Draft Proposed Outer Continental Shelf (OCS) Oil and Gas Leasing Program 2010–2015

Considering Comments of Governors, Section 18 Factors and OCS Alternative Energy Opportunities

January 2009

MMS U.S. Department of the Interior
Minerals Management Service

www.mms.gov

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Abbreviations

A	
AEWC	Alaska Eskimo Whaling Commission
AMCC	Alaska Marine Conservation Council
B	
Bbl	Barrels
BBO	Billion barrels of oil
BBOE	Billion barrels of oil equivalent
BCF	Billions cubic feet of gas
Btu	British thermal unit
C	
CZMA	Coastal Zone Management Act
D	
DPP	Draft Proposed Program
DOE	Department of Energy
DOI	Department of the Interior
E	
EA	Environmental Assessment
EIA	Energy Information Administration
EIS	Environmental Impact Statement
EPAct	Energy Policy Act of 2005
ESI	Environmental Sensitivity Index
ESP	Environmental Studies Program
ESPIS	Environmental Studies Program Information System
F	
FY	Fiscal Year
G	
GDP	Gross Domestic Product
GOM	Gulf of Mexico
GOMESA	Gulf of Mexico Energy Security Act of 2006
GSOE	Garden State Offshore Energy LLC
GW	Gigawatt
L	
LNG	Liquefied natural gas
M	
Mcf	Thousand cubic feet
M	Thousand
MM	Million
MMS	Minerals Management Service
MT	Metric ton
MW	Megawatts
N	
NAS	National Academy of Sciences
NEPA	National Environmental Policy Act
NEV	Net Economic Value
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOIA	National Ocean Industries Association
NRC	National Research Council
NRDC	National Resources Defense Council
NSV	Net Social Value
O	
OCS	Outer Continental Shelf
OCSLA	Outer Continental Shelf Lands Act
OECM	Offshore Environmental Cost Model
R	
ROD	Record of Decision
RPS	Renewable Portfolio Standards
T	
TAPS	Trans Alaska Pipeline
Tcf	Trillion cubic feet
TWh	Terawatt hours
W	
WCGA	West Coast Governors' Agreement on Ocean Health

Preface

Management of the oil and gas resources of the Outer Continental Shelf (OCS) is governed by the OCS Lands Act (Act), as amended, 43 U. S.C. 1331. et. seq., which sets forth procedures for leasing, exploration, and development and production of those resources. The Minerals Management Service (MMS) is the bureau within the Department of the Interior that is responsible for implementing the requirements of the Act. Section 18 of the Act calls for the preparation of an oil and gas leasing program indicating a 5-year schedule of lease sales designed to best meet the nation's energy needs.

The MMS is in the process of preparing a possible new 5-year program for 2010-2015, to replace the current program for 2007-2012. This document constitutes the draft proposed program, which is the first in a series of leasing proposals developed for public review before the Secretary of the Interior may take final action to approve a new 5-year program for 2010-2015. The draft proposed program provides a basis for conducting further analysis and gathering further information for the Secretary to consider in making future decisions. The document consists of the parts described below.

- Part I presents a summary of the draft proposed program. It briefly relates the location and timing of OCS oil and gas lease sales proposed for 2010-2015 and it discusses procedures for assuring the receipt of fair market value for leases as required by Section 18.

- Part II provides an informational overview of the emerging OCS Alterative Energy Program, which is mandated by the Energy Policy Act of 2005. While the Section 18 analysis and decisions are limited to oil and gas as required by the Act, the information about the Alternative Energy Program provides a back drop to the management of a more comprehensive OCS energy scenario.

- Part III describes the framework for developing the new program. It discusses the substantive and procedural requirements that are in place for preparing a program under Section 18 and describes the MMS approach to meeting those requirements. This includes a discussion of the principles and factors relating to OCS oil and gas resources and environmental and social considerations that Section 18 requires to be taken into account in deciding where and when to propose lease sales.

- Part IV presents the options that MMS prepared as a result of its analysis of the Section 18 principles and factors. The options form the basis from which the Secretary chooses the draft proposed program for 2010-2015. Each set of options is prefaced with a brief summary of the relevant results of the Section 18 analysis, the comments that MMS received from interested and affected parties, and any currently known or potential interest in alternative energy in the planning area being discussed.

- Part V presents the detailed Section 18 analysis executed by MMS to develop the options presented to the Secretary.

- Appendix A is a summary of all correspondence received by MMS in response to its public request for comments on the possible preparation of a new 5-year program, which was issued on August 1, 2008.

Appendix B provides a further explanation of the timing assumptions and their sensitivity in estimating Net Social Value in the Section 18 analysis presented in part V.B.

I. SUMMARY OF DECISION—DRAFT PROPOSED PROGRAM FOR 2010-2015

Introduction

Section 18 of the Act requires the Secretary of the Interior to prepare and maintain a schedule of proposed Outer Continental Shelf (OCS) oil and gas lease sales determined to "best meet national energy needs for the 5-year period following its approval or reapproval." Preparation and approval of a 5-year program must be based on a consideration of principles and factors specified by Section 18. Those criteria, and the manner in which they have been considered in the preparation of the draft proposed program for 2010-2015, are summarized in part III.

With the President's 2008 lifting of the withdrawal on offshore oil and gas exploration, areas of the OCS are now available for leasing that were not included in the 2007-2012 5-Year Program. Consequently, these new areas need to be evaluated for both their resource potential and public and industry interest in exploring and developing these areas. The President has acted to remove the withdrawal without restrictions, and Congress has acted to discontinue the annual moratoria without any further restrictions. In moving this process forward and to ensure the broadest possible review, public and industry comments are solicited on all the areas that the President and Congress have made available.

It is uncertain that the next 5-Year Program will offer as many areas for leasing as are included in this document. Such decisions on the size, timing and location of sales will rest with members of the next Administration. This draft proposed program (DPP) provides the next Administration with the maximum flexibility and the maximum available information to make these important decisions. To that end, the following questions will need to be addressed regarding the areas of the OCS that may be made available for leasing:

- Should there be buffer zones (i.e. areas where certain activities are prohibited or restricted)? If so, how large should they be? What criteria should be used for setting them (e.g., visual impacts, infrastructure, etc.)? Should they be uniform in all new areas or vary by area according to issues of concern and/or technical constraints?

- Are there specific areas/subareas that should be excluded because they are particularly sensitive? Or because oil and gas activities may significantly conflict, in area, with other uses for which the area/subarea might be better suited (e.g., alternative energy)?

- This Administration views revenue sharing as a strong feature of state participation in coastal resource development. When the President modified the presidential withdrawal, he called upon Congress to address new legislation to enhance current revenue sharing laws, to allow broader state participation in fiscal planning related to future coastal resource development. Please provide your views on what policies and programs MMS, Congress and the Administration should consider relative to OCS revenue sharing.

- For those areas proposed for leasing consideration in the Southern California Planning Area, in deciding the next steps in the 5-year program preparation, should MMS include a requirement for mandatory unitization to potentially limit the number of structures in one or more of these areas?

The DPP also outlines prospective resources and the potential revenues associated with the DPP. The MMS plans to complete an update of their 2006 National Assessment in early 2010 which should be available prior to publication of the Proposed Final Program.

It is important to note that the DPP invites comment from coastal states on how OCS resources are developed off their shores. Despite efforts on the part of the Administration to urge Congress to take up revenue sharing legislation, Congress has not expanded revenue sharing outside of four Gulf States. Other coastal states could share in revenues from leasing starting at the offshore state/Federal boundary, based upon the inherent revenue sharing built into section 8(g) of the Act. Congress could establish a broader revenue sharing program. Because of the then current energy situation and the 2008 President's action to remove the previous Presidential withdrawal, the governors of all 50 states were specifically asked for their comments, particularly on issues that are unique to each state, such as revenue sharing. The 2008 expiration of the congressional moratoria highlights new issues related to participation in revenue sharing.

While the DPP necessarily includes a schedule of sales (size, timing, and location), the intent of this document and associated materials is to make clear the Secretary is not recommending that any particular areas be in or out of the eventual final program. Rather, this DPP is designed to gather information, allowing the process to move forward in a way that will allow the next Administration to design a program that meets the objectives of the Nation.

This DPP is part of a multi-step process to prepare a new 5-Year Program to possibly replace the current one that began on July 1, 2007, and will end on June 30, 2012. The Secretary instituted the multi-step program preparation process two years early in order to provide an opportunity for greater access to domestic energy resources in a shorter time frame. Included in this document is information about OCS alternative energy leasing and development, an authority given to the Department by the Energy Policy Act of 2005, although this information is not part of the Section 18 process. Part II provides an overview of the Alternative Energy Program. Also included in Part IV is more area-specific alternative energy program information in conjunction with the discussion about that particular planning area and the oil and gas options considered and chosen for the DPP decision.

Before the new 5-Year Program may be approved and implemented, MMS must accept and consider comments on the draft proposed program, issue for public review and comment a proposed program and draft Environmental Impact Statement (EIS), and issue a proposed final program and final EIS. The 5-year preparation process is described in part III.

Section 18 of the Act requires that the 5-year schedule of lease sales be based upon a comparative analysis of the oil and gas-bearing regions of the OCS. Purely for administrative planning purposes, MMS has created 26 planning areas. Maps 1 and 2 in part IV show the planning areas, including those currently under restrictions.

In developing the draft proposed program for 2010-2015, MMS analyzed and considered leasing in all 26 planning areas of the OCS. The Secretary has decided to include all or portions of 12 planning areas in the DPP. This proposal includes a portion of the Central Gulf of Mexico Planning Area off the coast of Alabama and part of the Eastern Gulf of Mexico Planning Area, which are currently withdrawn from leasing consideration to 2022 under the Gulf of Mexico Energy Security Act of 2006 (GOMESA). While these areas may continue to

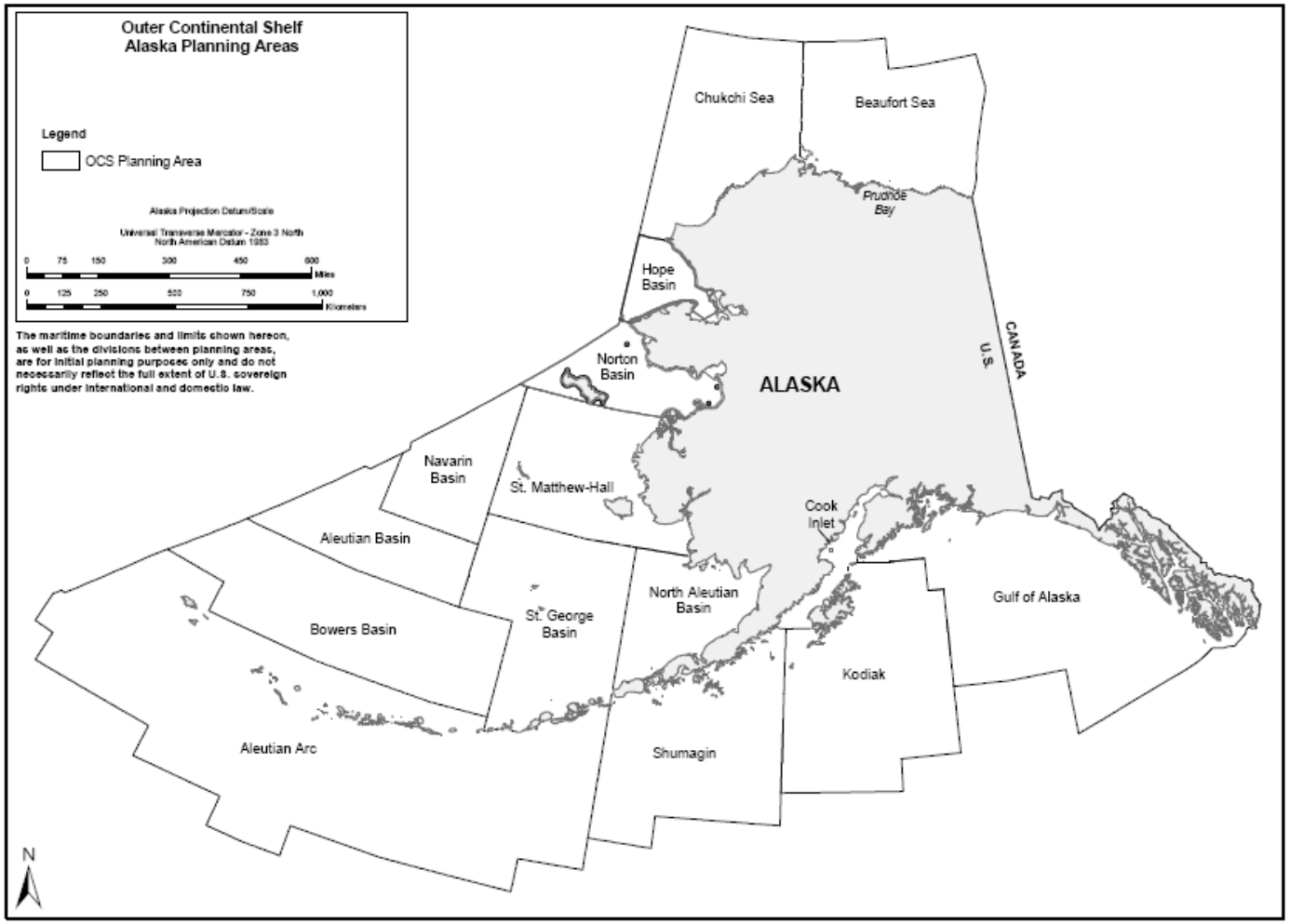
be included on a 5-year schedule, in order to actually hold a lease sale, Congress must pass new legislation lifting the restriction. In addition, pursuant to Section 18 of the OCS Lands Act, no lease sale will be proposed until all affected states have the opportunity to comment.

On August 1, 2008, MMS published a Notice in the *Federal Register* (73 FR 45065) requesting comments on all areas of the OCS and, specifically, whether to proceed with a new program 2 years early. One of the criteria to be considered under Section 18 is the Nation's energy needs. The August Notice laid out the current and future scenarios as put forth by the Department of Energy (DOE) in their *Annual Energy Outlook 2008,* cited the then-current price of oil, which had doubled since the announcement of the current program in April 2007, and provided information on the world energy markets and what activities were occurring closer to home, off Canada and Cuba. While the recent, precipitous price decline was due largely to a serious economic crisis that suddenly constrained demand, prices during the new 5-year lease sale schedule time period may rise as global economies recover. Energy plays a central role in the operation of the U.S. economy, and energy spending is commensurately large. In recent years, American consumers have spent well over a trillion dollars a year, more than 8 percent of the gross domestic product, on energy. For national and economic security reasons, the Nation needs more dependable access to many sources of energy—in its more traditional forms such as oil and gas, as well as opportunities for alternative sources of energy, such as wind, wave, and tidal current on the OCS.

The MMS received over 152,000 comments in response to the August 2008 Notice. See Appendix A, Summary of Comments. With the national and global energy situation, the comments from the public were about 60 percent in agreement with starting a new program to provide some level of expanded access to domestic sources of oil and natural gas. This DPP is designed to gather information, allowing the process to move forward in a way that will allow the next Administration to design a program that best fits their assessment of how to balance energy needs, environmental risks and benefits.

The DPP proposes a total of 31 OCS lease sales in 12 areas (4 areas off Alaska, 3 areas off the Atlantic coast, 2 areas off the Pacific coast, and 3 areas in the Gulf of Mexico). Maps A and B show the areas proposed for leasing (proposed program areas). Table A lists the location and timing of the proposed lease sales. Of the 31 sales, 10 sales are in 6 areas that were formerly under executive and/or congressional restrictions.

MAP A: Shows the Alaska Program Areas



MAP B: Shows the Lower 48 States Program Areas

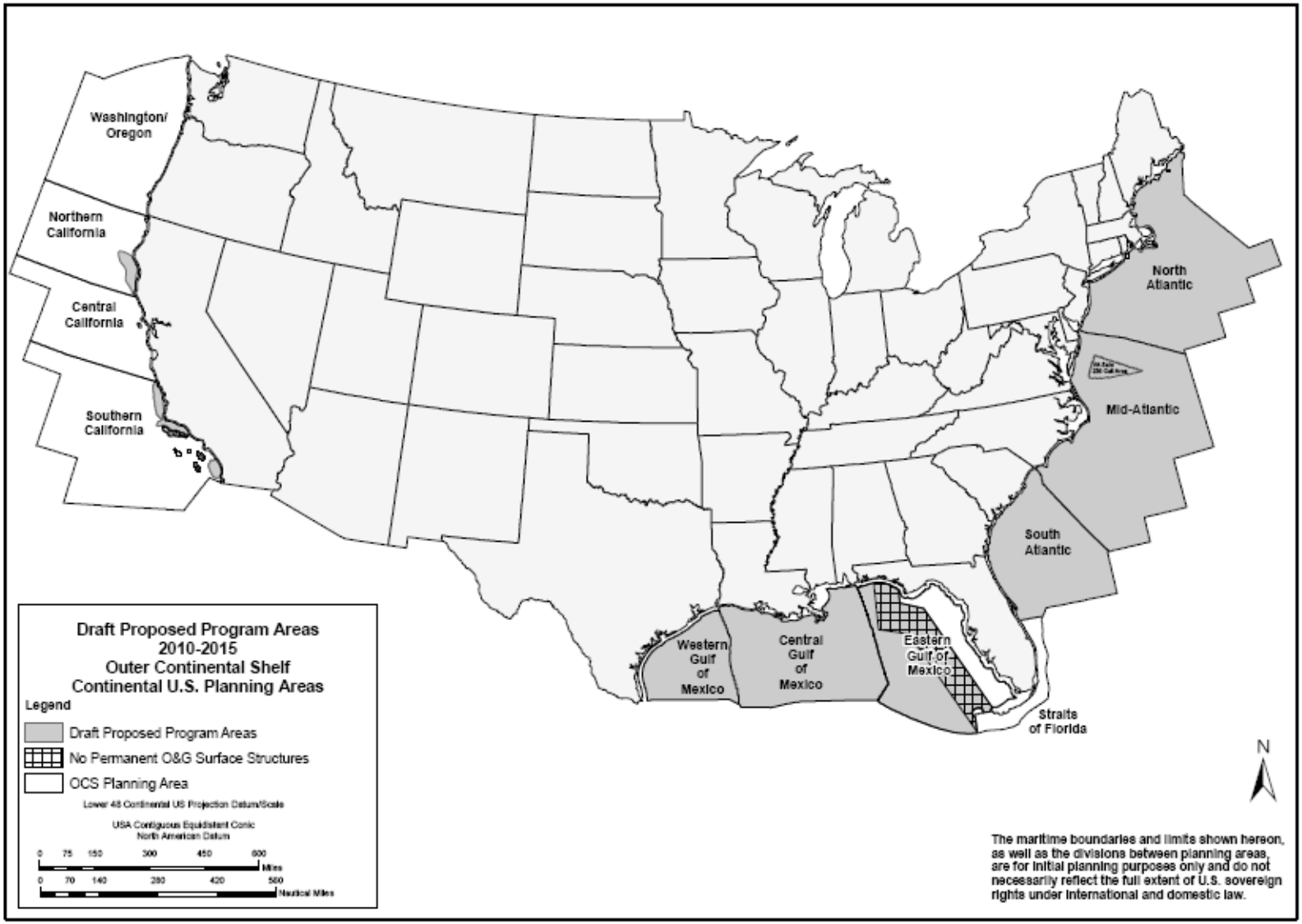


Table A
Draft Proposed Program for 2010-2015—Lease Sale Schedule

Sale No.	Area	Year
225	Eastern Gulf of Mexico	2010
215	Western Gulf of Mexico	2010
212	Chukchi Sea	2010
216	Central Gulf of Mexico	2011
218	Western Gulf of Mexico	2011
226	Eastern Gulf of Mexico*	2011
227	Central Gulf of Mexico*	2011
214	North Aleutian Basin	2011
219	Cook Inlet	2011
220	Mid-Atlantic	2011
222	Central Gulf of Mexico	2012
221	Chukchi Sea	2012
228	Southern California	2012
229	Western Gulf of Mexico	2012
230	Mid-Atlantic	2012
231	Central Gulf of Mexico	2013
217	Beaufort Sea	2013
232	North Atlantic	2013
233	Western Gulf of Mexico	2013
234	Eastern Gulf of Mexico*	2013
235	Central Gulf of Mexico	2014
236	Northern California	2014
237	Chukchi Sea	2014
238	Western Gulf of Mexico	2014
239	North Aleutian Basin	2014
240	South Atlantic	2014
241	Central Gulf of Mexico	2015
242	Beaufort Sea	2015
243	Southern California	2015
244	Cook Inlet	2015
245	Mid-Atlantic	2015

**Program area for lease sales would be expanded if Congress passes new legislation to lift any or all of the moratorium mandated by the Gulf of Mexico Energy Security Act of 2006 (GOMESA).*

Table B gives the leasing revenues (royalties plus bonuses for this discussion) that are estimated to be generated from leases issued in potential lease sales held in the draft proposed program planning areas. The total leasing revenues for all proposed sales sum to $368 billion in nominal dollars and $56 billion in present value dollars. (Cash flows are discounted at a 7 percent real interest rate plus the inflation rate to obtain present values.) Table B also gives the states' potential shares of the leasing revenues by applicable region, assuming the same revenue sharing formula of 37.5 percent as in GOMESA. They sum to $123 billion in nominal dollars and $18 billion in present value dollars, excluding revenues distributed under section 8(g) of the Act. Based on the projections of net economic value, the sum of Federal corporate income taxes and corporate profits generated by the new program is forecasted to be an additional $1.1 trillion in nominal dollars and $130 billion in present value dollars. It is assumed that Congress enacts legislation under which all leasing revenues with the states will be shared at 37.5 percent under future legislation, for areas where no sales were included in the 2007-2012 program and which were previously under moratoria. Sales in areas already included in the 2007-2012 leasing program are assumed to share revenues only as provided by GOMESA. That is, sharing begins in the Central and Western Gulf of Mexico for revenues starting in FY 2017, except certain parts of the Central and Eastern Gulf of Mexico formerly included in the Lease Sale 181 area or due south of that area, where sharing started in 2008. The estimates provided do not take account of the $500 million annual cap on revenue sharing currently provided in GOMESA for the Central and Western Gulf of Mexico planning areas.

Table B. Leasing Revenues and States Shares

Federal Leasing Revenues Before Sharing							
		Nominal Dollars (Millions)			**Present Values (2010 Millions)**		
Region	**Sales**	**Royalty**	**Bonus**	**Total**	**Royalty**	**Bonus**	**Total**
Gulf of Mexico	13	$281,855	$3,955	$285,811	$41,662	$3,403	$45,065
Atlantic	5	$15,084	$410	$15,494	$1,599	$334	$1,933
Pacific	3	$29,612	$407	$30,018	$3,017	$290	$3,307
Alaska	9	$36,051	$291	$36,342	$4,998	$217	$5,215
Total	30	$362,602	$5,063	$367,665	$51,277	$4,244	$55,521
States' Shares (37.5%)							
		Nominal Dollars (Millions)			**Present Values (2010 Millions)**		
Region	**Sales**	**Royalty**	**Bonus**	**Total**	**Royalty**	**Bonus**	**Total**
Gulf of Mexico	13	$105,696	$600	$106,296	$15,623	$546	$16,169
Atlantic	5	$5,656	$154	$5,810	$600	$125	$725
Pacific	3	$11,104	$152	$11,257	$1,131	$109	$1,240
Alaska	9	$13,519	$109	$13,628	$1,874	$81	$1,956
Total	30	$122,456	$906	$123,363	$17,355	$780	$18,134

Notes:
Estimates assume revenue sharing occurs without annual revenue sharing caps (currently $500 million/yr in the GOM)
Estimates assume legislation granting immediate revenue sharing for States near formerly restricted planning areas; GOM States share royalties after 2017
Estimates assume that legislation granting revenue sharing for Atlantic and Pacific States also grants same terms for Alaska.
Rental revenues are not estimated.

Alaska Region

In the Alaska Region, the DPP schedules multiple lease sales in the Beaufort Sea, Chukchi Sea, and North Aleutian Basin Planning Areas. Multiple sales are consistent with the Governor of Alaska's recommendations and the State's administration of its offshore oil and gas program. The sales in the Beaufort and Chukchi Seas are staggered by year with each other and timed to allow for possible new data from drilling between sales. The draft proposal expands the program areas to the entire planning areas for the Beaufort and Chukchi Seas, but the two subsistence deferrals in the Beaufort Sea and the 25-mile no-leasing buffer in the Chukchi Sea are continued from the current program.

Two sales are proposed in the North Aleutian Basin, a sale in 2011 in the current program and a second sale in 2014. The draft proposed program area is limited to that area included in the current program, commonly called the Sale 92 area, from the only sale held in this planning area in 1988.

The Cook Inlet Planning Area is included on the schedule as a special interest sale area. The sales are proposed for 2011 and 2015, but before MMS proceeds, it will issue a request for nominations and comments and will move forward only after consideration of the comments received in response to annual calls for information. If the comments from a call for information do not support consideration of a sale, the sale will be postponed and a request for nominations and comments will be issued again the following year, and so on through the 5-year schedule, until a sale is held or the schedule expires.

Maps 3-6 in part IV depict the specific Alaska OCS areas proposed for lease sales.

Pacific Region

The Pacific Region consists of four planning areas—Washington-Oregon, Northern California, Central California, and Southern California. The draft proposed program schedules one sale in the Northern California Planning Area and two in the Southern California Planning Area. The proposed sales are focused on areas of known hydrocarbon potential—the Point Arena Basin in Northern California, and the Santa Maria, Santa Barbara/Ventura, and Oceanside/Capistrano Basins in Southern California. The potential sales are limited to no more than these basins. The MMS also requests comments on mandatory unitization to potentially limit the number of structures in each of these basins. The draft proposed program area for the first sale in the Southern California Planning Area includes the Ecological Preserve offshore Santa Barbara for leasing but with access available only by directional drilling from structures outside the Preserve.

Maps 7 and 8 in part IV depict the specific Pacific OCS areas proposed for leasing consideration.

Gulf of Mexico Region

The draft proposed program includes sales in all three areas of the Gulf of Mexico Region—Western, Central and Eastern. The Central and Western Gulf of Mexico Planning Areas remain the two areas of highest resource potential and interest. The draft proposed program

would continue the customary practice of annual lease sales in these two areas, offering all the area that is not leased or under restriction. In addition, a second sale is proposed for 2011 in a small portion of the Central Gulf of Mexico Planning Area. This portion was recently made available with the lifting of restrictions.

Three sales are proposed for the Eastern Gulf of Mexico Planning Area, starting in 2010, offering all the area that is not leased or under restriction. The majority of the planning area is under restriction pursuant to GOMESA. Should any or all of that restriction be lifted during the 2010-2015 time frame, the draft proposed program area encompasses a portion of the planning area as depicted in Map 11. The proposal includes a 75-mile wide no permanent surface structures zone, with no leasing eastward of that zone. This area is configured to preliminarily address military multiple-use issues. Dialogue with the Department of Defense will continue through the development of this 5-year program and throughout the prelease process. To the extent that GOMESA restrictions remain in effect during the duration of the program, the program area for these sales would include the area offered in Sale 224 in 2008 as mandated by GOMESA plus a small portion to the south of the Sale 224 area recently made available with the lifting of restrictions.

Maps 9-11 in part IV depict the specific Gulf of Mexico OCS areas proposed for lease sales.

Atlantic OCS

There are four planning areas in the Atlantic OCS—North Atlantic, Mid-Atlantic, South Atlantic, and Straits of Florida. The draft proposed program proposes one sale each in the North and South Atlantic Planning Areas and three sales in the Mid-Atlantic Planning Area. Sale 220, offshore Virginia is the first of the three sales. In the current program, the Sale 220 program area includes a 50-mile no leasing buffer. However, for the two subsequent sales, the draft proposed program area contains no buffers for the entire Mid-Atlantic planning area. The Department intends to continue to be responsive to the request for a 50-mile buffer during subsequent steps in the 5-year program process or during the individual sale process, if the Commonwealth continues to hold that position. No sales are proposed for the Straits of Florida Planning Area.

Maps 12-14 in part IV depict the specific Atlantic OCS areas proposed for leasing consideration.

Assurance of Fair Market Value

Section 18 of the Act requires receipt of fair market value from OCS oil and gas leases. The MMS expects to continue using a two-phase post-sale bid evaluation process that it has used since 1983 to meet the fair market value requirement. Further, the DPP provides that MMS may set minimum bid levels, rental rates, and royalty rates by individual lease sale based on its assessment of market and resource conditions as the sale approaches. See part IV.D for fair market value options. Further information and analysis is contained in part V.D.

II. INFORMATION ON LEASING AND DEVELOPMENT OF ALTERNATIVE ENERGY RESOURCES ON THE OCS DURING THE 2010-2015 TIME FRAME

Overview

In addition to the traditional oil and gas resources, the OCS holds the potential for significant alternative energy resources. While offshore alternative energy technologies generally are in a nascent stage of development and have been employed sparingly in the U.S. to date, it is likely that alternative energy resources will begin to contribute significantly to meeting our energy needs in the near future. The MMS felt it was important to consider potential interaction between any prospective oil and natural gas projects and any potential alternative energy projects, especially wind projects, in addressing the 2010-2015 5-Year Program.

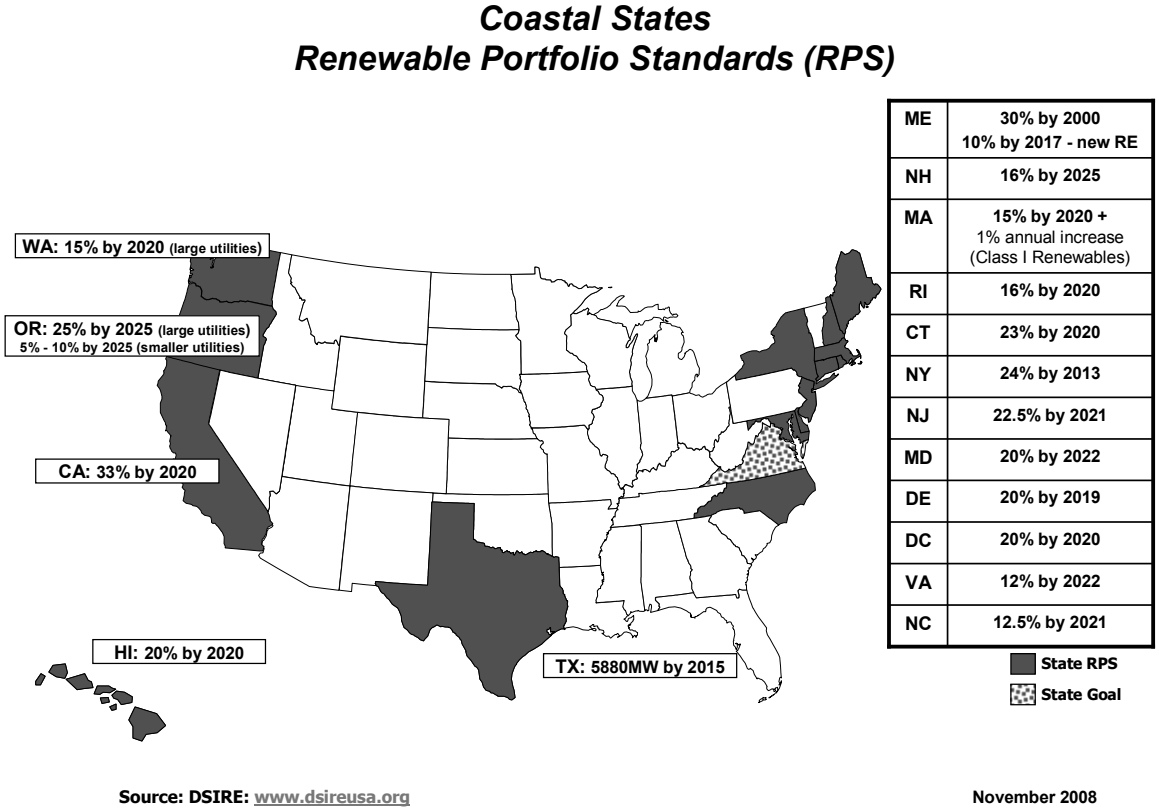


Figure 1

The full range of alternative energy resources includes many thermal and mechanical forms of energy. However, it is likely that for the foreseeable future only wind, wave, and current resources will be economically developable, with wind energy technology being the most mature of the three. These new, clean sources of energy will be developed in large part to comply with renewable portfolio standards (RPS) that have been adopted by states (see above) and could eventually be adopted on a nationwide basis. Due to onshore constraints on energy development, many coastal states—especially in the east—must look offshore to develop alternative energy in support of their RPS.

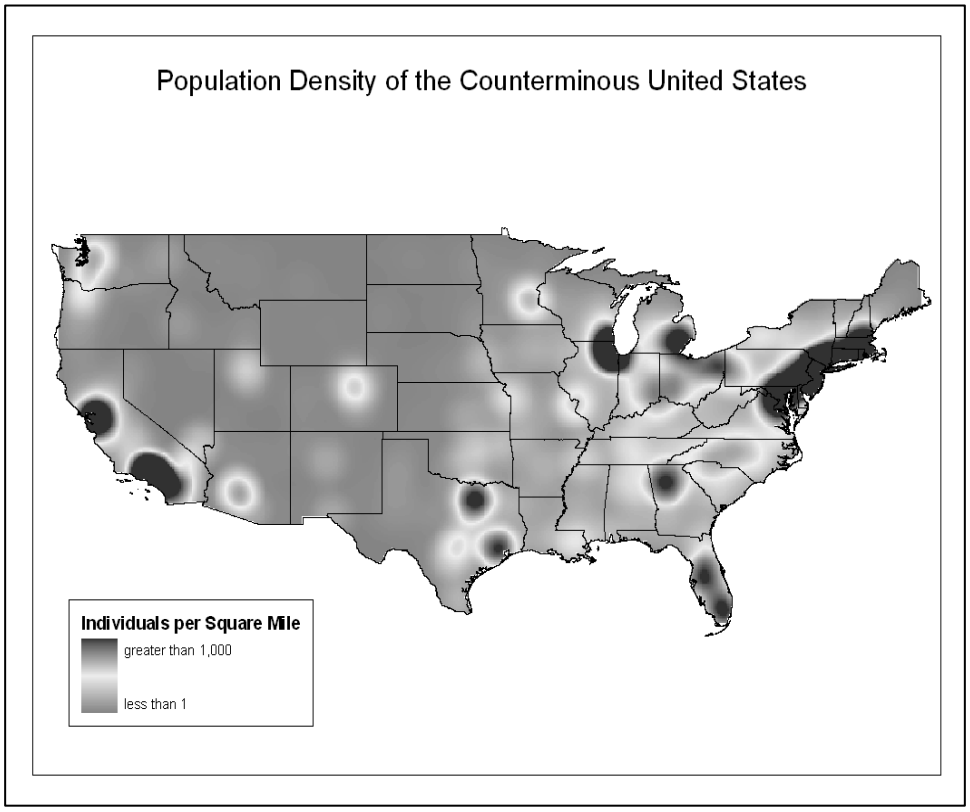
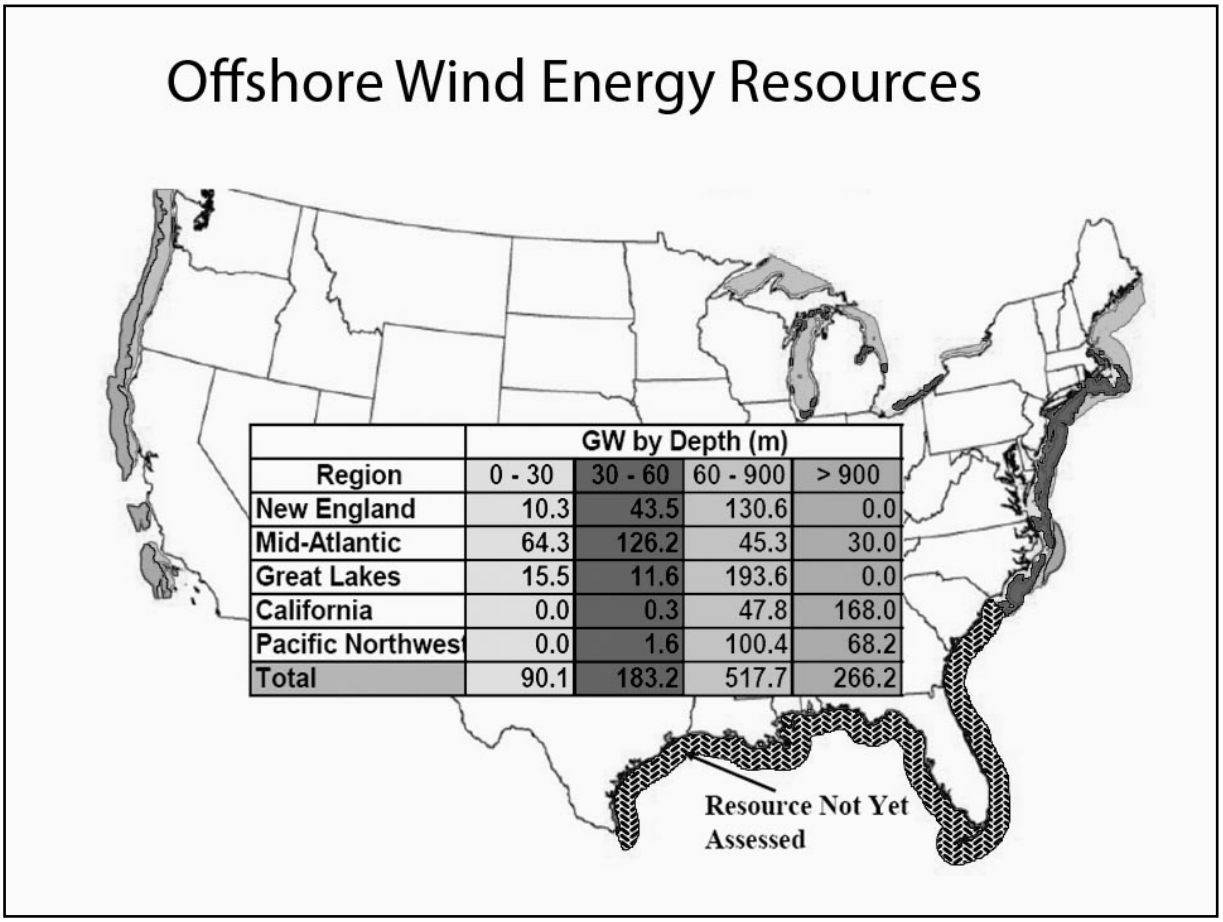


Figure 2

U.S. electricity demand centers coincide with population density, shown above. The locations of the wind, wave, and current resources of the OCS fit well with the locations of these demand centers. This is especially true in the Mid-Atlantic and Northeast, where the heaviest demand centers in the Nation could be served by abundant wind resources that appear to be economically developable at this time. Farther in the future, the demand centers in California could be served by wave and wind resources, and demand in Florida could be served by ocean current resources.

Offshore Alternative Energy Resource Potential

Offshore wind development technology is more advanced than ocean wave and current. Commercial-scale wind facilities have been operating in European waters since the 1990s, and several commercial projects have been proposed on the U.S. OCS, mainly off the east coast. A variety of prototype wave technologies have been deployed internationally, and there is interest in generating energy from ocean wave resources in the U.S., mainly off the west coast. Ocean current technology is the least mature, with efforts to measure currents and deploy testing technology proceeding in one area of the U.S. OCS off southeast Florida.



	GW by Depth (m)			
Region	0 - 30	30 - 60	60 - 900	> 900
New England	10.3	43.5	130.6	0.0
Mid-Atlantic	64.3	126.2	45.3	30.0
Great Lakes	15.5	11.6	193.6	0.0
California	0.0	0.3	47.8	168.0
Pacific Northwest	0.0	1.6	100.4	68.2
Total	90.1	183.2	517.7	266.2

Figure 3

Wind Energy Resources: The U.S. Department of Energy (DOE) estimates that more than 900,000 megawatts (GW), close to the total current installed U.S. electrical capacity, of potential wind energy exists off the coasts of the United States, often near major population centers, where energy costs are high and land-based wind development opportunities are limited. Slightly more than half of the country's identified offshore wind potential is located off the New England and Mid-Atlantic Coasts, where water depths generally deepen gradually with distance from the shore. Development of offshore wind energy technologies has the potential to provide up to 70,000 MW of domestic generating capacity to the nation's electric grid by 2025.

Wave Energy Resources: The total annual average wave energy off the U.S. coastlines, calculated at a water depth of 60 meters, has been estimated at 2,100 Terawatt-hours (TWh). Capturing the energy of ocean waves in offshore locations has been demonstrated as technically feasible, and basic research to develop improved designs of wave energy conversion devices is being conducted in regions such as near the Oregon coast, which is a high wave energy resource. Compared with other forms of offshore renewable energy, such as solar photovoltaic (PV), wind, or ocean current, wave energy is continuous but highly variable, although wave levels at a given location can be confidently predicted several days in advance.

Ocean Current Energy Resources: In terms of ocean current energy, the greatest resource potential in the U.S. appears to lie off of the Florida coast. The Florida Straits current starts

only eight kilometers offshore in the southern part of Florida, close to Miami and sustains relatively large speeds over significant distances in relatively unchanging patterns. All of these factors combine to create an attractive environment for future ocean current resource development.

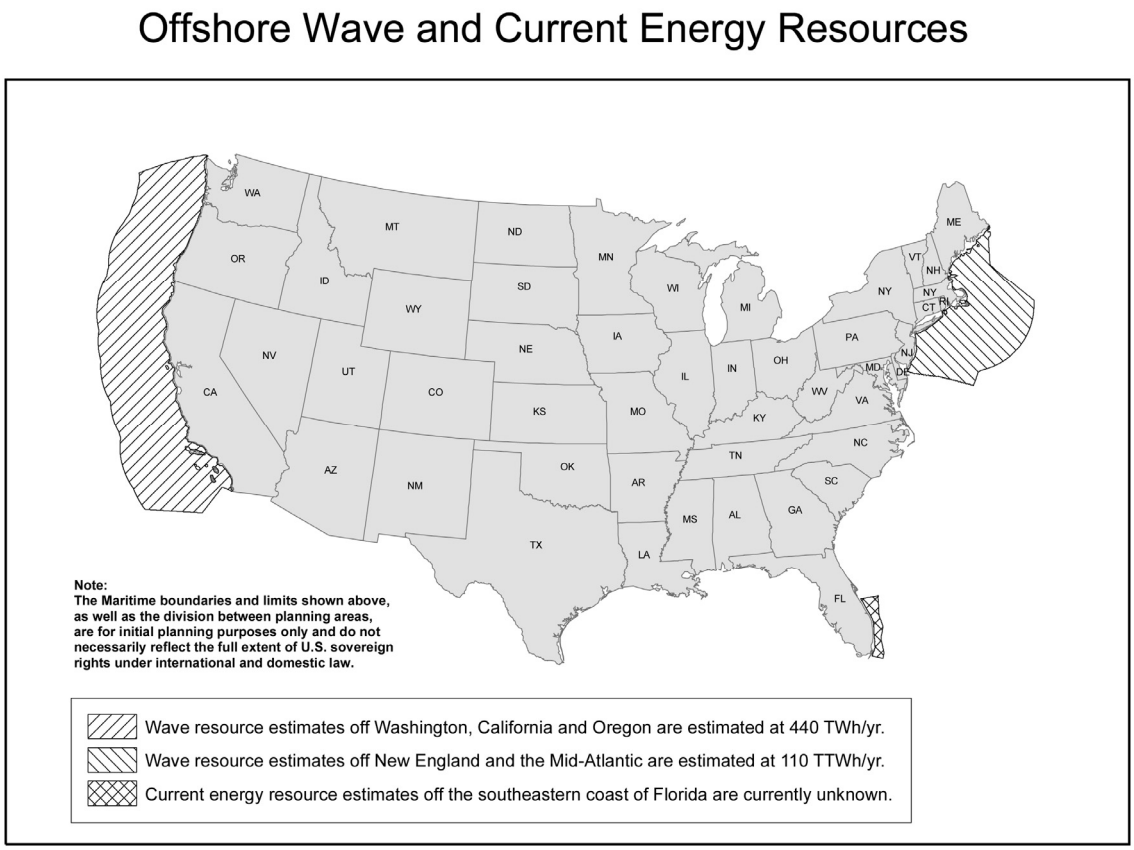


Figure 4

MMS Authority Under the Energy Policy Act of 2005

The MMS may authorize the development of alternative energy on the OCS under subsection 8(p) of the Act, as amended by the Energy Policy Act of 2005 (EPAct). This amendment authorized the Secretary to issue leases, easements, or rights-of way on the OCS for activities that produce or support production, transportation, or transmission of energy from sources other than oil and gas. This authority was delegated to MMS in 2006. Under this authority, MMS will regulate the generation of electricity or other forms of energy from sources other than oil and natural gas under regulations promulgated by MMS. The EPAct also requires that 27 percent of the revenues received by the Federal government from alternative energy projects located within the first three nautical miles of the OCS be shared with nearby coastal States.

Under this relatively new authority, MMS promulgated regulations outlining its role as the lead agency for authorizing OCS alternative energy, as well as recognizing the roles of other Federal agencies that have regulatory responsibility in such activities. The new authority does not expressly supersede or modify existing Federal laws, and all activities must comply fully with such laws. As directed by the statutory provision calling for promulgation of regulations, the MMS consulted with other Federal agencies, as appropriate, affected States, and others throughout the rulemaking process. As required by the statute, MMS rules will provide that any activity permitted under this authority be "carried out in a manner that provides for—

(A) Safety;
(B) Protection of the environment;
(C) Prevention of waste;
(D) Conservation of the natural resources of the Outer Continental Shelf;
(E) Coordination with relevant Federal agencies;
(F) Protection of national security interests of the U.S.;
(G) Protection of correlative rights in the Outer Continental Shelf;
(H) A fair return to the U.S. for any lease, easement, or right-of-way under this subsection;
(I) Prevention of interference with reasonable uses (as determined by the Secretary) of the exclusive economic zone, the high seas, and the territorial seas;
(J) Consideration of—
  (i) The location of, and any schedule relating to, a lease, easement, or right-of-way for an area of the Outer Continental Shelf; and
  (ii) Any other use of the sea or seabed, including use for a fishery, a sealane, a potential site of a deepwater port, or navigation;
(K) Public notice and comment on any proposal submitted for a lease, easement, or right-of-way under this subsection; and
(L) Oversight, inspection, research, monitoring, and enforcement relating to a lease, easement, or right-of-way under this subsection."

After the rulemaking is finalized, MMS will issue requests for interest and calls for information and nomination to determine the levels of interest in leasing areas around the country. Based on the information received, MMS will better understand how to move forward with the processes outlined in the rulemaking.

The MMS prepared a Final Programmatic EIS (PEIS) in support of the establishment of a program for authorizing alternative energy and alternate use activities on the OCS. The PEIS examined the potential environmental effects of the program on the OCS and identifies policies and best management practices that may be adopted for the program. The PEIS also examined three alternatives, as well as the no action alternative: (1) the proposed action which would establish the program; (2) a case-by-case alternative that would evaluate each project individually without the benefit of a comprehensive program; and (3) the preferred alternative, which consisted of a combination of the first two alternatives, allowing MMS to review projects during the interim while the program and regulations are being established.

The PEIS focused on alternative energy technologies and areas on the OCS in which industry expressed a potential interest and the ability to develop or evaluate from 2007 to 2014. The PEIS proposed policies and best management practices based on the PEIS analyses. As the program evolves and more is learned, the mitigation measures may be modified or new

measures developed. Each project developed under this new program will be subject to environmental reviews under the National Environmental Policy Act (NEPA), and each project may have additional project-specific mitigation measures.

A Record of Decision (ROD) was published on January 10, 2008. The preferred alternative was selected as well as interim policies and best management practices that were recommended in the PEIS. The PEIS and ROD are available at http://ocsenergy.anl.gov/. Subsequently, MMS prepared an environmental assessment (EA) analyzing its rulemaking. The EA incorporates by reference the Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf, Final Environmental Impact Statement, October 2007. This EA was prepared to assess any impacts of this rule. The Final EA is available on the MMS website at http://www.mms.gov/offshore/AlternativeEnergy/RegulatoryInformation.htm.

MMS Alternative Energy Interim Policy

In November 2007, while proceeding with the promulgation of regulations, MMS implemented an interim policy to authorize the installation of offshore data collection and technology testing facilities on the OCS in support of alternative energy development. The interim policy was intended to give interested entities a head start in acquiring information that would be helpful to them in proceeding with commercial projects under the final adopted regulations. Following the initial announcement, MMS received more than 40 nominations of areas proposed for limited leasing off the west and east coasts. In April 2008, MMS identified 16 proposed lease areas for priority consideration. Those proposed lease areas included a total of ten for activities relating to development of wind energy off New Jersey, Delaware and Georgia, two for activities relating to development of wave energy off northern California, and four for activities relating to development of current energy off southeast Florida. At this time, following discussions with all of the entities applying for leases in these 16 areas, MMS is proceeding with the lease issuance process for areas off New Jersey, Delaware, Georgia, and southeast Florida. Applicants off northern California have either withdrawn or have not been responsive to MMS in the process.

Based on our experience to date in managing the OCS alternative energy program as described above, MMS has developed preliminary leasing priorities for the next 5 years, located off of the coasts of New Jersey, Delaware, and Rhode Island, that will support future commercial development, as well as identifications of areas of tentative interest for future alternative energy activity. These priorities and interests are outlined in part IV of this document in the discussions of the individual OCS planning areas.

MMS' Alternative Energy Preliminary Leasing Priorities

The MMS has established a tentative goal of potentially authorizing the construction of offshore wind power facilities with the capacity of up to 3,000 megawatts, generating 10,255,986 megawatt hours per year, by 2015. This figure is based on the alternative energy projects that MMS anticipates may be constructed in MMS' preliminary leasing priority areas (Mid-Atlantic and North Atlantic Planning Areas) and tentative areas of interest (North Atlantic Planning Area and offshore Virginia), discussed below, should these areas remain leasing priority areas and areas of interest.

North Atlantic Planning Area

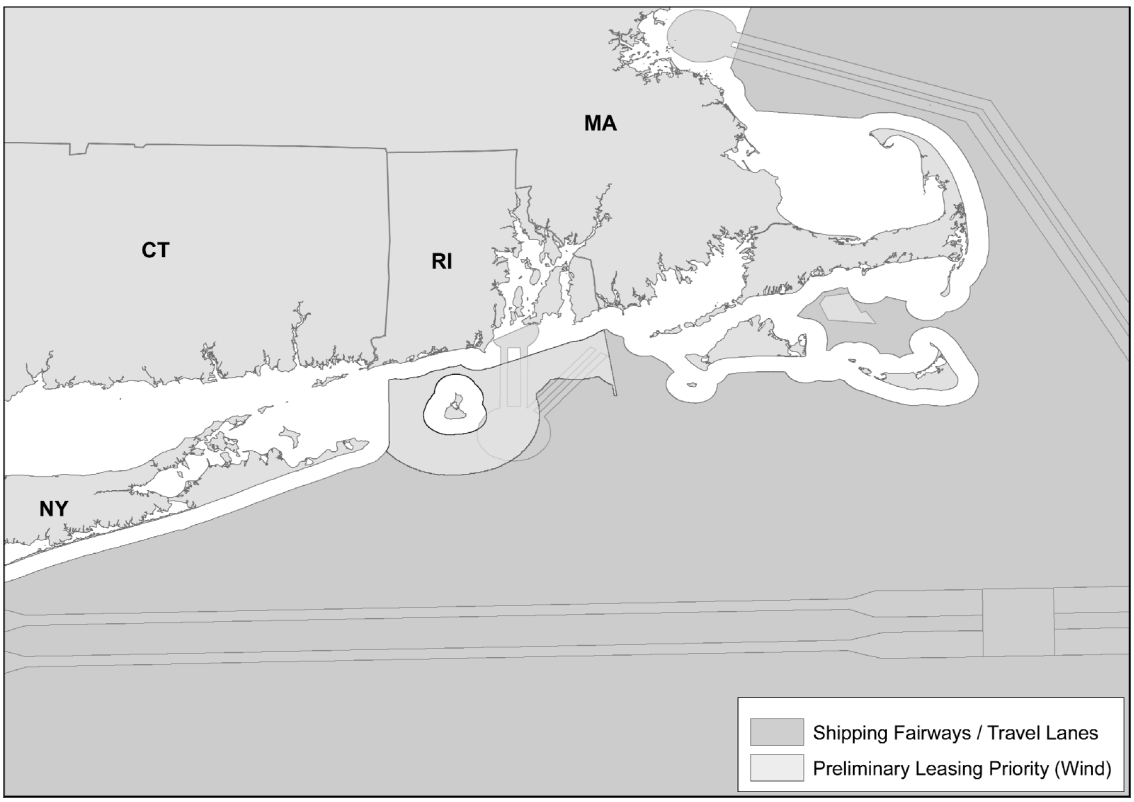


Figure 5

Massachusetts: The MMS is nearing completion of the review of the Cape Wind project proposed in Nantucket Sound on the OCS off Massachusetts. The planned capacity for this wind power facility is approximately 500 megawatts. The MMS anticipates issuing a final EIS in January of 2009 and record of decision on this project later in 2009. If the decision is favorable, MMS may issue a commercial lease noncompetitively later in 2009.

Rhode Island: In September 2008, Deepwater Wind LLC was chosen as the successful developer to construct a wind energy project off the shores of Rhode Island. It is anticipated that the project will provide 1.3 million megawatt hours per year of renewable energy. The exact location of the wind project will be determined from the results of the Special Area Management Plan (SAMP) permitting process led by the Rhode Island Coastal Resources Management Council in partnership with the University of Rhode Islands' Graduate School of Oceanography.

Mid and North Atlantic Planning Area

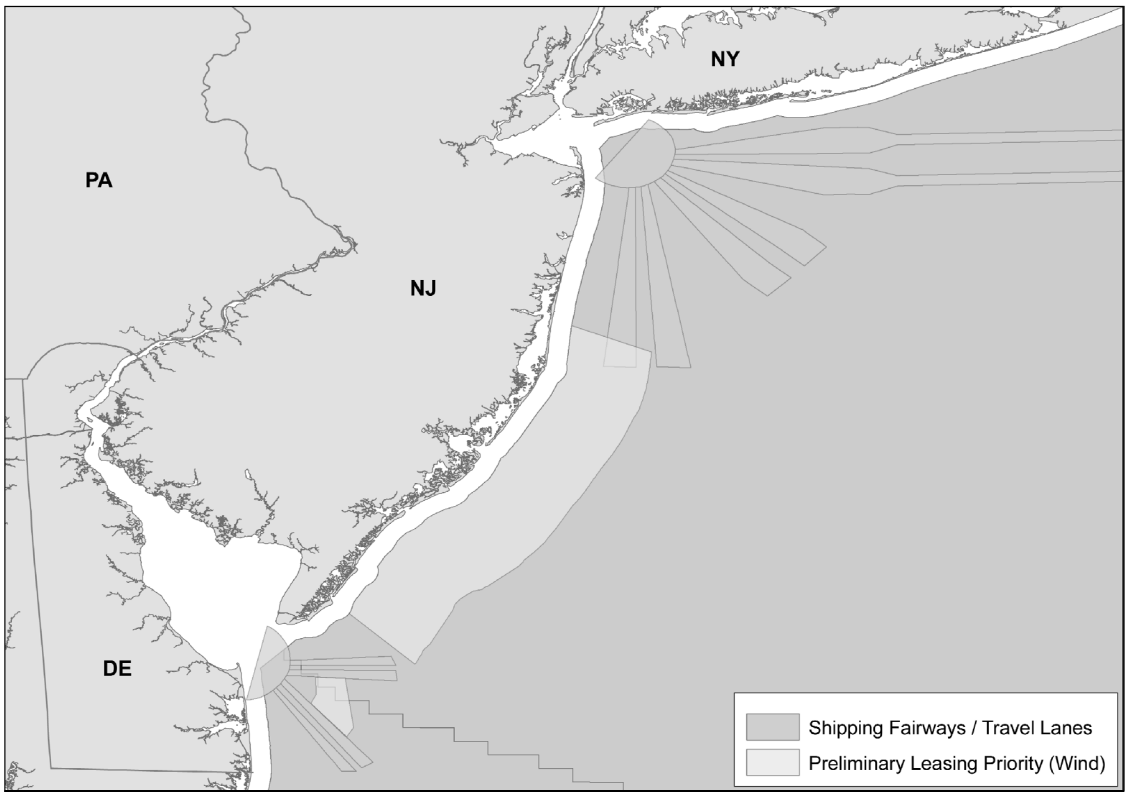


Figure 6

New Jersey: In April 2006, a panel established by the State of New Jersey to look into offshore wind development issued a report calling for the New Jersey Board of Public Utilities (BPU) to proceed with an offshore wind project to obtain practical knowledge of benefits and impacts resulting from offshore wind turbine facilities. The BPU issued a solicitation for proposals to develop a capacity of 350 megawatts of wind power on the OCS and offered a grant of $19 million. In October 2008, the State selected Garden State Offshore Energy LLC (GSOE) as the winner of the grant solicitation. New Jersey is currently in negotiations with GSOE for a project to come on line in 2013. Therefore, MMS plans to offer a commercial OCS wind energy lease as early as 2011, after completing the necessary competitive or noncompetitive leasing process and accompanying reviews, such as those required by NEPA and the Coastal Zone Management Act (CZMA). Recently the State initiated a program to encourage additional limited leasing relating to OCS wind resources that could accelerate additional commercial development. The North Atlantic Map shows the areas off New Jersey proposed for wind energy activity.

Delaware: A wind energy development project has been proposed with the support of the State of Delaware. The developer, Bluewater Wind, LLC, has entered into a power purchase agreement with the local utility, Delmarva Power, calling for construction of an OCS wind power facility with a 450-megawatt capacity. Under this contract the developer needs to obtain the permits for construction and operation of the project by August 2012. The MMS plans to offer a wind energy lease by that date after completing the necessary competitive or noncompetitive leasing process and accompanying reviews, such as those required by NEPA and CZMA.

MMS Alternative Energy Tentative Areas of Interest

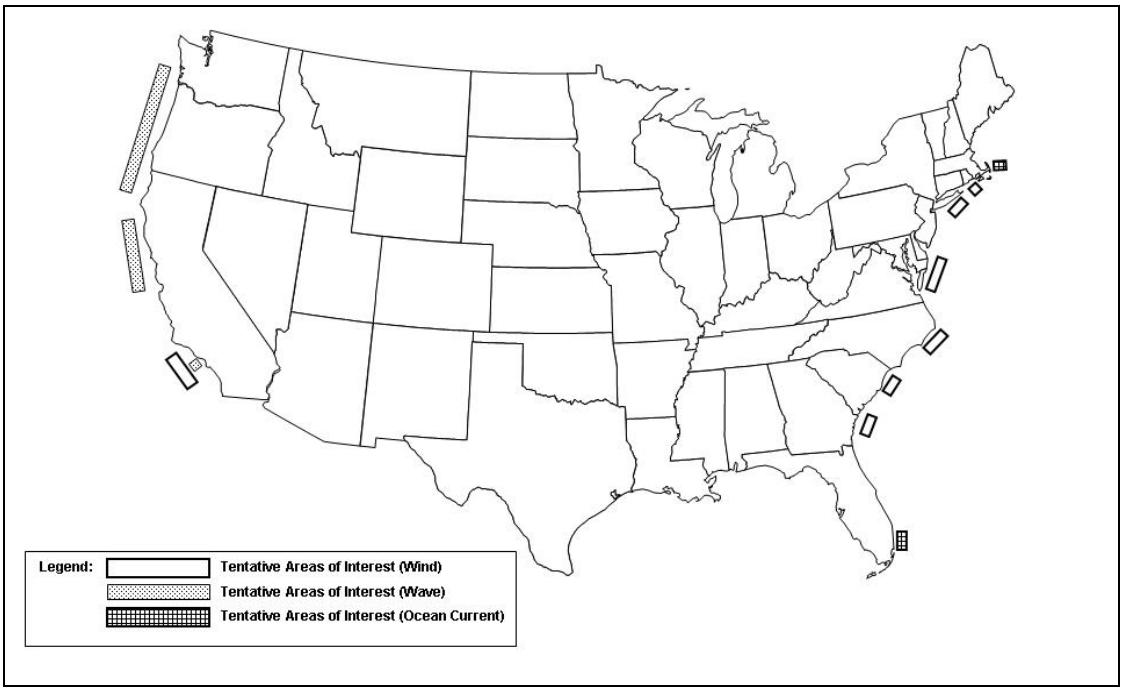


Figure 7

Northern California: Two tentative areas of interest for prospective OCS wave energy development were identified to MMS through the interim policy, one off Humboldt County and another off Mendocino County. The interested project developer, Pacific Gas and Electric Company, eventually decided not to pursue a limited lease under the interim policy but continues to hold preliminary permits issued by the Federal Energy Regulatory Commission that authorize studies in support of future wave energy development in the state waters adjacent to each of these areas.

Southern California: Two areas in the general vicinity offshore Santa Barbara were nominated for leasing under the interim policy, one relating to wave energy and another relating to wind energy. Neither has been chosen by MMS for limited lease issuance. It appears that interest in potential development in this area is tied to the existence of a power cable running from existing OCS Platform Irene to shore that could support such activities.

Washington & Oregon: Several areas off Washington and Oregon were nominated for leasing relating to wave resources under the interim policy, but none has been chosen by MMS for limited lease issuance. While experts believe that the Pacific Northwest offers one of the best regimes for wave energy development; California, Oregon and Washington have been cautious to protect their coastal ecological resources and created the West Coast Governors Association (WCGA) to coordinate efforts in baseline ecological research and regional planning, among other things. While the WCGA is working diligently on these issues, it has not yet recommended going forward with commercial wave development anywhere on the west coast. Recently, the U.S. Department of Energy awarded a multi-

million dollar grant to Oregon State University for the Northwest National Marine Renewable Energy Center.

Massachusetts, Rhode Island & New York: Tentative areas of interest, identified through interim policy processes or discussions with MMS, include locations relating to wind resources off Massachusetts, Rhode Island and Long Island, New York, and a single location relating to tidal current resources off Cape Cod National Seashore in Massachusetts. None of these areas has been chosen for limited lease issuance by MMS. The interest off Long Island also is reflected in the suspended Long Island Offshore Wind Project and in a new 10-year plan being developed by the New York Power authority that may include a wind development of significant size. However, planning with respect to alternative energy development in all of these areas is tentative at this time, and it is uncertain whether commercial leasing will proceed during the 2010-2015 time frame.

Maryland, Virginia & North Carolina: Tentative areas of interest, identified through interim policy processes or discussions with MMS, include locations off Maryland, Virginia, and North Carolina.

Georgia & South Carolina: An area off Georgia was nominated under the interim policy for leasing relating to wind power by Southern Company and was chosen by MMS for limited lease issuance. Areas off South Carolina also were nominated relating to wind resources and have not been chosen for limited lease issuance.

Florida: Several areas along the southeast coast of Florida were nominated for leasing relating to current power under the interim policy. The MMS chose four locations to proceed with limited lease issuance. Experts believe these locations are within one of the prime areas for potential current power development due to the large volume and steady flow of the Gulf Stream current. While the current power industry is perhaps the most promising of the offshore renewables, multiple developers, utilities and academic institutions have expressed interest in the resource potential off the Florida coast and initiating technology testing of prototype turbines. For example, the Florida Atlantic University's Center for Ocean Energy Technology is pursuing partnerships to establish a South Florida Testing Facility range for research, design, development, implementation, testing, and commercialization of offshore current power generation.

III. FRAMEWORK FOR FORMULATING THE DRAFT PROPOSED PROGRAM FOR 2010-2015

A. Procedural Requirements

The draft proposed program is an early step in the process of preparing the new 5-year program. This document is the first of three possible proposals of OCS lease sales for the 2010-2015 time frame. Before the new 5-year program may be approved and implemented, MMS must accept and consider comments on the draft proposed program, and issue for public review a proposed program and draft EIS, and then a proposed final program and final EIS. The key steps in preparing a new 5-year program under Section 18 of the Act and section 102(2)(C) of the National Environmental Policy Act (NEPA) are described below.

Request for Comments and Suggestions
On August 1, 2008, MMS published in the *Federal Register* a request for comments on whether to prepare a new 5-year program for 2010-2015. The MMS also sent letters to all 50 State governors and the heads of interested federal agencies requesting their input by September 15, 2008. Comments received are summarized in Appendix A.

Draft Proposed Program
After considering all the analyses of information relating to Section 18 factors and principles (see parts IV and V), the Secretary selects a draft proposed program as the initial proposal for the 5-year program for 2010-2015. The MMS announces the draft proposed program in the *Federal Register* and distributes it to interested and affected parties for a 60-day comment period. The Secretary's proposal is explained in part I of this document.

Proposed Program
Preparation of a proposed program will be based on further Section 18 analysis and consideration of the comments received by MMS concerning the draft proposed program. The proposed program is the second draft of the Secretary's proposal. The MMS will publish the proposed program in the *Federal Register* and submit it along with a draft EIS to the Congress, the Attorney General, the governors of affected states, and other interested and affected parties for a 90-day comment period. The MMS also will give the governors written responses to their comments on the draft proposed program.

Proposed Final Program
Preparation of a proposed final program will be based on further Section 18 analyses and consideration of the comments received by MMS concerning the proposed program. The proposed final program is the third draft of the Secretary's proposal. The MMS will announce the proposed final program in the *Federal Register* and submit it to the President and the Congress along with summaries of any comments received and an explanation of the responses on any recommendations received from affected state and local governments and the Attorney General. The MMS will issue a final EIS with the proposed final program.

Program Approval
Sixty days after the proposed final program is submitted to the President and the Congress, the Secretary may approve the new 5-year program.

B. Substantive Requirements

Section 18 of the Act sets forth specific principles and factors to guide 5-year program formulation. Analysis of information relating to those principles and factors produces results that MMS uses to develop reasonable options from which the Secretary may select a schedule of proposed lease sales indicating, as precisely as possible, the size, timing, and location of leasing activity determined to best meet national energy needs. A brief overview of those Section 18 requirements is presented below.

Energy Needs
Section 18(a) states that the purpose of the 5-year OCS oil and gas leasing program is to help meet the Nation's future energy needs. Part V.A presents an analysis of anticipated energy needs. The analysis includes discussions of the U.S. Department of Energy's projections of national energy needs according to *Annual Energy Outlook 2008;* the potential contribution of OCS oil and gas production in meeting those needs; alternatives to OCS production, including alternative forms of energy; and considerations relating to regional energy needs.

Environmental Considerations
Section 18(a)(1) provides that in addition to examining oil and gas resources, the Secretary is required to consider the values of other OCS resources and the potential impacts that OCS oil and gas activities could have on those resources and on the marine, coastal, and human environments. Part V.B presents the environmental issues and concerns that have been raised by commenters and presents information relating to safe and sound operations, as well as pertinent findings of the final EIS for the 5-year program for 2007-2012 and other relevant NEPA documents and environmental information.

Factors for Determining Timing and Location of Leasing
Section 18(a)(2) lists eight factors that are to be considered in deciding the timing and location of oil and gas activities among the different areas of the OCS. While some of these factors lend themselves to quantification to facilitate comparison among planning areas, others do not and need to be considered qualitatively. Each of the eight factors provided in 18(a)(2)(A) through (H) is listed below along with references to the parts of the draft proposed program analysis that address them.

(A) Geographic, Geological, and Ecological Characteristics

The main source of information on geographic, geological, and ecological characteristics of the OCS planning areas considered in preparing the draft proposed program is the final EIS for the 5-year program for 2007-2012, April 2007.

Other sources include recent NEPA documents prepared for leasing and operations activities, the MMS 2006 resource assessment, the MMS cumulative effects report (97-0027), the 1994 National Research Council report concerning information for Alaska OCS decisions, scientific study results, which are reported in the environmental studies program information system (ESPIS) database, and information submitted or cited by commenters.

(B) Equitable Sharing of Developmental Benefits and Environmental Risks

Part V.C briefly analyzes the equitable sharing factor. It discusses the analyses and findings of previous 5-year programs and briefly cites new developments and their potential influence on the nature and distribution of benefits and risks associated with the size, timing, and location options available for consideration.

The analysis also describes the significant effect that the long-term withdrawal of areas from leasing has had on equitable sharing by effectively precluding expansion of the lease sale schedule to include areas that were not proposed for leasing in the approved 5-year programs for 1997-2002 and 2002-2007. The approved program for 2007-2012 included an area offshore Virginia that was under restrictions at the time. The Eastern Gulf and a small portion of the Central Gulf of Mexico remain unavailable to 2022 pursuant to the Gulf of Mexico Energy Security Act of 2006. Marine sanctuaries remain under executive withdrawal as delineated in section 12 of the OCS Lands Act.

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

Part V analyzes regional and national energy needs. The final EIS for the 5-year program for 2007-2012 describes existing regional oil and gas infrastructure and its relationship to new OCS leasing. Additional relevant information is available in recent lease sale EIS's and other NEPA documents cited below, in III.D

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

Part V.B discusses competing uses of the OCS. This summary is based on information provided in the final EIS for the 5-year program for 2007-2012.

The 1997 MMS cumulative effects report, the recent lease sale EIS's and other NEPA documents cited above, ESPIS results, and information submitted or cited by commenters.

(E) Interest of Potential Oil and Gas Producers

Part V.C describes industry interest as indicated in response to the August 2008, Request for Comments that was issued by MMS. The discussions of size, timing, and location options in part IV also include summaries of industry interest. Appendix A summarizes all comments received from the oil and gas companies and associations.

(F) Laws, Goals, and Policies of Affected States

The discussions of size, timing, and location options in part IV include summaries of the relevant laws, goals, and policies—and federally approved coastal zone management programs and policies—that state governments identified in responding to MMS request for comments. Appendix A summarizes all comments received from state governors and government agencies.

(G) Environmental Sensitivity and Marine Productivity

Part V.C analyzes environmental sensitivity and marine productivity based on the latest available information from the National Oceanic and Atmospheric Administration (NOAA) and the National Marine Fisheries Service (NMFS).

(H) Environmental and Predictive Information

Part V.B presents an analysis of environmental concerns that summarizes relevant information and findings from the final EIS for the 5-year program for 2007-2012, recent lease sale EIS's, other NEPA documents, and other MMS reports and studies.

Balancing Potential Environmental Damage, Discovery of Oil and Gas, and Adverse Impact on the Coastal Zone

Section 18(a)(3) requires the Secretary to render decisions on the timing and location of OCS leasing that strike a balance between environmental and developmental principles based on a consideration of the factors comprising Section 18(a)(2) listed above. Part V.C addresses the balancing requirement by presenting a comparative analysis of all 26 planning areas as the Request for Interest asked for information on all planning areas.

The centerpiece of the comparative analysis is an estimation of net social benefits for each planning area that is derived by calculating the value of oil and gas resources minus the cost to industry and the environmental and social costs of developing those resources (with consumer surplus benefits then added). Appendix B provides additional information on the sensitivity of timing assumptions in estimating net social value. The comparative analysis also ranks the planning areas according to quantified information relating to environmental sensitivity and marine productivity and according to the interest of potential oil and gas producers. The other Section 18(a)(2) factors do not lend themselves as readily to quantification and are treated qualitatively. The comparative analysis also examines additional qualitative information pertaining to industry interest, the findings and purposes of the Act, the comments and recommendations of interested and affected parties, and other information relevant to striking a proper balance under Section 18(a)(3).

The Act does not specify what the balance should be or how the factors should be weighed to achieve that balance, leaving to the Secretary the discretion to reach a reasonable determination under existing circumstances.

C. Judicial Guidance

The new 5-year program, if approved, would be the eighth prepared by the Department of the Interior. The first three programs prepared and approved under Section 18 were challenged in court—in 1980, 1982, and 1987. The U.S. Court of Appeals for the District of Columbia Circuit decided all of those lawsuits. The new 5-year program is being prepared in accordance with guidance provided in those decisions, which are cited as follows.

California I [California *v*. Watt, 688 F2d 1290 (D.C. Cir. 1981)];

California II [California *v*. Watt, 712 F2d 584 (D.C. Cir. 1983)]; and

NRDC [Natural Resources Defense Council], *et al. v.* Hodel, 865 F2d 288 (D.C. Cir. 1988)].

No lawsuits were filed against the 5-year programs approved for 1992-1997, 1997-2002, and 2002-2007. The current program for 2007-2012 is under challenge in the same court [Case Nos. 07-1247 and 07-1433, consolidated]. Oral arguments were held in October 2008, but as yet no decision has been rendered.

D. Analytic Approach

The analysis for formulating the draft proposed program for 2010-2015 focuses on the size, timing, and location of leasing and the provisions for assuring fair market value.

The Secretary's proposal in part I identifies for further leasing consideration *program areas* consisting of all or parts of 12 of the OCS planning areas. See Maps 1 and 2. This draft proposed program analysis examines and compares all 26 of the planning areas in light of the criteria of Section 18 of the Act. The Secretary's proposal will be further analyzed in the proposed program. It will also be analyzed in the draft EIS prepared to assess the effects of the draft proposed program pursuant to NEPA.

While the intent is to base this draft proposed program on the newest available information, in some instances the analysis must refer to the information used to develop and approve the 5-year program for 2007-2012. The most notable example is in the analysis of environmental concerns (part V.B). Because an EIS for the new program will not be prepared until the next step in the process—issuance of the proposed program in 2009—the draft proposed program relies greatly on the final EIS prepared for the 2007-2012 program. However, that information is augmented by other more recent environmental documents and reports that have been prepared by MMS and that will provide basic information for the EIS for the new program. We also are reinterpreting resource data that in some cases is 20 to 30 years old, particularly in areas that had been unavailable for leasing for many years.

In addition to the information presented in this document, the Secretary's decision on the draft proposed program for 2010-2015 will consider the following pertinent documents, which are incorporated by reference.

- Decision Document for the Proposed Final Program for 2007-2012 (April 2007)
- Final EIS for the Proposed Final Program for 2007-2012
- EIA, Short Term Energy and Winter Fuels Outlook, October 2008
- EIA Annual Energy Outlook 2008
- Undiscovered Oil and Gas Resources, Alaska Federal Offshore As of 2006, http://www.mms.gov/alaska/re/reports

- Assessment of Undiscovered Technically Recoverable Oil and Gas Resources on the Nation's Outer Continental Shelf, 2006. http://www.mms.gov/2005EnergyPolicy act.htm#ImplementingInMMS

- Accounting for Socioeconomic Change from Offshore Oil and Gas; Cumulative Effects on Louisiana's Parishes; 1969-2000, MMS 2006-030, 2006
- Gulf of Mexico Oil and Gas Lease Sales: 2007-2012; Western Planning Area Sales 204, 207, 210, 215, and 218; Central Planning Area Sales 205, 206, 208, 213, 216, and 222; Final Environmental Impact Statement, MMS 2007-018, 2007

- Gulf of Mexico OCS Oil and Gas Lease Sales: 2009-2012; Central Planning Area Sales 208, 213, 216, and 222; Western Planning Area Sales 210, 215, and 218; Final Supplemental Environmental Impact Statement, MMS 2008-041, 2008

- Gulf of Mexico OCS Oil and Gas Lease Sale 224; Eastern Planning Area; Final Supplemental Environmental Impact Statement, MMS 2007-060, 2007

- Gulf of Mexico OCS Oil and Gas Lease Sales 189 and 197; Eastern Planning Area; Final Environmental Impact Statement, MMS 2003-020, 2003

- Gulf of Mexico OCS Oil and Gas Lease Sale 181; Eastern Planning Area; Final Environmental Impact Statement, MMS 2001-051, 2001

- Proposed Gulf of Mexico OCS Oil and Gas Lease Sale 207; Western Planning Area; Environmental Assessment, MMS 2008-003, 2008

- Proposed Gulf of Mexico OCS Oil and Gas Lease Sale 206; Central Planning Area; Environmental Assessment, MMS 2007-059, 2007

- Site-Specific Environmental Assessment for an FPSO Facility; Site-Specific Evaluation of Petrobras America Inc.'s Initial DOCD, N-9015; Cascade-Chinook Project, MMS 2008-008, 2008

- Chukchi Sea Planning Area, Oil and Gas Lease Sale 193 and Seismic Survey Activities in the Chukchi Sea, Final Environmental Impact Statement, MMS 2007-026, 2007

- Arctic OCS Seismic Surveys- 2006, Programmatic Environmental Impact Statement, OCS EIS/EA, MMS 2006-038, 2006.

- Structure-Removal Operations, OCS on the Gulf of Mexico Outer Continental Shelf, Programmatic Environmental Assessment, OCS EIS/EA, MMS 2005-013, 2005

- Cook Inlet Planning Area Oil and Gas Lease Sales 191 and 199, Final Environmental Impact Statement, OCS EIS/EA, MMS 2003-055, Volumes 1-3, 2003

- Environmental Assessment—Proposed Oil and Gas Lease Sale 202 Beaufort Sea Planning Area, MMS 2006-001

- Geological and Geophysical Exploration for Mineral Resources on the Gulf of Mexico Outer Continental Shelf: Final Programmatic Environmental Assessment, OCS EIS/EA MMS 2004-054, 2004

- US Coast Guard Marine Casualty Pollution Investigations, "Oil Spill Compendium 1973-2004."

IV. DRAFT PROPOSED PROGRAM OPTIONS

A. Size, Timing, and Location Options

Introduction

This section presents the options dealing with size, timing, and location of future leasing. The Secretary chooses from these options to create the Draft Proposed Program for 2010-2015. The MMS has formulated these options based on its consideration of information relating to the Section 18 criteria and based on the results of consultation with interested and affected parties.

Again, while the DPP includes a schedule of sales, the intent of this document and associated materials are to make clear that the Secretary is not recommending any particular areas be included in or excluded from the eventual final program. Rather, it is designed to gather information, allowing the process to move forward in a way that will allow the next Administration to design the program that best fits their assessment of how to balance energy needs and environmental risks and benefits.

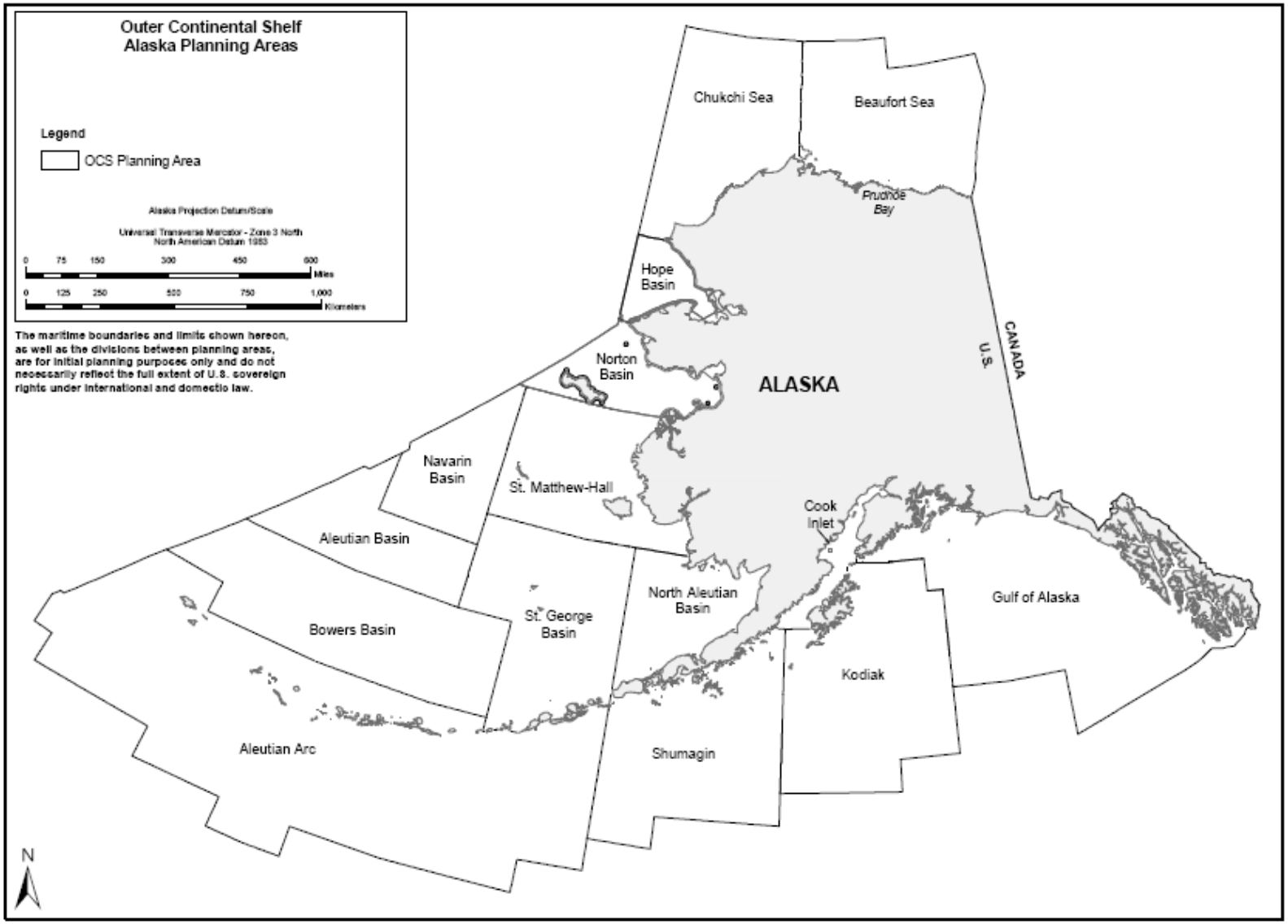
Comments of interested and affected parties play an important role in the Section 18 process. Our response to the various comments is a key element in shaping options and making programmatic decisions that best reflect the needs of the Nation, the states, and local entities. As stated previously, it is uncertain whether the next 5-Year Program will offer as much area for leasing as has been included in this document. This document provides the next Administration with the maximum flexibility and the maximum available information to make these important decisions. To that end, the following questions will need to be addressed for all or some planning areas described below:

- Should there be buffer zones? If so, how large should they be? What criteria should be used for setting them (e.g., visual impacts, infrastructure, etc.)? Should they be uniform in all new areas, or vary geographically?

- Are there places that should be excluded because they are particularly sensitive? Or because they are more suited to other uses (e.g. alternative energy)?

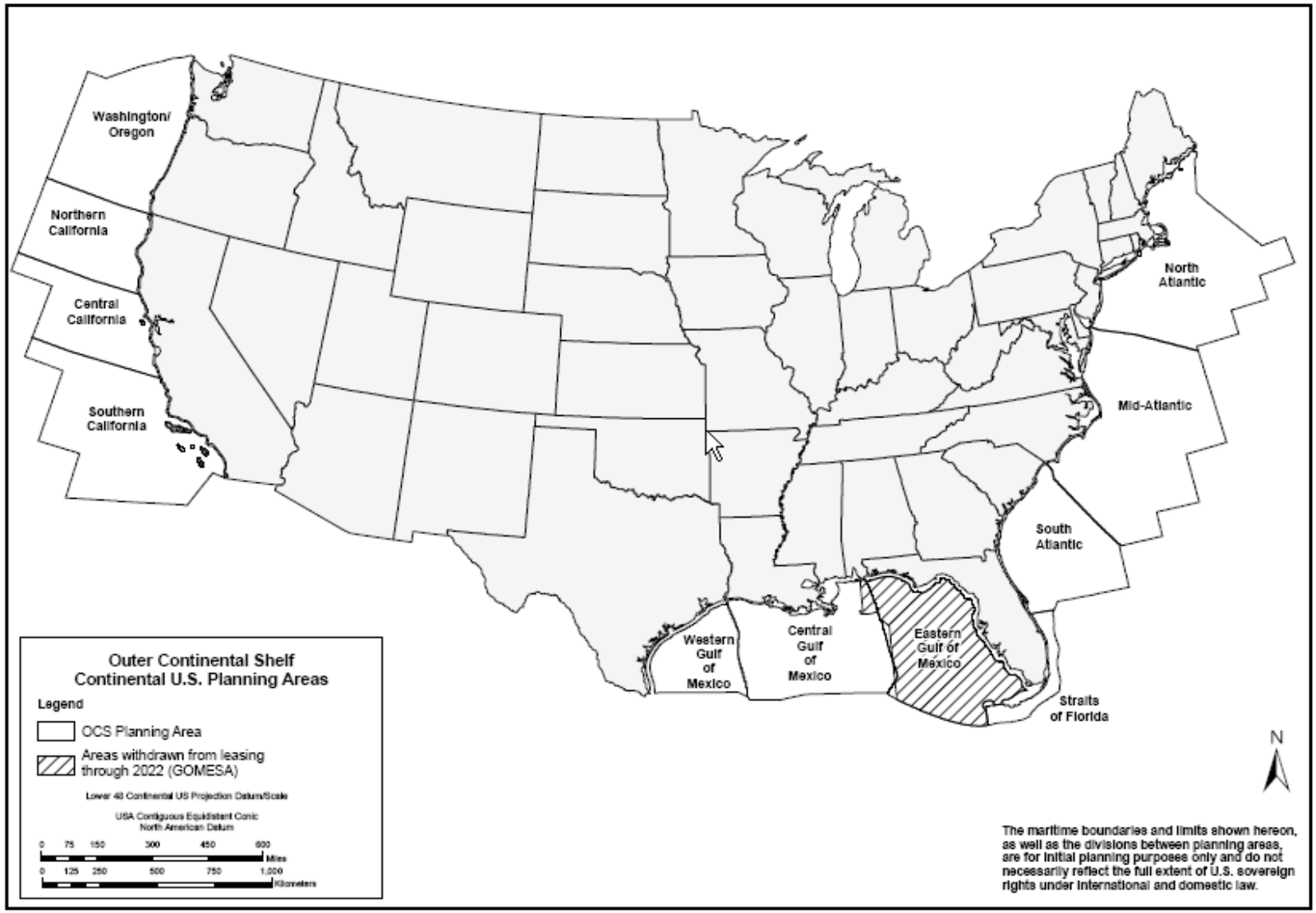
- This Administration views revenue sharing as a strong feature of state participation in coastal resource development. When the President modified the presidential withdrawal, he called upon Congress to address new legislation to enhance current revenue sharing laws, to allow broader state participation in fiscal planning related to future coastal resource development. Please provide your views on what policies and programs MMS, Congress and the Administration should consider relative to OCS revenue sharing.

- For those areas proposed for leasing consideration in the Southern California Planning Area, in deciding the next steps in the 5-year program preparation, should MMS include a requirement for mandatory unitization to potentially limit the number of structures in one or more of these areas?



MAP 1: Shows the Alaska Planning Areas

MAP 2: Shows the Lower 48 States Planning Areas



The OCS is divided into 26 planning areas. The majority of the Eastern Gulf of Mexico and a small portion of the Central Gulf Planning Areas are off limits for leasing to 2022 pursuant to the Gulf of Mexico Energy Security Act of 2006 (GOMESA). All marine sanctuaries are withdrawn from disposition by leasing indefinitely by presidential action under Section 12 of the Act.

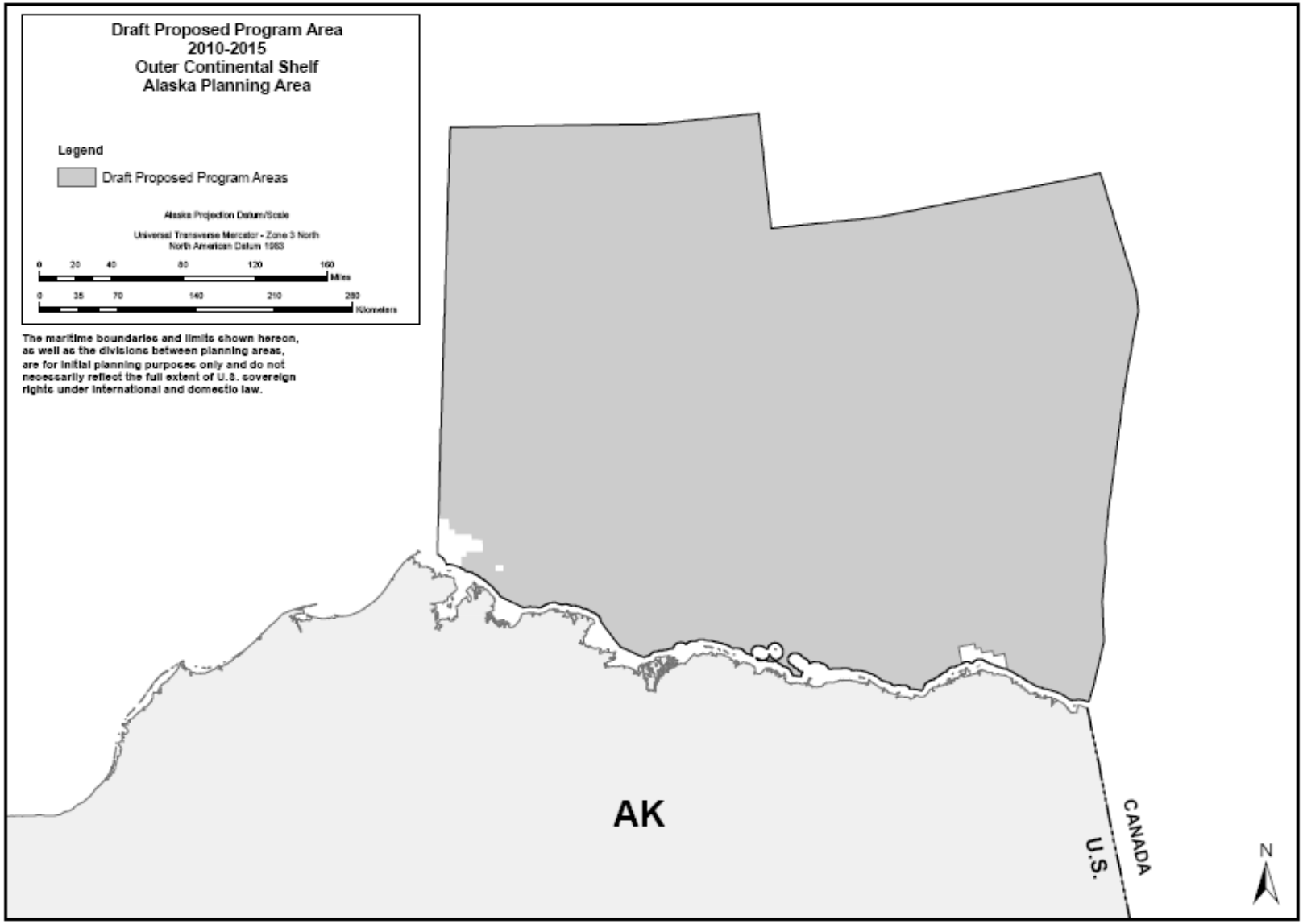
Maps 1 and 2 show the 26 planning areas and which areas are under restriction. Maps A and B in part I and Maps 3 –14 show the proposed program areas that are identified in the draft proposed program as options for further consideration of leasing or study. The areas selected will be analyzed further for the proposed program. Each planning area lists various options that were presented to the Secretary. In all cases Option 1 is the chosen option and is shown in **bold.** The bolded options constitute the Secretary's draft proposed program decision.

The Section 18 objectives of formulating a program to best meet national energy needs and to assure the receipt of fair market value for leases and the rights they convey are major factors in formulating size, timing, and location options. The analyses of net social value and the factors specified by Section 18(a)(2) provide a solid basis for developing options. Part V of this document presents those analyses and examines economic, social, and environmental values; oil and gas resource potential and industry interest; distribution of benefits and risks; competing uses of the OCS; regional energy needs; and the laws, goals, and policies of affected states. The MMS is able to weigh different resources, values, and policies in formulating reasonable options that can be selected by the Secretary to achieve the balance between areas being considered for lease sale, as required by Section 18(a)(3).

Options for Scheduling Lease Sales

The following sections present leasing options for 12 full or partial planning areas that are being considered for leasing from 2010 through 2015. Various background information, comparative analysis results, comments received in response to the August 2008 Request for Comments, and information about potential alternative energy activities in the area precede the various options for each of the 26 planning areas, regardless of whether they are proposed for leasing consideration. Environmental issues and concerns are addressed in Part V. In most areas and at each stage of the preparation process, the Secretary is given the option of choosing to have no sales in that area. The "Other" Option in each area allows the Secretary to entertain a full range of possible actions that could be proposed and considered in accordance with Section 18. Additional options that were available to the Secretary but not chosen also are described below. If scheduling of a lease sale is proposed, a map is referenced showing the program area(s) proposed for leasing consideration.

MAP 3: Shows the Beaufort Sea Program Area



ALASKA REGION

Fifteen planning areas make up the Alaska Region. Of the 15, leasing consideration is proposed in 4 of the planning areas—Beaufort Sea, Chukchi Sea, Cook Inlet, and the North Aleutian Basin. There also is a brief discussion of the history and available information about the 11 planning areas that are not being proposed for leasing consideration.

BEAUFORT SEA

Background. Ten sales have been held in this area since 1979 and two additional sales are scheduled in the current program for 2009 and 2011. Currently, there are 246 active leases in this area. Thirty-one exploratory wells have been drilled and there is production from a joint federal/state unit, with federal production of over 23 million barrels of oil since 2001. The State of Alaska holds periodic areawide sales in state waters, from which there is production. The Beaufort Sea is one of two OCS areas (the other is the Chukchi Sea) that have the potential to provide oil to extend operation of the Trans Alaskan Pipeline (TAPS). The TAPS is currently operating at approximately 1/3 of its capacity and requires new discoveries to continue operations. Any gas fields discovered in either area would contribute to the required volumes to justify a North Slope gas pipeline.

Key Comparative Results. This area has an estimated net social value (NSV) range of $16.9 to 121.1 billion, depending on the price scenario, ranking it 8th to 5th of the 16 planning areas with some economic value. The area is ranked 9th for relative environmental sensitivity and 26th, the lowest, for primary productivity. Four companies expressed interest in the area in response to the August 2008 Request for Comments.

Selected Comments. The Governor supports broad inclusion in the program and asks MMS to work with local communities to avoid conflicts with subsistence whaling and to address stakeholder concerns. Specifically, the Governor supports the proposed leasing programs in the Beaufort and Chukchi Seas, including the 25-mile buffer for the Chukchi Sea sale area identified in the 2007-2012 Program. The North Slope Borough sees no need to start a new 5-year Program and continues to want sale deferral areas permanently removed from consideration. The Northwest Arctic Borough agrees with the North Slope Borough in opposition to the new MMS initiative. The Native Village of Point Hope opposes this MMS action. The Northwest Arctic Borough, the Native Village of Point Hope, and the Alaska Eskimo Whaling Commission agree with the North Slope Borough in opposition to the new MMS initiative. Environmental groups believe that a new program is not necessary, and that the risks related to offshore oil and gas development are too great. Most business/organization commenters recommended expanded acreage consideration in the Alaska OCS. Most oil and gas companies expressed interest in the Alaska OCS in general, with four specifically mentioning the Beaufort Sea. The citizen comments from Alaska were about 53 percent in favor of starting a new program. Most did not specify particular areas.

Alternative Energy. The MMS received no nominations for leasing in the Beaufort Sea Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

Options

(1) Two sales in 2013 and 2015 in the current planning area with two nearshore subsistence deferrals (Kaktovik and Barrow) as shown on Map 3.

(2) Two sales in 2013 and 2015 in the entire planning area.

(3) One sale
   (A) Current planning area with nearshore deferrals.
   (B) Entire planning area.

(4) No sale.

(5) Other.

CHUKCHI SEA

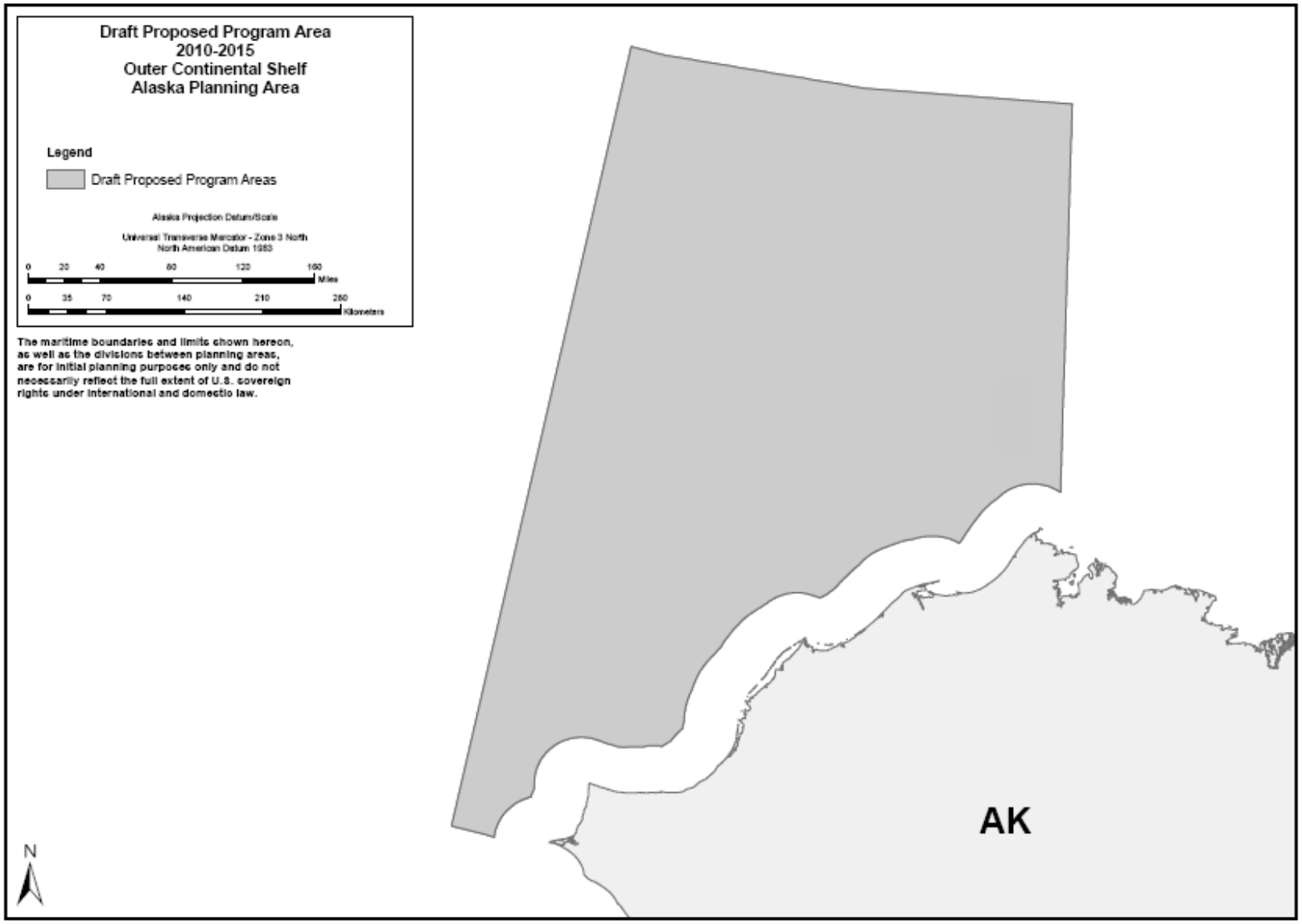
Background. The most recent sale in this area was Sale 193, held in February 2008. This was the largest sale in the history of Alaska OCS leasing, generating over $2.6 billion in revenues. There are 487 existing leases at this time. Two additional sales are scheduled in the current program for 2010 and 2012. Prior to Sale 193, there were two sales in this area with the most recent in 1991. There were five exploratory wells drilled prior to 1992 on leases issued in the earlier sales. All have been plugged and abandoned. Although an uneconomic gas discovery was made, there is no commercial production from the area. However, the Chukchi Sea has the greatest potential (ranked 2nd nationally for undiscovered technically recoverable oil and gas resources) to provide the hydrocarbons necessary to extend Trans Alaskan Pipeline (TAPS) operations and contribute to the gas volumes needed to justify a North Slope gas pipeline.

Key Comparative Results. This area has an estimated NSV range of almost $0.9 to 85.0 billion, depending on the price scenario, ranking it 15th to 8th of the 16 planning areas with some economic value. The low NSV value understates the importance of the Chukchi Sea. This year's record setting lease sale demonstrates industry's interest in the area with many large recognized prospects being leased. The area is ranked 19th for relative environmental sensitivity and 24th for primary productivity. Four companies expressed interest in the area in response to the August 2008 Request for Comments.

Selected Comments. The Governor of Alaska urged continued leasing in the Chukchi Sea, including the 25-mile buffer identified in the 2007-2012 Program and adequate local stakeholder consultation, planning, and environmental safeguards. Most comments listed under the Beaufort Sea Planning Area also are applicable to the Chukchi Sea Planning Area. The citizen comments from Alaska were about 53 percent in favor of starting a new program. Most did not specify particular areas.

Alternative Energy. The MMS received no nominations for leasing in the Chukchi Sea Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

MAP 4: Shows the Chukchi Sea Program Area



Options

(1) Three sales in 2010, 2012, and 2014 in the current planning area with 25-mile nearshore buffer as shown on Map 4

(2) Three sales in the entire planning area

(3) Two sales
(A) Current planning area with 25-mile nearshore buffer
(B) Entire planning area

(4) No sale.

(5) Other.

NORTH ALEUTIAN BASIN

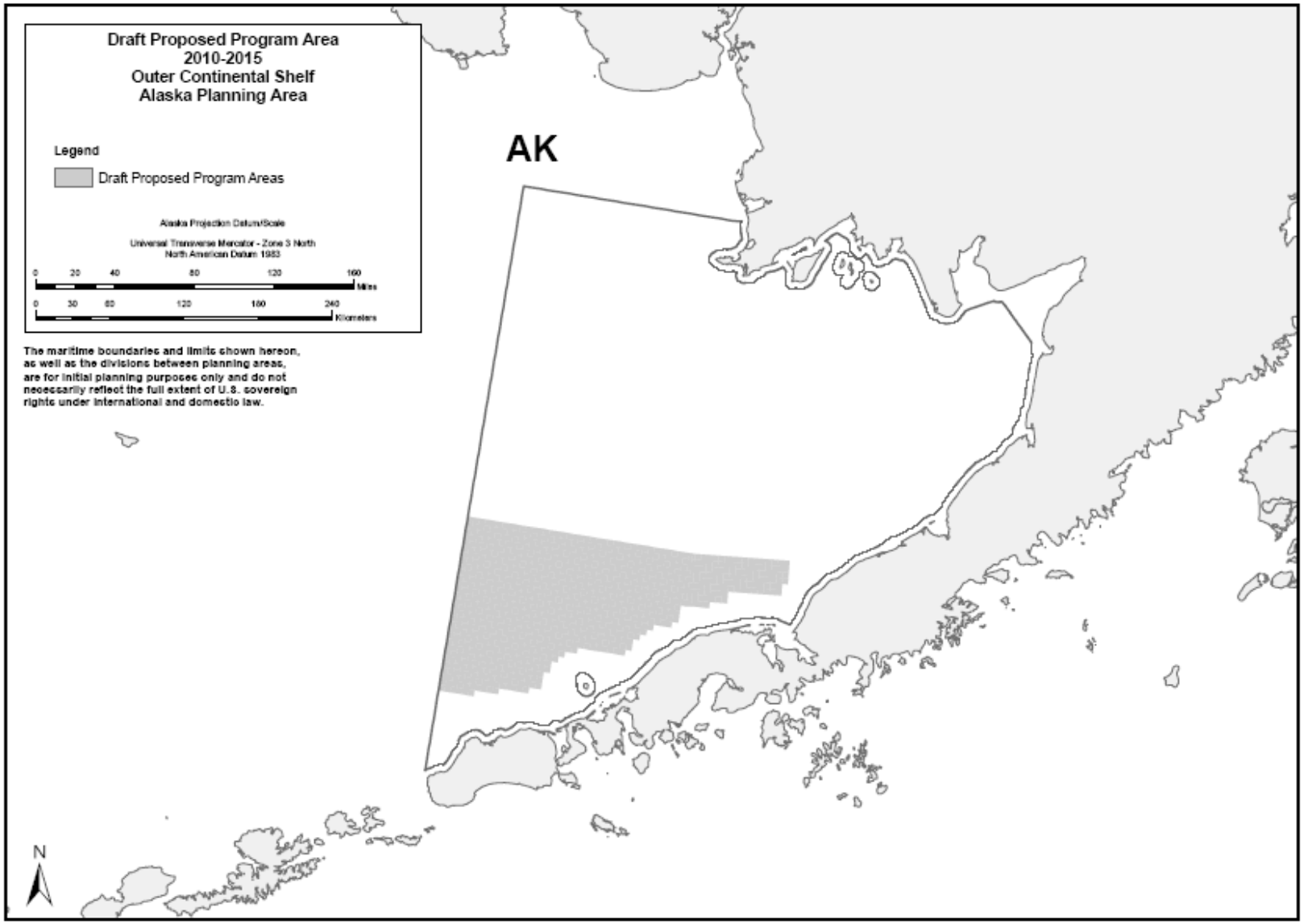
Background. One lease sale is scheduled for this area in the current program for 2011. There was one sale in 1986 with 23 leases issued in 1988 after resolution of litigation. Those leases were relinquished in settlement of other litigation in 1995. There has been no exploratory activity and there are no existing leases in this area. The area had been under presidential withdrawal from June 1998 to January 2007, and under annual congressional restrictions from FY 1990 through FY 2003.

Key Comparative Results. This area has an estimated NSV range of $4.6 to 30.0 billion, depending on the price scenario, ranking it 12th to 11th of the 16 planning areas with some economic value. It is ranked 13th for relative environmental sensitivity and 11th for primary productivity. Three companies expressed interest in this area in response to the August 2008 Request for Comments.

Selected Comments. The Governor stated that she "supports the proposed leasing programs in the North Aleutian Basin planning area, and specifically leasing only in the area included in Lease Sale 92 held in 1985." Most environmental organizations remain opposed to the lifting of the presidential withdrawal and any oil and gas activity in this area. Most energy business commenters recommend expanded access to the Alaska OCS. Three oil and gas companies expressed specific interest. The citizen comments from Alaska were about 53 percent in favor of starting a new program. Most did not specify particular areas.

Alternative Energy. The MMS received no nominations for leasing in the North Aleutian Basin Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

MAP 5: North Aleutian Basin Program Area



Options

(1) Two sales in 2011 and 2014 in the Sale 92 Area only as shown on Map 5.

(2) Two sales
  (A) In the entire planning area.
  (B) Sale 92 Area only in 2011 and entire planning area in 2014.

(3) One sale in 2011.
  (A) Sale 92 Area Only.
  (B) Entire planning area.

(4) No sale.

(5) Other.

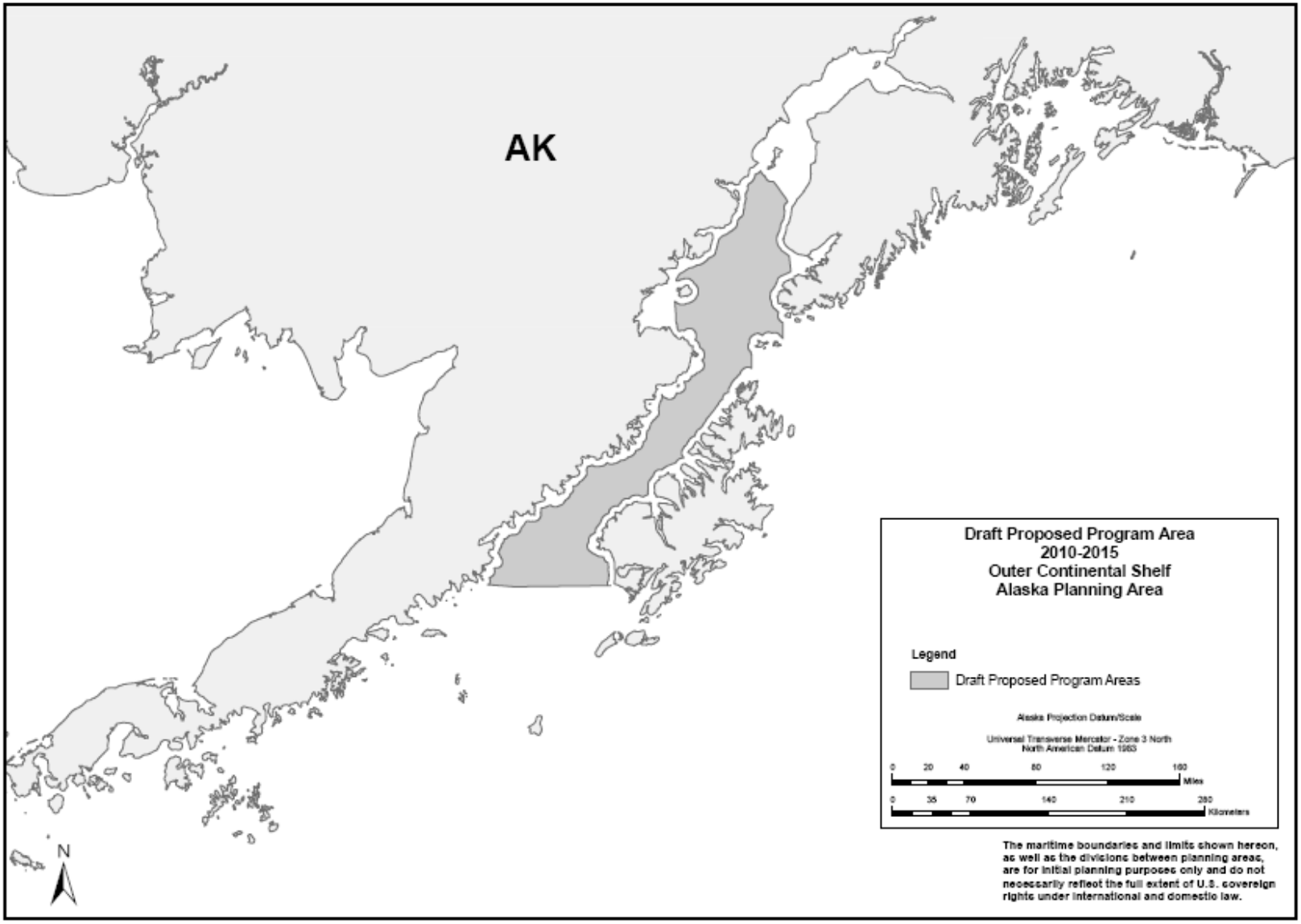
COOK INLET

Background. There have been five sales in this area. The most recent was held in 2004 with no bids received. This area is included in the current program as a special interest sale. A Request for Interest was published on July 8, 2008, and resulted in no expressions of interest. In accordance with the process for such sales, another Request will be published each year until either there is interest expressed to warrant continuing with the presale process or the current program ends. There have been 13 exploratory wells drilled with no commercial discoveries. There are two active leases in the area. Cosmopolitan, a discovery in joint federal/state waters, is being evaluated for commercial development. The State of Alaska schedules periodic areawide sales in state waters and there is production in state waters.

Key Comparative Results. There is an estimated NSV range of $11.5 to 44.3 billion, depending on the price scenario, ranking it 10th to 11th of the 16 planning areas with some economic value. It is ranked 14th for relative environmental sensitivity and 22nd for primary productivity. Three companies expressed interest in the August 2008 Request for Comments.

Selected Comments. The Governor supports the special interest sales option contained in the 2007-2012 Program for the Cook Inlet Planning Area. Of the businesses/ organizations that support access to the Alaska OCS, several mentioned this area. Three oil and gas companies expressed specific interest in the area. The citizen comments from Alaska were about 53 percent in favor of starting a new program. Most did not specify particular areas.

Alternative Energy. The MMS received no nominations for leasing in the Cook Inlet Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.



Map 6: Cook Inlet Program Area

Options

(1) **Two special interest sales in 2011 and 2015 in the area shown on Map 6**.

(2) One special interest sale.

(3) No sale.

(4) Other.

The remaining 11 planning areas are included in one set of options after the following brief description of each.

HOPE BASIN

Background. No lease sales have been held. This area was included in the 5-year program for 2002-2007 in conjunction with the Chukchi Sea Planning Area as a special interest sale. There was no interest expressed for the Hope Basin in response to three Requests for Information issued during the 2002-2007 time frame. The area also was included in the 5-year program for 1997-2002 as a simultaneous U.S./Russia OCS lease sale that was canceled, with this area being deferred for possible consideration in later programs.

Key Comparative Results. Available information indicates that this area has no development value, although it is estimated to have some oil resources. It is ranked 8th for relative environmental sensitivity and 17th for primary productivity. There was no industry interest expressed in response to the August 2008 Request for Comments.

Selected Comments. The Governor supports an interest-initiated program for the Hope Basin and encourages MMS to reconsider the omission of this area in the 2007-2012 Program. The citizen comments from Alaska were about 53 percent in favor of starting a new program. Most did not specify particular areas.

Alternative Energy. The MMS received no nominations for leasing in the Hope Basin Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

GULF OF ALASKA

Background. Three lease sales were held from 1976 to 1981. There were 12 exploration wells drilled, but no commercial discoveries. The sale scheduled in the 5-year program for 1997-2002 was canceled, primarily due to low prices and low industry interest. There are no existing leases.

Key Comparative Results. This area has an estimated NSV of about $2.79 to 18.64 billion, depending on the price scenario, ranking it 14th to 13th of the 16 planning areas with some economic value. It is ranked 15th for relative environmental sensitivity and 9th for primary.

There was no industry interest expressed in response to the August 2008 Request for Comments.

Selected Comments. There was no particular mention of this planning area in the comments.

Alternative Energy. The MMS received no nominations for leasing in the Gulf of Alaska Basin Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

ST. GEORGE BASIN

Background. One sale was held in 1983. There were ten exploration wells drilled with no commercial discoveries. There are no active leases in this area. One sale was scheduled in the 5-year program for 1992-1997, but it was deferred. The area has not been included for leasing consideration since that time.

Key Comparative Results. Available information indicates that this area has negligible development value, although it is estimated to have oil and gas resources. It is combined with the Aleutian Arc Planning Area for relative environmental sensitivity and is ranked last of the planning areas that have ranking. It is ranked 7th for primary productivity. There was no industry interest expressed in response to the August 2008 Request for Comments.

Selected Comments. There was no particular mention of this planning area in the comments.

Alternative Energy. The MMS received no nominations for leasing in the St. George Basin Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

NORTON BASIN

Background. One sale was held in 1983. There have been six exploration wells drilled with no commercial discoveries. There are no existing leases. The area was included in the 5-year program for 2002-2007 as a special interest sale. Four Requests for Information were issued with no expressions of interest.

Key Comparative Results. Available information indicates that Norton Basin has no development value, although it is estimated to have oil and gas resources. The area is ranked 11th for relative environmental sensitivity and 10th for primary productivity. There was no industry interest expressed in response to the Requests for Information.

Selected Comments. The Governor supports an interest-initiated program for Norton Basin, and encourages MMS to reconsider the omission of this area in the 2007-2012 Program. The citizen comments from Alaska were about 53 percent in favor of starting a new program. Most did not specify particular areas.

Alternative Energy. The MMS received no nominations for leasing in the Norton Basin Planning Area under the interim policy and is not aware of any specific plans or proposals to

develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.
One lease sale was held in 1983. There were eight exploratory wells drilled with no commercial discoveries. There are no existing leases and the area has not been included in a 5-year program since 1987-1992.

Key Comparative Results. Available information indicates that this area has negligible development value, although it is estimated to have oil and gas resources. It is not ranked for relative environmental sensitivity and is ranked 13th for primary productivity. There was no industry interest expressed in response to the August 2008 Request for Comments.

Selected Comments. There was no particular mention of this planning area in the comments.

Alternative Energy. The MMS received no nominations for leasing in the Navarin Basin Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

ST. MATTHEW-HALL

Background. There have been no lease sales.

Key Comparative Results. This area is not ranked in NSV due to negligible resource estimates from available information. It is ranked 6th for relative environmental sensitivity and 5th for primary productivity. There was no industry interest expressed in response to the August 2008 Request for Comments.

Selected Comments. There was no particular mention of this planning area in the comments.

Alternative Energy. The MMS received no nominations for leasing in the St. Matthew-Hall Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

ALEUTIAN BASIN

Background. No lease sales have been held and no wells drilled.

Key Comparative Results. This area is not ranked in NSV due to negligible resource estimates from available information. It is not ranked for relative environmental sensitivity and is ranked 19th for primary productivity. There was no industry interest expressed in response to the August 2008 Request for Comments.

Selected Comments. There was no particular mention of this planning area in the comments.

Alternative Energy. The MMS received no nominations for leasing in the Aleutian Basin Planning Area under the interim policy and is not aware of any specific plans or proposals to

develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

BOWERS BASIN

Background. No lease sales have been held and no wells drilled.

Key Comparative Results. This area is not ranked in NSV due to negligible resource estimates from available information. It is not ranked for relative environmental sensitivity and is ranked 14th for primary productivity. There was no industry interest expressed in response to the August 2008 Request for Comments.

Selected Comments. There was no particular mention of this planning area in the comments.

Alternative Energy. The MMS received no nominations for leasing in the Bowers Basin Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

ALEUTIAN ARC

Background. No lease sales have been held and no wells drilled.

Key Comparative Results. This area is not ranked in NSV due to negligible resource estimates from available information. It is combined with the St. George Basin Planning Area for relative environmental sensitivity and is ranked last of the planning areas that have a ranking. It is ranked 21st for primary productivity. There was no industry interest expressed in response to the August 2008 Request for Comments.

Selected Comments. There was no particular mention of this planning area in the comments.

Alternative Energy. The MMS received no nominations for leasing in the Aleutian Arc Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

SHUMAGIN

Background. No lease sales have been held and no wells drilled.

Key Comparative Results. Available information indicates that this area has negligible development value, although it is estimated to have some oil and gas resources. It is ranked 21st for relative environmental sensitivity and 3rd for primary productivity. There was no industry interest expressed in response to the August 2008 Request for Comments.

Selected Comments. There was no particular mention of this planning area in the comments.

Alternative Energy. The MMS received no nominations for leasing in the Shumagin Planning Area under the interim policy and is not aware of any specific plans or proposals to

develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

KODIAK

Background. No lease sales have been held and no wells drilled.

Key Comparative Results. Available information indicates that this area has negligible development value, although it is estimated to have some oil and gas resources. It is ranked 16th for relative environmental sensitivity and 4th for primary productivity. There was no industry interest expressed in response to the August 2008 Request for Comments.

Selected Comments. There was no particular mention of this planning area in the comments.

Alternative Energy. The MMS received no nominations for leasing in the Kodiak Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

Options (for all 11 areas discussed immediately above)

(1) No sale.

(2) Other.

PACIFIC REGION

Four planning areas make up the Pacific Region. Leasing is proposed in two of the four planning areas, Northern California and Southern California, focusing on areas with known hydrocarbon potential. A brief history and summary of available information are included below for all four areas.

NORTHERN CALIFORNIA

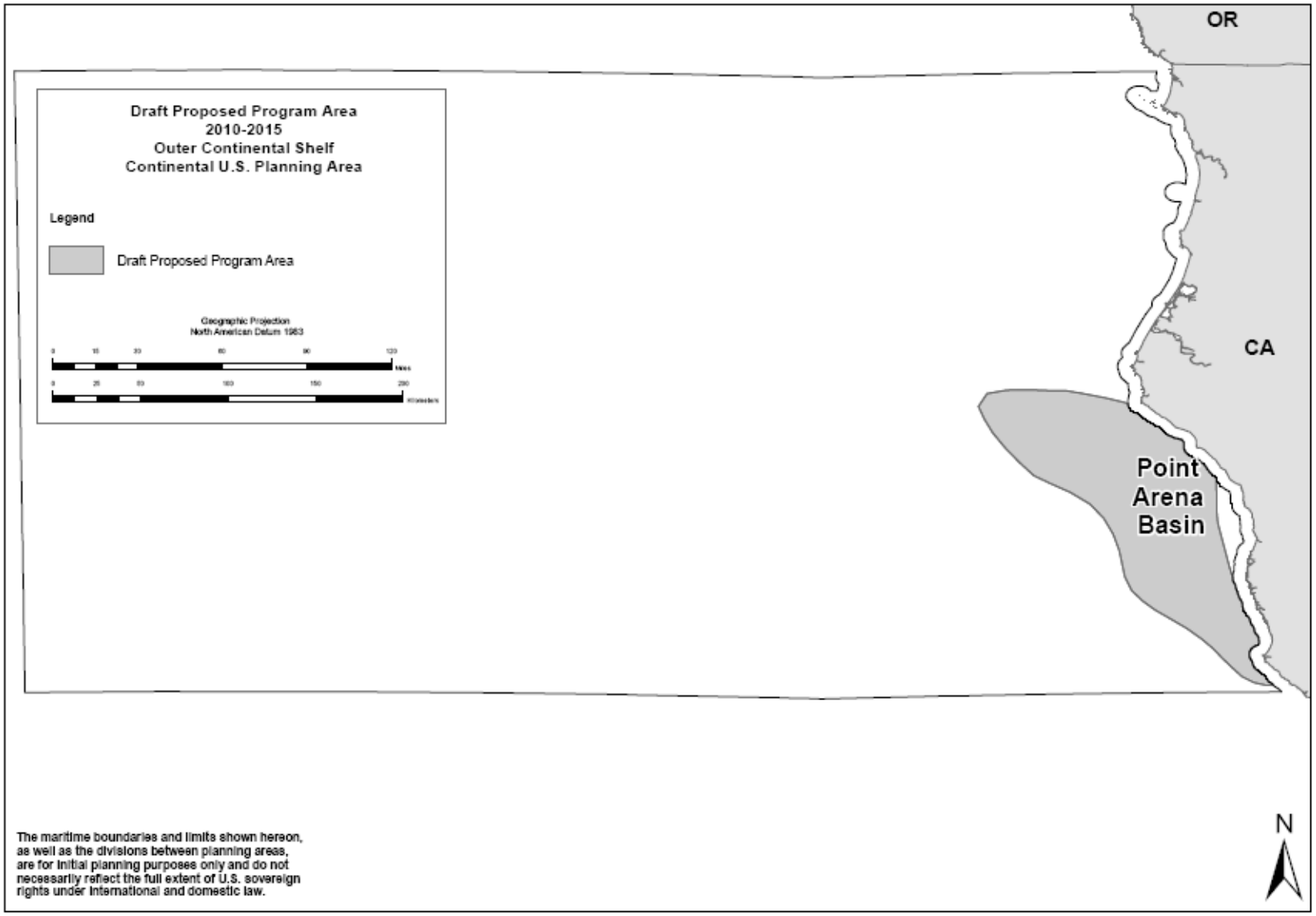
Background. One sale was held in 1963. There were seven exploratory wells drilled with no commercial discoveries. The area was under annual congressional restrictions from FY 1982 through FY 2008 and under presidential withdrawal from 1990 to July 2008.

Key Comparative Results. The area has an estimated NSV range of about $22.5 to 73.8 billion, depending on the price scenario, ranking it 7th to 10th of the 16 planning areas with some economic value. It is ranked 17th for relative environmental sensitivity and 18th for primary productivity. Two industry commenters expressed interest in this area in response to the August 2008 Request for Comments.

Selected Comments. The Governors of California, Oregon, and Washington co-signed a letter to discuss the release on July 29, 2008, of their action plan to implement the West Coast Governors' Agreement (WCGA) on Ocean Health. This regional approach is linked to the Western Climate Initiative. The Governors are opposed to including new areas or lifting the moratoria. A congressional delegation including five California Representatives opposed a new program for oil and gas development saying MMS had failed to make the case for a new program because the energy resources are insignificant in the Atlantic, Pacific and Eastern Gulf; current leases are underutilized; a mid-cycle 5-year program is not warranted; and protections are not in place to safeguard the environment. Industry and consumer interests in this area show support for broader MMS exploration, with environmental safeguards in place. Specific local comments were opposed to activity citing the sensitivity of the coastal environment. Two companies expressed interest. Approximately 60 percent of the citizen comments from California opposed starting a new program.

Alternative Energy. Two tentative areas of interest for prospective OCS wave energy development were identified to MMS through the interim policy, one off Humboldt County and another off Mendocino County. The interested project developer, Pacific Gas and Electric Company, eventually decided not to pursue a limited lease under the interim policy but continues to hold preliminary permits issued by the Federal Energy Regulatory Commission that authorize studies in support of future wave energy development in the state waters adjacent to each of these areas. Planning with respect to alternative energy development in these areas is tentative at this time, and it is uncertain whether leasing will proceed during the 2010-2015 time frame.

Map 7: Northern California Program Area



Options

(1) One sale in 2014 in the Point Arena Basin [2.0 million acres] as shown in Map 7.

(2) One sale in 2014 in the entire planning area [44.79 million acres].

(3) No sale.

(4) Other

SOUTHERN CALIFORNIA

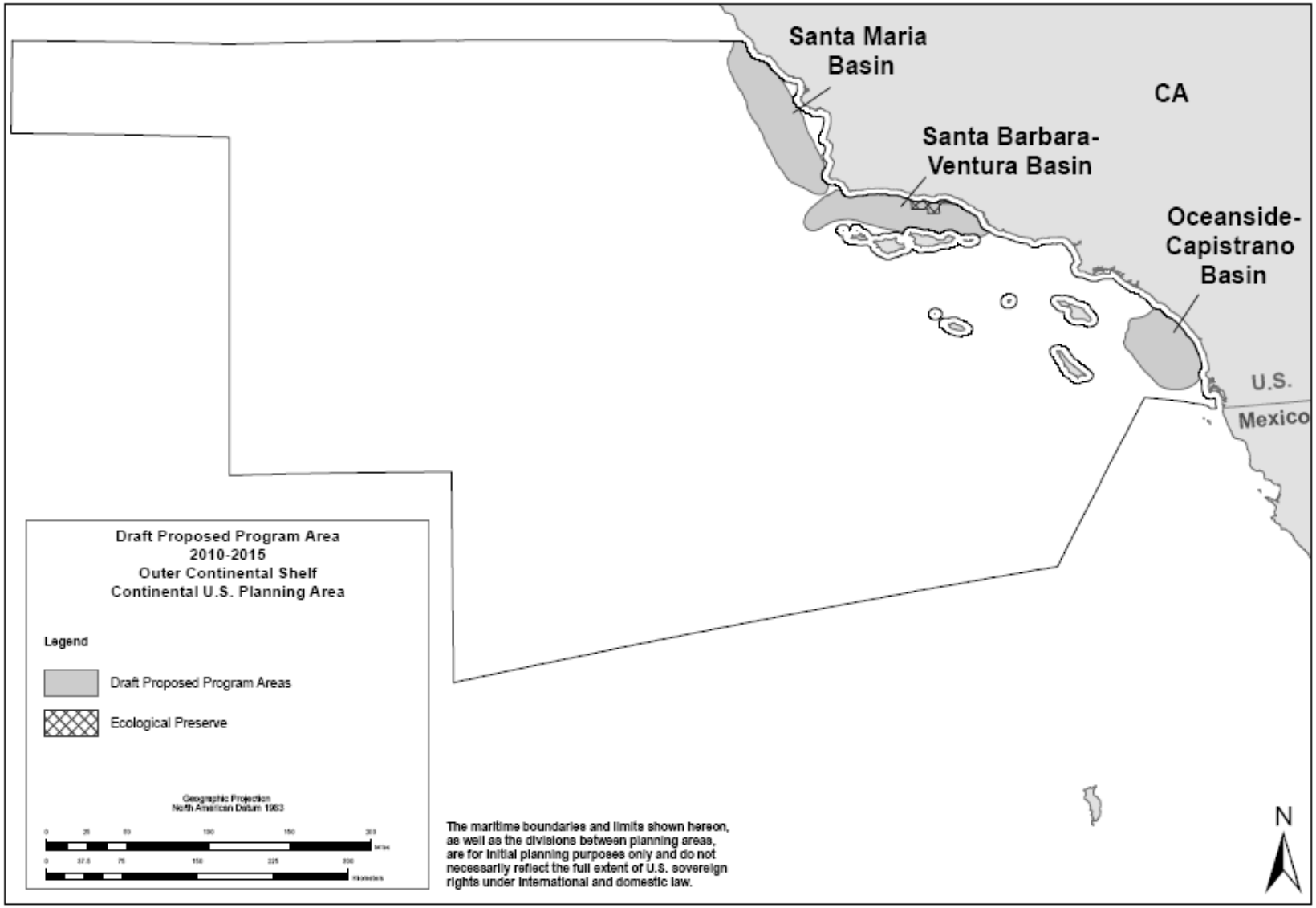
Background. There have been 10 lease sales from 1963 through 1984. Over 1,300 exploratory and development wells have been drilled. There are 79 existing leases, with 43 producing and 36 undeveloped. Oil and gas production, which began in June 1968, totals almost 1.2 billion barrels of oil and 1.6 trillion cubic feet of natural gas through December 2007. Much of the area was under annual congressional restrictions from FY 1985 through FY 2008 and was under presidential withdrawal from 1990 until July 18, 2008.

Key Comparative Results. This area has an estimated NSV range of $68.1 to 204.4 billion, depending on the price scenario, ranking it 3rd or 4th of the 16 planning areas having some value. It is ranked 18th for relative environmental sensitivity and 18th for primary productivity. Five companies expressed interest in the area in response to the August 2008 Request for Comments.

Selected Comments. The Governors of California, Oregon, and Washington co-signed a letter to discuss the release on July 29, 2008 of their action plan to implement the West Coast Governors' Agreement (WCGA). This regional approach is linked to the Western Climate Initiative. They are opposed to including new areas or lifting the moratoria. A congressional delegation including five California Representatives opposed a new program for oil and gas development saying MMS had failed to make the case for a new program because the energy resources are insignificant in the Atlantic, Pacific and Eastern Gulf; current leases are underutilized; a mid-cycle 5-year program is not warranted; and protections are not in place to safeguard the environment. All comments from environmental groups state that they do not want any areas currently under moratoria considered for the 2010-2015 5-Year Program. While the overwhelming majority of business organizations supported expanding access to the OCS generally, only a few listed the Pacific OCS without any further specification of which planning area. Five companies expressed interest. Approximately 60 percent of the citizen comments from California opposed starting a new program.

Alternative Energy. Two areas in the general vicinity offshore Santa Barbara were nominated for leasing under the interim policy, one relating to wave energy and another relating to wind energy. Neither has been chosen by MMS for limited lease issuance. It appears that interest in potential development in this area is tied to the existence of a power cable running from existing OCS Platform Irene to shore that could support such activities. Planning with respect to alternative energy development in both of these areas is tentative at this time, and it is uncertain whether commercial leasing will proceed during the 2010-2015 time frame.

Map 8: Southern California Program Area



Options

(1) Two sales—
(A) One sale in 2012 in the Santa Maria and Santa Barbara/Ventura Basins [2.8 million acres] as shown on Map 8, including the Santa Barbara Ecological Preserve, but with no disturbance of the surface of the seabed—access only via directional drilling.
(B) One sale in Oceanside Basin in 2015 [0.95 million acres] as shown on Map 8.

(2) Two sales in the program areas listed in Option 1—
(A) With offered tracts limited to those that can support no more than 5 new platforms in each basin*.
(B) With 15-mile buffer for no new permanent surface structures

(3) One sale in entire Planning Area [88.99 million acres].

(4) No sale.

(5) Other.

*We are requesting comments on mandatory unitization to potentially limit the number of structures in each basin.

WASHINGTON-OREGON

Background. One lease sale was held in 1964. There were 12 exploratory wells drilled with no commercial discoveries. There are no existing leases. The area was under annual congressional restrictions from FY 1991 through FY 2008 and under presidential withdrawal from 1990 to July 2008.

Key Comparative Results. This area has an estimated NSV range of about $0.49 to 17.3 billion, depending on the price scenario, ranking it between 11th and 15th of the 16 planning areas with some economic value. It is ranked 10th for relative environmental sensitivity and 15th for primary productivity. There was no industry interest expressed in response to the August 2008 Request for Comments.

Selected Comments. The Governors of California, Oregon, and Washington co-signed a letter to discuss the release on July 29, 2008, of their action plan to implement the West Coast Governors' Agreement (WCGA). This regional approach is linked to the Western Climate Initiative. They are opposed to including new areas or lifting the moratoria. Over 65 percent of the citizen comments from Washington and Oregon are opposed to starting a new program.

Alternative Energy. Several areas off Washington and Oregon were nominated for leasing relating to wave resources under the interim policy, but none has been chosen by MMS for limited lease issuance. While experts believe that the Pacific Northwest offers one of the best regimes for wave energy development, California, Oregon and Washington have been cautious to protect their coastal ecological resources and created the West Coast Governors' Agreement (WCGA) to coordinate efforts in baseline ecological research and regional planning, among other things. While the WCGA is working diligently on these issues, it has

not yet recommended going forward with commercial wave development anywhere on the west coast. Recently, the U.S. Department of Energy awarded a multi-million dollar grant to Oregon State University for the Northwest National Marine Renewable Energy Center. Planning with respect to alternative energy development on the OCS in these areas is tentative at this time and it is uncertain whether leasing for commercial development will proceed during the 2010-2015 time frame.

CENTRAL CALIFORNIA

Background. One sale was held in 1963. There were 12 exploratory wells drilled with no commercial discoveries. The area was under annual congressional restrictions from FY 1991 through FY 2008 and under presidential withdrawal from 1990 to July 2008. Most of the OCS nearest the coast are in marine sanctuaries and therefore under indefinite presidential withdrawal.

Key Comparative Results. This area has an estimated NSV range from about $30.3 to 90.3 billion, depending on the prices scenario, ranking it between 5th and 7th of the 16 planning areas having some economic value. It is ranked 20th for relative environmental sensitivity and 23rd for primary productivity. Two companies expressed interest in the area in response to the August 2008 Request for Comments.

Selected Comments. The Governors of California, Oregon, and Washington co-signed a letter to discuss the release on July 29, 2008 of their action plan to implement the WCGA. This regional approach is linked to the Western Climate Initiative. They are opposed to including new areas or lifting the moratoria. A congressional delegation including five California Representatives opposed a new program for oil and gas development saying MMS had failed to make the case for a new program because the energy resources are insignificant in the Atlantic, Pacific and Eastern Gulf; current leases are underutilized; a mid-cycle 5-year program is not warranted; and protections are not in place to safeguard the environment. All comments from environmental groups oppose consideration of any areas that were then under moratoria for the new initiative. Two companies expressed interest. Approximately 60 percent of the citizen comments from California opposed starting a new program.

Alternative Energy. The MMS received no nominations for leasing in the Central California Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

Options (for the 2 areas discussed immediately above)

(1) No sale.

(2) Other.

GULF OF MEXICO REGION

There are three planning areas in the Gulf of Mexico Region—Western, Central, and Eastern Gulf of Mexico. The Western and Central areas constitute the most active areas of the OCS program. The majority of the Eastern Gulf Planning Area and a small portion of the Central Gulf Planning Area off the coast of Alabama are currently off limits until 2022 under the Gulf of Mexico Energy Security Act of 2006 (GOMESA).

WESTERN GULF OF MEXICO

Background. Under the newly defined administrative boundaries for the Western Planning Area under the Draft Proposed Program for 2007-2012 (February 2006), the number of blocks in this planning area decreased from 6,517 to 5,240. Approximately 6,621 wells have been drilled and approximately 797 million barrels of oil and 32,050 billion cubic feet of natural gas have been produced through April 2008. The first sale held since this planning area was redefined was Sale 204 in 2007. The latest sale held was Sale 207 in August 2008 where 319 tracts were bid on with high bid bonuses totaling $487 million. This sale is still being evaluated. There are approximately 1,869 active leases in this newly configured area. The State of Texas administers an oil and gas program that includes state waters adjacent to this area.

Key Comparative Results. This area has an estimated NSV range of about $80.1 to 382.0 billion, depending on the price scenario, ranking 2nd of the 16 planning areas that have some economic value. The area is ranked 7th for relative environmental sensitivity and 20th for primary productivity. Six companies expressed interest in the area in response to the August 2008 Request for Comments, ranking it tied for first with the Central Gulf of Mexico in number of expressions of interest

Selected Comments. The Governor of Texas states it is critical that MMS open all prospective Gulf areas for leasing as soon as possible. Most businesses/organizations supported continued sales in this area generally. Opposition and support were expressed by environmental groups and consumer groups respectively. Six companies expressed interest. Over 78 percent of the citizen comments from Texas supported starting a new program

Alternative Energy. The MMS received no nominations for leasing in the Western Gulf of Mexico Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

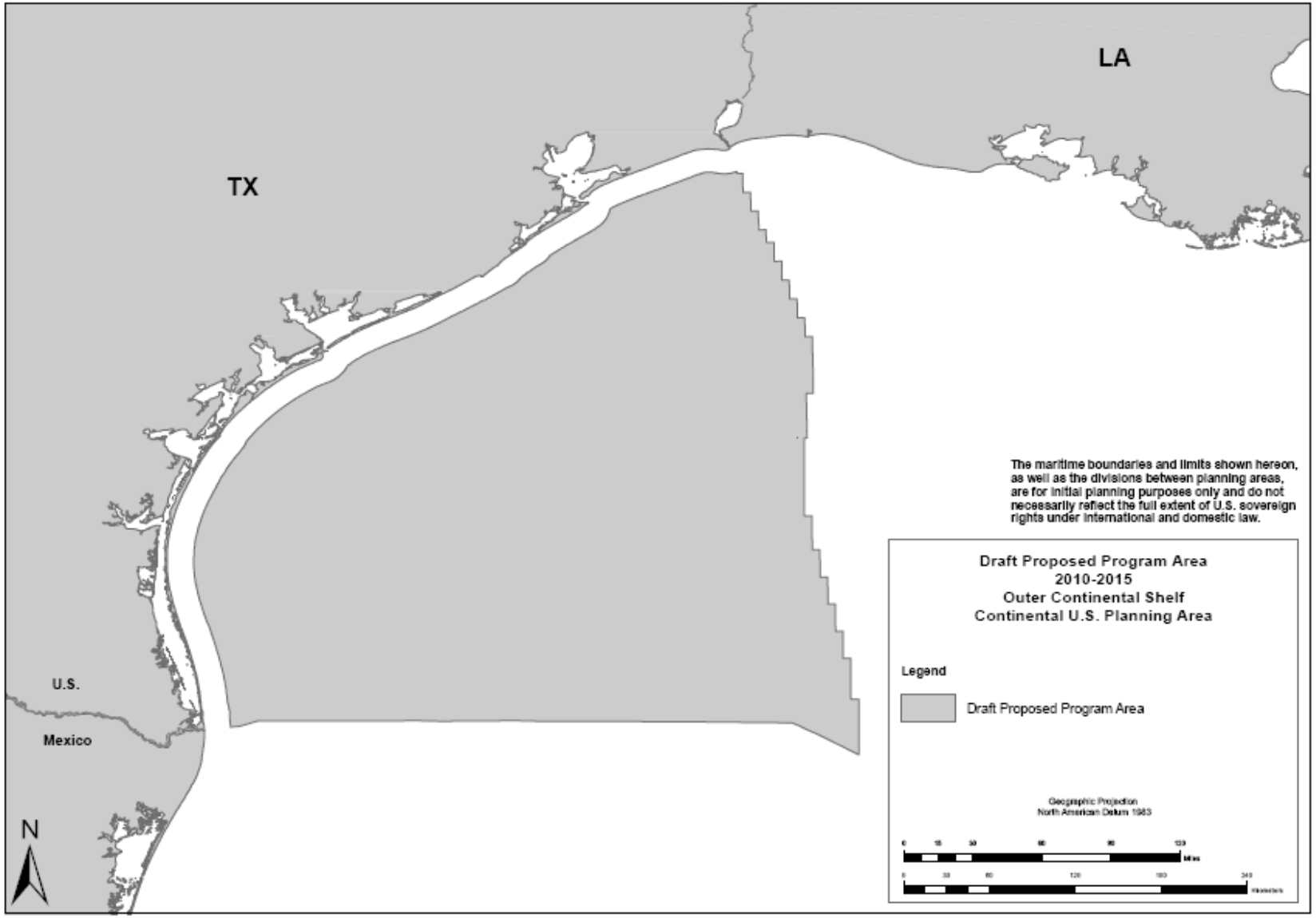
Options

(1) **Five sales in 2010, 2011, 2012, 2013, and 2014, offering all unleased blocks not covered by leasing restrictions as shown on Map 9.**

(2) No sale

(3) Other.

Map 9: Western Gulf of Mexico Program Area



CENTRAL GULF OF MEXICO

Background. Under the newly defined administrative boundaries for the Central Planning Area under the Draft Proposed Program for 2007-2012 (February 2006), the number of blocks in this planning area increased from 9,113 to 12,370. Approximately 36,434 wells have been drilled and some 15 billion barrels of oil and 138 trillion cubic feet of natural gas have been produced through April 2008. The first sale held since this planning area was redefined was Sale 205 in October 2007. The latest sale held was Sale 206 in March 2008 which resulted in 603 leases being awarded with bonuses totaling $3.7 billion. There are approximately 5,420 active leases in this newly configured area. The States of Louisiana, Mississippi, and Alabama administer oil and gas programs that include state waters adjacent to this area.

Key Comparative Results. This area has an estimated NSV range of $233.8 to 1,001.4 billion, depending on the price scenario, ranking it 1st of the 16 planning areas with some economic value. It is ranked 5th for relative environmental sensitivity and 8th for primary productivity. Six companies expressed interest in the area in response to the August 2008 Request for Comments, ranking it tied for first with the Western Gulf of Mexico in number of expressions of interest.

Selected Comments. The Governor of Mississippi views maximizing access to known, domestic energy resources as essential to achieving national energy goals. He states that a new 5-year program is an important initiative. Several local governments in Alabama support a balanced and environmentally sound leasing program off its coast. Several businesses/organizations supported a new program with continued sales in this area. Many companies and associations stated that the "next 5-year plan must provide for expanded leasing in the OCS." Six companies expressed interest in this area. Over 85 percent of the citizen comments from Louisiana, Mississippi, and Alabama supported starting a new program.

Alternative Energy. The MMS received no nominations for leasing in the Central Gulf of Mexico Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

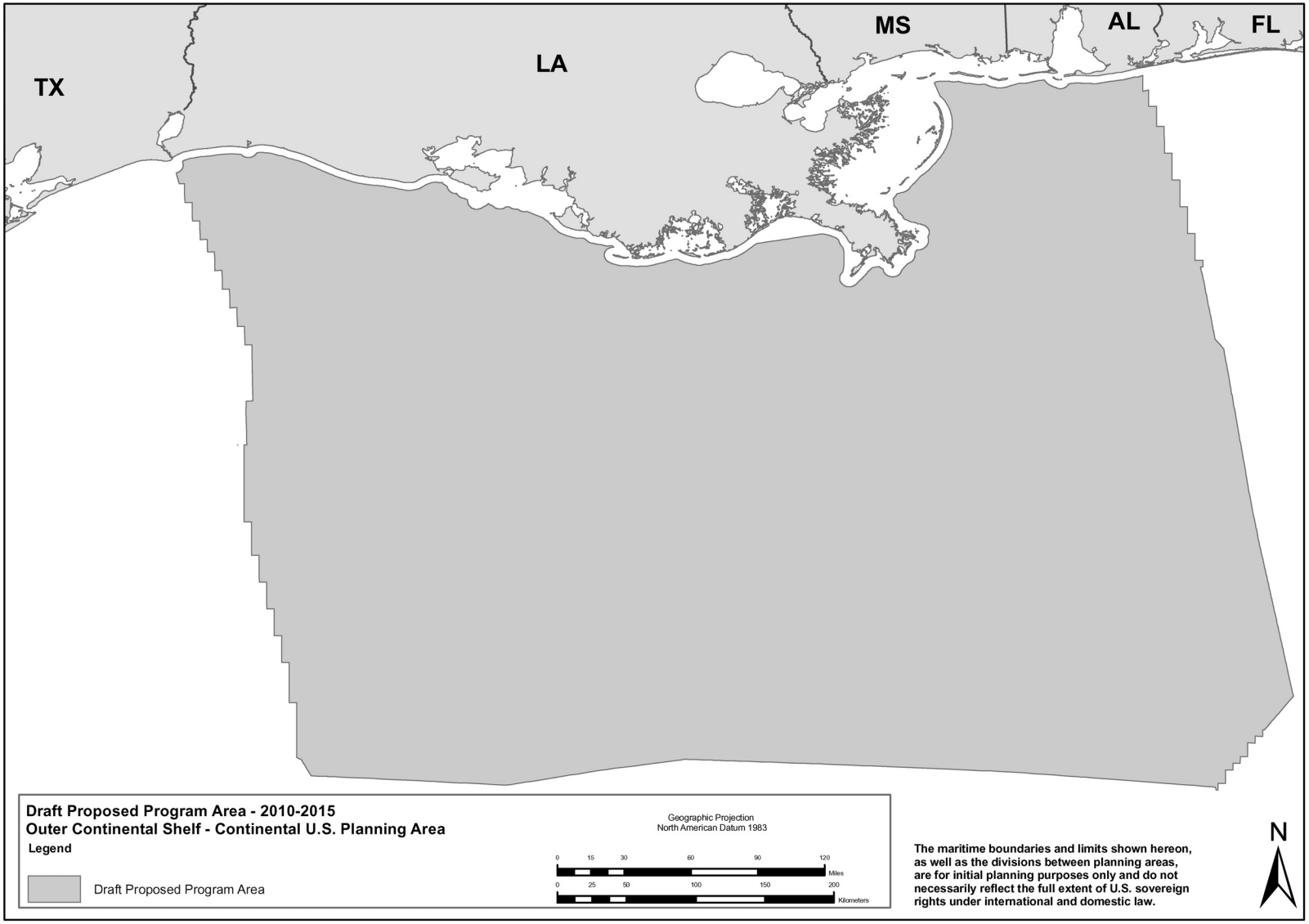
Options

(1) Six sales: one each in 2011, 2012, 2013, 2014, and 2015, offering all unleased blocks not covered by leasing restrictions as shown on Map 10. Second sale in 2011 in the small area near the western coast of Florida, recently made available with lifting of restrictions.

(2) No sale.

(3) Other.

Map 10: Central Gulf of Mexico Program Area



EASTERN GULF OF MEXICO

Background. Under the newly defined administrative boundaries for the Eastern Planning Area under the Draft Proposed Program for 2007-2012 (February 2006), the number of blocks in this planning area decreased from 13,457 to 11,486. The latest sale held since this area was redefined was Sale 224 which resulted in leases being awarded on 36 blocks with bonuses totaling $64.7 million. There are a total of 122 active leases in this newly configured area. As this area was configured in the past, there have been 12 sales held and there have been 40 wells drilled with significant discoveries of natural gas. The majority of this planning area is unavailable for leasing consideration to 2022 under GOMESA. Therefore, these acres will not be offered unless GOMESA is modified. As in the past, we will continue to coordinate with the Department of Defense under the Memorandum of Agreement.

Key Comparative Results. This area, as reconfigured, has an estimated NSV range of about $50.1 to 215.9 billion, depending on the price scenario, ranking it 4th or 3rd of the 16 planning areas with some economic value. It is ranked 2nd for relative environmental sensitivity and 6th for primary productivity. Five companies that expressed interest in this area in response to the August 2008 Request for Comments.

Selected Comments. The Governor of Florida related his interest in working with DOI on OCS matters. He stated that he is "comfortable discussing OCS development as long as it is far enough, safe enough and clean enough off Florida's coast." If not, Florida will continue to oppose oil and gas drilling. Monroe County, Florida, sent a resolution in support of protection for the coast of Florida, particularly the southern Gulf coast and the Keys. All environmental groups expressed opposition to lifting the restrictions in any areas or any action allowing Eastern Gulf development. A majority of the business/organization commenters supported expanded access to domestic resources. Five companies expressed interest in this area. Approximately 63 percent of the citizen comments from Florida supported starting a new program

Alternative Energy. The MMS received no nominations for leasing in the Eastern Gulf of Mexico Planning Area under the interim policy and is not aware of any specific plans or proposals to develop OCS alternative energy resources in this area at this time. Therefore, it appears unlikely that commercial leasing will proceed during the 2010-2015 time frame.

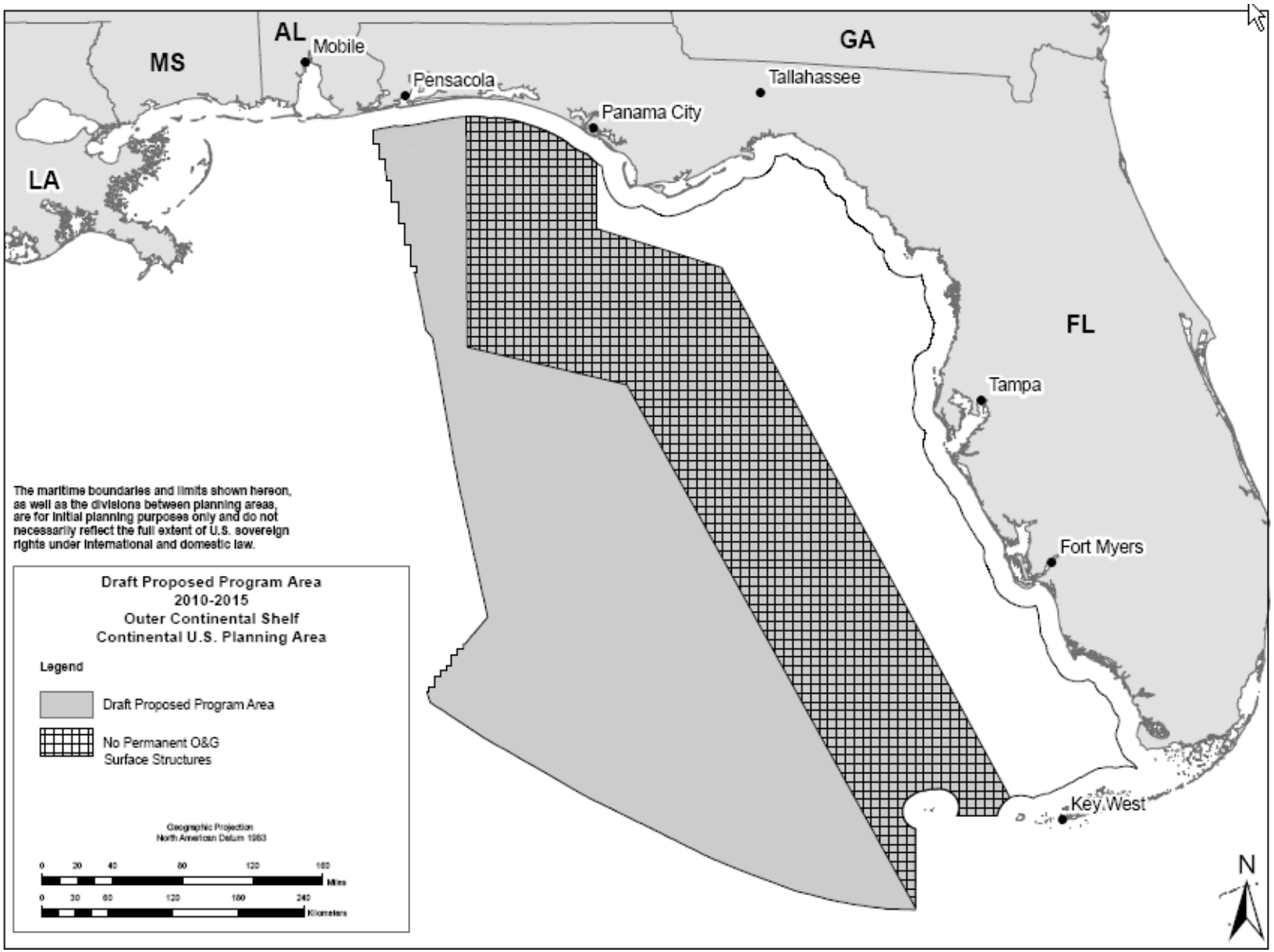
Options

(1) Three sales in 2010, 2011, and 2013, offering all unleased blocks not covered by leasing restrictions with a 75-mile no permanent surface structures buffer for a portion of the planning area, as shown on Map 11 . No leases will be offered eastward of that zone. The area is configured to preliminarily address military multiple-use issues. Dialogue with DOD will continue throughout the presale process.

(2) Three sales in 2010, 2011, and 2013, offering all unleased blocks not covered by leasing restrictions.

(3) Three sales in 2010, 2011, and 2013, offering all unleased blocks not covered by leasing restrictions with a 25-mile no leasing buffer.

Map 11: Eastern Gulf of Mexico Program Area



(4) Three sales in 2010, 2011, and 2013, offering all unleased blocks not covered by leasing restrictions with a 15-mile no leasing buffer and a 15- to 25-mile no permanent surface structures buffer.

(5) Three sales in 2010, 2011, and 2013, offering all unleased blocks not covered by leasing restrictions with a 15-mile no leasing zone and a 15- to 25-mile no permanent surface structures buffer along the westernmost portion of the planning area and a 75-mile no permanent surface structures buffer for a portion of the planning area, as in Option 1.

(6) Three sales in 2010, 2011, and 2013, offering all unleased blocks not covered by leasing restrictions with a 25-mile no leasing zone along the westernmost portion of the planning area with access via directional drilling and a 75-mile no permanent surface structures buffer for a portion of the planning area, as in Option 1.

(7) No sale.

(8) Other.

ATLANTIC REGION

There are four planning areas that make up the Atlantic Region—North Atlantic, Mid-Atlantic, South Atlantic, and Straits of Florida. Leasing options are being considered in all areas but the Straits of Florida.

NORTH ATLANTIC PLANNING AREA

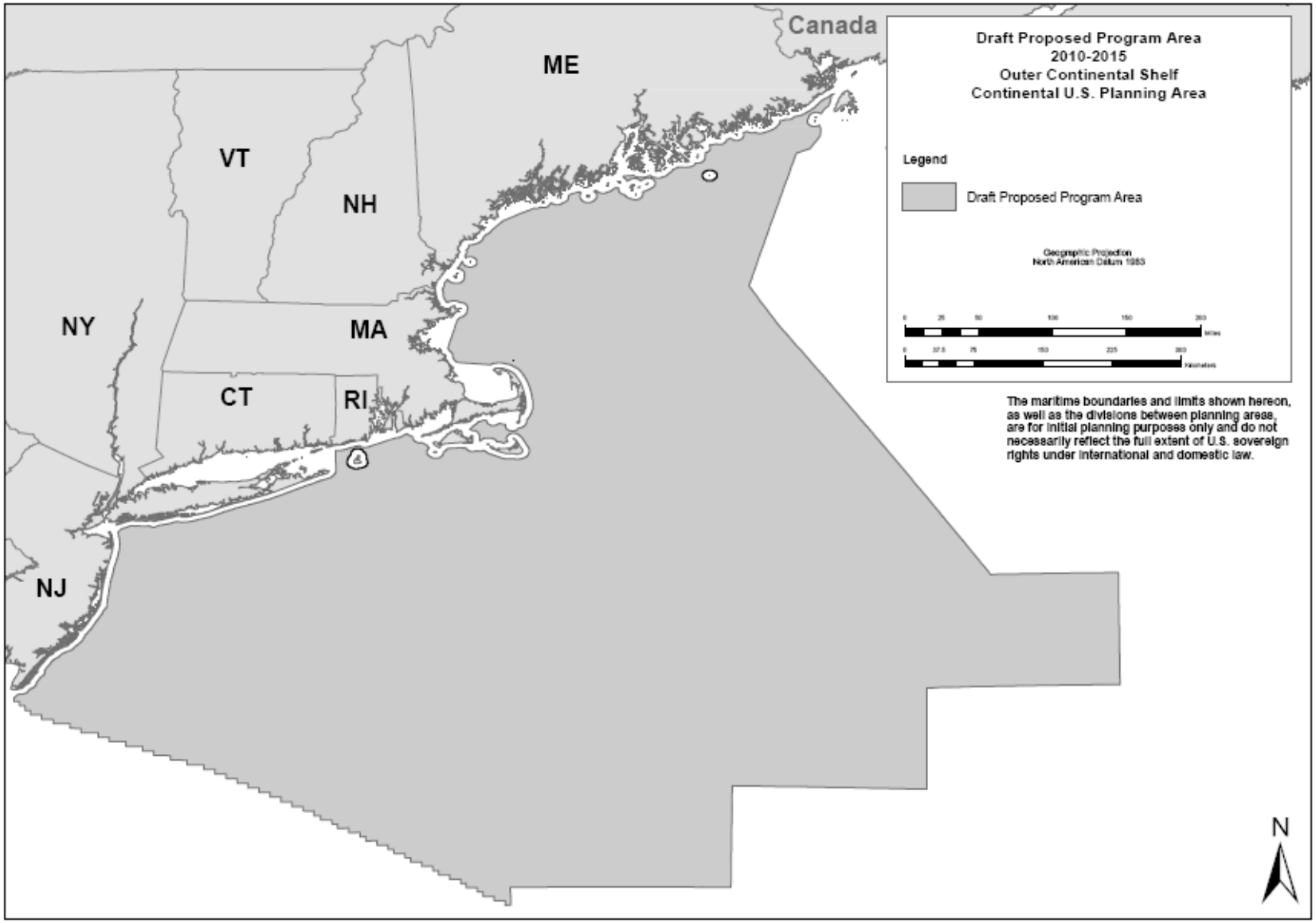
Background. One sale was held in 1979. There were eight exploratory wells drilled with no commercial discoveries. There are no existing leases. The area was under annual congressional restrictions from FY 1984 through 2008 and under presidential withdrawal from 1990 through July 18, 2008.

Key Comparative Results. This area has an estimated NSV range of about $21.1 to 101.3 billion, depending on the price scenario, ranking it 7th or 6th of the 16 planning areas with some economic value. It is ranked 12th for relative environmental sensitivity and 12th for primary productivity. Five companies expressed interest in this area in response to the August 2008 Request for Comments.

Selected Comments. The Governor of Maine suggests that Maine does not have appreciable commercially recoverable oil or natural gas reserves; wind energy is of interest in the Gulf of Maine; potential safeguards for natural resources and related uses need to be evaluated; Maine's coastal program must be considered; and all actions must be consistent with that program. The statement concludes that MMS action is not appropriate in the North Atlantic. The State of Connecticut supports continued moratoria and finds no justification for development in the North or Mid-Atlantic Planning Areas. The Governor of New Jersey expresses his continued opposition to any weakening of the [then] current moratoria. He encourages the Federal Government to look to an energy policy that is comprehensive, forward-thinking, and less dependent on drilling and oil. Environmental groups opposed lifting the former moratoria in any area. Many non-energy businesses/organizations support more access to domestic resources. Five companies expressed interest. The citizen comments from the North Atlantic States were about 70 percent opposed to starting a new program.

Alternative Energy. The MMS is nearing completion of the review of the Cape Wind project proposed in Nantucket Sound on the OCS off Massachusetts. The planned capacity for this wind power facility is approximately 500 megawatts. The MMS anticipates issuing a final EIS on this project in January of 2009, and a record of decision later in 2009. If the decision is favorable, MMS may issue a commercial lease noncompetitively later in 2009.

In April 2006, a panel established by the State of New Jersey to look into offshore wind development issued a report calling for the New Jersey Board of Public Utilities (BPU) to proceed with an offshore wind project to obtain practical knowledge of benefits and impacts resulting from offshore wind turbine facilities. The BPU issued a solicitation for proposals to develop a capacity of 350 megawatts of wind power on the OCS and offered a grant of $19 million. In October 2008, the State selected Garden State Offshore Energy LLC (GSOE) as the winner of the grant solicitation. New Jersey is currently in negotiations with GSOE for a project to come on line in 2013. Therefore, MMS plans to offer a commercial OCS wind energy lease as early as 2011, after completing the necessary competitive or noncompetitive leasing process and accompanying reviews, such as those required by the National



MAP 12: North Atlantic Program Area

Environmental Policy Act (NEPA) and the Coastal Zone Management Act (CZMA). Recently the State initiated a program to encourage additional limited leasing relating to OCS wind resources that could accelerate additional commercial development. The North Atlantic Map shows the areas off New Jersey proposed for wind energy activity.

In September 2008, Deepwater Wind LLC was chosen as the developer to construct a wind energy project off the shores of Rhode Island. It is anticipated that the project will provide 1.3 million megawatt hours per year of renewable energy. The exact location of the wind project will be determined from the results of the Special Area Management Plan (SAMP) permitting process led by the Rhode Island Coastal Resources Management Council in partnership with the University of Rhode Island's Graduate School of Oceanography.

Additional tentative areas of interest, identified through interim policy processes or discussions with MMS, include locations relating to wind resources off Massachusetts, Rhode Island, and Long Island, New York, and a single location relating to tidal current resources off Cape Cod National Seashore in Massachusetts. None of these areas has been chosen for limited lease issuance by MMS. The interest off Long Island also is reflected in the suspended Long Island Offshore Wind Project and in a new 10-year plan being developed by the New York Power authority that may include a wind development of significant size. However, planning with respect to alternative energy development in all of these areas is tentative at this time, and it is uncertain whether commercial leasing will proceed during the 2010-2015 time frame.

Options

(1) One sale in 2013 in the entire planning area as shown on Map 12.

(2) One sale in 2013 with 25-mile no leasing buffer.

(3) One sale in 2013 with 15-mile no permanent surface structures buffer.

(4) One sale in 2013 with 15-mile no leasing zone and 15- to 25-mile no permanent surface structures buffer or a no surface structures with access via directional drilling.

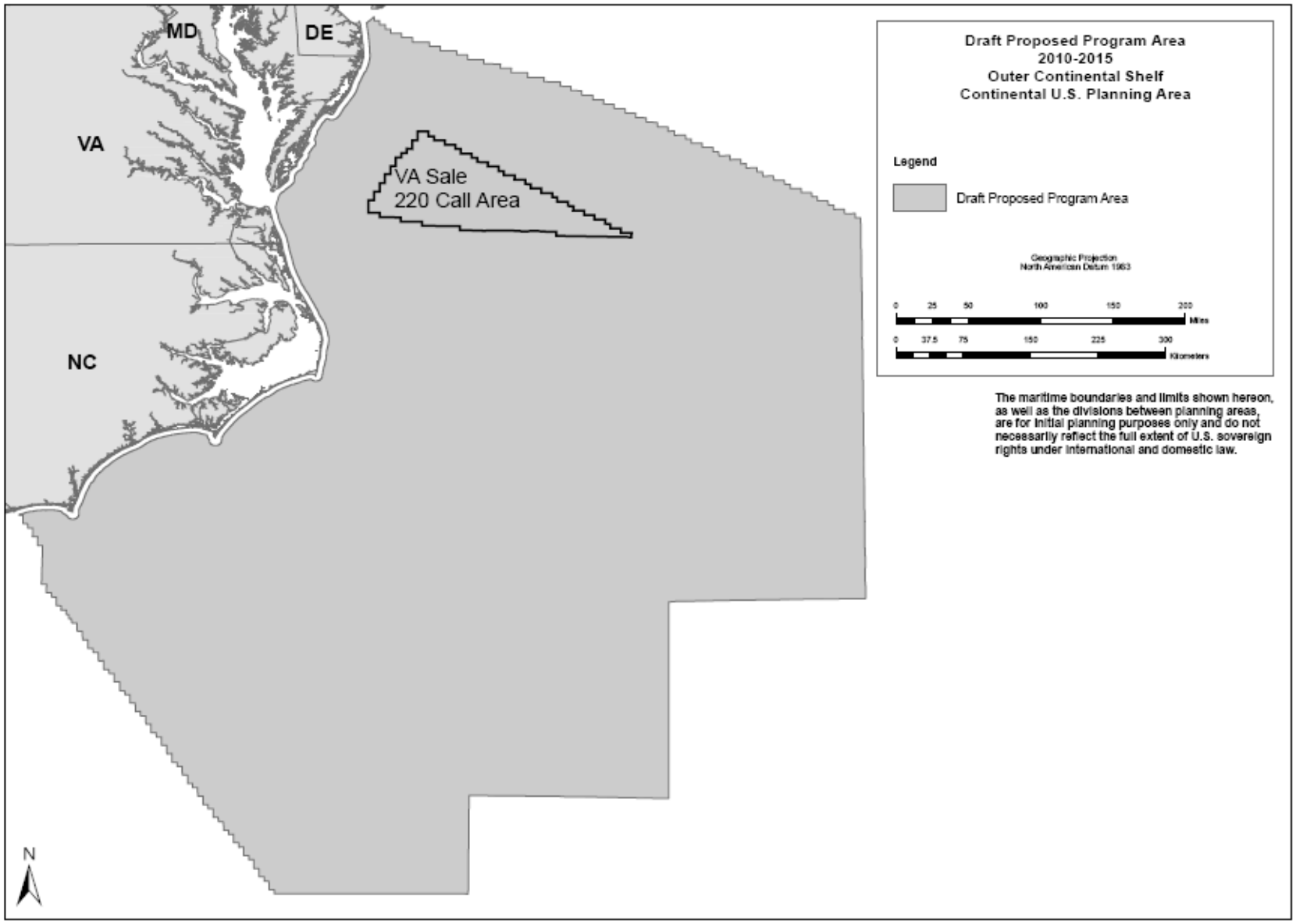
(5) No sale.

(6) Other.

MID-ATLANTIC

Background. There have been five sales held between 1976 and 1983. There have been 32 exploratory wells drilled with no commercial discoveries. There are no existing leases. The area was subject to presidential withdrawal from June 1998 to July 2008 and to annual congressional restrictions from FY 1990 through FY 2008. A special interest sale for an area offshore Virginia is scheduled for 2011 in the current program. A Request for Information was published on November 13, 2008. The comment period closed on December 29, 2008.

Key Comparative Results. This area has an estimated NSV range of about $14.4 to 72.98 billion, depending on the price scenario, ranking it 9th to 10th of the 16 planning areas with some value. It is in the ranked 4th for relative environmental sensitivity and 2nd for primary



MAP 13: Mid-Atlantic Program Area

productivity. Five companies expressed interest in this area in response to the August 2008 Request for Comments.

Selected Comments. The Governor of Delaware reiterated the State's support for a comprehensive inventory of traditional OCS mineral resources and expressed the importance of alternative energy resources. The Governor of Virginia supports federal efforts to determine the extent of Virginia's offshore natural gas resources. He restated the Commonwealth's legislative policy that no activity should occur within 50 miles of the shoreline, offshore waters of all Atlantic states should be considered at the same time, and that activity should be limited to exploration only and natural gas only. The State of North Carolina provided the text of a letter from the Governor calling on Congress to empower North Carolina and other States to acquire OCS lease permits, without federal fees, and to allow state control over these reserves as the Nation transitions to alternative fuels. The Governor of Georgia expressed interest in offshore development. Eight Virginia Congressional members agreed with MMS initiating a new program, but opposed the use of the current administrative boundaries and other concerns in future planning. The citizen comments from the Mid-Atlantic States were about 70 percent in support of starting a new program.

Alternative Energy. A wind energy development project has been proposed with the support of the State of Delaware. The developer, Bluewater Wind, LLC, has entered into a power purchase agreement with the local utility, Delmarva Power, calling for construction of an OCS wind power facility with a 450-megawatt capacity. Under this contract the developer needs to obtain the permits for construction and operation of the project by August 2012. The MMS plans to offer a wind energy lease by that date after completing the necessary competitive or noncompetitive leasing process and accompanying reviews, such as those required by NEPA and CZMA. The Mid-Atlantic map shows the proposed wind lease area.

Additional tentative areas of interest, identified through interim policy processes or discussions with MMS, include locations off Maryland, Virginia, and North Carolina. Planning with respect to alternative energy development in these areas is tentative at this time, and it is uncertain whether leasing will proceed during the 2010-2015 time frame.

Options

1) Three sales—two sales in the entire planning area in 2012 and 2015, and Sale 220 off Virginia in 2011, as shown on Map 13.

(2) Three sales in 2011, 2012, and 2015 in the entire planning area.

(A) With a 15-mile with no permanent surface structures buffer
(B) With a 15-mile no leasing zone and a 15- to 25-mile no surface structures zone with access via directional drilling
(C) Sale 220 off Virginia in 2011 with 50-mile no leasing buffer.*

(3) Three sales with 25-mile no leasing buffer.

(4) No sale.

(5) Other.

*The Department intends to continue to be responsive to the Commonwealth of Virginia's request for a 50-mile buffer; hence, we may defer the 50-mile buffer in subsequent steps in the 5-year process or during the individual sale process, if the Commonwealth continues with that position.

SOUTH ATLANTIC

Background. Four sales have been held between 1978 and 1983. There were six exploratory wells drilled with no commercial discoveries. There are no existing leases. The area was subject to presidential withdrawal from 1998 to July 2008 and to annual congressional restrictions from FY 1990 through FY 2008.

Key Comparative Results. This area has an estimated NSV range of $4.4 to 21.9 billion, depending on the price scenario, ranking it 13th of the 16 planning areas with some economic value. It is ranked 1st for relative environmental sensitivity and 1st for primary productivity. Five companies expressed interest in the area in response to the August 2008 Request for Comments.

Selected Comments. The Governor of Georgia supports environmentally sound efforts to increase the domestic oil and gas reserves of the United States. Numerous environmental groups opposed any consideration of leasing in areas then withdrawn and one specifically asked that sales be excluded in the South Atlantic. Most businesses/ organizations supported opening the Atlantic OCS to consideration of leasing. Some specifically mentioned the South Atlantic. Five companies expressed interest. Approximately 86 percent of the citizen comments from South Carolina and Georgia Atlantic supported starting a new program. Approximately 63 percent of the citizen comments from Florida supported starting a new program, although most were focused on the Eastern Gulf of Mexico and few mentioned the Atlantic coast of Florida.

Alternative Energy. An area off Georgia was nominated under the interim policy for leasing relating to wind power by Southern Company and was chosen by MMS for limited lease issuance. Areas off South Carolina also were nominated relating to wind resources and have not been chosen for limited lease issuance. Planning with respect to alternative energy development in both of these areas is tentative at this time, and it is uncertain whether commercial leasing will proceed during the 2010-2015 time frame.

Options

(1) One sale in 2014 in the entire planning area, as shown on Map 14. .

(2) One sale in 2014 with 25-mile no leasing buffer.

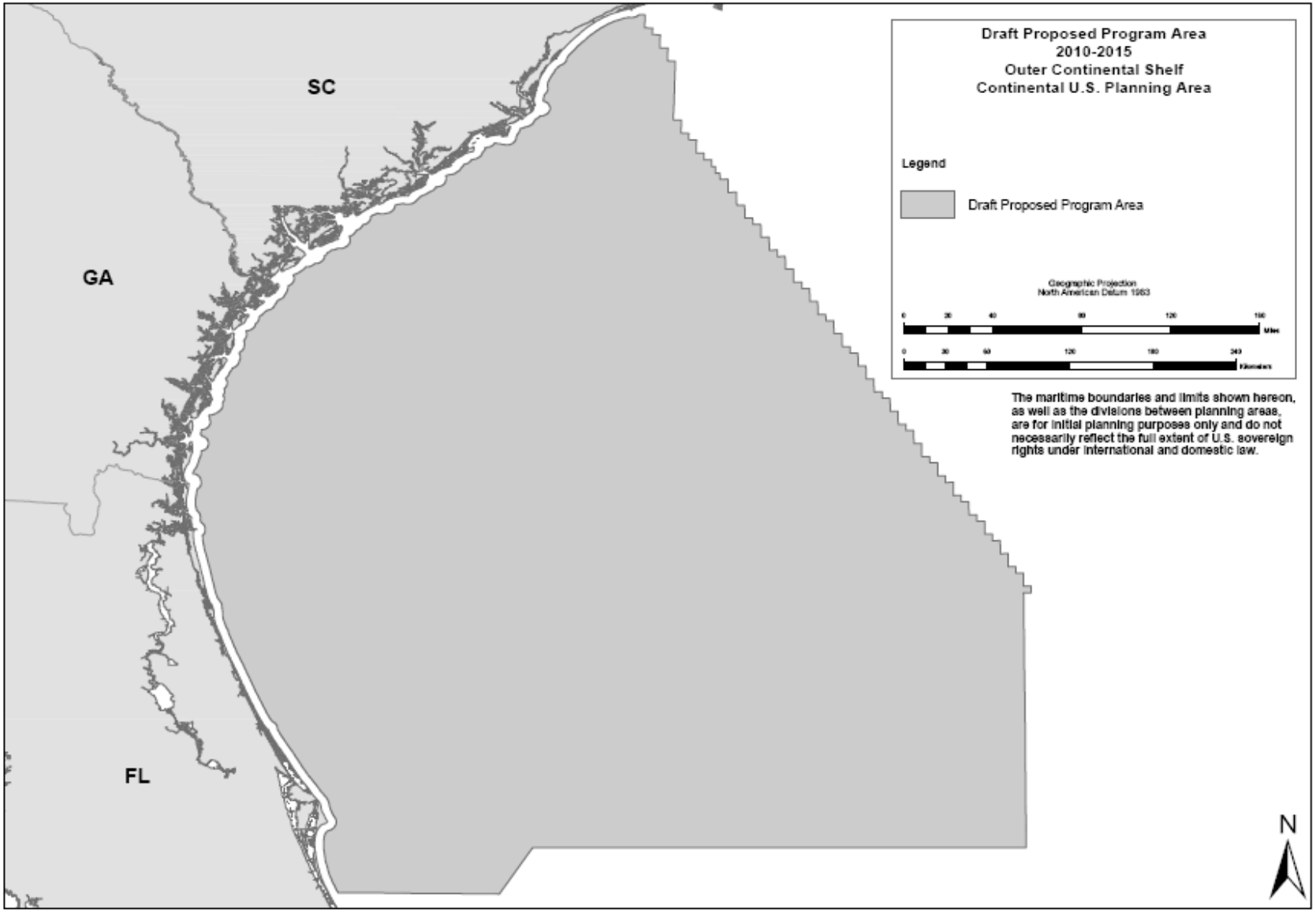
(3) One sale in 2014 with 15-mile no permanent surface structures buffer.

(4) One sale in 2014 with 15-mile no leasing zone and 15- to 25-mile no permanent surface structures buffer or a no surface structures with access via directional drilling.

(5) No sale.

(6) Other

MAP 14: South Atlantic Program Area



STRAITS OF FLORIDA

Background. One sale was held in 1959. There were three exploratory wells drilled with no commercial discoveries. There are no existing leases and the area has not been included in a 5-year program since 1987-1992. It is not and has not been under any congressional or presidential restrictions on activity.

Key Comparative Results. This area has an estimated NSV range from zero to $85.0 billion, depending on the price scenario, 16th of the 16 planning areas with some economic value at any of the price-scenario levels. It is ranked 3rd for relative environmental sensitivity and 25th for primary productivity. There was no industry interest expressed in response to the August 2008 Request for Comments.

Selected Comments. All environmental groups are interpreted as requesting that this area be excluded from leasing. Approximately 63 percent of the citizen comments from Florida supported starting a new program, although most were focused on the Eastern Gulf of Mexico and few mentioned the Straits of Florida.

Alternative Energy. Several areas along the southeast coast of were nominated for leasing relating to current power under the interim policy. The MMS chose four locations to proceed with limited lease issuance. Experts believe these locations are within one of the prime areas for potential current power development due to the large volume and steady flow of the Gulf Stream current. While the current power industry is perhaps the most embryonic of the offshore renewables, multiple developers, utilities and academic institutions have expressed interest in the resource potential off the Florida coast and initiating technology testing of prototype turbines. For example, the Florida Atlantic University's Center for Ocean Energy Technology is pursuing partnerships to establish a South Florida Testing Facility range for research, design, development, implementation, testing, and commercialization of offshore current power generation. However, planning with respect to alternative energy development in this area is tentative at this time, and it is uncertain whether leasing for commercial development will proceed during the 2010-2015 time frame.

Options

(1) No sale.

(2) Other.

B. Fair Market Value Options

This part discusses the bidding systems used in OCS auctions and the processes used to assure that OCS leases are not awarded for less than fair market value. The discussion includes an overview of the post-sale OCS bid adequacy process. Part IV.D discusses in greater detail the post-sale measures taken to assure the receipt of fair market value for OCS leases as required by Section 18(a)(4) of the Act.

Bidding Systems

The Outer Continental Shelf Lands Act (OCSLA) grants the Secretary the authority to issue leases on the OCS. Section 18(a)(4) of the OCSLA states that "Leasing activities shall be conducted to assure receipt of *fair market value* for the lands leased and the rights conveyed by the Federal Government." Lessees pay bonuses, rentals, and royalties reflecting the value of the rights to explore and potentially develop and produce OCS oil and gas resources.

The competitive bidding systems available in OCSLA and in the 30 CFR § 260.110 regulations provide for variations of the cash bonus /royalty rate approaches. The MMS has chosen to use the cash bonus bidding system subject to a fixed royalty rate since 1983. Congress passed the amended Act in 1978, instructing Interior to experiment with alternative bidding systems for leasing offshore oil blocks. The goal was to encourage participation from small companies by reducing up-front costs associated with the traditional "bonus bid" system. Interior used four alternative bidding systems from 1978 through 1982 and found the alternatives unsatisfactory because, among other things, they reduced participation by small companies, were significantly more complex to administer and often were not beneficial to the taxpayer.

Beginning in 1983, MMS modified its procedure of determining which blocks to offer for leasing by replacing the tract selection process with areawide leasing. In recent years concerns have been raised by the State of Louisiana about several aspects of the areawide leasing procedure, including that the format might reduce government revenue from OCS oil and gas leases.

Areawide Leasing

The State of Louisiana has questioned the benefits of areawide leasing and commented on the potential benefits of using alternative leasing schemes in several letters to the MMS in 2006, 2007, and 2008. In late 2007, MMS awarded a contract for a detailed analysis of alternative and modified leasing approaches that may better serve to further the multiple goals of the OCS Lands Act. Elements of the policies to be examined include: setting limited sale size by tract nomination or selection approaches; reconfiguring sales in the Central and Western GOM planning areas; altering the frequency of sales; raising royalty rates or applying royalty rate functions; and changing the auction bidding variable or royalty payment scheme. The study is expected to take about 2 years to complete. In addition, it is likely that MMS will spend another year on internal review, evaluation, and decision making prior to any transition to a new or modified leasing system.

Prior to areawide leasing, MMS employed a pre-sale tract evaluation process. However, this process is less feasible when offering a large number of tracts and absent information about which tracts will receive bids. Thus, the current post-sale tract evaluation process has important efficiencies and fair market value properties because it allows MMS to focus only on blocks that receive bids. It also permits more detailed mapping and analysis of the most recently obtained and analyzed geological data needed to make informed bid acceptance or rejection decisions, thus helping to assure receipt of fair market value.

In the process of considering alternative leasing approaches and fiscal systems that may enhance government take and assure receipt of fair market value, MMS must be cognizant of the effects any policy changes might have on the achievement of other statutory goals of the Federal OCS Program. Among these are expeditious and orderly development and maintaining a diverse and competitive industry. Areawide leasing allows smaller independent companies to expeditiously acquire, explore and produce low-resource, low-risk fields, while providing larger companies an incentive to pursue technological development in deep water. Areawide leasing also encourages innovative exploration strategies and is consistent with maintaining financially sound geophysical contracting and processing industries.

We expect the forthcoming contract analysis of alternatives to areawide leasing to address such possible consequences. Therefore, pending completion of that analysis, MMS considers it is appropriate to continue the current areawide approach under the Draft Proposed 5-Year Program. If MMS subsequently determines that some alternative approach to leasing policy is preferable, then the 5-Year Program could be adjusted accordingly after it is implemented.

Diligence

A block's high bid is considered in light of MMS fair market value requirements. If a high bonus bid does not satisfy any of the required conditions, the offer is rejected and the OCS block is reoffered at the next scheduled OCS lease sale. If the high bonus bid is accepted, the working interest is conveyed to the lessee for a limited period called the initial term. It is important to note that the fair market value at the time of lease award is not based on the value of the oil and gas eventually discovered or produced; instead it is related to the value of the right to explore and, if there is a discovery, to develop and produce hydrocarbons. This value is therefore based on the expected, not actual, activities and results that are anticipated to occur after the sale. Moreover, this value depends upon the conditions imposed on lessees by MMS, such as diligence requirements, which may restrict lessee flexibility in certain timing milestones and hence have a negative effect on expected as well possible actual tract value.

During the initial term of a lease and before the lease goes into production (in other words, during the time the lessor is not receiving any benefit from its retained royalty interest), the lessee pays annual rentals. In recent sales, MMS has imposed rentals that escalate over time to encourage faster exploration and development of leases. The government also reserves a royalty interest, which is a cost-free share of the production if the lease is determined to hold economically recoverable hydrocarbons and enters production. Royalty rates can have a significant impact on bidder interest and are a key parameter in the calculation of FMV for a block. All of the obligations (bonus payments, rentals and royalties) reflect the value of the lessor's (i.e., the Federal government's) property interest in the leased minerals and are fiscal components of fair market value.

Fiscal Lease Terms

The options considered for the Draft Proposed Program, subject to sale-by-sale reconsideration, are to maintain the current minimum bid levels, rental and royalty rates or to establish alternative minimum bid levels, rental, and/or royalty rates.

In the Gulf of Mexico (GOM), the current minimum bid levels are $25 per acre in water depths of less than 400 meters and $37.50 per acre in water depths of 400 meters or greater. On the Alaska OCS, recent minimum bid levels differ by planning area and are $25 per hectare (about $10 per acre) in the Chukchi Sea, Cook Inlet and in Zone B of the Beaufort Sea, and $37.50 per hectare (about $15 per acre) in Zone A of the Beaufort Sea. Annual rental rates for the most recently announced GOM sale range from $7 to $16 per acre. Alaska rental rates range from $2.50 to $30.00 a hectare which is about $1.00 to $12.00 per acre. The OCS production fixed royalty rate is 18.75 percent for recent GOM sales and 12.5 percent for Alaska sales.

The MMS has incrementally adjusted lease fiscal terms in recent sales in response to emerging market conditions. In particular, the royalty rate has been raised twice for GOM leases in recent years as oil and gas prices have risen substantially above the range that prevailed for years. Also, escalating rentals have been implemented for leases in the GOM and in Alaska for the Beaufort Sea and Chukchi planning areas. Based on the results of recent GOM and Alaska sales, these combinations of fiscal changes have not impeded competition for leases.

To continue assurance of fair market value, MMS periodically evaluates fiscal terms as they relate to market conditions, competition, and the prospective nature of available Federal OCS acreage. Fair market value for the public's OCS resources is also determined through diligent monitoring of exploratory results and, when necessary, fiscal term adjustments are made in the notice for lease sale for newly issued leases.

Bid Adequacy Options

All bids for OCS blocks in oil and gas lease sales must satisfy the MMS's fair market value requirements. The bid adequacy process in use since 1983 evaluates high bids in two phases. The first phase of the bid evaluation process assesses bid adequacy and relative tract value by applying long-standing rules and procedures which draw upon the number of bids received on the tract, the distribution of those bids as well as the ranking of high bids across tracts, and an independent MMS assessment of the tract's geologic and economic viability. If not accepted during this first phase, the tract's high bid is evaluated using detailed analytical assessment procedures. The outputs of these procedures, in conjunction with the distribution of bids on tracts receiving multiple bids, is a set of tract-specific values that are used to determine that tract's ultimate reservation price. This reservation price must be no lower than the minimum bid level used for all tracts within a comparable water depth range. If the high bid does not exceed the MMS reservation price, the lease is not awarded and the block is reoffered at the next lease sale in that planning area. Thus, under its bid adequacy procedures, MMS reviews all high bids received and evaluates all blocks using either tract-specific bidding factors or detailed tract-specific analytical factors to ensure that fair market value is received for each OCS lease issued.

Selected Comments. There were no comments related to fair market value or OCS auction bidding systems among the responses to the Request for Comments published on August 8, 2008.

Further discussion of fair market value and the bid adequacy process is found in part V.D.

Options

Fiscal Lease Terms

(1) Set minimum bid levels, rental rates, and royalty rates using the parameters in place for recent sales under the 2007-2012 program, subject to sale-by-sale reconsideration.

(2) Set minimum bid levels, rental rates, and royalty rates using different parameters, subject to sale-by-sale reconsideration.

(3) Other.

Bid Adequacy Review

(1) Continue use of the current, two-phased bid adequacy process, subject to revision as appropriate.

(2) Other.

V. DRAFT PROPOSED PROGRAM ANALYSIS

Part V presents the analyses required by Section 18 of the Act. For the Draft Proposed Program, these analyses focus on the relative value, sensitivity, productivity, and other aspects of the 26 OCS planning areas, with no presuppositions about the size, timing, and location decisions to follow. After Draft Proposed Program decisions—the initial decisions in the 5-year program development process—the equivalent analyses focus on the anticipated results of the decisions and the various decision options to be offered the Proposed and Proposed Final Programs.

A. Analysis of Energy Needs

Introduction

Energy plays a central role in the operation of the U.S. economy and energy spending is commensurately large. In recent years, American consumers have spent well over a trillion dollars a year, more than 8 percent of the gross domestic product, on energy. As noted in its report "Facing the Hard Truths about Energy" (2007 (updated September 17, 2008), the National Petroleum Council recognizes the U.S. as the largest participant in the global energy system as the largest consumer, second largest producer of coal and natural gas, and the largest importer and third largest producer of oil. Growing demand for energy in other countries, especially India and China, means competition for limited energy sources will become more intense and longer term prices for imported energy likely will increase.

Section 18 requires the Secretary to formulate an OCS leasing program to "best meet national energy needs for the five-year period following its approval or reapproval" [18(a)]. In formulating the program, the Secretary must consider "the location of such [OCS] regions with respect to, and the relative needs of, regional and national energy markets" [18(a)(2)(C)]. The long lead times that are involved in OCS oil and gas leasing and permitting of exploration, development, and production activities, along with the extended life of oil and gas projects, actually dictate that the analysis of energy needs look at projections for a period of time in the future that is much longer than 5 years.

The following sections discuss national and regional energy needs, considering a large, continuing gap between domestic production and consumption, increased concern over the growing amount of U.S. dollars sent overseas, likely supply contributions of OCS production and other sources of energy, and a new opportunity to consider making available some of the oil and gas resources in OCS planning areas beyond the Central and Western Gulf of Mexico and the Alaska OCS.

Forecast National Energy Needs

Expected high and volatile energy prices and continued dependence on foreign energy, especially for crude oil, raise important energy policy issues about energy supply options and their effects on the economy and the environment.

Petroleum and natural gas currently supply almost 65 percent of the Nation's energy needs. Furthermore, the Energy Information Administration (EIA) forecasts that the Nation is poised to become even more dependent on oil and natural gas over the next two decades. The EIA's

projections, shown in Table 1 below, indicate that while the *share* of energy obtained from other sources is likely to increase, the actual *amount* of oil and gas needed to meet the Nation's energy needs is expected to remain steady through 2030. The Nation will continue to rely heavily on oil and natural gas to meet its energy needs, even as alternative sources of energy supply an increasing share of our energy.

Table 1: Energy Consumption (quadrillion British thermal units (Btu))

	2005	2010	2015	2020	2025	2030
Liquid Fuels and Other Petroleum	40.47 *40.4%*	40.46 *40.7%*	41.80 *40.4%*	42.24 *39.4%*	42.78 *37.4%*	43.99 *37.3%*
Natural Gas	22.65 *22.6%*	23.93 *23.2%*	24.35 *22.8%*	24.01 *21.7%*	23.66 *20.7%*	23.39 *18.9%*
Other	36.96 *36.9%*	38.95 *37.9%*	41.11 *38.3%*	44.44 *40.1%*	48.10 *42.0%*	50.63 *42.9%*
Total	100.08	103.34	107.26	110.85	114.54	118.01

Source: EIA Annual Energy Outlook 2008 (Reference Case) p.119

Domestic energy security and independence have become key topics in the national energy debate due to the changing international political climate, increased competition for resources, energy supply instability, and price volatility. Because oil and natural gas will remain crucial to meeting national energy needs, the Nation must also rely more heavily on Federal lands to supply the needed resources**.** Estimates of remaining U.S. technically recoverable oil and gas resources from the U.S. Geological Survey (onshore and State offshore) and the MMS (Federal offshore) indicate that the majority of the Nation's remaining resources lie on Federal lands. Therefore, there is a clear need for a continued high level of leasing activity for oil and gas in the Gulf of Mexico, the primary OCS region currently available for energy production and development activities. Production from previously restricted areas would help meet this continued need and would add to the diversity of supply, cushioning the effects of hurricanes and other disruptive forces on the Gulf of Mexico production as well as refining and processing operations. However, it will require many years of preparatory work to begin production in some areas without existing infrastructure, such as the Atlantic, and it will take even longer for those areas to reach full production.

Table 2: U.S. Crude Oil Production (Millions of Barrels/Day)

	2005	2010	2015	2020	2025	2030
Gulf of Mexico	1.41 *25.16%*	2.14 *36.09%*	2.38 *38.64%*	2.25 *36.12%*	2.08 *34.44%*	1.92 *34.35%*
Other	3.78 *74.84%*	3.79 *63.91%*	3.78 *61.36%*	3.98 *63.88%*	3.96 *65.56%*	3.67 *65.65%*
Total	5.19	5.93	6.16	6.23	6.04	5.59

Source: EIA Annual Energy Outlook 2008 (Reference Case), Table A14

Table 2 summarizes EIA's forecast of U.S. crude oil production from 2005 to 2030[1]. It shows projected Gulf of Mexico crude production increasing from 1.41 million barrels per day in 2005 to 2.38 million barrels per day by 2015, or by between 5 and 6 percent annually. Then it will decline at an annual rate of between 1 and 2 percent through 2030. From a national energy and economic security standpoint[2], the Gulf's production takes on even greater importance as the U.S. tries to maintain domestic oil supplies as a hedge against the huge quantity of both crude oil and refined products imported from abroad, often from unstable and/or hostile governments. While EIA projections show an increase in imports of approximately 1 percent per year between 2010 and 2030, despite a slight increase in domestic production over current levels[3], imports would still supply more than half of the oil consumed in the U.S.

[1] The EIA projections assume that all laws and regulations remain in place, i.e., EIA does not try to anticipate which legal and regulatory proposals will eventually be adopted. At the time of the *AEO 2008*, leasing restrictions were in place for the entire Atlantic and Pacific OCS. Those restrictions have since been removed.
[2]While oil prices are set on the world market, making it difficult to insulate the Nation's economy from price changes, maintaining secure supplies of petroleum can help avoid temporary supply disruptions (or threats thereof), and consuming domestic supplies limits the amount of dollars sent overseas, reducing the balance of payments deficit.
[3] *AEO 2008,* Table A 11 (Actual oil import projections are 9.60 million barrels per day in 2010 and 11.03 in 2030. Domestic oil production increases from 5.10 to 5.59 million barrels per day from 2006, the most recent year for which actual production figures are available, to 2030.)

Table 3: U.S. Natural Gas Production (Trillions of Cubic Feet/Year)

	2005	2010	2015	2020	2025	2030
Gulf of Mexico	3.37 *18.65%*	3.61 *18.71%*	4.32 *22.13%*	4.31 *21.92%*	3.86 *19.69%*	3.47 *17.85%*
Other	14.70 *81.35%*	15.68 *81.29%*	15.20 *77.87%*	15.36 *78.08%*	15.74 *80.31%*	15.97 *82.15%*
Total	18.07	19.29	19.52	19.67	19.60	19.43

Source: EIA Annual Energy Outlook 2008 (Reference Case), Table 14
Note: Totals may not sum to column totals due to independent rounding.

Table 3 summarizes EIA's forecast of U.S. natural gas production from 2005 to 2030. It shows projected Gulf of Mexico gas production increasing to 4.3 trillion cubic feet in 2015 then decreasing through 2030 at a rate of approximately 1.45 percent per year. While the Gulf is projected to produce smaller percentages of the Nation's natural gas requirements in the next two decades, with growing production coming from other supply regions, it is needed as an important and stable source of natural gas.

The *Annual Energy Outlook (AEO) 2008* forecasts increases in domestic energy production and in energy imports and energy consumption over the next 20 years. It predicts a smaller gap between domestic production and consumption as compared to previous EIA forecasts. The *AEO 2008* also shows a slowing in the rate of energy imports, as these imports decline from 34.7 percent to 31.5 percent of total consumption. The slowing demand for energy imports can be attributed to an increase in the domestic production of biofuels and a decreased demand for transportation fuels due to new CAFE standards.

The growth rate for the U.S. economy projected in *AEO 2008* is 2.4 percent of gross domestic product (GDP). Although the ratio of energy expenditures to GDP generally falls over time from 8.6 percent in 2006 to 5.6 percent in 2030, volatile prices and uncertain supplies could contribute to tight petroleum and natural gas supplies which could lead to the ratio creeping back up. Volatile prices are expected to continue, with world crude oil price projections for 2030 ranging from $42.35 to $118.65. Despite volatile prices, world oil demand is projected to increase as a result of strong demand in developing economies once the current economic crisis eases. Some forecasts anticipate stronger international demand relative to supply, resulting in higher prices than shown in EIA's 2008 projections.

Petroleum demand is projected to grow from 20.8 million barrels per day in 2004 to 21.57 million barrels per day in 2025, led by growth in the transportation sector, which is projected to increase from about 70 percent of U.S. petroleum consumption to more than three-fourths of U.S. petroleum consumption in 2030 and is 97 percent reliant on liquid fuels. The growth rate in petroleum demand is lower than in previous forecasts, due to much higher prices than expected over the last year or two. If prices continue to decline or fluctuate at lower levels, consumption growth projections could be too low. U.S. crude oil production is projected to

increase from 5.10 million barrels per day in 2006 to 5.59 million barrels per day in 2030. Projected production is higher in the later years of the forecast when projected prices are higher. Projected increases in domestic refinery gains, ethanol and biodiesel, and liquids from gas, coal, and biodiesel contribute to the overall gain in liquid fuels production by 2030.

U.S. natural gas production is projected to increase from 18.07 trillion cubic feet in 2005 to 19.98 trillion cubic feet in 2022 before beginning a slow decline to 19.43 in 2030. The estimate of 19.60 trillion cubic feet in 2025 is much lower than the *AEO 2004* estimate, which was 24.0 trillion cubic feet of domestic natural gas production in 2025. These estimates include Alaska natural gas, assumed to begin flowing through a new pipeline to be completed by 2020. Net pipeline imports of natural gas, primarily from Canada, are projected to decline from 3.71 trillion cubic feet in 2005 to about 1.68 trillion cubic feet in 2030, due to reserve depletion effects and growing domestic demand in Canada. Net imports of liquefied natural gas are expected to increase to 2.84 trillion cubic feet by 2030, although year-to-year availability in the U.S. may vary significantly if growth in world demand outpaces growth in supply, with the possible result that higher gas prices elsewhere will draw available supply away from the U.S.

Meeting Energy Needs

Contribution of OCS Oil and Gas

The OCS leasing and development program will continue to play a very important role in meeting our Nation's energy needs as the Presidential ban on federal offshore drilling has been lifted and Congressional moratoria on leasing off the Atlantic and Pacific coasts have expired.

Natural gas from the OCS supplies about 14 percent of our domestic gas production. Offshore oil also accounts for about 27 percent of our domestic oil production. According to *AE0 2008*, net petroleum imports met 66 percent of demand in 2005 and because of increasing demand, are expected to increase by approximately one million barrels per day even as the share of imports declines to 57 percent of demand in 2030. Even without major year-to-year increases in petroleum imports, the contribution of these imports to the U.S. balance of payments deficit has increased tremendously. Applying the EIA estimates of daily petroleum imports to its high price scenario would yield an estimated net export of one-half trillion dollars per year from the U.S. to other countries. If the International Energy Agency numbers were to apply, the U.S. would be sending fully one trillion dollars abroad each year by 2030 to pay for crude oil and natural gas imports.[4]

Although the decline in the U.S. balance of trade was largely due to increased world oil prices, the contribution of the trade deficit to a weakening dollar was also a factor, given that oil prices are denominated in dollars.[5] As the following chart indicates, oil prices have risen more rapidly in U.S. dollars than in Euros.

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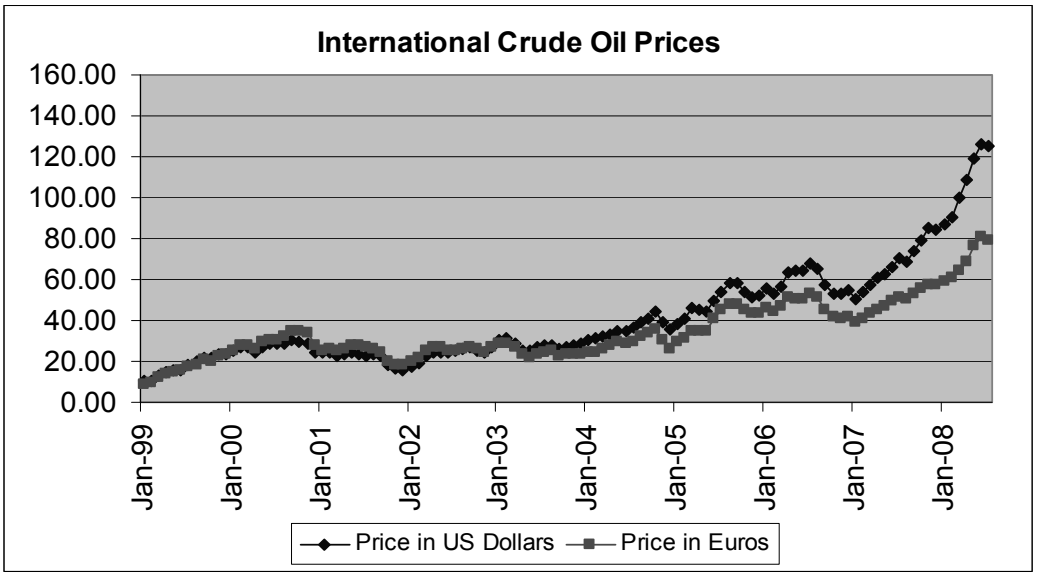
[4] World Energy Outlook 2008, Tables 1.4, 4.1, and 4.2 and Figure 3.10, International Energy Agency, Paris, 2008.

[5] As the dollar weakened, oil became relatively more expensive to U.S. consumers than to those with stronger currencies, resulting in less pressure to reduce demand abroad and greater pressure on available world supply than there otherwise would have been. This was another factor contributing to increased overall world prices.

Chart 1: International Crude Oil Prices



Source: Based on EIA data found at http://tonto.eia.doe.gov/dnav/pet/hist/rwtcm.htm and exchange rate data from Econstats, available at http://www.econstats.com/fx/fx_am1.htm.

Not only did world oil prices in general increase rapidly through the summer of 2008, but the declining value of the dollar exerted additional upward pressure on U.S. import costs. The dollar amount spent on oil imports by August of 2008 surpassed the amount spent in all of 2007. Production of oil and gas from the OCS directly reduces the amount of oil that must be imported from abroad, much of it from politically unstable regions, thereby lessening the threat to the U.S. economy posed by supply disruptions and higher prices.

Natural gas is a clean burning, environmentally preferred source of energy for electricity generation, and demand has risen significantly over the last decade, as new gas-fired generation plants have been built and put into service. This increase in demand, as well as growing residential demand, has raised concerns that the volumes of natural gas available from traditional sources—involving both domestic production and imports from Canada and Mexico—will have to increase dramatically to maintain adequate supplies in the future. In addition, the nation's reliance on imported liquefied natural gas (LNG) to meet the demand for natural gas raises further concerns.

According to the EIA, "the United States received 99.8 percent of its pipeline-imported natural gas from Canada with the remainder from Mexico."[6] As stated in the decision documents for the Proposed Final Program for 2007-2012, the MMS report entitled, *Future Natural Gas Supply From the OCS*: *An Assessment of the Role of the OCS as Supplier of the Nation's Future Energy Needs (April 2000),* concluded that in 2020 Mexico will not be more than a minor supplier and Canada's ability to export at the rate projected by EIA will depend heavily on future gas discovery and development on its eastern seaboard. However, since 2000, both the production and the net exports of Canadian natural gas to the US essentially have been flat. In addition, for the past several years, production of natural gas in Canada has outpaced replenishment of reserves. At current production levels, the Canadian production to

[6] http://www.eia.doe.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/impex.html

reserves ratio is only 9 years.[7] According to the Ziff Energy Group, Canadian exports to the US could decline from 9.9 Bcf/d in 2007 to 5.0 Bcf/d in 2015, if present trends continue.[8] Since Canada's largest hydrocarbon resource, the Alberta oil sands, uses more natural gas in the production process than it produces, the oil sands will not contribute to the maintenance of Canadian gas production and exports. Taking all of these factors into account, it is highly unlikely that imports of natural gas from Canada to the US will offset the overall increase in domestic US demand.

Liquefied Natural Gas (LNG) imports have increased rapidly over the past several years. Between 2002 and 2007, LNG imports grew from 5.7 to 16.7 percent of all natural gas imports and now account for almost 800 million cubic feet of gas per year. Most of this increase is accounted for by imports from Africa.[9] This introduces new concerns relative to natural gas supply and prices in the future. Natural gas has been transported primarily by pipeline, which limits the geographic market. As a result, the balance between supply and demand differs from one region to another; therefore, prices differ by region. Because oil can be shipped (i.e., sold) anywhere to meet demand, world-wide prices are largely equalized. Converting gas to LNG allows shipment around the world, so as LNG becomes available in large quantities (relative to demand), natural gas prices may increasingly be set in the world market. Natural gas prices in the U.S. are lower than in many parts of the world because of high domestic production and ready availability of imports from Canada, where natural gas production also is high. This could mean that increasing reliance on LNG will leave at least some regions vulnerable to price or supply disruptions, as available LNG is routed to markets with higher prices, rather than to the U.S. market. Long-term supply contracts, which are common for natural gas, could help to avoid this kind of situation, but robust domestic production is more likely to preserve lower domestic prices.

Natural gas is a crucial hydrocarbon energy source produced in the U.S. On a unit energy basis, natural gas and oil production from the OCS are similar; however, the proportion of hydrocarbon production represented by natural gas is declining relative to that of oil. On a unit energy basis, OCS natural gas production in 2006 was 3.14 quadrillion BTUs, almost as much as that generated from oil production, which equaled 3.81 quadrillion BTUs.

Since 1994, oil production in the Gulf of Mexico has increased more than 50 percent. The OCS is still one of the largest suppliers of crude oil for the U.S. market, after imports from Canada, Saudi Arabia, Mexico and Venezuela. From 1994 through 1998, deepwater production of both oil and gas from the Gulf almost tripled, and without this increase, declining domestic production in recent years would have been almost twice as severe. The trend of increasing deepwater production from the Gulf is attributable to the recent contribution of very large fields with high flow rates located in over 1,000 feet of water that have been discovered and developed using new technology. This trend is expected to continue, due to record-setting levels of leasing activity in deep water.

For the first time in many years, the Secretary appears to have an opportunity to increase the stability and security of oil and gas supplies by leasing OCS resources off the Atlantic and Pacific coasts.

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[7] http://www.eia.doe.gov/emeu/cabs/Canada/NaturalGas.html
[8] http://www.eia.doe.gov/emeu/cabs/Canada/NaturalGas.html
[9] http://tonto.eia.doe.gov/dnav/ng/ng_move_impc_s1_a.htm - EIA US Natural Gas Imports by country

Alternatives to the Contribution of OCS Oil and Gas

If no OCS oil and gas lease sales were held during the period to be covered by the new 5-year program, there would not be a reduction in the Nation's demand for energy equal to what would have been provided by the oil and gas resources anticipated to be discovered and produced as a result of those lease sales. In the environment of increasing world demand for oil and gas likely to resume after the current economic downturn is over, a supply cut equivalent to the production anticipated to result from a new 5-year program would contribute to rising prices in the absence of additional production somewhere else. This would lead to some reduction in oil and gas consumed in the U.S., but most of the foregone production would be replaced by other sources.

The MMS uses its *Market Simulation Model* to estimate the amount and percentage of alternative sources of energy the economy would adopt in the unlikely case a particular 5-year program were not approved and implemented. The *Market Simulation Model* is based on estimates of price elasticity of demand and substitution effects. In this case, elasticity of demand is the extent to which consumers purchase less of a product when the price increases by a certain amount. According to the research supporting the model, oil lost from OCS production would be replaced by 88 percent greater imports, 4 percent increased onshore production, 3 percent switching to gas, and 5 percent reduced consumption. Natural gas lost from OCS production would be replaced by 64 percent onshore production, 22 percent switching to oil, 5 percent imports, and 9 percent reduced consumption. A detailed discussion of the model and alternative sources of energy in the context of the Proposed Final Program for 2007-2012 is given in *Energy Alternatives and the Environment (MMS 2007-016*), which can be found with other 5-year program documents at www.mms.gov. The model and the related publication will be updated for analyses conducted for the Proposed Program. In addition, the forthcoming analysis will contain specific estimates of production and quantities of other energy sources substituted for oil and gas in the absence of a 5-year program.

Many alternative sources will contribute to the U.S. energy future. This prediction is buoyed by passage of the Energy Policy Act of 2005 into law. The Act grants the Department of the Interior new responsibilities for renewable energy projects and other alternative uses of the U.S. Outer Continental Shelf. Section 388 of the Act gives the Secretary of the Department of the Interior, through MMS, the authority to (1) grant leases, easements or right-of-ways for renewable energy-related uses on Federal OCS lands, (2) act as a lead agency for coordinating the permitting process with other Federal agencies, and (3) monitor and regulate those facilities used for renewable energy production and energy support services.

Under this new authority, MMS began developing regulations intended to encourage orderly, safe, and environmentally responsible development of alternative energy resources and alternate use of facilities on the OCS. On December 30, 2005, MMS published the Advanced Notice of Proposed Rulemaking in the *Federal Register* (70 FR 77345) as the first step to promulgating rules and implementing the type of program authorized by the Energy Policy Act. The MMS published the Notice of Proposed Rulemaking in the *Federal Register* on July 9, 2008. The proposed rule was open for public comment for a 60-day period, with MMS receiving approximately 280 unique comment letters. The MMS anticipates that the rule will be finalized by the end of 2008 or early 2009. See part II of this document for more information about potential leasing and development of OCS alternative energy.

The alternative energy technologies expected to be deployed on the OCS will continue to mature over the next decade and beyond. As such, natural gas and oil will remain important contributors to our energy mix throughout the foreseeable future.

The Federal or State governments might use taxes, subsidies, or specific measures (like requiring non-gasoline powered vehicles) to encourage or mandate a different mix of energy alternatives than the market would choose. Such government actions would most likely be directed at vehicle or electric generating plant fuels and fuel consumption. Any of these measures favoring a particular energy alternative probably would have important environmental consequences, some of which might be negative.

Regional Energy Considerations

For 2006, the following table shows proportional petroleum and natural gas production and consumption by region in the U.S. It also shows total energy consumption as a percentage of total U.S. energy consumption for each region.

Table 4: Proportional Petroleum and Natural Gas Production and Consumption by Region in 2006

Petroleum Admin. for Defense District (PADD) or OCS Region	Production		Consumption		Total Energy Consumption (MMBtu)
	Crude Oil % of U.S. Total	Natural Gas % of U.S. Total	Crude Oil % of U.S. Total	Natural Gas % of U.S. Total	% of U.S. Total
East Coast	0.43%	2.89%	30.15%	24.92%	32.19%
Midwest	8.98%	13.68%	25.20%	26.23%	27.46%
Gulf Coast	30.17%	45.40%	25.87%	26.85%	21.26%
Federal OCS, Gulf of Mexico	25.45%	15.67%	0.00%	0.47%	0.17%
Rocky Mountain	7.01%	18.20%	3.27%	4.13%	3.73%
Pacific	26.26%	3.90%	15.52%	17.50%	15.35%
Federal OCS, Pacific	1.51%	0.25%	0.00%	0.00%	0.00%
Federal OCS, Alaska	0.18%	0.00%	0.00%	0.00%	0.00%

East Coast (PADD I): Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania, Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia
Midwest (PADD II): Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, Wisconsin
Gulf Coast (PADD III): Alabama, Arkansas, Louisiana, Mississippi, New Mexico, and Texas
Rocky Mountain (PADD IV): Colorado, Idaho, Montana, Utah, and Wyoming
Pacific (PADD V): Alaska, Arizona, California, Hawaii, Nevada, Oregon, and Washington

Note: Offshore production in State waters is included with onshore production for each Petroleum Administration for Defense District. Federal OCS production is not included in the PADDs.

Sources:
Crude oil production by region: http://tonto.eia.doe.gov/dnav/pet/pet_sum_snd_d_r10_mbbl_a_cur-1.htm and http://tonto.eia.doe.gov/dnav/pet/pet_crd_crpdn_adc_mbbl_a.htm
Natural gas production by State: http://tonto.eia.doe.gov/dnav/ng/ng_sum_snd_a_EPG0_FPD_Mmcf_a.htm
OCS crude oil production: http://www.mms.gov/stats/PDFs/2006OILProdOCSOperatorsCORRECTIONS.pdf
OCS natural gas production: http://www.mms.gov/stats/PDFs/2006GasProdOCSOperatorsCORRECTIONS.pdf
Crude oil consumption: http://tonto.eia.doe.gov/dnav/pet/pet_cons_psup_a_EP00_VPP_mbbl_a.htm
Natural gas consumption: http://tonto.eia.doe.gov/dnav/ng/ng_cons_sum_a_EPG0_VC0_mmcf_a.htm
Total energy consumption: http://www.eia.doe.gov/emeu/states/sep_sum/html/pdf/sum_btu_1.pdf
Petroleum conversion factors: http://www.eia.doe.gov/emeu/mer/pdf/pages/sec12_3.pdf
2006, million Btu per barrel (5.353)
Natural gas conversion factors: http://www.eia.doe.gov/emeu/mer/pdf/pages/sec12_4.pdf
2006, Btu per cubic foot (1,028)

Table 4 compares regions of the country regarding oil and gas production and consumption. One general theme is that the western part of the U.S. produces more hydrocarbons than it consumes while the opposite is true for the eastern U.S. The Gulf Coast and West Coast produce much more than is consumed while the East Coast has only a small amount of production and the greatest overall energy consumption.

In particular, destructive hurricanes in 2005 and 2008 have demonstrated that the Nation would benefit from not having so much of its oil and gas coming through the Gulf of Mexico on its way to eastern States.

Plans for the Proposed Program and Proposed Final Program Analyses

The MMS intends to update the *Market Simulation Model,* and expects the process to take over a year and a half.

Conclusion

Despite promising new sources of energy that appear on the horizon, America's reliance on oil and natural gas is not likely to change dramatically in the near future. Achieving the goal of ample secure, clean, and affordable energy will require diligent, concerted efforts on many fronts on both the supply and demand sides of the energy equation. Our national energy policy will need to focus on increasing conservation and efficiency to help reduce demand for fossil fuels (i.e., oil, natural gas, and coal), and thus help lessen our dependence on foreign oil imports; and implementing a sustained effort to diversify our energy sources including increased investment in renewable energy sources (e.g., biofuels, wind, wave and solar energy) to supply alternative clean fuels for consumption. Renewable energy sources are attractive for environmental reasons, and worldwide government policies and incentives will increase the use of renewable energy sources for electricity generation. Eventually, with the threat of global climate change and depletion of affordable, exhaustible conventional resources, all nations will need to move beyond a reliance on fossil fuels in favor of alternative energy sources.

In the interim, to help bridge the existing energy gap as this nation moves towards a more sustainable energy future, obtaining sufficient supplies of traditional fuels at reasonable prices and continued responsible oil and gas development will be crucial to our energy security and the strength of our economy.

B. Analysis of Environmental Concerns

Introduction

The Act, as amended, includes provisions for considering environmental protection in managing the nation's offshore oil and gas resources. The law's amendments contain policies pointing to the importance of applying safeguards to help limit the risks of environmental damage and to protect the human, marine, and coastal environments. Section 18 of the Act mandates that decisions on the management of OCS mineral resources should seek a proper balance between the potential for environmental damage, the potential for discovery and development of oil and gas resources, and the potential for adverse impact on the coastal zone. It is, therefore, important in developing a 5-year program to solicit comments relating to environmental concerns, to consider and analyze carefully the comments received, and to make use of that information in the development of the EIS for the program. The EIS will analyze both positive and adverse impacts of the new 5-year program on environmental and socioeconomic resources, and those findings will be included in a Proposed Program.

Comments Relating Environmental Concerns

Appendix A contains a summary of the comments the MMS received in response to the August 2008, Request for Comments. Comments on the EIS process and environmental issues will be used for scoping purposes. A number of the comments expressed concerns related to the possible environmental and socioeconomic affects of the OCS program. Many

issues were identified during the preparation of previous 5-year programs and are very similar to the concerns raised and analyzed during preparation of the 5-year program for 2007-2012 and its accompanying EIS. The primary concerns are identified and discussed below.

Climate Change

The MMS has included a general discussion of global climate change in the 5-year EIS since 1985. There is a growing consensus that climate change is occurring and the observance in recent years of measurable effects of climate change, particularly in Alaska. The 2007-2012 EIS gave even more attention to the issue of climate change, based on the observed changes that have been occurring during the past decades, particularly in the high latitude environments in Alaska. The EIS included discussions of the effects of ongoing, observable climate changes for the affected resources, and discusses the impacts of the program on climate change. Additional analyses are included in the cumulative effects analysis in which the impacts of the continuing trend in climate change during the life of the program are evaluated along with all other factors affecting environmental resources. Climate change is included in the cumulative analyses of resources that either are already being affected by ongoing climate change, such as subsistence and marine mammals in the Arctic, or will directly be affected by warmer average global temperatures, such as coastal habitats in the GOM, which could experience increased inundation from accelerated rates of sea level rise. In addition to including climate change in describing the environmental resources which the activity will affect, the 2010-2015 EIS will analyze the contribution of OCS oil and gas activity to climate change.

Impacts from secondary impacts of climate change will not be considered because they are too speculative at this time. For example, impacts of climate change on components of the hydrologic cycle, such as precipitation, evaporation, river runoff, and the salinity balance of estuaries, will not be included because the expected direction and magnitude of these changes is too speculative to predict at this time.

Consultation and Coordination

Several comments were received regarding consultation and coordination processes under the Coastal Zone Management Act and Endangered Species Act. Following a tiered approach under NEPA, the intent of the 5-year EIS is to provide only broad information and analyses that will serve as the starting point for more detailed environmental reviews at the region-, site-, project- or activity-specific stages. With the subsequent NEPA analyses (i.e., lease sale, activity specific), MMS formally consults with the various Federal and state agencies. It is at these stages, not the 5-year program stage, where the information has enough detail that a thorough and effective analysis can be done.

Comments were also received regarding government-to-government consultations. The MMS recognizes the right of Indian tribes to self-government, supports tribal sovereignty and self-determination, and strives to work with federally recognized tribes whenever any of its proposed activities may potentially affect a tribe, its treaty rights, sovereignty, or its members. The MMS, in compliance with Executive Order 13175, offers government-to-government consultation with tribes at the lease sale stage.

Risks of Accidental Oil Spills

It has been many years since any substantial environmental impacts have been observed as a result of an oil spill caused by the OCS production and transportation activities. Concerns continue to be expressed that OCS-related oil spills will result in unacceptable impacts to the marine and coastal environment. Although the location and timing of a serious oil spill cannot be known with any certainty, the EIS that will be prepared for the new 5-year program will analyze potential risks and impacts based on pertinent historical data. As in previous analyses, the EIS will show that the risk of an oil spill taking place varies from OCS region to region proportional to the amount of oil that is expected to be produced and transported. While analysts generally can calculate the risk of an oil spill occurring, it is not possible to predict the location of a spill or its path, and therefore it is not possible to predict which ecological, social, or economic resources would be affected and to what extent. Due to variables such as ocean currents, which could carry a spill out to sea and away from sensitive coastal resources, and the different sizes of spills that could occur, it is reasonable to assume that the actual risk of a particular resource being contacted and harmed will be smaller than the risk of a spill taking place. Concern was also expressed about the ability to recover oil spilled in an ice covered area.

The MMS requires that all drilling or production operations on the OCS have an approved oil spill contingency plan that describes where the nearest equipment is located, where the trained personnel are, and how everyone is notified. Additional site-specific information as to response capabilities specific to a worst case spill will be required. During drilling operations, a company can be required to have equipment staged on a dedicated vessel located at the rig, which can immediately contain and clean up a spill. There is also oil spill equipment available at onshore bases. The MMS conducts frequent inspections of all OCS activity—both at the drilling stage and at production. It also requires the use of subsurface safety valves that shut-in the flow of oil in emergencies such as loss of the entire rig or platform.

Ecological Issues

There were many concerns over the potential degradation of the natural marine and coastal environments resulting from the new 5-year program. Concerns include effects of construction and operation on air and water quality offshore such as discharges from support vehicles and facilities; noise associated with seismic activities; vessel traffic on sea turtles and marine mammals; and the impacts from OCS-related coastal construction, particularly areas new to OCS development, on coastal habitats. These and other impact-producing activities and events have been previously identified and will be fully addressed in the 2010-2015 EIS.

There was also concern over the lack of data on the environmental baseline and the potential impacts of oil and gas development, particularly in Arctic conditions.

Social and Economic Issues

Concerns cited most often about the OCS development are aimed at the dependence of states' tourism and fishing economies on a healthy marine environment. Potential adverse environmental impacts of OCS development could lead to economic and social hardships to adjacent states. In Alaska, there are additional concerns about the effects of offshore activity

on subsistence hunting and the impact to Native culture values and traditions from the introduction of new jobs and workers.

Environmental Analyses

The OCS Record

The 2003 report of the National Academy of Sciences entitled *Oil in the Sea III* indicated that only 3 percent of the oil in the world's marine waters is the product of offshore oil and gas operations. Production and transportation from the U.S. OCS contributes less than .01 percent of the oil in global marine waters. The primary source of oil in marine waters is natural seepage. Seeps in North American marine waters introduce about 150 times more oil than OCS oil and gas activities. The oil and gas industry's efforts, in conjunction with research, inspection, and enforcement programs implemented by MMS, have contributed significantly to keeping the amount of oil introduced by OCS activities as low as possible.

Since the Santa Barbara Channel OCS oil spill in 1969, measures have been underway continuously to improve the technology of offshore operations, and the Federal government has developed more stringent regulations governing OCS operations. Each OCS facility is subject to an announced inspection for compliance with environmental and safety regulations at least once a year and MMS also conducts periodic unscheduled inspections. The result of all of these efforts is an excellent record that has been documented in detail in previous 5-year program analyses and in several MMS publications. In the fifteen year period between 1993 and 2007, Federal OCS operators produced 7.49 billion barrels of oil (crude oil and condensate). During that same period, the amount of oil spilled totaled about 47,800 barrels (crude & refined petroleum spills of 1 barrel or greater) (0.0006% of that produced) or about 1 barrel of petroleum spilled for every 156,000 barrels produced.

Findings of EIS's Prepared for Previous 5-Year Programs

The final EIS for the 5-year program for 2010-2015 will not be completed until 2010, so the program's potential impacts will not be completely assessed until that time. However, some general indications of the potential impacts of the program may be derived from the extensive analyses included in the EIS's that have been prepared for past 5-year leasing programs. The most recent is the April 2007 final EIS that was prepared for the current 5-year program. Each of the previous EIS's has examined environmental issues and concerns and presented relevant information on the geographical, geological, socioeconomic, cultural, and ecological characteristics of many of the 26 planning areas. Most of the issues and concerns addressed in those past EIS's are similar to those that likely will be analyzed in the EIS prepared for the 5-year program for 2010-2015. Recent 5-year programs have not included the Pacific coast for leasing consideration at any step in development; therefore the EIS's did not include specific analysis of that OCS Region. However, some issues discussed below are likely to arise in the Pacific Region, but additional issues that are relevant to that Region alone will be addressed in the EIS for this program. A summary of the principal findings of EIS's prepared for past 5-year programs is presented in the following paragraphs.

Air Quality. No substantive degradation of onshore air quality should take place. Emissions associated with routine offshore activities could cause small increases in onshore concentrations of some air pollutants, but will not result in new exceedances of national or state air quality standards. For areas where there are existing exceedances, OCS oil and gas

activities would have a negligible contribution to further exceeding ozone standards. Accidental oil spills could cause rapid and possibly dramatic increases in volatile organic carbon concentrations near and downwind from a spill, but the duration of these concentrations should be short, generally a few days.

Water Quality. No permanent degradation of water quality is expected. Sediment disturbance from the emplacement of anchors, platforms, and pipelines should result in localized, temporary increases in turbidity. Rapid dilution of discharged materials, controls on the kinds of material and amount discharged, and the effects of currents and dispersion can be expected to limit the extent of measurable water quality degradation to the immediate vicinity of the source. Water quality will recover quickly from small spills, but large oil spills will require clean up operations to hasten the restoration of water quality to pre-spill conditions. However, there is the potential for more widespread and long-term water quality impacts from large oil spills in ice covered waters, due to limited access and a slower decomposition and weathering process.

Wildlife. Although some marine mammals could be harmed during OCS activities, no permanent change in the population of any species is expected to take place. In most cases, impacts to marine mammals from activities associated with the proposed program should not be lethal. Exposure to spilled oil may result in the loss of individual marine mammals. In Alaska sea otters, whales, seals, Steller sea lions, polar bears, and walruses may be injured or killed if exposed to oil. In the case of Steller sea lions, which are experiencing a declining population, a large oil spill could lead to permanent impacts to the population should one or more spills contact numerous or large rookeries. There is also a possibility of impacts to marine mammals in the Pacific from a tanker spill transporting OCS oil to west coast terminals. Such losses are not expected to result in permanent changes in species distributions or population numbers. Routine activities such as the operating and servicing of platforms may cause temporary behavioral changes in some marine mammal species, but no loss of individuals or permanent changes in populations should occur.

Construction and operation of onshore facilities and pipelines could result in short- and long-term impacts from disturbances and loss of habitat to terrestrial mammals. Because they are located in protected areas away from existing OCS industry infrastructure, no measurable impacts are expected to endangered beach mice in the GOM. In Alaska, no long term impacts to terrestrial mammals are expected. Some displacement of caribou from onshore support areas and pipeline corridors could occur during the calving season but no long term impacts are expected. Large oil spills along coastal areas used by grizzly or black bears and otters could result in sub-lethal impacts and contribute to a decline in survival of exposed bears resulting in minor population impacts for a generation, particularly in the Cook Inlet area where there are high seasonal concentrations of bears along the coast.

In Alaska, impacts to birds from routine operations and oil spills should range from no measurable impacts to short term impacts. Impacts could be greater if constant ship traffic passed through prime feeding areas. The range of impacts that might arise from large oil spills go from not being measurable to the potential for effects on the viability of certain populations. Impact levels will depend on the size, location, and timing of the spills and the bird populations affected. For some birds, such as the Spectacled and Steller's eiders, a large oil spill contacting coastal wetlands in the Arctic where they breed, could affect a large number of these threatened birds. In the GOM, impacts to bird populations from routine operations and oil spills range from no measurable impacts to some short term effects.

Impacts from oil spill contact and subsequent clean up operations could require mitigation to restore populations to pre-spill conditions, depending on the location, timing, and size of the spill.

No substantive reductions in finfish or shellfish populations should result from either routine offshore activities or accidental oil spills. Impacts in the form of population displacement or losses are expected to be of short duration. The wide dispersal of early life stages of fishes help to minimize the impacts of large oil spills to fish populations.

Marine turtles in the GOM could be affected by routine operations or oil spills, but no identifiable changes in the numbers or distribution of turtles are expected. Similarly, marine turtles along the Atlantic Coast could be affected by routine operations, with effects similar to those observed in the GOM.

Shoreline and Seafloor Habitats. In the GOM, some wetlands may be lost to erosion from vessel traffic and canal maintenance. Large oil spills that contact wetland areas could result in direct temporary impacts on the vegetation and additional impacts from clean up operations. No long term impacts from exposure of wetlands and estuaries to spilled oil are expected. No long term effects are expected on coastal barriers, beaches, and dune systems from coastal construction because of low impact construction methods currently in use.

Existing lease stipulations and regulations controlling oil and gas activities near topographic features, pinnacles, and chemosynthetic communities in the GOM, and ongoing studies and investigations to locate and monitor these habitats, are expected to result in no long term or population level impacts to these habitats.

In Alaska, impacts from routine operations and oil spills to most seafloor habitats are expected to be short term and localized. Impacts to the Stefansson Sound Boulder Patch area from oil spills could result in some temporary disruptions to the kelp beds there and to the existing composition of benthic species.

If rocky intertidal communities are exposed to oil spills, reductions in plant and invertebrate animal abundance can be expected. The impacts are expected to be localized, and recovery to pre-exposure conditions would occur within several years.

Along the Atlantic coast, impacts to sensitive ecological areas such as barrier islands are a concern, particularly from oil spills and marine debris.

Coastal Communities. Some changes in coastal land use patterns could occur in localized areas, but no extensive land use impacts are expected in the GOM or along the Pacific coast. An exception is Port Fourchon, Louisiana, where, because of heavy usage of the Port to support OCS oil and gas activities, there could be significant impacts to existing infrastructure. Employment demands will be met by locally available labor forces in the GOM area.

Any OCS development in Alaska could result in new pipelines, onshore facilities, and roads. In the Arctic area of Alaska, most offshore workers will commute from other areas, minimizing local employment and population impacts. Increased employment and population from Cook Inlet development would result in a small effect that would be absorbed by the large existing population.

Since no infrastructure currently exists along the Atlantic, OCS development could result in new pipelines, onshore facilities, and roads.

Cultural and Subsistence Activities. The cultural and subsistence activities of Native American communities in Alaska could be affected by both routine development activities and oil spills. Increasing urbanization that could occur from OCS development may result in changes to Native culture that may be permanent. Noise and disturbance associated with routine OCS activities and oil spills could interfere with some subsistence hunting activities. An oil spill could render subsistence resources unavailable or undesirable for one or two years.

Environmental Justice. Alaska natives may be disproportionately affected by OCS activities because of their reliance on subsistence resources and harvest practices. However, these effects are expected to be mitigated substantially, though not eliminated, with the use of appropriate available mitigation measures. In other OCS areas, particularly the GOM, no disproportionate effects are expected on minority or low income populations.

Tourism and Recreation. Routine activities would have limited effects on recreation and tourism, with potential positive impacts on diving and recreational fishing. Coastal construction related to OCS activity may interfere with tourism and recreation in a few locations, but the effect should be of short duration and have little long term economic effect. Recreational beaches and coastal areas exposed to oil spills would become unsuitable for use during the cleanup period, but the displacement of tourists is not likely to last more than one season.

Fishing. Routine activities could cause localized and temporary impacts to local fishermen and fish resources. Seismic surveys, and construction and decommissioning activities may temporarily displace fishermen from small areas that are normally used for fishing. The presence of platforms would preclude commercial fishing, while acting as fish attraction devices for both pelagic and reef-associated species. Loss or damage to fishing gear may also result from contact with anchors, rigs, platforms or pipelines, for which compensation may be available through the Fishermen's Contingency Fund. Accidental oil spills may also result in the temporary closure of some fisheries, a reduction of commercial and recreational fish resources, and loss of gear. Small spills are unlikely to have a large effect before dilution and weathering reduces concentrations and, therefore, would not have long-term effects on commercial and recreational fish resources. For most species, it is anticipated that a large spill would affect only a small proportion of a given fish population within a region and that fish resources would not be permanently affected. A few species with susceptible life histories might show population-level effects if a major spill were to occur when and where a population is concentrated.

Archaeological Resources. Assuming compliance with existing Federal, state, and local archaeological regulations and policies, most impacts to archaeological resources resulting from routine activities will be avoided. Based on experience gained from the previous oil spills, limited impacts to coastal historic and prehistoric archaeological resources are expected from direct contact with oil, but some impacts could occur during clean up operations.

Recent NEPA Documents

Since the final EIS for the 5-year program for 2007-2012 was issued in 2007, MMS has completed a multi-sale EIS and a supplemental EIS analyzing lease sales in the Central and Western GOM Planning Areas, a supplemental EIS for a lease sale in the Eastern GOM Planning Area, and an EIS for a lease sale in the Chukchi Sea off Alaska. These lease sale EIS's support the conclusions of the 5-year program EIS concerning types and levels of environmental impacts for those areas. The last Atlantic and Pacific OCS lease sale Final EIS's were prepared in 1985 and 1984, respectively.

Preparation of an EIS for the New 5-Year Program

In addition to the analysis of environmental information required by Section 18 of the Act, MMS will prepare an EIS pursuant to NEPA that analyzes the environmental effects of the proposed 5-year program and reasonable alternatives. The EIS preparation process begins with the Notice of Intent to Prepare an EIS for the Proposed 5-Year Program that is published in the *Federal Register* concurrently with the announcement of this program document. The Notice requests information from interested and affected parties that could be used to assist in developing the scope of the EIS, the significant issues to be addressed, and alternatives to be considered.

Additional Environmental Considerations

In preparing the EIS and performing the environmental analyses required by Section 18, MMS has been able to draw on a substantial amount of information and analytic results obtained from its Environmental Studies Program (ESP), which has funded approximately $800 million in studies since 1973. The ESP Information System (ESPIS) provides brief descriptions of the studies. The MMS is working to make full study reports available through ESPIS, and many are already accessible. The ESPIS search and retrieval system may be reached on the internet at https://www.gomr.mms.gov/homepg/espis/espisfront.asp.

In part V.C, the analyses of social costs and environmental sensitivity and marine productivity are presented and useful information concerning the potential effects of oil and gas leasing and related activities under the proposed 5-year program also is provided.

C. Comparative Analysis of OCS Planning Areas

Introduction

This section presents the required comparative analysis of Section 18 factors and considerations for the draft proposed program decision. The analyses address the Section 18 criteria that lend themselves to quantification as well as those that do not. Factors that are quantified to facilitate comparison among OCS planning areas include Net Social Value and environmental sensitivity and marine productivity. The other factors are addressed more qualitatively. The comparative analysis also takes into account comments received, other considerations pursuant to the Act and NEPA, and applicable judicial opinions.

Estimates of Hydrocarbon Resources

Resource estimates from the 2006 MMS National Assessment of Undiscovered Technically Recoverable Oil and Gas Resources on the OCS (http://www.mms.gov/revaldiv/RedNatAssessment.htm) form the basis of the MMS evaluation of all 26 planning areas for the Draft Proposed Program. The 2006 Assessment projects the undiscovered, technically and economically recoverable oil and natural gas resources located outside of known oil and gas fields on the U.S. OCS. The assessment considers recent geophysical, geological, technological, and economic information. Several significant updates to the economic assumptions were made for assessing the Undiscovered Economically Recoverable Resource (UERR) potential used in this report. The most influential change involved incorporating a relationship between oil price and development costs in the modeling methodology. Capturing observed variations in oil and gas exploration and development costs across a wide range of oil prices improved the MMS confidence in estimating the UERR's presented in Table 5.

This fundamental relationship was not modeled in previous MMS economic assessments. A cost-price "elasticity factor" was defined based on internal analyses that found that a statistically significant relationship exists between crude oil price and an index of upstream capital cost. These analyses were based in part on indices developed by IHS, Inc, and Cambridge Energy Resource Associates and were applied to all cost components. Another important factor affecting the UERR reported in this analysis was a revised estimate of the natural gas heat content (btu) equivalency factor. That factor, which was 0.90 in 2005, has decreased to 0.60 in 2008, thus lowering the economic value of gas relative to oil. For example, an oil price of $60 per barrel in the 2006 assessment was associated with a $9.07 per thousand cubic feet of gas (mcf), while the same oil price is associated with a natural gas price of $6.41 per mcf in 2008. Furthermore, estimates of UERR expected to be available for lease as of July 2010 were revised to incorporate recent leasing activity in those planning areas with OCS lease sales. In particular, there has been a considerable reduction in estimates of UERR expected to be available for lease in the Chukchi Sea as of July 2010, due to increased costs and the fact that industry leased what was considered to be the most prospective acreage in the planning area in Sale 193 in 2008.

The MMS estimates of total available undiscovered economically recoverable resources in the various OCS planning areas provide the foundation for the relative ranking of the planning areas by Net Social Value shown in Tables 5 and 6. Any estimate of the full extent of undiscovered resources in a planning area is, by its very nature, a rough approximation, and the estimates for the draft proposed program are intended to give decision makers a good approximation of the relative value of the various planning areas, as opposed to firm predictions of resource quantities.

Table 5: Resources by Planning Area (Low, Mid, and High Price Scenarios)

(All unleased, undiscovered, economically recoverable resources as of July 2010)

Planning Area	Resources at $60/bbl & $6.41/mcf			Resources at $110/bbl & $11.74/mcf			Resources at $160/bbl & $17.08/mcf		
	Oil BBO	Gas Tcf	Both BBOE	Oil BBO	Gas Tcf	Both BBOE	Oil BBO	Gas Tcf	Both BBOE
Central Gulf of Mexico	14.37	59.52	24.96	16.01	73.38	29.07	16.60	77.51	30.39
Western Gulf of Mexico	5.74	33.78	11.78	6.39	39.01	13.33	6.62	40.63	13.85
Southern California	4.15	7.08	5.41	4.72	8.22	6.19	4.87	8.47	6.38
Eastern Gulf of Mexico	3.03	10.97	4.98	3.46	16.38	6.38	3.61	18.17	6.84
North Atlantic	1.33	7.32	2.64	1.57	10.85	3.50	1.67	12.77	3.94
Central California	2.17	2.28	2.58	2.25	2.35	2.67	2.26	2.37	2.68
Northern California	1.63	2.30	2.04	1.82	2.75	2.31	1.86	2.86	2.37
Mid-Atlantic	0.94	5.54	1.93	1.15	8.56	2.67	1.24	10.17	3.05
Beaufort Sea	1.36	1.58	1.64	2.94	5.79	3.97	3.48	9.37	5.15
Cook Inlet	0.73	0.70	0.85	0.86	0.97	1.04	0.91	1.04	1.09
South Atlantic	0.31	1.69	0.61	0.35	2.44	0.79	0.37	2.85	0.88
North Aleutian	0.43	0.79	0.57	0.59	4.62	1.41	0.64	5.92	1.69
Washington-Oregon	0.30	1.28	0.53	0.35	1.57	0.63	0.35	1.64	0.65
Gulf of Alaska	0.22	1.26	0.44	0.35	2.12	0.73	0.40	2.44	0.84
Chukchi Sea	0.11	0.16	0.13	1.59	4.21	2.34	2.71	9.22	4.35
Straits of Florida	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.01	0.02
Hope Basin	**	**	**	**	**	**	**	**	**
Norton Basin	**	**	**	**	**	**	**	**	**
Navarin Basin	**	**	**	**	**	**	**	**	**
St. George Basin	**	**	**	**	**	**	**	**	**
Shumagin	**	**	**	**	**	**	**	**	**
Kodiak	**	**	**	**	**	**	**	**	**
Aleutian Arc	**	**	**	**	**	**	**	**	**
Aleutian Basin	**	**	**	**	**	**	**	**	**
Bowers Basin	**	**	**	**	**	**	**	**	**
St. Matthew-Hall	**	**	**	**	**	**	**	**	**

Notes

Bbl: barrel of oil. mcf: thousand cubic feet of natural gas BBO: billion barrels oil. Tcf: trillion cubic feet of gas. BBOE: billion barrels oil equivalent

** negligible development value.

Net Social Value

Introduction

At the draft proposed program stage, the Net Social Value (NSV) analysis provides the Secretary with estimates of net economic value and environmental/social costs associated with the ultimate recovery of *all* economically recoverable oil and natural gas resources thought to exist on OCS acreage expected to remain unleased in each of the 26 OCS planning

areas as of July 2010, when the 5-year program for 2010-2015 is expected to take effect. The purpose of such an analysis at this point in the process of creating a new 5-year program is to provide the Secretary with a concise, quantitative summary of the relative costs and benefits of exploring for and producing oil and gas resources in each planning area, in preparation for the Secretary's initial decision on size, timing, and location of future lease sales. This summary is presented in the form of a ranking of planning areas, based on (estimated resources and on) NSV. After the draft proposed program is published and comments are received, a new analysis will be undertaken, examining the net social benefits of anticipated production from those areas proposed for leasing, based on the specifics of size, timing, and location in the proposal and in any alternatives to be considered for the next decision on the proposed program. The results of numerous other qualitative and quantitative analyses are, or will be, published in this document, in the proposed program decision documents, and in the draft EIS, which will be published concurrently with the proposed program documents.

The NSV of OCS oil and gas resources is calculated by subtracting environmental and social costs from NEV. The estimates of benefits and costs presented below have been obtained using the same basic methods as those used for the analyses for the previous several 5-year programs, although the current analysis reflects some changes in timing assumptions to make certain calculations more consistent and realistic. The resource numbers on which these estimates are based have been revised to reflect changes in resource estimation technology, available information, and unleased acreage that have occurred since the most recent lease sales and lease relinquishments in each area.

The NSV is calculated through a scenario in which all resources are leased the initial year of the new program (2010). In this scenario, the resources are discovered and produced at an orderly and expeditious rate typical of each planning area, assuming no special constraints that might result from a Secretarial decision on size, timing, and location of lease sales. This scenario avoids a circuitous logic by which the calculation of resource values presumes the size, timing, and location decisions that are to be based, in part, on those same resource value calculations. This approach is consistent with the Court's opinion in *California II* that it was reasonable to use a methodology that avoided that circuitous logic for the ranking of planning areas required by the Act at this stage of the planning process. When the next round of analyses is prepared, the net social benefits analyses will exclude all planning areas and portions of planning areas not being considered for the proposed program, will include economic benefit and cost estimates associated with those resources anticipated to be discovered and produced as a result of the new program (as opposed to total available resources), and will include an estimate of consumer surplus benefits for each program area.

This analysis includes resource and NSV estimates for each of three level, inflation-adjusted price scenarios: $60 per barrel of oil (bbl) and $ 6.41 per thousand cubic feet of natural gas (mcf), $110/bbl and $11.74/mcf., and $160/bbl oil and $17.08/mcf for the life of the program. The experiences of the last few decades have shown that unanticipated events or economic changes can cause oil and gas price paths to deviate considerably from even the most respected forecasts, so MMS uses the level-price-scenario approach to allow decision makers to more easily envision the effects on NEV of major swings in price, either upward or downward. However, during the 18 months preceding the completion of this analysis, oil prices rose and fell by approximately $80 per barrel, indicating a need to present decision makers with a wide range of price possibilities. In addition, because the recent precipitous price decline was due largely to a serious economic crisis that suddenly constrained demand, prices could easily begin another steady rise as global economies (and thus demand) recover

during the new 5-year lease sale schedule. The changing balance between supply and demand would be exacerbated by decisions to curtail or delay high-cost investments (to increase supply) that were planned as prices reached and surpassed historic highs. Trends in the crude oil futures market indicate a strong expectation of higher prices during the 2008-2013 period.

While it is relatively easy to remove lease sales from the 5-year schedule if prices and industry interest fall, the reverse is true if soaring prices indicate a need for a more aggressive schedule. The Secretary cannot add lease sales to a 5-year schedule once it is in place, regardless of changing conditions, without following the same multi-step time-consuming process. For this very reason, the effort to begin the analyses required for a new program for 2010-2015 was initiated to give the incoming administration a head start, should it decide to lease in areas not in the 2007-2012 program. Therefore, the current analysis includes low and high price scenarios with a $100-per-barrel range as well as a mid-point price scenario that is considerably higher than market prices at the time of the analysis.

The relationship among price levels, economically recoverable resource estimates, and activity levels is not linear. For example, the effect on resource estimates of a given increase in prices, whether in dollars or in percentage, will depend to a large extent on the initial prices. In addition, the time required to put in place new infrastructure and the competition from other parts of the world for existing drilling rigs and investment dollars result in much slower increases in oil and gas activities (relative to price increases) after a certain activity level is reached. The underlying exploration and development activity levels utilize historical information whenever possible to account for infrastructure constraints that cannot be directly tied to oil and gas prices and/or resource availability.

Hydrocarbon Resources

The estimates of hydrocarbon resources and the economic analysis prepared for this 5-year draft proposed program are based on all undiscovered, economically recoverable oil and natural gas resources on blocks expected to be available for lease (unleased) as of July 2010 unless otherwise specified. Economically recoverable resources are accumulations of hydrocarbons that have a positive net economic value (NEV) under the economic conditions being considered. The location and extent of undiscovered oil and gas resources are unknown. Therefore, MMS uses a method of analysis that yields estimates based on current knowledge of the geology of each area with consideration of existing engineering and economic constraints.

The economically recoverable oil and gas resources for the 26 OCS planning areas being considered in this analysis are displayed in Table 5. For the draft proposed program, the UERR estimates are provided at price scenarios of $60/bbl ($6.41/mcf), $110/bbl ($11.74/mcf), and $160/bbl (17.08/mcf). It should be noted that undiscovered economically recoverable resource estimates presented in the DPP differ from undiscovered technically recoverable estimates. First of all, technically recoverable estimates do not take into account any economic feasibility and secondly, the UERR's presented in Table 5 are considered to be only those resources available for leasing as of July 2010. For example, the 2006 Assessment reports undiscovered, technically recoverable oil and natural gas resources of 15.38 BBO and 76.77 Tcf for the Chukchi Sea Planning Area, while Table 5 indicates 1.59 BBO and 4.21 Tcf of undiscovered economically recoverable oil and natural gas in that planning area will be available for lease in April 2010 at $110/bbl and $11.74/mcf. As previously noted, in the Chukchi Sea, the most prospective areas presumably were leased in Sale 193. The remaining

resources are considered less economically viable under current technological, pricing, and economic assumptions.

Net Economic Value

The Net Economic Value (NEV) is the value of the oil and gas resources in the ground, inferred as the difference between the discounted market value of produced oil and gas and the discounted costs of exploring, developing, producing, and transporting the oil and gas to market. The NEV can be considered as the present value of the expected economic rent for the undiscovered and unleased resources. It is calculated after deduction of capital, operating and transportation costs and it can also be equated to the sum of the present values of royalties, taxes, and post-tax profits.

The NEV for undiscovered resources in unleased portions of each planning area is calculated by assuming hypothetical schedules of activities covering exploration, development, and production of the undiscovered economically recoverable resources (UERR). The activities are expressed in highly-aggregated terms, such as exploration wells drilled, platforms installed, and barrels produced annually areawide. Costs specified for the activities are consistent with the costs used for estimating the UERR.

The U.S. Government, as the lessor, collects a portion of the NEV as transfer payments in the form of cash bonuses, rentals, royalties, and taxes. The lessees, as private firms, retain the remainder of the NEV as economic profits that may be distributed to shareholders around the country.

The NEV-to-price relationship is not linear. While costs do rise as higher prices prompt companies to pursue resources that are more difficult and more expensive to develop and produce, they have tended to rise more slowly than the rapid rise in prices over the past few years. The wide price range in the scenario reflects the possibility that this trend will resume once the world-wide economic crisis, which rather suddenly constrained demand and caused the precipitous fall in prices in later 2008, is over and developing countries have resumed previous patterns of increasing consumption. If prices do resume a fairly quick advance toward the levels of our "high" scenario, it will allow for a mix of lower-cost and higher-cost fields to be developed at the same time. The result is that NEV per unit of resource increases more rapidly as total resources increase, especially in areas, such as the Atlantic and the Pacific, where legal restrictions (as opposed to restrictions caused by hostile or risky natural conditions, as in the Arctic) have resulted in little or no exploration and development.

An estimate of the NEV of the resources available for leasing was made for each of the planning areas. Under the assumptions used, 15 planning areas have positive NEV in the low-price scenario: the North, Mid-, and South Atlantic; Eastern, Central, and Western Gulf of Mexico; Southern, Central, and Northern California; Washington-Oregon; Gulf of Alaska; Cook Inlet; North Aleutian Basin; Chukchi Sea; and Beaufort Sea. Table 6 presents NEV estimates.

Net Social & Environmental Costs

Beyond the private costs captured in the NEV estimates, society incurs environmental and social costs from the activities and facilities associated with OCS oil and natural gas exploration, development, and production. These costs take a variety of forms, and MMS has

organized the environmental and social costs associated with OCS activities into the following nine categories: Beach Recreation, Recreational Fishing, Ecology, Commercial Fisheries, Subsistence, Air Quality, Public Services, Property Values, and Water Quality

The MMS uses the Offshore Environmental Cost Model (OECM) for estimating environmental and social costs associated with OCS activities. The OECM, which was completed in 2001 and has undergone several small revisions,[10] is designed to model the impact of typical activities associated with OCS production and typical oil spills occurring on the OCS. The model uses economic inputs, resource estimates, and exploration and development scenarios as the basis for its calculations. This model is not designed to represent impacts from catastrophic events or impacts on unique resources such as endangered species.

The OECM uses habitat equivalency analysis to overcome the problem of passive enjoyment value. Passive enjoyment value, also called passive use or non-use, is the benefit people derive from (1) knowing a natural resource continues to exist in a specific condition, (2) retaining the option to use that resource in the future, and (3) being able to pass the resource to future generations, which may be a subset of (2). Passive enjoyment value represents an important component of the value of natural resources; however, it is very difficult and extremely expensive to measure accurately. Some economists question whether it can ever be measured accurately. Exacerbating the difficulty and expense of estimating passive enjoyment is the complication imposed on measurement by the vast extent of territory, many planning areas, and great diversity of natural resources covered by this program. Habitat equivalency analysis avoids the passive enjoyment problem by estimating the cost of providing additional habitat equivalent to that lost from an environmental event such as an oil spill.

If OCS oil and, to a lesser extent, natural gas are not produced, imports of foreign oil will increase substantially. Most of this oil would be imported by tanker, entailing risks of oil spills and environmental costs. Subtracting the environmental costs associated with these increased imports from the environmental costs associated with OCS production leaves an estimate of the net environmental and social costs associated with OCS activities. To ensure consistency, MMS employs its *Market Simulation Model* to estimate imports that would substitute for OCS production. A more detailed explanation of MMS expectations of realistic energy alternatives to the OCS program can be found in a paper, *Economic Analysis for the OCS 5-Year Program 2007-2012: Theory and Methodology* (MMS 2007-017) posted on MMS website at www.mms.gov under Offshore Energy, 5-Year Program, Information on the 2007-2012 Oil & Gas Leasing Program, Additional 2007-2012 Background Documents.

The avoided costs subtracted to get a "net" result include only costs incurred along the U.S. coastal areas. They do not include social and environmental costs where U.S. environmental laws and other protections cannot be enforced, nor do they include the greenhouse gas (GHG) emissions from overseas production and tankers traveling to and from U.S. ports. Given the increased concern over the degree to which GHG may contribute to climate change, MMS will consider adding a climate change module to the OECM. However, it would entail considerable effort and uncertainty, because to do so, MMS would have to predict where oil and gas imports would originate and estimate emissions at each origin as well as emissions produced in transporting the resources to U.S. waters.

[10] The OECM will undergo further revisions and updates as the analyses for the new 5-year program progress.

Consistent with the approach to estimating NEV, MMS has adopted the simplifying assumption that "downstream" social and environmental costs of processing and refining 5-year program oil and gas would be roughly the same as those incurred by use of other sources of energy to meet the demand that would otherwise be met by OCS production. There are two basic reasons for this. First, as mentioned above, OCS production does not create demand for oil and gas, and the vast majority of demand not met by domestic production will be met by importing more oil and gas. For example, the research underlying the MMS *Market Simulation Model* indicates that about 88 percent of foregone OCS oil production, in the absence of a new program, would be replaced with imported oil, and about 22 percent of foregone OCS natural gas production would be replaced by switching from gas to oil. The roughly 8 percent (net) of forgone OCS oil that would not be replaced by importing more oil or increasing domestic production would be more than canceled out by the roughly 22 percent increase in imports and domestic oil production to replace foregone OCS gas, even with a roughly 9 percent decrease in the overall domestic consumption of more-environmentally friendly natural gas.[11] Once crude oil reaches shore, the process of refining, transporting, and consuming that oil is the same, whether domestically produced or imported, subject to some refining differences based on the quality of oil. Second, expanding the analysis to include domestic refining, transportation, and use would require a great increase in the complexity of MMS models, along with a corresponding decrease in confidence in the results. Not only would the downstream social and environmental costs of the two scenarios likely cancel each other out, but MMS would have to make numerous assumptions to treat the uncertainties inherent in estimating the relatively small differences in effect spread over the Nation. And, to be consistent, MMS would then need to use these new, less reliable, assumptions in all equivalent analyses, greatly adding to the complexity and cost of the analyses while potentially *reducing* confidence in the results.

Estimates of the net environmental and social costs associated with the development of the economically recoverable resources in the OCS planning areas are presented in Table 6 under the heading "Net Soc. & Env Cost."

Net Social Value

As noted above, NSV is calculated by subtracting environmental costs from NEV. The NSV estimates are shown in Table 6, below. A more detailed explanation of the methodology employed by MMS for its net economic and social benefits analysis can be found in a paper cited above (MMS 2007-017) and posted on the same MMS web page as the other study cited above. The paper was written to describe the methodology for the net social benefits analysis (which includes NEV) for the proposed final program for 2007-2012, which is based on anticipated production from lease sales on the proposed 5-year schedule (specifying size, timing, and location decisions). Otherwise, the methodology is essentially the same as for this analysis. The paper will be updated for the next proposed program.

[11] This may result in an understatement of the external costs avoided by implementing a new 5-year program. See the analysis of national and regional energy needs in section IV.A of this document for more discussion of energy sources likely to replace foregone OCS production.

Table 6: Ranking of Planning Areas by Net Social Value

(All unleased, undiscovered, economically recoverable resources as of July 2010)

Planning Area	Net Economic Value ($MM)			Net Soc. & Env. Cost ($MM)			Net Social Value ($MM)		
	Low	Mid	High	Low	Mid	High	Low	Mid	High
Central Gulf of Mexico	235,263	597,490	1,003,182	1,434	1,677	1,760	233,829	595,813	1,001,422
Western Gulf of Mexico	81,212	228,423	383,372	1,096	1,236	1,280	80,116	227,187	382,092
Southern California	58,729	131,327	205,188	602	727	783	58,127	130,600	204,405
Eastern Gulf of Mexico	50,279	132,926	216,152	148	190	207	50,131	132,736	215,945
Central California	30,514	60,498	90,574	234	253	272	30,280	60,245	90,302
Northern California	22,607	49,086	73,941	126	149	166	22,481	48,937	73,775
North Atlantic	21,270	59,061	101,563	167	211	248	21,103	58,850	101,315
Beaufort Sea	17,012	64,460	121,336	6	100	175	17,006	64,360	121,161
Mid-Atlantic	14,540	41,932	73,171	116	161	187	14,424	41,771	72,984
Cook Inlet	11,511	27,528	44,359	49	58	66	11,462	27,470	44,293
Washington-Oregon	4,928	11,358	17,389	53	65	72	4,875	11,293	17,317
North Aleutian	4,603	16,483	30,092	26	42	47	4,577	16,441	30,045
South Atlantic	4,451	12,088	21,916	29	38	43	4,422	12,050	21,873
Gulf of Alaska	2,806	10,319	18,681	21	36	42	2,785	10,283	18,639
Chukchi Sea	939	32,794	85,211	86	194	236	853	32,600	84,975
Straits of Florida	**	38	256	1	2	2	**	37	255
Hope Basin	**	**	**	0	1	2	**	**	**
Norton Basin	**	**	**	0	0	0	**	**	**
Navarin Basin	**	**	**	0	2	2	**	**	**
St. George Basin	**	**	**	2	4	5	**	**	**
Shumagin	**	**	**	0	0	0	**	**	**
Kodiak	**	**	**	1	1	1	**	**	**
Aleutian Arc	**	**	**	0	0	0	**	**	**
Aleutian Basin	**	**	**	0	0	1	**	**	**
Bowers Basin	**	**	**				**	**	**
St. Matthew-Hall	**	**	**				**	**	**

Notes

** means negligible development value.

$MM: million dollars (net present value as of 2010 using 7% real discount rate).

Scenario prices are in 2010 dollars: $60/bbl oil & $6.41/mcf; $110/bbl oil & $11.74/mcf; $160/bbl oil & $17.08/mcf

Environmental Sensitivity and Marine Productivity

Introduction

Section 18(a)(2)(G) of the Act requires the Secretary to consider the relative environmental sensitivity and marine productivity of the different areas of the OCS as one factor in determining the timing and location of potential natural gas and oil lease sales. To satisfy this requirement, we have ranked the program areas in terms of their relative environmental sensitivity and marine productivity. The marine productivity and environmental sensitivity

analysis is not intended to reflect potential risks from offshore oil and gas activities, but is used by the Secretary as one of many considerations when developing the program. Analyses presented within this section are approximations using the best available information and will be further refined throughout the development of the 5-year program.

Relative Environmental Sensitivity

Spilled oil is a major environmental risk from offshore oil and gas activities. The natural resources of coastal ecosystems face the most significant environmental consequences from contact with spilled oil. The Environmental Sensitivity Index (ESI) Shoreline, developed by the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce, provides a systematic method for compiling data into standardized formats to map shoreline sensitivity to spilled oil. Coastal states and other Federal agencies, including MMS, assist in ESI development efforts and use the ESI products, which also include biological and socioeconomic data in addition to the ESI Shoreline. The ESI Shoreline ranking approach has a strong scientific basis, and it has proven to be effective as an oil spill planning and response tool for over two decades in the United States and overseas. In developing the ESI Shoreline, NOAA has accumulated a large database identifying the location of sensitive resources for most coastal areas in the United States. This data is critical to establishing protection priorities and identifying clean-up strategies in the event of a spill.

Comparison of the standardized data over large areas can assist in identifying relative environmental sensitivity. While a wide variety of factors contribute to the environmental sensitivity, the predominant factors, particularly which pertain to oil spills, are the physical and biological characteristics of a coastal area. The ESI Shoreline classification provides standardized definitions of shoreline characteristics and uses them to assign shoreline sensitivity rankings. These standards are uniform across all areas of the United States. This uniformity enables comparisons with the OCS planning areas and assessments of their relative environmental sensitivity in accordance with the Act. Shorelines are ranked according to their sensitivity to oiling, the natural persistence of oil, and the ease of clean up. The ESI assigns each shoreline segment of the coastal United States a ranking between 1 and 10, where 1 represents shorelines least susceptible to damage by oiling, and 10 represents the locations most likely to be damaged. Examples of shorelines ranked as "1" include steep, exposed rocky cliffs and banks, where oil cannot penetrate into the rock and will quickly be washed off by the action of waves and tides. Shorelines ranked as "10" include vegetated coastal marshes, mangrove swamps and exposed tundra shorelines. Oil in these areas will in general remain for a long period of time, penetrate deeply into the substrate, and inflict damage to many kinds of plants and animals and their preferred habitats. More detailed information on the ESI ranking system can be obtained at www.response.restoration.noaa.gov/esi/esiintro.html. See table 7 for a complete description of each ranking.

Table 7: ESI Rankings and Respective Description

ESI No.	Description
1	Exposed rocky shores, Exposed, solid man-made structures
2	Exposed wave-cut platforms in bedrock, mud, or clay; Exposed scarps and steep slopes in clay
3	Fine to medium-grained sand beaches; Scarps and steep slopes in sand
4	Coarse-grained sand beaches
5	Mixed sand and gravel beaches
6	Gravel beaches; Riprap
7	Exposed tidal flats
8	Sheltered rocky shores and sheltered scarps in bedrock, mud, or clay; Sheltered, solid man-made structures; Sheltered riprap; Vegetated, steeply-sloping bluffs
9	Sheltered tidal flats; Vegetated low banks
10	Salt/brackish-water marshes; Freshwater marshes/swamps; Scrub-shrub wetlands; Inundated tundra

The most recent ESI data was obtained directly from NOAA. The total length of shoreline included in this analysis exceeded 130,000 miles. These ESI line data sets were aggregated or disaggregated as appropriate to represent respective planning areas. For some planning areas, incomplete data sets were used as the best available data to represent that planning area. Each ESI value was weighted by the length of its line segment. average rating for the planning area was calculated based on the weighted average of the ESI data for the coastal areas that border the planning area.

Table 8 lists the average ESI Shoreline ranking by OCS planning area in order of decreasing average relative ESI Shoreline ranking. The South Atlantic area scored the highest relative ranking of 9.2. A group of high relative rankings at or near 9 also occur in the Mid-Atlantic, the Straits of Florida, and the Eastern and Central Gulf of Mexico[12], where extensive coastal lowlands containing vast amounts of wetlands, swamps and other sensitive shorelines occur. The Aleutian Arc/St. George Basin scored the lowest relative ranking of 3.5. Relatively low rankings also occurred along the Pacific coast and in other areas of Alaska.

[12] The average ESI Shoreline sensitivity ranking for the Central Gulf of Mexico is likely an underestimate because the Louisiana ESI Shoreline only includes the outermost shoreline along the seaward edge of the Mississippi River deltaic plain. The extensive wetland areas landward of the outer shoreline are laid out in a complex pattern created by the numerous channels and bayous that divide the coast into an almost indeterminable length of shoreline. It is not practical to characterize each stretch of shoreline in these areas. The outer shoreline of the Mississippi River deltaic plain used in this analysis is likely biased toward lower ranked sandy shorelines because it is a favored location for the accumulation of the sand that is eroded as the delta transgresses landward.

Table 8: OCS Planning Areas by Relative Environmental Sensitivity

Planning Area	Average ESI Shoreline Rank*
South Atlantic	9.2
Eastern Gulf of Mexico	9.1
Mid-Atlantic	9.0
Straits of Florida	9.0
Central Gulf of Mexico	8.9
St. Matthew Hall	8.1
Western Gulf of Mexico	7.6
Hope Basin	7.5
Beaufort Sea	7.4
Washington-Oregon	7.3
North Atlantic	7.0
Norton Basin	7.0
North Aleutian Basin	6.4
Cook Inlet	5.9
Gulf of Alaska	5.6
Kodiak	5.3
Northern California	5.2
Southern California	5.0
Chukchi Sea	4.9
Central California	4.3
Shumagin	4.3
Aleutian Arc/St. George Basin	3.5

*Three Planning Areas in the Alaska OCS—Bowers Basin, Aleutian Basin, and Navarin Basin—are not ranked as they are not adjacent to a coastline.

Table 8 reflects the ordinal ranking of all the OCS planning areas for which ESI data are available. These rankings do not and are not intended to estimate or quantify the actual impact magnitude that would occur if a spill should contact a shoreline. The rankings only indicate the shoreline sensitivity relative to other shorelines. A low relative shoreline ranking does not imply, nor is it meant to imply in this analysis, that minimal or no impacts would occur in the event of a spill. A low ranking only means that the shoreline is less sensitive than a shoreline with a higher ranking.

Another analysis of the data was done by grouping the ESI Shoreline rankings into High, Moderate, and Low sensitivity level categories based on a natural separation of the shorelines listed in Table 7 into three categories of physical shoreline characteristics.

Low Sensitivity Shorelines are hard and armored coastlines included in ESI Shoreline rankings 1 and 2. These shorelines include rocky coasts, cliffs, and shorelines protected by coastal structures.

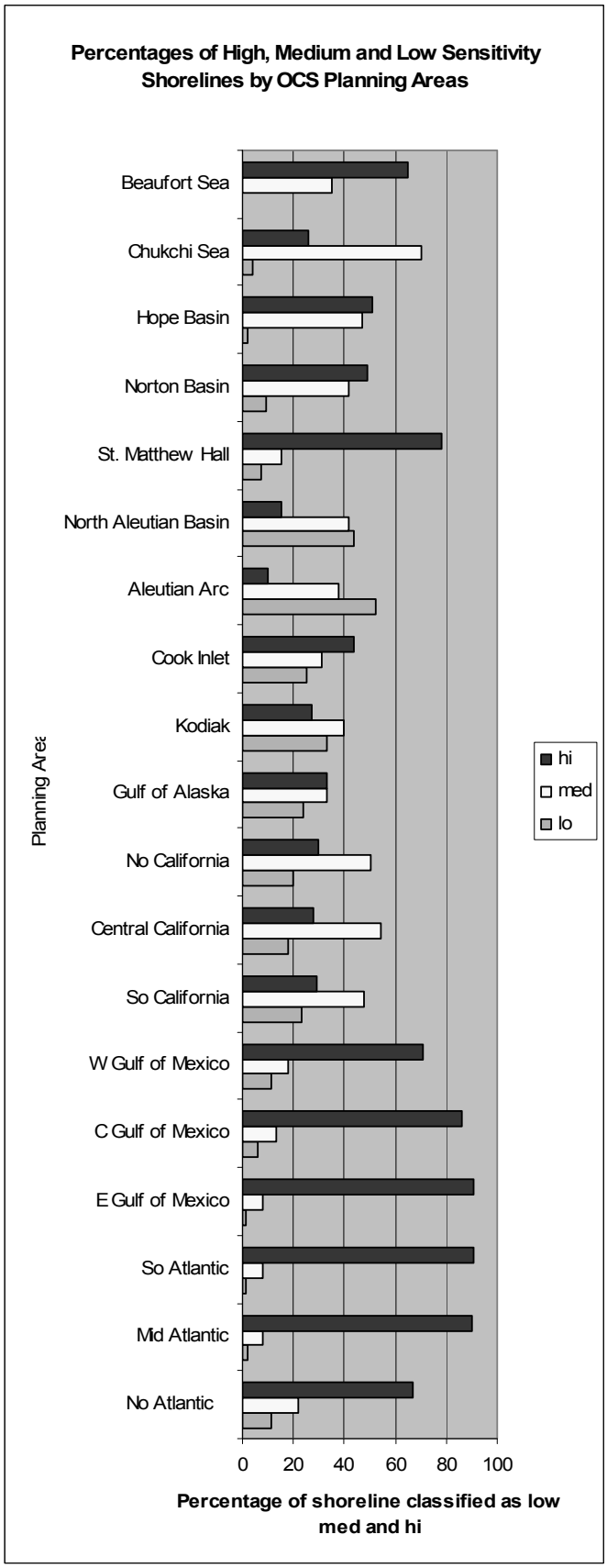
Medium Sensitivity Shorelines are shorelines included in ESI Shoreline rankings 3 through 6 that are made up of unconsolidated materials such as sand, gravel, and riprap. Shorelines with coarse material such as gravel have a higher sensitivity ranking than shorelines with finer material such as sand because oil will penetrate deeper into the subsoil on coarse grained

beaches and shores and as a result will be more difficult to clean and will persist longer in the environment.

High Sensitivity Shorelines are coastal habitats included in ESI Shoreline rankings 7 through 10. These include biological habitats such as coastal wetlands, swamps, mangroves, exposed tidal flats, and inundated tundra shorelines. These shorelines typically occur on soft substrates often in environments protected from strong wave and hydrodynamic energy that encourages spilled oiled that collects there to persist and to be difficult to clean.

The total length of ESI shoreline adjacent to each planning area was disaggregated into each of the three sensitivity levels. Table 9 shows for OCS planning areas, the percentage of shoreline ranked as High, Medium, and Low Sensitivity. The listing of planning areas starts with the Beaufort Sea in Alaska, continues southward through the rest of Alaska, southward along the Pacific Coast, eastward across the Gulf of Mexico into the South Atlantic Planning Area, then north along the Atlantic coast to the North Atlantic Planning Area. The percentages illuminate the underlying regional trends and patterns in environmental variables affecting the geographic distribution of coastal sensitivity to oil spills. For example, the table shows the decreasing occurrence of rock shorelines and the increasing occurrence of coastal wetlands and swamps moving from the North Atlantic through the Mid-Atlantic and into the South Atlantic Planning Areas that are important factors affecting regional distinctions in coastal sensitivity to oil spills. These regional trends in geologic, climatic and ecological parameters that determine shoreline characteristics are reflected in the ESI Shoreline rankings which show decreasing sensitivity moving south to north along the Atlantic coast.

Table 9: Percentage of High, Medium, and Low Sensitivity Shorelines by OCS Planning Areas*



*Bowers Basin, Aleutian Basin, and Navarin Basin are not ranked as they are not adjacent to a coastline. For this table, Straits of Florida is included with the Eastern GOM, St. George Basin is included with Aleutian Arc, and Washington-Oregon has only the summary ranking shown in Table 8.

The MMS received comments on the 2007-2012 Program documents that the environmental sensitivity of the landfast ice shoreline in Alaska was not accounted for in the MMS analysis that only considers the ESI ranking for the land shoreline in Alaska. The comments asserted that the rich biological productivity and habitats that could occur part of the year along the landfast ice shoreline in and near leads and polynyas were not being accounted for in the analysis that produced the list of relative rankings shown in Table 8. Current ESI mapping methodology does not include or rank landfast ice so there is no existing reference for ranking the ice shoreline. If ESI included landfast ice as a shoreline type it would be ranked by established ESI procedures that include the following factors:

- Relative exposure to waves and tidal energy
- Biological productivity and sensitivity
- Substrate type (grain size, permeability, trafficability, and mobility)
- Shoreline slope
- Ease of cleanup
- Ease of restoration

It is important to note that the biological productivity and sensitivity factor in the list applies to the shoreline itself and not biological habitats that occur seasonally on or near the shoreline. Wetland shorelines rank 10 because of their occurrence in sheltered locations, permeable soils, susceptibility to damage during cleanup, and the biological productivity and sensitivity of the material that makes up the shoreline itself. Whether or not a wetland shoreline serves as habitat for an endangered bird species, however, would not be used to rank the shoreline or as a basis for distinguishing the rank of one wetland shoreline from another. Applying these ranking principles to the landfast ice shoreline would result in an ESI shoreline ranking of likely no more than 2 or 3. Again, the seasonal occurrence of habitats and biological productivity on and near the ice shoreline would not be captured in the ESI Shoreline rank according to established ESI ranking methodology.

We considered possible changes in environmental sensitivity rankings in the Arctic under different scenarios for evaluating the landfast ice shoreline. If the ranking of the landfast ice shoreline were based on traditional ESI Shoreline ranking criteria and given a rank of 3, the average shoreline rank for the Chukchi and Beaufort Seas calculated from time averaging the land and the ice shoreline ranks together would be lower than the values developed solely from the land shoreline (Table 10). This result follows from the fact that both the Chukchi and Beaufort Seas ESI land shoreline ranks in Table 8 exceed the value of 3.0 given to the ice shoreline. Therefore, the presence of the ice shoreline much of the year will work to lower the average ESI rank compared to the rank for the land shoreline alone.

To consider habitat sensitivity along with shoreline sensitivity, we postulate the existence of a hypothetical measure of environmental sensitivity that captures both the habitat sensitivity and ESI shoreline sensitivity rankings in one quantity. The discussions are limited to the Chukchi and Beaufort Sea Planning Areas in the Alaskan Arctic where MMS ice data resources are greatest. The assumptions used in the analysis are as follows:

1. The landfast ice shoreline is present 8.5 months of the year.
2. Landfast ice shorelines along and near polynyas occur 4.5 to 5 months a year. These shorelines were ranked 10 for habitat sensitivity and were assumed to include up to 100 percent of the landfast ice shoreline during these months (Stringer and Groves, 1991).
3. Ice leads are abundant through the landfast ice for 3.5 to 4 months. The proportion of the landfast ice shoreline represented by ice leads is assumed to be 10 percent based on an analysis of ten years of remote sensing imagery (Eicken et al, 2006). The landfast ice along an ice lead was ranked 10 while the rest of the ice was ranked 3 based on an assumed ESI Shoreline rank for ice.
4. The total land shoreline sensitivity measured as the length of the shoreline multiplied by the average rank for the shoreline is the same as the total ice shoreline sensitivity. This assumption allows the analysis to combine the sensitivity measures of the two shorelines together to calculate an average.

The sensitivity scores for the Beaufort and Chukchi Sea Planning Areas based on these assumptions are 8.1 and 5.8 respectively as shown in Table 10. These sensitivity scores are a little less than one number higher than the ranks for the land shoreline alone as listed in the first column of the table. The second column of the table also shows the average rank if the landfast ice shoreline using an ESI rank of 3 were included in the analysis.

Table 10: Effects of Including Landfast Ice to Determine Relative Environmental Sensitivity

Planning Area	ESI Land Shoreline Rank From Table 8	ESI Landfast Ice Rank Ice = 3	Combined Shoreline/Habitat Rank
Beaufort Sea	7.4	4.1	8.1
Chukchi Sea	4.9	3.5	5.8

This brief analysis suggests that the relative environmental sensitivity rankings shown listed in Table 8 may not be affected significantly when habitat sensitivity is considered as another variable in the analysis. In fact, the independence of relative environmental sensitivity from habitat was an implicit assumption of the existing analysis that uses the ESI shoreline rank alone. The analysis implicitly assumes that habitat sensitivity values are approximately the same when calculated over large coastal areas. This is a reasonable initial assumption for the following reasons. First, there is no reason to assume that one area of the Nation is notably lacking or enriched with habitat sensitivity compared to other areas. Furthermore, while habitats are identified, mapped and protected, MMS is not aware of an established methodology or system to rank one habitat type versus another in terms of environmental sensitivity. A methodology does not exist, for example, to rank the habitat sensitivity of landfast ice shoreline in the Arctic relative to the sensitivity of coastal wetlands in the Gulf of Mexico that provide important biological habitats; or to that of rocky coasts in California that seasonally serve as haul out areas for marine mammals; or to that of barrier beaches along the Atlantic coast that serve as habitat for marine turtles.

If we proceed with the discussion, using the assumption that all habitats that have been identified, mapped and protected through law or regulation are given identical ranks, then habitat sensitivity rankings will be proportional to the relative amounts of these habitats that occur adjacent to OCS planning areas. If we assume the amount of habitat is approximately uniform across the coastal areas of the Nation then each of the ESI Shoreline ranks in Table 8 would be equally affected by habitat sensitivity and the order of relative sensitivities listed in Table 8 would remain the same after a habitat sensitivity factor was added. Under these conditions, ESI Shoreline rank alone would account for the variation in relative sensitivity. For example, oil could contact a rocky shoreline with a low ESI sensitivity rank but still cause high damage to the biota and habitats that occur on the shore seasonally. Likewise, oil could contact a wetland shoreline with an ESI rank of 10 and also damage the biota that is using the habitat. If the amount of habitat is proportionally the same in both areas and if the sensitivity rank of the habitats are the same in both areas, then the addition of the habitat sensitivity factor raises both rankings by about the same amount. Under these conditions, the difference in relative environmental sensitivity to oil spills on average will be determined by how long the oil persists in the environment and continues to cause potential habitat damage, and on how much environmental and habitat damage would be caused by clean up and restoration efforts. These parameters are the same variables that define ESI Shoreline sensitivity.

The MMS continues to evaluate other approaches for determining relative environmental sensitivity such as the expansion of the methodology to incorporate habitat information and welcomes comments on this topic.

References

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Relative Marine Productivity

"Productivity" is a term used to indicate the amount of plant or animal biomass that is produced over a period of time. Primary production is the assimilation of organic carbon through photosynthesis. The most common example is simply a plant using energy from the sun to make organic matter. It is the basis for growth in most ecosystems. The productivity of the marine aquatic community is its capacity to produce food for its component species. Primary production in the marine environment is conducted by aquatic plants such as Sargassum, submerged aquatic vegetation and phytoplankton. The rate at which this occurs is based largely on the plants' ability to photosynthesize. Inshore waters have a much higher primary productivity than most open-ocean waters because of the presence of increased nutrients and light penetration possible to the sediment-water interface allowing for the establishment of benthic vascular plants and seaweed in addition to phytoplankton (Figure 1). Phytoplankton can occupy all surface waters of a planning area and fix carbon as long as sufficient light and nutrients are available. Farther from shore, fewer nutrients, primarily of terrestrial origin, are available for use by phytoplankton, and surface mixing due to wave

action, down-dwelling, fronts, and convergence may push some phytoplankton down into the water column where insufficient light allows for photosynthesis to occur.

Primary productivity is the easiest method to measure, compare and discuss the productivity in multiple areas, compared to secondary or tertiary productivity. Continental Shelf Associates, Inc. (1991) state, "Ideally, comparisons of secondary productivity among diverse geographic areas would take an ecosystem perspective. In other words, they would be based on an understanding of what eventually happens to the primary production within an ecosystem." It is difficult to compare secondary and tertiary productivity within different geographic areas because the ecological communities are composed of different species which have different physiologies, life history patterns, and general ecological relations. This adds uncertainty to comparing productivity data from different oceans and latitudes. Species populations and communities may vary based on hours, weeks, seasons, and years. Secondary productivity is difficult to measure because there is no single zooplankton sampling method that collects all organisms defined as zooplankton. Additionally, estimates of zooplankton abundance present difficulties due to net avoidance and because the animals are distributed vertically, horizontally, and in patches in the water column. Therefore, the composition and biomass estimates of zooplankton productivity are not accurate (CSA, 1991). For this reason, this section will focus on primary productivity.

The methods of measuring phytoplankton productivity are relatively standard and results are normally expressed in terms of chlorophyll-a or the amount of carbon fixed during photosynthesis per square meter of ocean surface per unit time. It is important to note that measurements of phytoplankton can vary greatly both spatially and temporally resulting in significant differences in measurements within and between planning areas. As a result the reader must be aware of the highly variable mosaic pattern of productivity estimates.

Table 11: Primary Production Estimates for Each Planning Area

Rank	Planning Area	Metric Tons/yr
1	South Atlantic	203,124,209
2	Mid-Atlantic	139,781,399
3	Shumagin	137,606,171
4	Kodiak	134,247,604
5	St. Matthew-Hall	134,067,143
6	Eastern Gulf of Mexico	117,466,816
7	St. George Basin	117,301,462
8	Central Gulf of Mexico	110,234,566
9	Gulf of Alaska	105,574,501
10	Norton Basin	84,262,675
11	North Aleutian Basin	84,251,465
12	North Atlantic	81,157,898
13	Navarin Basin	69,706,304
14	Bowers Basin	63,952,718
15	Washington-Oregon	45,742,749
16	Southern California	39,983,470
17	Hope Basin	38,728,168
18	Northern California	37,915,717
19	Aleutian Basin	33,569,865
20	Western Gulf of Mexico	31,331,220
21	Aleutian Arc	25,554,257
22	Cook Inlet	24,152,550
23	Central California	20,592,712
24	Chukchi Sea	8,237,533
25	Straits of Florida	6,850,743
26	Beaufort Sea	4,591,039

Source: CSA (1990, 1991)

There are two methods to provide an analysis for primary production–total estimated primary production and normalized or average per unit area production. In the first method, the size of the planning area is incorporated into the analysis and can greatly contribute to the overall relative rankings. Therefore, it is possible to have a highly productive on average, but small, planning area that would be lower ranked than a larger planning area with average productivity. In the second method, the sizes of the planning areas are not incorporated into the analysis and the planning areas with the highest average per square meter productivity would be higher ranked. To ensure a complete analysis of the primary productivity of each planning areas, as required under the Act, both methods have been used.

Table 11 shows the estimates for the total primary productivity of each planning area in metric tons per year. Estimates range from the highest in the South Atlantic Planning Area, yielding a total primary productivity of over 203 million metric tons of carbon per year to the lowest, 4.5 million metric tons of carbon per year in the Beaufort Sea. For the purposes of this analysis, the planning areas have been broken down into eight different classes of estimated total primary production, with the first and highest being the South Atlantic Planning Area.

The second group consists of planning areas with total primary productivity values ranging from 140 million to 134 million metric tons of carbon per year. This group includes the Mid-Atlantic, Shumagin, Kodiak, and St. Matthew-Hall Planning Areas.

Four planning areas fall within the third category of estimated primary productivity which ranges between values of 117 to 105 million metric tons of carbon per year. This group includes the Eastern Gulf of Mexico, St. George Basin, Central Gulf of Mexico, and the Gulf of Alaska Planning Areas.

The fourth group consists of the Norton Basin, North Aleutian Basin, and North Atlantic Planning Areas. Values for this group range from 81 to 84 million metric tons of carbon per year.

The fifth group consists of the Navarin Basin and Bowers Basin Planning Areas with estimated primary productivity values ranging from 64 to 70 million metric tons of carbon per year.

The largest number of planning areas falls into the sixth category of primary productivity production with values ranging from 31 to 46 million metric tons of carbon per year. Washington-Oregon, Southern California, Hope Basin, Northern California, Aleutian Arc, and the Western Gulf of Mexico Planning Areas fall into this category.

The seventh primary productivity group ranges between 21 and 26 million metric tons of carbon per year and includes the Aleutian Arc and Cook Inlet Planning Areas.

The eighth and lowest category of estimated primary productivity includes those planning areas with less than 9 million metric tons of carbon per year, the Chukchi Sea, Straits of Florida, and Beaufort Sea Planning Areas.

Table 12 shows the estimates for the primary productivity per square meter in each planning area, broken down where possible in grams of carbon per meter square per year. The high productivity planning areas are those with 200-500 g C/m^2/year. Twelve planning areas are included in this category, including the South Atlantic, Mid-Atlantic, Shumagin, Kodiak, St. George Basin, North Atlantic, Washington-Oregon, Cook Inlet, Central California, Northern California, and Southern California. The confidence level associated with these estimates are poor to moderate with the exception of the Washington-Oregon and Mid-Atlantic Planning Areas where the confidence level is moderate to high. The variability of productivity levels within these planning areas is high with the exception of St. George Basin which is unknown.

Table 12: Relative Annual Water Column Primary Productivity, Variability, and Confidence in Available Data for OCS Planning Areas

Planning Area	**Productivity Level**			**Variability**	**Confidence**
	High	*Medium*	*Low*		
South Atlantic	X			High	Poor - Moderate
Mid-Atlantic	X			High	Moderate - High
Shumagin	X			High	Poor - Moderate
Kodiak	X			High	Poor - Moderate
St. Matthew-Hall					
Coastal		X		Unknown	Poor
Outer		X		Unknown	Poor
Eastern Gulf of Mexico					
Embayments	X			Low-Moderate	Moderate
Coastal		X		High	Poor
Offshore		X		Low-Moderate – High	Moderate
St. George Basin	X			Unknown	Poor
Central Gulf of Mexico					
Coastal	X			High	Poor
Offshore		X		High	Poor
Gulf of Alaska		X	X	High	Poor - Moderate
Norton Basin					
Coastal/Sound		X		Unknown	Moderate
Anadyr/Shelf	X			Unknown	Poor
North Aleutian Basin					
Coastal Domain		X		High	High
Central		X		High	High
Sea Ice			X	High	Poor - Moderate
North Atlantic	X			High	High
Navarin Basin		X		Unknown	Poor
Bowers Basin		X		Unknown	Poor
Washington-Oregon	X			High	Moderate-High
Southern California	X			High	High
Hope Basin					
Central		X		Unknown	Moderate
Bering Sea	X			Unknown	Moderate

Northern California	X	X		Unknown	Poor
Aleutian Basin		X		Unknown	Poor
Western Gulf of Mexico					
Embayments		X		Unknown	Moderate
Coastal		X		High	Moderate
Offshore		X		Low	Poor
Aleutian Arc					
South		X	X	Unknown	
North		X		Unknown	
Cook Inlet	X			High	Poor-Moderate
Central California	X			High	Moderate
Chukchi Sea					
Coastal (Lisburne)		X		Unknown	Poor-Moderate
Coastal (Barrow)			X	Unknown	Poor-Moderate
Ice Algae			X	Unknown	Poor-Moderate
Straits of Florida					
Embayments			X	Low-Moderate	Poor
Coastal			X	Low- Moderate	Poor
Beaufort Sea			X	High	Poor-Moderate

Source: CSA, 1990

* Relative Phytoplankton productivity categories: High (200-500 g C/m^2/year), Moderate (50 - 200 g C/m^2/yr), and Low (<50 g C/m2/yr).

Climate change, as an ongoing process, will likely affect relative marine production. The Arctic Council and the International Arctic Science Committee evaluated the consequences of climate variability, climate change, and increased ultraviolet radiation on the Arctic marine environment. In the Arctic, phytoplankton generally grow more slowly than in warmer areas in part due to colder temperatures, but, more importantly, due to limited nutrients. Since a large proportion of the primary production in highly productive water columns can potentially reach the shallow bottom, primary and benthic production tends to be coupled. Benthic production also supports bottom-feeding fish, whales, seals, walruses, and sea ducks. Climate change can affect the temperature (which affects the metabolism and distribution of organisms), sea ice (which provides some species with a platform for birthing and foraging), and snow (which is used in the construction of overwintering lairs). This also affects nutrient levels and surface mixed layer depth, which then affects primary and secondary productivity, and then affects food availability to the upper trophic levels. Sea ice is an important ecological factor in the Arctic. Sea ice and snow cover reduce light levels at the water surface which limits primary production. The melting of the ice results in a stratification of the upper water column which promotes primary production. However, sea ice is also an important habitat for marine mammals and sea birds. A change of temperature may shift not only primary and secondary production, but also the distribution of higher trophic species,

changing metabolic rates, feeding rates and competition and reproductive processes in some fish, and changing the migration route of some marine mammals (Arctic Council, 2005).

References

Arctic Council. 2005. Arctic Climate Impact Assessment. Cambridge University Press, New York: 1042p.

Continental Shelf and Associates. 1990. Comparison of Marine Productivity Among Outer Continental Shelf Planning Areas. U.S. Department of Interior, Minerals Management Service. Contract Number 14-35-0001-30487. Herndon, Virginia 20170.

Continental Shelf and Associates. 1991. Comparison of Marine Productivity Among Outer Continental Shelf Planning Areas: Supplement – An Evaluation of Benthic Habitat Primary Productivity. U.S. Department of Interior, Minerals Management Service. Contract Number 14-35-0001-30487. Herndon, Virginia 20170.

Industry Interest

The MMS received comments from 47 energy companies and oil and gas trade groups and membership organizations. Strong support for the MMS initiative to start a new 5-year program was expressed in all comments. Generalized support for opening all areas of the domestic OCS, opening moratoria areas and utilizing new technologies was also common. Many companies expressed concern that the absence of seismic data impeded discussion and ranking of certain areas.

Several companies and trade associations commented that the Secretary of the Interior should streamline the planning process and that it may be beneficial to break up some of the larger planning areas off the Atlantic coast. Therefore, rankings provided by some companies were subject to further interpretation of the specific indicated interest.

Table 13 shows how many companies identified a specific planning area as a candidate for leasing in the 2010-2015 Program. As shown in this table, the highest areas of expressed interest were Western and Central Gulf of Mexico, with some interest expressed in 11 other areas. While the other planning areas did not receive specific interest, many commenters advised that all areas should have some level of pre-leasing data collection to know better where resources might be located.

Table 13: Industry Interest

Number of Companies Expressing Interest In Specific Planning Areas*

Western Gulf of Mexico	6
Central Gulf of Mexico	6
Eastern Gulf of Mexico	5
North Atlantic	5
Mid-Atlantic	5
South Atlantic	5
Southern California	5
Chukchi Sea	4
Beaufort Sea	4
North Aleutian Basin	3
Cook Inlet	3
Northern California	2
Central California	2
Straits of Florida	0
Washington-Oregon	0
Gulf of Alaska	0
Kodiak	0
Shumagin	0
Aleutian Arc	0
St. George Basin	0
Bowers Basin	0
Aleutian Basin	0
Navarin Basin	0
St. Matthew-Hall	0
Norton Basin	0
Hope Basin	0

*Generalized industry interest was "high" with respect to expanding program planning to include all areas of the OCS. Interest in specific areas was difficult to interpret from each company's comment. Company comments did not consistently rank areas in the congressional moratoria in the same manner as areas available at the time of the Request for Comments. Certain companies urged MMS to open areas for seismic data collection, but it was unclear whether that constituted a specified industry interest in that area. Some companies noted that in the absence of real seismic data and analysis, ranking areas in order of preference was difficult.

As of July 14, 2008, the only areas under Presidential Withdrawal under Section 18 of the Act are Marine Sanctuaries managed under the Marine Protection, Research, and Sanctuaries Act of 1972. As of October 1, 2008, the majority of the Eastern Gulf of Mexico and a small portion of the Central Gulf of Mexico are the only areas under congressional restriction, pursuant to GOMESA.

Equitable Sharing of Developmental Benefits and Environmental Risks

Introduction

Section 18(a)(2)(B) of the Act requires that the Secretary base the timing and location of the OCS exploration, production, and development on a consideration of, among other things, "an equitable sharing of developmental benefits and environmental risks among the various regions." Because developmental benefits and many environmental risks often accrue outside the OCS regions, which are portions of land lying under the ocean, analysis of this factor usually goes beyond the strict requirements of the Act and considers the sharing of benefits and risks to the onshore US population, particularly in the coastal areas near producing regions of the OCS.

Section 18 does not require that the leasing program achieve an equitable sharing of developmental benefits and environmental risks, nor have the courts set a specific standard of equitable sharing that the Secretary is to achieve. As the court recognized in *California I* and *California II*, the degree to which a proposed 5-year schedule of lease sales might achieve an equitable sharing of benefits and risks must be considered in light of a number of other factors, many of which are not under the control of the Department and some of which greatly affect the options available.

The variety of timing and location options available to the Secretary at the Draft Proposed Program stage require this analysis to be based on considerations that, while somewhat general, allow a fairly simple basis for judging the implications of programmatic decisions on equitable sharing of developmental benefits and environmental risks. The options related to the Secretary's consideration of equitable sharing issues have increased considerably for the new 5-year program, given the lifting of the Presidential withdrawal and the expiration of the Congressional moratoria that restricted leasing on the entire Atlantic OCS and the entire Pacific OCS.[13] The options are defined and presented in the Draft Proposed Program decision documents, along with the Secretary's decision based on the various Section 18 analyses and other factors.

Benefits and Risks

Some benefits and risks of OCS leasing are shared widely while others are concentrated in regions adjacent to areas of OCS oil and gas activity.

Among the chief benefits that accrue primarily to producing regions and nearby onshore areas are reduced risk of accidents involving tankers carrying imported oil and the results on local economies of expenditures on the factors of production, i.e., labor, land, materials, and equipment. Exploration, development, and production—and many of the industries that support such activities—generally result in employment at higher-than-average pay, and the spending on these activities reverberates through the economy. Additional benefits to communities proximate to OCS oil and gas activities come from programs that allocate OCS oil and gas revenues to those States and coastal political subdivisions near OCS oil and gas

[13] The one remaining restriction is the GOM Energy Security Act of 2006 prohibition of leasing in the majority of the Eastern GOM and a small portion of the Central GOM off the coast of Alabama. While the Secretary can include these restricted areas of the GOM in a new 5-year program, no lease sale planning could proceed without removal of those restrictions.

exploration and development. Currently three programs provide Federal OCS revenues to the coastal producing States.

1. The 8(g) revenue sharing provides coastal producing States with 27 percent of revenues from all leases within three miles of a State's submerged lands boundary.
2. The Coastal Impact Assistance Program (CIAP) authorized by Energy Policy Act of 2005 provides $250 million per year for each of the fiscal years 2007 through 2010 to Alabama, Alaska, California, Louisiana, Mississippi, Texas, and their coastal subdivisions for coastal restoration and protection.
3. The Gulf of Mexico Energy Security Act (GOMESA) of 2006 provides the four GOM producing States of Alabama, Mississippi, Louisiana, and Texas a 37.5 percent share of revenues from selected areas in the Eastern and Central GOM planning areas through 2016. Additional GOM oil and gas lease revenues (limited to $500 million annually) are to be shared in 2017 and beyond. Revenues distributed under the provisions of GOMESA are intended to help compensate for potential negative impacts of OCS activities and are reserved for coastal restoration and protection.

While the Secretary cannot expand, extend, or otherwise revise the 8(g) and impact-assistance-related provisions to further the equitable sharing of the developmental benefits and environmental risks during the period covering the next 5-year program, Congress can do so if appropriate.

Benefits flowing from Federal government revenues, i.e., bonuses, rents, and royalties obtained through the Federal government's property interest in OCS oil and gas leases, tend to be widely distributed among the geographic onshore regions of the United States, as do benefits from taxes on corporate income resulting from OCS-related activities. These benefits are disbursed through General Fund appropriations for various Federal functions, as well as (for a portion of OCS-specific revenues) through the Historic Preservation Fund and the Land and Water Conservation Fund.

Financial rewards for profitable OCS oil and gas operations in the form of stock dividends and increased stock values also tend to be widely distributed, as owners live throughout the country. Any benefits of an improved balance of trade or decreased risk of supply disruptions (that could result from actions by hostile governments or a variety of other causes) are shared nationally as well. The immediate environmental risks of OCS oil and gas activities are borne primarily by producing regions and nearby onshore areas. Some of the financial consequences of those risks, e.g., compensation by responsible parties for natural resource damage and payments into funds established to provide compensation for losses not attributable to specific parties, are shared by companies and individuals throughout the Nation.

The nature of developmental benefits and environmental risks associated with the OCS oil and gas program, as summarized in the previous paragraphs, has been well documented in previous 5- year program analyses. Those analyses concluded that the 5-year program has a certain innate equity in that the geographic areas bearing the greatest risks also receive a higher share of the benefits, while certain financial aspects of both benefits and risks are shared somewhat widely. However, the Secretary can consider those factors mentioned in the previous paragraph that do lead to greater benefits and/or risks for local areas in deciding whether to include any or all of the newly available planning areas in the next 5-year program.

Once the Secretary makes the Draft Proposed Program decision—specifying size, timing, and location of lease sales as closely as is reasonable—there will be a more specific equitable sharing analysis of the decision and each alternative. The first such specific analysis will be included in the proposed program.

Conclusion

The general findings and conclusions of previous 5-year program equitable sharing analyses are still valid. The exclusion of much of the Eastern GOM, as well as all planning areas in the Atlantic and Pacific OCS regions from the four previous programs (stretching from 1992 to the present) has precluded adjacent States and communities from sharing in direct benefits and risks resulting from those programs. However, the lifting of the Presidential withdrawal and the expiration of the Congressional moratoria covering much of these areas has created a new opportunity for the Secretary to enhance the equitable sharing of developmental benefits and environmental risks among coastal regions.

The distribution of benefits associated with factors of production is linked significantly to the location of OCS oil and gas support industries, which currently exist primarily along the GOM, Southern California, and Alaska coasts. Should broad, new restrictions not be imposed on OCS leasing, the Secretary's decision on an OCS leasing schedule for the period 2010-2015 could expand areas available for leasing, perhaps eventually leading to the development of new OCS-related industries and employment in the adjacent communities, creating a more equitable sharing of benefits and risks than achieved under previous 5-year programs. An additional benefit for these communities could result from new Federal impact assistance programs similar to those mentioned in the previous section, should Congress decide to enact such new programs.

Balancing Considerations

Introduction

Section 18(a)(3) of the Act requires the Secretary to "select the timing and location of leasing, to the maximum extent practicable, so as to obtain a proper balance between the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone." Striking this balance based on a consideration of the principles and factors enumerated in Section 18(a) is essentially a matter of judgment for which no ready formula exists. Section 18 requires the consideration of a broad range of principles and factors rather than imposing an inflexible formula for making decisions. Thus, previous 5-year programs have scheduled as many as 37 lease sales in 22 planning areas and as few as 16 sales in 8 planning areas.

Some of the factors that Section 18 specifies for consideration are embodied in the benefit-cost analysis, i.e., resource potential and certain environmental values. Others are not as readily quantifiable and are therefore described qualitatively. For example, environmental considerations such as aesthetics or concerns for certain species are extremely difficult to translate into accurate economic estimates. In order to provide the Secretary full and appropriate information for the draft proposed program decision, this document is supplemented by relevant NEPA documents and other analyses that present information relating to such environmental factors and other qualitative considerations. This supplemental information, which is identified in part III.D, is incorporated by reference.

Judicial Guidance

The U.S. Court of Appeals for the D.C. Circuit has elaborated in great detail on the statutory criteria for the balancing decision required by Section 18(a)(3). Pertinent excerpts from the Court's opinions on litigation concerning previous 5-year programs are presented below.[14]

The Court has stated the following concerning the weight to be accorded the three elements of Section 18(a)(3).

> That the Act has an objective—the expeditious development of OCS resources—persuades us to reject petitioners' view that the three elements in Section 18(a)(3) are "equally important" and that no factor is "inherently more important than another." The environmental and coastal zone considerations are undoubtedly important, but the Act does not require they receive a weight equal to that of potential oil and gas discovery. A balancing of factors is not the same as treating all factors equally. The obligation instead is to look at all factors and then balance the results. The Act does not mandate any particular balance, but vests the Secretary with discretion to weigh the elements so as to "best meet national energy needs." The weight of these elements may well shift with changes in technology, in environment, and in the Nation's energy needs, meaning that the proper balance for 1980-1985 may differ from the proper balance for some subsequent five-year period. (*California I,* 668 F.2d, p. 1317)

The following three statements of the Court pertain to the analysis of the Section 18 factors and the Secretary's discretion in weighing the results of that analysis.

> (1) The Act recognized the difficult burden the Secretary must shoulder by stating that the selection of timing and location of leasing must strike the proper balance "to the maximum extent practicable." The Secretary must evaluate oil and gas potential, which can be quantified in monetary terms, in conjunction with environmental and social costs, which do not always lend themselves to direct measurement. Because of this, they must be considered in qualitative as well as quantitative terms.
>
> Although the secretarial discretion we have described is broad, as a result of both the general wording of the statute and the nature of the task the Secretary is asked to perform, the Secretary's discretion is not unreviewable. The policies and purposes of the Act provide standards by which we may determine whether the Secretary's decision was arbitrary, irrational, or contrary to the requirements of the Act. To do so, we consider "whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment." (*California I*, 668 F.2d, p. 1317)
>
> (2) In deciding whether to include an area, the Secretary weighed qualitative factors as well as quantitative factors. The Secretary listed among qualitative

[14] The current 5-year program for 2007-2012 is the subject of litigation filed July 2, 2007 in the D.C. Circuit, No. 07-1247. The Court has yet to render a decision.

factors "national security, industry interest, and equitable sharing of development costs and benefits." OCSLA specifically directs the Secretary to weigh such qualitative factors in his balance.

Taking qualitative factors into account implies that the inclusion of areas with a calculated NSV of zero may nonetheless be compatible with Section 18(a)(3). (*NRDC*, 865 F.2d, p. 307)

(1) The Secretary must make a good-faith effort to balance environmental and economic interests. So long as he proceeds reasonably, however, his decisions warrant our respect. (*NRDC*, 865 F.2d, pp. 308-309)

The Decision on the Draft Proposed Program for 2010-2015

Programmatic balancing decisions must also take into account that development of a 5-year program represents a very early stage of planning in the overall process governing OCS oil and gas activity, which entails preparing the leasing schedule, implementing that schedule with individual lease sales, and permitting of exploration and development and production. The draft proposed program is followed by three more steps in the 5-year program preparation process—the proposed program, proposed final program, and ultimate approval of the new program.

In formulating the first 5-year programs, the tendency was to include more areas for consideration early in the process and reduce the scope of the program later in the process or even following its approval. The rationale for such an approach was that it would be better to defer decisions to exclude areas until later, because the information on which to base such decisions becomes more reliable and geographically focused as the planning process progresses. Further, this rationale held that as program activities progress, there are numerous occasions to refine areas under consideration when the program is implemented and as projections of hydrocarbon potential, levels of OCS activities, and possible environmental effects become more specific.

Other Considerations

Other relevant considerations that have implications for balancing environmental and socioeconomic issues and concerns with potential benefits of OCS activity are discussed in this document, the document and EIS prepared for the 5-year program for 2007-2012, and in other referenced documents. Such considerations are summarized below.

Findings and Purposes of the OCS Lands Act. Title I of the OCS Lands Act Amendments of 1978 sets forth a number of findings and purposes with respect to managing OCS resources. Those principles generally pertain to recognizing national energy needs and related circumstances and addressing them by developing OCS oil and gas resources in a safe and efficient manner that provides for environmental protection; fair and equitable returns to the public, state, and local participation in policy and planning decisions; and resolution of conflicts related to other ocean and coastal resources and uses.

Industry Interest. Interest, as indicated in the comments responding to the August 2008 Request for Comments is summarized in Table 13. Industry interest is a key criterion for deciding whether to propose an area for a lease sale. However, it is not the sole and absolute

indicator of the potential of an area to contribute oil and gas resources for regional and national use. Therefore, as with all of the balancing information discussed in this part, industry interest should be weighed with other considerations in deciding where and when to propose OCS leasing. The presentation of size, timing, and location options in part IV includes discussions of industry interest along with other significant considerations. Summaries of all industry comments are provided in Appendix A.

Information Incorporated by Reference. Documents pertaining to geographical, geological, and ecological characteristics, to local and national energy markets and needs, and to environmental and predictive information, as cited in part III, are incorporated by reference.

Laws, Goals, and Policies of Affected States. Relevant laws, goals, and policies identified by affected states are summarized in the options part of this document, as appropriate, and in Appendix A.

Issues Raised in Comments. All comments received in response to the August 2008 Request for Comments are summarized in Appendix A. Those that correspond more specifically to program options are described in part IV.

D. Assurance of Fair Market Value

The Draft Proposed 5-year Program includes general provisions for assuring the receipt of fair market value in accordance with Section 18(a)(4). Those provisions allow setting minimum bid levels, rental rates, and royalty rates on a sale-by-sale basis and maintaining a process for applying and periodically reviewing bid adequacy procedures for the post-sale assessment of blocks receiving bids in OCS lease sales. This bid adequacy process relies on both evidence of market competition and in-house estimates of tract value. In addition to the lease fiscal terms and bid adequacy process, the MMS establishes terms and conditions to assure diligent development of leases and environmentally clean and safe operations. These other measures are included in regulations and implemented independent of the 5-year program and lease sale preparation process.

Tract Evaluation and Bid Adequacy

The 5-Year Program for 2007-2012 included the two-phase post-sale evaluation process for determining bid adequacy. The process was instituted in 1983 with the implementation of the areawide leasing policy and has undergone several refinements to address fair market value concerns. The most recent revision was published in the *Federal Register* on July 12, 1999 (64 FR 37560). It established a new criterion for awarding leases under the number-of-bids and viability rules in the first phase of the bid evaluation process and a new tract specific assessment process in conjunction with an averaging condition in the second phase for multiple-bid blocks that do not satisfy the acceptance conditions in the first phase. A more detailed description of the existing bid adequacy process—"*Summary of Procedures for Determining Bid Adequacy at Offshore Oil and Gas Lease Sales: Effective July 1999, with Sale 174"*—is available on the internet at http://www.gomr.mms.gov/homepg/lsesale/bidadeq.html.

Bid evaluation procedures are dynamic; as conditions change, the MMS Fair Market Value Oversight Committee looks for opportunities to improve the process. Thus, in implementing the new 5-year program, there may be revisions to the OCS bid adequacy procedures to incorporate knowledge gained from their use, or to accommodate structural changes to the leasing process. Current fiscal terms are described in part IV.B of this document.

The MMS reviews all high bids received to help ensure that they represent fair market value for the lease block. In the absence of multiple bidders, the single bid received must still exceed the government's assessed or imputed value. When a block is assessed as viable and not accepted under the number of bids rule in phase one, it is evaluated in phase two and the geologic and economic models for each block determine the fair market value minimum acceptable bid. If the block is deemed to be nonviable, the MMS value is equated to the minimum bid. In practice, it is extremely rare for a bid not to exceed the minimum by at least a small amount, so if MMS geologic and economic models indicate that a tract is nonviable, the high bid would be accepted in phase one.

If a high bonus bid does not satisfy any of the required conditions, the bid is rejected and the OCS block is reoffered at the next scheduled OCS lease sale. For an average GOM sale, 1-3 percent of high bids are rejected. One effect of bid rejection is to encourage bidders to submit bids that will exceed the government's reservation price and thereby promote receipt of fair market value. Moreover, rejection of high bids under the existing MMS bid adequacy procedures has consistently resulted in higher average returns in subsequent sales for the same tracts, even when those tracts not receiving subsequent bids were included in the average. Since 1984, MMS has rejected total high bids of $578.7 million in the Gulf of Mexico. Subsequently, the same blocks were re-offered and drew high bids of $1.503 billion, usually within one year of rejection, for a total net gain of $924.3 million. These results indicate that the MMS bid adequacy assessments and procedures have performed quite well identifying high bids below fair market value.

Conclusion

The MMS evaluates market conditions, available resources, bidding patterns, and the competitiveness of the Federal OCS when setting fiscal terms for each lease sale. As presented in part IV of this document, changes to fiscal terms or bidding systems are made on a sale-by-sale basis. If MMS changes from the recently implemented fiscal terms or from a bidding system that consists of cash bonus bid subject to fixed royalty rate, any changes would be announced to the public and industry through the Proposed Notice of Sale or other notification in the *Federal Register*, typically prior to the Final Notice of Sale.

Appendix A

Summary of Comments to August 1, 2008, *Federal Register* Notice Concerning Preparation of the 5-Year OCS Oil and Gas Leasing Program for 2010-2015

Introduction

Section 18 of the OCS Lands Act, 43 U.S.C. 1344, requires the Department of the Interior to prepare a 5-year OCS oil and gas leasing program. To begin preparation of the 5-year program for 2010-2015, the MMS issued a *Federal Register* notice soliciting comments. This appendix is a summary of all comments received in response to that notice. Due to the volume of the response from energy companies, related industry associations and interest groups, and various private citizens, submittals under those headings have been condensed to express the most common ideas received by MMS.

Number of Comments by Category

Governors, State Elected Officials, and State Agencies	33
Local Governments, Tribes and Alaska Native Corporations	16
Members of Congress and Federal Agencies	11
Environmental and Other Related Interest Organizations	24
Oil and Gas Companies and Associations	47
Non-Energy Industry Associations and Business Groups	64
General Public	152,477
Total	**152,672**

Summary of Comments

Governors, State Elected Officials, and State Agencies

When the Request for Comments was published, the Secretary of Interior and the Director of MMS each wrote letters to all the Governors, requesting that all 50 Governors review the Request for Comments, and submit comments, and provide to MMS a contact person with whom to facilitate future communications. As of this publication date, a total of 33 state responses have come from state Governors, other elected state officials and state agencies.

- Alaska Governor Palin supports initiating a new 5-year program. The Governor supports leasing in the Beaufort and Chukchi Seas, including the 25-mile buffer for the Chukchi Sea area and encourages the MMS to continue to work together with the North Slope Borough, whaling representatives and other Native Communities to ensure that leasing can be conducted with minimal conflicts with subsistence activities. The Governor supports leasing in the North Aleutian Basin, specifically in the area included in Sale 92 in 1985. The Governor includes by reference the State's comments on the Call for Information and Nominations and Notice of Intent to Prepare an EIS for the Beaufort and Chukchi Seas planning areas (December 3, 2007) addressing the research and data needs; and the Alaska comments on the Call for Information and Nominations and Notice of Intent to Prepare an EIS for the North Aleutian Basin Proposed Oil and Gas Lease Sale 214 (July 7, 2008). The Governor supports the special interest sales for the Cook Inlet and for Hope Basin and Norton Basin.

- Alaska State Representatives Chenault, Harris, and Roses wrote letters of general support.

- The California Coastal Commission commented on its strong opposition to any new leasing of frontier areas of the California coast for oil and gas extraction. They are in favor of the moratoria continuing and believe the Nation should be focusing on expanding renewable energy and energy efficiency.

- The Governors of California, Oregon, and Washington co-signed a letter to discuss the release on July 29, 2008, of their action plan to implement the West Coast Governors' Agreement on Ocean Health. This regional approach is linked to the Western Climate Initiative. This comment views the initiatives raised in the MMS Request for Comments, such as including new areas in the program, or lifting the moratoria, as having little impact on average wellhead prices. This comment suggests that the planning being done at MMS is not the solution.

- California Assembly Member Nava, 35th District, opposes lifting the moratoria and attaches Joint Assembly Resolution 51 that requests the Federal government not to lift the moratoria.

- The Connecticut Department of Environmental Protection, on behalf of Governor Rell, advocates for conservation over leasing options. Alternative Energy comments were submitted to MMS strongly supporting development of renewable resources. Incorporated by reference is the Connecticut Advisory Board's report, "2007 Energy Plan for Connecticut," and the Connecticut Coastal Management Act. Comments specifically mention concerns of impacts of oil and gas leasing in the Mid-Atlantic submarine canyons, including Hudson Canyon. Equitable sharing of developmental benefits is a primary concern and a broader distribution of OCS revenues would significantly enhance the management of ocean and coastal resources nationwide.

  Connecticut supports the Ocean Blueprint for the 21st Century, the set of recommendations provided by the U.S. Commission on Ocean Policy—specifically Recommendations 24-1 and 30-1. Those recommendations related to portions of OCS revenue. They endorse the establishment of an Ocean Trust Fund in the U.S. Treasury which would receive resource rents from OCS oil and gas development and activities, among other activities, to be devoted exclusively to ocean and coastal issues. Additionally, they support a new coordinated and comprehensive national ocean policy. (Recommendation 30-1). In light of the moratoria, only renewable energy should be promoted in moratoria areas.

- Connecticut State Representatives Ferrari and Hamzy sent letters in favor of MMS proposals.

- Governor Minner of Delaware states that Delaware's position has not changed since the letter sent in 2005, incorporated by reference. The 2005 letter called for a comprehensive inventory of all the traditional OCS mineral resources. Alternative energy resources are important to Delaware.

- Governor Crist of Florida supports offshore activity with the assurance that it is "far enough, safe enough and clean enough" off Florida's coast. Otherwise, Florida will continue to oppose oil and gas drilling.

- Governor Perdue of Georgia's letter to congressional leaders that the Governor sent in July, 2008, appears favorable to MMS initiatives and states support for OCS development as part of a comprehensive plan.

- Hawaii Governor Lingle provided general support for MMS planning and provided a state contact for future efforts.

- Iowa State Representative Watts sent a supportive letter.

- South Carolina State Representatives Massey and Ford sent detailed letters in support, requesting that South Carolina be included in the special interest sale planned for Virginia in 2011.

- Kentucky State Representative Roeding sent a supportive letter.

- The Governor Baldacci of Maine suggests that Maine does not have appreciable commercially recoverable oil or natural gas reserves; however, wind energy is of interest in the Gulf of Maine; potential safeguards for natural resources and related uses need to be evaluated. Maine's coastal program must be considered and all actions must be consistent with Maine's coastal program. The Governor's statement concludes that MMS action is not appropriate in the North Atlantic. The MMS is encouraged to consult with the Premiers of Canada's Maritime Provinces with whom Maine and neighboring states collaborate through the Gulf of Maine Council on Marine Environment to manage shared responsibilities related to Georges Banks.

- The Maryland Department of Natural Resources submitted comments on behalf of Governor O'Malley. Maryland is historically in support of limited exploration in the Mid-Atlantic, provided it is conducted with state-of-the-art protections. In 1995, Maryland considered one Mid-Atlantic lease sale. However, Maryland thinks the Nation would be ill-served by developing a new plan at this particular time. Industry should develop the current leases. Additional data is needed. Maryland commented on administrative boundaries and asked that Atlantic offshore administrative boundaries not be modified. With respect to revenue sharing, Maryland advocates for equitable sharing, including a broader distribution system that recognizes the interdependent nature of ocean and coastal ecosystems. Maryland sent a list of state laws and regulations relating to oil and gas activities.

- New Jersey Governor Corzine outlined concerns related to starting a new OCS program and opposes the planning initiative outlined in the Request for Comments. The Governor seeks a more comprehensive approach and cites New Jersey's draft Energy Master Plan released in April 2008. This comment urges Federal consideration of air pollution, greenhouse gases, tourism, fishing, and other recreational activities.

- The New Jersey Department of Environmental Protection discussed the ecological value of the New Jersey coast as well as tourism, recreation, and fishing. The state offshore administrative boundaries for the Atlantic Region are considered "invalid for purposes of considering the potential effects of offshore oil and gas leasing." New Jersey is opposed to the next 5-Year program including the Mid-Atlantic or North Atlantic Planning Areas.

- The North Carolina Department of Environment and Natural Resources, on behalf of Governor Easley, attached the text of a letter that the Governor sent to members of the U.S. House and Senate. The Governor called on Congress to empower North Carolina and other states to acquire OCS lease permits, without federal fees and to allow state control over these reserves as the U.S. transitions to alternative fuels. This comment encloses previously submitted North Carolina comments identifying critical issues for consideration during the development of any new OCS leasing program. The comment contains a summary of the socio-economic, physical and marine issues unique to the coast. In addition, an overview was attached of some of the legal and policy issues that must be considered in the course of evaluating potential energy development in offshore waters of North Carolina.

- The Republican leadership in the North Carolina General Assembly supports the direction of the MMS initiative, and incorporates by reference State Resolution #2806. The resolution urges Congress to allow North Carolina to determine whether offshore exploration should be allowed.

- Mississippi Governor Barbour views maximizing the accessibility of known, domestic energy resources as essential to achieving national energy goals. Along with conservation and increased energy efficiency, producing more energy domestically is a way to reduce oil imports. A new 5-year program is an important initiative.

- Mississippi State Representative Currie sent a supportive letter.

- Texas Governor Perry states that it is critical for that MMS to open all prospective Gulf areas for leasing as soon as possible. He also believes that lease sales should be held in all prospective Alaska areas, including the North Aleutian Planning Area. New initiatives should be undertaken to open the Pacific and Atlantic planning areas for leasing and development as well.

- Virginia Governor Kaine supports Federal efforts to determine the extent of Virginia's offshore natural gas resources. The Governor reiterates the Commonwealth's legislative policy that no activity should occur within 50 miles of the shoreline; that waters offshore all Atlantic states should be considered at the same time; and that activity should be limited to exploration only and natural gas only.

- The Virginia Department of Environmental Quality sent technical comments relating to environmental issues and requirements.

- The Virginia Department of Mines provided details of the infrastructure needed to support exploration and development within the 50-mile exclusion zone and that more work needs to be done to eliminate problems related to conflicts with Virginia laws.

Also, the Department reiterates earlier comments that the administrative boundaries are based on Equidistant Line Methodology and therefore, result in an inequitable allocation of areas among the states due to the vagaries of the shoreline from which the boundaries are projected.

- Virginia State Representatives Helm and Ruff sent supportive letters.

- The Washington State Department of Ecology strongly opposes MMS initiating a new 5-year plan. The State cites the 1990 OCS Task Force Agreement regarding leasing off the Pacific Northwest and attached the Agreement and study plan.

Local Governments, Tribes, and Alaska Native Corporations

- Mayors and council members of several cities in Alabama support actions to initiate a new 5-Year program.

- The Aleutians East Borough (AEB) noted that they had actively participated in development of the 2007- 2012 Program and attached comments that support oil and gas leasing in the North Aleutian Basin; provided maximum protection is given to fishery resources and lease stipulations are included to safeguard local interests. The Borough recently became a Cooperating Agency for the lease sale EIS and pledges to devote resources to achieving a Record of Decision they can support in the upcoming lease sale. However, AEB is concerned that MMS's proposal to accelerate the 5-Year planning effort will divert MMS staff from duties related to the current program, particularly the EIS. They suggest a limited amendment to the 2007-2012 Program to address the addition of only those new lower-48 areas. The Borough incorporates by reference all comments for previous programs and the attached Resolution No. 07-09 dated 10-16-06.

- The Inupiat Community of the Arctic Slope expresses general opposition and supports the Alaska Eskimo Whaling Commission letter sent to MMS (summary below) to represent those peoples engaged in subsistence hunting of whales and other sea animals.

- The Native Village of Point Hope generally opposes the program and cites Sale 193 litigation.

- Native Village of Point Hope provides general opposition and cites Sale 193 litigation.

- The North Slope Borough continues its opposition to offshore activities and sees no reason to revise the current program as the 5-year cycle of leasing was selected to allow for effective planning and capture trends in oil prices and other variables. A new program should not be done in response to a single volatile variable. If the Secretary proceeds with a new program, all Alaska planning areas should be excluded and any currently scheduled sales cancelled to avoid potential for harm and until more is known about the arctic environment. The Borough commented that if activity does occur, the majority, if not all, of revenue sharing (coastal impact assistance) funds should be given directly to local communities where the impacts occur and not the

State. The Borough raised many of the same issues as outlined below for the Defenders of Wildlife.

- The Northwest Arctic Borough is in opposition to a new 5-Year plan and detailed their environmental concerns.

- Nunamta Aulukestai, Dillingham, Alaska, urged MMS to remove Bristol Bay from the current program and all future consideration.

- Monroe County, Florida, sent Resolution No 223-2008 to oppose MMS planning due to environmental concerns.

- Charlotte, North Carolina Mayor McCrory wrote in support of MMS actions.

- The Pennsylvania Borough of Chambersburg favors starting a new program, from the standpoint of a borough that owns a municipal gas utility since 1946, serving over 5,000 customers.

Members of Congress and Federal Agencies

- Lois Capps (CA), George Miller (CA), Frank Pallone (NJ), Kathy Castor (FL), Henry Waxman (CA), Ed Markey (MA), Maurice Hinchley (NY), Mike Thompson (CA), and Sam Farr (CA) signed a joint letter to the Secretary opposing MMS actions based on the arguments that (1) the energy resources are insignificant in the Atlantic, Pacific and Eastern Gulf, (2) that current leases are underutilized, (3) a mid-cycle 5-year is not warranted, and (4) protections are not in place to safeguard the environment.

- A joint letter from Brad Miller (D-NC) and David Price (D-NC) note that the Request for Comments is not in the spirit of the OCS restrictions put in place by Congress.

- A joint letter sent to the Secretary from eight Virginia Representatives—Thelma Drake, Virgil Goode, Tom Davis, Randy Forbes, Eric Cantor, Rob Wittman, Frank Wolf, and Bob Goodlatte—applauds MMS for initiating a new program. However, they cite the administrative boundary issue as a concern in future planning.

- The Department of Defense, Department of the Navy Installations and Environment, welcomes the opportunity to work with MMS; and referenced the existing Memorandum of Agreement as effective in avoiding conflicts.

- The Department of Transportation, Pipeline and Hazardous Materials Safety Administration, supports MMS efforts and will closely follow the program development. Since the 1996 Memorandum of Understanding, collaboration has been effective. The Department raised three questions to revisit as the program planning progresses—hurricane preparedness, repair of deepwater pipelines, and hydro-testing in deepwater.

- The U.S. Environmental Protection Agency submitted comments pertaining to shared regulatory responsibilities and indicated they would become involved at the EIS stage.

- The U.S. Geological Survey offered general support.

- The National Park Service asked MMS to take into consideration the impacts of subsequent oil and gas development, including access and ancillary facilities, on special status areas for which the Service has some programmatic responsibilities. They would like to collaborate with MMS in formulating a Memorandum of Understanding in this process.

- The Bureau of Land Management, Fluid Minerals Division, supports the action by the President to lift the restriction on leasing and development of oil and gas resources in the OCS to increase the domestic supply of such resources.

- The Department of Energy (DOE), Office of Fossil Energy, fully supports the initiative to start a new 5-Year leasing plan in light of the recent lifting of the Presidential withdrawal on developing certain areas of the OCS. The DOE encourages MMS to actively pursue new resource characterizations and estimations in the OCS areas formerly under restriction and views the importance of the OCS to future U.S. energy needs as very high. Inventories and lease sales should be expanded. The plan needs to be flexible. Advances in technology should be utilized in assessing resource potential in the OCS and in assessing environmental impacts of future development. The U.S. Commission on Ocean Policy recommends cooperation between state and federal governments. The DOE does not support "gas-only" leasing.

- The Marine Mammal Commission recognizes that oil and gas prices have soared, affecting virtually all sectors of society and instilling in many a great sense of urgency regarding the development of domestic energy sources. Oil and gas companies have increased their exploration activities in a number of locations where production was not previously economically feasible and where environmental conditions may be particularly sensitive to the adverse effect of energy production. In 2009, the new Administration will undoubtedly begin with ideas for addressing the Nation's energy needs and production and may determine that a whole new strategy is warranted for both the immediate and long-term future. For these reasons, the Commission believes that decision makers must have the benefit of the best available scientific information and recommends that MMS, in cooperation with DOE, initiate a new 5-year oil and gas leasing program to supersede the current program.

- The National Oceanic and Atmospheric Administration expressed concern about collaboration with them on data review.

Environmental and Other Related Interest Organizations

Twenty-three organizations commented in this category. In general, commenters addressing only environmental concerns opposed the program. However, commenters addressing consumer concerns and environmental concerns were more supportive with strong views that MMS should include environmental protections in all planning.

- The Alaska Coalition of Washington opposes MMS actions because the new proposal will not change the cost and availability of oil and gas and it is harmful to the environment.

- The Alaska Eskimo Whaling Commission (AEWC) presented detailed local data about the spiritual connection between the members and the whaling practices in Alaska, the life of bowhead whales, and the migratory patterns of the whales. The AEWC is opposed to a new 5-Year plan because MMS lacks data on the environmental baseline and potential impacts of oil and gas exploration; MMS must determine whether Inupiat Eskimos will bear inequitable risks; consideration of the unique sensitivity of the northern Alaskan OCS waters is inadequate; and other considerations related to human health are not yet done.

- The Alaska Marine Conservation Council urges MMS to remove Alaska areas of Bristol Bay (North Aleutian Basin) from the plan, providing detailed local data and scientific material for review.

- The Alaska Wilderness League submitted comments jointly with the Alaska Center for the Environment, Audubon Alaska, Defenders of Wildlife, Natural Resources Defense Council, Northern Alaska Environmental Center, Pacific Environment, and the Wilderness Society to oppose the MMS initiative for the following reasons: there are better alternatives to drilling; global warming trends; expansion of the program is not justified; legal requirements have not been met; concerns about critical baselines; concerns about spilled oil; Endangered Species Act compliance; and harm to humans.

- Americans for American Energy supports MMS efforts due to the high costs of energy.

- The California Democratic Environmental Caucus asks MMS to cancel the new 5-Year proposal due to the already high consumption of oil and gas in this country and the serious environmental concerns related to production and development.

- The Center for Biological Diversity, a non-profit public interest conservation organization of more than 35,000 members nationally, opposes the expansion of oil and gas activities on the OCS. The Center suggests that the MMS initiative is a massive expansion of offshore leasing and the defects of the prior program should be corrected before a new program is started. The MMS must analyze alternative energy options. If MMS proceeds with a new expanded program, it must fully consider and evaluate the impacts of the program.

- The Center for Water Advocacy sent comments opposed to the MMS proposal, detailing alternatives to drilling and incorporating several studies by reference. The Center addressed concerns related to general environmental conditions as well as specific National Environmental Policy Act (NEPA) concerns.

- The Conservation Law Foundation focused mainly on Georges Banks, and urged MMS not to include this area because it is a protected area, an ecological preserve, and has little promise of resources.

- The Consumer Energy Alliance of Florida supports development of all domestic energy resources and finds that high energy prices negatively impact consumers and the U.S. economy. The Alliance supports MMS plans to initiate a new program.

- Defenders of Wildlife, a group of more than 500,000 members nationally, advises MMS on the following points. 1) The MMS is explicitly precluded from expenditures related to OCS leasing, preleasing, and related activities, along areas of most of the Pacific and Atlantic coasts. 2) Defenders of Wildlife reject the "seaward boundary lines" promulgated by the Secretary in 2006. 3) Distribution of Federal OCS royalties should not be part of a revised program. 4) Concerns about the air-gun inventory. 5) Concerns about gas-only leasing. 6) Concerns about Eastern Gulf of Mexico and high-risk activities. 7) Alaska issues are unresolved. 8) Data gaps in the current 5-Year program should prevent an accelerated program replacing the current program. 9) Greenhouse Gas Emissions are a concern. 10) Endangered Species Act matters require further consultation with all Federal agencies. 11) Ecological characterization is a concern. 12) Buffer Zone and closed areas need further work. 13) Stipulations for zero discharge requirements are needed. 14) Oil spill preparedness is a concern. 15) Attention by industry and Federal regulators directed at protecting Alaska's living resources is needed. 16) The Request for Comments contains no acknowledgement of the carbon-constrained future. 17) There are Royalty-in-Kind ethical matters featured in reports from the Office of the Inspector General. 18) Alaskan waters should be treated separately and with precautionary science.

- The Delaware River Keeper is an emergency response group that opposes any new leasing in areas that are currently protected under the congressional moratoria on offshore drilling, and asks DOI to cancel this leasing program and instead to use these resources to speed the transition to a clean energy economy.

- Earthjustice is opposed to opening any new planning areas off Alaska should MMS and the Secretary of the Interior move forward with this program.

- The Environmental Defense Center urges MMS that a new program is premature and to exclude California from future planning.

- Gulf Coast Environmental Defense, a non-profit public interest environmental education organization in Florida, is opposed to the expansion of a 5-year program within the congressional moratoria areas prior to the expiration of the moratoria. They also oppose to the distribution of royalties, air gun "inventories,", and gas-only leasing. They are concerned about green house gas emissions, Endangered Species Act matters, ecological characterization, buffer zone and closed areas, zero discharge requirements, oil spill preparedness, growing scandals over MMS functions, and Eastern Gulf of Mexico concerns.

- The Heritage Foundation urges MMS to see the opportunities in the OCS and plan on expanded development.

- The James Madison Institute supports expeditious development.

- The John Locke Foundation urges MMS to open up the OCS on behalf of North Carolinians.

- The July 4th Foundation supports expeditious development.

- The Ocean Conservancy, a national non-profit organization with more than 126,700 members and volunteers, and Oceana, an international non-profit with more than 300,000 supporters worldwide, jointly commented in opposition to the proposal to develop a new 5-year program. Their position is that this initiative is not a real solution to the country's energy problems, and because of the risks to the environment especially in the Arctic. The MMS must consider lack of data, climate change, human communities, global weather patterns, and the synergistic effects on the Arctic environment. If there is a new 5-year initiative, MMS should not expand the program in Alaska until completion of a comprehensive scientific assessment. The congressional moratorium should not be changed.

- Reef Relief offers specific concerns related to the congressional moratoria that have protected Florida since 1981. Any oil and gas development in the Eastern Gulf of Mexico has the potential to jeopardize the Florida Keys coral reef ecosystem. Reef Relief enclosed a petition dated July 2008, with 426 signatures sent to the Governor of Florida to opposing drilling.

- The Southeast Energy Alliance (SEA) states that it is important for the Federal Government to allow access to all offshore oil and natural gas supplies as soon as all necessary environmental protections have been put in place. The SEA supports MMS planning for a new 5-year program and recommends an expanded program, lifting the moratoria, and providing states with a fair share of revenues derived from production off their coasts.

- The World Wildlife Fund, an international conservation organization representing 1.2 million members, is opposed to MMS planning a new 5-year program for the following reasons: a new plan does not resolve energy costs problems; drilling in Alaska jeopardizes important resources and places undue risks on communities; Arctic areas should be off-limits; the Bering Sea and the North Aleutian Basin should be off-limits; the Alaska Peninsula should be off limits; MMS must address risks before leasing activity proceeds; and climate change is a concern. Additional concerns include but are not limited to, polar bears, lack of data, oil spill response, cumulative impacts, invasive species, and health impact assessments.

Oil and Gas Companies and Associations

Forty-seven energy companies and oil and gas trade groups and membership organizations submitted comments. Strong support for the MMS initiative to start a new 5-year program was common; along with generalized support for opening all areas of the domestic OCS, opening moratoria areas, and utilizing new technologies to advance domestic exploration and production. Many comments noted that, in the absence of real seismic data and analysis, ranking areas in order of preference is difficult. The following comprise the most common comments received.

The commenting companies were in favor of expanding exploration and leasing of all areas of the OCS, including those areas where production was prohibited at the time of the comment period. They consistently cited the benefits that increased production and development

activity would provide for consumers as the main reason to open more OCS acreage to leasing.

Several companies and trade associations commented that the Secretary should streamline the planning process and that it may be beneficial to break up some of the larger planning areas off the Atlantic coast.

Many companies urged MMS to complete all needed advance seismic analyses OCS-wide, so leasing in restricted areas can begin as soon as possible should those areas become available.

- The American Petroleum Institute and the Natural Gas Supply Association advocated that MMS provide as expansive a leasing program as possible. Streamlining the 5-year process was requested.

- The Alaska Oil and Gas Association commented in support of MMS planning in Alaska, in moratoria areas, and in every possible area.

- The American Gas Association advocated for a new 5-year plan for the OCS to replace the current plan and to place as much acreage as possible within the plan. This position is based on soaring natural gas prices and our Nation's energy needs.

- The American Public Gas Association (APGA) is the national association for publicly owned natural gas distribution systems. Of the approximately 1,000 public gas systems that operate in 36 states, almost 700 are APGA members. The APGA strongly supports the MMS proposed 5-year plan and urges MMS to expanded leasing.

- The BP American Production Company supports the activities provided in the Request for Comments and provided extensive detailed comments relating to policy, planning, operations, and national energy goals.

- Chevron North America supports the MMS plan and offered extensive comments on the 5-year leasing program, with particular detail about the planning process.

- Cobalt International Energy, a private oil and gas exploration and production company focused on the deepwater Gulf, stated that the challenges today are drastically different than they were a few years ago, and therefore a new 5-year plan is needed.

- ConocoPhillips strongly supports MMS efforts to begin a new 5-year program to succeed the current program. By initiating this program approximately 2 years ahead of schedule, the current Administration can provide the next Administration with a head-start on expanding energy production from OCS resources. Going to all 50 states for comment, instead of the coastal states exclusively, was favorable.

- ExxonMobil detailed reasons to start a 5-year in the same manner as the Request for Comments sets forth the rationale, and urged MMS to develop all areas in the OCS. They strongly support the timing of a new program.

- The Independent Petroleum Association of America supports MMS planning to open all areas of the OCS. The Association provided specific recommendations related to the Atlantic Coast, namely that there should be more planning areas.

- The National Ocean Industries Association's (NOIA) comment represented seven industry membership organizations (NOIA, American Exploration and Production Council, International Association of Geophysical Contractors, International Association of Drilling Contractors, and US Oil and Gas Association). This comment strongly encouraged MMS to start a new program and to analyze all of the planning areas in the draft proposed program for 2010-2015. They urged MMS to expand the program to include all OCS areas. Where areawide leasing is not possible, "focused leasing" is recommended. The comment represented views that streamlining the process is beneficial, the President should have the authority to conduct emergency leasing, and there should be revenue sharing with States.

- The Offshore Marine Service Association supported of the new 5-year planning initiative because it increases the national security, improves jobs, and increases America's shoreline infrastructure.

- Shell Oil Company views the OCS program as critical to a comprehensive national energy policy. The moratoria should be lifted and all areas should be included in new planning. Budgets of the MMS and other permitting agencies should be substantially increased. The OCSLA process should be streamlined and the redundant steps should be eliminated. New scientific information would be useful to government decision makers. There is a relatively long exploration and development process needed to bring new supplies into production.

- Statoil-Hydro supports the MMS initiative.

- Walter Oil and Gas Corporation supports the plan and encourages MMS to expand access to all other OCS areas including the Eastern Gulf of Mexico, and Atlantic and Pacific areas, including withdrawn areas.

- Generalized letters of support were submitted by the following oil and gas companies and associations: ADA Resources; Anadarko; Alpar Energy, Armstrong Gas Company; Cathlind Energy; Clements Exploration; Goodrich Petroleum Corporation; Great Oak Energy, Inc.; Henigman Oil Company.; Energy XXI; Francis W. King; Devon, Key Energy; Laclede Gas Company.; Laramie Energy II; Marks Oil; M&M Exploration, Inc.; Noble; New Prospect; Ozark Energy; Pathfinder; Petroleum Land Service; Pikeville Natural Gas; Quality Seismic Services; Starks Energy Economics; Triad Energy Corporation; Thunder Creek Gas Services; TGS, and others.

Non-Energy Industry Associations and Business Groups

Sixty-three non-energy businesses and business membership organizations sent comments to MMS in response to the Request for Comments. From all across the country, agriculture, transportation, retail sales, building, and manufacturing were among the industries represented. This category of commenters is the most broad-based, in terms of representing both coastal and non-coastal national concerns.

Common elements of non-energy business concerns included the burden on domestic businesses of the high cost of fuel and the need for a comprehensive energy plan that develops domestic resources. They also urged to the utilization of modern technologies to protect the environment while developing domestic resources.

Many commenters used form letters to submit generalized support for the MMS initiative to begin planning a new 5-year program. A list of the businesses that sent generalized support for expanded OCS development includes: A1 Production, Inc., Alabama State Port Authority; American Trucking Association; Arrow Adhesives, Chemical Industry Council of Illinois; Chickasaw Distributors; Strongwell Corporation, North Star Terminal & Stevedore Company., Haas Farms, Covington Electric Cooperative, Global Industries, FMC Technologies, Signa Engineering Corporation, Pipe Organs, Fort Worth & Western Railroad, Industrial Resources Group, and National Chicken Council.

- Alaska Independent Fisherman's Marketing Association, the largest salmon fishermen's association, urged MMS to remove Bristol Bay from the current 5-year OCS program, and not to include it in a potential leasing program.

- The U.S. Chamber of Commerce, the largest business federation, noted that American attitudes are changing, access to fuels is in the best interests of the Nation, and people appreciate that and want it to happen.

- Associated Industries of Florida and its 10,000 members strongly support the creation of a new 5-year plan, stating that responsible offshore drilling in the Eastern Gulf of Mexico would benefit the Nation and Florida.

- The Resource Development Council, an Alaskan-based non-profit business association, supports expanded development. The new 5-year proposal and congressional action to lift restrictions are sensible steps toward the development of a comprehensive national energy plan.

- The American Chemistry Council, representing 140 chemical manufacturing companies, views initiating a new 5-year program as necessary to address national energy needs as required by Section 18 of the OCS Lands Act. Energy costs are a key factor in chemical industry competitiveness, and a new 5-year plan is an essential first step in creating a robust national energy policy and securing our energy future.

- The Steel Manufacturers Association commented on behalf of 34 member companies in support a new 5-year plan.

- The Mendocino Sea Vegetable Company, a hand-harvested, gourmet edible wild sea-weed producer off the Mendocino Coast, opposes the program. Drilling would pollute the West Coast wild seaweed community, a valuable resource to the ecosystem and endanger the livelihoods of the wild-seaweed hand-harvesters.

- The North Carolina Farm Bureau represents thousands of farm families in all 100 counties of the state and supports access to all offshore oil and natural gas supplies.

Especially noted is the Southeast Atlantic which will provide a much needed economic boost to North Carolina's economy.

- The Western Business Round Table is comprised of a coalition of CEO's and senior executives and has long advocated getting serious about implementation of a thoughtful, balanced and long-term energy policy. This comment urges MMS to continue to give states a strong role regarding resources, notes that this new 5- Year program is a good phase one, and encourages MMS to expand the program.

- The Small Business and Entrepreneurship Council supports MMS planning because energy costs are killing entrepreneurship.

- The Farm Bureau of Colorado supports MMS in new 5-year planning.

- The National Association of Manufacturers urges MMS to expand the program.

General Public

- More than 152,000 comments from private citizens were received regarding the next 5-year program for oil and gas leasing on the OCS. Nearly all the respondents in favor of increased OCS development cited the effect of energy prices as the reason change is necessary. Among those opposed, the reason most often cited was concern for negative impacts on the environment.

  A majority of the commenters, about 53 percent, supported a 5-year plan that offers increased acreage for offshore oil and gas production and development. Other comments either requested that MMS maintain the current OCS leasing footprint, or reject development in favor of alternative energy resource development. Another group of commenters expressed a desire for MMS to pursue traditional and alternative sources of energy.

Appendix B

A Sensitivity Analysis of Timing Assumptions in Estimating Net Social Value

Introduction

Part V.B of this document presents a relative ranking of planning areas based on Net Social Value (NSV), which is calculated by subtracting Net Environmental & Social Costs from Net Economic Value (NEV). The NSV analysis conducted for the Draft Proposed Program (DPP) is conceptually similar to the Net Benefits analysis conducted later for the Proposed Program (PP) and for the Proposed Final Program (PFP). However, the measures of NSV in the DPP analysis

- are based on total estimated unleased resources in each of the 26 planning areas, rather than on anticipated the proportions of those resources anticipated to be leased and producedtion because, at the time of the DPP analysis, there is no from the tentative program decision from which to infer anticipated productionapplicable at the time;
- it does not include consumer surplus benefits; and
- assume all of a planning area's unleased resources are leased simultaneously, rather than in stages, in order to avoid premature judgments regarding the timing of lease salesit uses different scenario timing assumptions.

Timing and decisions on lease sales will be included in subsequent program documents based on a more disaggregated, sale-specific type of analysis.

The NSV analysis is one of various section 18 (43 U.S.C. 1344) analyses designed to

- to present the Secretary with a quantitative summary of the relative "economic, social, and environmental values" of various OCS resources, as well as "the potential impact of oil and gas exploration on the other values of the [OCS] and the marine, coastal, and human environments," and
- to provide a quantitative, summary perspective for the balancing of "the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone."

Other perspectives are provided in quantitative and qualitative form, especially in the extensive 5-year environmental impact statement (EIS).

At the DPP stage, the NSV analysis provides the Secretary with estimates of NEV and Net Environmental & Social Costs associated with the ultimate recovery of *all* economically recoverable OCS oil and natural gas resources expected to be unleased in each of the 26 OCS planning areas as of July 2010, when the 5-year program for 2010-2015 is proposed to take effect. The purpose of such an analysis at this point in the process of creating a new 5-year program is to provide the Secretary with a concise, quantitative summary of the relative costs and benefits of exploring for and producing oil and gas resources in each planning area, in preparation for the Secretary's initial decision on size, timing, and location of future lease

sales. This summary is presented in the form of a ranking of planning areas, based on estimated resources (Table 5) and on NSV (Table 6).

The focus of this analysis is the methodology for comparing planning area values without presupposing a decision. (See discussion under "Timing …," below.) This appendix presents a sensitivity analysis in which the results are calculated using two sets of timing assumptions.

After the DPP analyses and subsequent decision are published and comments are considered, a new analysis will be undertaken. The next analysis examines the net benefits of anticipated production from those areas proposed for leasing, based on the specifics of size, timing, and location in the proposal, which is the DPP decision, and in any alternatives to be considered for the next decision on the PP. The results of numerous other qualitative and quantitative analyses are considered and published in this document; in the PP decision document, which includes the PP analyses, decision options, and decisions; and in the draft EIS, which will be published concurrently with the PP document.

The Net Social Value Analysis

As described in part V.C of the text, there are two basic components of the NSV calculations, the NEV and the Net Environmental & Social Costs.

The NSV is consistent with the traditional presentation of a cost-benefit analysis from a national perspective, presented in terms of benefits, costs, and net benefits to the Nation. For the DPP analyses, the purpose of the NSV analysis is to provide a relative ranking of the planning areas to assist in the initial DPP decision as to which areas should be offered for lease and how often. For subsequent analyses, NSV is based on production anticipated to result from the previous Secretarial decision, as well as from each EIS alternative.

Net Economic Value

The NEV is the discounted market value of produced oil and gas, minus the discounted costs of exploration, development, and transportation. After private costs are deducted, NEV is distributed to the government as cash bonuses, rentals, royalties, and taxes, and to the lessees and their shareholders as post-tax profits. The NEV is calculated using discounted cash flow analysis and is reported in 2010 dollars.

Net Environmental & and Social Costs

Net Environmental & and Social Costs are "external costs" to society (spillover effects), environmental and social costs that society bears from exploring, developing, producing, and transporting the oil and gas that are not captured in NEV, less the equivalent costs avoided by meeting demand with OCS resources instead of from other sources, including increased imports and increased domestic onshore production. The OCS-related costs include such costs as damages from oil spills and air pollution from operations. In the absence of new OCS production, the risk of imported-oil spills, tanker emissions, and air pollution from onshore oil and gas operations and tankers would increase; so these avoided costs are subtracted from costs associated with 5-year program activities.

Net Social Value

The NSV is a simple, arithmetic calculation: NSV equals NEV minus Net Environmental and Social Costs.

The basic equations follow.

Available Undiscovered, Economically Recoverable Resources
x Assumed Price
= Gross Revenue

Gross Revenue
- Private Costs (not including transfers to Government)
= Net Economic Value (NEV), which includes profit and payments to Government

NEV
- Environmental and Social Costs of 5-year OCS oil and gas activities
+ Environmental and Social Costs avoided by producing from OCS
= Net Social Value (NSV)

The experiences of the last few decades have shown that unanticipated events or economic changes can cause oil and gas price paths to deviate considerably from even the most respected forecasts, so MMS uses the level-price-scenario approach to allow decision makers to more easily envision the effects on NEV of major swings in price, either upward or downward. During the 18 months preceding the completion of this analysis, oil prices rose and fell by approximately $80 per barrel, indicating a need to present decision makers with a wide range of price possibilities. In addition, because the recent precipitous price decline was due largely to a serious economic crisis that suddenly constrained demand, prices could easily begin another steady rise as global economies (and thus demand) recover during the new 5-year lease sale schedule. The changing balance between supply and demand would be exacerbated by decisions to curtail or delay high-cost investments (to increase supply) that were planned as prices reached and surpassed historic highs.

While it is relatively easy to remove lease sales from the 5-year schedule if prices and industry interest fall, this is not true if soaring prices indicate a need for a more aggressive schedule. The Secretary does not have legal authority to add lease sales to a 5-year schedule once it is in place, regardless of changing conditions. Therefore, the current analysis includes low and high price scenarios with a $100-per-barrel range as well as a mid-point price scenario that is considerably higher than market prices at the time of the analysis. Estimates of NSV are considered for each of three level, inflation-adjusted price scenarios: $60 per barrel of oil (bbl) and $ 6.41 per thousand cubic feet of natural gas (mcf), $110/bbl and $11.74/mcf., and $160/bbl oil and $17.08/mcf for the life of the program.

Timing Assumptions for the Sensitivity Analysis

As mentioned in part V.C and earlier in the appendix, the DPP analysis differs from the equivalent analyses performed at later stages of the 5-year program development process. For this DPP analysis, NSV was calculated through a scenario in which all estimated unleased resources are leased in 2010, the initial year of the new program, and the resources are discovered and produced at an orderly and expeditious rate typical of each planning area, assuming no special constraints that might result from a Secretarial decision on size, timing, and location of lease sales. This scenario avoids a circuitous logic by which the calculation of resource values presumes the size, timing, and location decisions that are to be based, in part, on those same resource value calculations. The similar methodology that was used by the Department of the Interior in the DPP analysis for the 1982-1987 program was challenged in *California v. Watt, 712 F.2d 584 (D.C. Cir., 1983)* ("*California II*") and upheld by the Court of Appeals for the DC Circuit in its opinion issued in 1983.

> The Secretary in his initial calculation determined net economic value as if all oil in all areas would be leased and developed in the first year of the program. This was reasonable because the Secretary was trying to calculate the *relative* ranking of each of the planning areas, in addition to determining whether each of the planning areas should be leased. Petitioner would have the Secretary initially determine the timing of each lease sale in order to determine when the oil would be developed and then calculate the costs and benefits of leasing at that time in order to determine whether and when each planning area should be leased. Petitioners in effect claim that the measure used to determine the timing and location of lease sales must itself factor into that conclusion the timing of the lease sales. This is an illogical proposition. The Secretary's actions were more reasonable. After calculating the costs and benefits of leasing in each area under the assumption noted above, the Secretary computed the cost of delay for each planning area. Therefore, the Secretary evaluated each area on a relative basis initially and then considered the cost of delay for each planning area. This was entirely permissible. (Id., at 601)

The current approach used in the DPP similarly avoids the bias associated with taking into account the proposed timing of sales in doing initial ranking at the DPP stage. However, unlike that used at the time of this court decision, it does not presume all production occurs in the first year. This is consistent with the Court's opinion in *California II* that it was reasonable to use a methodology that avoided that circuitous logic for the ranking of planning areas required by the Act at this stage of the planning process.

This appendix presents a sensitivity analysis in which the results are calculated using two sets of timing assumptions. The current methodology used in this DPP is less restrictive than estimating values "as if all oil in all areas would be leased and developed in the first year of the program." An alternate approach—stricter than that described by the court—would be to estimate the values as if all resources were leased, discovered, developed, and produced in the first year of the program. Tables 1-3 compare the estimates calculated with a seven percent, real discount rate and with a discount rate set equal to the rate of inflation. This effectively is a real discount rate of zero percent. The latter is equivalent to estimating the values as if all resources were leased, discovered, developed, and produced in the first year of the program. In

both cases, the values were estimated as if all resources were leased in the first year of the program, so the difference is that the approach we have chosen acknowledges the normal delays in exploration, development, and production for each planning area. This injects more realism into the hypothetical set of calculations necessary to remove any presumption of leasing decisions.

Table 1: Alternative Method Values by Planning Area (Low Case)

(Available as of July 2010)

	Low Price Scenario Produced over time				Low Price Scenario Produced all at Once			
Planning Area	**Net Economic Value $MM**	**Net Env'l. & Social Cost $MM**	**Net Social Value $MM**	**Rank**	**Net Economic Value $MM**	**Net Env'l. & Social Cost $MM**	**Net Social Value $MM**	**Rank**
Central Gulf of Mexico	235263	1434	233829	1	836262	2842	833420	1
Western Gulf of Mexico	81212	1096	80116	2	321508	2142	319366	2
Southern California	58729	602	58127	3	236431	1204	235227	3
Eastern Gulf of Mexico	50279	148	50131	4	181818	299	181519	4
Central California	30514	234	30280	5	124688	466	124222	5
Northern California	22607	126	22481	6	94647	256	94391	6
North Atlantic	21270	167	21103	7	92484	332	92152	7
Beaufort Sea	17012	86	16926	8	54292	160	54132	9
Mid-Atlantic	14540	116	14424	9	64912	232	64680	8
Cook Inlet	11511	49	11462	10	22129	97	22032	10
Washington-Oregon	4928	53	4875	11	21061	107	20954	11
North Aleutian	4603	26	4577	12	19797	48	19749	13
South Atlantic	4451	29	4422	13	20176	58	20118	12
Gulf of Alaska	2806	21	2785	14	10370	41	10329	14
Chukchi Sea	939	6	933	15	2804	12	2792	15
Straits of Florida	0	1	-1	16	160	3	157	16

Notes

BBO: billion barrels oil. Tcf: trillion cubic feet gas. BBOE: billion barrels oil equivalent, $MM: million dollars (2010$)

Price scenario is level $60/barrel oil and $6.41/thousand cubic feet gas in 2010 dollars.

Resources are unleased and undiscovered UERR.

In "Produced over Time" columns, values are discounted sums (at "real" 7%) assuming all resources leased in 2010 and discovered, developed, and produced over time periods typical for the various planning areas.

In "Produced all at Once" columns, values are undiscounted sums, effectively assuming exploration, development, and production in 2010.

Table 2: Alternative Method Values by Planning Area (Mid-Price Case)

(Available as of July 2010)

Planning Area	Mid-Price Scenario Produced over time				Mid-Price Scenario Produced all at Once			
	Net Economic Value $MM	Net Env'l. & Social Cost $MM	Net Social Value $MM	Rank	Net Economic Value $MM	Net Env'l. & Social Cost $MM	Net Social Value $MM	Rank
Central Gulf of Mexico	597490	1677	595813	1	2034093	3324	2030769	1
Western Gulf of Mexico	228423	1236	227187	2	825664	2416	823248	2
Eastern Gulf of Mexico	132926	190	132736	3	466630	385	466245	4
Southern California	131327	727	130600	4	518520	1454	517066	3
Beaufort Sea	64460	194	64266	5	243018	362	242656	6
Central California	60498	253	60245	6	244955	503	244452	5
North Atlantic	59061	211	58850	7	238096	421	237675	7
Northern California	49086	149	48937	8	202793	302	202491	8
Mid-Atlantic	41932	161	41771	9	178354	321	178033	9
Chukchi Sea	32794	100	32694	10	119625	185	119440	10
Cook Inlet	27528	58	27470	11	84898	114	84784	11
North Aleutian	16483	42	16441	12	71965	80	71885	12
South Atlantic	12088	38	12050	13	52150	77	52073	13
Washington-Oregon	11358	65	11293	14	47907	131	47776	14
Gulf of Alaska	10319	36	10283	15	39201	114	39087	15
Straits of Florida	38	2	36	16	737	3	734	16

Notes

BBO: billion barrels oil. Tcf: trillion cubic feet gas. BBOE: billion barrels oil equivalent, $MM: million dollars (2010$)

Price scenario is level $110/barrel oil and $11.74/thousand cubic feet gas in 2010 dollars.

Resources are unleased and undiscovered UERR.

In "Produced over Time" columns, values are discounted sums (at "real" 7%) assuming all resources leased in 2010 and discovered, developed, and produced over time periods typical for the various planning areas.

In "Produced all at Once" columns, values are undiscounted sums, effectively assuming exploration, development, And production in 2010.

Table 3: Alternative Method Values by Planning Area (High Case)

(Available as of July 2010)

Planning Area	High Price Scenario Produced over time				High Price Scenario Produced all at Once			
	Net Economic Value $MM	Net Env'l. & Social Cost $MM	Net Social Value $MM	Rank	Net Economic Value $MM	Net Env'l. & Social Cost $MM	Net Social Value $MM	Rank
Central Gulf of Mexico	1003182	1760	1001422	1	3267228	3490	3263738	1
Western Gulf of Mexico	383372	1280	382092	2	1328399	2501	1325898	2
Eastern Gulf of Mexico	216152	207	215945	3	744812	418	744394	4
Southern California	205188	783	204405	4	807247	1561	805686	3
Beaufort Sea	121336	236	121100	5	475761	441	475319	5
North Atlantic	101563	248	101315	6	408332	494	407838	6
Central California	90574	272	90302	7	367860	539	367321	7
Chukchi Sea	85211	175	85036	8	354918	326	354592	8
Northern California	73941	166	73775	9	308831	335	308496	9
Mid-Atlantic	73171	187	72984	10	305269	373	304896	10
Cook Inlet	44359	187	44172	11	135536	130	135406	11
North Aleutian	30092	72	30020	12	131749	90	131659	12
South Atlantic	21916	47	21869	13	91104	86	91018	13
Gulf of Alaska	18681	42	18639	14	71885	80	71805	15
Washington-Oregon	17389	66	17323	15	73503	146	73357	14
Straits of Florida	256	2	254	16	2618	3	2615	16

Notes

BBO: billion barrels oil. Tcf: trillion cubic feet gas. BBOE: billion barrels oil equivalent, $MM: million dollars (2010$)

Price scenario is level $160/barrel oil and $17.08/thousand cubic feet gas in 2010 dollars.

Resources are unleased and undiscovered UERR.

In "Produced over Time" columns, values are discounted sums (at "real" 7%) assuming all resources leased in 2010 and discovered, developed, and produced over time periods typical for the various planning areas.

In "Produced all at Once" columns, values are undiscounted sums, effectively assuming exploration, development, and production in 2010.

The primary reason for changes in planning area rankings in these tables appears to be the price-level assumption. The planning areas most affected by this are the two most prospective Alaska OCS planning areas, the Beaufort Sea and the Chukchi Sea. The severity of conditions, lack of infrastructure, and the remoteness of the areas, especially in the case of the Chukchi Sea, make the economic value of the resources there very sensitive to the price they can command in the market.

In contrast, the timing assumption (effectively, discounting or lack thereof), changes the ranking of a few planning areas by one position here and there but, overall, would not seem to warrant reconsideration of a decision on size, timing, or location of leasing for any area. For example, the relative NSV rankings for the Eastern Gulf of Mexico and Southern California

change with the timing assumption, but both remain well below the NSV for the Western Gulf of Mexico and well above the NSV for planning areas below them in the ranking.

Therefore, the conclusion of this sensitivity analysis is that the current DPP methodology regarding the timing of exploration, development, and production of resources is consistent with the principles laid out in *California II*, and that the timing assumptions do not make a substantive difference in the relative ranking of planning areas by NSV. Given this conclusion, MMS prefers to use the more realistic timing assumptions described in part V.C and in this appendix.

The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

The Minerals Management Service Mission

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Energy and Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS **Minerals Revenue Management** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.