

1 INTRODUCTION

1.1 BACKGROUND

Section 18 of the Outer Continental Shelf Lands Act (OCSLA) of 1953 (67 Stat. 462) as amended (43 USC 1331 *et seq.*) requires the U.S. Department of the Interior (USDOJ) to prepare a 5-year schedule that specifies, as precisely as possible, the size, timing, and location of areas to be assessed for Federal offshore oil and gas leasing on the U.S. Outer Continental Shelf (OCS). The Federal action being evaluated is the preparation of this 5-year schedule. A schedule is needed to increase the predictability of sales in order to facilitate planning by industry, affected states, and the general public. This schedule is the 5-year program. The OCSLA also requires the 5-year program to be developed and maintained in a manner that is consistent with several management principles. Within the USDOJ, the Bureau of Ocean Energy Management (BOEM or the Bureau) (formerly the Bureau of Ocean Energy Management, Regulation and Enforcement and prior to that, the Minerals Management Service) must manage the OCS oil and gas program to ensure a proper balance among oil and gas production, environmental protection, and impacts on the coastal zone. OCSLA defines the OCS as all submerged lands lying seaward of State coastal waters which are under U.S. jurisdiction. BOEM is organized into four regional offices, each of which is responsible for overseeing the safe and environmentally responsible development of traditional and renewable ocean energy and mineral resources in four OCS regions: Alaska, Pacific, Gulf of Mexico (GOM), and Atlantic — for a combined total of 1.7 billion acres of the OCS.

In recent years, the leasing of OCS oil and gas resources has been subject to suspensions of activities or moratoria. In 1982, Congress imposed a moratorium on oil and gas leasing for offshore California. Over the next decade, Congress expanded the moratorium to include almost all Atlantic and Pacific planning areas. From 1990 through 2000, an Executive Withdrawal enacted by President George H. Bush was in effect on a portion of the same OCS acreage subject to the 1982 congressional moratorium. Separate and apart from the congressional moratorium, the Executive Withdrawal served to independently limit offshore development. In 1998, President Clinton extended the Executive Withdrawal through 2012. On July 14, 2008, however, President George W. Bush lifted the OCS Executive Withdrawal. On August 1, 2008, the Minerals Management Service (MMS) issued a Request for Comments for the preparation of a new 5-year OCS leasing program to cover 2010 through 2015.

On January 21, 2009, a notice for Request for Comments on the Draft Proposed 5-Year OCS Oil and Gas Leasing Program for 2010-2015 and the Notice of Intent to Prepare an Environmental Impact Statement (EIS) for the Proposed 5-Year Program were published in the *Federal Register* (*Federal Register*, January 21, 2009, Volume 74, Number 12, pages 3631–3635). On February 10, 2009, the Secretary of the Interior extended the comment period by 180 days to September 21, 2009.

As a result of the comment period extension and the Bureau's reconsideration of existing policies and regulations in response to the Deepwater Horizon (DWH) event on April 20, 2010, the time period to be covered by the new program shifted from 2010-2015 to 2012-2017. The

January 2009 Draft Proposed Plan remains the first of three draft decisions for the program (now for 2012-2017) that will replace the existing 2007-2012 program. However, in response to comments and other considerations, the Secretary has reduced the scope of the 5-year EIS to exclude several planning areas that were originally included in the Draft Proposed Plan decision.

On April 2, 2010, the Bureau issued a Notice of Intent (NOI) to prepare an EIS with respect to the OCS Oil and Gas Leasing Program for 2012-2017 (hereafter referred to as “the Program”) and requested comments for the purpose of determining the scope of the EIS. The updated strategy limited lease sales to the following planning areas: Beaufort Sea, Chukchi Sea, Cook Inlet, the Central and Western GOM, and the area of the Eastern GOM excluded from Congressional moratoria (see Figure 1-1). The NOI also announced that scoping meetings would be held during June and early July 2010 in coastal States bordering the Mid- and South Atlantic; Western, Central, and the portion of the Eastern GOM; and at several locations in Alaska. Subsequently, on June 30, 2010, the Secretary announced that the scoping meetings were postponed until later in 2010 because of the need for BOEM to focus on reviewing and evaluating safety and environmental requirements of offshore drilling in response to the DWH event and that a new public comment period would later be announced. On December 1, 2010, the Secretary announced an updated oil and gas leasing strategy for the OCS. The Secretary engaged in the balancing mandated by Section 18 of OCSLA and decided to proceed with caution and to focus on leasing in areas with current active leases, therefore, the Mid- and South Atlantic Planning Areas were no longer considered for potential sales and development through 2017, nor was the area in the Eastern GOM that remains under a congressional moratorium. Accordingly, scoping meetings were not held in these areas. It was also announced that the Western GOM, Central GOM, and the Cook Inlet, Chukchi Sea, and Beaufort Sea areas offshore Alaska would continue to be considered for potential leasing in the Program.

Congress, in its yearly appropriations to the USDOJ, continues to maintain an annual moratorium on OCS oil and gas leasing in the Eastern GOM Planning Area with the exception of a small area along the boundary between the Central and Eastern Planning Areas that was excluded from the moratorium by the GOM Energy Security Act of 2006. Additionally, Presidential moratoria have withdrawn all national marine sanctuaries from leasing through June 30, 2017 (Hagerty 2011). On March 31, 2011, President Obama, under the authority of Section 12(a) of the OCSLA, withdrew the Bristol Bay area of the North Aleutian Basin for consideration of leasing through June 30, 2017. The Congressional and Presidential moratoria prohibit future oil and gas leasing but do not apply to existing leases. Although there are current leases in the Pacific region, no new OCS leasing will take place in the Pacific region under the Program.

BOEM has prepared this programmatic environmental impact statement (PEIS) to assess the environmental, social, and economic impacts associated with the Program. The following Federal, State, and local agencies are serving as cooperating agencies on the development of the PEIS, due to their special expertise:

- U.S. Department of Commerce National Oceanic and Atmospheric Administration (NOAA)

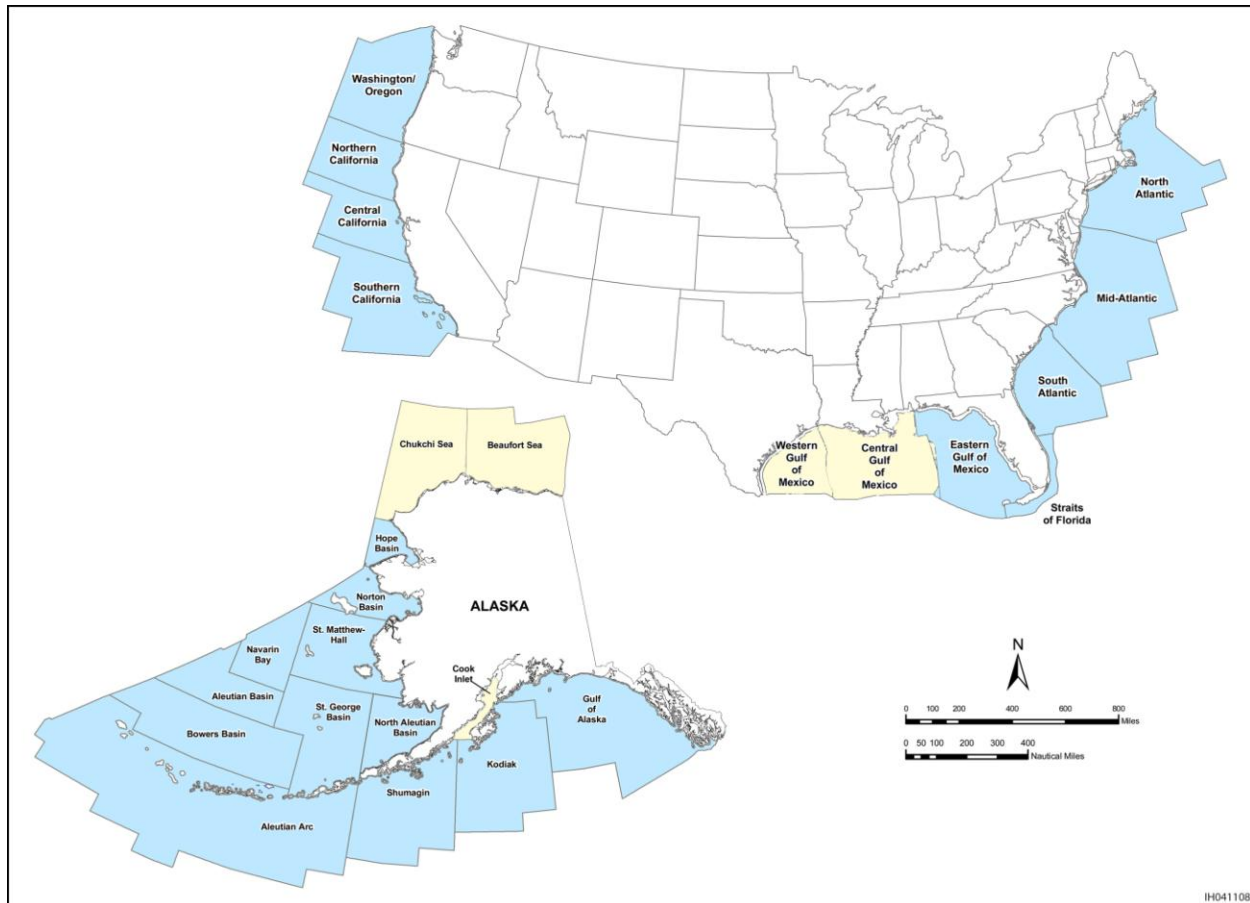


FIGURE 1-1 OCS Planning Areas (planning areas being considered for the Program are shown in yellow)¹

- The State of Alaska
- Alaska North Slope Borough

The Program is scheduled to begin in September 2012. The Program consists of a national schedule of potential OCS lease sales within 6 of the 26 OCS Planning Areas (Figure 1-1). The Program will be the eighth such program prepared since Congress amended the OCSLA in 1988. The Program establishes a framework for managing the OCS oil and gas leasing in a manner that accounts for all of the factors required by OCSLA. It also provides the public with a clear statement of the USDOJ's OCS leasing intentions during the period from 2012 to 2017.

¹ The two whaling deferrals in the Beaufort Sea and the 40-km (25-mi) coastal deferral in the Chukchi Sea Planning Areas included in the 2012-2017 Arctic program area are not visible at this map scale. These deferral areas are shown in Figure 2-3).

1.2 PURPOSE OF AND NEED FOR ACTION

The purpose of and need for preparing a schedule of potential OCS oil and gas lease sales is to “best meet national energy needs for the 5-year period following its approval” (43 USC 1344) by balancing the potential for environmental harm, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone. In developing the 5-year leasing schedule, BOEM considers regional and national energy needs; leasing interests as expressed by possible oil and gas producers; applicable laws, goals, and policies of affected States, local governments, and tribes; competing uses of the OCS; relative environmental sensitivity and marine productivity among OCS regions; public input; and the equitable sharing of benefits and risks among stakeholders.

Energy use in the United States is expected to continue to increase from present levels through 2035 and beyond (EIA 2011). For example, the U.S. consumption of crude oil and petroleum products has been projected to increase from about 19.1 million barrels (Mbbbl) per day in 2010 to about 21.9 Mbbbl per day in 2035 (EIA 2011). Oil and gas reserves in the OCS represent significant sources that currently help meet U.S. energy demands and are expected to continue to do so in the future. The benefits of producing oil and natural gas from the OCS include not only helping to meet this national energy need, but also generating money for public use. In 2009, the OCS produced 2.5 trillion cubic feet (Tcf) of natural gas and more than 590 Mbbbl of oil and condensate. These numbers represent 10 and 30%, respectively, of the total U.S. domestic production of oil/condensate and natural gas in 2009. The Federal Government has received, on average, more than \$10 billion per year between 2000 and 2010 from OCS bonuses, rental payments, and royalties. The highest revenues per year occurred in 2008, when the government received \$23.3 billion in total revenues.

1.3 OVERSIGHT OF OCS OIL AND GAS ACTIVITIES

On October 1, 2011, the USDOJ established two new, independent bureaus: Bureau of Ocean Energy Management (BOEM) and Bureau of Safety and Environmental Enforcement (BSEE). These agencies are collectively responsible for offshore energy management and safety and environmental oversight missions formerly under the jurisdiction of the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE). The establishment of BOEM and BSEE marked the completion of the reorganization of the former Minerals Management Service (MMS).

BOEM is responsible for managing environmentally and economically responsible development of the nation’s offshore energy and mineral resources. Principal functions include offshore leasing, resource evaluation, review and administration of oil and gas exploration and development plans, renewable energy development, marine mineral development, environmental assessment, and environmental studies. BOEM’s regulations related to offshore oil and gas operations are in 30 CFR Parts 550, 551, 552 and 556.

BSEE is responsible for safety and environmental oversight of offshore oil and gas operations, including permitting and inspections of offshore oil and gas operations. Principal

functions include the development and enforcement of safety and environmental regulations, permitting offshore exploration, development and production, inspections, offshore regulatory programs, oil spill response, and newly formed training and environmental compliance programs. BSEE's regulations related to offshore oil and gas operations are in 30 CFR Parts 250 and 254.

1.4 ENVIRONMENTAL REVIEW UNDER NEPA

Section 18 of the OCSLA directs the USDOJ to conduct environmental studies and prepare any EIS required in accordance with the OCSLA and with Section 102(2)(C) of the National Environmental Policy Act of 1969 (NEPA) (42 USC 4332(2)(C)). Under NEPA, Federal agencies are required to prepare a "detailed statement for major Federal actions significantly affecting the quality of the human environment" (NEPA 102(2)). The preparation of this PEIS is also consistent with the Council on Environmental Quality (CEQ) regulations (40 CFR 1502.4(b)), which state that "environmental impact statements may be prepared and are sometimes required for broad Federal actions such as the adoption of new agency programs or regulations (Section 1508.18). Agencies shall prepare statements on broad actions so that they are relevant to policy and are timed to coincide with meaningful points in agency planning and decision making." The preparation of this PEIS is consistent with, and meets the requirements of OCSLA, CEQ's regulations for implementing NEPA, and USDOJ's regulations implementing NEPA (43 CFR 46).

The OCSLA leasing and development process consists of four major stages. The Secretary first prepares a nationwide 5-year oil and gas leasing program that establishes a schedule of lease sales. Thereafter, individual lease sales scheduled in the 5-year program are held following a series of pre-lease planning actions. Once a lease is issued to an OCS lessee, an Exploration Plan (EP) must be submitted for approval before an operator may begin exploratory drilling on a lease. The EP establishes how the operator will explore the lease and includes all exploration activities, the timing of these activities, information concerning drilling, the location of each well, and other relevant information. If the lessee discovers oil and/or natural gas, a Development and Production Plan (DPP) must be submitted for agency approval. This DPP includes how many wells, where these wells will be located, what type of structure will be used, and how the operator will transport the oil and natural gas. The OCSLA also requires operators to apply for permission prior to drilling wells, pursuant to an EP or, in most areas, a DPP.

In this phased process, the final PEIS may, through tiering, greatly assist subsequent lease sale-specific analyses by allowing incorporation of relevant portions of the final PEIS into those later analyses and NEPA documents. Tiering is defined by the CEQ (40 CFR 1508.28) as "the coverage of general matters in broader environmental impact statements (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basin-wide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on issues specific to the statement subsequently prepared."

When a broad NEPA document such as a PEIS or environmental assessment (EA) has been prepared, any subsequent site-specific assessment or evaluation can summarize (and include by reference) the issues discussed in the broader document, and thus the site-specific assessment can focus its analyses on project-specific issues of the particular proposed action (40 CFR 1502.20). Following selection of the Program, subsequent lease sale-specific NEPA analyses and documentation may tier off the PEIS for the Program.

This PEIS is the first of many NEPA analyses that will be done for the activities that occur as a result of the Program. The NEPA assessments, including EISs and EAs associated with various stages of OCS oil and gas development, are shown in Table 1-1 and Figure 1-2.

1.4.1 Scope of the PEIS

This PEIS was prepared to evaluate the potential environmental impacts of alternatives for OCS oil and gas leasing under the Program, and presents those impacts in a comparative manner that provides a clear basis for making a reasoned choice among the alternatives by the decision-maker. The analyses and evaluations in this PEIS are intended to inform decisions on the size, timing, and location of leasing activity that will be made to create the schedule of lease sales for the Program (43 USC 1344). The OCSLA requires that, for potential leasing to occur in a specific planning area during the applicable 5-year OCS oil and gas leasing program, the specific planning area in which the lease sale would be held must be included in the approved 5-year program. Pursuant to the OCSLA (43 USC 1344(e)), the Secretary must review the leasing program approved at least once each year.

Portions of planning areas can be deferred from leasing during any 5-year oil and gas program because of the presence of sensitive environmental resources, space-use conflicts, or other reasons. The USDOJ can also cancel or restrict the area offered in a lease sale based on information, events, and other conditions that arise during any 5-year oil and gas program. Examples of the exercise of this authority occurred during the 2007-2012 Oil and Gas Leasing Program (the Program) when the single sales scheduled in the North Aleutian Basin and offshore Virginia were cancelled in 2010.

At the programmatic stage, considering the full planning area provides for the broadest and most extensive analysis in order to support the balancing of different considerations — including social, economic, and environmental issues. Because leasing of portions of planning areas (subareas) can be deferred during a 5-year leasing program, the USDOJ is maintaining flexibility in fulfilling its OCSLA mandate to provide for both the nation's energy needs and protect the marine and coastal environment by including in the Program the total area of all 6 OCS Planning Areas (except for the three specified Arctic deferrals) that were decided upon by the Secretary. If conditions changed during the Program as a result of new information, technologies, or other developments that mitigated the issues responsible for the deferral of a subarea, it would not be possible to offer the subarea for leasing during the existing Program if it were not included in the Program at the outset. There are some exceptions to the approach described above for the 5-year program; for example, the two subsistence deferrals in the Beaufort Sea and the 25-mi no-leasing buffer in the Chukchi Sea have been deferred in past lease

TABLE 1-1 NEPA Assessments Conducted within the OCS Oil and Gas Leasing Program

Program Level	Program Stage	NEPA Analysis ^a	Geographic Scope	Focus and Scope
Planning	Program	Programmatic EIS	Continental	Identification of program areas and number and schedule of lease sales for the Program
	Lease sale	Lease sale EIS or EA	Planning area	Identification of potential impacts and mitigation measures
Project ^b	Exploration	CER, EA, or EIS	Lease block(s)	Application and enforcement of mitigation measures; monitoring of mitigation effectiveness
	Production	CER, EA, or EIS	Portion of lease block	
	Decommissioning	CER, EA, or EIS	Specific facility within a lease block	

^a CER = categorical exclusion review; EA = environmental assessment; EIS = environmental impact statement.

^b The level of NEPA review at the project level is determined by the complexity of the project, risk factors associated with the project, whether the project occurs in a frontier or mature OCS area, the technologies being used for the project, and other factors.

sales and have subsequently been incorporated into past 5-year programs. These deferrals (described in detail in Chapter 2 of this PEIS) will be included in the proposed action for the current 5-year leasing program.

The detailed information and fine geographic scale needed to evaluate block-by-block deferrals or other mitigations in a specific planning area are not typically available or appropriate for the PEIS, which needs to adopt a broad geographical scale for its national coverage. Decisions about exclusions and mitigations can be premature at the programmatic stage when the focus is the development of a leasing program that identifies how many sales will be included in the program, where to have the sales, and when to schedule the sales. During the NEPA process, many stakeholders encouraged BOEM to include additional deferrals or equivalent mitigation in this Program. BOEM has considered the numerous deferral and mitigation recommendations in Section 4.3.2 to begin the process of developing mitigation strategies for the 2012-2017 OCS Program. This section includes a discussion of the process BOEM will use during the Program to ensure that these suggestions are evaluated, when appropriate and as warranted.

The PEIS informs these decisions by identifying areas, environmental resources, and types of OCS activities that, acting together, suggest the potential for important interactions between environmental resources and OCS-related activities that could result in significant impacts. In this way, the PEIS identifies the broad issues that will likely require more focused

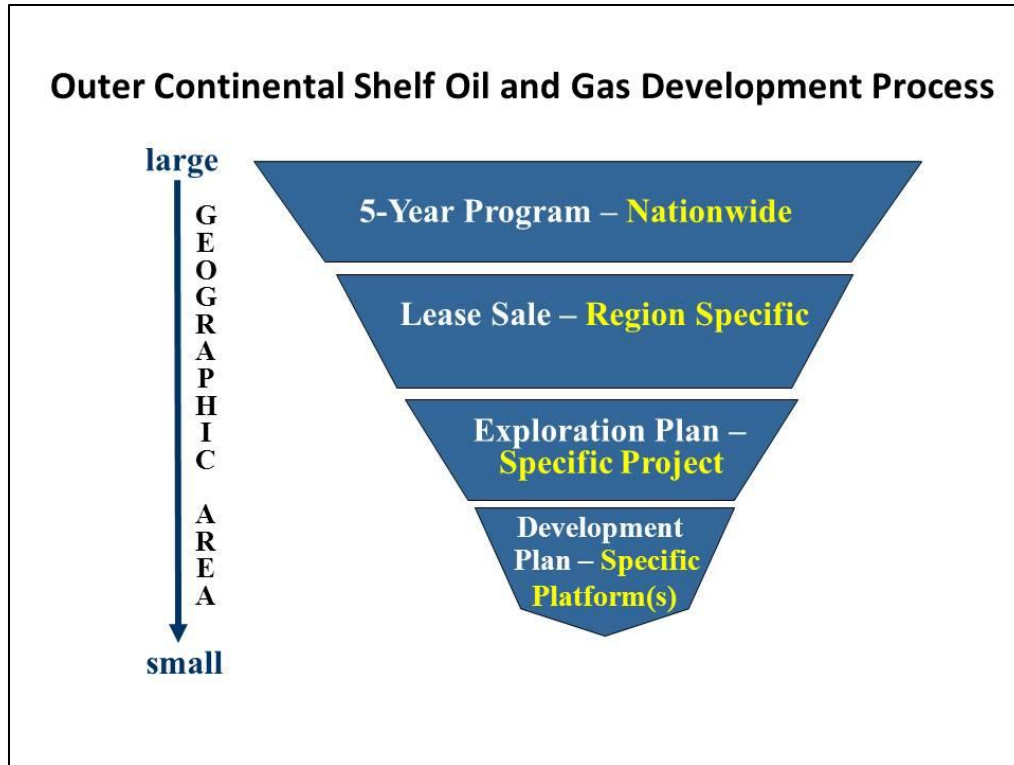


FIGURE 1-2 The Outer Continental Shelf Oil and Gas Development Process

and fine-scale evaluations in subsequent NEPA assessments, leading to the possible development and application of mitigations, should leasing and development actually occur.

1.4.2 Incomplete and Unavailable Information

CEQ regulations require an agency to obtain, or explain why it cannot obtain, relevant information about reasonably foreseeable significant adverse impacts that is essential to a reasoned choice among the alternatives presented in an EIS (40 CFR 1502.22). This PEIS provides the level of NEPA analysis corresponding to the first stage of the Program. The PEIS sets forth alternatives for the Secretary to consider and analyzes issues of programmatic concern, which pertain to the Program as a whole.

Programmatic-level analyses and decisions do not require the same detailed analysis that may be necessary at a later stage in the OCS leasing process. Lease sale-specific issues, such as determining which stipulations should apply to a lease sale, are not ripe for analysis at the programmatic stage. Resolving uncertainty related to significant adverse effects on some resources, such as that surrounding global climate change impacts in the Arctic or the potential environmental baseline change brought about by the DWH event in the GOM, is not essential at this programmatic stage. In the instances of missing resource-specific information noted in the PEIS, BOEM has determined that the information was not essential to the Secretary's choice

among alternatives at this broad, programmatic decision point because the Secretary is only establishing a schedule of potential lease sales. The Secretary retains the discretion to delay and cancel lease sales that are part of an approved program, but the Secretary will not have the discretion to add program areas that are not included in the Program without program re-approval. It would be imprudent to foreclose program areas at this time based on uncertainty due to incomplete and unavailable information. Over the course of the Program, information relevant to decision making may become available before the decision maker is actually in the position to decide whether to hold a specific lease sale.

This PEIS presents the information necessary for the Secretary to make a general planning decision, which will be implemented in the future through a series of subsequent, planning area-specific decisions that authorize lease sales and OCS exploration and development activities. To the degree possible, the PEIS uses scientifically credible information and uses accepted scientific methods to make reasoned judgments and arrive at reasoned conclusions. Moreover, some missing information, such as definitive information about baseline changes to resources in the GOM resulting from the DWH event, will not be available in a time frame relevant to timely fulfillment of the OCSLA statutory mandate to establish a program every five years.

1.4.3 Public Involvement

As previously discussed, the development of the Program includes preparation of this PEIS which, in accordance with NEPA, analyzes the potential effects of the adoption of a schedule of proposed lease sales that identifies the size, timing, and location of proposed leasing activity. NEPA requires draft and final versions of a PEIS to be published, fostering public involvement through two public involvement opportunities: the scoping public comment period prior to the preparation and publication of the Draft PEIS and the Draft PEIS public comment period prior to the preparation and publication of the Final PEIS.

The content of a Draft PEIS is based on a process called “scoping.” The regulations implementing NEPA require that scoping be included in the environmental analysis process (40 CFR 1501.7). Scoping for the Draft PEIS included several key elements: (1) gathering information and ideas from the public and elsewhere about the analytical issues related to the Program; (2) making determinations about which issues should be analyzed; and (3) identifying alternatives to the proposal that warranted analysis. The scoping process is dynamic in that it begins before the PEIS analyses are initiated and continues throughout the period of document preparation.

In January 2009, the previous Administration published a Draft Proposed Program and a NOI to prepare an EIS that set out a schedule for scoping meetings in the areas of the Draft Proposed Program. In February 2009, the Secretary of the Interior extended the comment period on the Draft Proposed Program and postponed the scoping meetings to allow time to consider further public comment before determining which areas in the Draft Proposed Program should be scoped and analyzed for consideration in the subsequent program proposals. A preliminary revised program for 2012-2017 was proposed on March 31, 2010, and on April 2, 2010, an NOI

to prepare and scope the 2012-2017 OCS Oil and Gas Leasing Program PEIS was published in the *Federal Register* (75 FR 16828). That NOI invited the public to provide comments on the scope and content of the PEIS and identified as many as 14 locations where public scoping meetings could be held to obtain comments.

On June 30th, 2010, Secretary of the Interior Salazar announced that the public scoping meetings would be postponed in response to the DWH event. The additional time would be used to evaluate safety and environmental requirements of offshore drilling. On December 1, 2010, Secretary Salazar announced an updated oil and gas strategy for the OCS. The new strategy continued a moratorium for areas in the Eastern GOM (Figure 1-2) and eliminated the Mid-Atlantic and South Atlantic Planning Areas from consideration for potential sales and development through the 2017 planning horizon. The Western GOM, Central GOM, Eastern GOM (only a very small portion thereof), Cook Inlet, Chukchi Sea, and Beaufort Sea OCS Planning Areas (Figure 1-1) would continue to be considered in the PEIS. Subsequently, on January 4, 2011, a Notice of Scoping Meetings for the proposed 2012-2017 OCS Oil and Gas Leasing Program PEIS was published in the *Federal Register* (76 FR 376) and a second scoping period was conducted from January 6, 2011, through March 31, 2011. During this scoping period, public scoping meetings were held for 12 locations in Alaska, Texas, Louisiana, Alabama, and Washington, D.C. In addition, BOEM received comments through the mail and maintained a public website to accept electronic scoping comments.

Recent EISs and EAs for GOM and Alaska OCS oil and gas lease sales provided additional scoping information. Many of the analytical issues raised during the lease sale review process are applicable to this PEIS for the proposed Program. Subject matter experts at BOEM also identified analytical issues relevant to the PEIS analyses. In addition, alternatives developed for past leasing program proposals were reviewed to determine whether it would be appropriate to analyze any of them in detail in this PEIS.

On November 10, 2011, a Notice of Availability (NOA) for the public release of the Draft PEIS was published in the *Federal Register*. The notice announced a 60-day public comment period from November 10, 2011, until January 9, 2012. During this Draft PEIS public comment period, public hearings were held for 13 locations in Alaska, Texas, Louisiana, Alabama, and Washington, D.C. In addition, BOEM received comments through the mail and maintained a public website to accept electronic comments. All comments received during the public comment period were impartially considered and given equal weight by BOEM. Section 8.4.4 of this Final PEIS presents the responses to these comments prepared by BOEM.

Through all of the above public commenting opportunities, the following major issues were identified for consideration in preparing the PEIS:

- Oil and gas activities that could cause impacts (termed “impact-producing factors”);
- Ecological resources that could be affected by oil and gas activities;

- Social, cultural, and economic resources that could be affected by oil and gas activities;
- Human health;
- Climate change;
- Regulatory oversight, regulatory and industry reforms, and safety; and
- Oil spills.

In addition, comments received through the NEPA process provided suggestions for alternatives to be considered in the PEIS. These suggestions fell into the following major categories:

- Prohibiting leasing and development in one or more planning areas;
- Limiting leasing and development to specific areas on the OCS (e.g., no deep water);
- Including more OCS planning areas than the six identified in the proposed action;
- Developing new, or expanding existing, deferral areas; and
- Developing alternative energy sources to replace oil and gas.

The alternatives evaluated in this PEIS, as well as those considered but removed from further consideration, are discussed in Chapter 2 of this PEIS.

For analytical purposes only, this PEIS considers mitigation and other protective (see Appendix B: Assumed Mitigation and Other Protective Measures) measures already established and required by existing statutes or regulations, as well as sale-specific measures (stipulations) that were commonly adopted in past sales and that would likely be implemented for any lease sales that would occur under the Program. However, it is at the lease sale stage that more detailed and geographically focused analyses are conducted to evaluate the magnitude of potential impacts and, if needed, to develop effective mitigation strategies to reduce the magnitude of those potential impacts to acceptable levels. Therefore, the impact analyses presented in this PEIS assume implementation of mitigation and other protective measures that are required by statute or regulation as well as sale-specific mitigation measures (stipulations) commonly adopted in past sales (see Appendix B). This PEIS also assumes that existing mitigations and other protective measures in areas with currently active leases, such as the GOM and parts of Alaska, will be applied to areas included in the Program that do not have a history of OCS activity. However, this PEIS does not adopt or apply any mitigation or other protective measures because this is done during Program implementation, including the lease sale, exploration plan, and development plan phases.

1.5 ANALYTICAL ISSUES

A number of analytical issues, many of which are addressed in this PEIS, were identified during the NEPA process. These include the geographic scope of the PEIS, the analytical scope of the PEIS, the impacting factors to be considered in the analyses, and the resources that may be affected by the Program. These analytical issues are discussed below.

1.5.1 Geographic Scope

There are 26 planning areas on the OCS, and six of these have been identified for leasing consideration as part of the Program (Figure 1-1). Twenty planning areas located along the Atlantic, Pacific, Florida, and Alaska coasts are neither part of the proposed action nor analyzed in any alternative considered in this PEIS.

1.5.2 Analytic Scope

The analyses conducted in preparation of this PEIS were based on current, available, and credible scientific data. Interpretation of these scientific data was used to evaluate direct, indirect, and cumulative impacts associated with the proposed action and alternatives. Throughout this PEIS, Alternative 1 (referred to herein as the proposed action) is used as the default scenario on which to base analysis of potential impacts. This does not mean that Alternative 1 has already been chosen as the operative alternative for the Program. Rather, the proposed action includes the largest geographic scope of any of the alternatives contemplated, so using it to analyze impacts results in the most all-inclusive analysis possible, compared to the other alternatives presented. The proposed action is the alternative that has the potential to cause the greatest geographic range of impacts, with each of the other alternatives representing, in effect, a subset of the proposed action. Therefore, using the proposed action as the basis for analysis provides the most complete and meaningful assessment of potential impacts.

As a programmatic evaluation, this PEIS does not evaluate site-specific issues that would be associated with specific lease sales in specific planning areas. As previously discussed, a variety of location-specific factors (such as water depth, sea floor topography, distance from shore, ecological communities, and the presence of threatened and endangered species and cultural resources) may vary considerably, not only between planning areas but also among lease sale blocks within individual planning areas. In addition, variations in project design and study (including the seismic survey approach and technology selected) will influence and/or determine the nature and magnitude of impacts that might occur with a given lease sale. The combined effect of these location-specific and project-specific factors cannot be fully anticipated or addressed in a programmatic analysis, and can only be evaluated at the lease-sale or finer level.

1.5.3 Impact-Producing Factors

Several types of impact-producing factors were identified that warrant consideration. All of the following impact-producing factors are included in the exploration and development scenarios for the proposed action presented in Section 4.4, and are evaluated as applicable in the resource-specific impact evaluations presented elsewhere in Chapter 4. In addition, the cumulative impact analysis includes activities unrelated to OCS activities but relevant to assessing cumulative impacts (Section 4.6). The impact-producing factors related to OCS exploration and development that were identified include:

- Accidental oil spills including those from loss of well control, production accidents, transportation failures (e.g., from tankers, other vessels, seafloor and onshore pipelines, and storage facilities), and low-level spillage from platforms.
- The offshore and onshore disposal of liquid wastes, including well drilling fluids (i.e., drill muds), produced water, ballast water, and sanitary and domestic wastewater generated by OCS-related activities.
- Solid waste disposal, including material removed from the well borehole (i.e., drill cuttings), solids produced with the oil and gas (e.g., sands), cement residue, bentonite, and trash and debris (e.g., equipment or tools) accidentally lost, including those that contain materials such as mercury that may bioaccumulate.
- Gaseous emissions from offshore and onshore facilities and transportation vessels and aircraft.
- Noise from seismic surveys, ship and aircraft traffic, drilling and production operations, and explosive platform removals.
- Invasive species whose introduction may be facilitated by activities associated with the construction of offshore facilities or with the movement of materials and equipment by way of transportation systems.
- Physical impacts from ship and aircraft traffic and use conflicts with oil tankers and barges, supply/support vessels and aircraft, and seismic survey vessels and aircraft.
- Physical emplacement, presence, and removal of facilities, including offshore platforms; seafloor pipelines; floating production, storage, and offloading systems; onshore infrastructure such as pipelines, storage, processing, and repair facilities; ports; pipe coating yards; refineries; and petrochemical plants.
- Other activities including oil spill response (cleanup), including both response and recovery under extreme sea and ice conditions.

- Interaction of oil and gas industry workers and local residents, including interaction associated with the employment of local residents.

In addition to the activities that may result from the proposed action, the PEIS considers natural processes and phenomena that could cause indirect impacts by affecting the safe conduct of OCS oil and gas exploration, production, and transportation activities, or the environmental conditions under which these activities occur. These include geologic hazards such as earthquakes and continental slumping; gas hydrates; physical oceanographic processes such as water currents, sea ice, and waves; subsea permafrost; shoreline erosion; and meteorological and climatic events and processes such as hurricanes and climate change, including global warming and ocean acidification. The PEIS also considers space-use conflicts with military operations in designated offshore military areas and potential future alternative uses of the OCS, including the program for alternative energy development and production and alternate use of offshore facilities. It also considers the effects of the Program on the introduction of invasive species into U.S. waters.

This PEIS gives particular attention to the issue of climate change, based on the observed changes that have been occurring during the past several decades, particularly in the Arctic environments in Alaska. Chapter 3 presents a discussion of climate change and baseline conditions (Section 3.3), while many of the subsequent resource-specific discussions of the affected environment include discussions of the effects of ongoing, observable climate changes for those resources. Additional analyses are included in the cumulative analysis (Section 4.6) in which the impacts of the continuing trend in climate change during the life of the proposed action are evaluated along with all other factors affecting a particular resource.

1.5.4 Potentially Affected Resources

This PEIS evaluates resources that may potentially be impacted by oil and gas leasing and development under the Program. The resources evaluated include not only natural resources (physical and biological) but social, cultural, and economic resources as well. The natural resources and topics evaluated in this PEIS are as follows:

- *Water Quality (including marine and estuarine areas)*. The water quality issues are related primarily to marine water quality and how changes in water quality caused by OCS activities could affect biological resources (for example, by potentially contributing to the GOM hypoxia zone).
- *Air Quality*. The principal concern is the transport of offshore emissions to onshore areas leading to potential violations of Federal and State air quality standards intended for the protection of human health and welfare.
- *Biologic Resources*. Primary concerns are related to habitat disturbance or loss (including designated critical habitats, pursuant to the Endangered Species Act of 1973 (ESA), and habitat areas of particular concern, pursuant to the Magnuson-Stevens Act), direct physical impacts on biota, and

disturbance of normal behaviors (feeding, courtship, migration) by OCS-related activities.

- *Socioeconomic and Sociocultural Resources.* Socioeconomic and sociocultural resources included potential impacts on tourism, recreation, commercial fishing, subsistence harvests, aesthetics, local economy, land and water use conflicts, equitable sharing of program benefits and burdens, disproportionate impacts on Louisiana, and disproportionate impacts on Alaska Natives.

The issues we examine in this PEIS regarding possible impacts on biology and ecology fall into three main categories: animals, plants, and habitats or ecological systems. Among the animal groups identified as needing analysis for potential program impacts were marine mammals, birds, fish, and sea turtles. Special attention was drawn to migratory species, species taken commercially and for Alaska Native subsistence (including whales, fish, and birds), and threatened and endangered species. With respect to habitats or systems, both marine (e.g., sanctuaries, marine parks/preserves, seagrasses, mangroves, and “hard bottom” areas) and coastal (e.g., estuaries, wetlands/marsh, intertidal zone, seashore parks) areas were identified as subject to possible adverse impacts. The issue of bioaccumulation is also discussed in this PEIS.

The specific biological and ecological resources analyzed in detail are:

- Marine mammals, including a variety of endangered and nonendangered cetaceans (e.g., whales, dolphins, etc.), pinnipeds (seals, sea lions, walruses), sirenians (manatees), sea otters, and polar bears.
- Terrestrial mammals, including caribou and grizzly/brown bear in Alaska, and five species of federally listed mice and voles that inhabit certain coastal areas of the GOM.
- Birds, including a variety of endangered and nonendangered seabird, shorebird, waterfowl, and raptor species. Particular concern was identified for migratory species, including those taken by Alaska Native for subsistence.
- Fish, including a variety of finfish and shellfish species used for commercial, subsistence, or recreational purposes. Particular concern was identified regarding chronic pollution from polycyclic aromatic hydrocarbons. Particular concern was also identified for salmon in Alaska.
- Reptiles, including sea turtles.
- Coastal habitats, including wetlands, estuaries, seagrass and kelp beds, mangroves, dunes, beaches, and barrier islands.
- Lower trophic level organisms and food chains.

- Open water habitats, such as *Sargassum* mats.
- Seafloor habitats, including submarine canyons, topographic features, corals, live bottom areas (benthic environments), and seeps (e.g., brine and oil seeps).
- Areas of Special Concern, including coastal and marine sanctuaries, parks, refuges, reserves, sanctuaries, and forests. Particular concern was raised in regard to “essential fish habitat” as designated by the U.S. Department of Commerce (USDOC) National Marine Fisheries Service (NMFS).

Specific concerns regarding social, cultural, and economic resources included potential impacts on tourism, recreation, commercial and recreational fishing, subsistence harvests, aesthetics, local economy (especially the “boom/bust” phenomenon), land and water use conflicts, equitable sharing of program benefits and burdens, and disproportionate impacts to certain populations. The social, cultural, and economic topics analyzed in this PEIS are as follows:

- Population, employment, income, and public service issues from the effects of the Program, including issues of “boom/bust” economic cycles.
- Land use and infrastructure, including construction of new onshore facilities, and land use and transportation conflicts between the oil and gas development and other uses.
- Sociocultural systems effects were primarily identified with respect to Alaska. These include concerns about the effects on subsistence (e.g., bowhead whale hunting), loss of cultural identity, psychological health of people, and social costs of lease sales and oil spills.
- Environmental justice (e.g., the potential for disproportionate and high adverse impacts on minority and/or low-income populations [Executive Order 12898]).
- Commercial, subsistence, and recreational fisheries.
- Tourism and recreation, including the use of coastal areas for sightseeing, wildlife observations, swimming, diving, surfing, sunbathing, hunting, fishing, and boating, as well as visual impacts of offshore OCS structures.
- Archaeological resources, including historic shipwrecks and surface or subsurface sites that had been inhabited by humans during prehistoric times.

1.5.5 Issues Not Analyzed in This PEIS

The following discussions address issues identified during the NEPA process that were not analyzed in this PEIS. These issues include concerns about affected resources or analytical techniques employed in the PEIS.

1.5.5.1 Worker Safety

Generally, concerns mentioned regarding worker safety risks from OCS oil and gas development were broad and not defined during scoping. The issue of worker safety is appropriately addressed in BOEM's regulations. The OCSLA and the implementing regulations require that all drilling and production operations use the best available and safest technologies. A principal reason for this requirement is to minimize the adverse effect of OCS operations on human safety. BOEM considers whether a proposed project would be conducted in a manner that conforms to the many specific requirements developed to protect worker safety during the review of proposals to conduct lease operations. Worker safety considerations, are not, however, necessary for, or appropriate to, the determination of the size, timing, and location of leasing activity in the Program and therefore are not addressed in this PEIS.

1.5.5.2 Proposed Seismic Inventory

Many comments were received through the public involvement process on the issue of the Federal Government conducting seismic surveys to identify potential OCS oil and gas resources. Industry must hold leases before it commits to very expensive exploration drilling activities. Generally, industries, States, and individuals supportive of OCS petroleum development favored holding leases before industry commits to exploration activities, and those against OCS development opposed it. Those in favor argued that it was prescribed in duly enacted law, it would support national energy planning, and it would provide information relevant to the equitable sharing of the benefits and burdens of the OCS leasing program. Those against oil and gas leasing and development on the OCS argued that it would subvert previous laws and policies (e.g., coastal zone management and Congressional moratoria), it might not comply with all NEPA requirements, and it might create pressure to develop areas that are currently under Congressional moratoria and Presidential withdrawals. The procedures under which a seismic inventory for all of the oil and gas resources on the OCS might be conducted are not yet established and are, therefore, unrelated to the Program and not addressed in this PEIS.

1.5.5.3 Neighboring Countries Drilling on OCS Border with the United States

It was suggested that the United States should lease selected tracts on the OCS in order to protect U.S. mineral rights in border areas. The issue of foreign governments exploring and developing petroleum resources in their territorial waters is unrelated to the Program and is, therefore, not addressed by this PEIS.

1.5.5.4 Endangered Species Act Section 7 Consultations for Threatened and Endangered Species

Section 7(a)(2) of the ESA (16 USC 1536(a)(12)) requires each Federal agency, in consultation with and with the assistance of the Secretary of the Interior and the Secretary of Commerce, to ensure that any action it authorizes, funds, or carries out in the United States or upon the high seas is not likely to jeopardize the continued existence of any listed species or result in destruction or adverse modification of critical habitat. The regulations at 50 CFR 402.02 defines “action” as “all activities or programs of any kind authorized, funded, or carried out in whole or in part.” Preparing the Program does not fit the definition of a Federal action because no OCS activities are being “authorized, funded, or carried out” at this Program level. Therefore, ESA Section 7 consultations (whether informal or formal) at the 5-year programmatic stage are premature. Instead, decision options for the leasing program are preserved for the Secretary at the time the decision is made for each sale. Therefore, it is at the lease sale stage that BOEM begins ESA Section 7 consultation.

In further support of the position not to consult at the 5-year programmatic stage, the U.S. Fish and Wildlife Service (USFWS) and NMFS, in their final rulemaking establishing procedural regulations for Section 7 consultations (51 FR 19926), clarified that informal and formal consultations are a “post-application process when applicants are involved.” BOEM would therefore not approach this stage until the lease sale level or for any pre- or off-lease permits that may be requested. Further, BOEM believes the intent of Congress when passing the ESA was to exclude consultations on actions that are remote or speculative in nature. While the following quote addresses ESA Section 7 early consultations (a pre-application process defined in the above-referenced *Federal Register* notice), we believe it clearly expresses Congress’ intent and is consistent with our position.

“The Committee expects that the Secretary will exclude from such early consultation those actions which are remote or speculative in nature and to include only those actions which the applicant can demonstrate are likely to occur. [. . .] The Committee further expects that the guidelines will require the prospective applicant to provide sufficient information describing the project, its location, and the scope of activities associated with it to enable the Secretary to carry out a meaningful consultation.” (H.R. Rep. No. 567, 97th Cong., 2nd Sess. 25 [1982])

Ultimately, decisions regarding the size and configuration of a lease sale area, lease stipulations, and some mitigation measures are determined by the presale process. Prior to the presale process, greater uncertainties exist. Some of the uncertainties may result from an industry firm’s interest in a particular area and its willingness to bid, which depend, in part, on continually changing perceptions about potential benefits that might result. Limitations on predicting a firm’s investment decisions also limit the ability to predict OCS activities. With so much uncertainty at this programmatic stage, ESA consultation would be premature.

1.5.5.5 Life Cycle Effects of Oil and Gas Development

A recommendation was made that the PEIS address all reasonable effects of new oil and gas development, production, and consumption. Such “full cycle” effects would include oil and gas exploration, construction and placement of infrastructure, continued drilling, production, processing, treatment, refining, transportation and storage, final decommissioning, and ultimate consumption of the finished product. Additionally, addressing the contribution of OCS development and OCS oil and gas consumption activities to climate change was stressed.

The scope of the proposed action analyzed in this PEIS encompasses the exploration, development, production, and transport of crude oil, and decommissioning. The consumption of the refined oil is not considered because the scope of this PEIS is limited to issues that have a bearing on the decisions for the proposed leasing program. The determination of the size, timing, and location of lease activity does not require USDOJ to consider the impact of consuming oil and gas extracted under an offshore leasing program. USDOJ’s obligations extend to assessing the relative impacts of production and extraction of OCS oil and gas on the localized areas where such activities occur. But, OCSLA does not require USDOJ to consider the environmental impact of post-exploration activities such as consuming fossil fuels on either the world at large, or the derivative impact of global fossil fuel consumption on OCS areas.

1.5.5.6 Resource Estimates and Impact Analyses

A concern was expressed that conclusions for environmental impacts should not be linked only to the potential for undiscovered economically recoverable hydrocarbon resources in a given planning area. It was suggested that low oil and natural resource estimates, and subsequent low probabilities of commercial finds, could erroneously be equated with insignificant environmental impacts. The PEIS does not assume that the potential for oil and gas resources dictates impact significance. The PEIS assesses the potential impacts of exploration, production, transporting crude oil and gas, and decommissioning on environmental resources, including the potential impacts of a large oil spill, of the proposed action and alternatives, regardless of the oil or gas resource estimate in a planning area. The analytical conclusions reflect the likely impacts of routine activities, as well as those that could occur in the event a large spill contacted environmental resources. The estimated number of large spills that could occur is a function of the assumptions regarding anticipated (future) production. Therefore, impacts could be greater on some environmental resources in one planning area because they could be exposed to relatively more large spills than other environmental resources in a different planning area, characterized by lesser oil potential. If exploration fails to identify oil and gas projects that are commercially feasible, then no development would occur and the only impacts will be associated with exploration activities.

A suggestion was made that the analysis of relative marine productivity should not be limited to a measure of the primary productivity. This measure is used because it is well documented and understood. However, we agree that it should not be the only factor used; therefore, BOEM uses other information as well in its consideration of the productivity of marine environments.

A suggestion was made in the Alaska region that BOEM use development scenarios that reflect the concerns of affected communities rather than such industry-related factors as water depth and proximity to existing infrastructure. As is the intent of CEQ guidance, our development scenarios are constructed to identify those events that are most likely to happen to better focus the analysis of future activities. However, we address the concerns of affected communities in the analyses of such topics as possible impacts on species and on subsistence.

1.6 ORGANIZATION OF THIS PEIS

This PEIS is organized as follows:

- Chapter 1 provides background information, identifies the purpose and need for the action, and discusses scoping and analytical issues.
- Chapter 2 describes the alternatives evaluated in the PEIS, identifies alternatives considered but not evaluated in the PEIS, summarizes the cost-benefit analysis prepared in support of the 5-year program, and presents a summary comparison of the environmental impacts of the alternatives.
- Chapter 3 provides an overview of the marine and coastal ecoregions where oil and gas development under the Program may occur and presents descriptions of the physical, natural, cultural, and economic resources or conditions that may potentially be affected by the proposed action and other alternatives.
- Chapter 4 describes the impact-producing factors associated with routine operations under each phase of OCS oil and gas development, discusses accidental events and spills, describes the impact analysis approach of the PEIS, and defines impact levels. This chapter also discusses the relationship of the physical environment to oil and gas development and identifies issues of programmatic concern, including deferrals and mitigation. Finally, Chapter 4 presents the exploration and development scenarios, as well as the accidental oil spill scenarios, assumed for this PEIS; discusses the potential impacts of these scenarios for each alternative; and discusses the potential cumulative impacts of the alternatives.
- Chapter 5 identifies the unavoidable adverse impacts associated with the alternatives.
- Chapter 6 discusses the relationship between short-term use of the environment and long-term productivity.
- Chapter 7 discusses the significant irreversible and irretrievable commitments of natural and man-made resources.

- Chapter 8 discusses the process used for preparing the Program and the list of agencies, organizations, governments, and individuals that received the PEIS. Chapter 8 also includes Draft PEIS public comments and responses.
- Chapter 9 lists the names, education, and experience of the persons who helped to prepare the PEIS. Also included are the subject areas for which each person was responsible.
- Appendix A presents a glossary of terms used throughout this PEIS.
- Appendix B identifies the mitigation and other protective measures that are required by existing statutes or regulations, as well as sale-specific measures (stipulations) that were commonly adopted in past sales and that are assumed will be implemented for any lease sales that would occur under the Program.
- Appendix C identifies Federal laws and Executive Orders that would apply to leasing under the Program.

1.7 REFERENCES

EIA (U.S. Energy Information Administration), 2011, *Annual Energy Outlook 2011*, Office of Integrated and International Energy Analysis, Washington, D.C.

Hagerty, C.L., 2011, *Outer Continental Shelf Moratoria on Oil and Gas Development*, CRS Report to Congress, 7-5700, R41132, Congressional Research Service, Washington, D.C., May 6.

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