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The Changing Offshore Regulatory Environment

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June 9, 2016



Tahiti Spar

Agenda

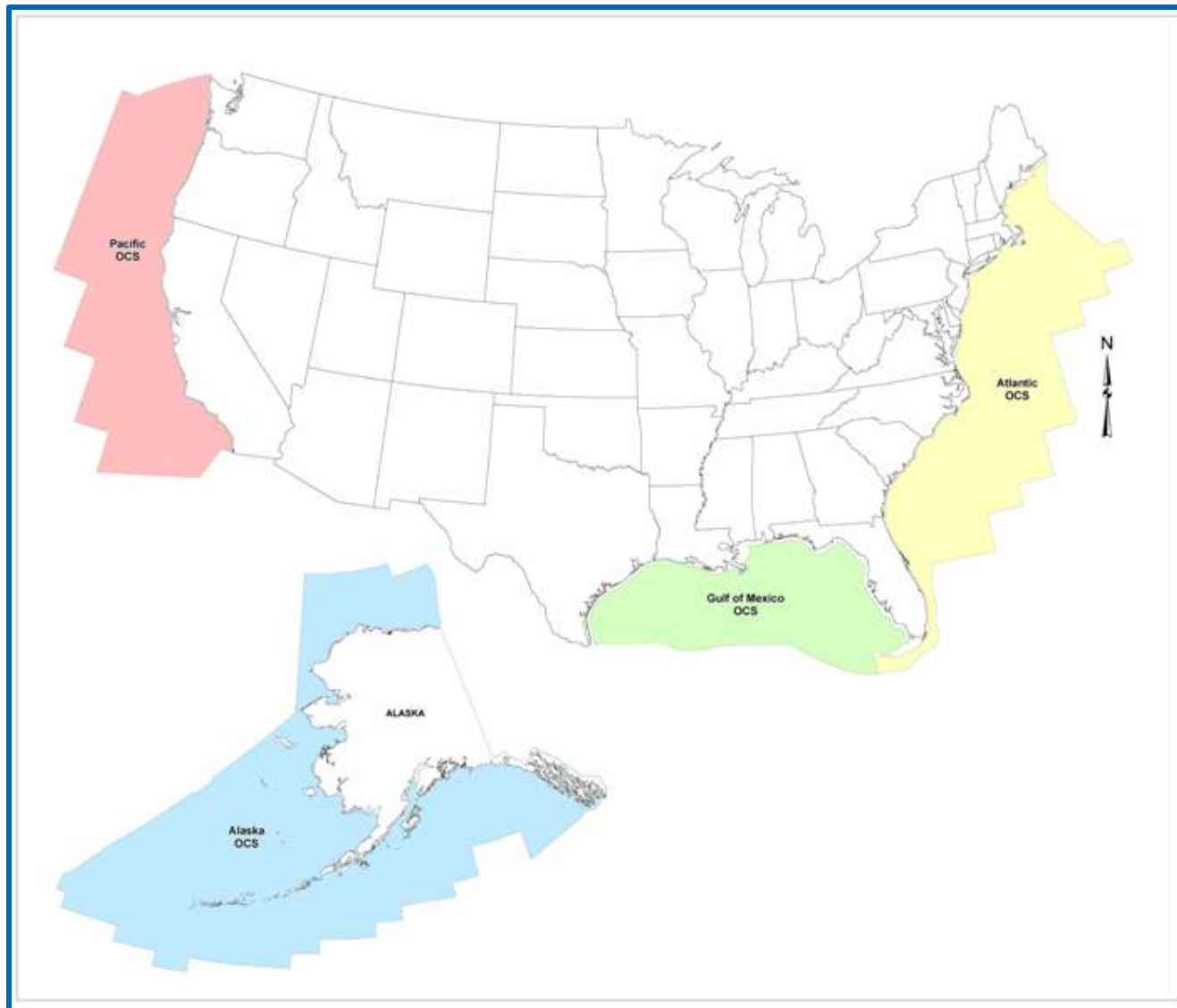
- Laws & Existing Regulations
- Permitting a Well
- Government Focus
- New Regulations & NTLs
- Ocean Governance
- Marine Protected Areas
- Other Ocean Stakeholders
- The New Normal
- Questions



Laws and Existing Regulations

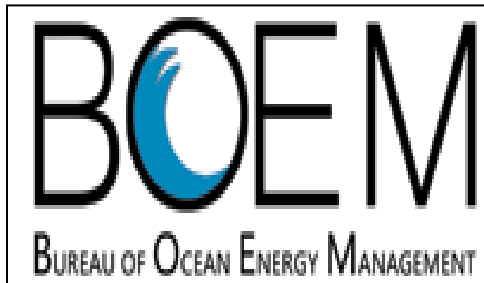


OCS Regions



Federal Agency Regulatory Responsibilities

- All leasing and operations on Federal offshore properties are governed by laws and regulations that ensure safe operations and the preservation of the environment while balancing the Nation's needs for energy development.
- Certain federal agencies enforce compliance with applicable regulations and periodically update the regulations to reflect advancements in technology, new information, and change in administrative policy.



Key Offshore Laws

- **Outer Continental Lands Act** of 1953 is the foundation law for offshore exploration and development.
- **The Oil Pollution Act** of 1990 (OPA 90) gave the Secretary of the Interior authority over offshore facilities and associated pipelines, with the exception of deepwater ports.
- **National Environmental Policy Act** of 1970 (NEPA) - NEPA requires a detailed environmental review be conducted before any major or controversial Federal action.
- **Clean Air Act** of 1970 (CAA) - The CAA regulates the emission of air pollutants from industrial activities.
- **Coastal Zone Management Act** of 1972 (CZMA) - The CZMA requires State review of Federal actions that could affect the land and water use of the State's coastal zone.
- **Federal Water Pollution Control Act** of 1977 (Clean Water Act) regulates discharges into the oceans.
- **Federal Oil and Gas Royalty Management Act** of 1982 (FOGRAMA) - The FOGRAMA requires that oil and gas facilities be built in a way that protects the environment and conserves Federal resources.
- **Marine Mammals Protection Act** of 1972 (MMPA) - The MMPA provides for the protection and conservation of all marine mammals (each individual animal) and their habitats.
- **Endangered Species Act** of 1973 (ESA) - The ESA requires a permit for the taking of any protected species. It also requires that all Federal actions not significantly impair or jeopardize any protected species or their habitats.

Other Key Laws



- Ports and Waterways Safety Act
- National Historic Preservation Act
- Natural Gas Policy Act
- Marine Pollution Research and Control Act
- Occupational Safety and Health Act
- National Fishing Enhancement Act of 1984
- Rivers and Harbors Act of 1899
- Coastal Barrier Resources Act of 1982
- National Ocean Pollution Act of 1978
- Gulf of Mexico Energy Security Act of 2006

Other Government Departments & Agencies Involved in Regulating the OCS

- National Oceanic and Atmospheric Administration
- U.S. Coast Guard
- Department of Defense
- Corps of Engineers
- U.S. Air Force
- Department of Transportation
- Commerce Department
- U.S. Navy
- U.S. Fish and Wildlife Service
- National Park Service
- Environmental Protection Agency
- State Department
- Department of Energy
- Treasury Department
- Federal Energy Regulatory Commission
- U.S. Geological Survey
- Department of Homeland Security
- Marine Mammal Commission



Key Offshore Terms, Conditions & Regulations

- Oil and Gas Leases
- Code of Federal Regulations
 - 30 CFR 250 & 550
 - 30 CFR 256 & 556
- Notice to Lessees and Operators
- Federal Register Notices
 - Proposed Rulemaking
 - New Laws



Permitting a Well



Pre-drilling Administrative Requirements

- Designation of Operator
- Oil Spill Financial Responsibility
- General Lease Bond
 - \$50,000 – \$3,000,000
- Exploration Plan Bond
 - \$200,000 - \$1,000,000
- Supplemental Bond
- Oil Spill Response Plan
- Containment Demonstration for Wells in >1000' of water with Subsea BOP

Securing Co-Owner Approvals and Permitting a Well

- Negotiate Joint Venture
- Execute Offshore Operating Agreement
- Operator Secures Internal Approvals
- Submit Well Proposal
- Non-Operators Secure Internal Approvals/Elect to Participate
- Conduct Operations

Required Permits/Approvals/Notifications *	Agency
Designation of Operator	BOEM
Approval for Oil Spill Financial Responsibility (OSFR)	BOEM
Oil Spill Response Plan	BOEM
Military Warning and Water Test Areas	DOD
NPDES Permit Notice of Intent (NOI)	EPA
Emergency Evacuation Plan (EEP) - DDS	USCG
Written Notice of Ancillary Activity - G&G Exploration Activity or Development G&G Activity	BOEM
Ancillary Activity - Follow-up G&G Reports	BOEM
Written Notice of Ancillary Activity - Other Survey Activity or Study	BOEM
Initial Exploration Plan (Initial EP)	BOEM
Voluntary Unitization Agreement Application	BSEE
Approval for well or bottomhole location within 500 feet of lease line	BSEE
Application for Permit to Drill (APD)	BSEE
Application for Permit to Modify (APM)	BSEE
Rig Movement Report	BSEE & USCG
ROV Survey Report	BSEE
End of Operations Report (EOR)	BSEE

(* Coastal Zone Management Act – State Consistency Concurrence)

Source: Chevron

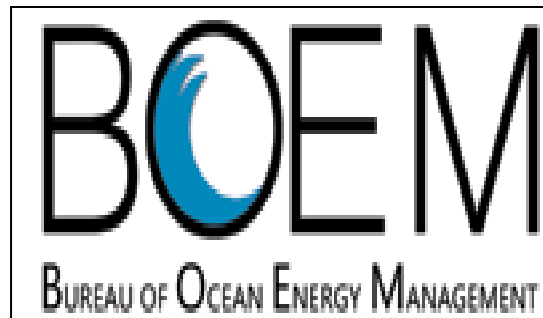
Government Focus



Photo courtesy of Transocean

BOEM Current Themes

1. Continue the foundation of what they do best – oil and gas leasing in the Gulf of Mexico and developing and implementing a new 5 Year Leasing Program.
2. Focus on the environmental impact oil and gas operations has on the OCS. This includes updating the existing air regulations, understanding mid/downstream emissions, the proper use of categorical exclusions under NEPA and the implementation of new Arctic regulations.
3. Focus on improving BOEM processes. This includes the timely release of bonds when they are no longer required and requiring supplemental financial security only when needed.



BSEE Current Focus Areas



1. The Decommissioning Expenditure Cost Reporting NTL
2. Finalizing the production safety rule (Subpart H) which includes defining best available and safety technology (BAST)
3. Crane safety
4. Helicopter safety
5. Operator bankruptcy (on a case by case basis)
6. Implementation of a new internal planning system to assist in transitioning to a new Administration
7. Rolling out a new BSEE website before the end of the summer (2016)
8. Optimizing data collection
9. Enhancing the Safety and Environmental Management Systems (SEMS)
10. Working on the Trans-boundary Agreement with Mexico
11. Hosting a series of Well Control Rule Workshops and issuing a series of NTLs to assist in implementing the new Rule

New Regulations and NTLs

New Final Rules – 2016 (to date)

- Decommissioning Expenditure Reporting Rule
- Well Control & BOP Rule (BSEE)
- Leasing Rule (BOEM)
 - Clarification on definition of “You” pending



Spring 2016 Regulatory Agenda

- BSEE final Production Safety Systems and Lifecycle Analysis rule - **May 2016**
- BSEE proposed rule that adds pipelines to Decommissioning Expenditure Reporting requirements - **June 2016**
- BSEE proposed Aviation (helicopter) rule – **Sept. 2016**
- BSEE proposed Cost Recovery Adjustment rule (31 cost recovery fees) – **Sept. 2016**
- BSEE final rule for the safe design and construction of Pedestal-mounted Cranes – **July 2016**
- BOEM/BSEE final Arctic drilling rule - **June 2016**
- BOEM proposed rule for Restructuring Bonding and Financial Assurance regulations - **Aug. 2016**
- BOEM final Air Quality Control, Reporting and Compliance Rule - **Dec. 2016**
- BOEM proposed rule on Oil Spill Financial Responsibility requirements - **May 2017**
- BOEM proposed rule establishing fee structure for project proponents to provide sustainable funding for facilitating timely and efficient project reviews - **June 2017**
- BOEM proposed Oil Spill Response requirement rule - **July 2017**
- BOEM/BSEE/ONRR – Civil Penalties Adjustment (Interim Final Rule) - **June 2016**
- NOAA proposed rule covering Marine Mammal Incidental Takings for Gulf of Mexico seismic activities - **Jan. 2017**
- NOAA proposed rule expanding Flower Garden Banks National Marine Sanctuary - **July 2016**
- EPA final Dispersant rule - **Aug. 2018**
- Coast Guard final rule establishing standards for MODUs and other vessels engaged in OCS activities with Dynamic Positioning Systems - **Dec. 2016**

Potential Rulemaking

- Climate Change Rule (BOEM)
- Fixing America's Surface Transportation Act (BOEM & BSEE)
- Offshore Hydraulic Fracturing (BSEE)



2016 OCS Related Oil & Gas NTLs

NTL Number	Effective Date	Title
2016-N01	January 7, 2016	Incident of Noncompliance Response System
2016-N02	February 2, 2016	Performance Measure for OCS Operators and Form BSEE-0131
2016-N03	April 27, 2016	Reporting Requirements for Decommissioning Expenditures on the OCS
2016-N04	October 1, 2015	Inspections Fees for Fiscal Year 2016
2016-G01	January 27, 2016	New Address for the Lafayette District Office

Pending Notice to Lessees

- Financial Assurance and Loss Prevention NTL
- Series of Well Control & BOP Rule NTLs (and Workshops)



New Pilot Program

BSEE's Risk-Based Inspection Program

On December 7, 2015, BSEE launched a pilot Risk-Based Inspection Program. The new program will complement its existing inspections and audits to increase the safety of offshore oil and gas operations.

The pilot program will use a systematic approach relying on both a quantitative model and qualitative performance and risk-related data. *It will be conducted in addition to BSEE's current inspections and audits.* These include inspections of production facilities, rigs and drilling operations under BSEE's National Inspection Program, as well as Safety and Environmental Management Systems (SEMS) audits.

BSEE will use performance and compliance data collected from the annual inspections and SEMS audits, as well as incident investigations and other reportable safety information to help identify offshore production facilities with a higher risk profile. In addition, factors such as the size of the facility and the production of hydrogen sulfide are considered in developing the risk profile.

Operators of facilities selected for participation in this pilot program are being notified. A Chevron operated facility was selected to participate in the first audit with a Shell operated facility chosen for the second pilot audit. Other operators will be notified in the near future to participate in the pilot that should be completed before year end. *A report on the audit results will be published in 2017.*

Ocean Governance

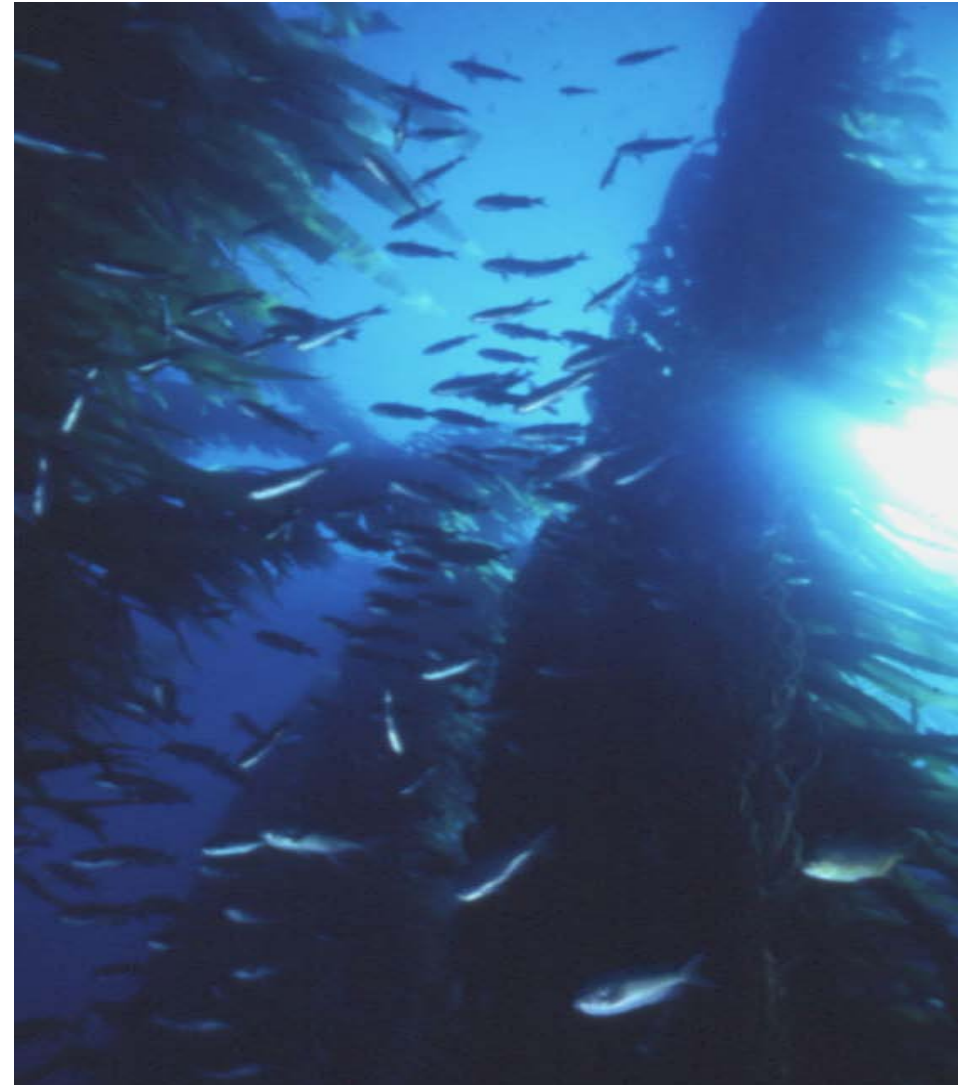


National Ocean Policy



National Ocean Policy

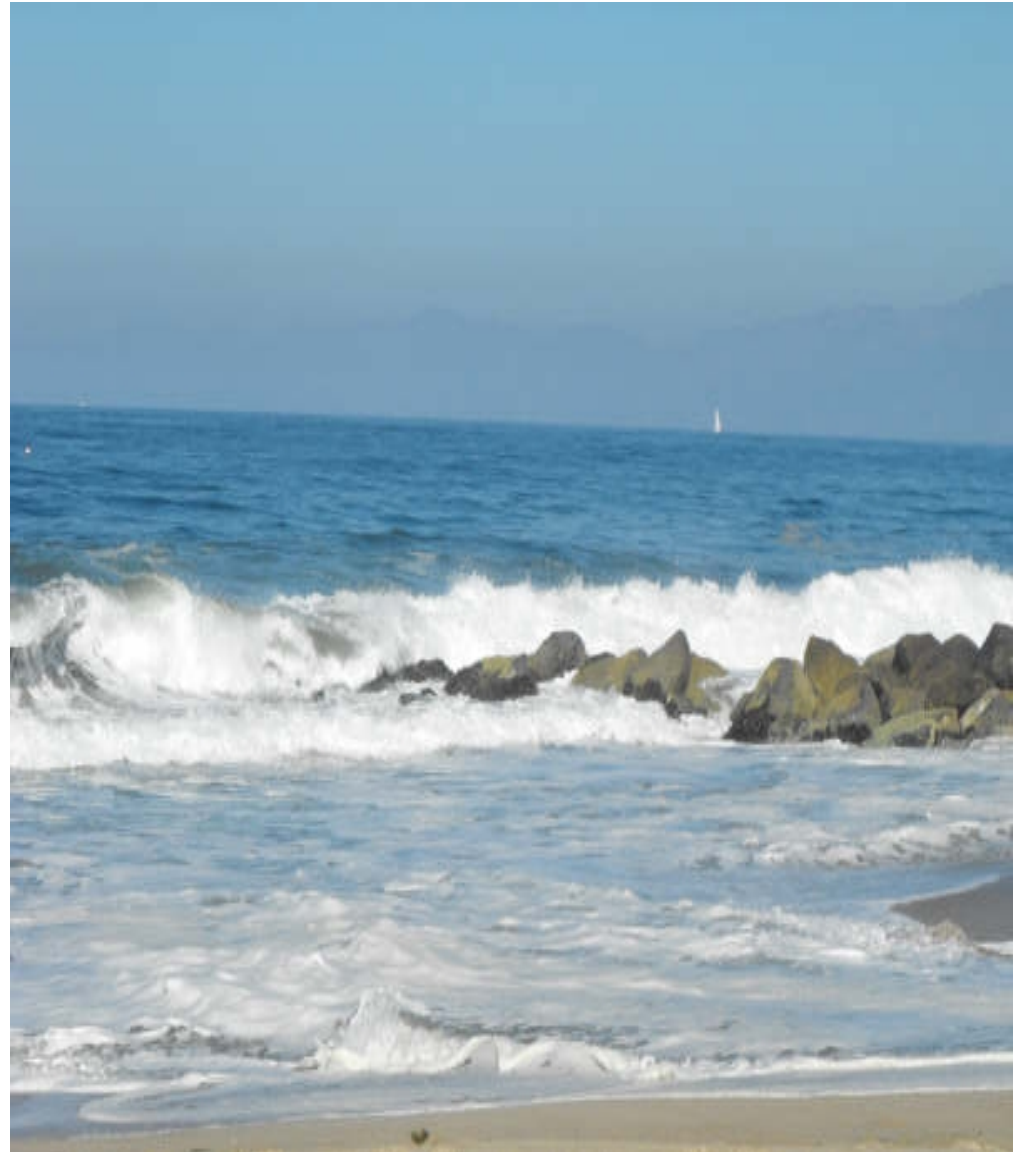
- *The National Ocean Policy sets forth a vision of an America whose stewardship ensures that the ocean, our coasts, and the Great Lakes are healthy and resilient, safe and productive, and understood and treasured so as to promote the well-being, prosperity, and security of present and future generations.*
- President Obama established the Interagency Ocean Policy Task Force (Task Force) and charged the Task Force with developing recommendations (National Ocean Policy Implementation Plan) to enhance our ability to maintain healthy, resilient, and sustainable ocean, coasts, and Great Lakes resources.
- Without creating any new regulations or authorities, the plan will ensure the many Federal agencies involved in ocean management work together to reduce duplication and red tape and use taxpayer dollars more efficiently.
- *On July 19, 2010, President Obama signed an Executive Order (E.O. 13547) establishing the National Ocean Policy* and adopting the Final Recommendations of the Task Force.



National Ocean Council

The National Ocean Policy created a *National Ocean Council consisting of 27 Federal agencies and departments*, providing a venue for agencies to work together cooperatively, share information, and streamline decision-making. Over a two year period the Council developed an Implementation Plan with extensive input from national, regional, and local stakeholders from all marine sectors; tribal, State, and local governments; the private sector, scientists, and the public.

The National Ocean Policy Implementation Plan translates the National Ocean Policy into on-the-ground actions that will help Americans all across the Nation sustain and enjoy our ocean resources. *The Plan identifies the specific actions Federal agencies will take to implement the Policy.* It is organized to describe how those actions will benefit the ocean economy, safety and security, and coastal and ocean resilience, by supporting local choices and providing foundational science and information.



National Ocean Policy Implementation Plan

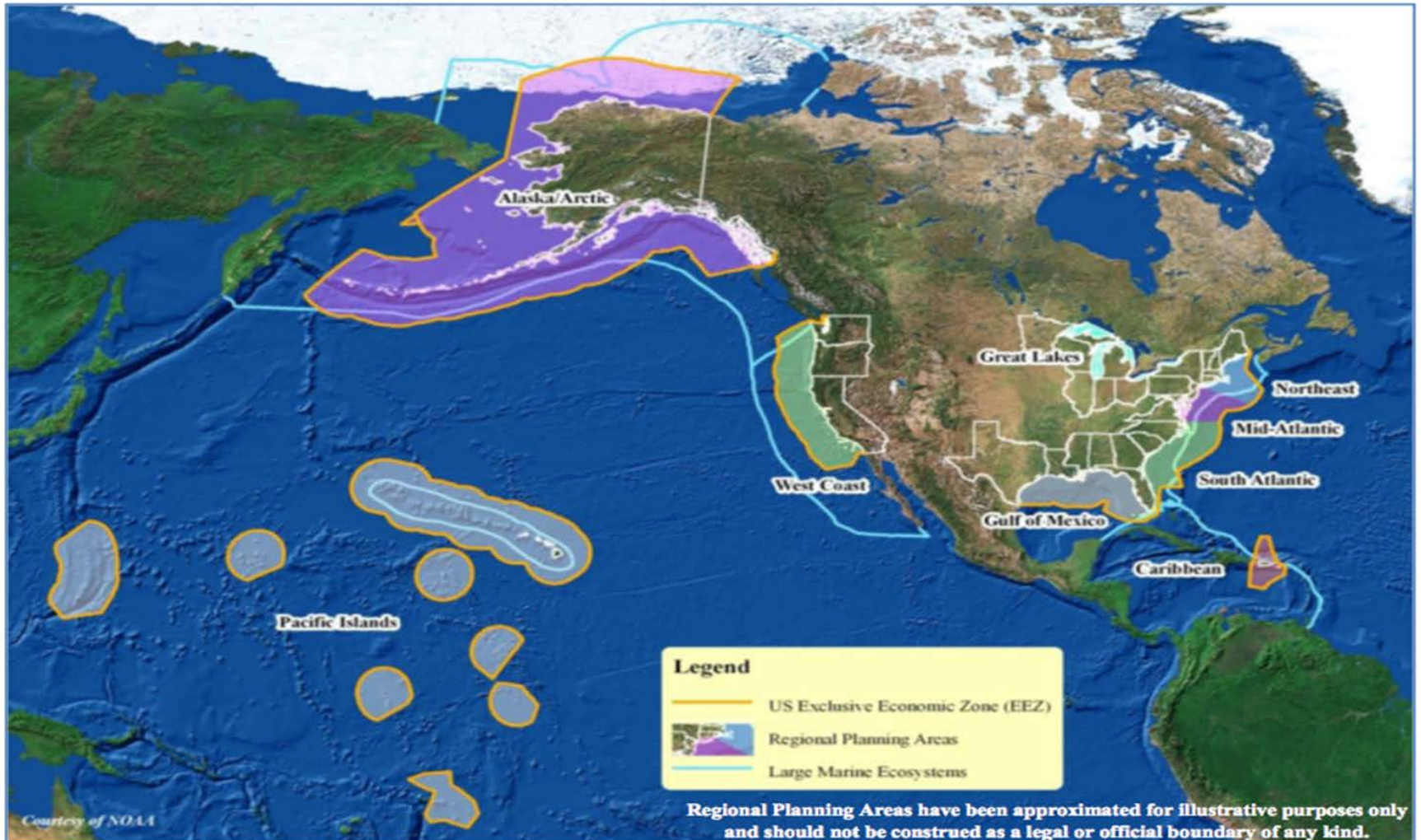
The Implementation Plan actions include creating:

1. A framework for the Nation's first ever National Policy for the Stewardship of the Ocean, Coasts and Great Lakes
2. A governance structure to provide sustained high-level and coordinated attention to ocean, coastal, and Great Lakes issues
3. An implementation strategy that identifies nine priority objectives
4. *A framework for effective Marine Planning employing a comprehensive and integrated Ecosystem-Based Management approach*
5. The nine priority objectives provide a bridge between the policy and specific actions required to achieve the intent of the National Ocean Policy.
6. Ecosystem-Based Management: foundational principle for the comprehensive management of the ocean, our coasts, and the Great Lakes



Nine Regional Planning Bodies

Large Marine Ecosystems and Regional Planning Areas



Source: NOAA

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Coastal and Marine Spatial Planning

- Marine planning is a **science-based tool** that regions can use **to address specific ocean management challenges** and advance their economic development and conservation objectives. Marine planning will support regional actions and decision-making and address regionally determined priorities, based on the needs, interests, and capacity of a given region. Marine planning will provide a more coordinated and responsive Federal presence and the opportunity for all coastal and ocean interests in a region to share information and coordinate activities.
- Marine plans produced by regional planning bodies can provide information about specific issues, resources, or areas of interest to better inform existing management measures.
- **Regional planning bodies are not regulatory bodies** and have no independent legal authority to regulate or otherwise direct Federal, State, tribal, or local government actions. All activities will continue to be regulated under existing authorities.
- The National Ocean Council has released a **Marine Planning Handbook** to support the efforts of regions that choose to engage marine industries, stakeholders, the public, and government to advance their economic development and conservation priorities.

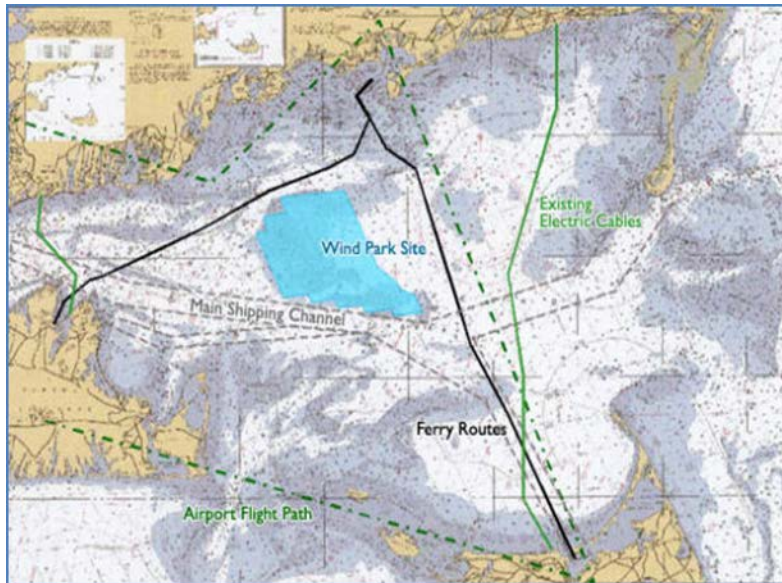


Coastal and Marine Spatial Planning

How will it help?

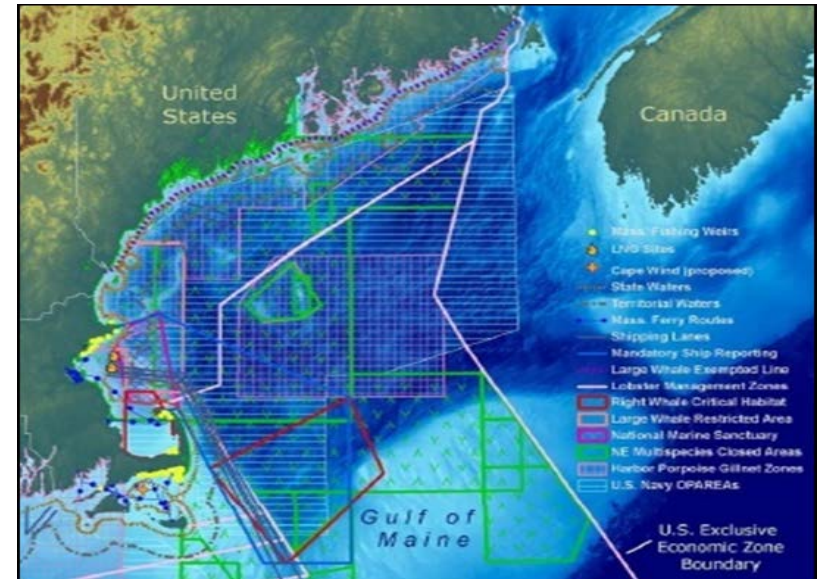
Pre-National CMSP

- Applicant proves suitability
- Checkerboard jurisdiction
- Delays, expensive & confusing



Post-National CMSP

- Predetermined suitability
- Regulatory certainty
- Less costly/fewer permitting delays



National Ocean Policy

(Northeast Regional Planning Body)

■ **Northeast Regional Planning Body**

- Six New England states
- Six federally recognized tribes
- Nine federal agencies
- New England Fishery Management Council
- Two ex-officio members: New York and Canada

■ **Northeast Ocean Plan—Goals**

- Healthy ocean and coastal ecosystems
- Effective decision-making
- Compatibility among past, current and future ocean uses

THE OCEAN PLAN

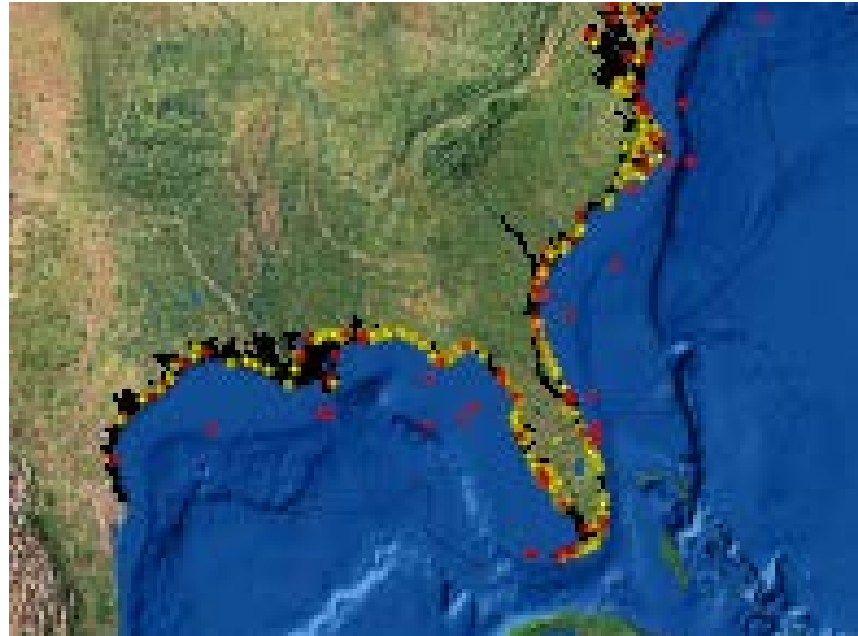
- This Plan summarizes the ocean planning process and is a guide to informing agency decisions and practices in order to continue making progress towards achieving regional goals for the management of our public ocean resources.
- This Plan recognizes that these goals and a desire to move towards an ecosystem-based approach to management must be achieved through existing legal frameworks by using the best available information and by ensuring public and scientific input in every decision. Therefore, the work is not done and this Plan serves as the foundation for continued progress.
- Comments are due on or before July 25, 2016.

Marine Protected Areas



Marine Protected Area (MPA)

- The term “marine protected area” encompasses a variety of conservation and management methods in the United States. In practice, **MPAs are defined areas where natural and/or cultural resources are given greater protection than the surrounding waters.** In the U.S., MPAs span a range of habitats including the open ocean, coastal areas, inter-tidal zones, estuaries, and the Great Lakes. They also vary widely in purpose, legal authorities, agencies, management approaches, level of protection, and restrictions on human uses.
- The term “marine protected area” is defined in MPA Executive Order 13158 :
 - **“...any area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein.”**
- The Department of Commerce’s under NOAA’s established the **National Marine Protected Areas Center** (NMPAC) to oversee the MPAs in the U.S. NMPAC has developed a Classification System that provides agencies and stakeholders with a straightforward means to describe MPAs in purely functional terms using **five objective characteristics** common to most MPAs:
 - Conservation Focus
 - Level of Protection
 - Permanence of Protection
 - Constancy of Protection
 - Scale of Protection



Source: NOAA

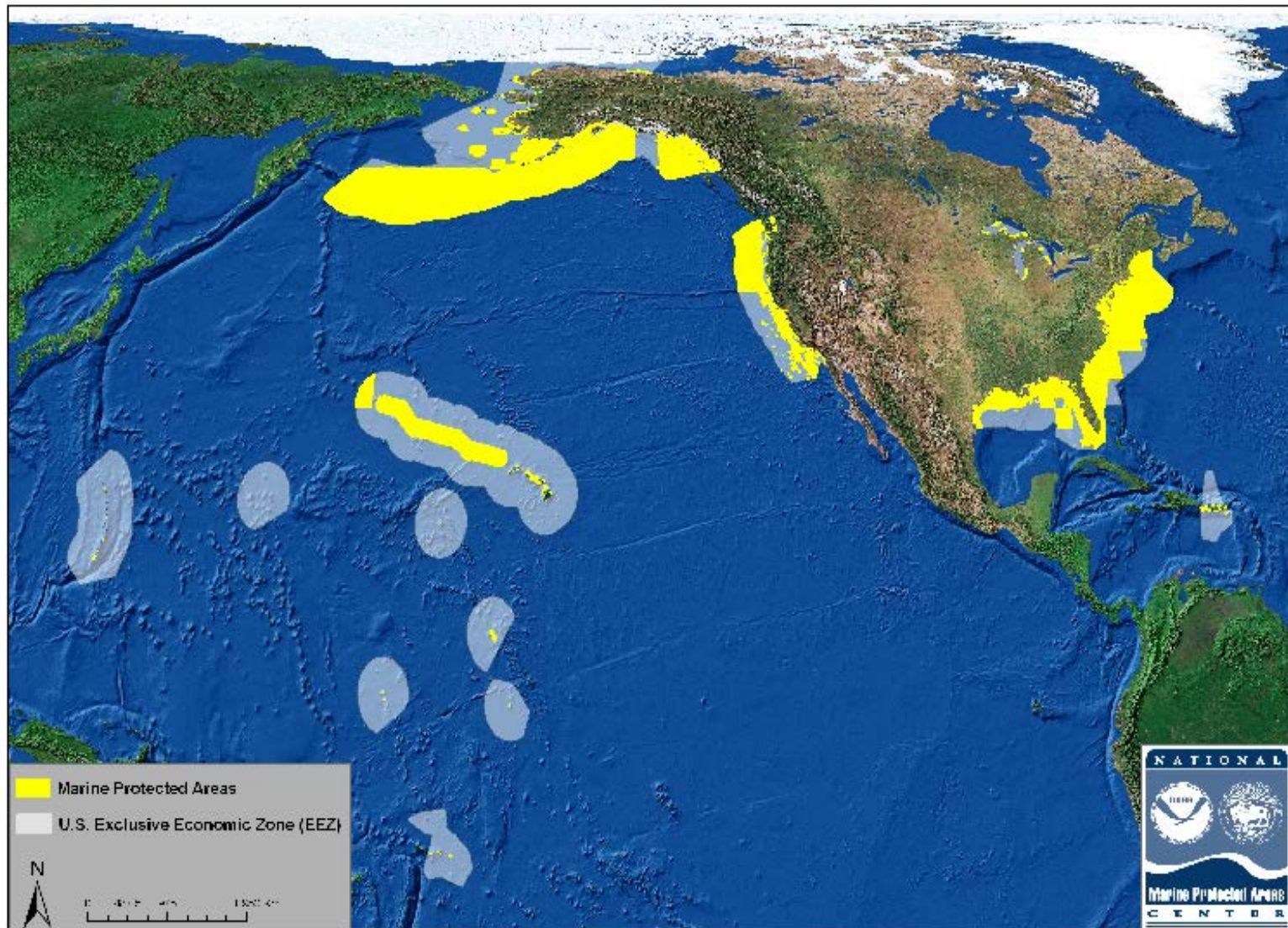
NATIONAL MARINE SANCTUARY SYSTEM



- ❑ NOAA's Office of National Marine Sanctuaries serves as the trustee for a network of 14 marine protected areas encompassing more than 170,000 square miles of marine and Great Lakes waters from Washington state to the Florida Keys, and from Lake Huron to American Samoa.
- ❑ The network includes a system of 13 national marine sanctuaries and the Papahānaumokuākea Marine National Monument.

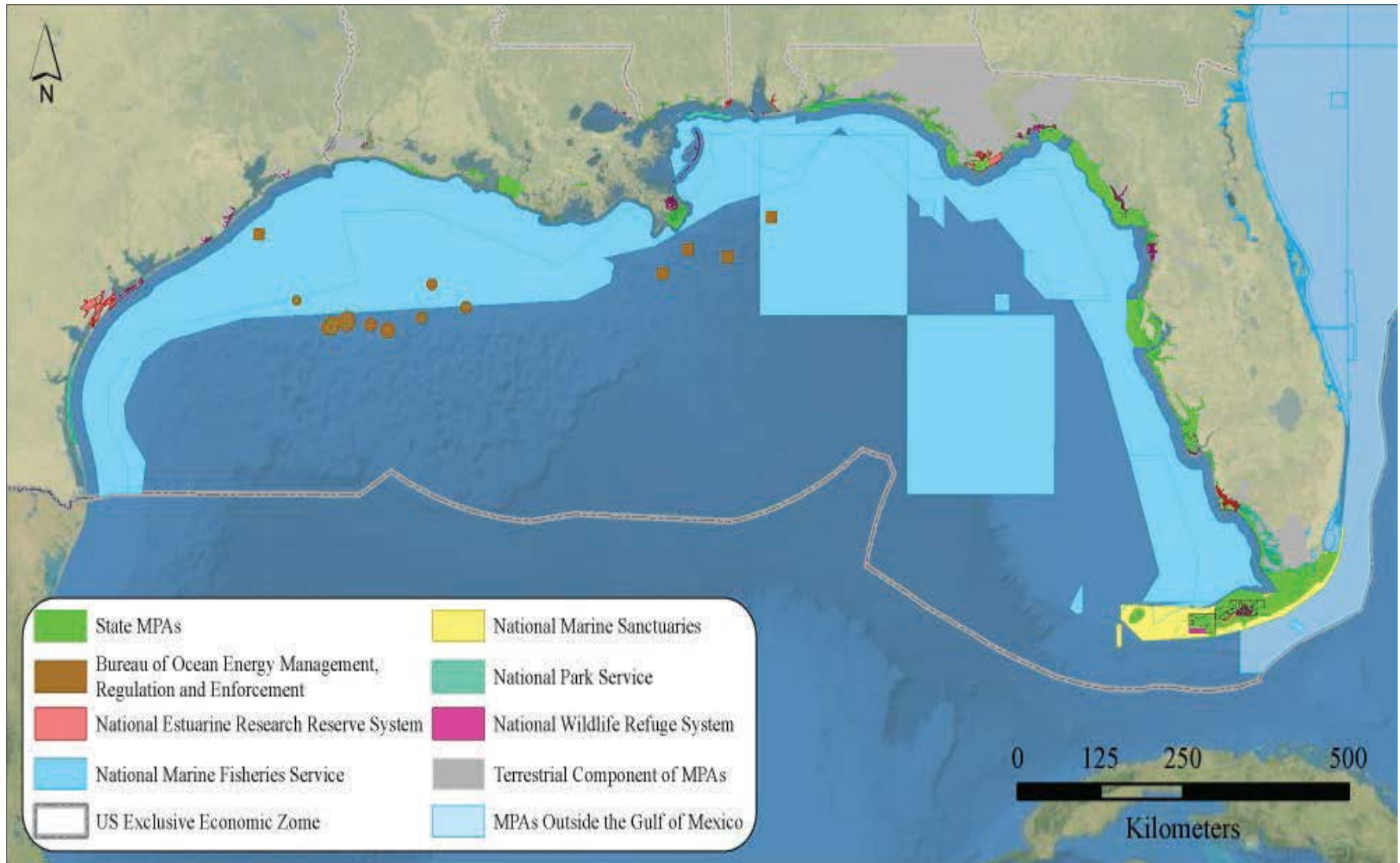
Source: NOAA

Marine Protected Areas



Source: NOAA

Marine Protected Areas in the Gulf of Mexico

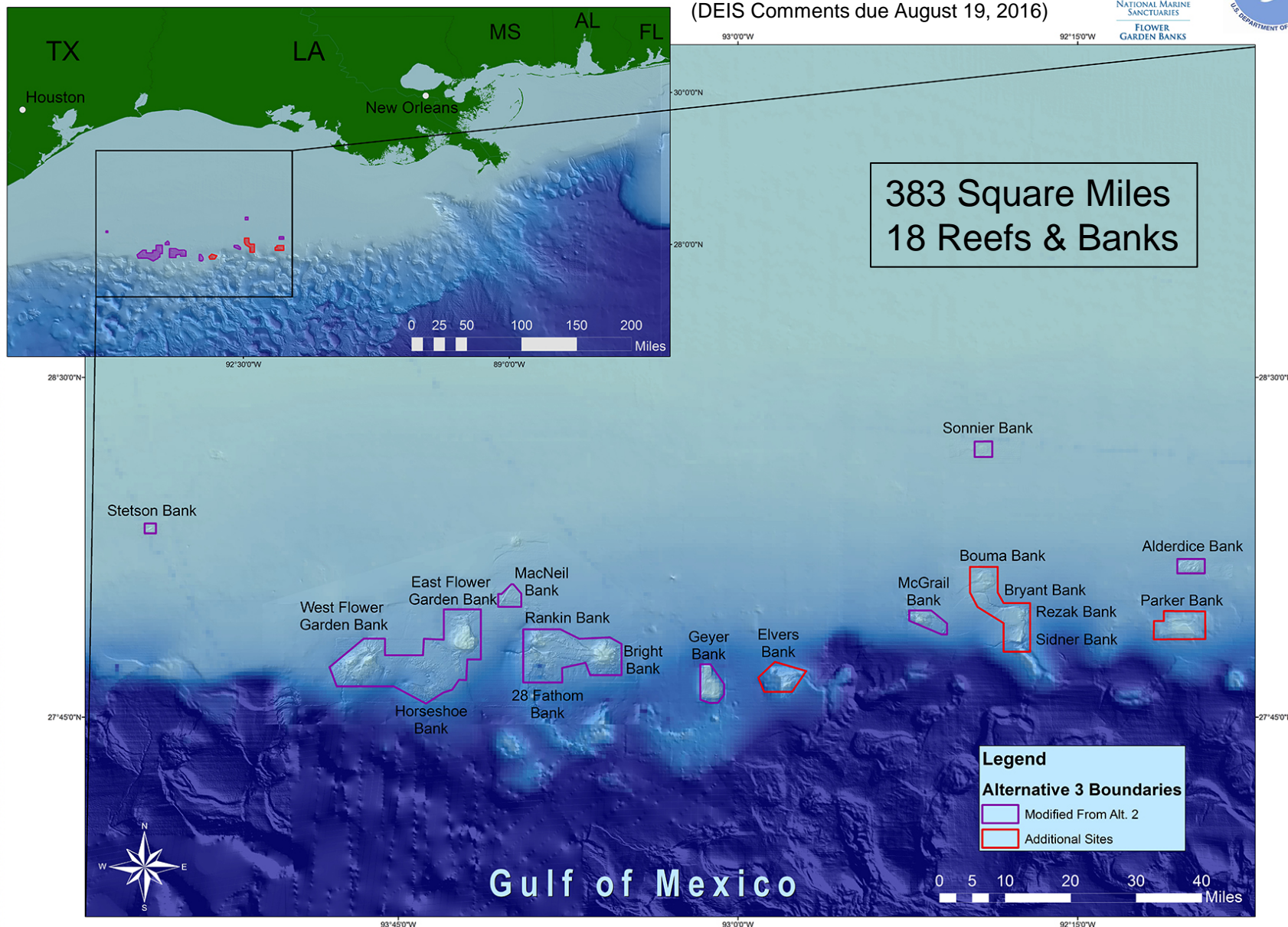


Source: NOAA

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Flower Garden Banks National Marine Sanctuary Expansion: Alternative 3

(DEIS Comments due August 19, 2016)



Other Ocean Stakeholders



Marine Minerals Program

- ***Loss of sand from the Nation's beaches, dunes, and barrier islands is a serious problem that affects both the coastal environment and the economy.*** For example, Louisiana, which has the highest coastal erosion rate in the country, has lost an average of 43 square km of land from its coast each year since 1985. Beach nourishment and other coastal restoration projects are addressing this problem, and sand from the Outer Continental Shelf (OCS) is often used to stem this erosion.
- ***BOEM has conveyed rights to millions of cubic yards of OCS sand for coastal restoration projects in multiple states.*** Those projects have resulted in the restoration of hundreds of miles of the Nation's coastline, protecting billions of dollars of infrastructure as well as important ecological habitat.



Offshore Wind Energy

The first offshore wind project was installed off the coast of Denmark in 1991. Since that time, commercial-scale offshore wind facilities have been operating in shallow waters around the world, mostly in Europe. Newer turbine and foundation technologies are being developed so that wind power projects can be built in deeper waters further offshore.

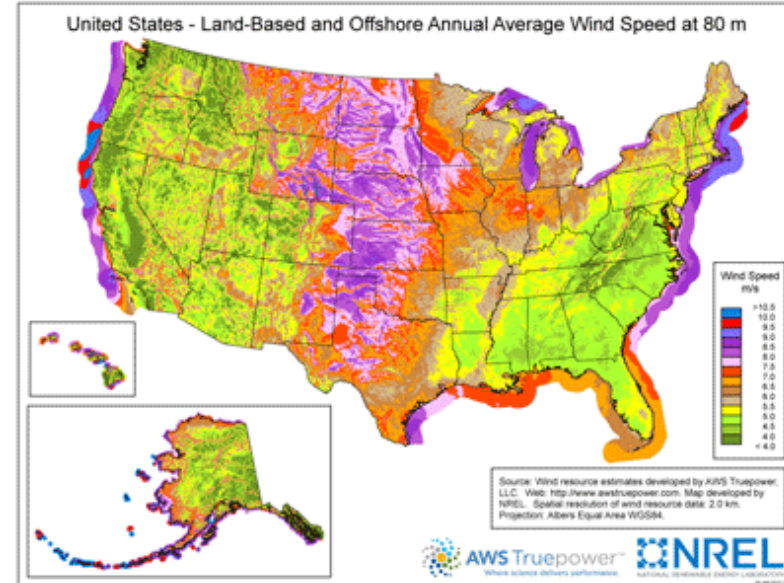
As the wind blows, it flows over the airfoil-shaped blades of wind turbines, causing the turbine blades to spin. The blades are connected to a drive shaft that turns an electric generator to produce electricity. Offshore wind turbines are being used by a number of countries to harness the energy of strong, consistent winds that are found over the oceans.

Offshore winds tend to blow harder and more uniformly than on land. The potential energy produced from wind is directly proportional to the cube of the wind speed. As a result, increased wind speeds of only a few miles per hour can produce a significantly larger amount of electricity. For instance, a turbine at a site with an average wind speed of 16 mph would produce 50% more electricity than at a site with the same turbine and average wind speeds of 14 mph.

Wind resource potential is typically given in gigawatts (GW), and 1 GW of wind power will supply between 225,000 to 300,000 average U.S. homes with power annually.

Wind speeds off the Atlantic Coast and in the Gulf of Mexico are lower than wind speeds off the Pacific Coast. However, the presence of shallower waters in the Atlantic makes development more attractive and economical for now. Hawaii has the highest estimated potential, accounting for roughly 17% of the entire estimated U.S. offshore wind resource

Source: BOEM



Offshore Wind Farm

Ocean Wave Energy

Ocean wave energy is captured directly from surface waves or from pressure fluctuations below the surface.

Waves are caused by the wind blowing over the surface of the ocean. In many areas of the world, the wind blows with enough consistency and force to provide continuous waves along the shoreline. Ocean waves contain tremendous energy potential. *Wave power devices extract energy from the surface motion of ocean waves or from pressure fluctuations below the surface.*

Wave power varies considerably in different parts of the world. Areas of the world with *abundant wave power* resource include the western coasts of Scotland, northern Canada, southern Africa, Australia, and *the northwestern coast of the United States, particularly Alaska.*

Whereas wind resource potential is typically given in gigawatts (GW), wave and tidal resource potential is typically given in **terawatt-hours/year (TWh/yr)**. The Electric Power Research Institute (EPRI) has completed a recent analysis of the U.S. wave energy resource potential. EPRI estimates the total wave energy resource along the outer continental shelf at 2,640 TWh/yr. *That is an enormous potential, considering that just 1 TWh/yr of energy will supply around 93,850 average U.S. homes with power annually.* While an abundance of wave energy is available, it cannot be fully harnessed everywhere for a variety of reasons, such as other competing uses of the ocean (i.e. shipping, commercial fishing, naval operations) or environmental concerns in sensitive areas. Therefore, it is important to consider how much resource is **recoverable** in a given region. EPRI estimates that the total recoverable resource along the U.S. shelf edge is 1,170 TWh/yr, which is almost one third of the 4,000 TWh of electricity used in the United States each year.

Source: BOEM

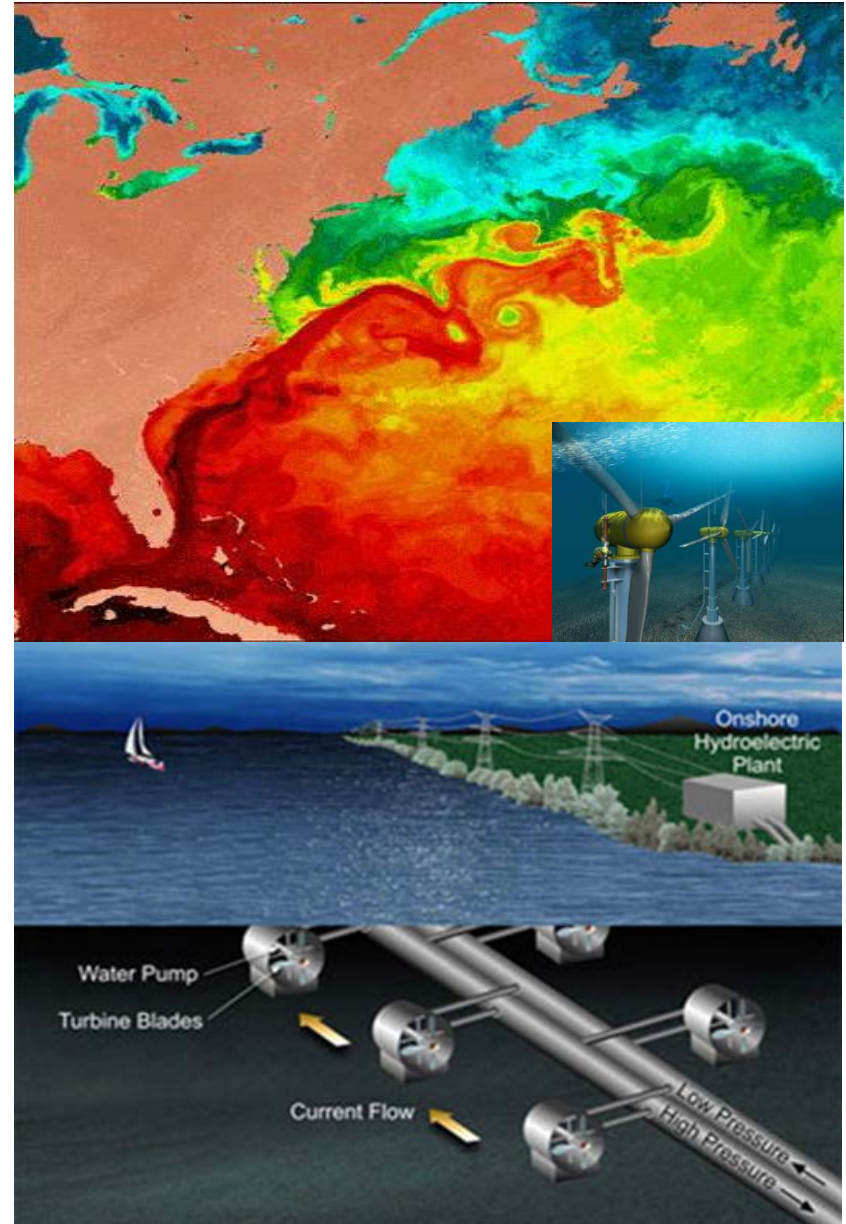


Wave Dragon Overtopping Device

Ocean Current Energy

Sea Surface Temperatures show the Gulf Stream Current

- **The relatively constant flow of ocean currents carries large amounts of water across the earth's oceans. Technologies are being developed so that energy that can be extracted from ocean currents and converted to usable power.**
- Ocean waters are constantly on the move. Ocean currents flow in complex patterns affected by wind, water salinity, temperature, topography of the ocean floor, and the earth's rotation. Most ocean currents are driven by wind and solar heating of surface waters near the equator, while some currents result from density and salinity variations of the water column. Ocean currents are relatively constant and flow in one direction, in contrast to tidal currents along the shore.
- While ocean currents move slowly relative to typical wind speeds, they carry a great deal of energy because of the density of water. Water is more than 800 times denser than air. So for the same surface area, water moving 12 miles per hour exerts the same amount of force as a constant 110 mph wind. Because of this physical property, ocean currents contain an enormous amount of energy that can be captured and converted to a usable form.
- **The United States and other countries are pursuing ocean current energy; however, marine current energy is at an early stage of development.** Relative to wind, wave, and tidal resources, the energy resource potential for ocean current power is the least understood, and its technology is the least mature. There are no commercial grid-connected turbines currently operating, and only a small number of prototypes and demonstration units have been tested.



Source: BOEM

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Ocean Current Turbines

Offshore Solar Energy

- **Solar energy technologies potentially suitable for use in ocean environments include concentrating solar power technology and photonic technology.**
- Solar energy reaches the United States at an average rate of about 6 million BTU/m² (about 6,330 mega joules/m²) per year. Every minute the sun bathes the Earth in as much energy as the world consumes in an entire year.
- Since oceans cover more than 70 percent of the earth's surface, they receive an enormous amount of solar energy. Deep ocean currents, waves, and winds all are a result of the sun's radiant energy and differential heating of the earth's surface and oceans.
- Solar radiation can be converted directly to usable energy through a variety of technologies. **While there are no commercial solar energy facilities operating offshore at this time**, solar energy technologies potentially suitable for use in offshore ocean environments include **concentrating solar power (CSP)** technology and **photonic technology**.



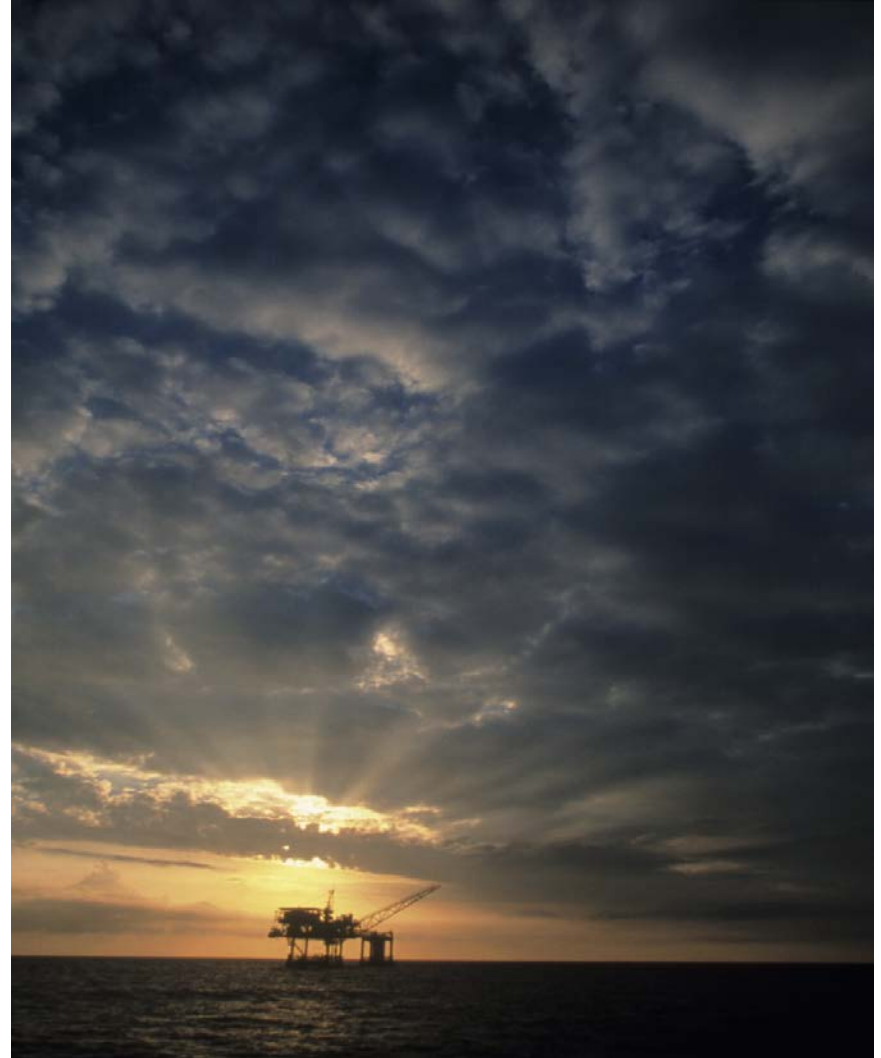
Onshore Solar Power Tower in Operation

The Future



The New Normal

- More regulations and restrictions on offshore operations
- Protection of taxpayers from any future decommissioning liability
- Increased facility and rig inspections
- Greater government oversight
- Enhanced civil penalty program
- Less offshore access for traditional oil and natural gas exploration



Questions ????????

