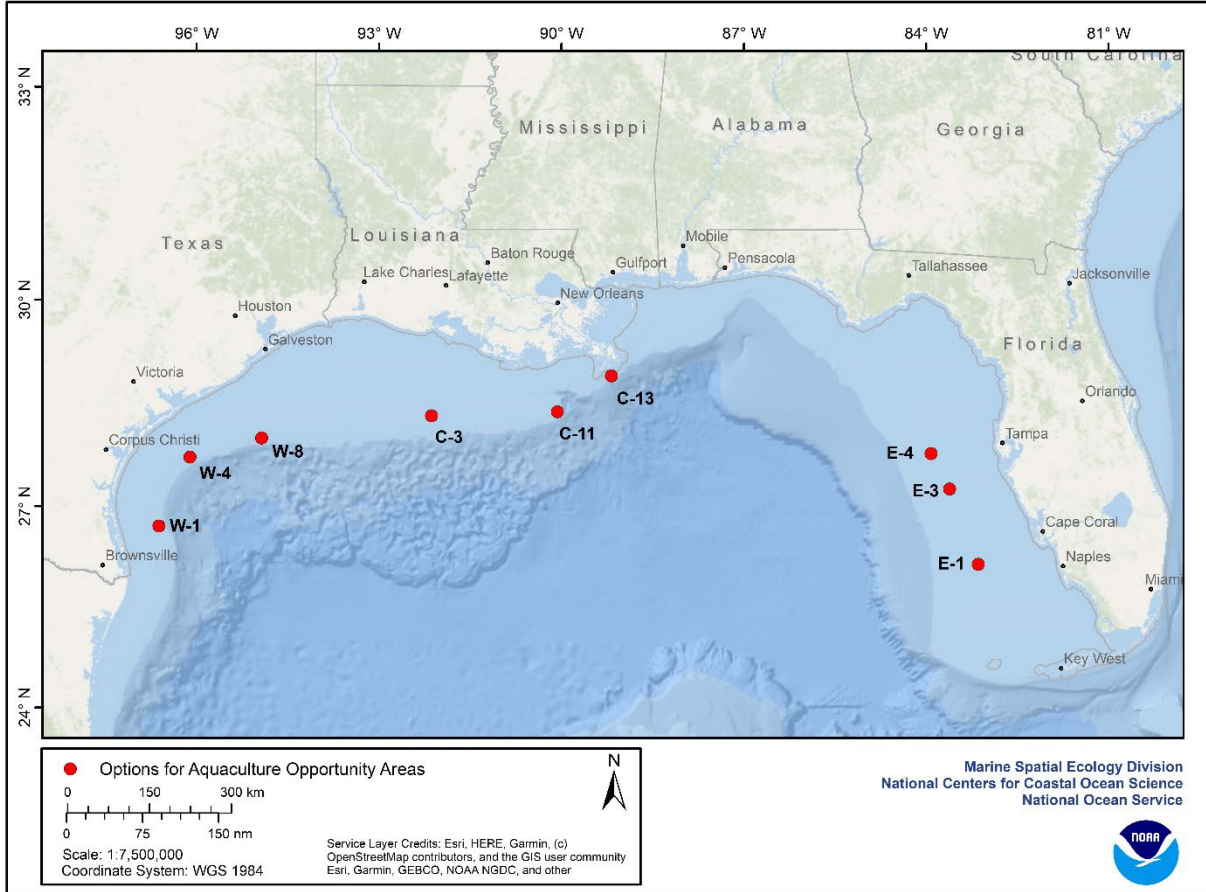


Figure 7-3: Commercial Fishing Value and Landings for the Gulf of Mexico Region, 2019

Source: NMFS (2020)

Aquaculture, or the farming of seafood species, is becoming more common along the Gulf Coast (see [Figure 7-4](#)). In 2016, a final rule was established to implement a Fishery Management Plan to regulate aquaculture in the GOM (81 FR 1762). In 2018, the GOM Region produced approximately 22% of the U.S. volume of marine aquaculture (NOAA 2020). BOEM and NMFS will work together to address and resolve any multiple use issues regarding use of the OCS for aquaculture and energy programs.

On May 2, 2023, NOAA Fisheries and its cooperating agencies published a Public Scoping Summary as part of its process to develop the *Gulf of Mexico Aquaculture Opportunity Area Programmatic Environmental Impact Statement* summarizing comments received on previously identified Aquaculture Opportunity Areas in the GOM. The process to select these areas was based on a spatial suitability model that included analysis of more than 200 data layers for a variety of factors, including energy and industry infrastructure, and the areas have been selected to minimize potential conflicts. The intent of this effort is to support long-term planning for offshore aquaculture. More information is available at: <https://www.fisheries.noaa.gov/southeast/aquaculture/gulf-mexico-aquaculture-opportunity-area-programmatic-environmental-impact-statement>.

Figure 7-4: Aquaculture in the Gulf of Mexico

Three of the five Gulf Coast states—Alabama, Louisiana, and Texas—have had some historical oil and gas exploration activity and currently produce oil and gas from state submerged lands.⁴⁹ Additionally, millions of individuals participate in a variety of recreational activities in the region’s coastal environment each year, including recreational fishing, beach visitation, swimming, boating, and wildlife viewing. The tourism and recreation industries in Alabama and Mississippi compose sizable portions of state GDP as a percent of each state’s total employment. Gulf Islands Seashore, which covers parts of coastal Mississippi, Alabama, and Florida, was the ninth most visited national park in 2021 (NPS 2022).

Coastal tourism and recreation industries constitute an important part of local economic activities for states adjacent to the program area. In 2022, the leisure and hospitality industry accounted for approximately 14,000 establishments, 246,000 jobs, and more than \$1.7 billion in wages in shoreline-adjacent areas to the GOM Program Area. This included approximately

⁴⁹ For additional information on state oil and gas leasing programs in the GOM, see Chapter 3 of BOEM’s Final Multisale Environmental Impact Statement for Gulf of Mexico Lease Sales 249, 250, 251, 252, 253, 254, 256, 257, 259, and 261 (BOEM 2017a).

4,900 establishments, 95,000 jobs, and \$536 million in wages for areas adjacent to the Western GOM Planning Area and 9,100 establishments, 151,000 jobs, and \$1.2 billion in wages for areas adjacent to the Central GOM Planning Area (BLS 2022).

Subsistence fishing and seafood harvesting are historically important public uses of coastal and marine resources within the GOM Program Area, particularly to rural communities. Traditional subsistence harvesting, including fishing and hunting, continues among some ethnic and low-income groups (MMS 2003). Several groups living along the Louisiana coast are central to the culture of the region and rely on fisheries and related marine resources. The Cajun population harvests fish and shellfish from the bayou as part of its subsistence activities (Henry and Bankston 2002). The United Houma Nation and Chitimacha Tribe in southeastern Louisiana depend on subsistence diets, recovering foods from coastal areas. Vietnamese anglers, who fish in the near offshore, retain up to 25% of their catch for their families and for bartering (Alexander-Bloch 2010).

7.2.2 Ports, Marine Navigation, Sea Lanes, and Submarine Cables

Total port calls in the U.S. are increasing, as are total port calls within the GOM Program Area (BOEM 2017b). GOM port calls represent approximately 33% of all U.S. port calls. The USCG designates shipping fairways and establishes traffic separation schemes that control the movement of vessels as they approach ports. Of the top 25 ports by total tonnage for 2020, 12 are in the GOM ([Table 7-3](#)) (BOEM 2017b).

The U.S. has three operating deepwater ports, including the Louisiana Offshore Oil Port, which is near the GOM Program Area. The Louisiana Offshore Oil Port is approximately 16 miles southeast of Port Fourchon, Louisiana, and began operations in 1981 to serve as an oil import facility for unloading and distribution for incoming supertankers to the GOM Region. This port has a throughput capacity of up to 1.2 million barrels per day and is the only deepwater port petroleum terminal in the U.S.

Additionally, a new floating LNG export project, Port Delfin, is anticipating investment decisions that could result in operations commencing in 2026. Port Delfin would be in Federal waters offshore Cameron Parish, Louisiana, and consists of a deepwater port and four floating LNG vessels handling a total of approximately 13 million tonnes (14.3 million tons) per annum of LNG (Wright 2022).

An extensive network of pipelines in the GOM Program Area carries all gas production and almost all OCS oil production from the OCS to onshore refineries and terminals. Many submarine power cables and related umbilicals are associated with oil and gas platforms and field development within the GOM Program Area (BOEM 2017a). For more information on submarine cables, refer to (Carter et al. 2009) and <https://www.n-a-s-c-a.org/>, including January 2022 cable

maps. There could also be other existing cables not identified on NASCA maps from non-NASCA members.

**Table 7-3: Top Ports Near the GOM Program Area
by Tonnage, 2020**



Port	Cargo Throughput (short tons)
Houston, TX	275,940,289
South Louisiana, LA	225,086,697
Corpus Christi, TX	150,755,485
New Orleans, LA	81,067,448
Baton Rouge, LA	71,686,872
Beaumont, TX	70,567,386
Mobile, AL	53,206,561
Plaquemines, LA	46,750,799
Lake Charles, LA	43,053,658
Port Arthur, TX	41,222,200
Freeport, TX	38,748,662
Texas City, TX	33,721,312
Gulfport, MS	1,642,723

Notes: Ports are shown in order from greatest to smallest tonnage. All ports in this table are included in the top 25 ports in the U.S. for tonnage.

Source: DOT (2023)

7.2.3 Military Uses

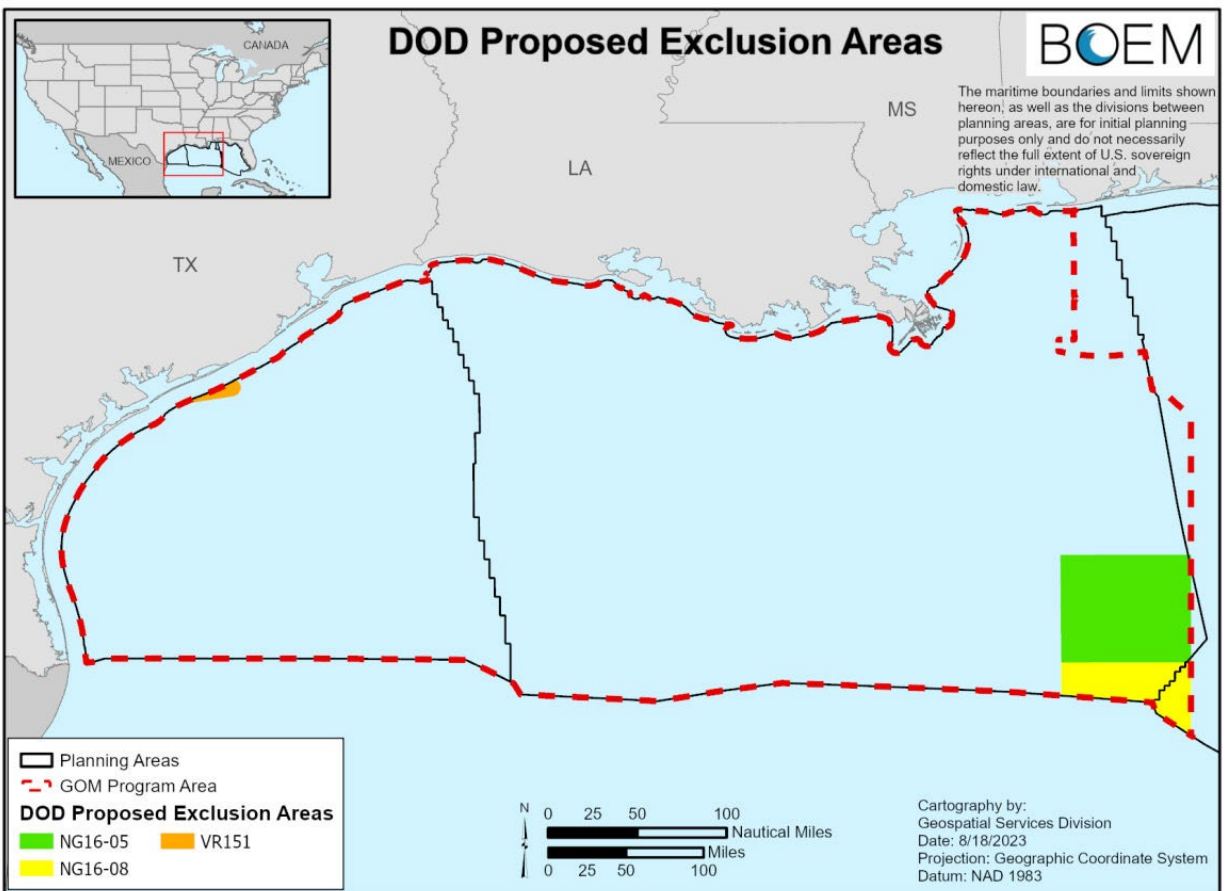
DOD conducts training, testing, and operations in the GOM Program Area. These activities are critical to military readiness and national security. The U.S. Navy uses the airspace, sea surface, subsurface, and seafloor of the OCS for events ranging from instrumented equipment testing to live-fire exercises. The U.S. Air Force conducts flight training and systems testing over extensive areas on the OCS. The U.S. Marine Corps conducts expeditionary warfare training. The USCG conducts search and rescue missions.

Some of the most extensive offshore areas used by DOD include U.S. Navy at-sea training areas. Training and testing could occur throughout the GOM OCS waters but are typically concentrated in Military Operating Areas (OPAREAs), warning areas, and testing ranges. These activities could vary depending on where they occur (e.g., open versus nearshore water). The GOM Program Area include the Corpus Christi and New Orleans OPAREAs, as well as portions of the Pensacola OPAREA, part of the Gulf of Mexico Range Complex.

Specific potential mission impacts on DOD activities involving the Navy were identified in two areas within the GOM Program Area in response to the Second Proposal. The first involves potential impacts on aviation flight training near the Texas coast over the western edge of the GOM Program Area. To avoid potential mission impacts, DOD requested that BOEM exclude the

portion of the OCS underlying military training route VR-151 from development. This area totals approximately 112,216 acres of the OCS. The second potential conflict identified includes approximately 4.64 million acres in the southeastern corner of the GOM Program Area. This space is used for sea trials and combat systems ship qualification trials supporting shipyards in Alabama and Mississippi. See [Figure 7-5](#).

Figure 7-5. Proposed DOD Exclusion Areas



Sea trials require the flexibility to evaluate all ship systems ranging from propulsion to onboard weapons. Avoiding conflicts with these activities requires open sea space to ensure safe operations for activities that will be hazardous to a non-participant. To ensure compatibility with these activities, DOD requested these areas remain free of permanent surface structures and for coordination during the exploration and development process to ensure Navy is able to utilize open sea space to meet its mission requirements.

DOD noted that development within these areas had the potential to impact mission requirements involving radar systems. Large above-water structures, such as oil rigs, have a masking effect on radar. Offshore structure data including location and height, which is not available at this stage of the planning process, is necessary to fully understand potential impacts and develop mitigation strategies.

Military Warning Areas (MWAs) are established to allow military forces to conduct training and testing activities. The GOM includes 12 MWAs and six Eglin Air Force Base Water Test Areas. While these are primarily in the Eastern GOM Planning Area, the westernmost boundary of several test areas overlaps with the eastern edge of the GOM Program Area. The six test areas are uncharted and procedures for use of the airspace are established by letter of agreement with the controlling air traffic center. The areas do not encompass any warning or restricted airspace but are used in conjunction with warning areas. The purpose of these areas is to simplify the process of issuing notices to air missions when hazardous tests require the airspace (Eglin Air Force Base 2020).

Military operations and oil and gas exploration and production have coexisted for many years in the GOM Program Area (BOEM 2017a). DOD and USDOJ continue to coordinate extensively under a 1983 Memorandum of Agreement, which states that the two parties shall reach mutually acceptable solutions when the requirements for mineral exploration and development and defense-related activities conflict. DOD provided detailed comments in response to the Second Proposal regarding compatibility of military activities and OCS oil and gas development within the program areas under consideration. Analysis of DOD uses of the OCS was considered when developing this PFP, and discussions involving potential conflict mitigation are ongoing.

NASA provided a Mission Impact Statement outlining potential conflicts with NASA operations and OCS oil and gas development. Based on this and other comments provided by NASA to BOEM in response to the Draft Proposal and Second Proposal, no conflicts are projected to occur in the GOM between potential oil and gas activity and NASA operations.

7.2.4 Renewable Energy

On November 1, 2021, BOEM published a Call for Information and Nominations (86 FR 60283) to further assess commercial interest in, and invite public comment on, possible commercial wind energy leasing in a proposed area in the GOM. In January 2022, BOEM announced it was preparing a Draft EA to consider impacts from potential offshore wind leasing in Federal waters of the GOM. During this planning process, BOEM received an unsolicited application for renewable wind energy leasing in the GOM Region. The unsolicited application was within the Call Area and BOEM determined that there is competitive interest in the application area.

On October 31, 2022, BOEM announced finalization of two Wind Energy Areas (WEAs) in the GOM. The first WEA is approximately 24 nm off the coast of Galveston, Texas. This area totals 508,265 acres. The second WEA is approximately 56 nm off the coast of Lake Charles, Louisiana, and totals 174,275 acres.

On February 24, 2023, BOEM published a Proposed Sale Notice in the *Federal Register*, initiating a 60-day public comment period. This notice proposed an offshore wind lease sale for three proposed lease areas in the GOM. Two of these proposed lease areas are within the WEA off the

coast of Galveston, Texas, while the remaining proposed lease area is within the WEA offshore Lake Charles, Louisiana. BOEM published a Final Sale Notice on July 21, 2023, and the lease sale was held on August 29, 2023. Coordination for renewable energy development is being conducted in partnership with Federal, state, and local agencies and Tribal governments via the Gulf of Mexico Intergovernmental Renewable Energy Task Force. More information on the task force and ongoing planning activities can be found at this address: <https://www.boem.gov/renewable-energy/state-activities/gulf-mexico-gom-intergovernmental-renewable-energy-task-force>. For more information on potential wind energy development in the GOM, visit <https://www.boem.gov/renewable-energy/state-activities/gulf-mexico-activities>.

7.2.5 Non-Energy Marine Minerals

Within the program area, BOEM has executed 12 sand and gravel negotiated agreements from 2001 through June 2023. These projects allocated approximately 85,596,000 cubic yards of sand for restoration projects, resulting in 72 miles of shoreline restoration. Eleven of these projects, totaling 65,996,000 cubic yards of sand, were offshore Louisiana, where 65 miles of shoreline was restored. One project totaling 19,600,000 cubic yards was offshore Mississippi, where 7 miles of shoreline was restored. BOEM expects that several major restoration projects will require the use of OCS sand resources to restore coastal wetlands and barrier islands along the Gulf Coast (Dartez 2016).

The State of Louisiana has invested hundreds of millions of dollars over the past two decades to restore barrier islands and shorelines and plans to continue to invest in rebuilding these features (CPRA 2022). Billions in Deepwater Horizon (e.g., Natural Resource Damage Assessment; National Fish and Wildlife Foundation; Resources and Ecosystems Sustainability, Tourist, Opportunities, and Revived Economics of the Gulf Coast States Act) recovery funds, the Water Resources Development Act and other Federal funds with state cost shares (e.g., Coastal Wetlands Planning, Protection, and Restoration Act, GOMESA), and other emergency funds (through the Federal Emergency Management Agency [FEMA]) are critical to supporting coastal resilience along the Louisiana coast.

The 2023 Louisiana Comprehensive Master Plan (CMP) included nearly \$16 billion for marsh and habitat creation using dredged material. Of the \$25 billion Louisiana restoration budget, \$2.5 billion was identified for programmatic restoration efforts such as barrier island maintenance as part of a regular state rebuilding program. The 2023 Louisiana CMP builds on previous master plan efforts and invests in projects to reduce storm surge-based flood risks to communities, provide habitat to support commercial and recreational activities, and support infrastructure critical to the coast of Louisiana.

Mixed sediment from the OCS is essential to coastal restoration initiatives in the GOM Region, such as the construction of wetlands. OCS sediment resources include sand, clay, silt, gravel-sized particles, and shell, found in deposits on or below the surface of the seabed on the OCS.

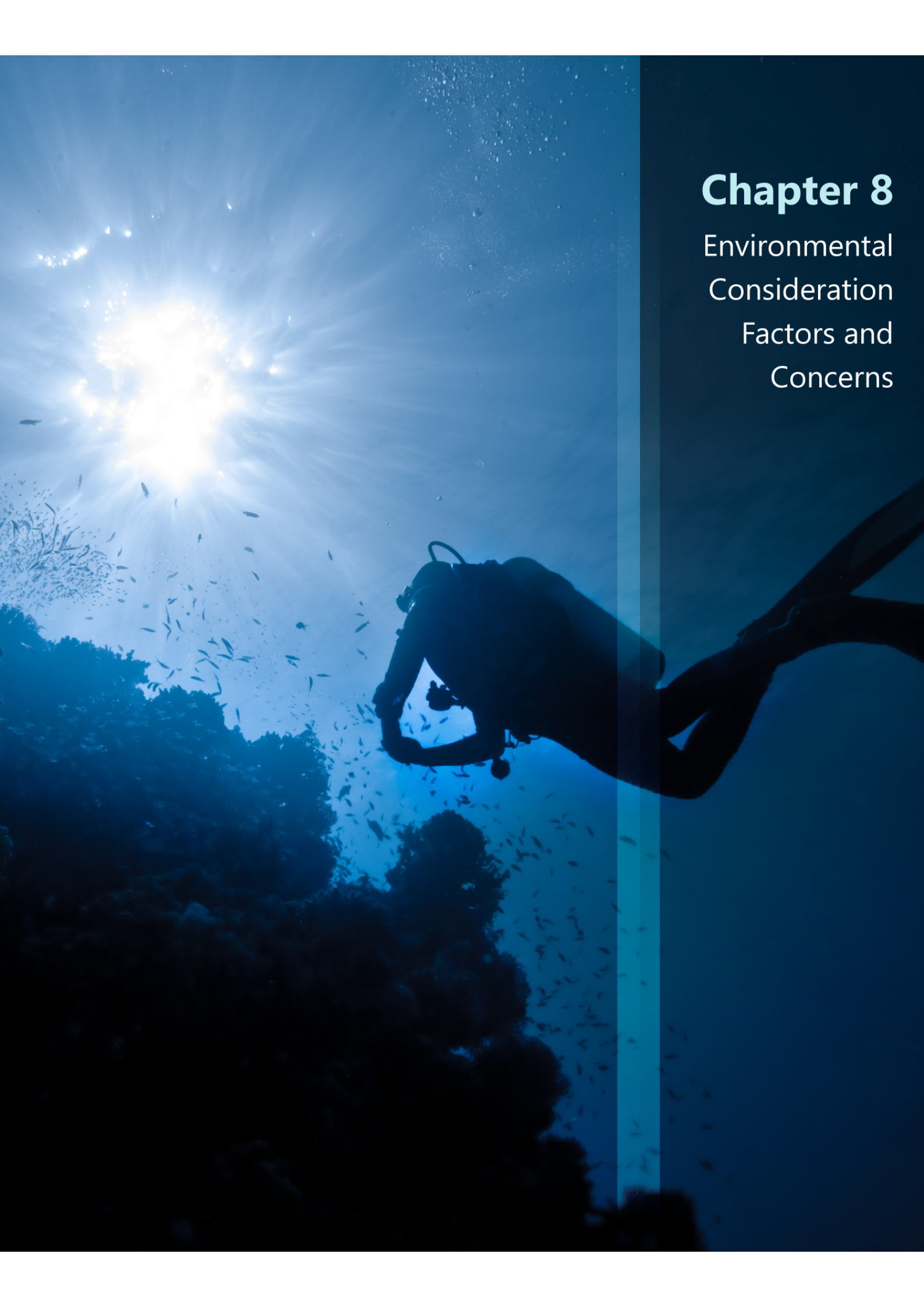
Louisiana, in coordination with FEMA, is also planning to restore the West Belle Headland in the Port Fourchon area following direct hits from named storms over the past several years. Construction is expected to commence in 2024 with sediment resources from Ship Shoal in the OCS.

BOEM also expects new requests for OCS sand related to the Texas Coastal Resiliency Master Plan, which was released in March 2023. This plan was developed in coordination with the Coastal Texas Study, a U.S. Army Corps of Engineers-lead effort to “develop a comprehensive plan to determine the feasibility of carrying out projects for flood damage reduction, hurricane and storm damage reduction, and ecosystem restoration in the coastal areas of the State.” Projects identified in the master plan for Texas will occur over the next 12 to 20 years, depending on Congressional authorization and partnerships. Construction cannot begin until a final proposal is approved and fully funded by Congress.

Up to 200 million cubic yards of material is identified in the Texas Coastal Study for use in projects in the State of Texas over the next 50 years. The USFWS is in the planning and design phase of a project to restore the shoreline in the Texas Point National Wildlife Refuge. OCS sediment resources from the Sabine Bank are proposed for use with the construction planned for 2024.

Offshore sediment resources, particularly sand, in the GOM are limited in coastal areas where needed for nourishment and restoration projects. Compounding this scarcity of sand is the fact that vast areas of these offshore sand resources are not extractable because of the presence of oil and gas infrastructure and archaeologically sensitive subareas.

BOEM has issued a Notice to Lessees and Operators and Pipeline Right-of-Way Holders to provide guidance for the avoidance and protection of significant sediment resources. This guidance is part of BOEM’s work to prevent obstructions to the use of the most significant OCS sediment resources, reduce multiple use conflicts, and minimize interference with oil and gas operations (BOEM 2017b, a). For the most current listing of significant OCS sediment resource blocks, see <https://www.boem.gov/marine-minerals/managing-multiple-uses-gulf-mexico>.



Chapter 8

Environmental
Consideration
Factors and
Concerns



Chapter 8 Environmental Consideration Factors and Concerns

As discussed in [Section 2.3](#), the environmental setting, ecological characteristics, and potential impacts on environmental resources are presented in the [Final Programmatic EIS](#).

8.1 Relative Environmental Sensitivity and Marine Productivity

8.1.1 Summary of Methodology

BOEM is required under Section 18(a)(2)(G) of the OCS Lands Act to consider the relative environmental sensitivity and marine productivity of the OCS when making decisions regarding the schedule of lease sales for the National OCS Program. For the 2017–2022 Program, BOEM built upon previous assessments of these two environmental considerations using an improved model to analyze relative environmental sensitivity and taking advantage of technological advancements to estimate marine primary productivity.

The environmental sensitivity and marine productivity analyses are intended to be used by the Secretary as one of many considerations when developing the National OCS Program. The current approach to determining relative environmental sensitivity considers both the vulnerability and resilience of an OCS Region’s ecological components to the potential impacts of OCS oil and gas activities within the context of existing conditions (e.g., ecosystem change).

For this PFP analysis, two program areas are included in the sensitivity analysis. The same methods that were used in the [DPP](#) and [Proposed Program](#) analyses are used for the PFP analysis and are briefly described below.

The methodology applied to analyze the relative environmental sensitivity for this National OCS Program is identical to that used in the [2017–2022 Program](#), but incorporates some updates and improvements based on input from public comments, updated scientific information, and changes in regulations. For example, the de-listing of the eastern distinct population segment of Steller sea lion and changes in commercial fishery landings caused some adjustments to the species selections in some of the BOEM ecoregions.

Primary productivity estimates for the program areas were generated using satellite-based measurements of chlorophyll-*a*, available light, and photosynthetic efficiency (Balcom et al. 2011). These parameters were input into the Vertically Generalized Production Model (VGPM) to provide estimates of net primary productivity (NPP). These methods are identical to the methods used in the [2017–2022 Program](#) and reflect the updated approach first used for the [2012–2017 Program](#).

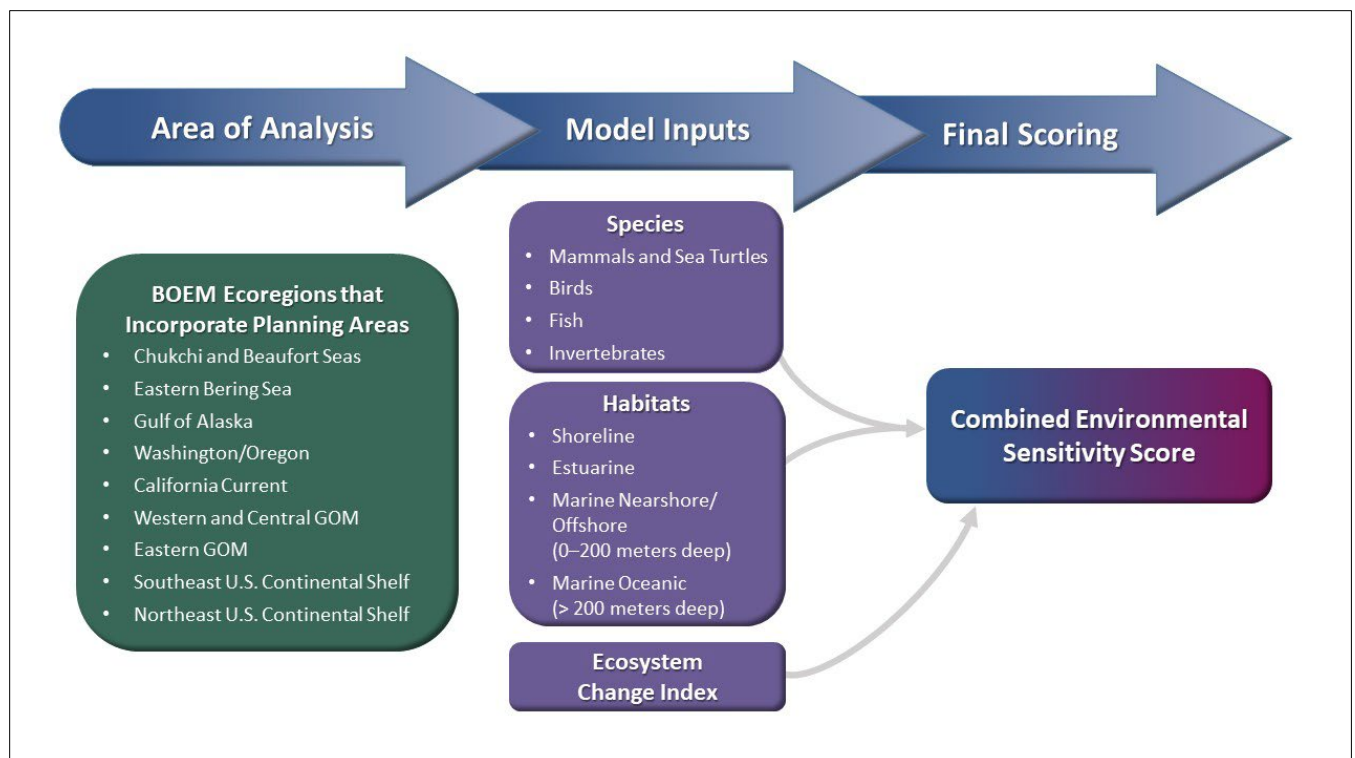
8.2 Relative Environmental Sensitivity

8.2.1 Methods

BOEM’s current approach to relative environmental sensitivity builds upon earlier methods. This method was developed with the objectives of repeatability and scientific rigor. The chosen approach treats all regions of analysis equally without bias to area, presence of existing BOEM activities, differences in species composition, or spatial inequalities of data availability, and weighs all species and habitats equally. The approach also allows unbiased comparison of geographic areas of differing size.

[Figure 8-1](#) outlines the complete process for determining the sensitivity scores. The following sections provide some details of the environmental sensitivity method and a full description is available in (BOEM 2014a). Since its development, this method has been adopted in a simplified form for use by NOAA for oil spill planning and response in Alaska (NOAA 2015).

Figure 8-1: Environmental Sensitivity Score Methodology



8.2.2 Geographic Scope

The environmental sensitivity analysis uses an ecosystem-based approach. The boundary designations for these BOEM ecoregions were informed by the original ecoregion concept (Spalding et al. 2007), and were based primarily on Large Marine Ecosystem (LME) boundaries (Sherman and Duda 1999). LMEs are large regions that sometimes extend beyond EEZ

boundaries, and their boundaries are based on bathymetry, hydrography, productivity, species composition, and trophic relationships. BOEM's marine ecoregions are areas that are differentiated by species composition and oceanographic features (Spalding et al. 2007, Wilkinson et al. 2009). BOEM ecoregions account for the distinct physical and ecological characteristics of the various OCS Regions, while simultaneously meeting BOEM's mission needs.

However, BOEM's program areas are administratively constructed designations that do not necessarily correspond to ecosystem boundaries. For this analysis of the program areas, the entirety of the OCS was divided into nine regions, referred to here as BOEM ecoregions (see Figure 2-4 of the [Final Programmatic FIS](#)). Although the entire OCS is analyzed to provide results that are relative among the various BOEM ecoregions, the areas of concern for this PFP are solely the Cook Inlet in the Gulf of Alaska Ecoregion and the GOM Program Area in the Western and Central GOM Ecoregion. Discussions and results for the other BOEM ecoregions are provided for comparison purposes only.

In addition to the numerical scores provided for the program areas in [Figure 8-2](#) and [Figure 8-3](#), the intensity of the shading corresponds to the magnitude of these scores. The figures also show the outlines of the BOEM ecoregions, which are the geographic units of analysis. Due to their relatively small and variable size, it is not practical to analyze the environmental sensitivity of the Subarea Options separately.

The seaward extent of the BOEM ecoregions used in this analysis is largely governed by the U.S. EEZ and BOEM program areas' seaward boundaries (see [Figure 1-1](#)). The use of BOEM ecoregions allowed for the analysis of geographic regions that are ecologically similar and contain similar habitat types and faunal assemblages. The initial method description (BOEM 2014b) used the terms "broad OCS Region" and "ecoregion" somewhat interchangeably. However, the boundaries of the broad OCS Regions used in this analysis do not fully align with North America's ecoregions, as traditionally defined (Wilkinson et al. 2009). Thus, to avoid confusion or inaccuracies, the spatial unit of analysis for environmental sensitivity will only be referred to as a "BOEM ecoregion" in this document.

The bulk of the scientific information available for this analysis was ecosystem-based or focused on individual faunal groups and their ecologies. To treat all regions of the OCS equally and not bias the analysis through uneven data availability, the BOEM ecoregions were created with boundaries that were ecologically meaningful and for which sufficient data were available for model input. The majority of the BOEM ecoregions encompass more than one program area (see [Figure 8-2](#) and [Figure 8-3](#)).

Figure 8-2: Relative Environmental Sensitivity for Gulf of Alaska Ecoregion

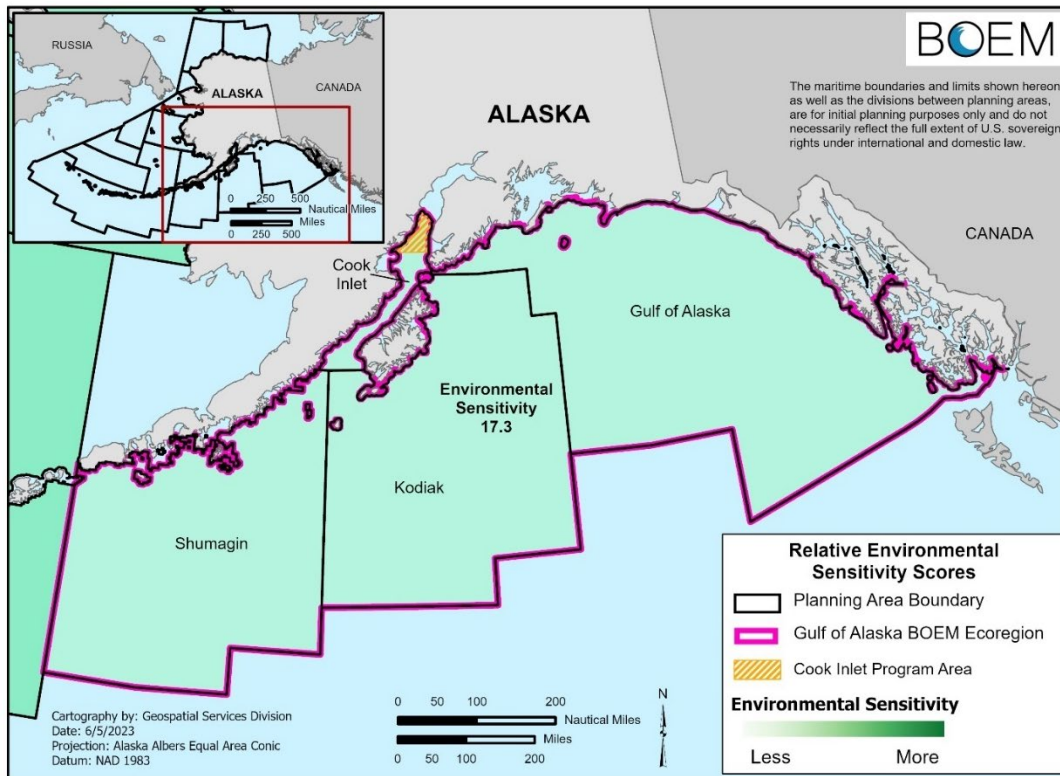
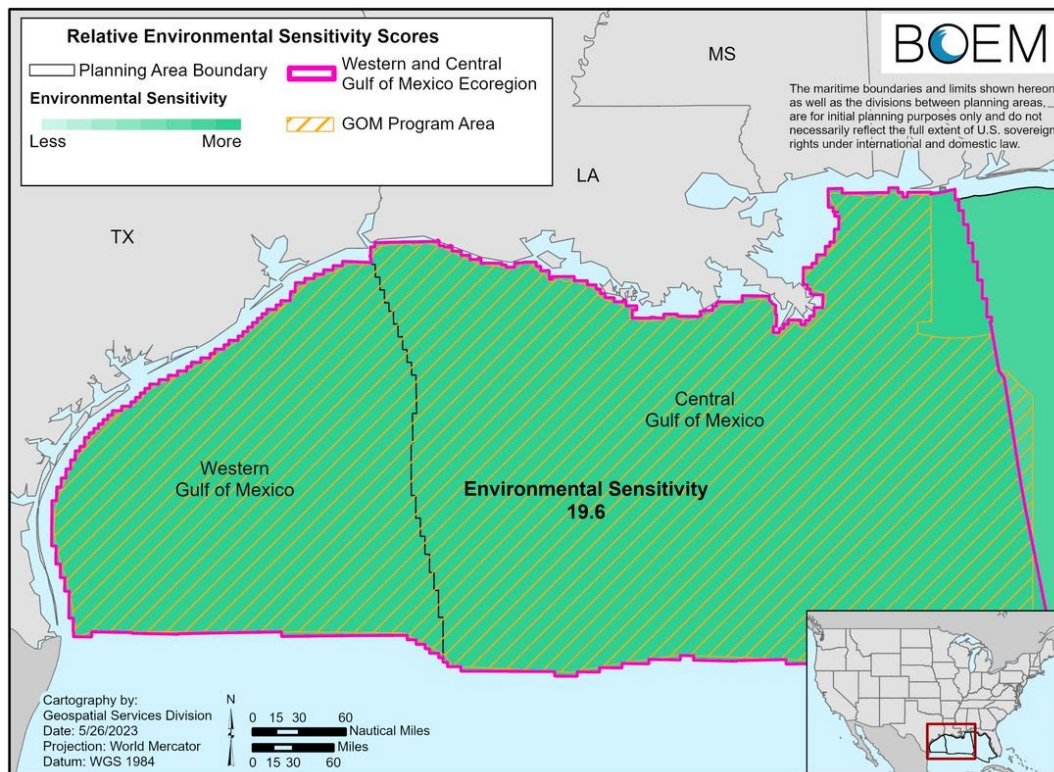


Figure 8-3: Relative Environmental Sensitivity for Western and Central GOM Ecoregion



Because the unit of analysis is a BOEM ecoregion, program areas within that region share the same environmental vulnerability and resilience to potential impacts from oil and gas exploration and development. The sensitivity scores from this PFP analysis are based on the vulnerability and sensitivity of the species and habitats within each unit of analysis—the BOEM ecoregions. Thus, program areas within the same BOEM ecoregion have the same sensitivity score. An analysis using program areas as geographic units would use the same data and support multiple program areas with similar ecologies. Therefore, such an analysis would be redundant, and the result would be identical to an analysis conducted by BOEM ecoregion. The [Final Programmatic EIS](#) provides additional information about each BOEM ecoregion, including geographical area, physical oceanography, ecological features, and human use.

The Gulf of Alaska Ecoregion, which contains the Cook Inlet Program Area, lies entirely within the U.S. waters of the Gulf of Alaska LME. The Alaska Peninsula bisects the East Bering Sea LME and the Gulf of Alaska Ecoregion. The Alaska Current flows from east to west along this portion of the OCS. This subarctic LME typically has little to no ice cover because the Alaskan Peninsula separates the Gulf of Alaska from the influence of the cold Arctic currents.

The GOM comprises a single LME, encompassing more than 1.5 million square kilometers (km²) (NOAA 2017a). However, for this PFP analysis, the GOM was divided into two BOEM ecoregions—the Eastern GOM and the Western and Central GOM—along the boundary between the Eastern and Central GOM planning areas. This boundary is not only administrative; there are several physical and biological justifications for this division. The line between these two BOEM ecoregions follows the De Soto Canyon off the coast of Alabama and traces the eastern edge of the Loop Current, which effectively divides the GOM. The northern edge of the boundary marks the westward edge of the West Florida Escarpment (part of the wide continental shelf along the eastern boundary of the GOM). Although both GOM ecoregions share similar habitat and species assemblages, there are some key differences, which are discussed in the Programmatic EIS (see Figure 2-4 of the [Final Programmatic EIS](#)).

8.2.3 Selection of Impacts, Species, and Habitats

The vulnerability and resilience of selected species and habitats to impact-producing factors (IPFs) were determined for each BOEM ecoregion. A comprehensive list of impacts and IPFs from BOEM-regulated activities was generated from recent EISs, notices to lessees and operators, and regulatory documents. These IPFs are also used in the [Final Programmatic EIS](#). Each specific IPF was assessed for its comparative relevance and overall potential impact on species and habitats on the OCS. Only IPFs with the greatest potential impacts were included in the analysis (see (BOEM 2014a), BOEM (2014b)).

These potential impacts were then grouped under the following categories of IPFs: (1) oil spills, (2) artificial light, (3) collisions with above-surface structures, (4) habitat disturbance, (5) sound/noise, accidental spills, and (6) vessel strikes. In the original method, a temporal

overlap of these activities with the presence of the species was incorporated into the model. However, this led to an inadvertent bias in lower sensitivity scores for those species that were not present year-round in their BOEM ecoregions. For the analysis in this document, it was therefore assumed that all impacts and all species could occur year-round. BOEM is considering options on how to best include this temporal variability in future versions of this model.

The environmental resources that could be vulnerable to impacts from BOEM-regulated activities include not only individual fauna, but also their habitats. Thus, both habitats and species were chosen as parameters in the environmental sensitivity analysis. The species component was organized into four groups: (1) mammals and sea turtles; (2) birds; (3) fish; and (4) invertebrates. These groups were selected to ensure broad representation across the diversity of organisms that inhabit marine and coastal waters. Species were chosen using the criteria of conservation importance, ecological role, and fisheries importance (for fish and invertebrates only).

The primary measure to determine conservation importance is Federal listing status under the ESA (NMFS 2017b). The ecological role for fish and invertebrates was based on abundance and importance as a prey or keystone species.⁵⁰ Fisheries importance was prioritized based on commercial landings weight data reported by NMFS. Species could be scored only once for each BOEM ecoregion. Four species each for the fish, birds, and invertebrate categories and five species for the marine mammal and turtle category were selected for each BOEM ecoregion. The number of species in each of the categories was determined to achieve a balance between providing adequate representation while maintaining a practical level of effort in sensitivity assessments and impact scoring. For details on the selection process for species and the data supporting these selections, see (BOEM 2014b).

The habitat parameters are comprised of the physical or biological features that support organisms or communities and have ecologically distinct properties. Habitat parameters were selected to ensure broad and diverse representation in coastal and marine areas within the BOEM ecoregion. The habitat categories were shoreline, estuarine, marine—nearshore/offshore, and marine—oceanic. Within the estuarine and both marine habitats both pelagic/water column and benthic habitats were selected.

The determination of shoreline parameters, using NOAA's Environmental Sensitivity Index (ESI) shoreline classification scheme (NOAA 1995, 2002), was based on all digital ESI shoreline data available as of 2017 (NMFS 2017b). Only oil spills were assumed to potentially impact coastal habitats. Although the bulk of BOEM-regulated activities occur in Federal waters miles from shore, shoreline habitats are at risk during spills due to the likelihood of being directly oiled when floating slicks impact the shoreline. Shoreline habitat scores were derived with methods set forth

⁵⁰ Keystone species are defined as a species on which other species in an ecosystem largely depend, such that if the species were removed, the ecosystem would drastically change.

in (BOEM 2014a) using current NOAA ESI data (NOAA 2017b). The estuarine and marine habitats were selected based on their ecological role or importance in terms of their contribution to regional biodiversity and overall productivity. For a full description of the habitat selection process, see (BOEM 2014a).

BOEM has re-evaluated the initial species and habitat selection in the original model since its first adoption and application in the development of the 2012–2017 Program. All species and habitats were examined for this PFP analysis to ensure that their selections were still valid based on the criteria prescribed in the methodology. BOEM relied upon public comments, updates to Federal regulations (such as ESA listings), and best available science to inform this review, and determined that some changes in selected species were warranted.

Some of these “new” species were included in the [2017–2022 Proposed Program](#) analysis, but some were included in the 2019–2024 [DPP](#) for the first time. A list of all changes in species and their selection rationale is shown in [Table 8-1](#); purple shading indicates the two ecoregions still under oil and gas leasing consideration. All other species and all habitat selections remain the same as provided in the 2014 Environmental Sensitivity Analysis (BOEM 2014a).

The environmental sensitivity of the selected species and habitats was scored with respect to potential impacts of oil and gas activities occurring on the OCS. This assessment was based on the quantification of the species’ and habitats’ vulnerability and resilience to potential oil and gas impacts.

Vulnerability was evaluated as the probability that a species/habitat would be exposed to an impact, and it was based on the spatial overlap between a given species/habitat and an impact. The resilience was based on the intolerance of a habitat or species to a given impact and that species’ or habitat’s recovery potential. Resilience was not predicated on previous frequency of exposure of a species or habitat to oil and gas impacts, but rather on best available data relating to ecological characteristics, tendencies, and trends, such as species’ reproductive rates and habitat recovery potential. Likewise, sensitivity analysis is intended to assess the significance of effects that an IPF will have if it occurs but does not consider the likelihood of its occurrence.



Table 8-1: Species Selected that Differ from the 2014 Environmental Sensitivity Analysis

BOEM Ecoregion	Species Selected	Replaces	Selection Criteria	Selection Rationale	Reference
Chukchi/Beaufort Seas Ecoregion	chum salmon	dolly varden	fisheries importance	The annual (weight) catch of chum salmon is higher than dolly varden. Dolly varden is not an important commercial fishery in the Arctic.	Menard et al. (2017)
	red king crab	blue king crab	fisheries importance	No commercial fishing occurs in the Arctic except for several small state-managed fish species. King crabs (<i>Paralithodes</i> spp.) are fished for subsistence purposes in the southeastern Chukchi Sea, but the species is not specified. The red king crab was chosen to replace the blue king crab as a representative species because red king crabs are becoming increasingly common in Arctic waters, including the Beaufort Sea, and they are a more important fishery in Alaskan waters than blue king crab.	ADF&G (2017a), NMFS (2017d, 2017b)
East Bering Sea Ecoregion	black-legged kittiwake	pigeon guillemot	ecological role	The black-legged kittiwake is more abundant than the pigeon guillemot in the Eastern Bering Sea.	Denlinger (2006), eBird (2017)
Gulf of Alaska Ecoregion	beluga whale	sperm whale	conservation importance	The Cook Inlet beluga whale stock is endangered and has designated critical habitat in the BOEM ecoregion. Additionally, public input on the previous National OCS Program suggested including the beluga whale. The sperm whale is endangered but does not have critical habitat designated.	Muto et al. (2017)
	harbor seal	northern fur seal	ecological role	The harbor seal is highly abundant, and its range is more focused within the Gulf of Alaska than the northern fur seal. The harbor seal is an important predator species in the program area. Northern fur seals are rarely found within the Cook Inlet, the part of the ecoregion where BOEM-regulated activities are most likely to occur.	(ADF&G 2017c, d, Muto et al. 2017)
	hooligan/eulachon	Pacific herring	conservation importance	The Pacific herring is no longer under consideration for ESA listing. Although only the southern distinct population segment of eulachon is listed, the Alaskan population is also in steady decline.	(MMS 2003, ADF&G 2017b, e, NMFS 2017c)

BOEM Ecoregion	Species Selected	Replaces	Selection Criteria	Selection Rationale	Reference
	Pacific cod	pink salmon	fisheries importance	The Pacific cod is a more appropriate choice for fisheries importance than the pink salmon due to its higher landings by weight.	(NMFS 2017b)
	black-legged kittiwake	glaucous-winged gull	ecological role	The black-legged kittiwake is more abundant than the glaucous-winged gull in the Gulf of Alaska Ecoregion.	(Denlinger 2006, eBird 2017)
Washington/Oregon Ecoregion	harbor porpoise	Dall's porpoise	ecological role	The harbor porpoise is the most abundant marine mammal in the BOEM ecoregion (minimum population estimate of about 48,000 animals). The Dall's porpoise's current minimum population estimate is just under 18,000 animals.	Carretta et al. (2017)
California Current Ecoregion	sperm whale	Steller sea lion	conservation importance	The eastern distinct population segment Steller sea lion was de-listed in 2013. The sperm whale is federally endangered with a very low potential for biological removal* (2.5 animals).	Carretta et al. (2019), NMFS (2017b)
Western and Central GOM Ecoregion	laughing gull	double-crested cormorant	ecological role	The laughing gull is highly abundant along the Gulf Coast. The double-crested cormorant is very abundant but has a wide inland distribution, making it a less appropriate choice for OCS sensitivity.	(O'Connell et al. 2011, eBird 2017)
	brown pelican	magnificent frigatebird	ecological role	The brown pelican is highly abundant along the Gulf Coast. The magnificent frigatebird is less abundant in the BOEM ecoregion.	(eBird 2017)
Eastern GOM Ecoregion	laughing gull	double-crested cormorant	ecological role	The laughing gull is highly abundant along the Gulf Coast. The double-crested cormorant is very abundant but has a wide inland distribution, making it a less appropriate choice for OCS sensitivity.	(eBird 2017)
	brown pelican	magnificent frigatebird	ecological role	The brown pelican is highly abundant along the Gulf Coast; the magnificent frigatebird is less abundant.	(eBird 2017)
Southeastern U.S. Continental Shelf Ecoregion	striped mullet	vermillion Snapper	fisheries importance	The striped mullet is the second highest landed fishery by weight in the BOEM ecoregion.	NMFS (2017a)
	sanderling	Wilson's storm-petrel	ecological role	The sanderling is abundant in the BOEM ecoregion, migrates along the coast, and is a species of concern. The Wilson's storm-petrel is less abundant in the BOEM ecoregion.	(O'Connell et al. 2011, eBird 2017)

BOEM Ecoregion	Species Selected	Replaces	Selection Criteria	Selection Rationale	Reference
	laughing gull	double-crested cormorant	ecological role	The laughing gull is highly abundant along the southeastern Atlantic Coast. The double-crested cormorant is very abundant but has a wide inland distribution, making it a less appropriate choice for OCS sensitivity.	(O’Connell et al. 2011, eBird 2017)
Northeastern U.S. Continental Shelf Ecoregion	northern gannet	double-crested cormorant	ecological role	The northern gannet has a very high density in the ecoregion. The double-crested cormorant is very abundant but has a wide inland distribution, making it a less appropriate choice for OCS sensitivity.	Kinlan et al. (2016)

Key: * = Potential biological removal is the maximum number of animals, not including natural mortalities, that could be removed annually from a marine mammal stock while allowing that stock to reach or maintain its optimal sustainable population level.

Note: Purple shading indicates the ecoregions or portions of ecoregions still under leasing consideration.

8.2.4 Impact-independent Modifiers

The model was designed to accommodate the consideration of impact-independent modifiers (e.g., climate change, productivity, and unregulated impacts). An ecosystem change vulnerability score was included as a scaling factor, which was added to the base sensitivity scores for each BOEM ecoregion. Using the same approach used in the 2017–2022 Program analysis, the anticipated effects of climate change, including changes in temperature, sea ice melt and freshwater influx, permafrost thaw, ocean acidification and upwelling effects, sea level rise and saltwater intrusion, increased storm activity, and changes in species composition, were assessed for each BOEM ecoregion.

A magnitude for each expected impact due to climate change was assigned to each BOEM ecoregion using a relative scale (0–2, depending on intensity of effects; see [Table 8-2](#)). These sub-scores were summed for a total ecosystem change score. This score was then converted to an ecosystem change index with a scale of 0 to 4. This scale was chosen to allow an appropriate weight for impact-independent factors in the final environmental sensitivity score.

Table 8-2: Ecosystem Change Impacts Score by BOEM Ecoregion



Consideration	Gulf of Alaska	Western and Central GOM
Temperature Change	2	0.5
Sea Ice Melt & Freshwater Influx	1	0
Permafrost Thaw	1	0
Ocean Acidification/Upwelling Effects	1	0.5
Sea Level Rise & Saltwater Intrusion	0	2
Increased Storm Activity	1	1
Change in Species Composition	1	1
Total	7	5
Ecosystem Change Index	2.0	1.4

Notes: Total score reflects the climate change score prior to the conversion to an ecosystem change index with a maximum score of four. Scores were assigned based on a scale of 0–2 and then summed for all anticipated effects. A score of 0 was given to BOEM ecoregions in which little to no effect was expected; a score of 1 assigned to BOEM ecoregions in which a low to intermediate effect was expected; and a score of 2 assigned for intermediate to high anticipated effects. Before summing the climate change index with the habitat and species sensitivity scores, the total ecosystem change scores in the table were converted to a scale of 0–4.

Sources: Fabry et al. (2009), Jones et al. (2009), Hauffer et al. (2010), Smith et al. (2010), Doney et al. (2012), USEPA (2013), IPCC (2014), Melillo et al. (2014), Ekstrom et al. (2015), NMFS (2017b), USGCRP (2017), USDA (2017).

Relative environmental sensitivity scores were calculated for each habitat and species selected (see [Table 8-3](#)). These scores (which also include the shoreline ESI) form the foundation of the total environmental sensitivity score. The species and habitat scores were normalized before combining them.⁵¹ The ecosystem change index was then added to this base score for a final sensitivity score.

⁵¹ Normalization of species and habitat scores was accomplished by converting the scores to percentages of the total score.

No theoretical maximum sensitivity score is possible for a BOEM ecoregion. Such a maximum is dependent upon the number of parameters included in the model (such as the number of species and habitats) and would therefore be mathematically impossible to achieve given the mechanics of the model. For the purposes of the OCS Lands Act, however, such a maximum is not necessary because the Act requires an analysis to determine “relative” environmental sensitivity (i.e., a comparison of all the regions). BOEM’s methodology achieves that comparison.

Table 8-3: Environmental Sensitivity Score by BOEM Ecoregion



BOEM Ecoregion	Program Area	Environmental Sensitivity Score
Gulf of Alaska	Cook Inlet	17.3
Western and Central GOM	GOM	19.6

8.2.5 Results and Discussion

The environmental sensitivity score for the Gulf of Alaska Ecoregion, including Cook Inlet, is 17.3, and the Western and Central GOM Ecoregion sensitivity score is 19.6 (see [Table 8-3](#)). These scores are unitless and serve as an index of environmental sensitivity. The small range in sensitivity scoring between these areas for Alaska and the GOM and the macroscale analysis of all program areas suggests that all areas are sensitive to oil and gas activities. Species, habitats, and ecological communities differ across ecoregions, with extreme dissimilarities between Arctic and subtropical ecosystems. The environmental sensitivity scores suggest that impacts from oil and gas activities and climate change transcend geographic differences among the ecoregions.

Of the two remaining BOEM ecoregions, the Western and Central GOM Ecoregion has the highest sensitivity score (19.6). This high score results from the ecoregion having the highest species and habitat component scores. Interestingly, the high total species score is not due to any single species with a high sensitivity score, but rather a collection of species with relatively high scores, especially for some of the birds (laughing gull and brown pelican), fish (red snapper and endangered Gulf sturgeon), and invertebrates (American oyster). The Western and Central GOM Ecoregion also had the highest marine benthic habitat score. Its benthic habitat is composed of fine, unconsolidated substrate, seeps, and deepwater coral. The Western and Central GOM Ecoregion has a fairly high shoreline index composed of a predominance of saltwater marshes, swamps, and other vegetated wetlands along the shores of those ecoregions (NOAA 2017c).

The beluga whale led to relatively high species scores for the Gulf of Alaska BOEM Ecoregion. The Cook Inlet beluga whale distinct population segment has been listed as endangered under the ESA. Other sensitive species included birds (black-legged kittiwake), fish (eulachon), and mammals (harbor seal). The Gulf of Alaska also received high climate change impact scores

represented by temperature changes, sea ice, permafrost thaw, and ocean acidification. For additional information on the scores for all the BOEM ecoregions, refer to the [Proposed Program](#).

The relatively small differences among the environmental sensitivity scores suggest that differentiation among the BOEM ecoregions based on the total score alone would be difficult. Rather, the environmental sensitivity is one tool of many that BOEM uses to make decisions regarding the exploration for, and development of, oil and gas resources on the OCS. This model is driven by the best available scientific information at the geographic scale of analysis, and BOEM strives to incorporate empirical data, where available. Similar approaches can be taken to evaluate proposed activities on particular areas of the OCS on a case-by-case basis. OCS Regions should be individually considered with a full understanding of the species present, their distributions, and habitat needs, and therefore, the individual sensitivity to potential oil and gas activities.

8.3 Marine Productivity

8.3.1 Background

Productivity is a term used to indicate the amount of biomass produced over a period of time. Primary productivity is the production of biomass using CO₂ and water through photosynthesis. The primary productivity of the marine community is its capacity to produce energy for its component species, which sets limits on the overall biological production in marine ecosystems.

Primary production in the marine environment is conducted primarily by phytoplankton; macroalgae, such as *Sargassum* or kelp; and submerged aquatic vegetation like seagrasses. The rate at which this occurs is based largely on the organisms' ability to photosynthesize. The methods of measuring phytoplankton productivity are relatively standard and results normally are expressed with reference to chlorophyll-*a* and measured as the amount of carbon fixed during photosynthesis per square meter of ocean surface per unit of time.

Phytoplankton can occupy all surface waters of a program area and fix carbon if sufficient light and nutrients are available. Farther from shore, nutrient availability could limit productivity. Additionally, surface mixing due to wave action, down-welling, fronts, and convergence carry phytoplankton to depths in the water column where light is insufficient for photosynthesis to occur.

The difference between the energy produced during photosynthesis and the amount of energy expended during this process is known as net primary production or NPP. The rate of NPP determines the amount of energy that is available for transfer to higher trophic levels (i.e., position in the food chain) (Ware and Thomson 2005, Chassot et al. 2010). Thus, the most critical aspect of marine productivity is NPP, which is the focus of this analysis.

The productivity of higher trophic levels (e.g., secondary and tertiary production) is more difficult to determine than primary productivity. Although some models of secondary and tertiary productivity exist for OCS Regions, estimates are not available for all program areas (Balcom et al. 2011). Unlike primary production, secondary production is difficult to validate with empirical measures. Due to the limitations of existing data and inequalities in data availability among all program areas and habitat types (Balcom et al. 2011), secondary and tertiary production estimates are not robust and will not be presented for decision support.

8.3.2 Methods

In 1991, BOEM (then the Minerals Management Service) completed a primary productivity review (CSA 1991b, a). The 1991 study produced estimates by tabulating the results of individual studies conducted in each program area. These estimates relied on studies that used different methodologies, spatial scales, and/or sampling frequencies. Since that time, BOEM has improved and refined its methodology, and the approach used in this PFP is identical to the methods presented in the 2017–2022 Program.

The current primary productivity study uses satellite-based observations to provide input parameters for the VGPM to estimate NPP in each program area as a function of chlorophyll-*a*, available light, and photosynthetic efficiency. The satellite-based measurements, which feed the VGPM, are available at a resolution of 1 km, allowing BOEM to analyze the primary productivity of the OCS at the program area spatial scale.

The years of analysis, 1998–2009, were constrained by the earliest availability of satellite data and the conclusion of the BOEM-funded study (Balcom et al. 2011). Productivity determinations were depth-integrated, extending from the ocean surface to the euphotic depth (i.e., the depth where 1% of the surface light, or photosynthetically available radiation, is available). This depth ranged from a maximum of 100 meters (i.e., within ocean gyres) to a minimum of several meters (e.g., within eutrophic coastal waters). For a more detailed discussion of methods, see (Balcom et al. 2011).

8.4 Results and Discussion

In this PFP analysis, the program areas are characterized by areal coverage, mean annual NPP, annual and monthly variance, and trend (i.e., increasing or decreasing productivity) over 12 years (1998–2009). The [Proposed Program](#) analysis provides results for all BOEM ecoregions. However, with the Secretary having narrowed the areas under consideration, productivity values for the two remaining program areas are presented in this PFP, as shown in [Table 8-4](#).

**Table 8-4: Net Primary Productivity Rates**

BOEM Ecoregion	Program Area	Areal Net Primary Production (t C km ⁻² yr ⁻¹)
Gulf of Alaska	Cook Inlet	413.5 ± 28.1
Western and Central GOM	GOM	309.3 ± 14.9

Key: t C km⁻² yr⁻¹ = metric tons of carbon per square kilometer per year

Based on the VGPM model results, the Gulf of Alaska Ecoregion is calculated to have produced higher primary production than the Western and Central GOM Ecoregion (Table 8-4). Various studies show the validity of this model in assessing primary productivity in marginal seas and upwelling systems; however, some degree of uncertainty is expected from the model. The lack of sunlight during Arctic winters limits phytoplankton growth; however, nutrient-rich winter waters prime the seascape for intense Arctic phytoplankton blooms in spring as day length increases. Tropical seas, however, are typically nutrient-poor and characterized by a stratified water column defined by temperature; this results in less primary production and is possibly a reason for lower NPP values in the Western and Central GOM Ecoregion compared with NPP estimated for the Cook Inlet.

Marine ecosystems can be affected significantly by the rates and magnitude of primary production within their boundaries. Alterations in primary production in an ecosystem will have wide-ranging effects on all dependent species and chemical processes occurring within the affected system. Having sufficient knowledge of the magnitude and rates of primary production within an ecosystem allows for an accurate understanding of the overall potential productivity within that system. This knowledge could help elucidate the potential effects that altering the base of the food chain could have on dependent species and processes. Besides any direct effects of an oil spill on higher trophic levels, any anthropogenic alteration of the base of the food chain, such as spilled oil on the surface of the ocean resulting in decreased light penetration and thus decreased rates of photosynthesis of a system, would necessarily affect the functioning of the system as a whole. However, these effects on primary production would likely be very short-term and low magnitude.

A comparison of 1990 and 2010 primary productivity determinations indicate that the model-derived estimates in the present analysis agree with literature-based determinations. Given the entirely different assessment and, therefore, independent methods used between the two periods, this similarity supports the conclusion that model results (based on satellite data) provide reliable estimates of primary productivity.

Significant variability in primary productivity determinations was evident in the 1998–2009 primary productivity dataset, particularly in the Alaska Region. Although some of this variability could be attributed to program area-specific oceanographic features or local processes, some variability could reflect the data acquisition method.

Field-based methods suffer from variations in analysis, geographic coverage, temporal coverage, and other standardization issues. Despite these challenges, BOEM required an approach that could be consistently applied and compared across broad areas. BOEM has determined that the current methodology (i.e., satellite-based measurements) is the best method to measure NPP for BOEM decisionmaking. Additionally, these are annual averages spanning 12 years. The Arctic is known to house high rates of NPP (Shakhaug 2004); however, these rates are measured during seasonal blooms (Springer and McRoy 1993, Hill and Cota 2005).

In conclusion, using NPP allows a comparison of the planning areas; areas with high rates of primary production would have the greatest amount of energy available to higher trophic levels over a given period. It is possible that the lower productivity in the Western and Central GOM Ecoregion compared with Cook Inlet is a function of its tropical and subtropical characteristics of temperature stratification and nutrient limitation, creating “ocean desert”-like surface waters. Conversely, freshwater discharge in the northern GOM contributes to high inputs of nutrients increasing seasonal productivity nearer to the coasts. The steep nearshore-offshore productivity gradients seen across the broad-scale area of the Western and Central GOM Ecoregion are not represented well by the regionwide NPP calculation. Local peaks and valleys of primary production estimates are smoothed out when calculating NPP over such a large scale.

Chapter 9

Equitable Sharing Considerations





Chapter 9 Equitable Sharing Considerations

Section 18(a)(2)(B) of the OCS Lands Act requires that the Secretary base the size, timing, and location of proposed lease sales in part on a consideration of “an equitable sharing of developmental benefits and environmental risks among the various regions.” BOEM’s equitable sharing analysis goes beyond the minimum requirements of the OCS Lands Act and considers the sharing of developmental benefits and environmental risks, including socioeconomic risks, experienced in the coastal areas near the OCS Regions.

9.1 Definition

The OCS Regions are submerged lands off the U.S. coast. However, most developmental benefits and environmental risks to society occur onshore or along the coast. BOEM uses PADDs (see [Section 6.2](#)), as well as program areas (as proxies for offshore and adjacent onshore areas), to provide information on the sharing of benefits and risks among these broader geographical areas. Importantly, this equitable sharing analysis is only conducted on areas included in the Secretary’s Second Proposal (i.e., the Cook Inlet Program Area and the GOM Program Area).

The equitable sharing analysis follows a regional economic impact approach and is different from the benefit-cost approach and national perspective used to estimate net benefits, as described in [Chapter 5](#). Regional economic impact analysis and benefit-cost analysis offer two complementary means of describing potential benefits and costs/risks. Each approach reflects different aspects of economic activity.

The effects measured in a benefit-cost analysis represent direct, first-order real resource market outcomes, such as increased production and the accompanying increase in economic surplus, as well as the costs that could result from a National OCS Program, including from the development of leases sold in the proposed lease sale schedule. Some factors that benefit society, such as employment, are treated in a benefit-cost analysis as costs paid by society to conduct the activities that result in economic value. When the NEV of the proposed lease sales is estimated, the costs of exploration, development, and transportation are subtracted from the gross value of oil and gas production to estimate the net value of the extracted resources in each program area.

However, in an economic impact analysis, such as that used in this equitable sharing analysis, these same costs generate income, employment, and revenues. State and local governments and residents generally consider these as benefits, and they are therefore analyzed as benefits in this chapter. The regional economic impact analysis focuses on these broad macroeconomic measures (e.g., employment, wages, and government revenue) as they relate to specific industries and geographic locations.

An additional distinction between the benefit-cost analysis and the regional economic impact analysis is the geographic perspective. The net benefits analysis evaluates leasing in each program area independently but does not outline the costs and benefits that would occur within a particular area. Instead, the analysis focuses on costs and benefits that accrue to the United States as a whole from leasing in a particular area. In contrast, the consideration of equitable sharing focuses on the relative geographical distribution of benefits and risks and on the regional context in which these benefits and risks occur.

9.1.1 Assumptions and Limitations

This chapter describes the types and distributions of benefits and risks that could occur should production result from the lease sales proposed within each region. The analysis in this chapter considers the development associated with the Second Proposal's leasing and potential production outlined in [Chapter 5](#). It does not explicitly consider any major technological breakthroughs or policy changes that fundamentally could change energy supply and/or consumption patterns.

If substantial changes were to occur, such as a large reduction in oil and gas consumption arising from efforts to combat climate change, there would likely be important changes in the benefits and risks resulting from OCS oil and gas development and from the No Sale Option for each program area. This is a particularly important issue because there would be many years between National OCS Program finalization and the resulting oil and gas production.

Many governmental and non-governmental entities have introduced policies and strategies to enhance the development of cleaner energy sources; [Section 1.2](#), [Chapter 5](#), and [Chapter 6](#) provide more information regarding these developments. These efforts could substantially affect energy market dynamics and thus alter the substitution rates arising in the absence of OCS development. The more that clean energy sources substitute for forgone OCS oil and gas, the more likely it would be that the sharing of benefits and costs arising from the No Sale Option for each program area would change.

9.1.2 Deciding on Areas to Offer for Lease: Benefits and Risks

In recent decades, Gulf Coast states have received most of the developmental benefits and borne most of the environmental risks associated with developing OCS resources because most OCS oil and gas activities occur in the GOM. If OCS production were reduced, most of this production would be replaced by substitute energy sources, while a smaller portion would not be replaced (i.e., energy consumption would decrease). The forgone OCS oil and gas would be replaced by oil imports from other countries, by increased domestic onshore oil and gas production, or by other energy sources. These substitute energy sources can have very different levels of developmental benefits and environmental risks, along with different geographic distributions.

The current level of oil and gas activities in and near a program area influences the effects that would result from the No Sale Option. Because OCS oil and gas has been produced for decades in the GOM Program Area, the No Sale Option could change the status quo, resulting in increased use of energy substitutes to replace the forgone OCS production. Within and adjacent to the GOM, the consequences of selecting the No Sale Option would include losses of employment and business opportunities for communities that have been providing goods, services, and labor to support OCS activities.

Conversely, for the Cook Inlet Program Area, having OCS production could change the status quo and displace a corresponding quantity of “energy substitutes” that are currently supplying energy markets. The main impact of the No Sale Option is likely to be forgone financial and fiscal opportunities associated with oil and gas development. A decision to not hold lease sales would mean that other (geographically dispersed) energy sources would continue to be used to fulfill domestic demand, extending existing benefits and risks near the related activities.

An important difference between the effects of OCS activities and the absence thereof is in the level and distribution of environmental risk. As discussed in [Chapter 5](#), BOEM uses *MarketSim* to estimate the energy substitutions most likely to occur, and the OECM to estimate the ESCs anticipated to result from those substitutions under the No Sale Option. Industrial Economics Inc. (2023b) provides information regarding the impacts of OCS activities that are not monetized in the OECM, and Chapter 2 of the [Final EAM paper](#) includes a discussion of non-monetized impacts from OCS activities.

The upstream benefits and associated risks of increased onshore oil and natural gas (those resulting from production and pre-production activities) accrue to communities in the U.S., as do the benefits of other substitute energy production. The upstream developmental benefits of increased oil imports generally accrue outside the U.S., but many of the environmental risks remain, especially to the extent that imported oil is brought to the U.S. by tanker. However, future technological changes, such as methods being pursued to de-carbonize the shipping industry, could change these environmental risks (Fahnestock and Smith 2021).

9.1.3 Overview of Equitable Sharing

The OCS Lands Act gives the Secretary wide latitude to assess the importance of a variety of factors when deciding the size, timing, and location of lease sales that best meet the Nation’s energy needs. There are no established legal criteria that specify how benefits and risks must be shared or distributed in a new National OCS Program.

There are dynamics that can greatly affect the equitable sharing implications of the National OCS Program that are not under the direct control of the Secretary. Among these are the unequal geographical distribution of oil and gas resources, environmental factors—such as inclement weather or ice cover—specific to one region or another, and laws that restrict or prohibit oil and

gas exploration in certain areas. Congress has the authority to pass laws that affect how communities are compensated for the risks they bear due to OCS-related activities, and individual state laws or policies can increase or decrease the opportunity for equitable sharing.

Consideration of the sharing of benefits and risks requires some understanding of the many activities necessary to explore for, develop, and produce OCS oil and gas, and to get the resources to markets. Most of the benefits and risks tend to be experienced by communities that are relatively close to production activities, but some others—chiefly economic or financial—affect people in distant areas. This analysis describes both regionalized and widespread sharing of the benefits and risks. The remainder of this section provides an overview of the phases typical of OCS oil and gas projects and broadly identifies factors that might influence relative levels of benefits and risks among the regions and the onshore areas that provide goods, services, and labor for the activities. Region-specific discussions can be found in [Section 9.2](#).

The [Final Programmatic EIS](#) contains information about the nature of the environmental risks associated with OCS oil and gas activities, and this chapter provides references to the appropriate sections in the EIS rather than repeating information. Potentially significant impacts from IPFs (such as noise and bottom/land disturbance) for each resource (such as marine mammals and water quality) are discussed for each OCS Region in Chapter 4 of the [Final Programmatic EIS](#).

9.1.3.1 Phases of an OCS Oil and Gas Project

Industry spending on OCS oil and gas projects starts at a relatively low level and begins to noticeably increase during acquisition of G&G data. It ramps up considerably when exploration wells are drilled, and peaks during the development phase, when drilling and completion of development wells, fabrication and installation of production platforms, and construction and installation of pipelines occur. The exploration and development phases usually take several years, after which spending drops to a stable level during the production phase, when spending on operations and maintenance occurs. At the end of life, there is additional spending during decommissioning and well-plugging and abandonment. All phases require project management, engineering, planning, permitting, and regulatory compliance. The “Human Environment” discussion in Section 4.1.4 of the [Final Programmatic EIS](#) provides a description and graphics to show general levels of project-related employment over time for a sample OCS oil and gas project.

9.1.3.2 Jobs and Increased Wages

Jobs and associated labor income are among the most important benefits to many local communities if industry activity occurs in a region. Employees are needed for all phases of OCS activity. Numerous companies in a wide range of sectors that provide goods and services to support direct activities create additional “indirect” employment. Spending by employee households also generates (induced) multiplier effects in local economies.

Many of the jobs in the oil and gas industry earn a significant wage premium. Oil and gas extraction jobs⁵² earn more than 150% of the average hourly wage of employees in other industries (BLS 2017). These oil and gas employees have more purchasing power and can consume more goods and services, benefitting them by increasing their standard of living while contributing relatively more to the economy. Employment and other estimates in [Section 9.3.1](#) support the expectation that both the states with significant current levels of OCS-related employment and those states near new OCS activity would very likely benefit.

9.1.3.3 State and Local Government Revenues

States and local governments hosting high-value onshore infrastructure to support OCS oil and gas activities, companies that provide goods and services to operators and contractors, and employees working onshore and offshore can increase government revenues through property taxes, income taxes (business and personal), and sales taxes. The importance of tax revenue depends on several factors, including taxing authority of relevant jurisdictions, the permanence of OCS activities (e.g., resulting from success or failure of exploration, which eventually determines production activities), the level of nearby activity, and the location of support infrastructure.

Currently, there are two statutes with provisions to provide OCS oil and gas revenues directly to coastal producing states and political subdivisions: the OCS Lands Act and GOMESA. Section 8(g) of the OCS Lands Act applies to all coastal states adjacent to current or potential areas of OCS development and requires the Federal Government to provide each adjacent state with 27% of the bonus, rent, and royalty revenues earned from OCS leases in the first 3 nm seaward of the state's submerged lands boundary. This 3-nm-wide area adjacent to the state's submerged lands boundary is known as the "8(g) zone." The 8(g) revenues are intended to compensate the states for any drainage of resources in state waters by Federal lessees. Accordingly, for the National OCS Program, it would apply only where program areas extend into the 8(g) zone.

GOMESA became law in 2006 and provides substantial revenues for Alabama, Louisiana, Mississippi, Texas, and their coastal political subdivisions (i.e., counties or parishes). The GOMESA revenue sharing program was designed to compensate for potential negative impacts of, and the additional demand for, services and infrastructure due to OCS activities. GOMESA funds are reserved for uses specified in the Act, including coastal conservation, restoration, and

⁵² There are not publicly available, regularly collected statistics specific to OCS-related employment and income. The best verifiable statistics available were used to illustrate the overall premium in OCS-related labor income. They do not reflect two influences that could have opposing effects on actual income levels: 1) the overall extraction industry statistics dilute the wage premium by averaging higher OCS-worker incomes with those of onshore workers, which can be much lower; and 2) the incomes of some OCS-related workers who are in jobs that are classified under other sectors (e.g., water transportation, shipbuilding) that could be lower.

hurricane protection. [Table 9-1](#) shows the 8(g) and GOMESA revenue dispersed in FY 2022, including GOMESA distributions to states and counties/parishes within those states.⁵³

**Table 9-1: FY 2022 8(g) and GOMESA
State Disbursement Summary**



State	8(g)	GOMESA
Alabama	\$1,869,855	\$34,835,764
Alaska	\$1,719,253	N/A
California	\$2,492,437	N/A
Louisiana	\$3,867,850	\$111,822,095
Mississippi	\$555,104	\$36,771,811
Texas	\$1,266,931	\$68,833,587
Total	\$11,771,430	\$252,263,256

Key: N/A=Not applicable.

Notes: Alaska and California do not receive revenues under GOMESA. Rows may not sum to totals due to independent rounding.

Source: ONRR (2021a)

9.1.3.4 Proximity of Energy Production to Refineries and Consumers

Another developmental benefit of OCS production is the production of oil and natural gas that is close to oil and gas consumers. The transportation of energy products is expensive, especially if new transportation infrastructure is needed, and it introduces environmental and other risks along the routes. Producing energy close to where it is refined, processed, and consumed reduces costs and can improve economic efficiency, reduce environmental impacts from transportation, and decrease potential impacts due to disruptions from events such as natural disasters. In the case of the GOM, 53 refineries are near the OCS, allowing them easy and efficient access to OCS-produced oil and gas (EIA 2023p).⁵⁴

9.1.3.5 Environmental Risks

In general, this equitable sharing analysis focuses on how environmental risks and impacts would likely be distributed, rather than on the nature and levels of potential impacts. The [Final Programmatic EIS](#) broadly describes potential physical, biological, and sociocultural impacts that could result from implementation of the proposed lease sales (BOEM 2022b). Extensive data on resources near each program area is contained in the Economic Inventory Report (BOEM 2014a). [Chapter 7](#) describes other uses of the OCS.

However, even in realistic worst-cases based on actual conditions related to potential outcomes, risks to social and natural resources described in [Chapter 7](#) herein and BOEM (2014a) would be in the form of reduction or degradation, not of total loss.⁵⁵ This applies to both the risks that might

⁵³ The GOMESA disbursements in FY 2022 are based on revenues received in FY 2021 because GOMESA distributions to states and counties/parishes occur in the year after the activities on which the distributions are based.

⁵⁴ There are 53 operable refineries in Texas, Louisiana, Mississippi, and Alabama.

⁵⁵ This may not be true for localized sociocultural resources and lifestyles.

be increased by introducing new OCS oil and gas activities and from an increased reliance on the likely energy substitutes. Industrial Economics Inc. (2018) discuss the risks of catastrophic oil spills, which, while very unlikely, would have more substantial impacts than the typical, more reasonably foreseeable oil spills, should a catastrophic spill occur. Chapter 3 of the [Final EAM paper](#) provides further analysis of the impacts of a low-probability catastrophic oil spill (BOEM 2023b).

The burden of environmental risk resulting from OCS oil and gas activities is borne primarily by the marine and coastal areas adjacent to and within areas where oil and gas activities occur—near drilling and production sites and transportation routes. Risks associated with non-routine or accidental events such as oil spills could be higher in areas with the greatest activity, in areas where the oceanography or other characteristics of the environment could lead to more oil reaching the shoreline, and in sensitive subareas such as marine sanctuaries.

In areas with new oil and gas development, it is often necessary to construct or modify supporting onshore infrastructure. While construction of onshore infrastructure can bring employment and other benefits, it also poses environmental, socioeconomic, sociocultural, and/or fiscal risks, especially if the oil and gas activity is short-lived and does not provide local communities with the revenues to compensate for upfront expenditures or under-used facilities. Especially in non-industrialized areas, some of the socioeconomic impacts could be associated with needs for additional general infrastructure development, such as higher-capacity roads and more housing, which can impose costs to the natural and human environments.

The construction or development of onshore infrastructure could cause changes in air quality, impacts from reductions in coastal marshland, a reduction in the value of certain ecosystem services (e.g., flood protection), or impacts on water quality, depending on the location and nature of construction or development activity. Destruction or alteration of existing habitat like wetlands or nesting areas for turtles and birds, permanent or temporary displacement of species that rely on those habitats, and behavioral disruption could have acute and long-term impacts on individuals and populations. The specific impacts would vary depending on the proposed construction and development activities.

Vulnerable coastal communities are often near onshore infrastructure and could be disproportionately impacted by new construction or the increased use of existing onshore infrastructure. These communities can experience disproportionate and adverse human health or environmental effects due to impacts on culture, air quality, water quality, biological resources (e.g., marine mammals, fishes, habitat), archaeological and cultural resources, land use (e.g., agriculture, residential, recreation, and tourism) and access to resources (e.g., recreation, tourism, fisheries). IPFs include noise, traffic, routine discharges, bottom and land disturbance, emissions, lighting, visible infrastructure, and space-use conflicts. The IPFs' effects on vulnerable

coastal communities' resources are qualitatively discussed in the [Final Programmatic EIS](#) (BOEM 2023a).

Climate change is also affecting vulnerable communities. BOEM continues to study ongoing and potential impacts in attempts to better include these effects in future analyses. BOEM is conducting a study to inform best practices for methodologies analyzing environmental justice (EJ) issues in relation to the National OCS Program, including climate effects. The study will also provide an EJ literature database and set of data tools and resources to facilitate EJ analysis and inform the Bureau's understanding of the cumulative effects of climate change on EJ communities. Lastly, the study will generate communications materials to be used to educate BOEM staff and decisionmakers as well as external stakeholders about these effects.

Oil spills are another possible risk borne in OCS Regions and the coastal areas adjacent to OCS activities (as well as in coastal areas along tanker routes and near the ports receiving imported oil as a substitute for forgone OCS production). Different OCS Regions have different risk factors affecting the probability of oil spills, volume spilled, and impact of spills that could occur, as well as the ability to contain and remove spilled oil quickly and effectively. Distance from shore, discharge duration, weather-related conditions, and even time of year could have substantial effects on the distribution of risks and impacts. While most of these factors apply in all regions, specific regional conditions and the characteristics of adjacent coasts can have major effects on the risk of harm to the human and natural environment.

For the purposes of this analysis (as discussed in [Section 9.1.1](#)), it is assumed that various energy substitutes would replace the forgone OCS oil and gas, with different relative geographical distributions of environmental risk, to the extent leasing is restricted or relocated (or otherwise does not occur) under a new National OCS Program. Some locations could experience increased environmental risk from the No Sale Option, but that depends largely on the mix of energy substitutes obtained, where the substitutes are produced, and where and how they are transported to the areas where they are to be used.

9.1.3.6 Domestically Produced Oil Exports

Congress removed restrictions on domestically produced crude oil exports in December 2015. This policy has provided additional markets for domestic crude oil. In 2022, the United States exported 3.6 million barrels of crude oil per day (EIA 2023o), approximately 30% of the total production of 11.9 million barrels per day (EIA 2023q). Future trends and patterns of crude oil exports depend on various energy market dynamics and geopolitical conditions and developments; see [Chapter 6](#) for more information.

9.2 Regional Benefits and Risks

[Section 9.1.2](#) describes the types of benefits and risks that can arise from the development and production of OCS oil and gas resources. This section discusses the benefits and risks that could arise from oil and gas leasing in the specific areas in the Second Proposal: the Cook Inlet Program Area and the GOM Program Area.

9.2.1 Alaska Region

Although the only history of Federal production on the Alaska OCS is from a single Federal-state project in the Beaufort Sea, Alaska has a mature oil and gas industry onshore and on state submerged lands. An established support network exists in the Prudhoe Bay area on the North Slope and in south-central Alaska, which includes Anchorage and communities along Cook Inlet. People working on projects in the state waters of Cook Inlet typically live in the larger population centers nearby or commute from outside the state. McDowell Group (2020) provides more information regarding Alaska’s oil and gas industry.

Annual 8(g) revenues disbursed to Alaska have been declining, from more than \$17.8 million in FY 2008 (including sharing from bonus bids in Beaufort Sea Lease Sale 202) to \$1.7 million in FY 2022 (ONRR 2021a). More recent 8(g) revenues to Alaska are from rental payments collected on active leases and royalties on the joint Federal-state production in the Beaufort Sea, but several lessees have relinquished their leases early or have let them expire.

9.2.1.1 Lease Sale Options

Benefits to Alaska

Cook Inlet Lease Sale 258, held in December 2022, resulted in one lease being awarded. Existing leases from Cook Inlet Lease Sale 244, held in June 2017, have not gone into production and, as of September 2023, BOEM is not in receipt of a complete exploration plan for the leases obtained through that lease sale. Given that Alaska’s oil and gas production and employment opportunities are declining, should new development occur in the Cook Inlet, it would likely serve only to lessen further losses of jobs, income, and revenue rather than increase these benefits. Sustained high prices and demand for oil and gas during the life of the new National OCS Program could lead to higher activity levels overall and result in new opportunities.

Employment, income, and revenues. Alaska’s direct and indirect employment patterns would be unlikely to change significantly because of the proposed lease sale. A large proportion of Cook Inlet workers and their families would likely reside in nearby communities, and employment benefits would be locally shared.

However, given Alaska’s relatively small population and lack of industrialization, a large percentage of the goods and services needed for development is likely to continue to be imported

from other parts of the country and world markets. The high wages paid to oil and gas workers relative to other workers should preserve higher-than-normal incomes for those Alaskan workers in oil-and-gas-related jobs employed due to new OCS projects.

Revenue sharing. The Federal Government would share with Alaska 27% of the bonus, rent, and royalty revenues from OCS oil and gas leases within the 8(g) zone, as described in [Section 9.1.3.3](#). No other revenue sharing statute applies to Alaska.

Proximity of supply and consumers of energy. Natural gas produced in Cook Inlet is likely to be consumed in south-central Alaska, which is facing uncertainties in future supply due to declining production on state leases. More information regarding national and regional energy markets is provided in [Chapter 6](#).

Risks to Alaska

The location of new OCS projects and the nature of fields being developed could vary the type, degree, and distribution of environmental risks. Chapter 4 of the [Final Programmatic EIS](#) identifies and discusses potentially significant impacts on several environmental resources from various IPFs. Water quality, all biological resources, and all sociocultural resources could experience significant impacts from several IPFs in the Alaska Region, if leases were issued and developed. [Chapter 8](#) presents the analysis of the environmental sensitivity of resources in the Cook Inlet Program Area. The Economic Inventory Report (BOEM 2014a) describes resources in and near those areas that could be affected by an oil spill, and [Chapter 7](#) describes other uses of the OCS.

Benefits and Risks to other Areas from Alaska OCS Activities

Some of the jobs created by Alaska OCS activities would be filled by workers elsewhere in the U.S. or other countries. These include long-distance workers and many of those who would provide goods and services to support those activities. The GOM Region has an extensive existing supply network, whose workers could support Alaska OCS activities.

Although it is likely that most of the environmental risks from exploration, development, and production activities on the Alaska OCS would manifest in or adjacent to the Alaska Region, some risks would occur outside the region. To the extent that Alaska OCS production is transported by tanker to West Coast refineries, environmental risk from potential oil spills could be experienced where these refineries are located. In addition, emissions would occur along tanker routes. Further, some of the transportation of drilling supplies, which provide economic benefits along with environmental risks, would also likely occur outside of Alaska and its waters.

9.2.1.2 Subarea Options

There are no Subarea Options for the Cook Inlet Program Area.

9.2.1.3 No Sale Option

Under the No Sale Option, there would be no new OCS activities from the 2024–2029 Program, and communities in Alaska would not receive the benefits or the environmental risks from OCS production.

Benefits

Few developmental benefits would accrue to Alaska from the No Sale Option. Under the No Sale Option, there would be no risks to the environment and local communities from OCS oil and gas production from this Program as no leasing or exploration could occur. While substitute energy production in state waters or onshore Alaska could provide some benefits, most substitute energy production would likely continue to occur in areas other than Alaska.

Risks

If the No Sale Option is selected for Cook Inlet, no environmental risks from OCS exploration, development, and production activities from new leases would occur in that program area. However, some environmental risks would continue to arise in areas where energy production is occurring (some of which could have been replaced by Cook Inlet production).

Some Alaska residents are concerned and have commented on socioeconomic risks not measured by BOEM's models, namely the risk of continued or accelerated declines in employment, income, and government revenues from oil and gas activities in the absence of new OCS activities. Oil and gas activities are critically important to the state economy and, in some cases, even more important to maintenance of local government services. However, the decline in oil and gas investment within Alaska was not caused by OCS-related policy, nor is there a guarantee that holding any proposed lease sale would result in significant levels of OCS activity. As noted, none of the 15 existing Cook Inlet leases are in production, and, as of September 2023, BOEM is not in receipt of a complete exploration plan for any leases obtained through past lease sales. Nevertheless, some stakeholders see OCS lease sales as a potential means of at least partially mitigating that increasing rate of decline.

9.2.2 Gulf of Mexico Region

Both OCS and onshore oil and gas activities have been occurring in the GOM and the adjacent states for decades. The petroleum industry has based its planning on offshore lease sales being held in the Western and Central GOM planning areas on a regular basis,⁵⁶ with few exceptions,

⁵⁶ The first areawide GOM lease sales were held in 1983, replacing the previous “tract selection” approach. Since then, two such lease sales have been held almost every year. Prior to 2017, one of these lease sales would offer Western GOM acreage and the other would offer Central GOM acreage. The 2017–2022 Program, approved in January 2017, continued the practice to annually offer two areawide lease sales but combined the available GOM planning areas into a single program area. Since the first lease sale under the 2017–2022 Program was held in August 2017, both annual

and the resulting OCS activities have been incorporated into the communities that supply labor, goods, and services to support them.

Significant infrastructure for oil and gas development already exists in and near the GOM and will not require additional new development or modification, potentially avoiding or reducing environmental risks associated with new coastal development. The extensive onshore infrastructure contributes to local and state economies and helps fund government services. The GOM Program Area is near ample refining and natural gas processing capacity, and a continuous supply of OCS oil and gas has been a factor in the amount and kind of capacity available. Gulf Coast refineries have access to domestically produced oil from the OCS, state waters, and onshore, as well as imported oil, and can blend oil of various grades and qualities to obtain the best prices given their specific equipment and facilities.

GOMESA provides for the sharing of OCS revenues with states, counties/parishes, and the LWCF. Currently, GOMESA shares 37.5% of specified OCS revenues with states and counties/parishes (with most shared revenue subject to a \$375 million annual cap) and 12.5% of OCS revenues with the LWCF (with a corresponding \$125 million annual cap). The annual GOMESA revenue sharing caps continue through 2055, after which there are no caps on GOMESA revenue sharing.

9.2.2.1 Lease Sale Options

Benefits

Most of the employment benefits of the new National OCS Program would be the continuation of current sources of business, employment, and public funding or, described another way, would be the avoidance of societal consequences resulting from lower activity levels. Continued GOM areawide lease sales would maintain benefits for states adjacent to the region.

Employment, income, and revenues. Most workers employed offshore and in the vast supporting network for GOM activities live in the Gulf Coast states. Production from the GOM from lease sales in this National OCS Program would extend the economic life of regional onshore infrastructure dependent on oil and gas. The economies of adjacent communities—and even state and local treasuries—depend on revenues from income taxes and from continued use of infrastructure associated with OCS activities.

Revenue sharing. The 8(g) provisions described in [Section 9.1.3.3](#) apply to revenues received from leases within 3 nm of state waters, although the likelihood is that only relatively small fields exist in the 8(g) zone and will remain unproduced. All revenues from applicable GOM leases issued during the 2024–2029 Program will be subject to GOMESA revenue sharing provisions.

areawide lease sales have also been “regionwide,” offering all available acreage in both the Western and Central GOM planning areas, as well as the small, unrestricted portion of the Eastern GOM Planning Area.

However, the GOMESA revenue sharing caps (for state/local governments and the LWCF) are likely to be reached in future years due to revenues from existing leases, and therefore such revenue sharing is not projected to increase due to new leasing (through at least 2055).

Proximity of supply and consumers of energy. Texas is the Nation’s top consumer of crude oil and natural gas (EIA 2021a), and four of the states adjacent to the GOM host 53 of the Nation’s 130 operable refineries (EIA 2021a). OCS production from the GOM under this National OCS Program would allow continuation of a reliable source of oil and gas near many refineries and a large pipeline network to supply other states’ demand for petroleum products. It would reduce any need for additional oil imports into the Gulf Coast’s ports, including the Louisiana Offshore Oil Port. Refineries in the area have a wide selection of crude oil grades to blend appropriately for their capacities and are accustomed to using OCS crude oil grades.

Risks

Chapter 4 of the [Final Programmatic FIS](#) identifies and discusses potentially significant impacts on several environmental resources from several IPFs. Air quality, water quality, most biological resources, and all sociocultural resources could experience significant impacts from several IPFs in the GOM OCS Region. [Chapter 8](#) presents the analysis for the environmental sensitivity of resources in the GOM Program Area. While not addressing impacts, the Economic Inventory Report (BOEM 2014a) describes environmental and social resources in and near those areas that could be affected by an oil spill, and [Chapter 7](#) describes other uses of the OCS.

One risk particular to infrastructure in the GOM is the risk of hurricanes, which can cause environmental damage through oil spills and other means. Climate change increases the risks posed by more frequent extreme weather events. To better deal with existing infrastructure, “in FY 2019, BSEE revised its guidance to industry on the timeliness of decommissioning activities to reduce the environmental and financial risk of idle infrastructure being damaged by a changing climate, the frequency of which increases the intensity of severe weather, such as hurricanes” (BSEE 2021). An average of 200 platforms have been removed every year for the past decade within the GOM (BSEE 2021). Additionally, BSEE inspectors conduct inspections annually at more than 1,600 facilities on the OCS (BSEE 2022a). These preemptive measures, in combination with reporting programs for facilities and pipelines both during and after a hurricane, aid BSEE in mitigating the risk posed by extreme weather, even in the event of increasing intensity and frequency.

9.2.2.2 Subarea Options

The one specific Subarea Option is the 15-Mile Baldwin County No Leasing Zone. As discussed in [Chapter 3](#), the potential for a targeted leasing strategy will be analyzed at the lease sale stage.

Benefits

The purpose of the 15-Mile Baldwin County No Leasing Zone Subarea Option is to restrict project sites to areas farther from coastal natural, social, and economic resources.

Selecting this option could both reduce environmental risks overall (due to lower levels of production and associated activity) and reduce the risk of oil spills from wells or production platforms to the extent that production would have occurred in this area without the restriction.

Risks

Under the 15-Mile Baldwin County No Leasing Zone Subarea Option, current leases could be explored and developed, but new leasing opportunities could not occur in the buffer area. Therefore, with selection of this Subarea Option, there would be no new environmental risks to the region from OCS production in that subarea.

BOEM estimates that selection of the 15-Mile Baldwin County No Leasing Zone Subarea Option would have minimal impact on the developmental benefits in the region. Given the size of the area, and the amount of acreage offered elsewhere in the GOM, it is unlikely that the benefits of the proposed lease sales would be significantly reduced by excluding the acreage associated with this option.

9.2.2.3 No Sale Option

Benefits

If the No Sale Option were selected, there would be benefits from additional onshore production of oil and natural gas, primarily in the Gulf Coast states but also in other PADDs. Most of the substitute energy would come from additional imported oil, the primary benefits of which would be experienced overseas, although oil imports would help retain refinery activity and jobs, along with levels of some other downstream activities and associated employment. Slightly higher oil prices would reduce overall consumption, but it is expected that the Gulf Coast refineries would be able to adjust their sources of crude oil (onshore, imports, and OCS blocks leased in previous lease sales) to make up for long-term declines in OCS production.

Under the No Sale Option, risks to the environment and local communities from OCS oil and gas production would decline. The [Final Programmatic EIS](#) provides additional information regarding the adverse environmental effects that could be avoided through the selection of the No Sale Option (BOEM 2023a).

Risks

Economic Risks: If the No Sale Option for the GOM Program Area were selected, there would likely be negative socioeconomic impacts on the counties/parishes and states adjacent to the

GOM Region. The severity of the negative effects on Gulf Coast state communities depends on several factors, some of which would be difficult to predict. The effects of a lack of lease sales for a few years could be modest, given the number of existing leases capable of further development.

A major factor in the impacts of a No Sale Option decision would be how that decision is viewed by industry. The No Sale Option could trigger decisions by companies operating in the GOM, as well as supporting companies and employees, to put more emphasis on non-GOM-related business opportunities. These decisions would influence the severity and longevity of the impacts. The nature of the socioeconomic impacts of the No Sale Option would also depend on the extent to which other business opportunities would arise, for example, in the renewable energy industry.

The No Sale Option would reduce demand for early-stage activities such as G&G surveys and exploration drilling, which would negatively impact the people and businesses that rely on those activities. The scale of this effect depends on the extent to which activities on existing, undeveloped leases could partially offset the loss of business from new leases. Oil and gas production would not be greatly affected during the first several years because existing lessees would maintain production and new discoveries on existing leases could be developed. However, beyond that, the impact on production would be uncertain based on when, or if, leasing returned.

BOEM considered a scenario in which there would be no new offshore oil and gas lease sales in the future, even beyond the period of this National OCS Program (see [Chapter 5](#)). The types of socioeconomic effects described in the preceding paragraphs would still occur, although not holding any leases sales in the future (as opposed to just over the next 5 years) would exacerbate these effects. Jobs supported by offshore oil and gas activities would gradually decline. Initial job losses would be focused on exploration and development activities, although eventually operations and maintenance jobs would decline as well. The speed and magnitude of these reductions would depend on the extent to which activities on existing leases would still occur. The socioeconomic effects of these job losses would depend on the extent to which oil and gas workers would be able to find jobs elsewhere, such as in the renewable energy industry or in the onshore oil and gas industry.

There would be an increase in decommissioning of oil and gas structures as the use of those structures for subsea tiebacks for new developments would be reduced; these decommissioning activities would temporarily support economic activity for the companies and workers that perform the decommissioning work. BOEM (2021f) provides information regarding recent trends and activities in the deepwater GOM, which provides insights regarding the potential losses of activity should the No Sale Option be selected. However, the ultimate effects of the No Sale Option depend on the prevailing economic environment, including factors such as energy prices, resource discoveries, and the evolution of the economy.

Not holding lease sales would also prevent the receipt of OCS revenues from bonus bids, royalties, and rental payments associated with the forgone leases. The government would immediately lose any future revenues from bonus bids, and rental receipts would steadily decline as existing leases expire or transition into production status, where they no longer generate rental income (leases in production would generate royalties). The royalties, which constitute the largest share of revenues generated from OCS production, will only experience a slight-to-moderate decrease in the short-term given the length of time before production begins on new leases. At least initially, despite the absence of bonuses and new rentals, states are unlikely to see a reduction in GOMESA revenues because the revenue sharing cap applicable to most revenue sharing would mean that increased leasing would not have increased revenue sharing. However, given that the revenue base will decline under the No Sale Option, the volatility of commodity prices and other external production-altering factors such as hurricanes could impact whether revenues meet the cap in future years.

In the long-term, production levels will decline as described in the NNL E&D scenario in [Chapter 5](#). This decline in production will also have a significant impact on GOMESA-eligible revenue as royalties also decline. In the baseline scenario with at least annual lease sales, GOMESA revenues are expected to reach the revenue sharing cap through 2056 when the GOMESA cap expires. However, under a NNL scenario, bonuses and rentals will not contribute to the GOMESA revenue sharing cap, and it is highly likely that GOMESA-eligible royalty revenues will drop below the revenue sharing cap well before 2056. The exact timing of this is difficult to estimate due to the volatility of commodity prices and the uncertainty of GOMESA-eligible production.

Environmental Risks: Under the No Sale Option, risks to the environment from OCS oil and gas production would decline, but energy substitutes would likely replace OCS production and produce their own risks. [Chapter 5](#) provides more information regarding the likely substitution patterns that would arise under the No Sale Option. Although some of the replacement energy sources for forgone GOM oil and gas would occur in Gulf Coast states (and, to a small extent, on existing OCS leases), there would be locational shifts of risk within the GOM and the Gulf Coast region. Communities and households whose business relationships were focused more on offshore (rather than onshore activities or downstream activities such as refining) would bear the greatest socioeconomic impacts. Section 4.2.1 of the [Final Programmatic EIS](#) provides additional information regarding the impacts of the No Sale Option (BOEM 2023a).

9.3 Widely Distributed Benefits and Risks

9.3.1 Widely Distributed Benefits

Offshore oil and gas activities have positive and far-reaching economic impacts. For example, the offshore oil and gas industry generates substantial government revenue. Bonus bids, royalty payments, and rental payments arising from OCS oil and gas leases provided revenues of \$5.6 billion in FY 2019, \$3.7 billion in FY 2020, \$4.1 billion in FY 2021, and \$6.5 billion in FY 2022

(ONRR 2021b). Benefits from these revenues tend to be widely distributed among the geographic regions of the U.S. Most leasing revenues are distributed to the U.S. Treasury and are then used for various Federal functions. As shown in [Table 9-1](#), some OCS revenues are also disbursed to states through the 8(g) provisions of the OCS Lands Act, and to Gulf Coast states and their counties/parishes through the provisions of GOMESA. OCS oil and gas activities also generate a significant amount of tax revenue to the U.S. Treasury. For example, portions of the corporate tax revenues generated by oil and gas companies arise due to the OCS-dependent components of their businesses.

Revenues from OCS oil and gas leases also provide most of the support for the LWCF, which provides geographically widespread assistance to states and local efforts to acquire land for parks and recreation facilities. In addition to funding matching grants, the LWCF is the primary revenue source for recreational land purchases by the National Park Service (NPS), Bureau of Land Management (BLM), USFWS, and U.S. Forest Service. Spending on “other uses” under the LWCF Act has generally been for natural resource purposes throughout the Nation.⁵⁷

In August 2020, the GAOA guaranteed annual funding of \$900 million for the LWCF (up until then, the LWCF had been subject to the annual appropriations process) (White House 2020). The GAOA also provides \$1.9 billion a year from payments to the U.S. Treasury from oil, gas, and other energy development on Federal land and water each fiscal year from FY 2021–2025 to be used for deferred maintenance projects in the National Parks System, in the National Wildlife Refuge System, on public land administered by the BLM, for Bureau of Indian Education schools, and in the National Forest System. As noted in [Section 9.2.2](#), GOMESA mandates an appropriation of additional funding for the LWCF.

OCS revenues also fund the Historic Preservation Fund (HPF), which provides grants to states, Tribes, local governments, and non-profit organizations to preserve historic places. In FY 2022, Congress appropriated \$173 million for the HPF; the annual report for the HPF (NPS 2021) describes how these funds were spent.

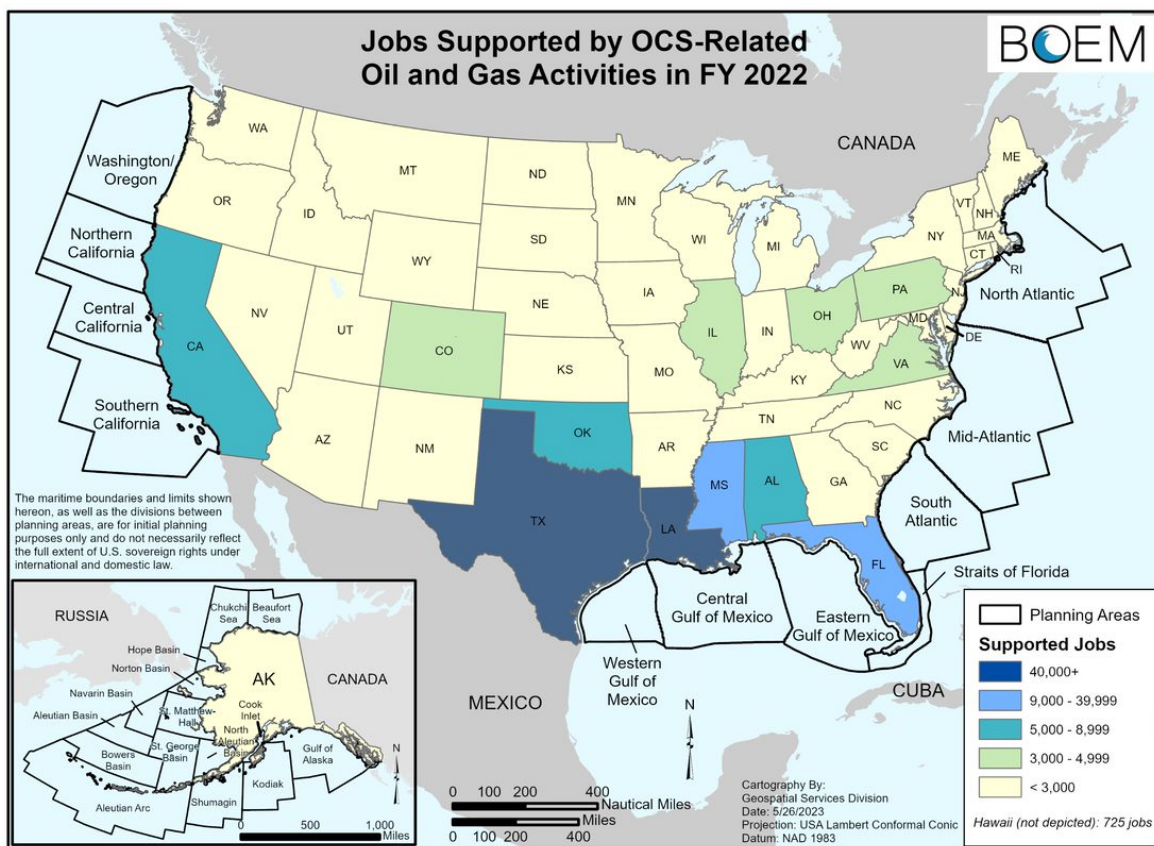
The various equipment and supplies required for an OCS oil and gas project, as well as the industry’s work schedules, allow vendors, suppliers, and employees to be located throughout the U.S. In addition to employment benefits, OCS oil and gas activities generate substantial industry profits that provide dividends to shareholders, generate corporate income tax revenue, and serve as a source of investment capital. BOEM uses internal regional economic impact models to estimate the total (direct, indirect, and induced) impacts of industry spending, government revenues, and industry profits generated by OCS oil and gas activities. In FY 2022, OCS oil and

⁵⁷ Historically, some of the major “other uses” of LWCF monies include funding for the Cooperative Endangered Species Conservation Fund, the Forest Legacy program, State and Tribal Wildlife Grants, and deferred maintenance in National Parks and other federally owned areas (CRS 2016).

gas activities sustained approximately 246,000 jobs and generated an estimated \$30 billion of value added (contribution to national GDP) (BOEM 2021e).

[Figure 9-1](#) shows the geographic distributions of estimated OCS oil and gas jobs supported during FY 2022; BOEM estimates that approximately 69% of jobs remained in the states adjacent to the GOM (Texas, Louisiana, Mississippi, Alabama, and Florida). The geographic distribution of jobs arising from the new National OCS Program depends on which OCS areas are included. The current distribution of developmental benefits indicates that both the states with significant levels of existing OCS-related employment and those states near the new activity would very likely benefit.

Figure 9-1: Distribution of Total Jobs Supported by FY 2022 OCS Oil and Gas Activities



Source: BOEM (2020)

In addition to monetary benefits to the U.S. from OCS activities, development of the OCS provides other national benefits. One of these benefits is a reduction in the U.S. trade deficit, with reduced dependence on imported oil. Domestic energy production also reduces risks to national security and adds to supply that can fulfill U.S. energy needs. These national benefits from OCS production are discussed in [Chapter 1](#).

Benefits from Avoiding Environmental and Social Costs of Energy Substitutes

In BOEM’s net benefits analysis in [Section 5.3](#), BOEM considers the ESCs of the OCS activities and of the No Sale Option, using the OECM and the *MarketSim* model. In that section, the ESCs associated with activities are calculated where they occur but presented in the analysis as costs in the program area with production. However, these costs are not always experienced in the program area with production. For example, to the extent that OCS production is replaced by additional onshore natural gas production, the associated impacts are felt in onshore areas, near existing onshore natural gas production locations.

For the equitable sharing analysis, BOEM did a quantitative analysis of where the ESCs occur, in the event they are outside the program area with production. In the GOM Program Area, almost 90% of the ESCs from the No Sale Option occur in non-coastal U.S. areas (from costs associated with onshore production). Most of the remaining costs accrue in the GOM Region, likely based on increases in ESCs from imports. In the Cook Inlet, almost 98% of the ESCs associated with the No Sale Option occur in non-coastal areas from onshore production, with the remaining costs occurring near the Pacific Coast, likely from increased imports.

These regional allocation costs are meant to provide the Secretary with a perspective of the relative sharing of ESCs in the absence of a National OCS Program. The avoided costs of having a National OCS Program rather than relying on substitutes are a widely distributed benefit of the program (e.g., fewer emissions onshore as a result of OCS leasing). Additional information on the non-monetized impacts are discussed under the No Action Alternative in the [Final Programmatic EIS](#) (BOEM 2023a) and in Chapter 2 of the [Final EAM paper](#) (BOEM 2023b).

9.3.2 Widely Distributed Risks

Most risks to the natural environment that result from OCS activities are regional in nature. However, OCS activities can lead to broader risks. For example, the risks from GHG emissions are national and international in scale, irrespective of whether they would be produced by implementation of the proposed lease sales or by the energy substitutes in the absence of new OCS activity. Chapter 2 of the [Final EAM paper](#) (BOEM 2023b) discusses the impacts of GHGs that could be emitted as a result of the activities associated with this National OCS Program.

The environmental risk of a low-probability catastrophic oil discharge, such as that resulting from the *Deepwater Horizon* accident, is considered remote, and the impacts, should a spill occur, would be primarily regional. However, the compensation costs for such events and for other losses not attributable to specific parties are shared by companies and individuals throughout the country. For example, after the *Deepwater Horizon* oil spill, all BP shareholders were affected by compensation liabilities associated with the spill. In that case, there was a significant transfer of funds to the GOM coast for clean-up and compensation from an international company with widely dispersed stockholders.

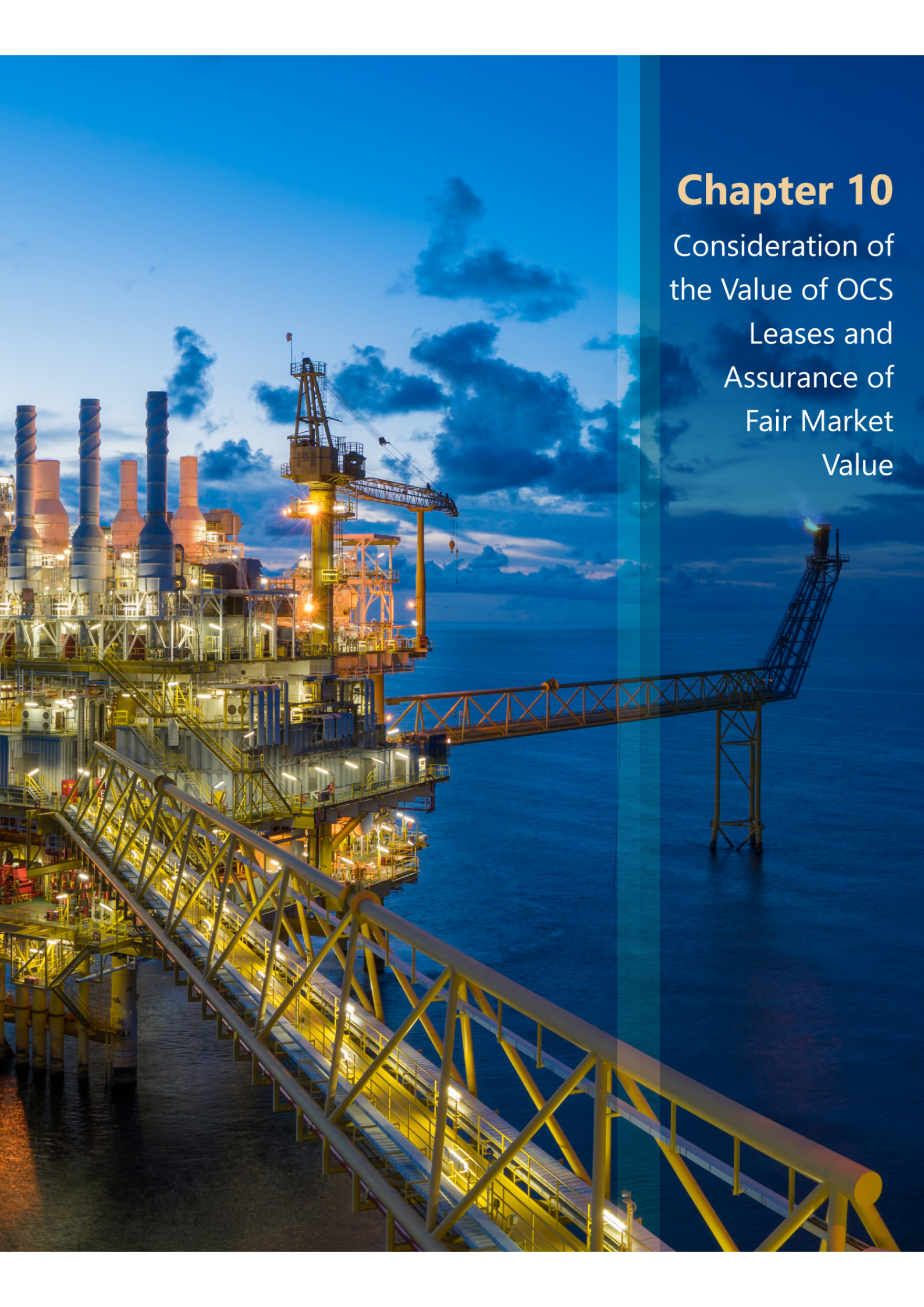
While this chapter has focused on the ESCs that occur in the U.S., some costs from the National OCS Program are not limited to the U.S. Similarly, foreign countries conduct their own oil and gas activities that could increase the risk to U.S. waters and coasts. For example, many long-lived marine species, such as whales, dolphins, sharks, and tuna, have distributions or ranges crossing international boundaries. Impacts on these species or populations originating within international waters could be detectable within U.S. waters and vice versa.

9.4 Conclusion

Oil and gas leasing and associated activities on the OCS result in developmental benefits, but also environmental risks. To the extent that oil and gas development occurs, the developmental benefits include employment, higher-than-average incomes, business opportunities, and increased government revenues. Oil and gas activities could also lead to environmental risks such as potential adverse impacts on marine and coastal resources from routine activities and from oil spills.

Currently, the GOM and adjacent states receive most of the direct benefits from OCS oil and gas activities and bear most of the risks to the human and natural environment. The GOM Region would see the largest impact from selecting the No Sale Option, given the extensive existing business, government, and employee inter-relationships and dependency associated with OCS activities.

Alaska is not a major consumer of energy but has a well-developed oil and gas industry that is in decline. Scheduling a lease sale for the Cook Inlet Program Area could provide benefits to the State of Alaska but would increase associated risks as well. The extent of those benefits and risks would depend on how much oil and gas leasing and development actually occurs.



Chapter 10

Consideration of
the Value of OCS
Leases and
Assurance of
Fair Market
Value



Chapter 10 Consideration of the Value of OCS Leases and Assurance of Fair Market Value

Section 18(a)(4) of the OCS Lands Act requires receipt of FMV from OCS oil and gas leases, stating “[l]easing activities shall be conducted to assure receipt of fair market value for the lands leased and the rights conveyed by the Federal Government.” Furthermore, the OCS Lands Act states that the OCS is a “vital national reserve held by the Federal Government for the public, which should be made available for expeditious and orderly development, subject to environmental safeguards, in a manner which is consistent with the maintenance of competition and other national needs” (43 U.S.C. § 1332 (3)).

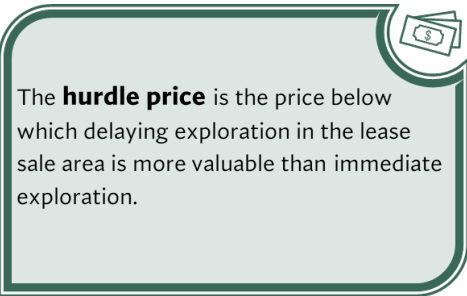
FMV was operationally defined by the report titled *Procedures for OCS Bid Adequacy Including the Final Report of the OCS Fair Market Value Task Force* (USDOJ 1983), as related to the adequacy of the level of the high bid offered for a lease with given fiscal terms, not to the design or setting of the fiscal terms themselves. The OCS Lands Act Amendments of 1978 Congressional Declaration of Purpose highlights that the OCS Lands Act is to “insure the public a fair and equitable return” on OCS resources. The concept of “fair return” considers a broader evaluation of all components of a lease sale, including fiscal terms, so that they provide an appropriate share of revenue in exchange for the right to extract natural resources.

To secure and maintain public trust in making OCS resources available for private development, BOEM employs an established set of criteria, described herein, that assure an adequate return to the public for the OCS lease rights issued. The valuation of OCS acreage is a multi-phase process including National OCS Program-level analysis, lease sale-level analysis, and, finally, the ultimate determination that a bid on a specific OCS block meets FMV in the analysis conducted prior to the issuance of an individual lease following a lease sale.

10.1 Timing of OCS Lease Sales and Related Activities

There is much uncertainty in the OCS leasing and development process, and this section considers some of those uncertainties and how they impact the value of OCS resources to society. For example, when determining whether an area should be included at this National OCS Program stage, BOEM acknowledges the timing of OCS lease sales can impact their value. For one component of uncertainty, timing, the section evaluates broad area-specific considerations, including a comparison of market prices to the calculated hurdle prices for oil and natural gas. This and many other factors can impact the value of OCS leases. Each potential lease sale scheduled in this National OCS Program is subject to separate established pre-lease sale decision processes, including hurdle price screening and lease term analysis (described in [Section 10.1.2](#)).

The value of the OCS resources and associated leases is affected by the timing of leasing. Because OCS leases have fixed primary terms after which a lease may expire (described in [Section 10.3.2](#)), as required by the OCS Lands Act, lessees planning to explore and initiate development on an economic prospect must do so within the primary term. In certain cases, it could theoretically be better for the lessee to wait longer to explore for and develop resources, but this cannot typically be done.



The **hurdle price** is the price below which delaying exploration in the lease sale area is more valuable than immediate exploration.

This situation could arise, for example, if the price of oil or gas were trending downward but showing signs of recovery after the primary term. In this situation, the lessee cannot wait for prices to rise before exploration and development begins because the primary term would be nearing expiration. However, waiting could be in society's, as well as the lessee's, interest because the resources would be worth more if produced later. In this case, it is conceivable that greater value could instead be realized by waiting longer to lease in the first place.

A similar situation could arise based on the uncertainty of future laws, regulations, and U.S. oil consumption. As the U.S. energy economy continues to transition away from fossil fuels, waiting to lease could also provide information to the Secretary on whether there will be a need for future oil and gas development on the OCS.

10.1.1 Information and Uncertainty

At the time of lease issuance, uncertainty exists regarding not only future prices, but also risked resource endowments, capital and operational costs, available technologies, ESCs, and the prevailing post-sale regulatory and legal environments. An objective of both the government and industry is to manage the risks associated with these uncertainties.

Through its fiscal terms, the government, as the lessor, engages in a form of risk sharing with the lessee. In exchange for the right to develop and sell oil and gas produced from Federal waters on the private market, the government receives an upfront bonus bid, rentals on non-producing acreage, and royalties if the lease enters production. The lessee assumes virtually all of the cost risk on a given lease, but no royalty payments are owed unless that development reaches the production stage. Other risks to society from OCS oil and gas development are managed through the application of industry best practices, enforcing legal liability, and enforcement of safety and environmental laws and regulations governing OCS operations.

This section explains how decisions regarding the timing of leasing, made at the appropriate points during the preparation and execution of the National OCS Program, reflect consideration of how uncertainty and information could evolve.

10.1.1.1 Option Value

Option value is defined as the value of waiting to make an irreversible investment until critical new information arrives. Option value provides the ability to account for the value of leasing. In general, option value can be an element of FMV, and its magnitude and significance are directly affected by components of uncertainty and information, or lack thereof. In designing the National OCS Program, BOEM provides the Secretary with information relevant to decisions on the size, timing, and location of lease sales. Public comments received on prior National OCS Programs have suggested that USDOJ consider option value while performing its size, timing, and location analysis to meet its FMV statutory requirement. The hurdle price analysis considers the uncertainty of oil and gas prices and the hydrocarbon endowment and is discussed in [Section 10.1.1.2](#). This section discusses non-market factors that are generally reflected in option value.

When uncertainties exist, having the option to delay activities creates value to a lessee as additional and new information can be revealed and incorporated into future decisions. However, once an action is taken, the presence of uncertainty is known to reduce the net benefits of a project because the action eliminates the value of the option to wait to take that action (Arrow and Fisher 1974). In connection with socially optimal OCS oil and gas development, the essence of option value is that a decision regarding whether to use an oil and gas asset can be modeled as a perpetual call option that lasts until the asset is leased (Davis and Schantz 2000).

From the government’s perspective, OCS oil and gas resources are a perpetual call option in that the government has the right, but not the obligation, to offer OCS areas for lease at any time in the future (i.e., the option does not expire). The decision to exercise the option at a particular time can reflect assumptions about the future path of prices as well as emerging information about resources, costs, and risks when the social value of the option is in question.

The broad form of option value here includes what can be termed “quasi-option value.” The concept of “quasi-option value” was identified by Arrow and Fisher (1974) and is defined as the “benefit associated with delaying a decision when there is uncertainty about the payoffs of alternative choices and when at least one of the choices involves the irreversible commitment of resources” (Freeman 1984). While traditional option value focuses on the value of action now versus in the future, the quasi-option value of an action is based on uncertainty and the value of information that can be gained now versus in the future.

An important distinction in quasi-option value is what is uncertain and how those uncertainties are resolved. Some uncertainties can be resolved through receipt of additional information, and this information can be learned without the development of the oil and gas resource (e.g., waiting for the results of a study on the baseline condition of an environmental resource in a program area). These uncertainties are defined as “independent learning” (Fisher and Hanemann 1987).

However, other uncertainties can only be resolved with exploration and development of the oil and gas, demonstrating “dependent learning.”

In their work on option value, Fisher and Hanemann (1987) specifically discuss the example of offshore oil leasing, acknowledging the “dependent” nature of uncertainties given that the largest uncertainty lies in estimating the quantity of oil and gas resources, which can only be resolved, and then only partially, by exploratory well drilling. If, on the other hand, the desired information regarding ESCs is, or can be, obtained without drilling, which by nature embodies some degree of risk, then it is “independent” information, and the case for significant option value and exclusion from the next National OCS Program is strengthened.

To answer these questions, BOEM must first consider the nature of the information being sought about the many uncertainties surrounding OCS oil and gas development and how these uncertainties can be resolved.

10.1.1.2 Considering Uncertainties for the National OCS Program

To determine whether the possibility exists for significant option value associated with delayed leasing, BOEM considers the uncertainties surrounding OCS activities and how these uncertainties could impact the value of OCS acreage. Resolving uncertainties can reduce risk and greatly change the value of a lease and its corresponding societal value. The following sections discuss the uncertainties that can affect the potential value and possible risks of OCS oil and gas development and how these uncertainties could be resolved. Major uncertainties surrounding oil and gas development are discussed in the context of independent and dependent learning. Many include components of both, and these uncertainties are tied to components of the net benefits analysis discussed in [Section 5.3](#).

The discussion of uncertainties and option value must always consider the pyramidal structure of the National OCS Program development and lease sale processes. The National OCS Program development process begins by considering all leasing areas, and then the potential areas are usually winnowed down into what is ultimately the lease sale schedule in the PFP. Through the development of this PFP, the Secretary has narrowed the areas considered for leasing.

At the National OCS Program stage, no irreversible commitment of resources occurs because no activities are authorized, and, as discussed, the Secretary could always choose to cancel a lease sale at the individual lease sale planning stage.

The next subsections consider the many different uncertainties that exist in OCS oil and gas development. Most of these uncertainties are discussed qualitatively with reference to the nature of the uncertainty and how the uncertainties could be resolved with additional information. This discussion is included because BOEM acknowledges the possibility of obtaining additional information that could affect the value of OCS resources over time. This value was

also recognized by the court in *CSE v. Jewell* (779 F.3d 588 [D.C. Cir. 2015]).⁵⁸ While discussed, BOEM does not quantify the quasi-option value of each of these uncertainties given difficulties in quantifying the informational value of delay and the continuing lack of well-established methods to quantify such considerations.⁵⁹

While many of the uncertainties are considered qualitatively, BOEM includes a quantitative treatment of price and resource uncertainty. These uncertainties are quantitatively discussed in [Section 10.1.2](#), which describes the hurdle price analysis.

10.1.1.3 Resource Uncertainty

BOEM assessments of undiscovered oil and gas resources account for uncertainty by using distributions for model inputs and assigning geologic risk at both the prospect and play level (described in [Chapter 5](#)). The uncertainty associated with the presence and estimated quantity of oil and gas resources can only be fully resolved through lease acquisition and subsequent production of oil and gas reserves on OCS acreage. In this sense, “dependent learning” is required to resolve uncertainty. Private companies must spend significant amounts of money to acquire leases and analyze geologic information to discover and ultimately produce new oil and natural gas reserves. BOEM’s current estimates of both technically recoverable and economically recoverable resources available in each of the OCS planning areas are presented in the 2021 National Assessment (BOEM 2021a).

When compared to the 2016 National Assessment, the 2021 UTRR mean estimate for oil in the GOM Region decreased by 38% to 29.59 BBO, while the estimate for gas decreased 61% to 54.84 Tcfg. While the overall aggregated resource volumes decreased for the GOM Region, it is worth noting that, based on current information, several geologic plays were assessed to contain more resources than in the previous assessment. The mean resource estimate for one geologic play increased by more than 1.5 BBOE due in large part to additional information from several new analog fields. The UTRR mean estimates in the Cook Inlet had very modest adjustments, with oil increasing from 1.01 BBO in 2016 to 1.04 BBO in 2021 and gas decreasing from 1.20 to 1.18 Tcfg.

The GOM Region provides an example of where recent activity and exploration results provide information that supports an update of undiscovered resource potential. While the expansion of offshore infrastructure and new technology has allowed industry to produce smaller and more geologically complex reservoirs, discovery trends in the GOM led to BOEM refining the field size

⁵⁸ The court found that “[t]here is therefore a tangible present economic benefit to delaying the decision to drill for fossil fuels to preserve the opportunity to see what new technologies develop and what new information comes to light.” *CSE v. Jewell*, 779 F.3d 588, 610 (D.C. Cir. 2015).

⁵⁹ The D.C. Circuit court upheld BOEM’s qualitative approach to considering option value in *CSE v. Jewell*, 779 F.3d 588, 612 (D.C. Cir. 2015). The court found that “Interior acted reasonably in employing qualitative, rather than quantitative, measures of the informational value of delay.”

distributions and the estimated number of prospects for some mature geologic plays, particularly on the shallow water shelf.

Seismic surveys are critical to improving knowledge and reducing resource uncertainty and to better understand hydrocarbon potential. However, exploration and development activities (drilling and production) are the most definitive way to reduce resource uncertainty.⁶⁰

The resource potential of certain acreage is one of the factors companies consider when determining areas to lease and how to explore their leases. At any point in time, a relatively small fraction of the area under lease is likely to be undergoing development. Companies typically have a portfolio of active leases that they evaluate when considering the timing and specific location of oil and gas resource development.

Given resource uncertainty, the estimated geologic and hydrocarbon potential of an OCS block, or group of blocks, is likely to change over time as new seismic data are acquired, imaging techniques are improved, new drilling results are available from nearby wells, new geologic plays are developed or existing plays are marginalized, and a variety of market factors including costs and changes in commodity prices occur. The net result is that the relative position of an OCS block in a company's portfolio for exploration or development opportunities is always in flux. A company's development plans are frequently revisited, and a company could determine that a newly acquired block is more valuable for immediate exploration than one nearing the end of its primary term. Blocks that are unleased and appear to have limited hydrocarbon prospectivity today could one day become a more valuable asset with the addition of new information. Without the ability to acquire additional acreage, companies may not proceed with additional seismic activities or exploration of leases in their portfolio. The ability to acquire new acreage allows for continued re-evaluation of uncertainties, high grading of leasehold portfolios and facilitates more efficient development.

10.1.1.4 Capital and Operating Cost and Extractive Technology Uncertainty

Companies operating on the OCS face uncertainty regarding future capital and operating costs. Cost uncertainty can be driven by market factors that affect demand for oil and gas exploration and development equipment, such as drilling rigs and skilled workers. An increase in oil prices encourages additional exploration and development activities, which increases the price of exploration, development, and production by increasing demand for drilling rigs. Similarly, the identification of an oil and gas-rich basin can spur increased industry interest and investment, raising the demand for drilling rigs and skilled workers.

Over time, innovative technology could become available to extract oil and gas resources more efficiently or safely, and/or reduce risks associated with extraction. Well control and containment technologies are improving the ability of operators to mitigate damages from well control

⁶⁰ This is analyzed in the paper by Rothkopf et al. (2006), *Optimal Management of Oil Lease Inventory*.

incidents by closing the well, capturing the flow, or assisting in clean-up operations. This further illustrates the concept of dependent learning, which is an element in the option value calculus but is oftentimes not considered by some when highlighting the importance of evaluating option value.

10.1.1.5 Environmental and Social Cost Uncertainty

As part of the National OCS Program decision on size, timing, and location, the Secretary considers the available environmental and social cost information. Additional and new environmental and social information is continually becoming available. All the environmental or social cost estimates in BOEM’s analysis, particularly the impacts estimated in the OEMM, are subject to uncertainty and future revision. Viewed from an analytical perspective, the situation is like that of resource estimates; there is some probability that ESCs might be smaller or larger than an estimate provides, and that directly affects the magnitude of the expected option value.

In contrast to resource estimates, most environmental impacts can be mitigated, remediated, or otherwise compensated. However, even with mitigation measures in place, certain impacts could be deemed significant and irreversible. For many years, environmental scientists and economists have examined the risks of irreversible impacts, and some researchers have applied real options theory to irreversible issues such as species extinction.

Research and studies have considered the uncertainty of the chances of resource development causing wildlife species extinction in connection with the uncertainty of the value of a given species. For example, Abdallah and Laserre (2008) assert that logging in a certain forest might cross an ecological threshold leading to caribou extinction. Option value models formalize the intuition that logging is not beneficial unless the implied risk is “low enough.” The value lost if a species becomes extinct is also uncertain. As described by Kassir and Lasserre (2002), biodiversity relates to a “portfolio” of future uses for species.

Another study specifically considered the amenity value—that is, the characteristics that influence and enhance appreciation of a particular area—that would be lost with oil and gas development in the Arctic National Wildlife Refuge. Conrad and Kotani (2005) estimate a “trigger price” for oil that would justify the loss in amenity value if development were allowed in the region. In theory, a similar approach could be applied to OCS leasing. BOEM is continuing to evaluate methods in which an amenity value could be incorporated into future hurdle price analyses.

The relatively few studies that apply real options concepts to possibly irreversible environmental impacts from oil and gas activities demonstrate the serious difficulty of assessing these risks. It is not hard to envision the broad outlines of a real options model of environmental impact, but it is surprisingly difficult to specify and estimate a useful empirical model of that type.

BOEM's Environmental Studies Program (ESP) recognizes the need for and importance of new environmental information and has funded more than \$1 billion in research throughout its 50-year history, covering physical oceanography, atmospheric sciences, biology, protected species, social sciences, economics, submerged cultural resources, and environmental fates and effects. Information developed by BOEM's ESP and other sources is incorporated in environmental analyses conducted by BOEM and builds the foundation for science-based decisionmaking throughout the National OCS Program development and leasing stages.

BOEM receives information from and collaborates with other Federal agencies, and works with Tribal entities, the scientific community, industry, and state and local governments. Further, BOEM includes new information at all stages of development of the National OCS Program and lease sale planning processes through its research and that of other Federal agencies and non-Federal entities. BOEM also considers comments received from the public during each of the public comment periods. In developing a National OCS Program, BOEM acknowledges the ever-expanding availability of scientific information and further considers additional scientific information at later stages in the OCS development process. Before a lease sale is held, BOEM conducts thorough NEPA reviews and updates its analysis based on new information. The pyramidal structure of the National OCS Program development process allows for more refined research and analysis at the lease sale stage.

While most of the research discussed above is driven by the possibility of oil and gas operations and is conducted to inform decisionmakers, the knowledge gained is largely "independent" learning. This follows the Fisher and Hanemann (1987) suggestion that needed information about environmental impacts can sometimes be obtained by research separate from drilling.

BOEM continues to investigate social and environmental issues and consider relevant information as it becomes available. In the meantime, BOEM provides qualitative information to the Secretary to consider existing uncertainties and how new information could become available for consideration in the decisions on size, timing, and location. Information on the environmental impacts for each region is provided in the [Final Programmatic EIS](#).

Environmental costs are an important component in the net benefits calculation. Additionally, an important aspect of OCS energy development is that in the absence of lease sales in any of the program areas, substitute sources of energy would be necessary to fulfill the U.S. demand for energy. These substitute energy sources have their own environmental costs, which are also uncertain. BOEM does not incorporate the costs of these substitute energy sources into its FMV hurdle price analysis to keep the analysis solely focused on the costs and timing for a specific area and that leasing decision. More information on the energy market substitutes is included in [Chapter 5](#).

Although the hurdle price analysis in [Section 10.1.2](#) does not incorporate a quantitative estimate of the uncertainty of ESCs or the possibility of irreversible damage, it does incorporate monetized

estimates of anticipated ESCs (consistent with those costs monetized and explained in [Chapter 5](#)). As in the [2017–2022 Proposed Program](#) and [PEP](#) analyses, the hurdle price calculation considers both the private and social costs of exploration and development.

10.1.1.6 Regulatory and Legal Environment Uncertainty and Policy Changes

An objective of both government and industry is to manage the risks associated with OCS oil and gas operations. Operators manage these risks by using industry best practices and prudent risk management methodologies. The government uses legal liability (e.g., liability of lessees for accident clean-up, and enforcement of lease obligations), and the promulgation and enforcement of safety and environmental laws and regulations.

The ability to maintain a stable and transparent regulatory and legal environment for oil and gas industry operations is an important factor for lessees and operators on the OCS when considering whether, when, and how much to invest in OCS tracts and related exploration and development activities.

The legal and regulatory environment for OCS exploration and development can greatly impact project profitability. As the National OCS Program evolves and throughout the time when a lessee proceeds to develop the leases it acquires, new regulations could be promulgated, and existing regulations revised. Occasionally, implementation of new statutory requirements and legal precedents occur in the interest of ensuring safe and environmentally sound OCS operations. The practice of BOEM and BSEE is to communicate and coordinate with the oil and gas industry and other stakeholders on the content and rationale of regulatory approaches and requirements. The bureaus encourage feedback, input, and suggestions for alternatives to regulatory proposals before they are finalized.

Changes in consumption could have an impact on OCS leasing and development in the future as the U.S. works to achieve its climate-related policy goals. Policy changes can affect markets in ways that impact companies' decisions about leasing, exploration, and production on the OCS. The pyramidal nature of the National OCS Program creates future decision points throughout the National OCS Program development and lease sale processes where, if necessary, changes can be made in response to new energy, climate, or other conditions.

10.1.1.7 Price Uncertainty

While the value promised by a lease sale is related to the resource endowment and the likelihood of finding economic hydrocarbon resources, it also is heavily influenced by future oil and natural gas price forecasts. Mean-reversion is one of several possible models that could be used to simulate oil and gas prices. The simplest model, used by Black and Scholes for valuing financial options, assumes geometric Brownian motion, which has the volatility of a mean-reversion model without the tendency to revert to a single long-run mean. In addition to the economic logic that

implies that oil and gas prices tend to revert to a long-run level, statistical tests can be applied to determine whether the oil or gas price series has a mean-reverting tendency.

In one paper, Pindyck (2001) concluded that “over the long run, price behavior seems consistent with a model of slow mean reversion.” Under a mean-reversion framework, uncertainty stabilizes over time as prices revert to a long-run mean. Weijermars (2018) emphasized that mean-reversion pricing is only followed during times of “business as usual” supply and demand equilibrium; unusual price events like the short-term price shocks in 2008–2009, 2014–2016, and 2020 will move prices well off the expected price range. Under the mean-reversion assumption, there is little benefit to waiting to lease because the uncertainty band narrows around the long-run average. However, should prices progress below the long-term trend, there could be a benefit in waiting for prices to rebound.

To consider the option value of the resources related to resource price uncertainty and optimal timing decisions, BOEM has adopted a hurdle price analysis. It is intended to evaluate every area included in the National OCS Program and determine if there is at least one geologic field where prompt exploration during this National OCS Program is consistent with an optimal allocation of resources. The hurdle prices are calculated assuming a mean-reverting price model.

10.1.2 Hurdle Prices

BOEM considers one aspect of uncertainty, price uncertainty, at the National OCS Program stage. BOEM compares undiscovered fields in each program area with an economic estimate of each area’s “hurdle” weighted average (i.e., BOE) price. BOEM’s hurdle price analysis only considers the uncertainty surrounding oil and gas prices. While many other uncertainties exist (described in [Section 10.1.1](#)), given data limitations and the lack of a widespread documented methodology to quantitatively evaluate other types of uncertainty, only price uncertainty is quantitatively evaluated at this time.

BOEM acknowledges that this assessment only considers the changes in resource prices and how they might impact whether leasing in the future could provide a higher social value. Importantly, as described in [Section 10.1.1.6](#), changes in regulations and U.S. energy consumption patterns could change leasing decisions. Although current prices could exceed the hurdle price, the Secretary could still determine that additional lease sales are not warranted given many reasons including the transitioning energy economy. The hurdle price analysis also does not consider changing uncertainties in social or environmental costs, and as discussed above, the Secretary may consider these uncertainties when making decisions on whether to lease.

The hurdle price is defined as the market price at which the social value of delaying to a future National OCS Program the exploration of a large field in the lease sale area would exceed the

value of immediate exploration of similarly large fields within this new National OCS Program.⁶¹ That is, when market prices are at or above the hurdle price, the value of allowing exploration for these large prospects exceeds the value of delay purely from the price uncertainty perspective. Therefore, greater social value could be realized by leasing that prospect now rather than delaying for future leasing. [Chapter 5](#) provides a detailed discussion on social costs of oil and gas development activities, including impacts on recreation opportunities and air quality, as well as ecological damage and upstream GHG emissions.

Once the new National OCS Program is approved, BOEM revisits the decision at the lease sale stage of whether to hold a lease sale included in the National OCS Program and evaluates which OCS blocks to offer and at what terms. Designing specific lease fiscal terms at the lease sale stage rather than the earlier National OCS Program formulation stage provides more flexibility (i.e., option value) and allows decisions to be made closer to the time when economic and other conditions that influence lease sale decisions are better known and somewhat easier to forecast. Given the iterative process of National OCS Program development and lease sale design, there are typically benefits from including areas in the National OCS Program if their hurdle prices are below current market prices as further analysis can then be conducted at a later stage (i.e., individual lease sale stage). [Section 10.3.2](#) provides more discussion on BOEM’s lease sale fiscal terms procedures.

BOEM calculated the hurdle prices for both program areas in this PFP. The hurdle price analysis is conducted considering the NSV of each program area and determines whether the value from leasing in this new National OCS Program is expected to be greater than the value of waiting to lease an area until a future National OCS Program. For this calculation, BOEM considers both the private and social costs of exploration and development, including the GHG emissions associated with exploration and development.

Within each program area, BOEM identified a hurdle price for a large undiscovered field identified by a statistical resource estimation model. As described in the [Final EAM paper](#), BOEM used the 95th percentile field size from the 2021 National Assessment to define the large field size available in each program area (StatOil 2016). This field size was then used for conducting the hurdle price analysis in each program area in conjunction with private and social cost estimates appropriate for the applicable water depths and field sizes. These factors were input into an in-house dynamic programming model, “When Exploration Begins version 3” (WEB3), to generate the hurdle prices.

⁶¹ All else being equal, the largest fields tend to have the highest net value per equivalent barrel of resources, so they are least likely to benefit from delaying leasing in anticipation of increasing resource prices.

The rationale for basing the hurdle price analysis on large fields is that larger fields are more valuable and more likely to be developed first when compared to smaller fields, even after accounting for social costs.

[Table 10-1](#) shows the NSV hurdle prices for each of the analyzed program areas. Column B in Table 10-1 shows the input field sizes for each program area. Columns C and D show the assumptions made about natural gas-oil ratios for each program area along with the relative proportion of oil and natural gas associated with each area as implied by that ratio. For example, in the Cook Inlet Program Area, the analysis assumes there is 1.13 mcf of natural gas for every barrel of oil. This, on a BOE basis,⁶² means that on average, approximately 83% of a field is oil, and 17% is natural gas.

Table 10-1: NSV Hurdle Prices



A Program Area	B Large Undiscovered Field (Million BOE)	C Natural Gas-Oil Ratio	D Portion of Field BOE		E NSV Hurdle Price	F 2023 EIA AEO 2024 Prices
			Oil	Natural Gas	Price Per BOE	Price Per BOE
Cook Inlet	342	1.13	83%	17%	\$31.00	\$85.02
GOM	179	1.67	77%	23%	\$34.00	\$80.70

Notes: The large undiscovered field size is defined as the 95th percentile field from the 2021 National Assessment field size distribution. The 95th percentile represents very large field sizes while avoiding outlier values. The estimate of large field sizes in the GOM Program Area assumes that the largest field will be in deepwater and is modeled accordingly. See the [Final EAM paper](#) for further elaboration.

Key: AEO = Annual Energy Outlook; BOE = barrel of oil equivalent; NSV = net social value

Source: EIA (2023b)

BOEM uses WEB3 to estimate the BOE hurdle prices shown in Column E of Table 10-1. Price forecasts from EIA are used to create a per-BOE price appropriate for each program area based on their natural gas-oil ratios (shown in Column F); if these prices are below the hurdle price, from the monetized option value perspective calculated here, delaying the exploration of an undiscovered field of the size shown in Column B would result in greater value to the government than immediate exploration. However, as described in this chapter, there could be other reasons to keep these areas in at the National OCS Program stage and to wait for further consideration at the lease sale stage. The hurdle prices are per BOE and shown in 2022 dollars. More details on the calculation of hurdle prices that are derived from applicable oil and natural gas price estimates are included in the [Final EAM paper](#).

The weighted BOE forecast prices from the EIA for 2024 exceed the hurdle price in both program areas analyzed. For these areas, the analysis does not point to the need to delay leasing for option value considerations.

⁶² On a thermal basis, 5.62 mcf of natural gas provides the same heat content as a barrel of oil.

Among the main considerations in the hurdle price calculation are the cost estimates associated with developing the largest field size in each region. Although the modeled GOM field is in deeper water than the Cook Inlet modeled field, differences in the regions can have major impacts on costs. For example, a single deepwater well in the GOM Program Area may would likely produce more than a single well in the Cook Inlet Program Area. As a result, compared to the GOM Program Area, the Cook Inlet Program Area has higher development costs per BOE.

BOEM notes that the calculation of hurdle prices is highly dependent on several assumptions, especially future price trends of oil and natural gas, and on the rate at which prices revert to that trend. Given recent energy market changes, prices remain incredibly uncertain. More detail on these assumptions and the sensitivities of hurdle prices are included in the [Final FAM paper](#) (BOEM 2023b). Accordingly, the hurdle price findings should be taken as a guide for only price-based option value. BOEM continues to review and revise its hurdle price framework as appropriate throughout the National OCS Program development process and leasing processes.

The lease sale stage provides another opportunity to revisit the hurdle price analysis and consider whether to hold a lease sale. As discussed, the hurdle price analysis quantifies only one component of option value, price uncertainty, but other uncertainties remain, and other components factor into BOEM's analyses for the National OCS Program and subsequent lease sales. This is especially important to note as new information becomes available that could affect resource estimates or private or social costs for either of the program areas. To capture the option value of new information becoming available that could make an area profitable to lease, the Secretary may choose to include or exclude areas in the National OCS Program regardless of the relationship between the hurdle prices and current prices.

The creation of a National OCS Program lease sale schedule allows companies the opportunity to plan for expenditures and prospects as part of their leasing and business strategy. Choosing to cancel lease sales based purely on the hurdle price is not costless and could have an adverse impact on company interest in the region and the value received by the public. As such, the Secretary also considers many other factors in the decision of whether to include an area in the National OCS Program and ultimately hold a lease sale.

10.2 Leasing Framework

The size of a lease sale and the frequency of lease sales within a program area are key considerations within the National OCS Program framework.

10.2.1 Size of a Lease Sale

Regarding the size of a lease sale, BOEM considers whether all acreage within a program area should be included in the lease sale, or whether to make a more targeted area available for leasing. Starting in 1983, BOEM and its predecessors have typically conducted GOM lease sales

under the areawide leasing format, meaning that the government offers all available (unleased and not restricted) acreage in the program area in the lease sale.⁶³ Prior to 1983, BOEM used an industry nomination or agency tract selection process in which companies nominated acreage or BOEM selected specific acreage for lease, and only that acreage was offered; the tract selection lease sales tended to result in fewer leases being issued.

In the early 2000s, the State of Louisiana requested on several occasions the use of methods other than areawide leasing, similar to industry nomination or agency tract selection. In 2010, BOEM contracted a study analyzing areawide leasing. The study, *Policies to Affect the Pace of Leasing and Revenues in the Gulf of Mexico* (hereinafter referred to as the “Areawide Leasing Study”), evaluated the efficacy of alternative leasing schemes to the areawide leasing model (Balcom et al. 2011).

The Areawide Leasing Study suggested that government revenues in the form of increased cash-bonus bids per block leased under the nomination/tract selection format would be offset by fewer blocks leased, less drilling, a reduced pace of discovery, lower rentals and royalties, and less annual future production of OCS oil and natural gas from newly issued leases. From this FMV perspective, the report found little benefit from adopting any of these alternative leasing schemes. However, targeted leasing can have other important programmatic advantages as discussed below.

When developing or implementing the National OCS Program, the size and scope of a program area or lease sale area, respectively, can be narrowed and a more targeted approach adopted in particular areas. Given the structure of the National OCS Program process, these decisions can be made throughout the National OCS Program development process or during the lease sale stage. Targeted leasing is geographically narrowed in scope and could be used to balance resource availability and limit conflicts with states’ CZM plans, DOD activities, environmentally sensitive subareas, and subsistence use by making certain determinations about which blocks within the program area are most suitable for leasing. In addition, a targeted leasing approach would be able to consider industry bidding and investment trends, allowing BOEM to focus leasing efforts on those specific blocks that would provide the highest social and private value.

Specifically, BOEM has used a targeted leasing approach in the Alaska Region, which aimed to offer areas with the most promising oil and gas resource potential while also protecting environmentally sensitive habitats and important social and cultural uses. BOEM’s targeted leasing approach narrowed the area available within the Cook Inlet to a targeted area, but within that space, all available blocks were open for leasing.

⁶³ Areawide leasing does not mean every available block. BOEM may still employ an areawide leasing format and exclude select blocks for marine sanctuaries, EEZ setbacks or to protect certain features (e.g., topographic features).

The IRA created an additional factor to consider when determining the size of a lease sale. Section 50265(b)(2) of the IRA requires BOEM to offer at least 60 million OCS acres for oil and gas leasing within the 12 months prior to issuing an offshore wind lease. This requirement is effective until August 16, 2032.

10.2.2 Frequency of Lease Sales

Another consideration at the National OCS Program stage is the frequency of lease sales within the years covered by a particular National OCS Program. When deciding the frequency of lease sales to be held in a particular area, an important consideration is the potential for new information (e.g., geologic information, revised price forecasts, new technology, environmental considerations) to become available between lease sales.

In the GOM Region, seismic exploration activity, exploration well drilling, and lease relinquishments are occurring almost continuously. Thus, in the GOM Program Area, the emerging information and tract availability could impact a company's bidding strategy as well as the government's evaluation of blocks. Accordingly, and partly in response to demand and new information, the GOM Program Area lease sale schedule has tended to involve more frequent lease sales. Traditionally, BOEM has held GOM Region lease sales twice a year, but an exploration and production company suggested in its comment letter that BOEM could consider holding one annual lease sale offering of at least 60 million acres for a trial period. One annual lease sale would allow BOEM to continue to meet the IRA requirement for continued offshore wind leasing while reducing the administrative burden of holding more frequent GOM oil and gas lease sales.

For the Cook Inlet, there is little to no ongoing activity, and less new information has become available in recent years.

10.3 FMV: Lease Terms and Bid Adequacy

After an area is included in an approved National OCS Program and following the determination of the lease sale size and timing, the next decision is the selection of the bidding system and lease terms for the lease sale offering. USDOJ evaluates these terms prior to each lease sale to assure the terms provide the public with FMV for the rights conveyed. After the lease sale and before acceptance of any bids, BOEM performs a bid adequacy evaluation. The lease sale components for assuring receipt of FMV consist of the bidding system, lease terms, and bid adequacy review.

10.3.1 Bidding Systems

In designing a lease sale, USDOJ determines the appropriate bidding system. The specific competitive bidding systems available under the OCS Lands Act are set forth in 30 CFR 560.202. The OCS Lands Act requires the use of a sealed bid auction format for oil and gas lease sales, with a single bid variable on tracts no larger than 5,760 acres, "unless the Secretary finds that a larger

area is necessary to comprise a reasonable economic production unit” (43 U.S.C. § 1337(b)(1)). The OCS Lands Act allows for different competitive bidding variables including royalty rates, bonus bids, work commitments, or profit-sharing rates.

When Congress amended the OCS Lands Act in 1978, it instructed USDOJ to experiment with alternative bidding systems for OCS leasing, primarily to encourage the participation of small companies by reducing upfront costs associated with the traditional cash-bonus bid system. USDOJ used four alternative bidding systems from 1978 through 1982. While one lease sale used the royalty rate as the bid variable, almost all the lease term structures during this period maintained the cash-bonus bid but varied the contingency variable with the use of a sliding scale royalty, which varied depending on the rate of production, a fixed net profit share, and 12.5% and 33% royalty rates.

At the time, these systems were not found to enhance National OCS Program performance compared to the then-prevalent 16.67% fixed royalty rate system in shallow water. Among other things, a review found that they did not increase participation by small companies; were significantly more complex to administer; distorted bids, which made it more difficult to identify the high bid; and often were not beneficial to the taxpayer. As a result, since 1983, USDOJ has chosen to use the cash-bonus bidding system along with a fixed royalty rate.

In evaluating which bidding terms to use, USDOJ considers the goals of the OCS Lands Act, the costs and complications of implementing the selected approach, the ability of the bidding variables to accurately identify the bidder offering the highest value, and the economic efficiency of the selected approach. The OCS Lands Act requires that USDOJ offer OCS acreage competitively. Competitive auctions are the most likely to maximize OCS leasing and production and efficiently allocate capital in a manner that is beneficial to the public. When preparing for specific lease sales, BOEM analyzes alternative fiscal terms to offer in conjunction with the current bidding systems. USDOJ also considers alternative bidding systems, as appropriate; these are described in the next section.

10.3.2 Fiscal and Lease Terms

After deciding to hold a lease sale and determining the bidding system to use, the next set of decisions deals with the lease sale terms to be offered, largely the fiscal terms and duration of the primary lease term. The fiscal terms include an upfront cash bonus, rental payments, and royalties, with the rental and royalty terms set by USDOJ and the upfront cash bonus offered by bidders subject to USDOJ’s minimum bid level. All the financial obligations (cash bonus, rental payments, and royalties) reflect the value of the lessor’s (i.e., Federal Government’s) property interest in the leased minerals and contribute to the assurance that FMV is received for the public’s resources. In determining the appropriate lease terms for a lease sale, USDOJ must balance the need to assure FMV with the other policy goals in the OCS Lands Act.

USDOJ evaluates fiscal and lease terms on a sale-by-sale basis and has adjusted these in recent lease sales in response to emerging market and resource conditions, competition, and the prospective nature of available OCS acreage. In general, any changes in fiscal terms are done incrementally, allowing BOEM the opportunity to evaluate the results of a lease sale held with new lease sale terms and for USDOJ to further refine terms, if necessary, in future lease sales.

BOEM follows formalized procedures for evaluating fiscal terms before lease sales. These annual procedures consider the effectiveness of the status quo fiscal terms in comparison to international fiscal systems and recent National OCS Program performance. During these procedures, BOEM updates the in-house analytical models, conducts additional statistical analysis, reviews international fiscal system trends, and recommends either adopting fiscal terms used in previous lease sales or other alternative fiscal terms. BOEM's procedures include use of both discounted cash flow and real option methods for deciding the set of fiscal terms that maximize the potential value of future leasing and production while ensuring receipt of FMV. After a lease sale, BOEM evaluates the bids received to determine whether the lease terms offered have enhanced bidding and competition for leases and to evaluate the necessity for additional changes or adjustments.

BOEM periodically conducts studies and incorporates their results into the procedures and analyses on fiscal terms. As discussed previously, BOEM conducted the 2010 Areawide Leasing Study to consider a range of alternative fiscal terms. The study was not able to identify alternative leasing and fiscal policies that would lead to significant increases in Federal revenues. Further, BOEM, jointly with the BLM and BSEE, completed a study with IHS Markit titled *2018 Comparative Analysis of the Federal Oil and Gas Fiscal Systems: Gulf of Mexico International Comparison* (IHS Markit 2018). The study compared peer group countries' petroleum extraction fiscal systems and terms to the U.S. Federal system and found that, from a government perspective and an investor perspective, recently used GOM lease fiscal terms have been competitive with the fiscal terms employed by other countries that compete with the U.S. for upstream oil and gas investment.

In the past, Congress has passed laws requiring USDOJ to offer specific fiscal terms. In 1995, Congress passed the Deepwater Royalty Relief Act (43 U.S.C. §§ 1337 *et seq.*), requiring the use of royalty suspension volumes for certain leases in water depths of 200 meters and deeper. Additionally, Congress passed the Energy Policy Act of 2005, with requirements for offering specific provisions of deep water and deep gas royalty relief. The IRA required BOEM to issue leases with a minimum royalty rate of 16.67% but not more than an 18.75% royalty rate during the 10-year period following IRA enactment. If Congress were to enact legislation requiring the use of specific lease or fiscal terms, they would be incorporated at the NOS stage.

10.3.2.1 Minimum Bid and Bonus Bid Amounts

For many years, the bid variable of the auction has been the bonus bid. This signature bonus is a cash payment required at the time of lease execution. A bonus bid is formulated by the bidder based on its perception of expected profit, net of other payments. USDOJ sets a minimum bid as a floor value for acquiring the rights to OCS acreage; historically, its primary utility has been to ensure receipt of FMV on blocks for which there are insufficient data to make a tract evaluation, or existing geologic or economic potential of the blocks is inadequate to support a positive tract value. In 2011, USDOJ increased the minimum bid in the deepwater GOM to encourage bidders to focus on blocks more likely to be explored during the primary lease term.

A higher minimum bid could result in a greater proportion of offered blocks being passed over (i.e., not bid on) by bidders. To the extent these passed-over blocks are marginally valued, their retention in the government's inventory and reoffering at the next lease sale could enhance the efficiency of the lease sale process and generate option value and higher bonus bids for the retained blocks in a future lease sale. A higher minimum bid level can also serve to narrow bidder interest to the more valuable blocks offered in the lease sale, thereby enhancing competition on the better blocks and encouraging bidders to focus their bidding on those blocks that they are most likely to explore and develop.

The lessee pays the bonus bid at the outset regardless of future activity or production, if any, so the lessee bears the risk of paying more than the lease is eventually worth, while the government bears the risk of accepting less than it is eventually worth. In contrast, the royalty is paid as a percentage of actual production, so the upfront risk to the lessee of future royalty payments is mitigated while the government accepts some risk that no royalties would ever be paid on a given lease if that lease never enters production. A fiscal advantage of the bonus is that it is received by the government immediately; there is no delay of, possibly, a decade or more, as with the royalty.

Although the minimum bid stipulates the lowest bid level, actual bids submitted are based on the expected profitability of the field and the evaluation of geology and economic viability (as described in [Section 10.3.2.2](#)). Bidders develop the actual amount of their bonus bids in consideration of the expected discounted present value of the lease. Accordingly, the fiscal terms in effect in a lease sale can affect the amount of the bonus bid for a lease, and changes in other fiscal terms can affect the revenues collected through bonuses. For example, a higher royalty or rental rate can be expected to induce bidders to formulate lower bonus bids and vice versa.

10.3.2.2 Bid Adequacy

Following a lease sale, BOEM evaluates all high bids on each OCS block to determine whether they satisfy the FMV requirements for acceptance. BOEM assesses all blocks using a combination of block-specific bidding factors and detailed block-specific resource and economic evaluation factors to assure that the government receives FMV for each lease issued. To be

considered for acceptance, the high bid must exceed the government's reservation price. The reservation price is block-specific and calculated using geologic and engineering parameters to evaluate the economics of that block. The reservation price helps to assure receipt of FMV by only leasing viable blocks for prices commensurate with the modeled geologic potential. As explained below, this value is separate from the minimum bid that is set at the time of the lease sale notice (discussed in the previous section). Creating a reservation price for individual blocks assures that even when there is only a single bid on a block, the bid is still evaluated against the government's estimate of the block's value.

The bid adequacy procedures, instituted in 1983, use a two-phased evaluation process to assess the adequacy of bids received in lease sales. The first phase involves BOEM's assessment of the block's geologic and economic viability using the best available seismic and other information available. All bidders must provide BOEM with the geologic and seismic data used to formulate the bid. This prevents a situation where asymmetric information gives an advantage to the bidder.

Since 1984, bid adequacy reviews and FMV determinations have resulted in an average rejection rate of bids of approximately 4.3%. One result of bid rejection is to encourage bidders to submit bids in subsequent lease sales that exceed the government's reservation price and thereby promote receipt of FMV. Rejection of high bids under existing BOEM bid adequacy procedures has consistently resulted in higher returns in subsequent lease sales for the same tracts, even when those tracts not receiving subsequent bids were included in the calculation of the average returns.

In the GOM, from 1984 through 2022, BOEM rejected total high bids of \$740 million, but when BOEM re-offered the blocks, they drew subsequent high bids of \$1.97 billion, for a total net gain of \$1.2 billion, or an increase of almost 166%. These results indicate that BOEM's bid adequacy assessments and procedures have performed well in identifying blocks with high bids below FMV. With the possibility of bid rejection from the government and competition from other bidders, lease sale participants are encouraged to submit bids that will reflect or exceed the government's reservation price. When bids exceed the reservation price, the government is confident it is receiving FMV.

BOEM occasionally conducts look-back studies to evaluate bid evaluations and actual development. These studies show that BOEM assigned most OCS leases with profitable hydrocarbon discoveries a positive value at the time of sale. However, in some cases where BOEM estimated block values to be negative and the blocks were issued for near-minimum bid, the lessees made discoveries of substantial size. In these cases, BOEM still receives FMV because payments have been made for royalties on that production, and at the time of the lease, the known geologic conditions warranted a reservation price below the high bid. BOEM has documented that either new information became available after the lease was awarded,

prompting a company to drill a specific target different than what was originally evaluated, or the BOEM evaluation of the potential oil and gas accumulation target did not coincide with that of the lessee company.

In those cases where new information became available after the lease was awarded, the information tends to be either new or reprocessed geophysical data unavailable at the time of sale, or new subsurface well data acquired because of drilling on a nearby lease that could indicate the possibility of material hydrocarbon deposits on the subject lease. Since it is quite common for exploration companies to acquire new or reprocessed geophysical data on leases after they are awarded but prior to exploratory drilling, these look-back studies tend to identify those wells that have been drilled to a target that sometimes is not coincident with the target that was evaluated pre-sale.

BOEM actively seeks opportunities to improve its bid adequacy process. The original form of the bid adequacy procedures was instituted in 1983 in conjunction with the implementation of the areawide leasing policy, but these procedures have undergone several refinements to address FMV concerns as conditions have changed. The Number of Bids Rule that had previously applied to Phase 1 of the bid adequacy procedures was eliminated by BOEM in March 2016. In January 2023, BOEM published proposed changes to the procedures, which would eliminate the use of tract classifications and the delayed valuation methodology while implementing a new confidence interval consideration. These proposed changes are partially in response to recommendations made by the Government Accountability Office's (GAO) Report GAO-19-531, *Offshore Oil and Gas: Opportunities Exist to Better Ensure a Fair Return on Federal Resources* (Government Accountability Office 2019). The current procedures are available online at <http://www.boem.gov/Fair-Market-Value/>.

10.3.2.3 Primary Term

In cases where a high bid meets the FMV requirements, the lease rights are issued to the lessee for a limited term, called the primary term. The OCS Lands Act sets the primary term at 5 years, or up to 10 years, “where the Secretary finds that such longer period is necessary to encourage exploration and development in areas because of unusually deep water or other unusually adverse conditions” (43 U.S.C. § 1337(b)(2)). The primary term promotes expeditious exploration while still providing time to commence development. In evaluating the primary term of the lease, USDOJ considers technology and time necessary for exploration and infrastructure development.

When designing specific lease sales, USDOJ considers the length of the primary term and whether it remains appropriate given current exploration timeframes. For example, for Lease Sale 256 in late 2020, USDOJ increased the primary term for leases in water depths of 800 to 1,600 meters to account for the technological difficulties associated with developing the remaining fields in this water depth.

10.3.2.4 Rentals

Before the beginning of royalty-bearing production, the lessee pays annual rentals that are either fixed or escalating. Rentals compensate the public for the value of holding the lease during the primary term and encourage diligent development. BOEM occasionally increases rental rates for inflation, as it did in 2022 and 2023 for Lease Sales 258 and 259 in the Cook Inlet and GOM, respectively.

Rental payments provide an incentive for the lessee to either drill the lease in a timely manner or relinquish it before the end of the primary term, thereby allowing other market participants to acquire these blocks earlier than otherwise. BOEM also includes escalating rentals to provide additional incentives to relinquish blocks when exploration is unlikely to be undertaken.

10.3.2.5 Royalties

OCS oil and gas production is subject to a royalty interest held by the government. Royalty rates can have a significant impact on bidder interest and are a key fiscal parameter in the calculation of the underlying economic value for an OCS block. It is primarily through royalties that the public shares in the project risk and receives compensation for the extraction of non-renewable resources. Prior to the IRA, the OCS Lands Act included a minimum royalty rate for OCS leases of 12.5% but did not include a maximum rate. The IRA narrowed the available royalty range by setting a new minimum royalty rate of 16.67% while establishing a maximum royalty rate of 18.75% for the 10-year period following IRA enactment. The rate is applied to the value of sold oil and gas, after deducting certain processing and transportation expenses. As the price of oil and gas fluctuates, the amount collected per barrel increases or decreases, but the rate itself remains constant.

10.4 Conclusion

USDOJ evaluates market conditions, available resources, bidding patterns, and the status of production on OCS acreage when establishing terms and conditions for each lease sale. While some components of OCS lease offerings are initially set at the National OCS Program stage (i.e., optimal timing and leasing framework), other components (e.g., fiscal and lease terms, bidding systems, and bid adequacy) are considered on a sale-by-sale basis to incorporate new information and assure the receipt of FMV. If USDOJ changes any of the lease sale terms, bidding system, or bid adequacy procedures, the changes are typically announced to the public and industry through the Proposed NOS or other notification in the *Federal Register*, prior to publication of the Final NOS.

The image features two hikers in silhouette standing on a rocky mountain peak. They are holding hands, symbolizing teamwork and achievement. The background is a soft, hazy sky transitioning from a pale blue at the top to a warm orange and yellow near the horizon, suggesting a sunrise or sunset. The foreground and the hikers are in deep shadow, creating a high-contrast scene. The overall mood is one of accomplishment and shared success.

Chapter 11

Outreach &
Coordination



Chapter 11 Outreach and Coordination

BOEM's outreach and coordination with other Federal agencies; state, local, and Tribal governments; non-governmental organizations; and the public is a crucial part of the National OCS Program development process. Through these efforts, BOEM strives to encourage open and continued communication between and among diverse groups to share ideas and concerns, and to ensure the accurate and timely exchange of information.

Section 18 of the OCS Lands Act specifies a multi-step process of public involvement and analysis that must be completed before the Secretary may approve a new National OCS Program. This process requires the Secretary to consider, among other factors, comments and concerns of governors, local governments, Tribes, industry, and other users of the OCS.

Particularly, the OCS Lands Act requires consideration of the laws, goals, and policies of affected states that have been specifically identified in (1) comments received from governors and (2) the interest of potential oil and gas producers in the development of oil and gas resources as indicated by exploration or nomination (i.e., industry interest). Industry interest is discussed in [Section 11.3](#) and laws, goals, and policies of affected states identified in governors' comments are discussed in [Section 11.5](#).

The National OCS Program development process provides multiple opportunities for stakeholders and the public to provide comments, with three formal comment opportunities (see [Figure 1-7](#) for a process diagram).

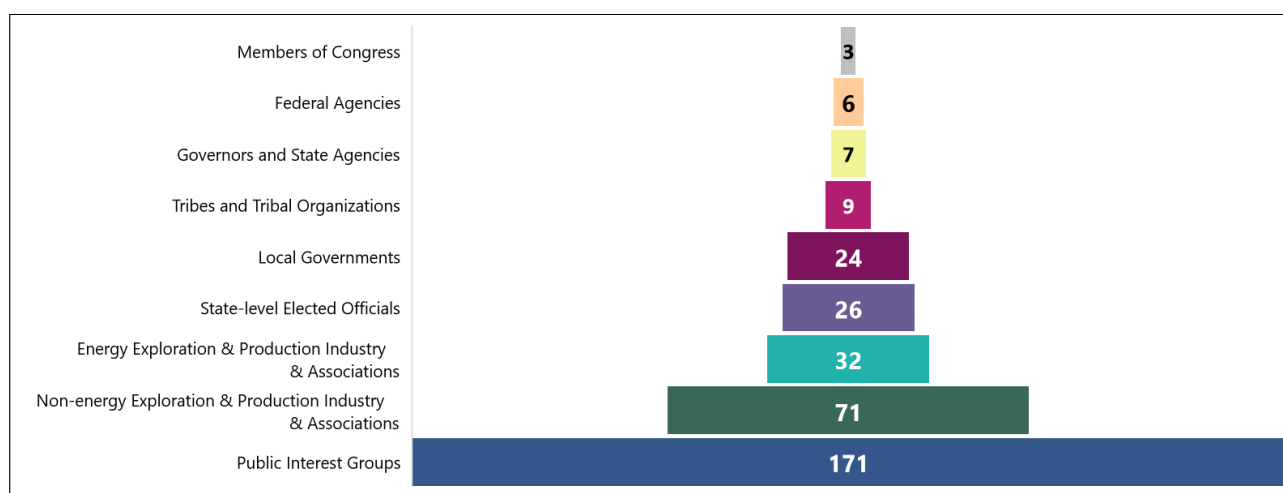
11.1 Public Comment Process

On July 3, 2017, BOEM published an RFI in the *Federal Register*, which is the first step to prepare a new National OCS Program ([82 FR 30886](#)). BOEM also sent letters to all governors and potentially interested Federal agencies requesting their input. BOEM received approximately 816,000 comments from interested parties, including the general public, in response to the RFI (see [Appendix A](#) of the [DPP](#) for a summary of comments received on the RFI).

A 60-day public comment period was initiated with the publication of the [DPP](#) on January 4, 2018, which ended on March 9, 2018 ([83 FR 829](#)). The scoping comment period for the Programmatic EIS was combined and concurrent with the DPP public comment period. BOEM received more than 2 million public comments from various stakeholders and partners on the DPP and scoping for the Programmatic EIS, including 188 different form letters and more than 23,000 unique letters. Many comments were general in nature, but of those that stated a position on specific planning areas, more than 95% stated opposition to Pacific area leasing and more than 80% opposed Atlantic area leasing.

In July 2022, the [Proposed Program](#) and [Draft Programmatic EIS](#) were published, initiating a 90-day public comment period ([87 FR 40859](#)). BOEM received approximately 760,000⁶⁴ public comments on the Proposed Program and Draft Programmatic EIS from various stakeholders and partners, including nearly 749,000 form letters and more than 5,000 unique letters (see [Figure 11-1](#) and [Appendix A](#)). [Appendix A](#) provides an overview of comments and summaries of the substantive comments received on the Proposed Program and Draft Programmatic EIS. Responses to substantive comments on the Draft Programmatic EIS can be found in Appendix I of the Final Programmatic EIS. [Table 11-1](#) provides an overview of the total public comments received throughout this National OCS Program development process.

Figure 11-1: Number of Proposed Program and Draft Programmatic EIS Comment Letters by Commenter Category



Note: Letters from Members of Congress contain multiple signatories amounting to 155 signatories. Additionally, approximately 760,000 comment letters were received from members of the general public.

**Table 11-1: National OCS Program Development
Approximate Public Comments Received**



Publication	Public Comments Received
Request for Information and Comments	816,000
Draft Proposed Program and scoping for the Programmatic Environmental Impact Statement	2,020,000
Proposed Program and Draft Programmatic Environmental Impact Statement	760,000
TOTAL	3,596,000

Note: Comment counts are approximated.

⁶⁴ Of the approximately 760,000 public comments, nearly 6,000 comments were duplicate or not germane.

11.2 Public Meetings for the National OCS Proposed Program and Draft Programmatic EIS

In consideration of the COVID-19 pandemic, BOEM held four virtual-only open house public meetings and one virtual oral testimony meeting during the 90-day public comment period for the [Proposed Program](#) and [Draft Programmatic EIS](#). Comments were collected from the Federal commenting website www.regulations.gov (docket number BOEM-2022-0031), during the open house meetings, during the oral testimony, and through the U.S. mail. [Table 11-2](#) summarizes the level of attendance for each public meeting.

Table 11-2: Public Meetings for the 2024–2029 Program and Draft Programmatic EIS



Date	Meeting Type	Approximate Number of Attendees
8/23/2022	Virtual Open House	112
8/25/2022	Virtual Open House	40
8/28/2022	Virtual Open House	28
8/30/2022	Virtual Open House	25
9/12/2022	Virtual Oral Testimony	340
TOTAL		545

This was the first time since the inception of the National OCS Program that virtual-only meetings were held. The meetings were designed to mimic the in-person open house public meeting format used during the comment period after publication of the [DPP](#) and NOI to prepare a Programmatic EIS. This proved to be successful, allowing participants and staff to remain safe from the then-high community levels of COVID-19 transmission as well as from potential exposure during travel. The format also allowed BOEM to accommodate out-of-area attendees who may not have been able to participate otherwise.

Several key BOEM staff were available at the virtual meetings to facilitate discussions with the public about the Proposed Program and the Draft Programmatic EIS. During this robust and interactive virtual meeting experience, participants were given the opportunity to have open discussions with BOEM staff and could ask questions or request additional information to learn more about BOEM and the Proposed Program and National OCS Program development process. The meetings were organized across several different virtual stations, as shown in [Figure 11-2](#) and [Table 11-3](#).

Participants could visit each station as frequently as they liked during the 3-hour meetings. In all, there were a total of 205 attendees at the four virtual open houses and 340 comments provided during virtual oral testimony at these meetings.

Figure 11-2: Virtual Open House and Public Meetings



Table 11-3: Description of BOEM’s Approach to the Virtual Open House Public Meetings

Station Number	Topic	Description of General User Experience	Subject Matter Team	Handouts
1	Introduction to the National OCS Program Development Process	Meet several key BOEM experts, listen to explanations of the process, opportunity to ask pointed questions, listen to responses, receive guidance on which stations to visit to meet specific needs and interests	Core National OCS Program development and generalists, communications specialist, facilitator, webinar manager	Program development process, Frequently Asked Questions, and other graphics
2	Oil & Gas Resource Assessment and Economic Considerations	Meet several key BOEM experts, listen to explanations of BOEM’s analytical approach, opportunity to ask pointed questions and listen to responses	Economists, petroleum engineers, modelers, resource evaluation experts, communications specialist, facilitator, webinar manager	Resource evaluation graphics, oil formation to production graphics, 2021 National Assessment, economic analysis quick reference, and emissions analysis highlights
3	Environmental Considerations	Meet several key BOEM and BSEE experts, listen to explanations of BOEM’s analytical approach, opportunity to ask pointed questions and listen to responses	NEPA experts, biologists, physical scientists, social scientists, communications specialist, facilitator, webinar manager	Environmental impact analysis highlights, oil spill response tactics, emissions analysis highlights, ESP overview
4	Renewable Energy & Other BOEM Programs	Learn about BOEM’s other program areas and become familiar with several key BOEM experts, opportunity to ask questions, and listen to responses, gain insights into where to find more information	Renewable energy, carbon sequestration, and marine and critical minerals experts; communications specialist; facilitator; webinar manager	Factsheets on all BOEM’s program areas
5	How to Comment	Explanations on how to provide written comments on regulations.gov, tips to provide useful comments, receive answers to technical questions	Generalists, communications specialist, facilitator, webinar manager	Tips to provide useful comments and commenting guide

11.3 Industry Interest

OCS Lands Act Section 18(a)(2)(E) (see [Section 2.3](#)) requires BOEM to consider the interest of potential oil and gas producers. In response to the [Proposed Program](#) and [Draft Programmatic EIS](#), BOEM received 33 comment letters from exploration and development companies and oil and gas industry associations representing such companies. Of those responses, 100% were in support of oil and gas leasing. Nearly half of all the commenters stated specific concerns about a no lease option, concerns about not meeting U.S. energy needs or energy security, or negative economic impacts on the GOM states. Eight commenters stated that the OCS Lands Act requires oil and gas lease sales, and four commenters mentioned the IRA requirements for oil and gas lease sales that are required before BOEM may issue offshore wind leases.

Other comments discussed concerns about the time it takes to progress from exploration and development to actual oil and gas production, as well as the benefits of the relatively low-carbon intensity of GOM oil and gas production. One commenter stated their concerns about Alaska specifically, noting Alaska's reliance on the oil and gas economy. Summaries of comments from industry are included in [Appendix A](#).

11.4 Tribal Coordination and Consultation

BOEM-regulated activities are proposed and conducted in areas of significance to many Native American communities. The ancestors of today's Tribes were the earliest inhabitants of North America, who used some of these same areas dating back more than 14,000 years ago. BOEM undertakes both formal government-to-government consultation with federally recognized Tribes (per BOEM consultation policies) and informal dialogue, collaboration, and engagement. BOEM is committed to maintaining open and transparent communications with Tribal governments, Alaska Native organizations, and other indigenous communities. BOEM's approach emphasizes continuing or establishing relationships that are built and maintained with trust, respect, and shared responsibility as part of a deliberative process for effective collaboration and informed decisionmaking.

BOEM received one request from the Kenaitze Indian Tribe for a consultation meeting during the 90-day comment period. In addition, the Tribe provided input (discussed further below) on the National OCS Program development process. BOEM has maintained continuing contact with the Kenaitze Indian Tribe after learning of a significant change in Tribal leadership since this request. BOEM looks forward to further engagement with the Tribe as members review their concerns with new leaders. No other consultation or informational meetings on the National OCS Program have been requested by Tribes or Tribal organizations and no meetings have been held.

BOEM received comments from three federally recognized Tribes in response to the [Proposed Program](#) and [Draft Programmatic EIS](#) (see [Appendix A](#)), as well as three cultural heritage

organizations with self-identified Tribal membership. In total, there were seven separate comments received from six commenters.

One of the comments was specific to the Cook Inlet Planning Area in Alaska, and one was specific to the GOM Region. As mentioned above, the Kenaitze Tribe provided input about the National OCS Program development process, calling for the withdrawal of the Cook Inlet Planning Area from future lease sales, noting primary concerns about pollution, potential oil spill risks, and potential disruption to tourism and natural resources. The Catawba Indian Nation comment indicated no immediate concerns regarding the National OCS Program and requested future notice when traditional cultural resources could be impacted. A third comment was received via Red Willow Offshore, LLC, a subsidiary of the Southern Ute Indian Tribe, with recommendations for BOEM regarding National OCS Program-related analysis and implementation. This comment is captured in the Energy Exploration & Production Industry and Associations section in **Appendix A**.

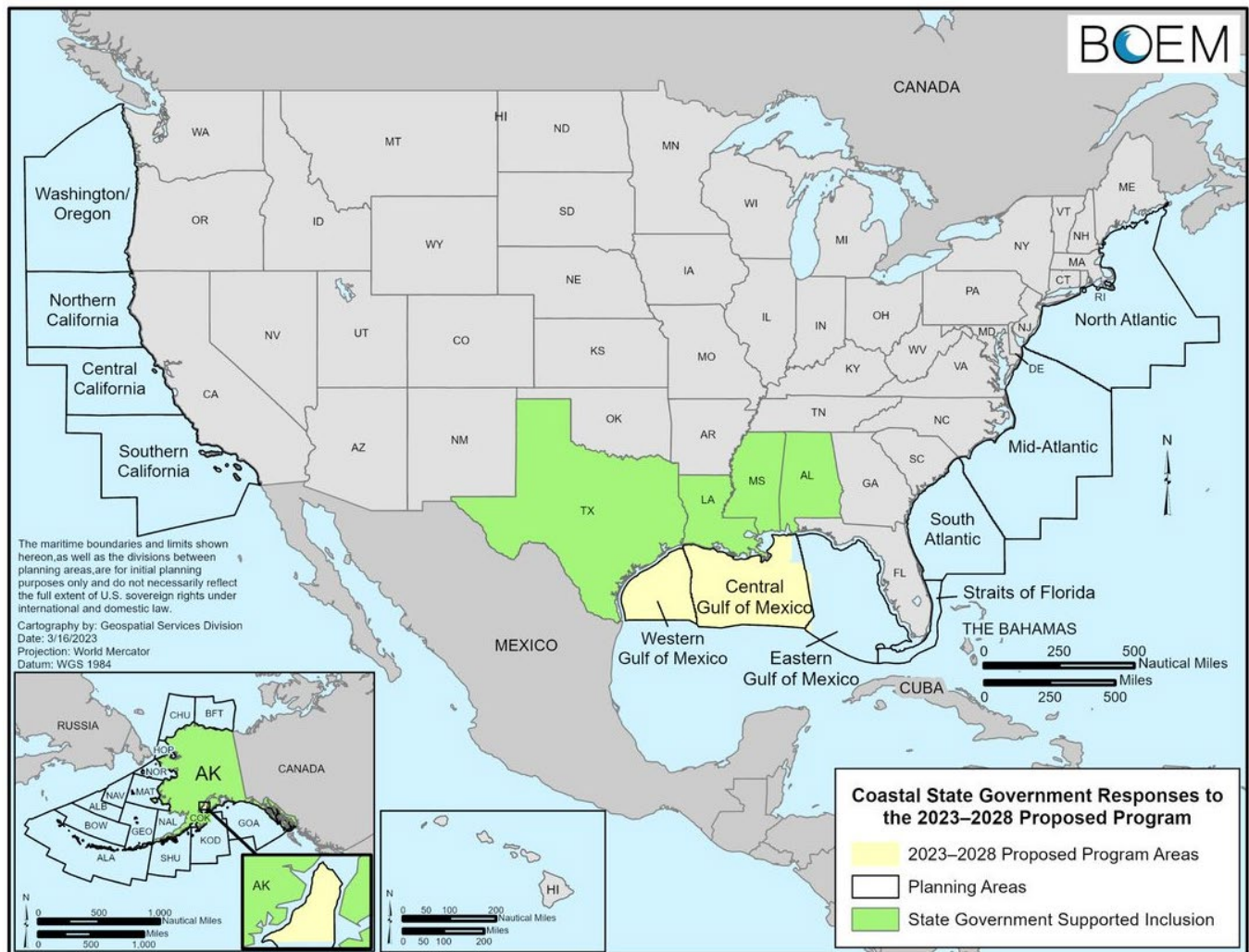
The Carrizo/Comecrudo Tribe of Texas, a non-federally recognized organization with self-identified Tribal membership, commented on a GOM fossil fuel export terminal project, expressing their opposition. They noted several issues and concerns, while also calling for stricter regulation of offshore fossil fuel projects and improved planning for potential disasters. Other comments were received from the Indigenous Peoples of the Coastal Bend, an intertribal group from Corpus Christi, Texas, consisting of the Karankawa Kadla, Lipan Apache, Mexica, Comanche, and Coahuiltecan Tribes; and the Society of Native Nations, a non-profit organization founded by a small group of Native people in Texas, which had comments focused on the overall Proposed Program. These commenters stated their opposition to new lease sales and included information about Tribal homelands, communities, artifacts, and similar interests.

11.5 Laws, Goals, and Policies of Affected States

OCS Lands Act Section 18(a)(2)(F) (see [Section 2.3](#)) requires BOEM to consider laws, goals, and policies of affected states that are specifically identified by their governors. Transmittal letters, along with directions to access the Proposed Program and Draft Programmatic EIS, were sent to all 50 governors and to Federal agencies announcing publication and requesting comments during the 90-day public comment period. BOEM received seven comment letters in response to the Proposed Program and Draft Programmatic EIS from governors or a state agency on behalf of the governor. These letters identified laws, goals, and/or policies that the state deemed relevant for the Secretary's consideration.

Comments from governors and state agencies are shown in [Figure 11-3](#) and detailed comment summaries are presented in **Appendix A**.

Figure 11-3: Coastal State Governor or State Agency Response to the Proposed Program



11.6 Next Steps

BOEM has analyzed public input to provide pertinent updates in this PFP and the [Final Programmatic EIS](#) analyses and for the Secretary’s consideration when determining the Final Proposal (**Part I**). Upon publication of this PFP and the Final Programmatic EIS, the President and Congress have a 60-day review period after which the Secretary may approve the National OCS Program and declare an effective date. Further outreach will be conducted at the individual lease sale stage (see [Figure 1-7](#) and [Figure 1-9](#)). **Appendix B** provides appropriations and staffing estimates for implementation of the Final Proposal.



Appendix A:

Summaries of
Public Comments
on the Proposed
Program



**Appendix A:
Summaries of Public Comments on the
National OCS Oil & Gas Leasing
Proposed Program**

Table of Contents

Abbreviations and Acronyms.....	iii
Appendix A Summaries of Public Comments by Commenter Category	1
Summary of Comments from the General Public.....	1
A.1 Governors and State Agencies.....	4
A.1.1 Proposed Program-wide Commenters	5
A.1.2 Cook Inlet-specific Commenters.....	5
A.1.3 Gulf of Mexico-specific Commenters	6
A.2 Local Governments	6
A.2.1 Proposed Program-wide Commenters	7
A.2.2 Cook Inlet-specific Commenters.....	7
A.2.3 Gulf of Mexico-specific Commenters	7
A.3 Public Interest Groups	11
A.3.1 Proposed Program-wide Commenters	13
A.3.2 Cook Inlet-specific Commenters.....	28
A.3.3 Gulf of Mexico-specific Commenters	29
A.4 Federal Agencies.....	30
A.4.1 Proposed Program-wide Commenters	30
A.4.2 Cook Inlet-specific Commenters.....	31
A.4.3 Gulf of Mexico-specific Commenters	32
A.5 Energy Exploration & Production Industry and Associations	32
A.5.1 Proposed Program-wide Commenters	33
A.5.2 Cook Inlet-specific Commenters.....	37
A.5.3 Gulf of Mexico-specific Commenters	37
A.6 Non-energy Exploration & Production Industry and Associations	40
A.6.1 Proposed Program-wide Commenters	41
A.6.2 Cook Inlet-specific Commenters.....	51
A.6.3 Gulf of Mexico-specific Commenters	51
A.7 State-level Elected Officials	52
A.7.1 Proposed Program-wide Commenters	52
A.7.2 Cook Inlet-specific Commenters.....	55
A.7.3 Gulf of Mexico-specific Commenters	56
A.8 Members of Congress.....	57
A.8.1 Proposed Program-wide Commenters	57
A.8.2 Cook Inlet-specific Commenters.....	57
A.8.3 Gulf of Mexico-specific Commenters	57
A.9 Tribes and Tribal Organizations	58
A.9.1 Proposed Program-wide Commenters	58

A.9.2 Cook Inlet Commenters 59

A.9.3 Gulf of Mexico-specific Commenters 59

A.10 Form Letter Campaigns 60

List of Tables

Table A-1: Stakeholders Providing Comments on the Proposed Program 1

Table A-2: List of Commenters from Governors and State Agencies..... 4

Table A-3: List of Commenters from Local Governments..... 6

Table A-4: List of Commenters from Public Interest Groups 11

Table A-5: List of Commenters from Federal Agencies..... 30

Table A-6: List of Commenters from Energy Exploration & Production Industry and Associations 32

Table A-7: List of Commenters from Non-energy Exploration & Production Industry and Associations.. 40

Table A-8: List of Commenters from State-level Elected Officials 52

Table A-9: List of Commenters from Members of Congress..... 57

Table A-10: List of Commenters from Tribes and Tribal Organizations 58

Table A-11: Summary of a Representative Example of Each Form Letter Campaign 60

Abbreviations and Acronyms

Acronym	Definition
BOEM	Bureau of Ocean Energy Management
BSEE	Bureau of Safety and Environmental Enforcement
DOI	Department of the Interior
EIS	Environmental Impact Statement
GDP	gross domestic product
GHG	greenhouse gas
GOM	Gulf of Mexico
IRA	Inflation Reduction Act
LWCF	Land and Water Conservation Fund
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
OCS	Outer Continental Shelf
OCSLA	Outer Continental Shelf Lands Act
PEIS	Programmatic Environmental Impact Statement
USEPA	U.S. Environmental Protection Agency

Appendix A Summaries of Public Comments by Commenter Category

On July 8, 2022, the Department of the Interior (DOI) Bureau of Ocean Energy Management (BOEM) announced the availability of, and requested comments on, the Proposed Program and Final Program for the 2023–2028 National Outer Continental Shelf (OCS) Oil and Gas Leasing Program (2023–2028 Program), as well as the Draft Programmatic Environmental Impact Statement (EIS) for the 2023–2028 Program. Comments were received via www.regulations.gov (Docket [BOEM-2022-0031](#)), U.S. Postal Service, and through oral testimony during a virtual public comment meeting held on September 12, 2022. The comment period closed on October 6, 2022. The [Volume II of the Final Programmatic EIS](#) includes information on comment-responses related to the Draft Programmatic EIS.

BOEM received a total of 762,859 public comment submissions in response to the notice. Of the total 762,859 public submissions, 5,290 were identified as unique, 748,715 copies were associated with form letter campaigns, 5,973 were duplicate or not germane, and 2,881 were incomplete submissions.¹ [Table A-1](#) below provides a count of unique submissions received by commenter type. This section provides a high-level summary of the comments received. General comments are presented first, followed by summaries of comments organized by commenter type.

Table A-1: Stakeholders Providing Comments on the Proposed Program

Commenter Type	Number of Comments Received
Governors and State Agencies	7
Local Governments	24
Public Interest Groups	171
Federal Agencies	6
Energy Exploration & Production Industry and Associations	32
Non-energy Exploration & Production Industry and Associations	71
State-level Elected Officials	26
Members of Congress	3
Tribes and Tribal Organizations	9
General Public	4,941
Total	5,290
Notes: These counts represent all unique submissions and exclude form letter copies. Letters from Members of Congress contain multiple signatories amounting to 155 signatories total. See summaries below for additional details.	

Summary of Comments from the General Public

Support for the Proposed Program

Numerous commenters expressed support for the Proposed Program. Several asserted that OCS oil and gas leasing is a vital source of fossil fuel energy for the United States, and that such domestic production supports employment, the economy, government revenue and gross domestic product (GDP), and national/energy security, and keeps energy prices down. Many commenters added that, due to strict environmental standards in the United States, producing oil and gas domestically is safe, reliable, and

¹ A total of 2,881 incomplete submissions containing only the text “A comment” were withheld from posting to www.regulations.gov and not accepted by BOEM.

relatively clean. Several commenters added that foreign oil has a higher carbon intensity per barrel production, reasoning that emissions from OCS drilling in the U.S. create less greenhouse gas (GHG) emissions.

Several commenters asserted that the United States is not ready to completely switch to renewable energy and that a slower transition to cleaner sources with continued oil and gas development is needed. Many added that halting oil and gas development would have negative effects on the economy, jobs, and the livelihoods of millions of Americans, and asserted that now is not a good time to scale back energy production. Citing Energy Information Administration data and reports, several commenters urged BOEM to pursue the Proposed Program to fulfill the United States' need for domestic oil production in the coming decades.

Comments Specifically in Support of Gulf of Mexico (GOM) Development

Numerous commenters expressed support for all 10 proposed lease sales in the GOM. Many echoed general supporting comments about the Proposed Program, including energy needs and demands, the need for national security and economic stability, support for jobs and the economy, the need to avoid dependence on foreign oil sources, the inability to quickly switch to renewables, and more. Several commenters discussed specific areas of the GOM, asserting that Gulf Coast states like Louisiana and Texas and their economies depend heavily on oil and gas development in the GOM. Some commenters provided details about the number of jobs and amount of government revenue supported by GOM oil and gas leasing.

Several commenters asserted that oil and gas development in the GOM is safe, reliable, and has among the lowest GHG emissions intensity in the world. Many commenters added that revenue from lease sales often goes towards coastal protection and funds development of renewable energy projects.

Comments Specifically in Support of Alaska Development

A few commenters expressed support for the lease sale proposed in Cook Inlet, asserting that leases in that area are dwindling and that development can safely be carried out without compromising the fishing industry, tourism, and the local environment.

Comments in Opposition to the Proposed Program

Numerous commenters expressed general opposition to the Proposed Program. Several cited environmental concerns regarding oil spills, including harms to marine life, soil and crops, ecosystems, hydrology and wetlands in coastal areas, water contamination, and damages to predominantly minority and disadvantaged coastal communities. Many commenters added that oil spills are not a question of if, but when, they will happen, citing the Deepwater Horizon spill as one example. Many commenters also discussed adverse impacts on recreation, tourism, fishing and seafood industries, endangered animals, ocean floor stability, workers, and coastal property values from oil spills and oil and gas drilling in general as reasons to oppose the Proposed Program.

Numerous commenters expressed concerns about the deleterious effects of climate change and the magnifying impacts the Proposed Program could have on GHGs, sea level rise, ocean acidification, extreme natural disasters, air quality and health risks, rising temperatures, and flooding.

Several commenters suggested the Biden Administration is prioritizing industry and corporate profits and violating promises of clean energy, “no more drilling” and “no new leases.” Some added that oil and gas companies already hold significant unused acreage in the oceans and are in effect “stockpiling leases.” Citing data, a commenter asserted that the Proposed Program would yield a small net benefit because the Economic Analysis Methodology overestimates the anticipated oil production. Many mentioned climate, environmental justice, and community goals and commitments made by the Administration that they asserted would be violated by the Proposed Program. Some commenters likewise asserted that the Proposed Program violates the Outer Continental Shelf Lands Act (OCS Lands Act) and the responsibilities of BOEM to protect the environment. A commenter said that the OCS Lands Act and National Environmental Policy Act (NEPA) give BOEM the authority to consider downstream effects of consumption of OCS-extracted oil and gas and the associated carbon emissions, for which it claims legal precedents.

Several commenters asserted that the Proposed Program would have “little to no [positive] effect” on gas prices, jobs, and the economy, and many added their concerns that approving the Proposed Program would “lock in [oil and gas] development” for the foreseeable future and increase American dependence on fossil fuels.

Numerous commenters asked for “no new leases” and asserted that the better alternative would be swift investment in, and commitment to, sources of renewable energy such as wind, solar, hydroelectric, and tidal power.

Comments Specifically in Opposition to GOM Development

Numerous commenters, who expressed opposition for leasing in the GOM, did so for many of the same reasons that commenters opposed the Proposed Program in general, including damages from oil spills, including the contamination of underground waters and wells, destruction to coastal communities, effects on tourism, threats to marine life, GHGs, negative effects of climate change, and more. A couple of commenters asserted that drilling in the GOM would interfere with military training and testing activities.

Several commenters discussed endangered species native to the GOM region that would be harmed by oil and gas development, such as sea turtles, manta rays, and multiple species of coral. One commenter expressed concern that the effects of oil and gas leasing on deep sea ecosystems in the GOM were not considered in the Programmatic Environmental Impact Statement (PEIS). Citing research, a commenter expressed concern regarding the effects of oil and gas production on hypoxia in the GOM.

Several commenters discussed coastal and frontline communities along the Gulf Coast that would bear many of the risks and costs of oil and gas development, asserted that many of these communities are comprised of people of color who already experience social, political, and economic disenfranchisement, and stated that these coastal communities often comprise large portions of Gulf Coast States’ populations.

Comments Specifically in Opposition to Alaska Development

Some commenters expressed opposition to leasing in the Cook Inlet area. They generally expressed concern over insufficient resources of natural gas in Cook Inlet, added that they will soon cost much more than they do currently, and asserted that the risk of oil spills such as the Exxon Valdez spill

threaten fishing, tourism, marine aquaculture, and subsistence economies in the region. Many commenters also expressed concerns about beluga whale populations. Some commenters discussed otters, seals, and other marine animals in Cook Inlet, some of whom are federally listed as endangered, and asserted that continued energy development in Cook Inlet would result in the extinction of these species.

Several commenters warned BOEM that oil and gas development in the Cook Inlet Program Area would impact adjacent Native residents, with one commenter specifying that PEIS Alternative B(a) could harm Indigenous peoples in the Cook Inlet and Kachemak Bay. One commenter advocated for the protection of sacred waters and wildlife from the expansion of drilling in Alaska.

Mixed Comments on the Proposed Program

Several commenters offered general comments without providing a position, including generally discussing issues like global warming, net-zero goals, other forms of pollution, costs of climate change, rising energy prices, general critiques of the Biden Administration, or otherwise not offering a clear supporting or opposing position on the Proposed Program. One commenter suggested a carbon tax from a business standpoint, while another asked that the process for the Proposed Program be put back into the public eye.

Mixed Comments on GOM Development

One commenter submitted a townhall video from GOM residents and organizations representing their views on oil and gas leasing in the Gulf. Another commenter discussed the tradeoffs between local benefits of leasing and the consequences of leasing in different regions with less stringent regulations.

Mixed Comments on Alaska Development

No mixed comments were provided on the Alaska Region.

A.1 Governors and State Agencies

[Table A-2](#) presents the list of commenters from Governors and State Agencies. Please see Chapter 11 for more information on the importance placed on these comments within Section 18 of the OCS Lands Act.

Table A-2: List of Commenters from Governors and State Agencies

Attorneys General of MD, CT, DE, ME, MA, NJ, NY, OR, RI, and WA
Delaware Department of Natural Resources and Environmental Control
Florida Department of Environmental Protection
Maryland Department of Natural Resources
Outer Continental Shelf Governors Coalition (2 comment letters received)
State of Alaska
The Energy Council

A.1.1 Proposed Program-wide Commenters

Attorneys General of Maryland, Connecticut, Delaware, Maine, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Washington, Brian E. Frosh, William Tong, Kathleen Jennings, Aaron M. Frey, Maura Healey, Matthew J. Platkin, Ellen F. Rosenblum, Letitia James, Peter F. Neronha, Bob Ferguson

Document ID: BOEM-2022-0031-6351

The group of state attorneys general supported BOEM’s exclusion of the Atlantic and Pacific Program Areas from the Proposed Program. The commenters also urged BOEM to minimize the scope and impact of new oil and gas leasing in other Program Areas, consistent with its offshore wind leasing plans and the conditions specified by the Inflation Reduction Act (IRA). The commenters said that any assessment of what leasing activity will best meet national energy needs must consider the climate crisis and the need to achieve net-zero emissions by 2050.

Delaware Department of Natural Resources and Environmental Control, Shawn M. Garvin

Document ID: BOEM-2022-0031-6385

The Delaware Department of Natural Resources and Environmental Control supported BOEM’s exclusion of the Mid-Atlantic Planning Area from the Draft Proposed Program.

Maryland Department of Natural Resources

Document ID: BOEM-2022-0031-6341

The Maryland Department of Natural Resources supported BOEM’s exclusion of the Mid-Atlantic Planning Area from the Draft Proposed Program.

Outer Continental Shelf Governors Coalition, John Bel Edwards, Tate Reeves, Kay Ivey, Mike Dunleavy, Greg Abbott

Document ID: BOEM-2022-0031-6343

The Outer Continental Shelf Governors Coalition urged BOEM to move forward with all 11 lease sales identified in the Proposed Program. The commenters requested continued collaboration with DOI.

Outer Continental Shelf Governors Coalition, John Bel Edwards, Tate Reeves, Kay Ivey, Mike Dunleavy, Greg Abbott

Document ID: BOEM-2022-0031-6284

The Outer Continental Shelf Governors Coalition asked what consultations required by the OCS Lands Act will entail, when the DOI will publish the Environmental Impact Statement, and when the 2023–2028 Program will be finalized.

A.1.2 Cook Inlet-specific Commenters

State of Alaska

Document ID: BOEM-2022-0031-6328

The State of Alaska supported BOEM’s proposal for a lease sale in Cook Inlet and commented that BOEM should include more than one lease sale per year in Cook Inlet, consider lease sales in the non-withdrawn areas of the Beaufort Sea, and analyze the benefits of the resources of the Chukchi and

Beaufort seas planning areas. The commenter supported additional development of oil and gas resources to ensure energy security, jobs, and long-term economic growth.

A.1.3 Gulf of Mexico-specific Commenters

Florida Department of Environmental Protection, Michael Shirley

Document ID: BOEM-2022-0031-6504

The Florida Department of Environmental Protection expressed concern about the effects of OCS oil and gas activities on the sensitive biological resources and critical habitats associated with GOM marine and coastal environments. The commenter stated that prior oil spills have resulted in negative impacts on Florida’s environmental resources, fisheries, tourism, and economy.

A.2 Local Governments

Table A-3: List of Commenters from Local Governments

Chambers County Commissioner Mark Tice
Chambers County Commissioner Precinct 1 Jimmy Gore
Chambers County Commissioner Precinct 4, Billy Combs
Chambers County JP Randy VanDeventer Precinct 2
City of Casselberry Vice Mayor John Miller
City of Pensacola Council Member Jennifer Brahier
City of Pensacola Council Member Ann Hill
Escambia County Commissioner
Greater Lafourche Port Commission/Port Fourchon
Gulfport City Councilor Ella Holmes Hines
Iberia Parish Government
New Orleans City Council, Helena Moreno
Plaquemines Parish Government
St. Bernard Parish Government
St. Charles Parish
St. Mary Parish Government
St. Tammany Parish Government
Tangipahoa Parish Government
Terrebonne Parish Council
Terrebonne Parish Economic Development Authority
Terrebonne Parish Government
Village of Cimarron
Ward 2, City Council Biloxi, Mississippi
West Baton Rouge Parish

A.2.1 Proposed Program-wide Commenters

Florida, City of Casselberry, John Miller

Document ID: BOEM-2022-0031-6242

The commenter expressed support for the Proposed Program stating that more oil and gas leases would lower energy costs.

New Mexico, Village of Cimarron, Judy LeDoux

Document ID: BOEM-2022-0031-6301

The commenter expressed support for the Proposed Program and the inclusion of the 11 lease sales, arguing that these leases will reduce energy prices and create jobs in the United States, and adding that oil and gas production in the GOM helps fund conservation and outdoor recreation in western states.

A.2.2 Cook Inlet-specific Commenters

No local government commenters provided comment on the Cook Inlet Program Area.

A.2.3 Gulf of Mexico-specific Commenters

Florida, Escambia County Commissioner, Robert Bender

Document ID: BOEM-2022-0031-6575

The commenter expressed opposition to any offshore oil and gas drilling activities in the GOM, arguing that Pensacola Beach and the Gulf Coast cannot withstand another oil spill. The commenter attached a resolution of opposition to offshore drilling in the GOM, and support for the Florida Coastal Protection Act, which would amend the OCS Lands Act to prohibit BOEM from offering oil and gas leasing in a few areas of the GOM.

Florida, City of Pensacola Council Member, Jennifer Brahier

Document ID: BOEM-2022-0031-6516

The commenter expressed opposition to the issuing of new oil and gas leases in the GOM, arguing that issuance of new leases would risk the health and well-being of human and marine life in the Gulf Coast, citing studies on the severe negative effects of the Deepwater Horizon oil spill on marine life, fishermen's and farmers' income, and the local seafood industry.

Florida, City of Pensacola Council Member, Ann Hill

Document ID: BOEM-2022-0031-6586

The commenter expressed opposition to new oil and gas leasing in the GOM, citing a study on long-term health impacts on individuals involved in oil spill cleanup operations. The commenter discussed local clean energy efforts to reduce the demand for fossil fuels, asking DOI to join in leading this effort.

Louisiana, Greater Lafourche Port Commission, Chett Chiasson

Document ID: BOEM-2022-0031-6581

The commenter expressed support for the Proposed Program and issuing new oil and gas leases in the GOM, arguing that oil and gas development helps meet U.S. energy needs and creates jobs and that production in the GOM produces fewer GHGs than in other regions. The commenter further

recommended that BOEM and other Federal agencies also consider planning other on- and offshore renewable energy and carbon capture developments.

Louisiana, Iberia Parish Government, M. Larry Richard

Document ID: BOEM-2022-0031-6585

The commenter expressed support for the Proposed Program and issuing new oil and gas leases in the GOM, stating that the industry supports many jobs in Louisiana, contributes significantly to state tax revenues, and helps fund conservation efforts. The commenter argued that failing to issue new leases could endanger these benefits, that expanding leasing in the GOM would reduce U.S. energy costs, and finally that oil and gas production in the GOM produces fewer GHGs than in other regions.

Louisiana, New Orleans City Council, Helena Moreno

Document ID: BOEM-2022-0031-6345

The commenter argued that BOEM should instead be focused on expanding offshore wind energy development in the GOM, because this development would help mitigate the effects of climate change on vulnerable communities and because oil and gas production causes air pollution that is harmful to human health in the GOM.

Louisiana, Plaquemines Parish Government, Kirk Lepine

Document ID: BOEM-2022-0031-6880

The commenter expressed support for the Proposed Program and issuing new oil and gas leases in the GOM, stating that the industry supports many jobs in Louisiana, contributes significantly to state tax revenues, and helps fund conservation efforts. The commenter argued that failing to issue new leases could endanger these benefits, that expanding leasing in the GOM would reduce U.S. energy costs, and finally that oil and gas production in the GOM produces fewer GHGs than in other regions.

Louisiana, St. Bernard Parish Government, Guy McInnis

Document ID: BOEM-2022-0031-6465

The commenter expressed support for the Proposed Program and issuing new oil and gas leases in the GOM, stating that the industry supports many jobs in Louisiana, contributes significantly to state tax revenues, and helps fund conservation efforts. The commenter argued that failing to issue new leases could endanger these benefits, that expanding leasing in the GOM would reduce U.S. energy costs, and finally that oil and gas production in the GOM produces fewer GHGs than in other regions.

Louisiana, St. Charles Parish, Matthew Jewell

Document ID: BOEM-2022-0031-6306

The commenter expressed support for the Proposed Program and issuing new oil and gas leases in the GOM, stating that the industry supports many jobs in Louisiana, contributes significantly to state tax revenues, and helps fund conservation efforts. The commenter argued that failing to issue new leases could endanger these benefits, that expanding leasing in the GOM would reduce U.S. energy costs, and finally that oil and gas production in the GOM produces fewer GHGs than in other regions.

Louisiana, St. Mary’s Parish, David Hanagriff**Document ID: BOEM-2022-0031-22915**

The commenter expressed support for the Proposed Program including all 11 lease sales. The commenter stated implementation of these leases would bring economic stability to the GOM region and lower energy costs.

Louisiana, St. Tammany Parish Government, Michael Cooper**Document ID: BOEM-2022-0031-6479**

The commenter expressed support for the Proposed Program and issuing new oil and gas leases in the GOM, stating that the industry supports many jobs in Louisiana, contributes significantly to state tax revenues, and helps fund conservation efforts. The commenter argued that failing to issue new leases could endanger these benefits, that expanding leasing in the GOM would reduce U.S. energy costs, and finally that oil and gas production in the GOM produces fewer GHGs than in other regions.

Louisiana, Tangipahoa Parish Government, Robby Miller**Document ID: BOEM-2022-0031-6498**

The commenter expressed support for the Proposed Program and issuing new oil and gas leases in the GOM, stating that the industry supports many jobs in Louisiana, contributes significantly to state tax revenues, and helps fund conservation efforts. The commenter argued that failing to issue new leases could endanger these benefits, that expanding leasing in the GOM would reduce U.S. energy costs, and finally that oil and gas production in the GOM produces fewer GHGs than in other regions.

Louisiana, Terrebonne Parish Council, Tammy Triggs**Document ID: BOEM-2022-0031-6455**

The commenter expressed concern that the Proposed Program would fail to adequately address U.S. energy needs by not scheduling new oil and gas lease sales, claiming that issuing no new leases would endanger U.S. energy security, jobs, and tax revenue, and further argued that energy producers in the GOM are among the least carbon-intensive in the world, supply a significant portion of U.S. oil and gas, and help fund important conservation projects.

Louisiana, Terrebonne Parish Economic Development Authority, Cohen Guidry**Document ID: BOEM-2022-0031-6453**

The commenter expressed support for including the maximum number of lease sales in the Proposed Program, while expressing concern that the Program could fail to adequately address U.S. energy needs by not scheduling new oil and gas lease sales. The commenter argued that issuing no new leases would endanger U.S. energy security, jobs, and tax revenue, particularly for essential services in the Gulf region, such as education, health care, emergency services, and infrastructure. The commenter also claimed that energy producers in the GOM are among the least carbon-intensive in the world, that they supply a significant portion of U.S. oil and gas, and that oil and gas revenues in the GOM help fund important conservation and levee protection projects in the region.

Louisiana, Terrebonne Parish Government, Gordon Dove**Document ID: BOEM-2022-0031-6454**

The commenter expressed support for including the maximum number of lease sales in the Proposed Program, while expressing concern that the Program could fail to adequately address U.S. energy needs by not scheduling new oil and gas leases. The commenter argued that issuing no new leases would endanger U.S. energy security, jobs, and tax revenue, particularly for essential services in the Gulf region, such as education, health care, emergency services, and infrastructure. The commenter also claimed that energy producers in the GOM are among the least carbon-intensive in the world, that they supply a significant portion of U.S. oil and gas, and that oil and gas revenues in the GOM help fund important conservation and levee protection projects in the region.

Louisiana, West Baton Rouge Parish, Riley Berthelot**Document ID: BOEM-2022-0031-6472**

The commenter expressed support for the Proposed Program and issuing new oil and gas leases in the GOM, stating that the industry supports many jobs in Louisiana, contributes significantly to state tax revenues, and helps fund conservation efforts. The commenter argued that failing to issue new leases could endanger these benefits, that expanding leasing in the GOM would reduce U.S. energy costs, and finally that oil and gas production in the GOM produces fewer GHGs than in other regions.

Mississippi, Gulfport City Councilor, Ella Holmes Hines**Document ID: BOEM-2022-0031-6346**

The commenter expressed opposition to issuing new oil and gas leases in the GOM, arguing that existing production in the region is sufficient for U.S. energy needs, and recommended expanding offshore wind energy development in the GOM, which would help mitigate the effects of climate change on vulnerable communities and reduce harmful air pollution in the GOM.

Texas, Chambers County Commissioner Precinct 4, Billy Combs**Document ID: BOEM-2022-0031-6458**

The commenter expressed support for the Proposed Program and expanding oil and gas production in the GOM, arguing that current operations support a substantial number of jobs and help fund conservation efforts, that expanding production can lower U.S. energy prices, and that oil and gas operations in the GOM produce fewer GHGs than in other regions.

Texas, Chambers County Commissioner Precinct 1, Jimmy Gore**Document ID: BOEM-2022-0031-6592**

The commenter expressed support for all 11 lease sales in the Proposed Program, stating that oil and gas operations in the GOM bring thousands of jobs and millions in GDP to the United States. They added that offshore leasing is an important revenue source for conservation projects and funding and that domestic energy production will help keep energy prices from further spikes in the future.

Texas, Chambers County JP, Randy VanDeventer Precinct 2**Document ID: BOEM-2022-0031-6595**

The commenter expressed support for all 11 lease sales in the Proposed Program, stating that they would bring economic strength and certainty to the country.

Texas, Chambers County Commissioner Precinct 2, Mark Tice**Document ID: BOEM-2022-0031-6316**

The commenter expressed support for oil and gas production in the GOM region stating that domestic production can lower energy prices and that GOM oil and gas production produces less GHG than alternatives.

Ward 2, City Council Biloxi, Mississippi**Document ID: BOEM-2022-0031-6381**

The commenter requested that all oil leases that might be offered be 12 miles south of Ship Island and suggested the proposed National OCS Program consider impacts of offshore oil disasters on the coastal economy. Additionally, the commenter expressed support for a transition to renewable energy and requested any offshore wind leases also be 12 miles south of Ship Island.

A.3 Public Interest Groups

Table A-4: List of Commenters from Public Interest Groups

List of Commenters

A Community Voice Louisiana
Alaska Marine Conservation Council
Alaska Survival
Alliance for Affordable Energy
American Friends Service Committee
API
Azul
Biloxi MS NAACP
Boat People SOS Biloxi, MS
Boat People SOS Gulf Coast
Business Alliance for Protecting the Pacific Coast
Business and Industry Association of New Hampshire
Center for Biological Diversity (2 comment letters received)
Center for International Environmental Law
Cherokee Concerned Citizens
Citizens Against Fracking
Clean Water Action
Climate Interactive and Citizens Climate Lobby
Climate Reality Dallas-Ft. Worth
Coastal Coordination Program, The Ocean Foundation
Colorado Farm Bureau

Consumer Energy Alliance
Defenders of Wildlife
Earth Ethics, Inc.
Earth Neighborhood Productions
Earthjustice
Earthjustice, et al.
Education, Economics, Environmental, Climate and Health Organization (EEECHO)
Energy and Landscape Conservation at the National Parks Conservation Association
Environment America
Environment Texas
Evergreen Action
FracTracker Alliance
Friends of Casco Bay
Georgia Natural Gas Authority
Gulf Economic Survival Team (GEST)
Gullah/Geechee Sea Island Coalition
Hancock County MS NAACP
Healthy Gulf
Healthy Ocean Coalition
Hispanic Access Foundation
Hispanic Policy Group
Institute for Energy Research
Institute for Policy Integrity at New York University School of Law
Interfaith Oceans
International Marine Mammal Project of Earth Island Institute
James Madison Institute (2 comment letters received)
John Locke Foundation
Lane Plating Community Advisory Group
Louisiana Just Recovery Network
Maine State Grange
Maryland Ornithological Society
Mississippi Rising Coalition
Mississippi State Conference NAACP Environmental and Climate Justice Committee
Montana Stockgrowers Association
Mystic Aquarium
National Parks Conservation Association
Natural Resources Defense Council, Irene Gutierrez, Lauren Kubiak, Julia Forgie, Sarah Chasis, Leyi Chen, Katie Chicojay Moore, Ursa Heindinger, Michael Jasny, Rebecca Loomis, Reecca Ramirez, Brad Sewell
Nebraska State Grange
New York State Grange
North Gulfport Community Land Conservancy
Ocean Conservancy

Oceana
Orange County Partnership
Pennsylvania Chemical Industry Council
Pennsylvania Farm Bureau
R Street Institute
Rethink Energy Florida
San Antonio Bay Estuarine Waterkeeper
Sanibel-Captiva Conservation Foundation (2 comment letters received)
Sea Turtle Conservancy
South Louisiana Economic Council
Southern Alliance for Clean Energy
Southern Environmental Law Center et al.
St. Mary Parish Economic Development Agency
Steps Coalition, Gulfport MS
Stone County MS NAACP
Surfrider Foundation (2 comment letters received)
Surfrider Foundation Chapters and Recreation Dependent Businesses, Julia Dugan
Surfrider Foundation FL Chapter Network
Susitna River Coalition
Taproot Earth
Taproot Earth and the Greater New Orleans Interfaith Climate Coalition
Taproot Earth, The Center for Biological Diversity, et al.
Texas NAACP State Conference
The Climate Reality Project
The People’s Justice Council
True Transition
Turtle Island Restoration Network
United Methodist Church’s Board of Church and Society
Voces Unidas Rio Grande Valley

A.3.1 Proposed Program-wide Commenters

Alliance for Affordable Energy, Sophie Zaken

Document ID: BOEM-2022-0031-6510

The commenter expressed opposition to the issuing of new oil and gas leases, arguing that offshore oil and gas production contributes significantly to air pollution and carbon emissions and that prohibiting offshore production in Federal waters would prevent substantial amounts of GHG emissions and health and property damage from pollution.

American Friends Service Committee, Peniel Ibe**Document ID: BOEM-2022-0031-6327**

The commenter opposed new leases in the GOM and Alaska under the Proposed Program. The commenter expressed concerns regarding the impacts of climate change and effects of oil and gas leasing on frontline and fenceline communities of Black, Brown, and Indigenous people.

API, Andy Radford**Document ID: BOEM-2022-0031-187158**

The commenter expressed support for the maximum potential of 11 lease sales, stating decisions on future lease sales will have short- and long-term implications for the Nation's energy and national security, job creation, and government revenue generation. The commenter also stated the OCS Lands Act and IRA affirm Congress' mandate to lease the resources on the OCS. The commenter expressed concern for the untimely issuance of the Proposed Program and encouraged BOEM to act quickly to finalize the Proposed Program and hold lease sales.

A Community Voice Louisiana**Document ID: BOEM-2022-0031-6594**

The commenter urged the authorization of no new lease sales in the 2023–2028 Program. The commenter expressed concern about the potential harm to communities that are particularly vulnerable to climate change impacts and live near industrial oil and gas activities. The commenter also argued for the need to transition to renewable energy sources in an equitable manner.

Azul**Document ID: BOEM-2022-0031-6377**

The commenter expressed opposition to the issuance of new oil and gas leases. The commenter expressed concern regarding the lack of language access for BOEM oil and gas lease documents, stating that many who live in the proposed leasing areas do not speak English as their primary language. They discussed the impacts of climate change and requested a hold on new leases until studies on impacts on vulnerable communities are finalized, released, and reviewed. The commenter requested that certain vulnerable communities and marine protected areas be excluded from consideration and that stronger worker protections be incorporated.

Biloxi MS NAACP, James Cromwell**Document ID: BOEM-2022-0031-6616**

The commenter opposed any new oil and gas leases, asking BOEM to instead focus on creating opportunities for offshore wind in the GOM to create jobs in communities of color. The commenter discussed the effects of climate change, such as stronger and more damaging hurricanes like Hurricanes Ian and Fiona.

Business Alliance for Protecting the Pacific Coast, Grant Bixby**Document ID: BOEM-2022-0031-187158**

The commenter expressed general opposition to opening the OCS to oil and gas leasing due to the threat of oil spills and climate change, which can harm businesses. The commenter urged BOEM to approve the alternative with no new lease sales.

Business and Industry Association of New Hampshire**Document ID: BOEM-2022-0031-6257**

The commenter expressed support for the proposed leasing program and the inclusion of the 11 proposed lease sales, stating that oil and gas lease sales will reduce energy prices and provide economic certainty to Americans.

Center for Biological Diversity, Kristen Monsell, Kristin Carden, Miyoko Sakashita**Document ID: BOEM-2022-0031-6388**

The commenter opposed new leases in the Alaska Cook Inlet Program Area and the GOM Program Area. The commenter said that the Proposed Program does not comply with the OCS Lands Act because it fails to properly analyze national energy needs, takes a region-wide lease sale approach, does not explain how environmental sensitivity and other Section 18(a)(2) factors were balanced, and failed to analyze the full costs associated with its Proposed Program by omitting key factors from its analysis. The commenter said that the environmental sensitivity and marine productivity analysis for waters off Alaska and the GOM was fundamentally flawed. The commenter asserted that BOEM did not examine a reasonable range of alternatives to the Proposed Action.

Center for International Environmental Law, Dante Swinton**Document ID: BOEM-2022-0031-187158**

The commenter expressed opposition to the extension of offshore oil and gas leases. The commenter argued that existing leases should first be maximized, and renewable energy should be explored before adding new leases.

Cherokee Concerned Citizens**Document ID: BOEM-2022-0031-6382**

The commenter expressed opposition to the Proposed Program and requested no new leases in the GOM regions. The commenter expressed concern about inadequate regulation of industrial oil activities and discussed the adverse impacts on the community, including poor air quality, industrial accidents, and historical negligence. The commenter called for further study of the benefits of renewable and offshore wind energy and consideration of climate change consequences.

Citizens Against Fracking, Laura Haider**Document ID: BOEM-2022-0031-187158**

The commenter opposed authorization of new oil and gas leases due to the risks posed by methane emissions, oil spills, and natural disasters.

Clean Water Action, Becky Smith**Document ID: BOEM-2022-0031-6519**

The commenter expressed opposition to the issuing of any new oil and gas leases, arguing that offshore drilling leads to coastline deterioration, which reduces natural defenses to extreme weather events, as well as contributes to climate change, which drives extreme weather. The commenter further stated that pollution caused by oil and gas production is severely harmful to human health and disproportionately affects low-income communities of color.

Climate Interactive and Citizens Climate Lobby**Document ID: BOEM-2022-0031-5380**

The commenter suggested that BOEM consider the global model En-Roads as a data source on how oil and gas production will affect the ability to achieve net-zero emissions.

Climate Reality Dallas-Ft. Worth**Document ID: BOEM-2022-0031-6609**

The commenter expressed opposition and requested no new leasing in the Proposed Program. The commenter expressed concern about adverse health consequences for human and animal populations due to fossil fuel extraction, the risk of oil spills, and stated that the U.S. could meet its energy needs through renewable energy sources.

Coastal Coordination Program, The Ocean Foundation**Document ID: BOEM-2022-0031-6354**

The commenter opposed oil and gas leasing, urging BOEM to include no new lease sales in the Proposed Program. The commenter stated that the Proposed Program and Draft Programmatic EIS failed to consider multiple Section 18 factors.

Colorado Farm Bureau, Shawn Martini**Document ID: BOEM-2022-0031-6473**

The commenter expressed support for the Proposed Program, arguing that it would increase the supply of energy and decrease prices, stressing that high energy prices have severely impacted the U.S. agricultural sector. The commenter added that fuel and electricity make up a significant portion of U.S. farm operating costs.

Consumer Energy Alliance**Document ID: BOEM-2022-0031-6579**

The commenter requested the quick approval of all lease areas identified in the Proposed Program. The commenter discussed the role that domestic production could play in energy independence, stabilizing energy prices, and easing an energy transition toward renewables.

Earth Ethics, Inc.**Document ID: BOEM-2022-0031-6580**

The commenter expressed opposition to OCS oil and gas leasing, stating that it contradicts the current President's campaign promises to end offshore drilling in various areas. The commenter discussed previous oil spills and the impacts on coastal communities as well as current levels of U.S. oil consumption and further suggested that issuing no new leases is necessary to the broader goal of fossil fuel divestment.

Earth Neighborhood Productions**Document ID: BOEM-2022-0031-6604**

The commenter expressed opposition to any offshore oil or gas exploration, arguing that it is unnecessary and that industrial activities would harm coastal and oceanic environments and life.

Earthjustice**Document ID: BOEM-2022-0031-6438**

The commenter requested a 45-day extension of the comment period. The commenter expressed concern about the fragility of the region and potential for offshore oil and gas development to adversely impact the area. The commenter further stated that the Program as currently proposed is unnecessary for domestic energy production.

Earthjustice, et al.**Document ID: BOEM-2022-0031-6334**

The commenter opposed the new lease sales under the Proposed Program in the GOM and Cook Inlet because of climate change and the impacts on Gulf Coast communities, citing studies on the effects of the 2010 BP Deepwater Horizon oil spill in the GOM. The commenter discussed environmental justice concerns, the impacts to coastal wetlands, the impacts from noise and vessel traffic associated with oil and gas development, and the Indigenous peoples and rural residents of the Cook Inlet who rely on subsistence hunting and fishing in the area. The commenter urged BOEM to adopt the no lease sale alternative and consider the downstream and midstream GHG emissions under the Section 18 factors. The commenter asserted that additional leasing is not necessary to meet national energy needs.

Education, Economics, Environmental, Climate and Health Organization (EECHO), Katherine Eglad**Document ID: BOEM-2022-0031-6280**

The commenter expressed opposition to new oil and gas leasing, arguing that issuing new leases is incompatible with climate goals, adding that coastal communities are at particular risk from extreme weather, sea level rise, and flooding. The commenter also warned of the effects of oil spills on coastal communities, claiming that loss of income caused by the Deepwater Horizon spill led to an increase in depression, alcoholism, substance abuse, and domestic violence.

Energy and Landscape Conservation at the National Parks Conservation Association, Matthew Kirby**Document ID: BOEM-2022-0031-187158**

The commenter expressed opposition to oil and gas leasing in the GOM to protect the national parks sites along the coasts and the economic consequences that oil spills could have on the region.

Environment America, Steve Blackledge**Document ID: BOEM-2022-0031-6524**

The commenter expressed opposition to issuing new oil and gas leases under the Proposed Program. The commenter argued that the environmental effects of oil spills are too severe to justify new offshore oil and gas development. The commenter further claimed that pipeline construction needed to transport oil often destroys wetlands, which serve as a buffer against storms and sea level rise. The commenter also stated that oil production often leads to groundwater contamination and air pollution, which are harmful to health in local communities. Finally, the commenter argued that new oil and gas leasing will lead to increased carbon emissions, exacerbating climate change.

Environment Texas, Luke Metzger**Document ID: BOEM-2022-0031-187158**

The commenter expressed opposition to offshore oil and gas leasing in the GOM, citing impacts on Gulf Coast communities, coastal economics, public health, climate and marine life. The commenter urged BOEM to revise the plan to allow for no new leasing.

Evergreen Action, Mattea Mrkusic**Document ID: BOEM-2022-0031-6366**

The commenter opposed offshore oil and gas lease sales in the GOM and Alaska under the next Five-Year Program, urging that BOEM instead pursue the no new lease sale option and instead offer a significant number of offshore wind leases in the OCS. The commenter discussed concerns regarding climate change, increased emissions, and meeting the Administration's climate goals.

FracTracker Alliance**Document ID: BOEM-2022-0031-6344**

The commenter opposed oil and gas leasing, asking BOEM to include no new lease sales in the Proposed Program. The commenter argued that additional lease sales do not align with the OCS Lands Act or the Biden Administration's climate change and environmental justice commitments.

Friends of Casco Bay, Ivy Frignoca**Document ID: BOEM-2022-0031-1390**

The commenter expressed opposition to any new offshore oil and gas exploration or drilling, arguing that such a prohibition is necessary to combat climate change.

Georgia Natural Gas Authority, Stephen Loftin**Document ID: BOEM-2022-0031-6481**

The commenter expressed support for the Proposed Program and for issuing new oil and gas leases, arguing that this would increase domestic energy supply and help lower energy costs for businesses and families.

Gulf Economic Survival Team (GEST)**Document ID: BOEM-2022-0031-6584**

The commenter requested the quick finalization of the Proposed Program and the inclusion of the maximum number of lease sales. The commenter expressed concern that the Program as proposed could fall short of meeting energy needs and discussed benefits related to offshore oil and gas development on the U.S. OCS such as job creation, comparatively low carbon intensiveness for GOM production, energy independence, and revenue sharing among Gulf Coast States.

Gullah/Geechee Sea Island Coalition**Document ID: BOEM-2022-0031-6378**

The commenter expressed opposition to offshore oil development, citing concerns related to the potential risks of oil spills and GHGs. The commenter called for Congress to permanently protect U.S. waters from offshore oil drilling and end fossil fuel subsidies and further called for a transition to renewable energy sources.

Hancock County MS NAACP, Greg Barabino**Document ID: BOEM-2022-0031-6615**

The commenter opposed any new oil and gas lease sales, asking BOEM to instead focus on creating opportunities for offshore wind in the GOM to create jobs in communities of color. The commenter discussed the effects of climate change, such as stronger and more damaging hurricanes like Hurricanes Ian and Fiona.

Healthy Gulf, Cynthia Sarthou**Document ID: BOEM-2022-0031-187158**

The commenter urged BOEM not to issue new leases in the GOM because of climate change, pipeline leaks, pollution, and environmental destruction.

Healthy Gulf, Naomi Yoder**Document ID: BOEM-2022-0031-187158**

The commenter asked BOEM to choose the no new lease sales alternative because of the threats posed by climate change, pipeline leaks, pollution, and environmental destruction in the GOM.

Healthy Ocean Coalition**Document ID: BOEM-2022-0031-6326**

The commenter opposed new lease sales in the GOM and Alaska under the Proposed Program. The commenter discussed the impacts of oil and gas drilling on the climate crisis, frontline communities and communities of color, and coastal communities and economies. The commenter said that moving forward with the proposed lease sales will not reduce energy costs for at least a decade.

Hispanic Access Foundation, Shanna Edberg**Document ID: BOEM-2022-0031-187158**

The commenter asked for no new lease sales because pollution caused by drilling disproportionately harms communities of color.

Hispanic Policy Group, Ariel Fernandez**Document ID: BOEM-2022-0031-3703**

The commenter supported the new lease sales in the Proposed Program. The commenter discussed the negative impacts of increased energy prices on the Hispanic community.

Institute for Energy Research, Tom Pyle**Document ID: BOEM-2022-0031-6371**

The commenter supported increasing the number of lease sales proposed under the Proposed Program. The commenter urged BOEM to expand leasing to be consistent with the OCS Lands Act and keep gasoline prices low. The commenter said that BOEM failed to quantify the climate impacts of offshore oil and gas drilling in terms of the estimated temperature impact of the Program.

Institute for Policy Integrity at New York University School of Law**Document ID: BOEM-2022-0031-6371**

The commenter did not express support or opposition to the Program Areas included, however, they did disagree with BOEM’s net benefits analysis. The commenter argued that BOEM’s net benefits analysis understated the costs of OCS leasing, particularly social and environmental costs. The commenter further argued that evidence shows that the costs of OCS leasing may exceed the benefits. The commenter also criticized BOEM’s decision to omit downstream GHGs from its net benefits analysis, arguing that BOEM has authority to consider the downstream impacts of oil and gas consumption under the OCS Lands Act and recent case law.

Interfaith Oceans, Marybeth Lorbiecki**Document ID: BOEM-2022-0031-187158**

The commenter expressed opposition to new oil, gas, and mining leases, citing environmental destruction caused by drilling. The commenter asserted that there is a moral and spiritual responsibility to care for the oceans, marine life, and the people who depend on them.

International Marine Mammal Project of Earth Island Institute, Mark Palmer**Document ID: BOEM-2022-0031-6574**

The commenter expressed opposition to issuing new oil and gas leases under the Proposed Program, arguing that new offshore oil and gas development would contribute significantly to climate change and create greater risks of oil spills, which harm marine mammals.

The James Madison Institute, Sal Nuzzo**Document ID: BOEM-2022-0031-6619**

The commenter supported the maximum number of lease sales. The commenter discussed the importance of energy security and avoiding increased gas prices. The commenter supported lease sales in both the GOM and Cook Inlet planning areas, specifically discussing the positive economic impacts of offshore oil and gas development in the GOM.

The James Madison Institute**Document ID: BOEM-2022-0031-6456**

The commenter expressed support for the Proposed Program and for expanding oil and gas leasing in general, arguing that it would decrease energy prices and create jobs in the United States.

John Locke Foundation, Jordan Roberts**Document ID: BOEM-2022-0031-6487**

The commenter supported leasing in the GOM Program Area 1 and the proposed lease sale for Cook Inlet in Alaska. The commenter discussed the need for greater energy security and lower gas prices.

Lane Plating Community Advisory Group, Allen McGill**Document ID: BOEM-2022-0031-187158**

The commenter opposed new lease sales in the GOM and urged BOEM to weigh its requirement in the OCS Lands Act that requires the Secretary to consider the environmental sensitivity and marine

productivity of different areas of the OCS. Also, the commenter asked BOEM to consider how long-term energy decisions will affect environmental justice communities in the Gulf.

Louisiana Just Recovery Network, Toi Jean Carter

Document ID: BOEM-2022-0031-6571

The commenter expressed opposition to issuing new oil and gas leases under the Proposed Program. The commenter argued that expanding offshore drilling would exacerbate climate change, which will lead to more severe hurricanes, and air pollution, which can cause cancer and other illnesses, harms that disproportionately affect communities of color in the GOM region. The commenter further recommended that BOEM prioritize developing offshore wind energy in the GOM instead of offshore oil and gas.

Maine State Grange, Sherry Harriman

Document ID: BOEM-2022-0031-6466

The commenter expressed support for the Proposed Program, arguing that it would increase the supply of energy and decrease prices, stressing that high energy prices have severely impacted the U.S. agricultural sector. The commenter added that fuel and electricity make up a significant portion of U.S. farm operating costs.

Maryland Ornithological Society, Robin Todd

Document ID: BOEM-2022-0031-6514

The commenter recommended that BOEM proceed with the No Action Alternative, arguing that new lease sales in the GOM and Cook Inlet would pose serious threats to bird life in those areas. The commenter argued that these areas encompass or are near numerous Important Bird Areas, which would be severely impacted by oil spills. The commenter further claimed that the oil and gas industry already holds leases which are not being used for production, which the commenter argued demonstrates that there is no need for issuing new leases. Finally, the commenter argued that issuing new leases would lead to increased carbon emissions, accelerating climate change and the further loss of vulnerable and endangered bird species.

Mississippi State Conference NAACP Environmental and Climate Justice Committee, Gordon Jackson

Document ID: BOEM-2022-0031-6613

The commenter opposed any new oil and gas lease sales, asking BOEM to instead focus on creating opportunities in offshore wind in the GOM to create jobs in communities of color. The commenter discussed the effects of climate change, such as stronger and more damaging hurricanes like Hurricanes Ian and Fiona.

Montana Stockgrowers Association

Document ID: BOEM-2022-0031-6587

The commenter expressed their support for the inclusion of the 11 proposed lease sale areas in the Proposed Final Program (PFP). The commenter stated that the Program's oil and gas lease sales will increase energy supply and lower energy costs for consumers and farmers.

Mystic Aquarium, Katie Cubina**Document ID: BOEM-2022-0031-6596**

The commenter expressed support for Alternative A, the No Action Alternative, with no new leasing during the Program period. Overall, they said that the five-year leasing plan is the opportunity for the Biden Administration to end new leasing for offshore drilling, move us toward permanently protecting our ocean commons from environmental risks, reverse our dependence on petroleum hydrocarbons, and meet goals for carbon neutrality. The commenter also expressed concern that increasing the infrastructure of new offshore lease areas would cause unequal distribution of risks to vulnerable and disenfranchised communities. Additionally, the commenter expressed concern that oil and gas development would contribute to the potential for extinction of the Cook Inlet beluga whales. Regarding the approach used for the net benefits analysis, the commenter remarked that the description of the approach acknowledges that changes in conditions are likely to be multi-factored but then provides no approach for how to integrate multiple states.

National Parks Conservation Association, Matthew Kirby**Document ID: BOEM-2022-0031-6357**

The commenter opposed the proposed lease sales in the GOM and Cook Inlet, urging BOEM to pursue the no lease sale alternative. The commenter discussed the economic value of national parks in coastal areas and the threat posed by climate change and continued emissions from oil and gas development.

Natural Resources Defense Council, Irene Gutierrez, et al.**Document ID: BOEM-2022-0031-6342**

The commenter opposed lease sales in the GOM and Cook Inlet. The commenter asserted that BOEM failed to consider and balance key OCS Lands Act factors. The commenter said that BOEM's NEPA analysis was flawed because it did not consider the effects of GHG emissions resulting from OCS development, the impacts of oil spills, and the effects on endangered species. The commenter argued in favor of no new lease sales because it will best meet national energy needs, adding that there are enough reserves already under existing leases. The commenter cited models demonstrating that no new leasing will have little impact on U.S. oil and gas production, criticizing BOEM's "no new leases" production forecast as flawed. The commenter urged BOEM to consider the impacts of oil and gas development on climate change, the environment, public health, and coastal communities and their economies. Citing reports on BP's Deepwater Horizon oil spill, the commenter discussed concerns about the potential for oil spills to harm ecosystems. The commenter expressed concern for the endangered Rice's whale if oil and gas lease sales are pursued in the GOM.

Nebraska State Grange, Kevin Cooksley**Document ID: BOEM-2022-0031-6462**

The commenter expressed support for the Proposed Program, arguing that it would increase the supply of energy and decrease prices, stressing that high energy prices have severely impacted the U.S. agricultural sector. The commenter added that fuel and electricity make up a significant portion of U.S. farm operating costs.

New York State Grange, Stephen Coye**Document ID: BOEM-2022-0031-6499**

The commenter expressed support for the Proposed Program, arguing that it would increase the supply of energy and decrease prices, stressing that high energy prices have severely impacted the U.S. agricultural sector. The commenter added that fuel and electricity make up a significant portion of U.S. farm operating costs.

North Gulfport Community Land Conservancy, Howard Page**Document ID: BOEM-2022-0031-6373**

The commenter opposed the proposed lease sales and expressed concern regarding the effects of emissions on storm events and the associated damage to coastal communities. The commenter discussed climate change, oil spills, and the need for wind power.

Ocean Conservancy, Andrew Hartsig**Document ID: BOEM-2022-0031-6332**

The commenter opposed lease sales in the GOM and in Alaska’s Cook Inlet. The commenter suggested that if BOEM opts to include oil and gas lease sales in the 2023–2028 Program, those sales should be kept to the minimum required to sustain build-out of wind facilities and held to the highest possible environmental standards.

Oceana**Document ID: BOEM-2022-0031-6356**

The commenter opposed any new oil and gas leasing and urged BOEM to include no new lease sales in the Proposed Program. The commenter argued that the passage of the IRA requires a revised Proposed Program and PEIS for public review and comment. The commenter discussed other uses of the Proposed Program Areas as well as the risks of oil and gas development. The commenter argued that properly balancing the OCS Lands Act factors requires BOEM to exclude the GOM and the Cook Inlet Alaska Regions.

Orange County Partnership, Maureen Halahan**Document ID: BOEM-2022-0031-6450**

The commenter expressed support for the Proposed Program and the inclusion of the 11 proposed lease sales, arguing that it would reduce high energy prices, and further claimed that current energy policies are hurting businesses by impacting overhead costs, employee retention, and competitive pricing.

Pennsylvania Chemical Industry Council, Steven Kratz**Document ID: BOEM-2022-0031-6464**

The commenter expressed support for including the maximum number of lease sales in the PFP. This commenter argued that high energy prices have significant impacts on manufacturers, increasing costs of feedstock, transportation, and power generation, which can impact consumer costs and supply chains. This commenter further stated that offshore oil and gas production supports many jobs in the United States and that production in the GOM is less carbon-intensive than in other regions.

Pennsylvania Farm Bureau, Grant Gulibon**Document ID: BOEM-2022-0031-6512**

The commenter expressed support for the Proposed Program and including the maximum number of lease sales and expressed concern about the possibility of no new leases being issued, arguing that these new offshore oil and gas developments would help reduce energy costs for the agricultural sector, which supports many U.S. jobs.

R Street Institute, Phillip Rossetti**Document ID: BOEM-2022-0031-6364**

The commenter discussed studies that suggest that reduced natural gas production in the United States would not necessarily lead to lower emissions in the near term in part because of the increased demand for higher-emitting coal. The commenter added that reduction in offshore oil and gas leasing would have negative economic impacts and cause energy security challenges.

Rethink Energy Florida**Document ID: BOEM-2022-0031-6374**

The commenter expressed opposition to any new gas and oil lease sales. The commenter discussed the impacts of previous offshore drilling disasters and negative externalities imposed on local communities and the economy as well as the importance of transitioning away from fossil fuels to renewable energy sources.

San Antonio Bay Estuarine Waterkeeper, Diane Wilson**Document ID: BOEM-2022-0031-6485**

The commenter opposed all new lease sales and discussed the effects of oil spills and public health impacts on frontline communities from offshore drilling in the GOM.

Sanibel-Captiva Conservation Foundation, Matt DePaolis**Document ID: BOEM-2022-0031-187158**

The commenter expressed opposition to oil and gas drilling in the GOM and Alaska, stating that existing leases preclude the need for new lease sales and arguing that there are risks to endangered species that must be considered.

Sea Turtle Conservancy**Document ID: BOEM-2022-0031-6380**

The commenter expressed opposition to any new oil or gas lease sales in U.S. waters and urged a decision of “no action.” The commenter expressed concern about the risk that oil spills pose to various species of sea turtles and discussed the importance of sea turtles to the GOM region. Additionally, the commenter requested that BOEM update its PEIS to fully analyze cumulative impacts of proposed new lease sales on the environment, coastal communities, and existing industries from drilling operations and consider alternatives to offshore drilling.

South Louisiana Economic Council, Vic Lafont**Document ID: BOEM-2022-0031-6517**

The commenter expressed support for including the maximum number of lease sales in the Proposed Program, while expressing concern that the Program could fail to adequately address U.S. energy needs by not scheduling new oil and gas lease sales. The commenter argued that issuing no new leases would endanger U.S. energy security, jobs, and tax revenue, particularly for essential services in the Gulf region, such as education, health care, emergency services, and infrastructure. The commenter also claimed that energy producers in the GOM are among the least carbon-intensive in the world, that they supply a significant portion of U.S. oil and gas, and that oil and gas revenues in the GOM help fund important conservation and levee protection projects in the region.

Southern Alliance for Clean Energy, Chris Carnevale**Document ID: BOEM-2022-0031-6329**

The commenter opposed new lease sales under the Proposed Program. The commenter expressed concern regarding climate change, asserting that oil and gas leasing in the proposed areas would impede net-zero emissions goals. The commenter also discussed the potential for oil spills to impact coastal communities.

Southern Environmental Law Center et al.**Document ID: BOEM-2022-0031-6350**

The commenter opposed oil and gas leasing, asking BOEM to include no new lease sales in the Proposed Program. The commenter particularly opposed the GOM Planning Areas and stated that oil and gas development poses a threat to natural resources, coastal economies, and communities. The commenter urged a targeted leasing approach if the planning area remains under consideration.

St. Mary Parish Economic Development Agency, Evan Boudreaux**Document ID: BOEM-2022-0031-6454**

The commenter expressed support for including the maximum number of lease sales in the Proposed Program, while expressing concern that the Program could fail to adequately address U.S. energy needs by not scheduling new oil and gas lease sales. The commenter argued that issuing no new leases would endanger U.S. energy security, jobs, and tax revenue, particularly for essential services in the Gulf region, such as education, health care, emergency services, and infrastructure. The commenter also claimed that energy produced in the GOM is among the least carbon-intensive in the world, that it supplies a significant portion of U.S. oil and gas, and that oil and gas revenues in the GOM help fund important conservation and levee protection projects in the region.

Steps Coalition, Gulfport MS, Jonathan Green**Document ID: BOEM-2022-0031-6617**

The commenter opposed any new oil and gas lease sales, asking BOEM to instead focus on creating opportunities in offshore wind in the GOM to create jobs in communities of color. The commenter discussed the effects of climate change, such as stronger and more damaging hurricanes like Hurricanes Ian and Fiona.

Stone County, MS NAACP, Robert James**Document ID: BOEM-2022-0031-6618**

The commenter opposed any new oil and gas lease sales, asking BOEM to instead focus on creating opportunities in offshore wind in the GOM to create jobs in communities of color. The commenter discussed the effects of climate change, such as stronger and more damaging hurricanes like Hurricanes Ian and Fiona.

Surfrider Foundation**Document ID: BOEM-2022-0031-6355**

The commenter opposed oil and gas leasing and urged BOEM to include no new lease sales in the Proposed Program. The commenter stated that expanded offshore oil and gas development would negatively impact marine ecosystems, wildlife, coastal communities, and recreation and tourism industries. The commenter discussed gaps in the Draft PEIS.

Surfrider Foundation, Cody Wright**Document ID: BOEM-2022-0031-6340**

The commenter expressed opposition to lease sales in the Cook Inlet and GOM regions. The commenter requested BOEM update its PEIS to fully analyze cumulative impacts on the environment, coastal communities, and existing industries from drilling operations and large oil spills and consider alternatives to offshore drilling.

Surfrider Foundation Chapters and Recreation Dependent Businesses, Julie Dugan**Document ID: BOEM-2022-0031-0017**

The commenter expressed opposition to new lease sales included in the Proposed Program, arguing that oil and gas development in the GOM and in Alaska negatively impacts marine ecosystems, coastal communities, and recreation and tourism industries. The commenter claimed specifically that activities such as seismic surveys, drilling, oil transport, and infrastructure installation damage marine wildlife and coastal economies. The commenter further argued that oil and gas development creates risks of catastrophic oil spills and exacerbates climate change. Finally, the commenter recommended that BOEM strongly consider the public opposition raised to the 2018 Draft Program.

Surfrider Foundation, Emma Haydocy**Document ID: BOEM-2022-0031-187158**

The commenter stated opposition to lease sales in the GOM and asked for no new lease sales because drilling and oil spills threaten tourism and coastal recreation industries, which are key to Florida's economy.

Surfrider Foundation FL Chapter Network**Document ID: BOEM-2022-0031-6362**

The commenter opposed lease sales in the GOM and Alaska under the Proposed Program. The commenter expressed concern regarding the risks of oil spills and extreme weather events exacerbated by climate change. The commenter cited studies on the negative impacts of Federal offshore drilling on Florida's ocean recreation and tourism economy. The commenter requested that BOEM update its Draft

PEIS to fully analyze the cumulative impacts on the environment, coastal communities, and existing industries from drilling operations and oil spills, and consider alternatives to offshore drilling.

Taproot Earth**Document ID: BOEM-2022-0031-6375**

The commenter requested no new oil and gas leases be issued. The commenter discussed the possible implications of continued offshore drilling—including disaster risks, environmental degradation, harm to public health and the economy—and stated that energy needs could be met without drilling. The commenter further discussed the importance of transitioning to renewable energy sources and improving energy efficiency to reduce demand. Additionally, the commenter stated that many current leases are going unused, discussed conflict between oil and gas development and offshore wind leases, and called for addressing the issue of abandoned and decommissioned oil and gas infrastructure. The commenter also discussed other various uses of the sea and seabed (e.g., fishing, navigation, shipping, tourism, recreation) and how they would be affected by oil and gas lease sales.

Taproot Earth and the Greater New Orleans Interfaith Climate Coalition, Reverend James VanderWeele**Document ID: BOEM-2022-0031-187158**

The commenter expressed concern regarding the effects of climate change, oil spills, and greenhouse gas emissions on future generations.

Taproot Earth, The Center for Biological Diversity, et al.**Document ID: BOEM-2022-0031-1149**

The commenter expressed opposition to new offshore oil and gas leasing. Citing requirements of NEPA that Federal agencies must involve the public in the rulemaking process, the commenter recommended that BOEM engage more intensively with the public before proceeding with a PFP and offered to host and facilitate public meetings for BOEM. The commenter argued that this is particularly necessary in this case because of the potential effects of climate change on vulnerable communities.

Texas NAACP State Conference, Gene Collins**Document ID: BOEM-2022-0031-6495**

The commenter expressed opposition to issuing new oil and gas leases, arguing that the air pollution caused by oil and gas production severely impacts human health and that these impacts fall disproportionately on low-income communities and communities of color. The commenter added that climate change, causing more extreme weather, is making oil spills from offshore drilling more likely. The commenter argued that it is possible to supply U.S. energy needs with renewable energy sources, and that shifting to renewable energy would prevent thousands of premature deaths caused by air pollution annually, eliminate carbon emissions, and create millions of jobs.

True Transition**Document ID: BOEM-2022-0031-6387**

The commenter discussed the ability of the Bureau of Safety and Environmental Enforcement (BSEE), the Office of Natural Resources Revenue, and BOEM to regulate lessees and mitigate risks associated with oil and gas development on the OCS and made specific recommendations on a variety of topics

related to safety measures and decommissioning. The commenter recommended stricter standards for bidding on OCS oil and gas leases; stricter oversight of decommissioned and idle rigs; the development of an energy security/decarbonization analysis tool; and the establishment of stronger lease stipulations related decommissioning.

United Methodist Church's Board of Church and Society

Document ID: BOEM-2022-0031-187158

The commenter requested no new lease sales be included in the final 2023–2028 Program for offshore oil and gas leasing. The commenter expressed concern for the risks posed by deep sea extraction of fossil fuels including damage to aquatic ecosystems, pollution from leaks and spills, impacts on coastal communities and continued contribution to the global climate crisis.

Voces Unidas Rio Grande Valley, Michelle Serrano

Document ID: BOEM-2022-0031-6507

The commenter expressed opposition to the issuing new oil and gas leases, arguing that offshore oil and gas production contribute significantly to air pollution and carbon emissions and that prohibiting offshore production in Federal waters would prevent substantial amounts of GHG emissions and health and property damage from pollution.

A.3.2 Cook Inlet-specific Commenters

Alaska Marine Conservation Council, Marissa Wilson

Document ID: BOEM-2022-0031-6317

The commenter opposed new lease sales in Lower Cook Inlet and expressed concerns regarding the Alaska Native peoples adjacent to the proposed lease sites and the potential for oil spills. The commenter said that the Draft PEIS fails to fully consider the economic and ecological impacts of a large oil spill scenario.

Alaska Survival

Document ID: BOEM-2022-0031-6601

The commenter requested that Cook Inlet be excluded from leasing consideration and expressed support for the No Action Alternative in the Draft PEIS. The commenter accused the oil and gas industry of stockpiling leases and reasoned that leases that are already approved should be used before new leases are issued. The commenter expressed concern about the impacts of industrial activities on fish and beluga whale populations in the region and the local economy. The commenter also stated that the BSEE Well Control Rule should be finalized before further OCS leasing occurs.

Defenders of Wildlife

Document ID: BOEM-2022-0031-6602

The commenter requested that Cook Inlet be excluded from the Proposed Program. The commenter expressed concern about the impact of industrial activities and resulting noise, air, and water pollution on the beluga whale population in the region. They further expressed concern about climate change and the continued use of fossil fuels to meet energy demand and discussed the opposition and concerns of local communities and Tribal groups to oil production in the Cook Inlet area.

Susitna River Coalition**Document ID: BOEM-2022-0031-6588**

The commenter expressed support for a No Action Alternative and stated that the Cook Inlet area should be excluded from sale consideration. The commenter expressed concern about the potential impacts of industrial oil and gas development on fish resources and the local economy as well as community displacement due to extreme weather events. They suggested that leases were being stockpiled and stated that current leases should be developed before more are issued. The commenter also stated that the BSEE Well Control Rule should be finalized before further OCS leasing occurs.

The People's Justice Council, Kyle Crider**Document ID: BOEM-2022-0031-187158**

Expressing concerns regarding the effects of climate change on the Gulf, the commenter urged BOEM to halt oil and gas leases to go forward and asserted that renewable energy infrastructure must be built.

The Climate Reality Project, Peter Bella**Document ID: BOEM-2022-0031-187158**

The commenter stated objections to new oil and gas leases in the GOM, urging BOEM to instead pursue offshore wind generation.

A.3.3 Gulf of Mexico-specific Commenters**Boat People SOS Biloxi, MS****Document ID: BOEM-2022-0031-6614**

The commenter requested that no new oil leases be issued and stated that the impacts of oil and gas leasing and climate change on Gulf Coast fishing communities should be considered and studied thoroughly as leases for offshore oil, gas, and wind energy projects are developed. The commenter discussed the impacts of previous oil spills on the fishing industry and the community more broadly and additionally suggested that offshore wind development should include worker training and business development.

Boat People SOS Gulf Coast**Document ID: BOEM-2022-0031-6383**

The commenter requested that the impacts of oil and gas leasing and climate change on Gulf Coast fishing communities be considered and studied thoroughly as leases for offshore oil, gas, and wind energy projects are developed. The commenter discussed the impacts of previous oil spills on the fishing industry and the community more broadly and additionally suggested that offshore wind development should include worker training and business development.

Center for Biological Diversity**Document ID: BOEM-2022-0031-4474**

The commenter opposed new lease sales in the GOM and submitted a recording of a town hall event featuring environmental justice communities, environmentalists, fisherfolks, and businesses opposed to new leasing in the five-year plan.

Mississippi Rising Coalition, Lea Campbell**Document ID: BOEM-2022-0031-6565**

The commenter expressed opposition to new oil and gas leasing in the GOM, arguing that such developments cause significant ecological and human harm through oil spills and leaks, toxic emissions, decreased property values, and land loss, and that the GOM is particularly unsuited for development because of frequent hurricanes, which make oil spills more likely. The commenter also argued that issuing no new leasing is necessary for the country to meet its decarbonization goals.

NRDC**Document ID: BOEM-2022-0031-6331**

The commenter opposed lease sales in the GOM, expressing concern for the lease sales to impact the Rice’s whale. The commenter said that oil and gas development in the Gulf threatens the whale’s survival and recovery as an endangered species. They provided analysis modeling the effects on oil and gas production from no new leasing in the GOM and compared their model with BOEM’s forecast for no new lease sales. The commenter included more than 80 signatories.

Sanibel-Captiva Conservation Foundation**Document ID: BOEM-2022-0031-6352**

The commenter opposed new oil and gas leasing in the GOM. The commenter discussed alternative energy sources as well as BOEM’s Draft PEIS analysis of alternatives. The commenter did not find the risks of additional oil and gas drilling acceptable given the alternative options.

Turtle Island Restoration Network, Joanie Steinhaus**Document ID: BOEM-2022-0031-6490**

The commenter opposed inclusion of the GOM Program Area. The commenter discussed concerns regarding the potential to increase oil spills and methane leaks, exacerbate climate change, and threaten wildlife species.

A.4 Federal Agencies**Table A-5: List of Commenters from Federal Agencies**

Marine Mammal Commission (MMC)
National Aeronautics and Space Administration (NASA)
National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS)
U.S. Department of Commerce
U.S. Department of Defense (DoD)
U.S. Environmental Protection Agency (USEPA)

A.4.1 Proposed Program-wide Commenters**U.S. Environmental Protection Agency****Document ID: BOEM-2022-0031-6349**

In accordance with its responsibilities under the Clean Air Act and NEPA, the Environmental Protection Agency (USEPA) provided comments on the Draft PEIS. The commenter stated that BOEM should make

several revisions for the final PEIS, including a more robust discussion in the purpose and need statement of the underlying economic analysis, revising the No Action Alternative baseline and baseline assumptions to reflect likely future changes to the national energy mix, incorporating midstream and downstream GHG emissions into the impact analysis, and revising the discussion of potential impacts from oil spills to include a summary of the modeling results of historic large and small platform and pipeline spills.

Marine Mammals Commission, Peter O. Thomas

Document ID: BOEM-2022-0031-6358

The commenter expressed opposition to the Proposed Action on the grounds that offshore oil and gas development is harmful to marine mammals. In particular, the commenter noted that the Cook Inlet Planning Area includes critical habitat for the engaged Cook Inlet beluga whale and the threatened northern sea otter. The commenter stated there is currently no good information on the abundance and distribution of marine mammals in the GOM.

National Aeronautics and Space Administration, Joel Carney

Document ID: BOEM-2022-0031-6313

The commenter said that the removal of lease sales scheduled in the Pacific Region, GOM Program Area 2, Atlantic Region, and Alaska Region (except for Cook Inlet) renders moot the agency's previously expressed concerns on the Draft Proposed Program regarding the safety of rocket launch operations in the United States.

NOAA Fisheries (NOAA NMFS)

Document ID: BOEM-2022-0031-6279

The commenter expressed concern that the proposal and Draft Programmatic EIS only contain very high-level discussions of the Program and potential impacts and suggested that they could benefit from increased detail. The commenter suggested that BOEM incorporate catastrophic oil spill damages and impacts to unique species in their analysis.

U.S Department of Commerce, Gina Raimondo

Document ID: BOEM-2022-0031-6283

The commenter said that it has asked the National Oceanic and Atmospheric Administration (NOAA) to review the Proposed Program and Draft PEIS and provide comments to BOEM.

U.S Department of Defense, Paul D. Cramer

Document ID: BOEM-2022-0031-6281

The commenter requested exclusion of several areas in the GOM that conflict with operational activities and requested coordination on de-confliction in Cook Inlet.

A.4.2 Cook Inlet-specific Commenters

No commenters from Federal agencies provided comment on Cook Inlet.

A.4.3 Gulf of Mexico-specific Commenters

No commenters from Federal agencies provided comment on GOM.

A.5 Energy Exploration & Production Industry and Associations

Table A-6 presents the list of commenters from energy exploration and production industry and associations. Please see Chapter 11 for more information on the importance placed on these comments within Section 18 of the OCS Lands Act.

Table A-6: List of Commenters from Energy Exploration & Production Industry and Associations

Alaska Oil and Gas Association
American Exploration and Production Council (AXPC)
American Petroleum Institute
American Public Gas Association
Arena Energy, LLC
Arena Offshore, LP
Beacon Offshore Energy (2 comment letters received)
bp America Inc.
Chevron
EnerGeo Alliance
Energy Marketers of America
Energy Workforce & Technology Council
Equinor Gulf of Mexico LLC
Florida Independent Petroleum Producers Association
Gulf Energy Alliance
Hess Corporation
International Association of Drilling Contractors
IPAA
Island Operating Company
Juneau Oil & Gas, LLC
Louisiana Mid-Continent Oil & Gas Association
National Ocean Industries Association
North Dakota Petroleum Council
Offshore Operators Committee
Ohio Oil and Gas Association
PA Grade Crude Oil Coalition
QuarterNorth Energy LLC
Red Willow Offshore, LLC / Southern Ute Indian Tribe
Ridgewood Energy Corporation
Rosefield Pipeline Company, LLC
Shell Offshore Inc.
Talos Energy Inc.
The Gas and Oil Association of WV, Inc.

Transocean, Enterprise Offshore Drilling, Parker Wellbore, and Noble Services Company
LLC

A.5.1 Proposed Program-wide Commenters

Alaska Oil and Gas Association, Tamara S. Maddox

Document ID: BOEM-2022-0031-6635

The commenter expressed concern that a no lease sale option could be adopted, stating the OCS Lands Act requires that OCS oil and gas lease sales be held and that a no lease sale approach would fail to meet U.S. energy needs. The commenter added that OCS oil production accounts for a large portion of U.S. energy production and is among the least carbon-intensive sources of oil and gas. The commenter stated that energy demand will increase through 2050, necessitating the expansion of oil production. Additionally, the commenter asserted that OCS oil and gas production is vital to U.S. energy security and that Alaska is dependent on the oil and gas economy.

American Exploration and Production Council (AXPC)

Document ID: BOEM-2022-0031-6396

The commenter expressed concern that a no lease sale option could be adopted, stating that such an approach would fail to meet U.S. energy needs. The commenter added that OCS oil production accounts for a large portion of U.S. energy production and is among the least carbon-intensive sources of oil and gas. The commenter stated that energy demand will increase through 2050, necessitating the expansion of oil production.

American Petroleum Institute, Cole Ramsey

Document ID: BOEM-2022-0031-6277

The commenter expressed concern that a no lease sale option could be adopted, stating the OCS Lands Act and IRA require that OCS oil and gas lease sales be held, and that OCS oil and gas production provides energy security, economic, and employment benefits to the United States. The commenter also requested that BOEM confirm that foregoing OCS oil and gas leasing would not significantly reduce energy demand in the United States and emphasized that lease sales should be offered in a transparent, predictable manner to promote capital investments. The commenter added that GOM production is among the least carbon-intensive sources of oil and gas and that BOEM should further consider the regulatory and environmental safeguards in force to mitigate OCS oil and gas environmental impacts. The commenter also argued that the Proposed Program does not have significant environmental impacts meriting a NEPA analysis, and that BOEM's NEPA analysis cannot consider downstream impacts. Additionally, the commenter argued that BOEM should not rely on social cost of GHG emissions in its analysis. The commenter also recommended that BOEM hold region-wide sales rather than more targeted lease sales.

American Public Gas Association

Document ID: BOEM-2022-0031-4486

The commenter expressed concern about the possibility of no new lease sales, asserting that such a decision would result in a massive decrease in oil and gas production and exacerbate already rising energy prices. It stated that increased oil and gas production is necessary to meet American energy

needs, remarked that GOM production is low in carbon intensity, and added that OCS oil and gas production is vital to U.S. energy security.

Beacon Offshore Energy

Document ID: BOEM-2022-0031-6630

The commenter supported expanding oil and gas leasing in the OCS. The commenter stated that OCS oil and gas production is the least environmentally harmful way to meet national energy demand for non-renewable energy through 2050.

EnerGeo Alliance

Document ID: BOEM-2022-0031-6397

The commenter expressed concern that a no lease sale option could be adopted, stating that such an approach would fail to meet U.S. energy needs. The commenter added that OCS oil production accounts for a large portion of U.S. energy production and is among the least carbon-intensive sources of oil and gas. The commenter stated that a no-sale option would negatively impact the geoscience industry in particular.

Energy Marketers of America, Sherri Stone

Document ID: BOEM-2022-0031-6640

The commenter supported OCS oil and gas production generally, stating that domestic production of fossil fuels is necessary to promote energy security while mitigating energy cost surges consumers face.

Energy Workforce & Technology Council, Tim Tarpley

Document ID: BOEM-2022-0031-6641

The commenter expressed concern that a no lease sale option could be adopted, stating that such an approach would fail to meet U.S. energy needs. The commenter added that OCS oil production accounts for a large portion of U.S. energy production and is among the least carbon-intensive sources of oil and gas. The commenter stated that energy demand will increase through 2050, necessitating the expansion of oil production. Additionally, the commenter asserted that OCS oil and gas development will prompt economic growth by stimulating investment and creating jobs.

Florida Independent Petroleum Producers Association, Thomas A. Herbert

Document ID: BOEM-2022-0031-6629

The commenter expressed concern that a no lease sale option could be adopted, stating that such an approach would fail to meet U.S. energy needs and energy security. The commenter added that GOM oil production is subject to some of the most stringent environmental regulations in the world.

International Association of Drilling Contractors, Matt Giacola

Document ID: BOEM-2022-0031-6636

The commenter expressed concern that a no lease sale option could be adopted, stating the OCS Lands Act requires that OCS oil and gas lease sales be held and that uncertainty as to the lease sale process can substantially impact investments in development and contractors who work to support OCS leases. The commenter stated that this uncertainty combined with international demand could lead to oil rig

companies moving abroad. The commenter also wrote that excluding the Pacific planning region is arbitrary and fails to provide the benefits of OCS oil and gas development across the country.

IPAA

Document ID: BOEM-2022-0031-122804

The commenter expressed concern about the possibility of no new lease sales, asserting that such a decision would result in a massive decrease in oil and gas production and exacerbate already rising energy prices. They stated that increased oil and gas production is necessary to meet American energy needs, remarked that GOM production is low in carbon intensity, and added that OCS oil and gas production is vital to U.S. energy security.

Island Operating, Gregg H. Falgout

Document ID: BOEM-2022-0031-6491

The commenter called for the Proposed Program to include all 11 proposed sales and noted that U.S. offshore oil production would mitigate U.S. inflation. They discussed the U.S. history of producing domestic energy safely while protecting the environment, the jobs supported by the oil and gas industry in the GOM, and the conservation funds provided by oil and gas revenues. They noted that the U.S. offshore industry has a lower environmental impact than similar industries in many other regions and stressed that energy security promotes national security, particularly at a time of instability in Eastern Europe.

Louisiana Mid-Continent Oil & Gas Association

Document ID: BOEM-2022-0031-6637

The commenter expressed concern that a no lease sale option could be adopted, stating the OCS Lands Act and IRA require that OCS oil and gas lease sales be held and that a no lease sale approach would fail to meet U.S. energy needs. The commenter added that OCS oil production accounts for a large portion of U.S. energy production and provides important economic benefits via employment and tax revenues, especially under the Gulf of Mexico Energy Security Act. Furthermore, the commenter stated that oil and gas revenue is important to funding Louisiana's Coastal Master Plan and that GOM oil production reduces carbon emissions because, in its absence, oil would be imported and impose greater environmental costs.

National Ocean Industries Association, Erik Milito

Document ID: BOEM-2022-0031-6674

The commenter supported OCS oil and gas production to promote what the commenter characterized as necessary fossil fuel production in a setting with more regulatory and environmental oversight. The commenter provided a description of environmental protections and mechanisms implemented since 2010 to mitigate the risks posed by OCS oil production. The commenter also stated that GOM oil production has supported regional communities through job creation, tax revenue, and Land and Water Conservation Fund (LWCF) contributions. The commenter wrote that OCS production also promotes national security by shifting production from foreign states. Additionally, the commenter wrote that oil and gas companies are important contributors to decarbonization because of their investments in carbon capture and storage, geothermal, and hydrogen technologies.

North Dakota Petroleum Council**Document ID: BOEM-2022-0031-6390**

The commenter expressed concern about the ability to meet domestic energy needs without the proposed lease sales. Further, the commenter stated that energy demand will increase through 2050 and that domestically produced oil is among the least carbon-intensive. The commenter stated that OCS oil and gas production is vital to U.S. energy security and that lease sales are required by the OCS Lands Act.

Offshore Operators Committee, Evan Zimmerman**Document ID: BOEM-2022-0031-6634**

The commenter expressed concern that a no lease sale option could be adopted, stating the OCS Lands Act requires that OCS oil and gas lease sales be held, and that OCS oil and gas production provides energy security and economic benefits to the United States. The commenter added that GOM production is among the least carbon-intensive sources of oil and gas.

Ohio Oil and Gas Association, Stephanie Kromer**Document ID: BOEM-2022-0031-6399**

The commenter supported expanding oil and gas leasing in the OCS. The commenter stated that OCS oil and gas production is necessary to mitigate increased fuel costs faced by Americans. Furthermore, the commenter stated that OCS oil production is among the least carbon-intensive ways to produce oil.

PA Grade Crude Oil Coalition, David Clark**Document ID: BOEM-2022-0031-6288**

The commenter expressed concern that a no lease sale option could be adopted, stating that such an approach would fail to meet U.S. energy needs, undermine U.S. energy security, and hurt U.S. employment. The commenter added that GOM oil production is subject to some of the most stringent environmental regulations in the world.

QuarterNorth Energy LLC, John H. Smith**Document ID: BOEM-2022-0031-6632**

The commenter expressed concern that a no lease sale option could be adopted, stating that such an approach would fail to meet U.S. energy needs or provide for energy security. The commenter added that OCS oil production accounts for a large portion of U.S. energy production and supports employment. The commenter also stated that GOM oil production has supported regional communities through job creation, tax revenue, LWCF contributions, and its own work-study program. The commenter added that GOM oil production is among the least carbon-intensive sources of oil and gas and subject to some of the most stringent environmental regulations in the world.

Red Willow Offshore, LLC / Southern Ute Indian Tribe, Jason Hooten**Document ID: BOEM-2022-0031-6488**

The commenter expressed support for the Proposed Program, citing benefits of OCS leasing related to revenue, energy independence, and meeting the oil and gas demands while transitioning to renewable energy. The commenter urged BOEM to schedule the 11 proposed lease sales, further specify the

factors to be used in determining the size and location of areas to be leased and eliminate uncertainty for industry in the PFP.

The Gas and Oil Association of WV, Inc., Charlie Burd

Document ID: BOEM-2022-0031-6633

The commenter expressed concern that a no lease sale option could be adopted, stating that such an approach would fail to meet U.S. energy needs. The commenter added that OCS oil production accounts for a large portion of U.S. energy production and supports employment. The commenter added that GOM oil production is among the least carbon-intensive sources of oil and gas and subject to some of the most stringent environmental regulations in the world.

Transocean, Enterprise Offshore Drilling, Parker Wellbore, and Noble Services Company LLC., Brady Long, Brad James, Sandy Esslemont, and James Sanislow

Document ID: BOEM-2022-0031-6389

The commenters expressed concern that the 11 lease sales discussed in the Proposed Program are too few and that these sales may not occur at all. The commenters stated that OCS oil and gas production contributes significantly to U.S. jobs, taxes, and funding for communities via the LWCF.

A.5.2 Cook Inlet-specific Commenters

No commenters from energy exploration and production industry and associations provided comment on Cook Inlet.

A.5.3 Gulf of Mexico-specific Commenters

Arena Energy, LLC, Michael Minarovic

Document ID: BOEM-2022-0031-6393

The commenter supported holding lease sales in the GOM, emphasizing that lease sales should be offered in a transparent, predictable manner to promote capital investments. The commenter stated that GOM oil production is vital to energy security and that it provides economic benefits to the producing region.

Arena Offshore, LP

Document ID: BOEM-2022-0031-6335

The commenter expressed support for holding all proposed 11 lease sales. The commenter asserted that GOM oil and gas production is less carbon-intensive than alternatives and would provide energy stability to the United States and enhance national security.

Beacon Offshore Energy, Cuffie M. McManus

Document ID: BOEM-2022-0031-6631

The commenter supported holding lease sales in the GOM, reasoning that the region produces the world's least carbon-intensive oil and gas, that the GOM is ideal for carbon storage and sequestration, that expanding GOM oil production will promote U.S. energy independence, and that the oil industry has addressed and reduced environmental risks since the Deepwater Horizon disaster.

bp America Inc., Downey Magallanes**Document ID: BOEM-2022-0031-6395**

The commenter supported continued lease sales in the GOM, stating that GOM oil production is still necessary in the transition to a carbon-free energy economy and that GOM oil production has relatively low carbon intensity and is subject to stringent environmental regulations. The commenter added that the IRA imposed a requirement that OCS oil and gas leasing occur before offering wind energy lease sales. The commenter emphasized the importance of a transparent, predictable lease sale process to support business planning and investments in the region.

Chevron, Bruce Neimeyer**Document ID: BOEM-2022-0031-6638**

The commenter supported further oil and gas leasing in the GOM, stating that GOM oil and gas production provides a significant revenue stream with economic benefits to Gulf Coast states and has potential to produce vast quantities of as-yet undiscovered oil and gas. The commenter added that GOM oil and gas production has a relatively low carbon intensity and that, given projections, oil and gas production will be necessary to meet U.S. energy demand in the coming decades. The commenter also questioned whether targeted leasing or narrowing of lease sale acreage would comport with the OCS Lands Act and recommended that GOM sales occur on a region-wide basis. The commenter recommended that lease sales be made with competitive fiscal terms. The commenter also provided input on the Draft PEIS, recommending that BOEM reevaluate the No Action Alternative, revise the cost-benefit analysis, consider that GOM development could rely on existing infrastructure, and reconsider its GHG analysis.

Equinor Gulf of Mexico LLC, Chris L. Golden**Document ID: BOEM-2022-0031-6391**

The commenter supported oil and gas leasing in the GOM, stating that doing so is vital to transitioning to affordable, secure, and decarbonized energy sources while the U.S. population and energy demand continues to grow, especially because IRA linked OCS wind farm leasing to oil and gas development. The commenter added that GOM production is less carbon-intensive than most other sources of oil and gas.

Gulf Energy Alliance, Kevin Bruce**Document ID: BOEM-2022-0031-6392**

The commenter asserted that BOEM must continue to hold lease sales in the GOM on a predictable and consistent basis to promote employment, energy security goals, and provide for relatively low carbon energy. The commenter reasoned that, because of regulatory practices, OCS production results in relatively low methane emissions compared with national energy production generally. The commenter also argued that oil and gas leases in the GOM are not stockpiled, but that it sometimes takes up to a decade or more for exploration and development to bring a lease into production.

Hess Corporation, Tim Cordingley**Document ID: BOEM-2022-0031-6401**

The commenter supported holding lease sales in the GOM to promote U.S. energy security and mitigate the impacts of energy costs to consumers. The commenter added that GOM oil production is important to the U.S. economy because of the jobs it provides, and investments stakeholders have made in GOM

oil and gas development. The commenter also stated that GOM oil production is among the least carbon-intensive in the world. Additionally, the commenter stated the LWCF and other beneficial programs depend on revenues from GOM oil production.

Juneau Oil & Gas, LLC

Document ID: BOEM-2022-0031-6314

The commenter supported holding lease sales in the GOM, emphasizing that 10 sales should be offered in a transparent, predictable manner. The commenter also stated that the environmental and social costs of alternative sources of energies should be evaluated in a consistent manner and that NEPA reviews should occur at the programmatic level to facilitate smooth lease sales processes. The commenter stated that oil and gas development is capital-intensive and that BOEM should take steps to minimize the risks faced by developers.

Ridgewood Energy Corporation

Document ID: BOEM-2022-0031-6639

The commenter asserted that BOEM must continue to hold lease sales in the GOM and do so on a predictable basis to promote capital investment, employment, tax revenues, energy security goals, and to provide for relatively low carbon energy. The commenter also argued that oil and gas leases in the GOM are not stockpiled, but that it sometimes takes up to a decade or more for exploration and development to bring a lease into production.

Rosefield Pipeline Company, LLC, Christopher A. Capsimalis

Document ID: BOEM-2022-0031-6394

The commenter supported holding lease sales in the GOM, emphasizing that lease sales should be offered in a transparent, predictable manner to promote capital investments. The commenter stated that GOM oil production is vital to energy security and that it provides economic benefits to the producing region.

Shell Offshore Inc., Colette Hirstius

Document ID: BOEM-2022-0031-6398

The commenter supported holding lease sales in the GOM, emphasizing that lease sales should be offered in a transparent, predictable manner. The commenter stated that OCS oil production is vital to the energy economy and that it provides economic benefits to the producing region. The commenter stated that continued oil production will be necessary even in a scenario calling for net-zero emissions by 2050 and reasoned that GOM production is among the least carbon-intensive in the world. The commenter also stated that OCS developers do not stockpile leases. The commenter added that promoting GOM oil and gas leasing would also facilitate GOM offshore wind leasing.

Talos Energy Inc.

Document ID: BOEM-2022-0031-6400

The commenter supported holding lease sales in the GOM to promote U.S. energy security and to mitigate the impacts of energy costs to consumers. The commenter added that GOM oil production is important to the U.S. economy because of the jobs it provides, and investments stakeholders have made in GOM oil and gas development. Additionally, the commenter stated the LWCF and other

beneficial programs depend on revenues from GOM oil production. Finally, the commenter stated that the OCS Lands Act requires that leasing continue.

A.6 Non-energy Exploration & Production Industry and Associations

Table A-7: List of Commenters from Non-energy Exploration & Production Industry and Associations

Alaska Jig Association
American Agri-Women
Anahuac Area Chamber of Commerce
Aquarium Conservation Partnership
Arkansas State Chamber of Commerce
Ashé Cultural Arts Center and Efforts of Grace, Inc.
Associated Builders and Contractors of West Virginia
Associated Pennsylvania Constructors
Bohn Flying LLC
Brick Industry Association
Cameron Parish Port
CGG
CleanEarth4Kids.org
Engineers Labor-Employer Cooperative
Florida State Hispanic Chamber of Commerce
Florida Tax Watch
Florida Transportation Builders' Association
Global Energy Institute - U.S. Chamber of Commerce
Hornbeck Offshore
Indiana Motor Truck Association
Industrial Energy Consumers of America
Innisfree Hotels
International Marine Contractors Association
Island Operating
Jacksonville Axemen Rugby Team
Jewish Youth Climate Movement
Joint sign-on comment from coastal business alliances across the country
Larrett Energy Services
Mageis Fairfield
Manufacture Alabama
Marcellus Shale Coalition
Maxx HDD LLC
Michigan Chemistry Council
Michigan Manufacturer's Association
Mississippi Economic Council
Montana Chamber of Commerce
Montana Farm Bureau Federation

National Association of Manufacturers
NC Chamber of Commerce
New Jersey Business & Industry Association
Nonlinear Seismic Imaging Inc.
Ohio Cast Metals Association
Ohio Chamber of Commerce
Ohio Energy and Convenience Association (2)
Ohio Gas Association
Pennsylvania Energy Infrastructure Alliance
Pennsylvania Food Merchants Association
Rio Grande Foundation
Seattle Aquarium
Ship Island Excursions
South Carolina Trucking Association, Inc.
Tennessee Chamber of Commerce & Industry
Texas Cast Metals Association
The Fertilizer Institute
U.S. Chamber of Commerce - Global Energy Institute
Utah Petroleum Association
Utica Energy Alliance
WB Pipeline
West Virginia Chamber of Commerce
West Virginia Manufacturers Association
Willmar Lakes Area Chamber of Commerce
Wisconsin Manufacturers & Commerce

A.6.1 Proposed Program-wide Commenters

American Agri-Women

Document ID: BOEM-2022-0031-6582

The commenter requested the approval of the 11 proposed lease sales, arguing that new lease sales would provide certainty to the offshore energy industry, benefit U.S. consumers, and improve food and national security.

Anahuac Area Chamber of Commerce, Katelynn Smith

Document ID: BOEM-2022-0031-6348

The commenter expressed support for all the 11 lease sales in the Proposed Program. They stated that high energy prices and high price indexes have made it difficult for American businesses, and that reopening the GOM for lease sales would provide relief and economic certainty for the Nation.

Aquarium Conservation Partnership, Tom Schmid**Document ID: BOEM-2022-0031-6333**

The commenter asked that BOEM exclude all new lease sales from the Proposed Program, citing concerns about several resource impacts. The commenter asserted that carbon emissions must drop significantly to mitigate the effects of climate change, but that the Proposed Program would be a significant step backwards. The commenter also expressed concerns about the danger of oil spills from offshore oil and gas drilling, which it stated can have a huge negative impact on marine life and low-income communities.

Arkansas State Chamber of Commerce, Randy Zook**Document ID: BOEM-2022-0031-6290**

The commenter expressed support for the Proposed Program and for including the maximum number of lease sales, expressing concern about the possibility that the Program could not include any new sales. The commenter argued that issuing new leases would help bring down costs for consumers, support good-paying jobs, and bolster energy security. The commenter added that oil and gas produced in the United States is done so under stricter environmental standards than elsewhere in the world.

Ashé Cultural Arts Center and Efforts of Grace, Inc.**Document ID: BOEM-2022-0031-6509**

The commenter expressed opposition to any new oil and gas lease sales. The commenter stated that locating oil and gas industry projects near marginalized communities constitutes environmental racism and stressed the need to transition away from fossil fuels.

Associated Pennsylvania Constructors**Document ID: BOEM-2022-0031-6572**

The commenter requested the prompt finalization of the Program and inclusion of the maximum number of lease sales. The commenter suggested that new oil and gas lease sales were needed to address high energy prices and that domestic production was preferable because of stricter environmental standards and energy independence considerations.

Associated Builders and Contractors of West Virginia**Document ID: BOEM-2022-0031-20313**

The commenter expressed support for the Proposed Program and for the maximum number of lease sales. They discussed the number of jobs supported by offshore development, asserted that GOM production is low in carbon intensity, and added that approving all 11 lease sales would help the U.S. meet its domestic energy demand.

Bohn Flying LLC, James Jacobsen**Document ID: BOEM-2022-0031-6320**

The commenter expressed support for all 11 lease sales in the Proposed Program and discussed some general benefits of offshore oil and gas lease sales. They asserted that the Proposed Program would help protect society from energy price spikes and provide critical funds for conservation efforts in the GOM.

Brick Industry Association, Joseph Casper**Document ID: BOEM-2022-0031-6303**

The commenter expressed support for the Proposed Program and the inclusion of the 11 lease sales. The commenter argued that expanding offshore oil and gas leasing would increase the supply of energy, reducing costs for manufacturers, which have been significantly impacted by high energy prices.

Cameron Parish Port**Document ID: BOEM-2022-0031-6260**

The commenter expressed support for all 11 lease sales in the Proposed Program and asserted that domestic fuel production would lower fuel costs and ease supply chain issues, allowing U.S. ports to maintain competitive import/export operations.

CGG, Robert Gauer**Document ID: BOEM-2022-0031-6289**

The commenter expressed concern about the possibility of offering no new lease sales until 2028, citing high energy prices and energy needs. The commenter added that oil and gas leasing in the GOM is some of the least carbon-intensive production in the world and expressed support for all 11 lease sales in the Proposed Program.

CleanEarth4Kids.org, Suzanne Hume**Document ID: BOEM-2022-0031-6600**

The commenter expressed opposition to the Proposed Program and asked BOEM to end all offshore drilling leases. The commenter asserted that oil and gas extraction is incredibly pollutive, destructive to children, and responsible for global deaths, and expressed concern about climate catastrophes caused by the use of fossil fuels.

Engineers Labor-Employer Cooperative, Mark Longo**Document ID: BOEM-2022-0031-6319**

The commenter expressed support for all 11 lease sales in the Proposed Program, noting the negative impact of restrictive leasing policies on energy projects. It discussed the economic impact of high gas prices on member projects, including higher out-of-pocket, shipping, and material costs and the resulting erosion of wage gains. It criticized anti-energy activists and stated union support for preserving U.S. energy independence.

Florida State Hispanic Chamber of Commerce, Julio Fuentes**Document ID: BOEM-2022-0031-3702**

The commenter expressed support for a rapid resumption of oil and gas leasing to benefit the U.S. economy, businesses, and families and lower high energy costs, considered a driver of the current record inflation. They discussed the impact of energy resource shortages and supply chain challenges, particularly during recovery from the pandemic.

Florida Tax Watch, Dominic Cabalaro**Document ID: BOEM-2022-0031-6570**

The commenter expressed support for the Proposed Program and for including the maximum number of lease sales, expressing concern about the possibility that the Program could not include any new sales. The commenter argued that issuing new leases would help bring down costs for consumers, support good-paying jobs, and bolster energy security. The commenter added that oil and gas produced in the United States is produced under stricter environmental standards than elsewhere in the world.

Florida Transportation Builders' Association**Document ID: BOEM-2022-0031-6555**

The commenter expressed support for the Proposed Program and for including the maximum number of lease sales, expressing concern about the possibility that the Program could not include any new sales. The commenter argued that issuing new leases would help bring down costs for consumers, support good-paying jobs, and bolster energy security. The commenter added that oil and gas produced in the United States is produced under stricter environmental standards than elsewhere in the world.

Global Energy Institute – U.S. Chamber of Commerce, Christopher Guith**Document ID: BOEM-2022-0031-6360**

The commenter urged BOEM to hold more lease sales than advertised in the Proposed Program, stating that the small number of lease sales proposed would harm their members in the form of higher energy prices. The commenter said that the Proposed Program would unjustifiably curtail OCS oil and gas production in a way that will not meet America's energy needs as required by the OCS Lands Act and could decrease the country's energy security by preventing the diversification of domestic energy sources.

Hornbeck Offshore**Document ID: BOEM-2022-0031-6578**

The commenter requested that the issuance of a Program that includes leasing in all 11 proposed sales. The commenter suggested that the Program would help address rising energy costs and have beneficial employment impacts and further argued that domestic offshore production is preferable to the alternatives, which have higher carbon footprints and national security issues.

Indiana Motor Truck Association**Document ID: BOEM-2022-0031-6457**

The commenter urged the expansion of oil and gas leasing on Federal lands, arguing that this action would increase domestic energy supply, lower energy prices, and create jobs. The commenter discussed the impact of high fuel prices on the trucking industry and stated that the increased costs are passed onto consumers.

Industrial Energy Consumers of America, Paul Cicio**Document ID: BOEM-2022-0031-6368**

The commenter expressed support for oil and gas energy production, stating that domestic energy production is important for strengthening U.S. energy independence. They asserted that renewable

energy is not viable for the manufacturing sector in a number of ways. The commenter urged BOEM to develop offshore leasing in Alaska and the GOM and prioritize this Program over other leasing programs.

International Marine Contractors Association

Document ID: BOEM-2022-0031-6636

The commenter expressed concern about the possibility of no new lease sales, asserting that such a decision would result in a massive decrease in oil and gas production and exacerbate already rising energy prices. It stated that increased oil and gas production is necessary to meet American energy needs, remarked that GOM production is low in carbon intensity, and added that OCS oil and gas production is vital to U.S. energy security.

Jewish Youth Climate Movement

Document ID: BOEM-2022-0031-6556

The commenter expressed opposition to the issuance of the proposed oil and gas lease sales. The commenter expressed concern about the impact of offshore drilling on vulnerable communities, worsening climate change, and infringement on religious obligations that stipulate protection of the environment.

Joint sign-on comment from coastal business alliances across the country, Business Alliance for Protecting the Pacific Coast, Surf Industry Members Association, Business Alliance for Protecting the Atlantic Coast, and Florida Gulf Coast Business Coalition

Document ID: BOEM-2022-0031-6525

The commenter requested no new lease sales be included in the PFP, citing the need to address climate change and the risks posed to communities affected by oil spills.

Larrett Energy Services

Document ID: BOEM-2022-0031-6459

The commenter expressed support for the Program and the inclusion of the 11 proposed oil and gas lease sales, especially the 10 lease sales in the GOM region, arguing that the lease sales will facilitate economic stability and lower energy prices. The commenter discussed the benefits of oil and gas operations in the GOM, arguing that lease sales fund national conservation efforts and spur investment in the region.

Magseis Fairfield, Shawn Rice

Document ID: BOEM-2022-0031-6475

The commenter expressed support for the inclusion of all 11 lease sales in the Proposed Program. The commenter expressed concern about the possibility of scheduling no new lease sales between 2023 and 2028 and asserted that rising energy prices and reliance on foreign nations would make such a move a devastating blow to the economy. They added that offshore production accounts for a large percentage of U.S. energy production, asserted that oil and gas production in the GOM is low in carbon intensity, and discussed the importance of the geoscience industry to energy exploration and production.

Manufacture Alabama, George Clark**Document ID: BOEM-2022-0031-3707**

The commenter expressed support for all 11 proposed lease sales, noting the particular importance of the GOM lease sales to their region. They noted that oil and gas operations in the area support the local economy and provide conservation funds, while predictable oil lease sales and lowered gas prices would spur investments and protect consumers.

Marcellus Shale Coalition**Document ID: BOEM-2022-0031-6577**

The commenter urged the prompt finalization of the Program and the inclusion of the maximum number of possible lease sales. The commenter discussed the importance of energy security and independence, countering rising energy prices, and argued that including the maximum number of lease sales would allow for future flexibility in energy production.

Maxx HDD LLC, Kevin Hutcherson**Document ID: BOEM-2022-0031-6304**

The commenter expressed support for the Proposed Program and the inclusion of the 11 lease sales. The commenter argued that offshore oil and gas production currently supports many jobs and contributes significant funding to conservation projects, and further stated that issuing new leases would help bring down energy prices.

Michigan Chemistry Council**Document ID: BOEM-2022-0031-6468**

The commenter expressed support for the Program and the inclusion of the 11 proposed lease sales, stating that the lease sales would increase energy supply, send impactful signals to global markets, and lower energy prices for manufacturers and consumers.

Michigan Manufacturer's Association, Caroline Liethen**Document ID: BOEM-2022-0031-6513**

The commenter expressed support for the Proposed Program and for including the maximum number of lease sales, expressing concern about the possibility that the Program could not include any new sales. The commenter stated that offshore oil and gas production provides a significant portion of the total U.S. energy supply, supports many jobs, and contributes substantially to tax revenues. Specifically, the commenter claimed that tax revenue and revenue sharing from oil and gas production helps fund education, health care, emergency services, infrastructure, conservation projects, and levee protection, particularly in the GOM region. Finally, the commenter added that oil and gas production in the GOM is less carbon intense than elsewhere in the world.

Montana Chamber of Commerce, Todd O'Hair**Document ID: BOEM-2022-0031-6448**

The commenter expressed support for the Proposed Program and the inclusion of the 11 lease sales. The commenter argued that expanding offshore drilling would help lower energy costs for businesses, and further claimed that businesses' overhead costs, employee retention, and competitive pricing are currently being negatively affected by short-sighted energy policies.

Montana Farm Bureau Federation**Document ID: BOEM-2022-0031-6573**

The commenter expressed support for the inclusion of the 11 proposed lease sales in the PFP, stating that this will reduce energy prices for farmers and consumers.

National Association of Manufacturers, Rachel Jones**Document ID: BOEM-2022-0031-6361**

The commenter expressed concern that the Proposed Program leaves open the possibility for no new lease sales to be held between 2023 and 2028 and urged BOEM to include all 11 lease sales in the PFP. The commenter asserted that domestic energy production can help keep energy prices down and help manufacturers compete in the global marketplace, and that continued production will increase economic and energy security.

NC Chamber of Commerce, Gary Salamido**Document ID: BOEM-2022-0031-6293**

The commenter expressed support for the Proposed Program and for including the maximum number of lease sales, expressing concern about the possibility that the Program could not include any new sales. The commenter stated that offshore oil and gas production provides a significant portion of the total U.S. energy supply, supports many jobs, and contributes substantially to tax revenues. Specifically, the commenter claimed that tax revenue and revenue sharing from oil and gas production helps fund education, health care, emergency services, infrastructure, conservation projects, and levee protection, particularly in the GOM region. Finally, the commenter added that oil and gas production in the GOM is less carbon intense than elsewhere in the world.

New Jersey Business & Industry Association**Document ID: BOEM-2022-0031-6508**

The commenter urged the approval of the Program and the inclusion of the maximum number of lease sales. The commenter argued that decarbonization should be balanced with maintenance of economic growth and stressed the need for domestic oil and gas production and job growth in the energy sector.

Nonlinear Seismic Imaging Inc., Sofia Khan**Document ID: BOEM-2022-0031-6294**

The commenter expressed support for issuing new offshore oil and gas leases, arguing that expanding the domestic U.S. energy supply is necessary for the country's economic and national security, and that more time is needed for the technological and infrastructure development necessary to transition the country's energy system to alternative, renewable energy sources. The commenter further argued that maintaining a strong domestic supply of oil helps maintain the international political position of the United States, protecting it from conflict and putting it in a better position if conflict breaks out.

Ohio Chamber of Commerce, Rick Carfagna**Document ID: BOEM-2022-0031-6325**

The commenter expressed support for the Proposed Program and asked for the maximum number of offshore lease sales. They stated that decreased energy supply and increased energy costs caused by global unrest have hurt Ohio residents and businesses and necessitated a greater focus on American

energy production. The commenter added a discussion of revenue- and job-based benefits of oil and gas production in Ohio and asked that BOEM finalize a 5-year Program for new lease sales.

Ohio Energy and Convenience Association

Document ID: BOEM-2022-0031-6497

The commenter expressed support for the Program and the inclusion of the 11 proposed lease sales, stating that the oil and gas lease sales will increase energy supply and reduce energy prices for families and businesses.

Ohio Energy and Convenience Association, Alex Boehnke

Document ID: BOEM-2022-0031-6522

The commenter expressed support for the Proposed Program and for including the maximum number of lease sales, expressing concern about the possibility that the Program could not include any new sales. The commenter stated that offshore oil and gas production provides a significant portion of the total U.S. energy supply, supports many jobs, and contributes substantially to tax revenues. Specifically, the commenter claimed that tax revenue and revenue sharing from oil and gas production helps fund education, health care, emergency services, infrastructure, conservation projects, and levee protection, particularly in the GOM region. Finally, the commenter added that oil and gas production in the GOM is less carbon intense than elsewhere in the world.

Ohio Gas Association, Jimmy Stewart

Document ID: BOEM-2022-0031-6621

The commenter asked that the Proposed Program be finalized with the maximum number of lease sales. They cited statements from the White House in March 2022 that committed to international partners and the European Union a certain level of production of oil and natural gas to meet rising demand.

Pennsylvania Energy Infrastructure Alliance

Document ID: BOEM-2022-0031-6460

The commenter expressed support for the Proposed Program and the inclusion of the 11 proposed oil and gas lease sales, stating that the lease sales will increase global energy supply and reduce energy prices for families and businesses. The commenter discussed rising energy prices and argued that that conflict in Ukraine demonstrates the importance of energy security.

Pennsylvania Food Merchants Association

Document ID: BOEM-2022-0031-6560

The commenter expressed support for including the maximum number of offshore lease sales in the Proposed Program, arguing for the need to reduce dependency on external sources of fuel and stating that oil and gas would be necessary for the foreseeable future.

Seattle Aquarium

Document ID: BOEM-2022-0031-6494

The commenter expressed support for a No Action Alternative and the inclusion of no new lease sales or offshore drilling in the plan. The commenter expressed concern about the climate crisis and the

potential impacts of oil spills on marine environments and communities, arguing that the proposed new lease sales contradict national climate policy goals.

Ship Island Excursions, Louis Skrmetta

Document ID: BOEM-2022-0031-6372

The commenter did not explicitly express opposition to or support for the Proposed Program but requested that oil leases and drilling rigs be located 12 miles south of Ship Island to avoid navigation and viewshed concerns. They asked that the Program consider impacts of oil disasters and negative economic effects on the recreation and tourism industries. The commenter expressed support for offshore wind generation, but also asked that leases for wind generation be located 12 miles south of Ship Island.

South Carolina Trucking Association, Inc., J. Richards Todd

Document ID: BOEM-2022-0031-6305

The commenter expressed support for the Proposed Program and for issuing new offshore oil and gas leases, arguing that doing so would increase the U.S. supply of energy and bring down fuel costs, which have severely impacted the trucking industry.

Tennessee Chamber of Commerce & Industry, Bradley Jackson

Document ID: BOEM-2022-0031-6554

The commenter expressed support for the Proposed Program and for including the maximum number of lease sales, expressing concern about the possibility that the Program could not include any new sales. The commenter argued that issuing new leases would help bring down costs for consumers, support good-paying jobs, and bolster energy security. The commenter added that oil and gas produced in the United States is done so under stricter environmental standards than elsewhere in the world.

Texas Cast Metals Association

Document ID: BOEM-2022-0031-6451

The commenter expressed support for the Program and the inclusion of the 11 proposed oil and gas lease sales. The commenter discussed the impacts that rising material and energy costs have had on their industry and suggested that the lease sales would increase the affordable energy supply and send impactful signals to global energy markets.

The Fertilizer Institute

Document ID: BOEM-2022-0031-6505

The commenter expressed support for the Program and the inclusion of the 11 proposed lease sales. The commenter stated that an affordable supply of natural gas is necessary to support domestic fertilization production and that the Program will reduce energy prices for producers and consumers.

U.S. Chamber of Commerce – Global Energy Institute

Document ID: BOEM-2022-0031-6365

The commenter called for an end to the ban on oil and gas exploration, asked that cancelled lease sales be restored, and advocated for a Program with the maximum possible number of lease sales. They added that high energy prices are a concern for businesses and people throughout the U.S., and that

increased domestic production would bring relief to businesses and households and promote energy security.

Utah Petroleum Association

Document ID: BOEM-2022-0031-6521

The commenter expressed support for the Proposed Program and the inclusion of the 11 proposed lease sales. The commenter argued that oil and gas lease sales will increase energy supply, reduce energy prices, create jobs, and support conservation efforts.

Utica Energy Alliance

Document ID: BOEM-2022-0031-6474

The commenter expressed support for the Proposed Program and the inclusion of the 11 proposed lease sales. The commenter argued that the proposed lease sales would increase energy supply and reduce energy prices for consumers and businesses.

WB Pipeline

Document ID: BOEM-2022-0031-6452

The commenter expressed support for the Proposed Program and the inclusion of the 11 proposed oil and gas lease sales, especially the 10 lease sales in the GOM region, arguing that the lease sales will facilitate economic stability and lower energy prices. The commenter discussed the benefits of oil and gas operations in the GOM, arguing that lease sales fund national conservation efforts and spur investment in the region.

West Virginia Chamber of Commerce, Stephen Roberts

Document ID: BOEM-2022-0031-6559

The commenter expressed support for the Proposed Program and for including the maximum number of lease sales, expressing concern about the possibility that the Program could not include any new sales. The commenter argued that issuing new leases would help bring down costs for consumers, support good-paying jobs, and bolster energy security. The commenter added that oil and gas produced in the United States is produced under stricter environmental standards than elsewhere in the world.

West Virginia Manufacturers Association, Rebecca McPhail

Document ID: BOEM-2022-0031-6244

The commenter expressed support for including all 11 lease sales in the Proposed Program and noted that increasing the supply of affordable and reliable U.S. energy resources would send a message to global markets and ease the current inflation of energy costs and benefit the overall U.S. economy.

Willmar Lakes Area Chamber of Commerce

Document ID: BOEM-2022-0031-6449

The commenter expressed support for the Program and new oil and gas lease sales. The commenter discussed rising energy and fuel prices and suggested that new lease sales would reduce energy prices for consumers and businesses.

Wisconsin Manufacturers & Commerce, Craig Summerfield**Document ID: BOEM-2022-0031-6673**

The commenter expressed support for new lease sales in the Proposed Program, noting both the current high prices for transportation fuels and the current high levels of inflation. They asserted that production from new lease sales would lead to lower prices for businesses and consumers.

A.6.2 Cook Inlet-specific Commenters**Alaska Jig Association, Darius Kasprzak****Document ID: BOEM-2022-0031-6626**

The commenter expressed their opposition to the proposed lease sale in Lower Cook Inlet. They recalled the devastation of the Exxon Valdez oil spill and advocated for a status quo option, meaning no new oil or gas drilling in Cook Inlet.

A.6.3 Gulf of Mexico-specific Commenters**Innisfree Hotels****Document ID: BOEM-2022-0031-6576**

The commenter discussed the impact of the Deepwater Horizon oil spill's impact on tourism in Florida and requested that these impacts be considered with regards to oil and gas development in the GOM region.

Jacksonville Axemen Rugby Team, Andrew Slover**Document ID: BOEM-2022-0031-3704**

The commenter requested that oil leasing resume immediately in the GOM Planning Area, noting that such action would send a strong message to global oil markets. The commenter discussed U.S. energy security concerns and urged diversification of the U.S. energy portfolio, commenting on increased fuel prices, benefits to families and small business, and environmental progress.

Mississippi Economic Council, Scott Waller**Document ID: BOEM-2022-0031-4481**

The commenter expressed support for the Proposed Program's 10 lease sales in the GOM Planning Area and asked for quick action to alleviate energy burdens. The commenter noted that high energy costs are weighing on business revenues nationwide and particularly impacting small, medium, and minority-owned businesses.

Ohio Cast Metals Association**Document ID: BOEM-2022-0031-6471**

The commenter urged that the current Administration do more to lower energy prices by initiating lease sales in the GOM. The commenter discussed the impacts of rising energy prices on its industry and stated that lease sales in the GOM would contribute to lower energy prices for manufacturers and consumers by signaling to global markets.

Rio Grande Foundation

Document ID: BOEM-2022-0031-6557

The commenter urged the prompt finalization of the plan and the inclusion of the 10 proposed lease sales in the GOM region. The commenter suggested that the Program would keep energy prices affordable for consumers and businesses and further argued that oil sourced from the GOM regions is comparably less carbon-intensive, protects consumers from global oil market instability, and funds conservation efforts.

A.7 State-level Elected Officials

Table A-8: List of Commenters from State-level Elected Officials

Alabama State Senate - Senator Gerald Allen
Arizona Legislature
Connecticut General Assembly 146th District, David Michel
Connecticut General Assembly's 146th House district, David Michel
Florida House of Representatives - District 16, Jason Fischer
Florida House of Representatives - Representative Clay Yarborough
Louisiana State Senator Michelle Fontenot
Louisiana State Senator Robert Mills
Member of the New York Assembly, District 102, Chris Tague
Member of the New York Assembly, District 118, Robert Smullen
Member of the New York Assembly, District 97, Mike Lawler
Member of the New York Assembly, District 116 Mark Walczyk
Mid-Atlantic Regional Council on the Ocean
Mississippi House of Representatives
New York State Assembly, Philip Palmesano, et al.
Ohio House of Representatives Representative Hillyer
Pennsylvania State Senators, Gene Yaw, Elder Vogel, and Scott Hutchinson
Southern States Energy Board
Texas Caucus on Climate, Environment & Energy
Texas Freedom Caucus - TX State Reps. Middleton, Schaefer, Krause, Cain, Gates, Harrison, Shaheen, Swanson, Toth, Vasut
The Energy Council
The Office of Texas House Speaker Dade Phelan
West Virginia Route 2 I-69 Authority

A.7.1 Proposed Program-wide Commenters

Alabama, State Senate, Senator Gerald Allen

Document ID: BOEM-2022-0031-6501

A state senator expressed support for the Proposed Program and its 11 lease sales. He asserted that oil and gas leasing in the GOM supports hundreds of thousands of jobs and billions in GDP and added that offshore leasing is vital to supporting critical conservation projects along the coast of Alabama. The commenter stated that domestic resources should be developed to keep energy prices—which have

been rising since the pause on oil and gas leasing in January 2021—down and to provide economic certainty to the United States.

Connecticut, General Assembly’s 146th House district, David Michel

Document ID: BOEM-2022-0031-6043

A state legislator opposed the Proposed Program and asked that the PFP end new leasing for offshore drilling. The commenter expressed concerns that the Proposed Program would add to the effects of climate change, and not do much to mitigate high gas prices. He asserted that a focus on offshore wind could bring jobs and revenue to the state of Connecticut without some of the negative impacts of oil and gas drilling.

Connecticut, General Assembly 146th District, David Michel

Document ID: BOEM-2022-0031-6527

A state legislator opposed the Proposed Program, citing the devastating effects of climate change on the state of Connecticut and asserting that more offshore drilling would accelerate climate-related damages. He added that oil and gas prices have spiked, but that new lease sales would not help lower them, as oil companies already have millions of acres of stockpiled, unused leases. The commenter added that offshore wind could bring millions of dollars and jobs to Connecticut and could be least damaging to the marine environment and asked that President Biden end new lease sales for offshore drilling.

Louisiana, State Senator Robert Mills

Document ID: BOEM-2022-0031-6506

A state senator expressed support for the Proposed Program and its 11 lease sales. He asserted that oil and gas leasing in the GOM supports hundreds of thousands of jobs and billions in GDP and added that offshore leasing is vital to supporting critical conservation projects along the coast of Louisiana. The commenter stated that domestic resources should be developed to keep energy prices—which have been rising since the pause on oil and gas leasing in January 2021—down and to provide economic certainty to the United States.

Member of the New York Assembly, District 102, Chris Tague

Document ID: BOEM-2022-0031-6583

A New York state legislator expressed support for the Proposed Program and stated the Program would help meet domestic energy needs and generate revenue with affordable domestic resources.

Member of the New York Assembly, District 118, Robert Smullen

Document ID: BOEM-2022-0031-151891

A group of New York state legislators expressed support for the Proposed Program, especially in the face of increased focus on renewable energy sources in New York State. They stated that energy prices have increased nationwide after offshore lease sales were paused in January 2021 and asserted that the Proposed Program would help the United States meet its energy needs, especially in the Eastern U.S., and generate revenue and affordable domestic resources.

Member of the New York Assembly, District 97, Mike Lawler**Document ID: BOEM-2022-0031-152001**

A New York state legislator expressed support for the Proposed Program and its 11 lease sales. He stated that energy prices have increased nationwide after offshore lease sales were paused in January 2021 and asserted that the Proposed Program would help the United States meet its energy needs, especially in the Eastern U.S., and generate revenue and affordable domestic resources.

Mid-Atlantic Regional Council on the Ocean, Avalon Bristow**Document ID: BOEM-2022-0031-6386**

A group of council members expressed their opposition to oil and gas leasing and development, specifically in the North and Mid-Atlantic regions. They asserted that the Proposed Program is continuing to analyze the potential for leasing off the Atlantic coast as a remnant of the 2019–2024 Proposed Program and stated that the DPEIS is lacking information on resource-specific impacts, state and local interests, and conflicts with offshore wind development. The commenters included a discussion of conflicting uses of the Mid-Atlantic, including habitat areas and fishing/recreation use, and expressed their support for BOEM’s focus on diverse energy sources and clean energy development.

Mississippi, House of Representatives, Brent Powell**Document ID: BOEM-2022-0031-4454**

A state representative expressed support for the Proposed Program and its 11 lease sales. He asserted that oil and gas leasing in the GOM supports hundreds of thousands of jobs and billions in GDP and added that offshore leasing is vital to supporting critical conservation projects along the coast of Mississippi. The commenter stated that domestic resources should be developed to keep energy prices down and provide economic certainty to the United States.

New York, State Assembly, Philip Palmesano, Chris Tague, Robert Smullen**Document ID: BOEM-2022-0031-6492**

A group of New York state legislators expressed support for the Proposed Program, especially in the face of increased focus on renewable energy sources in New York State. They stated that energy prices have increased nationwide after offshore lease sales were paused in January 2021 and asserted that the Proposed Program would help the United States meet its energy needs, especially in the Eastern U.S., and generate revenue and affordable domestic resources.

New York State Assembly, Mark Walczyk**Document ID: BOEM-2022-0031-6309**

A state legislator expressed support for the Proposed Program. He stated that energy prices have increased, and the Program would foster the production of energy within our own borders. He stated that the Program would help the United States meet its energy needs and would generate increased revenue nationwide.

Ohio, House of Representatives, Representative Brett Hillyer**Document ID: BOEM-2022-0031-6478**

A state representative expressed support for the Proposed Program and its 11 lease sales. He asserted that the drastic increase in energy prices was due to the oil and gas leasing moratorium from January

2021, and that these high energy prices will cripple the U.S. economy. The commenter added that the United States has a number of domestic resources that could be developed to provide more economic certainty for the State of Ohio.

Pennsylvania State Senators, Gene Yaw, Elder Vogel, and Scott Hutchinson

Document ID: BOEM-2022-0031-6315

A group of state representatives expressed support for all 11 lease sales in the Proposed Program. They asserted that America needs a safe and reliable energy supply of oil and gas production and that no lease sales would be devastating to the U.S. economy. The commenters discussed the level of oil and natural gas production, jobs, and government revenue supported by a 5-year leasing Program in the GOM and added that limiting U.S. production would hurt global GHG emissions progress.

Texas, Caucus on Climate, Environment & Energy, Patricia Zavala

Document ID: BOEM-2022-0031-6330

A group of state elected officials expressed concerns about the proposed oil and gas leasing Program. They discussed various negative impacts of climate change as a result of fossil fuel development and asserted that carbon emissions need to decrease to mitigate the crisis' worst effects. The commenters added that diversifying Texas' energy portfolio by focusing more on wind and solar energy will continue to decrease energy costs in Texas while reducing fossil fuel consumption.

Texas, Freedom Caucus, Mayes Middleton, Matt Schaefer, Matt Krause, Briscoe Cain, Gary Gates, Brian Harrison, Matt Shaheen, Valoree Swanson, Steve Toth, Cody Vasut

Document ID: BOEM-2022-0031-6339

A group of state elected officials expressed support for the Proposed Program and its 11 proposed lease sales. They asserted that rising energy prices could be avoided by finalizing the Proposed Program and stated that including the 11 lease sales would open hundreds of thousands of jobs in Texas and the United States. The commenters added that the leases would decrease U.S. reliance on foreign nations for energy sources.

The Energy Council, Tara Shaw

Document ID: BOEM-2022-0031-1146

The Energy Council expressed support for the Proposed Program.

West Virginia, West Virginia Route 2 I-69 Authority, Robert Miller

Document ID: BOEM-2022-0031-6461

A state authority expressed support for all 11 lease sales in the Proposed Program. It added that current high fuel prices make it more difficult for businesses to ship and receive goods and generally limit the market for goods. The commenter asserted that affordable, reliable energy is more important than ever, and that oil and gas production from the GOM plays an important role in the production of energy and in powering the economy.

A.7.2 Cook Inlet-specific Commenters

No comments from state elected officials specifically discussed the Cook Inlet.

A.7.3 Gulf of Mexico-specific Commenters

Arizona, Arizona Legislature, Sine Kerr

Document ID: BOEM-2022-0031-6496

A state legislator encouraged BOEM to move forward with an oil and natural gas leasing Program in the GOM. The commenter expressed concern with BOEM's option of moving forward with no additional sales, stating that it would have a massive negative impact on oil production and energy costs. The commenter asserted that oil and natural gas produced in the GOM has low carbon intensity and is protected by strong environmental regulations.

Florida, House of Representatives, Jason Fischer

Document ID: BOEM-2022-0031-4452

A state representative urged support for the Proposed Program and asked for the resumption of oil and gas lease sales in the western and central GOM. He asserted that lease sales would bring down rising gas prices and increase global energy supply.

Florida, House of Representatives, Representative Clay Yarborough

Document ID: BOEM-2022-0031-6500

A state representative asked that the Biden Administration encourage more oil and gas lease sales in the western and central GOM to lower the cost of energy, increase global energy supply, and create more jobs. He asserted that energy prices have risen since offshore oil and gas lease sales were halted in January 2021 and urged the Biden Administration to end the moratorium.

Louisiana, House of Representatives, Michelle Fontenot

Document ID: BOEM-2022-0031-1148

A state legislature, in a concurrent resolution passed during their 2022 regular session, urged the President to halt any Federal actions resulting in the delay or cancellation of offshore oil and natural gas lease sales and asked that the Administration comply with the resolution of Lease Sale 257 and finalize a 5-year plan for oil and gas leasing. It added that the GOM accounts for 17% of U.S. crude oil and 5% of natural gas and has generated more than a billion dollars from offshore leasing, and that oil and gas leasing in general has supported jobs and GDP growth in Louisiana. The commenter asserted that there is no indication that BOEM is working on another 5-year plan for oil and gas leasing, and, given that Louisiana has lost millions of dollars due to cancelled lease sales in 2021, BOEM and the Biden Administration should focus all efforts on mandated lease sales in the GOM.

Southern States Energy Board, Joel Carter, Jr.

Document ID: BOEM-2022-0031-6518

A group of state legislators expressed their support for the Proposed Program in the form of a Policy Resolution adopted on August 29, 2022. They asserted that the GOM is a critical part of the United States' crude oil and natural gas supply and added that inflation and energy prices are at historic highs and are increasingly harder on energy consumers, in part due to BOEM cancelling three sales in the GOM and Alaska in May 2022. The commenter urged BOEM to complete the 5-year plan for oil and gas leasing, and in the absence of such a plan, urged Congress to pass legislation mandating two region-wide sales to be held annually in the GOM.

Texas, The Office of Texas House Speaker Dade Phelan

Document ID: BOEM-2022-0031-6569

A state representative expressed support for the Proposed Program. He asserted that new oil and gas operations in the GOM would increase economic stability and help keep rising energy prices down through less reliance on foreign energy. The commenter added that oil and gas leasing is an important contributor towards conservation funds along the GOM coast.

A.8 Members of Congress

Table A-9: List of Commenters from Members of Congress

21 Members of Congress
130 Members of Congress
4 Members of Congress – Vincent Gonzalez, Sylvia R. Garci, Henry Vueller, and Lizzie Fletcher

A.8.1 Proposed Program-wide Commenters

21 Members of Congress, Bill Cassidy, et al.

Document ID: BOEM-2022-0031-6665

A group of 21 U.S. Senators expressed concern about the potential of no new leases being issued in the PFP, arguing that this could lead to an increase in emissions due to overseas imports. They further stated that they were monitoring efforts of the current Administration to halt lease sales or discourage bidding and argued that the best way to ease burdens related to energy is to increase supply domestically through oil and gas leasing.

130 Members of Congress, Steve Scalise, et al.

Document ID: BOEM-2022-0031-6667

A group of 130 Members of Congress expressed their support for the Proposed Program, as well as their concern with the Biden Administration’s shutting down of oil and gas production. They asserted that high energy prices, which are hurting low- and middle-income families the most, are in part due to underinvestment in reliable oil and natural gas production. The commenter added that BOEM delayed the release of a 5-year plan for offshore leasing and urged the PFP to include at a minimum the 11 lease areas in the GOM and Cook Inlet to reduce energy costs for the American people.

A.8.2 Cook Inlet-specific Commenters

No Members of Congress specifically provided comment on the Cook Inlet.

A.8.3 Gulf of Mexico-specific Commenters

Four Members of Congress, Vincent Gonzales, et al.

Document ID: BOEM-2022-0031-6666

Four Members of Congress expressed support for the inclusion in the PFP of the maximum number of 10 GOM lease sales. The commenters stated that oil and gas development would alleviate hardships on families and businesses and bolster national security by reducing dependence on foreign oil and gas.

The commenters further stated that the lease sales would generate revenue and jobs, stabilize energy markets, and stabilize the energy grid.

A.9 Tribes and Tribal Organizations

Table A-10: List of Commenters from Tribes and Tribal Organizations

Carrizo Comecrudo Tribe of Texas
Catawba Indian Nation
Indigenous Peoples of the Coastal Bend
Kenaitze Indian Tribe
Society of Native Nations

Note: A comment received via Red Willow Offshore, LLC, a subsidiary of the Southern Ute Indian Tribe, is captured in the Energy Exploration & Production Industry and Associations section of this appendix (BOEM-2022-0031-6488).

A.9.1 Proposed Program-wide Commenters

Catawba Indian Nation, Wenonah G. Haire

Document ID: BOEM-2022-0031-6287

The commenter stated that its members did not have immediate concerns regarding traditional cultural properties, sacred sites, or archaeological sites within the proposed project areas but requested notification should Native American artifacts or human remains be located during the ground disturbance phase of the project.

Indigenous Peoples of the Coastal Bend, Deondra Sanchez

Document ID: BOEM-2022-0031-187158

The commenter expressed opposition to the authorization of new lease sales in the GOM, expressing concern about the threat that oil and gas development poses to coastal communities through the exacerbation of climate change, oil spills, and pollution. The commenter said that oil and gas drilling will harm sacred animals and waters.

Indigenous Peoples of the Coastal Bend, Dorothy Peña

Document ID: BOEM-2022-0031-187158

The commenter opposed new lease sales that could threaten Tribal communities' waters. The commenter urged a transition to justly sourced renewable energy.

Society of Native Nations, Frankie Orona

Document ID: BOEM-2022-0031-6523

The commenter wrote in opposition to the authorization of new lease sales on the OCS, expressing concern about the threat that oil and gas development pose to Tribal homelands. The commenter discussed public health risks related to environmental degradation and risks posed to Indigenous communities due to the location of oil and gas projects near Indigenous lands. The commenter additionally called for the transition to clean energy and away from dependence on oil and gas.

A.9.2 Cook Inlet Commenters

Kenaitze Indian Tribe, Bernadine Atchison, Ronette Stanton

Document ID: BOEM-2022-0031-6489

The commenters submitted a resolution stating their opposition to oil and gas leasing in the Lower Cook Inlet and calling for the withdrawal of the Cook Inlet Planning Area from future lease plans. The commenters discussed the importance and cultural significance of the Lower Cook Inlet, discussed the impacts of previous oil spills in the region, and expressed concern about the potential for oil and gas development to pollute the area and disrupt the natural resource and tourism economy. The commenters further expressed their support for clean energy development.

A.9.3 Gulf of Mexico-specific Commenters

Carrizo Comecrudo Tribe of Texas

Document ID: BOEM-2022-0031-6523

The commenter expressed opposition to offshore fossil fuel export terminal project development in the GOM. The commenter discussed issues of colonialism, climate change, and disparate impact on marginalized communities, as well as the potential for environmental degradation in the event of an oil spill. The commenter further called for more strict regulation of offshore fossil fuel projects and the establishment of adequate disaster planning.

A.10 Form Letter Campaigns

[Table A-11](#) provides a summary of a representative example of each form letter campaign received by BOEM.

Table A-11: Summary of a Representative Example of Each Form Letter Campaign

Form Letter Document ID	Organization/ Commenter Name	Total Submissions in Campaign	Summary of Submission Letter
BOEM-2022-0031-6664	350.org	9,455	<ul style="list-style-type: none"> • Opposed offshore drilling projects. • Stated that new fossil fuels lease sales were incompatible with climate goals and environmental justice.
BOEM-2022-0031-6536	Ronald Adams	1,671	<ul style="list-style-type: none"> • Suggested that new Federal leasing would lower energy costs.
BOEM-2022-0031-6657	Alaska Marine Conservation Council	94	<ul style="list-style-type: none"> • Opposed offshore oil and gas leasing in Lower Cook Inlet. • Expressed concern regarding health of fisheries and marine ecosystems in the region.
BOEM-2022-0031-6652	Alaska Wilderness League	7,821	<ul style="list-style-type: none"> • Opposed offshore lease sales in, and requested the removal of, the Cook Inlet from future oil and gas development. • Expressed concern about impacts to local economy and endangered beluga whales.
BOEM-2022-0031-6658	Anonymous	31,602	<ul style="list-style-type: none"> • Expressed support for the inclusion of the maximum number of proposed lease sales. • Stated that oil and gas leases would reduce gas costs.
BOEM-2022-0031-6663	Anonymous	51,916	<ul style="list-style-type: none"> • Supported the inclusion of 11 proposed lease sales. • Stated that lease sales would lower gas prices, support jobs, and enhance energy independence.
BOEM-2022-0031-6662	Anonymous	17,095	<ul style="list-style-type: none"> • Supported the inclusion of 11 proposed lease sales in PFP. • Suggested that lease sales would support jobs and reduce the costs of energy and other goods.
BOEM-2022-0031-6661	Anonymous	12,810	<ul style="list-style-type: none"> • Supported the inclusion of 11 proposed lease sales in the PFP. • Suggested that oil lease sales would reduce the prices of gas and other goods.
BOEM-2022-0031-6660	Anonymous	23,350	<ul style="list-style-type: none"> • Supported inclusion of 11 proposed lease sales in PFP. • Suggested that oil and gas lease sales would support jobs and reduce energy prices.
BOEM-2022-0031-6605	Anonymous	9,143	<ul style="list-style-type: none"> • Opposed new offshore drilling lease sales. • Expressed concern about the impact of oil and gas drilling on vulnerable communities and climate goals.
BOEM-2022-0031-6607	Anonymous	9,310	<ul style="list-style-type: none"> • Opposed new leases, suggesting that lease sales undermine the current Administration's carbon emission reduction goals.
BOEM-2022-0031-6610	Anonymous	9,210	<ul style="list-style-type: none"> • Suggested opposition to the Proposed Program and expressed concern about oil and gas development contributing to environmental degradation.

Form Letter Document ID	Organization/ Commenter Name	Total Submissions in Campaign	Summary of Submission Letter
BOEM-2022-0031-6624	Anonymous	9,187	<ul style="list-style-type: none"> • Opposed the Proposed Program and stated that new oil and gas lease sales conflict with the current Administration’s professed climate and environmental justice commitments.
BOEM-2022-0031-6625	Anonymous	9,326	<ul style="list-style-type: none"> • Expressed opposition to the Proposed Program and expressed concern about environmental impacts. • Stated that the Proposed Program would have little or no impact on gas prices, jobs, or the economy.
BOEM-2022-0031-6659	Anonymous	44,831	<ul style="list-style-type: none"> • Supported the inclusion of all 11 proposed oil and gas lease sales. • Stated that domestic oil and gas production would protect national security interests and reduce gas prices.
BOEM-2022-0031-6285	Azul et al.,	60	<ul style="list-style-type: none"> • Opposed new offshore oil and gas lease sales and recommended the No Action Alternative. • Expressed concern about climate change and drilling impacts on vulnerable communities and the need to transition to clean energy. • Stated that new lease sales are unnecessary to meet future energy needs and that energy prices would not be reduced in the near term.
BOEM-2022-0031-2390	James Barton	13,034	<ul style="list-style-type: none"> • Expressed support for offshore oil and gas leasing. • Suggested that not approving lease sales would have adverse impacts on the economy.
BOEM-2022-0031-3578	Roland Bates	5,976	<ul style="list-style-type: none"> • Opposed the issuance of new oil and gas lease sales in the PFP. • Stated that new lease sales would not reduce gas prices in the near term and may hamper efforts to address climate change and harm communities.
BOEM-2022-0031-6235	Laura Benge	156	<ul style="list-style-type: none"> • Expressed support for inclusion of all 11 lease sales in the PFP. • Stated the importance of affordable and reliable energy to deal with global and economic crises.
BOEM-2022-0031-4653	Mon Bertolucci	1,044	<ul style="list-style-type: none"> • Stated the need to pursue offshore leasing to maintain global competitiveness, improve the economy, improve national security, and address high energy prices.
BOEM-2022-0031-6545	Elizabeth Brooks	10	<ul style="list-style-type: none"> • Supported the inclusion of all 10 proposed lease sales in the GOM region. • Argued that sourcing energy from the GOM is necessary to transition to clean energy.
BOEM-2022-0031-6611	Kristi Bulliard	155	<ul style="list-style-type: none"> • Expressed support for oil and gas lease sales in the GOM region. • Argued that development in the GOM region is preferable to alternatives due to relatively low carbon intensity. • Suggested that domestic energy development would reduce energy prices, enhance national security and energy independence, and support jobs.

Form Letter Document ID	Organization/ Commenter Name	Total Submissions in Campaign	Summary of Submission Letter
BOEM-2022-0031-6538	Alexis Byfuglin	1,789	<ul style="list-style-type: none"> Stated that the permitting process should not be used to block exploration and development and that domestic oil and gas production would lower fuel prices.
BOEM-2022-0031-6542	Elias Castro	1,675	<ul style="list-style-type: none"> Expressed support for domestic energy production through Federal leasing to lower food and energy costs.
BOEM-2022-0031-154890	The Center for Biological Diversity	21,154	<ul style="list-style-type: none"> Opposed offshore oil and gas lease sales. Expressed concern about climate change impacts and fossil fuel dependency.
BOEM-2022-0031-6651	The Center for Biological Diversity, et al.	113	<ul style="list-style-type: none"> Opposed issuance of new oil and gas lease sales. Stated that no new leasing is consistent with the OCS Lands Act and mentioned climate change impacts and goals, risks of oil spills, and environmental degradation in their reasoning.
BOEM-2022-0031-6316	Chambers County Commissioner Mark Tice	11	<ul style="list-style-type: none"> Expressed support for oil and gas production in the GOM region. Stated that domestic production can lower energy prices and that GOM oil and gas production produces less GHG than alternatives.
BOEM-2022-0031-6537	Daniel Chiofalo	1,714	<ul style="list-style-type: none"> Suggested that new Federal leasing would lower energy costs.
BOEM-2022-0031-6242	City of Casselberry Vice Mayor John Miller	22	<ul style="list-style-type: none"> Supported Proposed Program. Stated that more oil and gas lease sales would lower energy costs.
BOEM-2022-0031-6644	The Climate Reality Project	6,852	<ul style="list-style-type: none"> Expressed opposition to new oil and gas lease sales. Argued that new offshore oil and gas development would contribute to climate change, harm public health, and pollute the air.
BOEM-2022-0031-6568	Margaret Conlon	42	<ul style="list-style-type: none"> Opposed new oil and gas leasing. Expressed concern that new lease sales are contrary to current Administration's professed climate goals.
BOEM-2022-0031-6654	Cook Inletkeeper	979	<ul style="list-style-type: none"> Opposed offshore oil and gas lease sales in the Cook Inlet. Expressed concern about climate change and impacts of drilling activities in the region.
BOEM-2022-0031-6655	Cook Inletkeeper, Satchel Pondolfino	29	<ul style="list-style-type: none"> Opposed to proposed lease sales in Cook Inlet. Expressed concern about risks posed to commercial fishing and local businesses.
BOEM-2022-0031-6563	Margaret Donnelly	42	<ul style="list-style-type: none"> Opposed new offshore oil and gas leasing. Expressed concern about future fossil fuel development delaying transition to clean energy.
BOEM-2022-0031-6650	Environment America	26,921	<ul style="list-style-type: none"> Urged no new lease sales. Expressed concern about risks posed by offshore drilling to sea animals and ocean ecosystems.
BOEM-2022-0031-6643	Environment America	27	<ul style="list-style-type: none"> Opposed new oil and gas lease sales and requested BOEM end offshore drilling leasing in the GOM and all U.S. oceans

Form Letter Document ID	Organization/ Commenter Name	Total Submissions in Campaign	Summary of Submission Letter
			<ul style="list-style-type: none"> Expressed concern about environmental damage and risk of oil spills.
BOEM-2022-0031-6564	Florida Offshore Drilling Coalition et al.	34	<ul style="list-style-type: none"> Opposed new oil and gas lease sales. Argued that development in the GOM would harm marine ecosystems, vulnerable coastal communities, and local industries. Expressed concern about environmental impacts and effects of climate change.
BOEM-2022-0031-6647	Friends of the Earth	29,214	<ul style="list-style-type: none"> Urged no new oil and gas lease sales in the PFP. Stated that public sentiment does not favor offshore drilling. Expressed concerns about the effects of offshore oil and gas development and climate change on vulnerable species, marine ecosystems, and coastal communities.
BOEM-2022-0031-6646	Friends of the Earth U.S.	192	<ul style="list-style-type: none"> Call for no new lease sales in the Proposed Program. Expressed concern about harm to their communities, environmental degradation, and contributing to climate change. Discussed the impacts of previous oil spills, the potential harms to Indigenous communities, and the public health effects of industrial activities on communities near where they are located.
BOEM-2022-0031-6622	Adalberto Gamboa	6,144	<ul style="list-style-type: none"> Supported the inclusion of all 11 proposed lease sales in the PFP.
BOEM-2022-0031-6543	Gaylon George	1,650	<ul style="list-style-type: none"> Argued for the need to reduce energy costs through Federal leasing.
BOEM-2022-0031-6546	Mitch Guinn	1,155	<ul style="list-style-type: none"> Expressed support for offshore oil and gas lease sales. Stated the necessity of using domestic gas and oil to transition to clean energy and argued that lease sales would support jobs, generate revenue, and have lower relative carbon emissions compared to alternatives.
BOEM-2022-0031-1769	Dawn Hadsell	362	<ul style="list-style-type: none"> Opposed new oil and gas lease sales. Expressed concern about the effects of oil extraction on surrounding communities. Stated that oil and gas extraction are unnecessary to meet domestic energy needs and that renewables should be used instead.
BOEM-2022-0031-6612	Alma Hamblen	742	<ul style="list-style-type: none"> Expressed support for 11 proposed oil and gas lease sales. Stated that new lease sales would aid in energy independence, increase domestic oil supply, reduce energy prices, and help supply chain.
BOEM-2022-0031-6565	Sarah Hancock	49	<ul style="list-style-type: none"> Opposed new oil and gas leasing. Expressed concern about fossil fuel development delaying transition to clean energy.
BOEM-2022-0031-1768	Sarah Harrison	2,798	<ul style="list-style-type: none"> Opposed new offshore drilling lease sales.

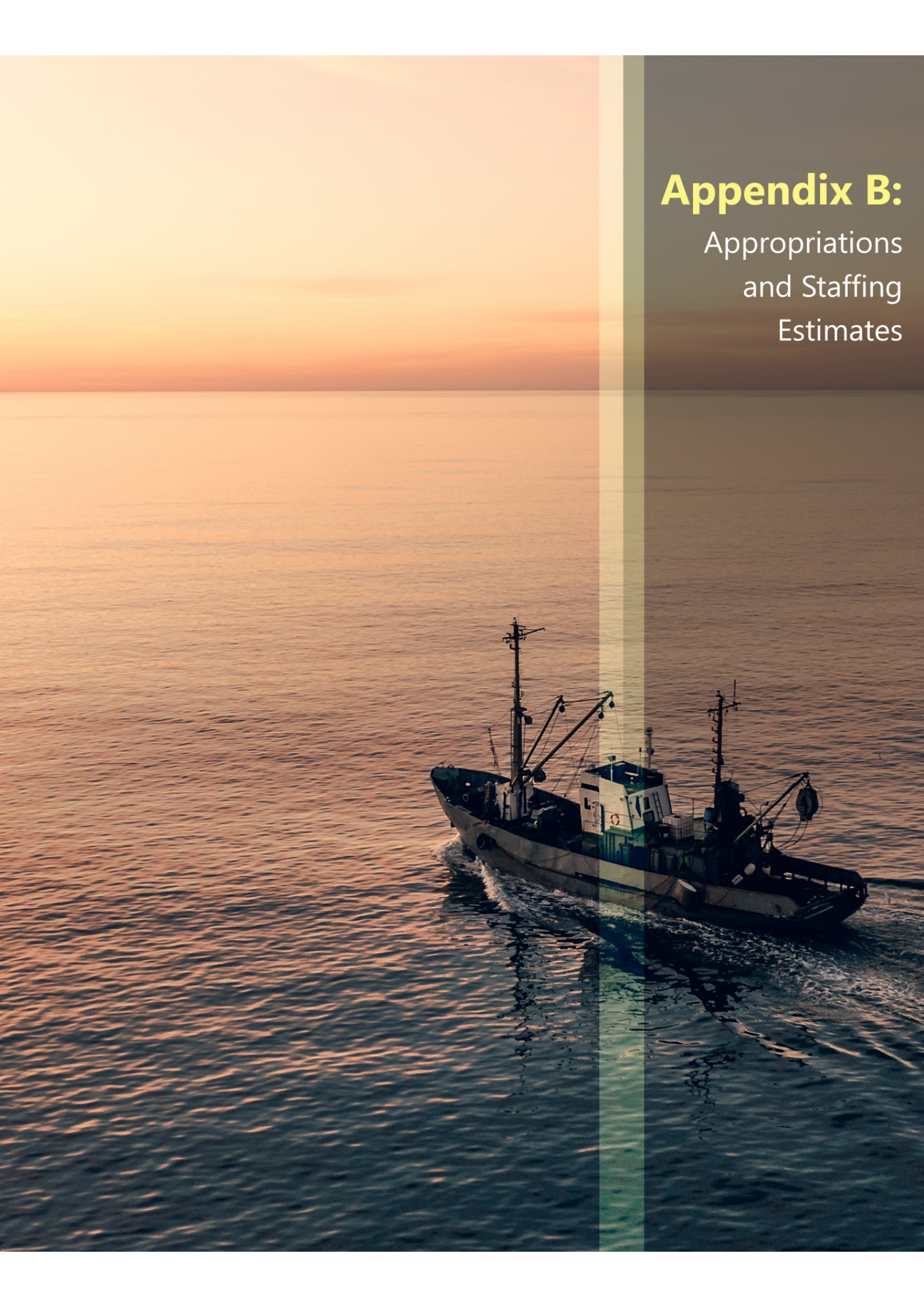
Form Letter Document ID	Organization/ Commenter Name	Total Submissions in Campaign	Summary of Submission Letter
			<ul style="list-style-type: none"> Argued for the need to transition to clean energy and stated that drilling leases would not reduce current gas prices.
BOEM-2022-0031-6535	Alexa Hartman	1,609	<ul style="list-style-type: none"> Suggested that new Federal leasing would lower energy costs.
BOEM-2022-0031-6653	Healthy Gulf	2,448	<ul style="list-style-type: none"> Opposed new lease sales. Expressed concern about climate change impacts and discussed past oil spills in Alaska and the GOM region.
BOEM-2022-0031-6656	Healthy Ocean Coalition	129	<ul style="list-style-type: none"> Opposed new lease sales in the Proposed Program. Expressed concern that the lease sales would lead to stockpiling of ocean space, accelerating climate change, and energy price gouging.
BOEM-2022-0031-3091	Kurt Heimbrock	46,132	<ul style="list-style-type: none"> Expressed concern about the possibility of a plan that includes no new lease sales. Suggested the need for new lease sales to address high energy prices, inflation, support jobs, and enhance energy independence.
BOEM-2022-0031-6553	Holser Farms	72	<ul style="list-style-type: none"> Supported the inclusion of all 11 proposed lease sales. Stated that oil and gas leasing would increase energy supply, reduce energy prices, and create jobs.
BOEM-2022-0031-6532	Edward Inman	42,194	<ul style="list-style-type: none"> Expressed support for oil and gas leasing in the GOM region. Suggested that not approving lease sales would increase energy prices. Stated that offshore GOM oil and gas production is superior to alternatives given high U.S. environmental standards.
BOEM-2022-0031-0344	Denise Keeton	2,196	<ul style="list-style-type: none"> Opposed new oil and gas lease sales. Expressed concern about impacts of climate change and offshore drilling on coastal communities and argued for the need to transition to renewable, clean energy. Stated that ending offshore lease sales would protect coastal economies.
BOEM-2022-0031-6540	Allan Lane	1,625	<ul style="list-style-type: none"> Argued for increase in domestic energy production and expressed concern about energy security.
BOEM-2022-0031-6548	J Lemley	25,046	<ul style="list-style-type: none"> Opposed any new oil and gas lease sales in the PFP. Argued for the importance of mitigating the impacts of climate change and meeting climate goals. Expressed concern for communities that may be impacted by offshore drilling.
BOEM-2022-0031-6012	Alva J. Lund	384	<ul style="list-style-type: none"> Expressed support for the inclusion of the maximum number of proposed lease sales. Expressed concern about there being no new lease sales and suggested that lease sales would support jobs, reduce consumers' costs, and enhance energy security. Argued that oil and gas production in the U.S. is less environmentally harmful than alternatives.

Form Letter Document ID	Organization/ Commenter Name	Total Submissions in Campaign	Summary of Submission Letter
BOEM-2022-0031-6528	Tim Maurer	438	<ul style="list-style-type: none"> • Opposed new oil and gas lease sales. • Stated the need to address climate change and transition to clean energy and expressed concern about continued investments in fossil fuels.
BOEM-2022-0031-6562	Mississippi State Senate Energy Committee - Angela Hill, Joel Carter Jr.	15	<ul style="list-style-type: none"> • Expressed support for the Proposed Program and all 11 lease sales. • Asserted that oil and gas lease sales in the GOM region would support jobs and conservation efforts. • Stated that domestic resources should be developed to keep energy prices down and provide economic certainty.
BOEM-2022-0031-6606	Vi More	7,374	<ul style="list-style-type: none"> • Expressed support for new oil and gas leasing in the GOM region. • Suggested that lease sales would help lower future energy costs, meet domestic energy needs, and enhance energy independence.
BOEM-2022-0031-6286	Multiple Scientists	102	<ul style="list-style-type: none"> • Expressed concern about offshore drilling's contribution to the climate crisis and its negative impact on marine ecosystems (e.g., through potential oil spills, chronic pollution, and generation of noise pollution that impacts vital marine mammal behavior). • Noted that our health and planet depend on a rapid transition to clean, renewable energy, and stated that the U.S. should not be investing in new fossil fuel extraction. • Requested the release of a PFP with no scheduled offshore oil and gas drilling lease sales.
BOEM-2022-0031-6608	National Youth for the Climate Emergency	64	<ul style="list-style-type: none"> • Opposed new lease sales. • Expressed concern about impacts of emissions, global warming, and the need to transition to clean energy.
BOEM-2022-0031-176402	Natural Resources Defense Council	107,355	<ul style="list-style-type: none"> • Opposed the proposed offshore oil and gas lease sales. • Discussed impacts to marine wildlife and coastal communities from past offshore drilling activities and oil spills. • Expressed concern about climate change and stated that proposed lease sales would not reduce gas prices.
BOEM-2022-0031-6531	Denise Neal	61,122	<ul style="list-style-type: none"> • Expressed support for leasing and energy development. • Stated that energy prices are too high.
BOEM-2022-0031-6324	New Hampshire House of Representatives - Representative Kevin Craig	63	<ul style="list-style-type: none"> • Expressed support for the Proposed Program and the 11 lease sales. • Asserted that pausing oil and gas leasing in 2021 led to increased gas prices and increased reliance on foreign energy sources and that the new lease sales would help meet domestic energy needs.
BOEM-2022-0031-6558	New Hampshire House of Representatives -	21	<ul style="list-style-type: none"> • Expressed support for the Proposed Program and the 11 lease sales. • Asserted that pausing oil and gas leasing in 2021 led to increased gas prices and increased reliance on foreign

Form Letter Document ID	Organization/ Commenter Name	Total Submissions in Campaign	Summary of Submission Letter
	Representative Melissa Litchfield		energy sources and that the new lease sales would help meet domestic energy needs.
BOEM-2022-0031-6318	New Mexico State Senate – Senator Gregory A. Baca	40	<ul style="list-style-type: none"> Expressed support for the Proposed Program and the 11 lease sales. Asserted that pausing oil and gas leasing in 2021 led to increased gas prices. Suggested that new lease sales in the GOM region would benefit conservation efforts.
BOEM-2022-0031-6645	Ocean Conservancy	13,249	<ul style="list-style-type: none"> Requested that the Cook Inlet region be excluded from the Proposed Program. Discussed the potential adverse impacts to the region, effects of climate change, and the need to transition to clean energy.
BOEM-2022-0031-187160	Oil Change International	5,093	<ul style="list-style-type: none"> Opposed new oil and gas lease sales. Expressed concern about impacts of fossil fuel development on coastal communities. Argued that offshore oil was unnecessary to meet energy needs.
BOEM-2022-0031-6541	Angela O’Shaughnessy	1,726	<ul style="list-style-type: none"> Expressed support for domestic energy production. Suggested that new Federal leasing would provide relief from high energy prices.
BOEM-2022-0031-6539	Paul Fulton	1,721	<ul style="list-style-type: none"> Stated that the Federal Government should support domestic energy exploration through leasing and not use the permitting process to obstruct development. Stated the need for lower energy prices.
BOEM-2022-0031-6649	People vs. Fossil Fuels	10,282	<ul style="list-style-type: none"> Requested that no new oil and gas leases be issued and that Federal fossil fuel leases be banned. Discussed the importance of curtailing GHG emissions, the potential consequences of climate change, and how communities might be impacted by climate change.
BOEM-2022-0031-6530	Trenton Platt	3,048	<ul style="list-style-type: none"> Opposed the authorization of any new oil and gas lease sales. Expressed concern about drilling risks posed to marine communities and ecosystems. Stated the need to transition away from fossil fuels and address climate change.
BOEM-2022-0031-0116	The Rachel Carson Council, Robert K. Musil	12	<ul style="list-style-type: none"> Expressed opposition to new oil and gas lease sales. Argued that new offshore production would exacerbate rising temperatures, extreme weather, resource shortages, biodiversity loss, and ecological disasters. Suggested that risks posed to vulnerable coastal communities are contrary to OCS Lands Act requirements that developmental benefits and environmental risk must be equitably shared.
BOEM-2022-0031-6627	Connie Raper	3,654	<ul style="list-style-type: none"> Urged the end of offshore oil and gas leasing. Expressed concern about impacts of climate change on communities and parks and the need to transition to clean energy.

Form Letter Document ID	Organization/ Commenter Name	Total Submissions in Campaign	Summary of Submission Letter
BOEM-2022-0031-6620	Adlina Riggins	1,373	<ul style="list-style-type: none"> Expressed support for inclusion of all 11 proposed lease sales. Suggested that new lease sales would enhance energy independence and address high energy prices.
BOEM-2022-0031-6529	Linda Rothenhoefer	26,019	<ul style="list-style-type: none"> Supported the inclusion of 11 proposed lease sales. Suggested that lease sales would reduce foreign energy dependency, generate revenue, and reduce energy prices.
BOEM-2022-0031-6544	Kevin Soter	1,845	<ul style="list-style-type: none"> Supported the inclusion of all 10 proposed lease sales in the GOM region. Stated that oil and gas production in the GOM region has lower GHG intensity compared to alternatives, strengthens energy domestic energy security, supports jobs, and supports the transition to clean energy.
BOEM-2022-0031-6526	Stacey Spears	1,458	<ul style="list-style-type: none"> Supported oil and gas leasing in the GOM and urged the approval of the maximum number of lease sales in the region. Argued for the need to use domestic oil and gas to reduce energy costs and transition to clean energy.
BOEM-2022-0031-6534	Donna Steier	1,665	<ul style="list-style-type: none"> Expressed support for oil and gas lease sales. Suggested that new leasing would reduce energy prices.
BOEM-2022-0031-6322	Homer Stewart	12	<ul style="list-style-type: none"> Expressed support for the inclusion of the 11 proposed oil and gas lease sales. Stated that the lease sales will increase global energy supply and reduce energy prices. Discussed the importance of energy independence.
BOEM-2022-0031-6547	William Strader	1,650	<ul style="list-style-type: none"> Opposed expansion of leasing in the GOM region. Stated that Gulf Coast communities should not be put at risk due to offshore drilling and that offshore drilling is incompatible with Congressional efforts to cut carbon emissions and promote clean energy.
BOEM-2022-0031-6648	Surfrider Foundation	4,178	<ul style="list-style-type: none"> Opposed new oil and gas lease sales. Expressed concern about harm to ocean and coastal environments and communities caused by oil spills. Argued for the need to transition to renewable energy sources.
BOEM-2022-0031-187159	Surfrider post card campaign	226	<ul style="list-style-type: none"> Opposed offshore drilling.
BOEM-2022-0031-6323	Sylvanoak LLC	27	<ul style="list-style-type: none"> Expressed support for all 11 proposed lease sales. Asserted that oil and gas operations in the GOM support jobs and are vital to conservation projects. Expressed concern about rising energy prices and stated that the Proposed Program would provide economic certainty by keeping price spikes down.
BOEM-2022-0031-6675	Taproot Earth and signatories, Kendall Dix	507	<ul style="list-style-type: none"> Opposed new offshore drilling lease sales in the Gulf South.

Form Letter Document ID	Organization/ Commenter Name	Total Submissions in Campaign	Summary of Submission Letter
			<ul style="list-style-type: none"> Expressed concern about impact of fossil fuel development on vulnerable communities and the need to invest in renewable energy security and independence.
BOEM-2022-0031-4520	Terrebonne Port Commission	14	<ul style="list-style-type: none"> Expressed support for all 11 proposed lease sales. Discussed benefits of offshore oil and gas development, including support for jobs, the economy, tax revenue, and environmental funding. Argued that GOM oil production is lower in carbon intensity compared to alternatives.
BOEM-2022-0031-6321	Voith U.S. Inc	7	<ul style="list-style-type: none"> Expressed support for the 11 proposed lease sales. Asserted that price energy price increases have negatively impacted U.S. industries and employment.
BOEM-2022-0031-6552	Washington Trucking Association	13	<ul style="list-style-type: none"> Expressed support for the Program. Stated that oil and gas lease sales will increase energy supply, reduce energy costs, and create jobs.
BOEM-2022-0031-6533	Nathan Weathers	60	<ul style="list-style-type: none"> Expressed support for the inclusion of all 11 proposed lease sales in the PFP. Discussed the impact of high energy costs on farmers and suggested that new lease sales will increase energy supply and reduce prices.
BOEM-2022-0031-6269	Dorothy Welch	1,326	<ul style="list-style-type: none"> Expressed support for the inclusion of the 11 proposed lease sales in the PFP. Stated that not approving lease sales would harm the economy and job creation and increase U.S. reliance on foreign countries.
BOEM-2022-0031-6642	West Virginia Manufacturers Association, Rebecca McPhail	20	<ul style="list-style-type: none"> Expressed support for the Program and all 11 lease sales. Stated that offshore oil and gas development supports jobs, the economy, and energy needs. Argued that GOM production has relatively low carbon intensity compared to alternatives.
BOEM-2022-0031-6550	West Virginia State Senate, Senator Mike Azinger	38	<ul style="list-style-type: none"> Expressed support for the Proposed Program and the 11 lease sales. Stated that the lease sales would increase energy supply, reduce energy prices, and create jobs. Asserted that energy price increases are due to the 2021 leasing moratorium.
BOEM-2022-0031-6561	Beth Winter	15	<ul style="list-style-type: none"> Opposed any new oil and gas lease sales in the PFP. Suggested that new lease sales are incompatible with mitigating the impacts of climate change. Stated that issuing new leases will allow oil and gas companies to continue to stockpile leases.
BOEM-2022-0031-6676	Kay Wood et al.	86	<ul style="list-style-type: none"> Suggested the end of offshore oil and gas lease sales. Stated the need to protect marine environments and address climate change.

A photograph of a fishing boat on the ocean at sunset. The sky is a gradient of orange and yellow, and the water is dark blue with a white wake behind the boat. The boat is white with a blue stripe and has various equipment on deck. A vertical green and yellow bar is on the right side of the image.

Appendix B:

Appropriations
and Staffing
Estimates



Appendix B: Appropriations and Staffing Estimates

Section 18(b) of the Outer Continental Shelf (OCS) Lands Act requires that the leasing program include estimates of the appropriations and staff needed to obtain information for preparing the National OCS Program, to analyze and interpret data and information, to conduct environmental studies and prepare environmental impact statements (EISs), and to supervise operations pursuant to the leases that will be issued. **Table B-1** presents the appropriations and staffing estimates associated with the implementation of the Final Proposal (see **Part I**).

Table B-1: Appropriations and Staffing Estimates (by Fiscal Year)



Activities	FY 2024		FY 2025		FY 2026		FY 2027		FY 2028		FY 2029	
	Funds	Staff	Funds	Staff	Funds	Staff	Funds	Staff	Funds	Staff	Funds	Staff
1	\$4,091,189	84	\$16,734,598	84	\$17,112,800	84	\$17,499,550	84	\$17,895,039	84	\$13,724,600	84
2	\$3,409,324	70	\$13,945,499	70	\$14,260,667	70	\$14,582,958	70	\$14,912,533	70	\$11,437,167	70
3	\$5,454,918	112	\$22,312,798	112	\$22,817,067	112	\$23,332,733	112	\$23,860,053	112	\$18,299,467	112
4	\$584,456	12	\$2,390,657	12	\$2,444,686	12	\$2,499,936	12	\$2,556,434	12	\$1,960,657	12
Total	\$13,539,887	278	\$55,383,552	278	\$56,635,220	278	\$57,915,176	278	\$59,224,059	278	\$45,421,892	278

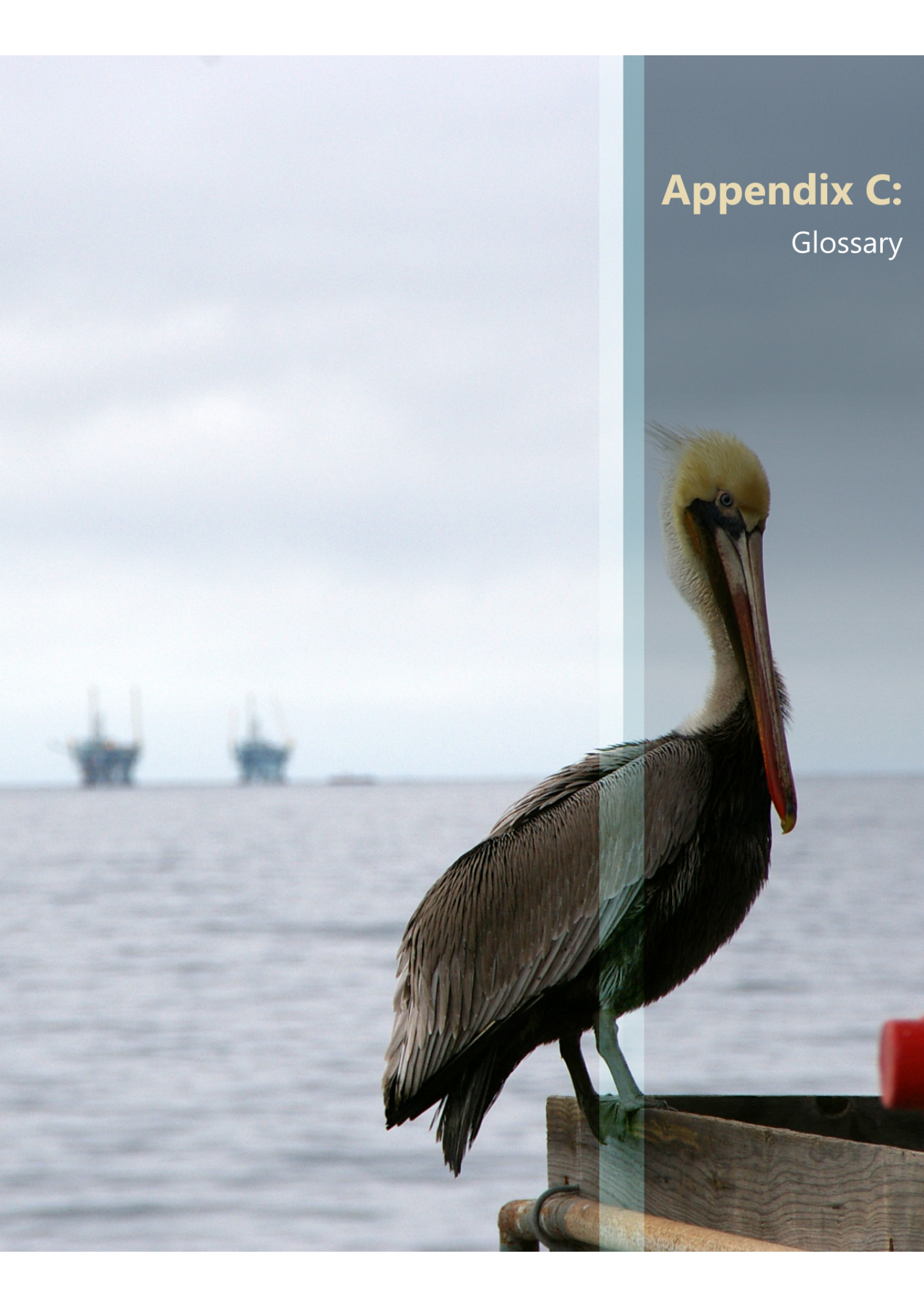
Note: Funding estimates are roughly approximated and are in thousands of dollars; staffing estimates are in full-time equivalent positions.

Activities Key:

1. Resource Information [Section 18(b)(1)]
2. Exploration Data and Other Information [Section 18(b)(2)]
3. Environmental Studies and EIS Preparation [Section 18(b)(3)]
4. Supervise Operations [Section 18(b)(4)]

Appendix C:

Glossary





Appendix C: Glossary

2-D Seismic — A seismic survey where a line of geophones captures enough information to generate a two-dimensional (height and length) image of the Earth’s subsurface directly below the line. (See definitions of “Seismic” and “Seismic Survey.”)

3-D Seismic — A seismic survey where a three-dimensional image of the subsurface is developed by combining numerous energy sources and multiple lines of geophones. The image consists of height, length, and side-to-side information that provides better resolution to the subsurface than a 2-D survey. (See definitions of “Seismic” and “Seismic Survey.”)

area identification (Area ID) — The Area ID is an administrative pre-lease step that describes the geographical area of the proposed actions (proposed lease sale areas) and identifies the alternatives, mitigating measures, and issues to be analyzed in the corresponding NEPA document.

barrel — The standard unit of measurement of liquids in the petroleum industry, which is 42 U.S. standard gallons.

barrel of oil equivalent (BOE) — The amount of energy resource (in this document, natural gas) that is equal to one barrel of oil on an energy basis. The conversion assumes that one barrel of oil produces the same amount of energy when burned as 5,620 cubic feet of natural gas.

basin — A depression in the earth’s surface where sediments are deposited, usually characterized by sediment accumulation over a long interval; a broad area of the earth beneath which layers of rock are inclined, usually from the sides downward toward the center.

block — A numbered area on an OCS leasing map or official protraction diagram. Blocks are portions of OCS leasing maps and official protraction diagrams (OPDs) that are themselves portions of planning areas. Blocks vary in size but cannot be larger than 5,760 acres (about 9 square miles or 2,304 hectares). Each block has a specific identifying number, area, and latitude and longitude coordinates that can be pinpointed on a leasing map or OPD.

bonus bid — The cash consideration paid to the U.S. by the successful bidder for a mineral lease. The payment is made in addition to the rent and royalty obligations specified in the lease.

Bureau of Ocean Energy Management — On October 1, 2011, the Bureau of Ocean Energy Management (BOEM) was created. BOEM is responsible for managing development of the Nation’s offshore energy and mineral resources in an environmentally and economically responsible way. Functions include: Leasing, Plan Administration, Environmental Studies,

National Environmental Policy Act (NEPA) Analysis, Resource Evaluation, Economic Analysis, and the Renewable Energy Program.

Bureau of Safety and Environmental Enforcement — On October 1, 2011, the Bureau of Safety and Environmental Enforcement (BSEE) was created. BSEE is responsible for enforcing safety and environmental regulations related to offshore energy and oil, gas, and other mineral resources. Functions include: all field operations, including Permitting and Inspections; Research for Offshore Regulatory Programs; Oil Spill Response and Training; and Environmental Compliance functions.

catastrophic discharge event — A low-probability, unexpected, and unauthorized large discharge of oil into the environment that could cause long-term and widespread effects on marine and coastal environments.

categorical exclusion — A category of actions which do not individually or cumulatively have a significant effect on the human environment, and which have been found to have no such effect in procedures adopted by a Federal agency in implementation of Council of Environmental Quality regulations (§1507.3) and for which, therefore, neither an environmental assessment nor an environmental impact statement pursuant to NEPA is normally required (40 CFR 1508.4).

conceptual play — Geologic play in which hydrocarbons have not been discovered and the petroleum system has not been proven to exist.

continental shelf — Part of the seabed that consists of a broad, gently sloping, shallow feature extending from the shore to the continental slope.

conventional reservoir — A hydrocarbon accumulation in which reservoir and fluid characteristics typically allow oil or natural gas to flow readily into a well. This distinguishes the resources from unconventional reservoirs where there is little to no significant force driving the migration of resources to a wellbore.

conventional resources — Oil and gas resources in conventional reservoirs where buoyant forces keep resources in place beneath a caprock.

conventional recovery methods — Producing oil and gas resources using traditional extraction methods, such as natural pressure or pumping, or by using secondary methods such as gas or water injection.

crude oil — Petroleum in its natural state as it emerges from a well, or after it passes through a gas-oil separator, but before refining or distillation.

Department of the Interior (Department, USDOJ) — The Department of the Interior is a Cabinet-level agency that manages America’s vast natural and cultural resources.

designated operator — an operator recognized by BOEM as the official contact and responsible party for the lease activities or operations on behalf of all lessees and operating rights owners.

determination of NEPA adequacy — BOEM uses a Determination of NEPA Adequacy (DNA) memo in the decision file to document that existing NEPA analyses are adequate for evaluating a new proposed action.

development — Activities following exploration, including the installation of facilities and the drilling and completion of wells for production purposes.

development and production plan — A plan describing the specific work to be performed on an offshore lease after a successful discovery, including all development and production activities that the lessee proposes to undertake during the period covered by the plan and all actions to be undertaken up to and including the commencement of sustained production. The plan also includes descriptions of facilities and operations to be used, well locations, current geological and geophysical information, environmental safeguards, safety standards and features, schedules, and other relevant information. All lease operators are required to formulate and obtain approval of such plans by BOEM before development and production activities can begin; requirements for submittal of the plan are identified in 30 CFR 550.241. A Development and Production Plan is also called a Development Operations Coordination Document.

draft proposed program (DPP) — Section 18 of the OCS Lands Act requires the Secretary of the Interior to prepare and maintain a schedule of proposed OCS oil and gas lease sales determined to “best meet national energy needs for the 5-year period following its approval or reapproval.” The Draft Proposed Program (also known as the Draft Proposal) is the first of three proposals to be issued before a new National OCS Program may be approved. Preparation and approval of a National OCS Program is based on a consideration of principles and factors specified by Section 18 to determine the size, timing, and location of lease sales.

endangered species — Any species that is in danger of extinction throughout all or a significant portion of its range and has been officially listed by the appropriate Federal agency (either the National Oceanic and Atmospheric Administration [NOAA] or U.S. Fish and Wildlife Service) under the Endangered Species Act.

enhanced recovery techniques — Techniques that increase the amount of oil that can be recovered from a reservoir, usually by injecting a substance into an existing well to increase pressure and reduce the viscosity of the fluids.

environmental assessment — A concise public document prepared pursuant to NEPA and the Council on Environmental Quality and Departmental implementing regulations. In the document, a Federal agency proposing (or reviewing) an action provides evidence and analysis for determining whether it must prepare an environmental impact statement or whether it finds there is no significant impact (i.e., Finding of No Significant Impact).

environmental impact statement (EIS) — A public document prepared pursuant to NEPA and Council on Environmental Quality and Departmental implementing regulations for a major Federal action significantly affecting the environment. EISs provide a full and fair discussion of significant environmental impacts to inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts. The document is used by Federal officials, in conjunction with other relevant material, to plan actions and make decisions.

environmental sensitivity — A measure of a region’s ecological components’ vulnerability to, and resilience after, potential adverse impacts of offshore oil and gas exploration and development activities in the context of existing conditions.

established play — Geologic plays in which hydrocarbons have been discovered and a petroleum system has been proven to exist.

exclusive economic zone (EEZ) — The maritime region adjacent to the territorial sea, extending up to 200 nautical miles (nm) from the baseline of the territorial sea, in which the U.S. has exclusive rights and jurisdiction over living and nonliving natural resources.

exploration — The process of searching for minerals prior to development. Exploration activities include: (1) geophysical surveys, (2) any drilling to locate an oil or gas reservoir, and (3) the drilling of additional wells after a discovery to delineate a reservoir.

exploration plan — A plan submitted by a lessee that identifies all the potential hydrocarbon accumulations and wells that the lessee proposes to drill to evaluate the accumulations within the lease or unit area covered by the plan. All lease operators are required to obtain approval of such a plan by a BOEM Regional Supervisor before exploration activities may commence.

field — Area consisting of a single reservoir or multiple reservoirs all grouped on, or related to, the same general geologic structural feature and/or stratigraphic trapping condition. There could be two or more reservoirs in a field that are separated vertically by impervious strata, laterally by geologic barriers, or both.

formation — A bed or deposit sufficiently homogeneous to be distinctive as a unit. Each different formation is given a name, frequently because of the study of the formation outcrop at the surface and sometimes based on fossils found in the formation.

geological data — Information derived from rocks of the seabed to provide information on the geological character of rock strata.

geological surveys — Geological surveying on the Outer Continental Shelf consists of bottom sampling, shallow coring, and deep stratigraphic tests. These surveys provide data that are useful in determining the general geology of an area and whether the right types of rocks exist for petroleum formation and accumulation.

geophysical data — Facts, statistics, or samples that have not been analyzed or processed, pertaining to gravity, magnetic, seismic, or other surveys/systems.

geophysical surveys — Geophysical surveys on the OCS provide data about the seafloor and the subsurface. Comprised of 2-D and 3-D seismic surveys, as well as multi-component, high-resolution, wide-azimuth, and other advanced types of seismic surveys, the surveys obtain data for hydrocarbon exploration and production, identify possible seafloor or shallow depth geologic hazards, and locate potential archaeological resources and hard bottom habitats that should be avoided.

hurdle price — The price below which delaying exploration for the largest potential undiscovered field in the sale area is more valuable from a quantified option value perspective than immediate exploration.

hydrocarbon — Any of a large class of organic compounds containing primarily carbon and hydrogen; comprising paraffins, olefins, members of the acetylene series, alicyclic hydrocarbons, and aromatic hydrocarbons; and occurring, in many cases, in petroleum, natural gas, coal, and bitumens.

lease — A legal document executed between the U.S. as lessor, and a company or individual (as lessee) that conveys the right to explore for, develop and produce, subject to plan approval, within the leased area, minerals on the OCS for a specified period. The term also means the geographic area (i.e., lease block) covered by that authorization, whichever the context requires.

lease period — See lease term.

lease sale — A BOEM proceeding by which certain OCS tracts are offered for lease by competitive sealed bidding and during which bids are received, announced, and recorded.

lease term — Duration of an OCS lease. Oil and gas leases are issued for a primary term of between 5 and 10 years. After that, the lease term continues if there is production in paying quantities or if the lease is suspended.

lessee — An entity, person, or persons to whom a lease is awarded; the holder of a lease.

liquefied natural gas (LNG) — Natural gas is converted to LNG by cooling it to a temperature of -256°F, at which point it becomes a liquid.

minerals — Minerals include oil, gas, sulfur, geopressured-geothermal and associated resources, and all other minerals which are authorized by an Act of Congress to be produced from “public lands” as defined in Section 1702 of the Federal Land Policy and Management Act of 1976.

leasing moratorium — Statutory restriction on areas BOEM can offer for OCS oil and gas leasing (e.g., the Gulf of Mexico Energy Security Act (GOMESA) moratorium on leasing in the Eastern GOM that expired on June 30, 2022).

natural gas — A mixture of hydrocarbon compounds and small quantities of various non-hydrocarbons existing in gaseous phase at the surface or in solution with crude oil in natural underground reservoirs at reservoir conditions.

nearshore waters — Offshore waters that extend from the shoreline out to the limit of the territorial sea (12 nm).

net economic value (NEV) — The value to society that is derived from the resources in the ground. The NEV equals the discounted gross revenues from the produced oil and natural gas minus the private costs required to realize the economic value of the resources.

net social value — The discounted gross revenues from the produced oil and natural gas minus the private, environmental, and social costs required to realize the economic value of the resources.

net-zero — resulting in neither a surplus nor a deficit of something specified, for example when gains and losses are added together and offset each other completely (e.g., net-zero carbon emissions).

oil and gas resource — Concentrations in the earth's crust of naturally occurring liquid or gaseous hydrocarbons that can conceivably be discovered and recovered. Normal use encompasses both discovered and undiscovered resources.

oil spill response plan — A plan submitted to BSEE by the lease or unit operator prior to using a facility handling oil that details provisions for fully defined specific actions to be taken following discovery and notification of an oil spill occurrence (30 CFR part 254).

operator — The person or company engaged in the business of drilling for, producing, or processing oil and gas.

outer continental shelf (OCS) — All submerged lands, subsoil, and seabed lying between the seaward extent of the jurisdictions of coastal states (which in most cases begins 3 nautical miles (nm) from the coastline) and the seaward extent of the jurisdiction of the United States (U.S.), which typically extends to 200 nm, or in some cases more, from the coastline. The jurisdiction of Texas and that of Florida, off its Gulf Coast, end 9 nm from the coastal baseline and Louisiana's jurisdiction ends at 3 imperial miles from the baseline, reflecting boundaries at the time these states became states of the U.S.

petroleum — An oily, flammable, bituminous liquid that occurs in many places in the upper strata of the earth, either in seepages or in reservoirs; essentially a complex mixture of hydrocarbons of different types with small amounts of other substances; any of various substances (as natural gas or shale oil) similar in composition to petroleum.

petroleum system — All of the geologic elements and processes which create a suitable environment to generate, accumulate, and preserve oil and gas. Elements such as source rock,

reservoir rock, and the trapping mechanism, along with fluids migration methods are necessary for the creation of a suitable hydrocarbon reservoir.

planning area — An administrative subdivision of the OCS used as the initial area(s) compared in the National OCS Program analyses.

play (geologic play) — A group of known and/or postulated pools that share common geologic, geographic, and temporal properties, such as history of hydrocarbon generation, migration, reservoir development, and entrapment.

pool — A discovered or postulated accumulation of hydrocarbons.

production — Activities that take place after the successful completion of a well, including removal of minerals, field operations, transfer of minerals to shore, operation monitoring, maintenance, and workover drilling.

production status — State of an active lease that has produced oil, gas, or both.

primary production — The production of biomass from inorganic carbon and water through photosynthesis or chemosynthesis. The primary productivity of a marine community is its capacity to produce energy for its component species, which thus sets limits on the overall biological production in marine ecosystems.

proposed program — The Second Proposal and an analysis of the Draft Proposal (also known as the Draft Proposed Program or DPP), the second in a series of three leasing schedules to be issued before a new National OCS Program may be approved.

proposed final program (PFP) — The final leasing schedule and an analysis of the Second Proposal, which may be adopted as the new National OCS Program after it has been before Congress and the President for 60 days.

record of decision (ROD) — The final step in the NEPA process where an EIS is prepared. The ROD identifies the selected alternative, presents the basis for the decision, identifies alternatives considered, specifies the environmentally preferable alternative, and identifies appropriate mitigation measures.

recoverable resources — Portion of the identified oil or gas resources that can be economically extracted under current technological constraints.

rent — Periodic payments made by the holder of a lease, prior to production in paying quantities, for the right to use the leased area resources for exploration, development, and production as established in the lease.

request for information and comments (RFI) — The first step in the development of a National OCS Program. BOEM publishes a *Federal Register* notice to request information and comments

from states and local governments, Tribal governments, Native American and Alaska Native organizations, Federal agencies, environmental and fish and wildlife organizations, the oil and gas industry, non-energy industries, other interested organizations and entities, and the public for use in the preparation of the National OCS Program. BOEM seeks a wide array of information including information associated with the economic, social, and environmental values of all OCS resources, as well as the potential impact of oil and gas exploration and development on resource values of the OCS and the marine, coastal, and human environments.

reservoir — Subsurface, porous, permeable rock body in which oil or gas or both may have accumulated.

royalty — Payment, in value (money) or in kind (in oil and gas), of a stated proportionate interest in production from leased mineral deposits by the lessees to the lessor.

secondary production — The amount of new biomass produced by consumer (heterotrophic) organisms over time. Its definition may be limited to only include the consumption of primary producers by herbivorous (plant-eating) organisms but is more commonly defined to include all biomass generation by heterotrophs.

seismic — Pertaining to, characteristic of, or produced by, earthquakes or Earth vibrations; having to do with elastic waves in the Earth.

seismic survey — A method of geophysical prospecting using the generation, reflection, refraction, detection, and analysis of elastic waves in the Earth. Seismic surveys use sound waves that are sent through the ocean floor to map the subsurface.

stipulation — Specific measures imposed upon a lessee by a provision not included in the standard lease form, but which are binding provisions of an executed lease. Stipulations could apply to some or all tracts in a sale. For example, a stipulation might limit drilling to a certain period of the year or certain areas.

tract — An area of the seabed that could be offered for lease. It is a designation assigned, for administrative and statutory purposes, to a block or combination of blocks that are identified on an official protraction diagram prepared by BOEM.

trap — A geologic feature that permits the accumulation and prevents the escape of accumulated fluids (hydrocarbons) from the reservoir.

unconventional recovery methods — Enhanced technological and engineering techniques used to produce oil and gas resources, such as horizontal drilling and hydraulic fracturing.

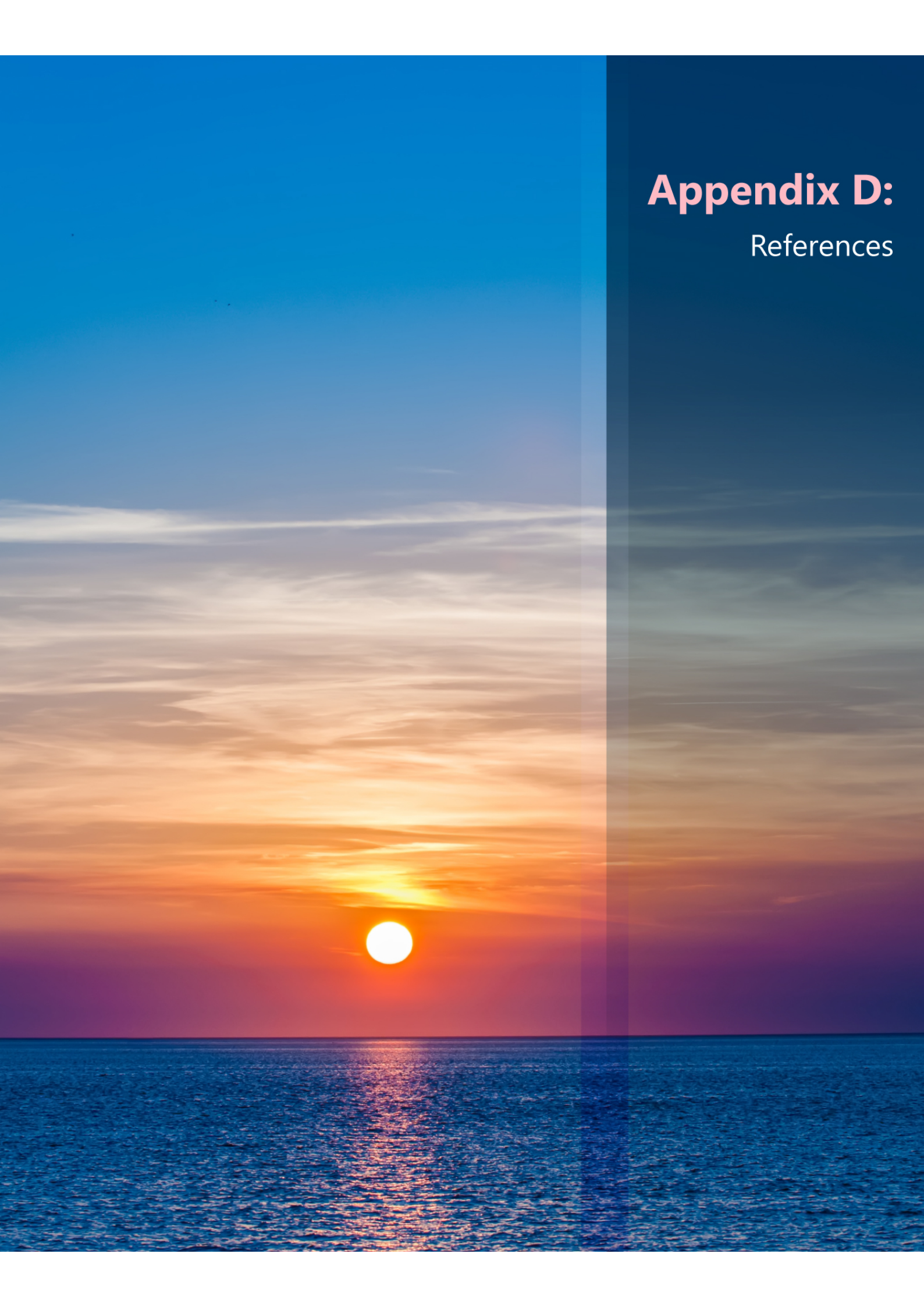
unconventional resources — Oil and gas resources trapped in formations that have lower permeability and/or porosity than rocks that have typically produced oil and gas resources in the past.

undiscovered economically recoverable resources (UERR) — The portion of the undiscovered technically recoverable resources that are economically recoverable under specified economic and technological conditions, including prevailing prices and costs.

undiscovered technically recoverable resources (UTRR) — Oil and gas that could be produced from the subsurface using conventional extraction techniques without considering economic viability.

unit status — The combination or consolidation of leases or portions of leases, that BSEE determines to be the logical unit area, for joint exploration and/or development of reservoirs or potential common hydrocarbon accumulations under the terms of a Unit Agreement as regulated under 30 CFR 250 Subpart M.

well — A hole drilled or bored into the earth, usually cased with metal pipe, to produce gas or oil, a hole for the injection under pressure of water or gas into a subsurface rock formation.



Appendix D:

References



Appendix D: References

- Abdallah, S. and P. Laserre (2008). "A Real Option Approach to the Protection of a Habitat." Retrieved September 20, 2014, from <http://www.er.uqam.ca/nobel/r25314/publications/PDF/caribou110819.pdf>.
- ADF&G (2017a). "Blue King Crab." Retrieved July 26, 2017, from <http://www.adfg.alaska.gov/index.cfm?adfg=bluekingcrab.us>.
- ADF&G (2017b). "Eulachon." Retrieved July 26, 2017, from <http://www.adfg.alaska.gov/index.cfm?adfg=eulachon.main>.
- ADF&G (2017c). "Harbor Seal." Retrieved July 26, 2017, from <http://www.adfg.alaska.gov/index.cfm?adfg=harborseal.main>.
- ADF&G (2017d). "Northern Fur Seal." Retrieved July 26, 2017, from <http://www.adfg.alaska.gov/index.cfm?adfg=northernfurseal.main>.
- ADF&G (2017e). "Pacific Herring." Retrieved July 26, 2017, from <http://www.adfg.alaska.gov/index.cfm?adfg=herring.main>.
- ADF&G (Undated). "Northern Cook Inlet Management Area." Retrieved June 28, 2023, from <https://www.adfg.alaska.gov/index.cfm?adfg=ByAreaSouthcentralNorthCookInlet.main>.
- ADNR (2016). "Annual Gross Oil Production." Retrieved August 15, 2017, from <http://dog.dnr.alaska.gov/Information/Data>.
- Alexander-Bloch, B. (2010) "Vietnamese-American Fishers Fight for Oil Spill Claim Approval." *New Orleans Times-Picayune*.
- Arrow, K. and A. Fisher (1974). "Environmental Preservation, Uncertainty, and Irreversibility." *The Quarterly Journal of Economics* **88**(2): 312-319.
- Austin, D., et al. (2014a). "Offshore Oil and Deepwater Horizon: Social Effects on Gulf Coast Communities, Volume II." Retrieved October 15, 2010, from <https://espis.boem.gov/final%20reports/5385.pdf>.
- Austin, D., et al. (2022). "Social Impacts of the Deepwater Horizon Oil Spill on Coastal Communities along the U.S. Gulf of Mexico." from https://espis.boem.gov/final%20reports/BOEM_2022-021.pdf.
- Austin, D., et al. (2014b). "Offshore Oil and Deepwater Horizon: Social Effects on Gulf Coast Communities, Volume I." Retrieved October 15, 2010, from <https://espis.boem.gov/final%20reports/5384.pdf>.
- Balcom, B., et al. (2011). "A Comparison of Marine Productivity Among Outer Continental Shelf Planning Areas." Retrieved September 18, 2023, from <https://espis.boem.gov/final%20reports/5121.PDF>.

- Barrick Novagold (2020). "Donlin Gold." Retrieved September 4, 2020, from https://www.novagold.com/resources/projects/technical_report_donlin_gold.pdf.
- BEA (2022). "2022 Trade Gap is \$945.3 Billion." Retrieved September 18, 2023, from <https://www.bea.gov/news/blog/2023-03-08/2022-trade-gap-9453-billion#:~:text=The%20U.S.%20international%20trade%20deficit,imports%20increased%20more%20than%20exports.>
- BEA (2023). "U.S. International Trade in Goods and Services: February 2023." Retrieved September 18, 2023, from <https://www.bea.gov/news/2023/us-international-trade-goods-and-services-february-2023>.
- BLS (2017). "Employment, Hours, and Earnings from the Current Employment Statistics Survey. Series Title: Average Hourly Earnings of All Employees, Total Private, Not Seasonally Adjusted." Retrieved August 8, 2017, from <https://data.bls.gov/pdq/SurveyOutputServlet>.
- BLS (2022). "Quarterly Census of Employment and Wages: Employment and Wages Data Viewer." Retrieved June 26, 2023, from https://data.bls.gov/cew/apps/table_maker/v4/table_maker.htm?type=1&year=2022&qtr=4&own=5&ind=1026&supp=0.
- BOEM (2014a). "Economic Inventory of Environmental and Social Resources potentially impacted by a Catastrophic Discharge Event within OCS Regions." Retrieved September 18, 2023, from <https://www.boem.gov/sites/default/files/oil-and-gas-energy-program/Leasing/Five-Year-Program/2017-2022/Economic-Inventories-for-CDE.pdf>.
- BOEM (2014b). "A Method for the Evaluation of the Relative Environmental Sensitivity and Marine Productivity of the Outer Continental Shelf: Final Report." Retrieved September 18, 2023, from <https://espis.boem.gov/final%20reports/5400.pdf>.
- BOEM (2016). "Cook Inlet Planning Area: Oil and Gas Lease Sale 244 in the Cook Inlet, Alaska. Final Environmental Impact Statement." Retrieved August 3, 2017, from <https://www.boem.gov/Cook-Inlet-Lease-Sale-244-Final-EIS-Volume-1/>.
- BOEM (2017a). "Gulf of Mexico OCS Oil and Gas Lease Sales: 2017-2022 Gulf of Mexico Lease Sales 249, 250, 251, 252, 253, 254, 256, 257, 259, and 261. Final Multisale Environmental Impact Statement." Retrieved August 3, 2017, from <https://www.boem.gov/BOEM-EIS-2017-009-v1/>.
- BOEM (2017b). "Gulf of Mexico OCS Proposed Geological and Geophysical Activities, Western, Central, and Eastern Planning Areas: Final Programmatic Environmental Impact Statement. Volume III, Appendices E-L." Retrieved September 18, 2023, from <https://www.boem.gov/sites/default/files/environmental-stewardship/Environmental-Assessment/NEPA/BOEM-2017-051-v3.pdf>.
- BOEM (2019). "Year 2017 Emissions Inventory Study." Retrieved June 15, 2022, from https://espis.boem.gov/final%20reports/BOEM_2019-072.pdf.
- BOEM (2020). "2020 Geological and Geophysical Data Inventory."
- BOEM (2021a). "2021 National Assessment of Undiscovered Oil and Gas Resources of the Nation's Outer Continental Shelf." Retrieved September 18, 2023, from https://www.boem.gov/sites/default/files/documents/oil-gas-energy/2021-NA_1.pdf.

- BOEM (2021b). "2021 National Assessment of Undiscovered Oil and Gas Resources of the U.S. Outer Continental Shelf." Retrieved June 13, 2022, from https://www.boem.gov/sites/default/files/documents/oil-gas-energy/2021-NA_1.pdf.
- BOEM (2021c). "Deepwater Gulf of Mexico Report 2019." Retrieved December 12, 2021, from <https://www.boem.gov/regions/gulf-mexico-ocs-region/deepwater-gulf-mexico-report-2019-boem-2021-005>.
- BOEM (2021d). "Estimated Oil & Gas Reserves, Gulf of Mexico OCS Region." Retrieved September 18, 2023, from <https://www.boem.gov/sites/default/files/documents/oil-gas-energy/BOEM%202021-052.pdf>.
- BOEM (2021e). "Fiscal Year 2020 USDOJ Economic Report: Bureau of Ocean Energy Management and Bureau of Safety and Environmental Enforcement Economic Contribution Estimates."
- BOEM (2021f). "Oil and Gas Production Forecast: 2022-2031." Retrieved August 14, 2023, from <https://www.boem.gov/sites/default/files/documents/regions/gulf-mexico-ocs-region/US%20OCS%20GOMR%20Oil%20and%20Gas%20Production%20Forecast%202022-2031.pdf>.
- BOEM (2022a). "2021 Geological & Geophysical Data Inventory." Retrieved August 14, 2023, from https://www.boem.gov/sites/default/files/documents/oil-gas-energy/resource-evaluation/geological-and-geophysical-data-acquisition-and-analysis/RED%20Bluebook_2021%20Final%20Version_508c.pdf.
- BOEM (2022b). "2023-2028 National OCS Oil and Gas Leasing Program Draft Programmatic Environmental Impact Statement." Retrieved September 18, 2023, from <https://www.boem.gov/sites/default/files/documents/oil-gas-energy/national-program/2023-2028-NationalOCSOilGasLeasingDraftPEISVol1.pdf>.
- BOEM (2022c). "2023-2028 National Outer Continental Shelf Oil and Gas Leasing Proposed Program." Retrieved August 14, 2023, from https://www.boem.gov/sites/default/files/documents/oil-gas-energy/national-program/2023-2028_Proposed%20Program_July2022.pdf.
- BOEM (2023a). "2024-2029 National OCS Oil and Gas Leasing Proposed Final Program Final Programmatic EIS ", from <https://www.boem.gov/sites/default/files/documents/oil-gas-energy/national-program/2023-2028-NationalOCSOilGasLeasingDraftPEISVol1.pdf>.
- BOEM (2023b). "Economic Analysis Methodology for the 2024-2029 National Outer Continental Shelf Oil and Gas Leasing Proposed Final Program." from <https://www.boem.gov/2024-2029-Economic-Analysis-Methodology>
- BOEM (2023c). "OCS Operations Field Directory." Retrieved September 18, 2023, from <https://www.boem.gov/sites/default/files/documents/regions/gulf-mexico-ocs-region/resource-evaluation/Operations-Field-Directory-Jan-Mar-2023.pdf>.
- BSEE (2021). "Bureau of Safety and Environmental Enforcement Budget Justifications and Performance Information: Fiscal Year 2022." Retrieved June 13, 2022, from <https://www.doi.gov/sites/doi.gov/files/fy2022-bsee-budget-justification.pdf>.
- BSEE (2022a). "Bureau of Safety and Environmental Enforcement Proposes Improved Offshore Safety Regulations for Novel Technologies and Challenging Conditions." Series Bureau of

- Safety and Environmental Enforcement Proposes Improved Offshore Safety Regulations for Novel Technologies and Challenging Conditions Retrieved June 28, 2022, Access 2022a, from <https://www.bsee.gov/newsroom/latest-news/statements-and-releases/press-releases/bureau-of-safety-and-environmental-1>.
- BSEE (2022b). "Outer Continental Shelf Oil and Gas Production." Retrieved August 1, 2023, from <https://www.data.bsee.gov/Production/OCSProduction/Default.aspx>.
- BTS (2019). "Port Freight Statistics in 2018, Annual Report to Congress 2019." Retrieved September 16, 2020, from <https://rosap.ntl.bts.gov/view/dot/43525>.
- Carretta, J. V., et al. (2017). "U.S. Pacific Marine Mammal Stock Assessments: 2016." NOAA Technical Memo Retrieved September 18, 2023, from https://repository.library.noaa.gov/view/noaa/14915/noaa_14915_DS1.pdf.
- Carretta, J. V., et al. (2019). "U.S. Pacific Marine Mammal Stock Assessments: 2018." NOAA Technical Memorandum NMFS Retrieved September 18, 2023, from https://repository.library.noaa.gov/view/noaa/20266/noaa_20266_DS1.pdf.
- Carter, L., et al. (2009). "Submarine Cables and the Oceans--Connecting the World." Biodiversity Retrieved July 9, 2018, from http://www.iscpc.org/publications/icpc-unep_report.pdf.
- Chassot, E., et al. (2010). "Global Marine Primary Production Constrains Fisheries Catches." Ecological Letters **13**(4): 495-505.
- Conrad, J. M. and K. Kotani (2005). "When to Drill? Trigger Prices for the Arctic National Wildlife Refuge." Resource and Energy Economics **27**: 273-286.
- Cooney, G., et al. (2016). "Updating the U.S. Life Cycle GHG Petroleum Baseline to 2014 with Projections to 2040 Using Open-Source Engineering-Based Models." Environmental Science and Technology **51**(2): 6.
- CPRA (2022). "Barrier Island Status Report: Draft Fiscal Year 2023 Annual Plan." Retrieved August 13, 2023, from <https://coastal.la.gov/wp-content/uploads/2022/01/BARRIER-ISLAND-STATUS-AP-FY23.pdf>.
- CRS (2016). "Land and Water Conservation Fund: Appropriations for "Other Purposes"." Retrieved August 27, 2018, from <https://fas.org/sgp/crs/mic/R44121.pdf>.
- CSA (1991a). "A Comparison of Marine Productivity among Outer Continental Shelf Planning Areas."
- CSA (1991b). "Comparison of Marine Productivity among Outer Continental Shelf Planning Areas: Supplement – An Evaluation of Benthic Habitat Primary Productivity."
- Dartez, J. S. (2016). The "Biggest," the "Baddest," and the "Bestest" - Coastal Restoration Cajun Style. Twenty-first World Dredging Congress, WODCON XXI, Miami, Florida.
- Davis, G. A. and R. Schantz (2000). "Selling Oil Leases: A Long-Term Real Options Analysis."
- Deerstone Consulting (2017). "Anchorage Energy Landscape and Opportunities Analysis." Retrieved January 4, 2022, from <https://www.muni.org/departments/mayor/aware/resilientanchorage/documents/anchorage%20energy%20landscape%20and%20opportunities%20analysis%20may%202017.pdf>.
- Denlinger, L. M. (2006). "Alaska Seabird Information Series."

- Doney, S. C., et al. (2012). "Climate Change Impacts on Marine Ecosystems." Annual Review of Marine Science **4**: 11-37.
- DOT (2023). "Port Profiles 2023." Retrieved August 13, 2023, from <https://explore.dot.gov/views/PortProfiles2023/HomeDashboard>.
- Ebertz, O. (2021.) "State allows Donlin Gold to Lease Land for 315-miles Pipeline."
- eBird (2017). "eBird Range Map." Retrieved July 26, 2017, from <http://ebird.org/ebird/map/>.
- Eglin Air Force Base. (2020, Last Update Date). "Instruction 13-204." Access 2020.
- EIA (2017). "Factors Affecting Gasoline Prices." Retrieved July 26, 2017, from https://www.eia.gov/energyexplained/index.cfm?page=gasoline_factors_affecting_prices.
- EIA (2018a). "Alaska State Energy Profile." Retrieved August 26, 2018, from <https://www.eia.gov/state/analysis.php?sid=AK>.
- EIA (2018b). "Oil Imports and Exports." Retrieved August 24, 2018, from https://www.eia.gov/energyexplained/index.php?page=oil_imports.
- EIA (2021a). "2021 AEO: Table 2 Energy Consumption by Sector and Source." Retrieved October 21, 2021, from <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=2-AEO2021&sourcekey=0>.
- EIA (2021b). "Alaska Dry Natural Gas Production." Retrieved December 14, 2021, from https://www.eia.gov/dnav/ng/hist/na1160_sak_2A.htm.
- EIA (2021c). "Crude Oil Import by Country of Origin." Retrieved December 12, 2021, from https://www.eia.gov/dnav/pet/pet_move_impcus_a2_nus_ep00_im0_mbbldp_a.htm.
- EIA (2021d). "Crude Oil Production by State." Retrieved December 12, 2021, from https://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbbldp_a.htm.
- EIA (2021e). "Number and Capacity of Petroleum Refineries." Retrieved December 12, 2021, from [https://www.eia.gov/dnav/pet/pet_pnp_cap1_a_\(na\)_800_Count_a.htm](https://www.eia.gov/dnav/pet/pet_pnp_cap1_a_(na)_800_Count_a.htm).
- EIA (2021f). "Renewables became the Second-Most Prevalent U.S. Electricity Source in 2020." Today in Energy Retrieved May 27, 2022, from <https://www.eia.gov/todayinenergy/detail.php?id=48896>.
- EIA (2021g). "State Profiles and Energy Estimates: Table ET1. Primary Energy, Electricity, and Total Energy Price and Expenditure Estimates, 1970-2019, United States." Retrieved December 8, 2021, from https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_prices/total/pr_tot_US.html&sid=US.
- EIA (2021h). "Total Energy Consumed per Capita." Retrieved November 1, 2021, from <https://www.eia.gov/state/rankings/>.
- EIA (2022a). "Crude Oil: U.S. Field Production of Crude Oil (Thousand Barrels)." Retrieved September 2022, from <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCREPUS1&f=M>.
- EIA (2022b). "Natural Gas Gross Withdrawals and Production." Retrieved May 20, 2022, from https://www.eia.gov/dnav/ng/ng_prod_sum_a_epg0_fgw_mmcf_a.htm.

- EIA (2022c). "Natural Gas Gross Withdrawals and Production." from https://www.eia.gov/dnav/ng/ng_prod_sum_dc_nus_mmcf_m.htm.
- EIA (2022d). "Petroleum and Other Liquids: U.S. Imports by Country of Origin." from https://www.eia.gov/dnav/pet/pet_move_impcus_a2_nus_ep00_im0_mbbl_m.htm.
- EIA (2022e). "U.S. Natural Gas Marketed Production." Retrieved September 2023, from <https://www.eia.gov/dnav/ng/hist/n9050us2m.htm>.
- EIA (2022f). "What is U.S. Electricity by Energy Source?" Frequently Asked Questions Retrieved May 27, 2022, from <https://www.eia.gov/tools/faqs/faq.php?id=427&t=3>.
- EIA (2023a). "Alaska: Profile Analysis." Retrieved September 2000, from <https://www.eia.gov/state/analysis.php?sid=AK>.
- EIA (2023b). "Annual Energy Outlook 2023." Retrieved June 2023, from <https://www.eia.gov/outlooks/aeo/>.
- EIA (2023c). "Annual Energy Outlook 2023: Narrative." Retrieved September 18, 2023, from https://www.eia.gov/outlooks/aeo/pdf/AEO2023_Narrative.pdf.
- EIA (2023d). "Annual Energy Outlook 2023: Table 2, Energy Consumption by Sector and Source." Retrieved September 18, 2023.
- EIA (2023e). "Electric Power Monthly: Table 1.1 Net Generation by Energy Source: Total (all Sectors), 2013-May 2023." from https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_1_01.
- EIA (2023f). Europe was the Main Destination for U.S. LNG Exports.
- EIA (2023g). "Factors Affecting Gasoline Prices." Retrieved August 14, 2023, from <https://www.eia.gov/energyexplained/gasoline/factors-affecting-gasoline-prices.php>.
- EIA (2023h). "February 2023 Monthly Energy Review." Retrieved April 9, 2023, from <https://www.eia.gov/totalenergy/data/monthly/archive/00352302.pdf>.
- EIA (2023i). Liquefied Natural Gas will Continue to Lead Growth in Natural Gas Exports.
- EIA (2023j). "Natural Gas: Natural Gas by End Use Consumption." Retrieved September 18, 2023, from https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_nus_a.htm.
- EIA (2023k). "Natural Gas: Natural Gas Exports and Re-exports by Country." Retrieved September 18, 2023, from https://www.eia.gov/dnav/ng/ng_move_expc_s1_a.htm.
- EIA (2023l). "Natural Gas: Natural Gas Gross Withdrawals and Production." from https://www.eia.gov/dnav/ng/ng_prod_sum_a_EPG0_VGM_mmcf_a.htm.
- EIA (2023m). "Petroleum & Other Liquids: Crude Oil and Lease Condensate Production by API Gravity." September 18, 2023, from https://www.eia.gov/dnav/pet/pet_crd_api_adc_mbblpd_m.htm.
- EIA (2023n). "Petroleum & Other Liquids: Crude Oil Production." Retrieved August 13, 2023, from https://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbbl_a.htm.
- EIA (2023o). "Petroleum & Other Liquids: Movements by Pipeline, Tanker, Barge, and Rail between PAD Districts." Retrieved September 18, 2023, from https://www.eia.gov/dnav/pet/pet_move_ptb_a_epc0_tnr_mbbl_m.htm.

- EIA (2023p). "Petroleum & Other Liquids: Exports." Retrieved September 18, 2023, from https://www.eia.gov/dnav/pet/pet_move_exp_dc_NUS-700_mbbldpd_m.htm.
- EIA (2023q). "Petroleum & Other Liquids: Number and Capacity of Petroleum Refineries." Retrieved April 27, 2023, from https://www.eia.gov/dnav/pet/pet_pnp_cap1_dcu_nus_a.htm.
- EIA (2023r). "Petroleum & Other Liquids: Percentages of Total Imported Crude Oil by API Gravity." Retrieved April 27, 2023, from https://www.eia.gov/dnav/pet/pet_move_ipct_k_m.htm.
- EIA (2023s). "Petroleum & Other Liquids: Product Supplied." Retrieved April 27, 2023, from https://www.eia.gov/dnav/pet/pet_cons_psup_dc_nus_mbbldpd_a.htm.
- EIA (2023t). "Petroleum & Other Liquids: U.S. Refinery and Blender Net Input of Crude Oil and Petroleum Products." Retrieved September 18, 2023, from <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MTTRIOUS1&f=M>.
- EIA (2023u). "Summary of Legislation and Regulations Included in the Annual Energy Outlook 2023."
- EIA (2023v). "Total Energy Consumed per Capita." Retrieved August 14, 2023, from <https://www.eia.gov/tools/faqs/faq.php?id=85&t=1#:~:text=The%20U.S.%20average%20residential%20energy,2021%20was%20about%2076%20MMBtu.&text=Last%20updated%3A%20July%2028%2C%202023>.
- EIA (Undated). "Petroleum Administration for Defense Districts." Retrieved August 29, 2018, from <https://www.eia.gov/petroleum/marketing/monthly/pdf/paddmap.pdf>.
- Ekstrom, J. A., et al. (2015). "Vulnerability and Adaptation of U.S. Shellfisheries to Ocean Acidification." *Nature Climate Change* **5**: 207-214.
- Fabry, V. J., et al. (2009). "Ocean Acidification at High Latitudes: The Bellwether." *Oceanography* **22**(4): 160-171.
- Fahnestock, J. and T. Smith (2021). "This New Strategy is Paving the Way for Net-Zero Shipping." Retrieved June 13, 2022, from <https://www.weforum.org/agenda/2021/10/net-zero-shipping-decarbonisation-new-strategy/>.
- Fisher, A. C. and W. M. Hanemann (1987). "Quasi-Option Value: Some Misconceptions Dispelled." *Journal of Environmental Economics and Management* **14**(2): 183-190.
- Freeman, A. M., III (1984). "Notes: The Quasi-Option Value of Irreversible Development." *Journal of Environmental Economics and Management* **11**(3): 292-295.
- Government Accountability Office (2019). "Offshore Oil and Gas: Opportunities Exist to Better Ensure a Fair Return on Federal Resources." Retrieved June 23, 2022, from <https://www.gao.gov/products/gao-19-531>.
- Haufler, J. B., et al. (2010). "Climate Change: Anticipated Effects on Ecosystem Services and Potential Actions by the Alaska Region, U.S. Forest Service."
- Henry, J. M. and C. L. I. Bankston (2002). *Blue Collar Bayou: Louisiana Cajuns in the New Economy of Ethnicity*. Westport, Connecticut, Praeger Publishers.

- Hill, V. and G. Cota (2005). "Spatial Patterns of Primary Production on the Shelf, Slope, and Basin of the Western Arctic in 2002." Deep Sea Research Part II **52**: 3344-3354.
- IHS Markit (2018). "2018 Comparative Analysis of the Federal Oil and Gas Fiscal Systems: Gulf of Mexico International Comparison." Retrieved September 18, 2023, from <https://www.boem.gov/sites/default/files/oil-and-gas-energy-program/Energy-Economics/Fair-Market-Value/2018-GOM-International-Comparison.pdf>.
- Industrial Economics Inc. (2018). "Forecasting Environmental and Social Externalities Associated with Outer Continental Shelf (OCS) Oil and Gas Development - Volume 2: Supplemental Information to the 2018 Revised Offshore Environmental Cost Model (OECM)."
- Industrial Economics Inc. (2023a). "Consumer Surplus and Energy Substitutes for OCS Oil and Gas Production: The 2023 Revised Market Simulation Model (MarketSim)."
- Industrial Economics Inc. (2023b). "Forecasting Environmental and Social Externalities Associated with Outer Continental Shelf (OCS) Oil and Gas Development, Volume 1: 2023 Revised Offshore Environmental Cost Model (OECM)."
- Interagency Working Group (2021). "Interagency Working Group on Social Cost of Greenhouse Gases, United States Government." Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide; Interim Estimates under Executive Order 13990, from www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf.
- IPCC (2014). "The Synthesis Report of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change." Retrieved July 26, 2017, from http://ipcc.ch/pdf/assessmentreport/ar5/syr/SYR_AR5_FINAL_full.pdf.
- Jones, B. M., et al. (2009). "Increase in the Rate and Uniformity of Coastline Erosion in Arctic Alaska." Geophysical Research Letters **36**(L03503).
- Kassar, I. and P. Lasserre (2002). "Species Preservation and Biodiversity Value: A Real Options Approach." CIRANO Scientific Series 2002s-82 Retrieved October 15, 2014, from <http://www.cirano.qc.ca/pdf/publication/2002s-82.pdf>.
- Kinlan, B. P., et al. (2016). "Modeling At-Sea Occurrence and Abundance of Marine Birds to Support Atlantic Marine Renewable Energy Planning: Phase I Report." Retrieved September 18, 2023, from https://repository.library.noaa.gov/view/noaa/18106/noaa_18106_DS1.pdf.
- Krauss, C. (2018) "Oil Boom Gives the U.S. a New Edge in Energy and Diplomacy." New York Times.
- Larson, E., et al. (2021). "Net Zero America: Potential Pathways, Infrastructure, and Impacts, Final Report Summary." from <https://www.netzeroamerica.princeton.edu>.
- Masnadi, M. S., et al. (2018). "Global carbon intensity of crude oil production." Science **361**(6405): 851-853.
- McDowell Group (2020). "The Role of the Oil & Gas Industry in Alaska's Economy." Retrieved September 18, 2023, from <https://www.aoga.org/wp-content/uploads/2021/01/Reports-2020.1.23-Economic-Impact-Report-McDowell-Group-CORRECTED-2020.12.3.pdf>.

- Melillo, J. M., et al. (2014). "Climate Change Impacts in the United States: The Third National Climate Assessment." Retrieved September 18, 2023, from <http://nca2014.globalchange.gov>.
- Menard, J., et al. (2017). "2015 Annual Management Report: Norton Sound, Port Clarence, and Arctic, Kotzebue Areas." Fishery Management Report.
- MMS (2003). "Cook Inlet Planning Area: Oil and Gas Lease Sale 191 and 199, Final Environmental Impact Statement."
- MMS. (2007, Last Update Date). "Notice to Lessees and Operators (NTL) of Federal Oil and Gas Leases on the Outer Continental Shelf (OCS), Gulf of Mexico OCS Region." Access 2007.
- Muto, M. M., et al. (2017). "Alaska Marine Mammal Stock Assessments, 2016." U.S. Department of Commerce, NOAA Technical Memorandum.
- NMFS (2017a). "Commercial Fisheries Statistics." Retrieved July 26, 2017, from <https://www.st.nmfs.noaa.gov/commercial-fisheries/commercial-landings/annual-landings-with-group-subtotals/index>.
- NMFS (2017b). "Endangered and Threatened Marine Species Under NMFS' Jurisdiction." Retrieved July 26, 2017, from <http://www.nmfs.noaa.gov/pr/species/esa/listed.htm>.
- NMFS (2017c). "Eulachon, *Thaleichthys pacificus*." Retrieved July 26, 2017, from <https://www.fisheries.noaa.gov/species/eulachon>.
- NMFS (2017d). "Red King Crab." Retrieved July 26, 2017, from https://www.afsc.noaa.gov/Education/factsheets/10_rkc_fs.pdf.
- NMFS (2020). "NMFS Landings Query Results." Retrieved September 18, 2020, from https://www.st.nmfs.noaa.gov/pls/webpls/ME_ANNUAL_LANDINGS.RESULTS.
- NOAA (1995). "Sensitivity Mapping of Inland Areas: Technical Support to the Inland Area Planning Committee Working Group." Retrieved September 18, 2023, from https://repository.library.noaa.gov/view/noaa/2002/noaa_2002_DS1.pdf.
- NOAA (2002). "Environmental Sensitivity Index Guidelines: Version 3.0." Retrieved September 18, 2023, from https://repository.library.noaa.gov/view/noaa/10263/noaa_10263_DS1.pdf.
- NOAA (2015). "Alaska Oil Spill Risk Analysis." Retrieved November 17, 2015, from <https://alaskafisheries.noaa.gov/habitat/restoration/oilspill/oilspillfactsheet1114.pdf>.
- NOAA (2017a). "Large Marine Ecosystems of the World: XV Gulf of Mexico: LME #5." Retrieved June 12, 2017, from http://www.lme.noaa.gov/index.php?option=com_content&view=article&id=1&Itemid=112.
- NOAA (2017b). "Mean Sea Level Trends for Tropical and Gulf of Mexico Stations." Retrieved July 26, 2017, from <https://tidesandcurrents.noaa.gov/sltrends/tropicaltrends.htm>.
- NOAA (2017c). "National Marine Sanctuaries: Southeast Atlantic, Gulf of Mexico and Caribbean Region." Retrieved April 2023, from <http://sanctuaries.noaa.gov/about/southeast.html>.
- NOAA (2020). "Fisheries of the United States, 2018." Retrieved September 17, 2020, from <https://www.fisheries.noaa.gov/feature-story/fisheries-united-states-2018>.
- NPS (2021). "Historic Preservation Fund FY 2020 Annual Report." Retrieved December 12, 2021, from <https://www.nps.gov/subjects/historicpreservationfund/statistical-reports.htm>.

- NPS (2022). "About Us: Visitation Numbers." Retrieved May 16, 2022, from <https://www.nps.gov/aboutus/visitation-numbers.htm>.
- NREL (2021) "Cook Inlet Tidal Energy Resource Characterization Effort."
- O'Connell, A., et al. (2011). "Compendium of Avian Occurrence Information for the Continental Shelf Waters along the Atlantic Coast of the United States, Final Report (Database Section - Shorebirds)." Retrieved September 18, 2023, from <https://espis.boem.gov/final%20reports/5193.pdf>.
- ONRR (2021a). "Fiscal Year Disbursements." Retrieved December 12, 2021, from <https://revenue.data.doi.gov/downloads/disbursements/>.
- ONRR (2021b). "Fiscal year revenue." Retrieved December 12, 2021, from <https://revenue.data.doi.gov/downloads/revenue/>.
- Pindyck, R. (2001). "The Dynamics of Commodity Spot and Futures Markets: A Primer." *Energy Journal* **22**(3): 1-29.
- Pomeroy, L. (1991). Relationships of Primary and Secondary Production in Lakes and Marine Ecosystems. *Comparative Analyses of Ecosystems: Patterns, Mechanisms, and Theories*. J. Cole, G. Lovett and S. Findlay. New York, New York, Springer: 97-119.
- Port of Anchorage (2011). "Military Support." Retrieved March 6, 2018, from <https://www.portofalaska.com/business/military-support/>.
- Port of Anchorage (2016). "Cargo Distribution." Retrieved Accessed July 27, 2017, from <https://www.portofanc.com/business/cargo-distribution/>.
- Poux, S. (2022) "In Victory for Commercial Fisherman, Court Orders Cook Inlet Fishery to Reopen."
- Raval, A. (2018) "Oil Majors Return to Deepwater Drilling." *Financial Times*.
- Redlinger, M., et al. (2018). "Cook Inlet Natural Gas Availability." Retrieved April 27, 2023, from https://dog.dnr.alaska.gov/Documents/ResourceEvaluation/CI_Natural_Gas_Availability_Study_2018.pdf.
- Rothkopf, M., et al. (2006). "Optimal Management of Oil Lease Inventory: Option Value and New Information." Retrieved October 15, 2014, from http://rutcor.rutgers.edu/pub/rrr/reports2006/22_2006.pdf.
- Rystad Energy (2020). "Upstream CO₂ Intensities of O&G Producing Countries are Poles Apart--Here's Why."
- Shakhaug, E. (2004). Primary and Secondary Production in the Arctic Seas. *The Organic Carbon Cycle in the Arctic Ocean*. Heidelberg, Germany, Springer.
- Sherman, K. and A. M. Duda (1999). "An Ecosystem Approach to Global Assessment and Management of Coastal Waters." *Marine Ecology Progress Series* **190**: 271-287.
- Smith, S. L., et al. (2010). "Thermal State of Permafrost in North America: A Contribution to the International Polar Year." *Permafrost and Periglacial Processes* **21**: 117-135.
- Spalding, M. D., et al. (2007). "Marine Ecoregions of the World: A Bioregionalization of Coastal and Shelf Areas." *BioScience* **57**(7): 573-583.

- Springer, A. M. and C. P. McRoy (1993). "The Paradox of Pelagic Food Webs in the Northern Bering Sea—III Patterns of Primary Production." *Continental Shelf Research* **13**(5/6): 575-599.
- StatOil (2016). Comment Letter Response to the 2017-2022 Proposed Final Program. BOEM.
- USCB (2021). "Foreign Trade: Historical Series: U.S. International Trade in Goods and Services: Exports, Imports, and Balance of Petroleum and Non-Petroleum End-Use Category." Retrieved December 14, 2021, from <https://www.census.gov/foreign-trade/statistics/historical/petro.pdf>.
- USDA (2017). "Permafrost Zones." Retrieved July 26, 2017, from https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ak/technical/dma/?cid=nrcs142p2_035893.
- USDOI (1983). "Procedures for OCS Bid Adequacy Including the Final Report of the OCS Fair Market Value Task Force."
- USEPA (2013). "Climate Change Alaska: Climate Impacts in Alaska." Retrieved October 15, 2015, from <http://www.epa.gov/climatechange/impacts-adaptation/alaska.html>.
- USGCRP (2017). "Regions and Topics." Retrieved July 26, 2017, from <http://www.globalchange.gov/explore>.
- Ware, D. M. and R. E. Thomson (2005). "Bottom-up Ecosystem Trophic Dynamics Determine Fish Production in the Northeast Pacific." *Science* **308**(5726): 1280-1284.
- Weijermars, R., Sun, Z., (2018). "Regression Analysis of Historic Oil Prices: A Basis for Future Mean Reversion Price Scenarios." *Global Finance* **35**.
- White House. (2020, Last Update Date). "President Donald J. Trump is Conserving and Restoring the Majesty of America's Public Lands." Retrieved December 2020, Access 2020, from <https://www.whitehouse.gov/briefings-statements/president-donald-j-trump-conserving-restoring-majesty-americas-public-lands/>.
- Wilkinson, T., et al. (2009). "Marine Ecoregions of North America." Retrieved September 18, 2023, from <http://www.cec.org/files/documents/publications/3256-marine-ecoregions-north-america-en.pdf>.
- Wright, B. (2022). "Delfin LNG Expects Investment Decision on Floating LNG Project this Year: The Export Project in the US Gulf of Mexico could Handle Up to 13 MPTA of Liquefied Natural Gas." *Journal of Petroleum Technology*.



U.S. Department of the Interior

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.



Bureau of Ocean Energy Management

The mission of the Bureau of Ocean Energy Management is to manage development of U.S. Outer Continental Shelf energy and mineral resources in an environmentally and economically responsible way. The bureau promotes energy independence, environmental protection, and economic development through responsible management of these offshore resources based on the best available science.