

# Unit 4: Oil and Gas Development



# Overview of Unit

- U.N. Convention on the Law of the Sea
- Oil and Gas Development Framework
- Liquefied Natural Gas
- Renewable Energy
  - Wind Energy
  - Wave Energy

# U.N. Convention Law of the Sea

- Under UNCLOS, nations have “sovereign rights” to explore, exploit, conserve, and manage marine resources in three maritime areas.
  - Contiguous Zone (12 – 24 nautical miles)
  - Exclusive Economic Zone (12 – 200 nm)
  - Continental Shelf (0 – 200 nm, or 350 nm if shelf extends further)
- Coastal nations also have jurisdiction over “the establishment and use of artificial islands, installations and structures” in these areas.

# Submerged Lands Act

- States received title to submerged lands within 3 nautical miles (3 marine leagues along Gulf Coast of FL and TX) of coast.
- Within their offshore boundaries, states have:
  - Title to and ownership of the lands beneath navigable waters within the boundaries, and
  - Right and power to manage, administer, lease, develop, and use the lands and natural resources.

# Outer Continental Shelf Lands Act

- OCSLA set up a comprehensive leasing program and system for collecting royalties for oil and gas development activities on the Outer Continental Shelf.
- OCS is defined as all submerged lands lying seaward and outside areas of state control subject to U.S. jurisdiction and control.

# Moratorium

- Certain areas are withdrawn, however.
  - Some 90% of U.S. waters have drilling bans.
- In 1990, President George H. W. Bush prohibited most oil and gas development outside the offshore areas associated with Texas, Louisiana, and Alabama. Was to be effective until after 2000.
  - President Clinton extended the moratorium until June 30, 2012

# Energy Policy Act of 2005

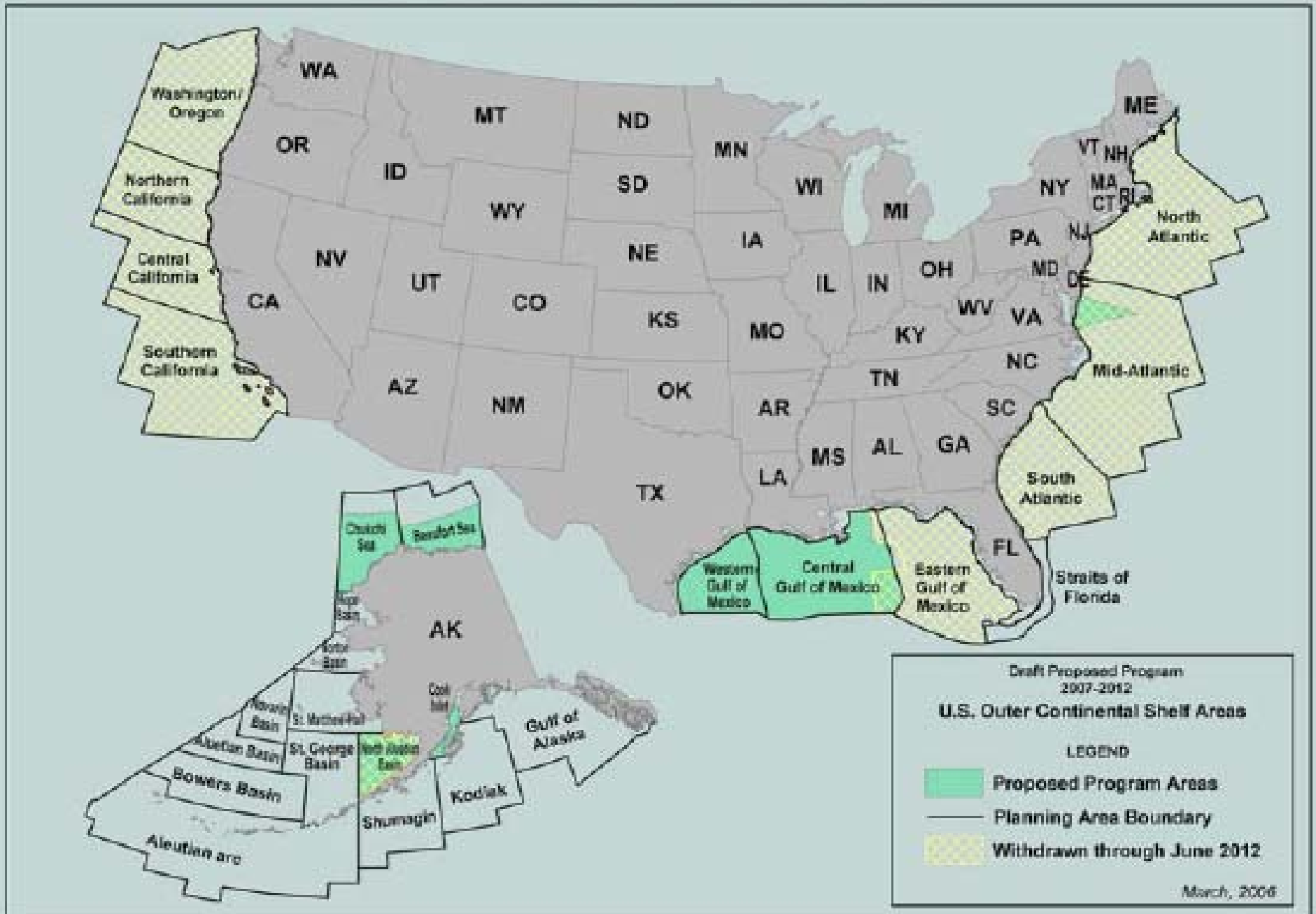
- Section 357 requires the Secretary of the Interior to conduct an inventory and analysis of oil and natural gas resources beneath all the waters of the US OCS.
- Permits some forms of exploration, including 3-D seismic technology, but prohibits drilling.

# Recent Relaxing of Moratorium

- Gulf of Mexico Energy Security Act of 2006
  - Increased available area in Gulf by 8.3 million acres.
  - System was set up to share royalties.
    - 37.5 % to the States (except for Florida)
    - 12.5% to Land and Water Conservation Fund
    - 50% to Federal Government
- Bush also recently lifted the moratorium in Bristol Bay and the Central Gulf of Mexico.



## Federal OCS Areas - Alaska and the Lower 48



# Liquefied Natural Gas Facilities

- For projects located onshore or near shore (in state waters)
  - Federal Energy Regulatory Commission (FERC) has jurisdiction.
- For projects located offshore (seaward of state waters)
  - Maritime Administration (MARAD) and the Coast Guard are the responsible agencies.

# Offshore LNG: Deepwater Port Act

- Secretary of Transportation directed to “authorize and regulate the location, ownership, construction, and operation of deepwater ports” which include LNG terminals.
- Authority delegated to MARAD and the Coast Guard.

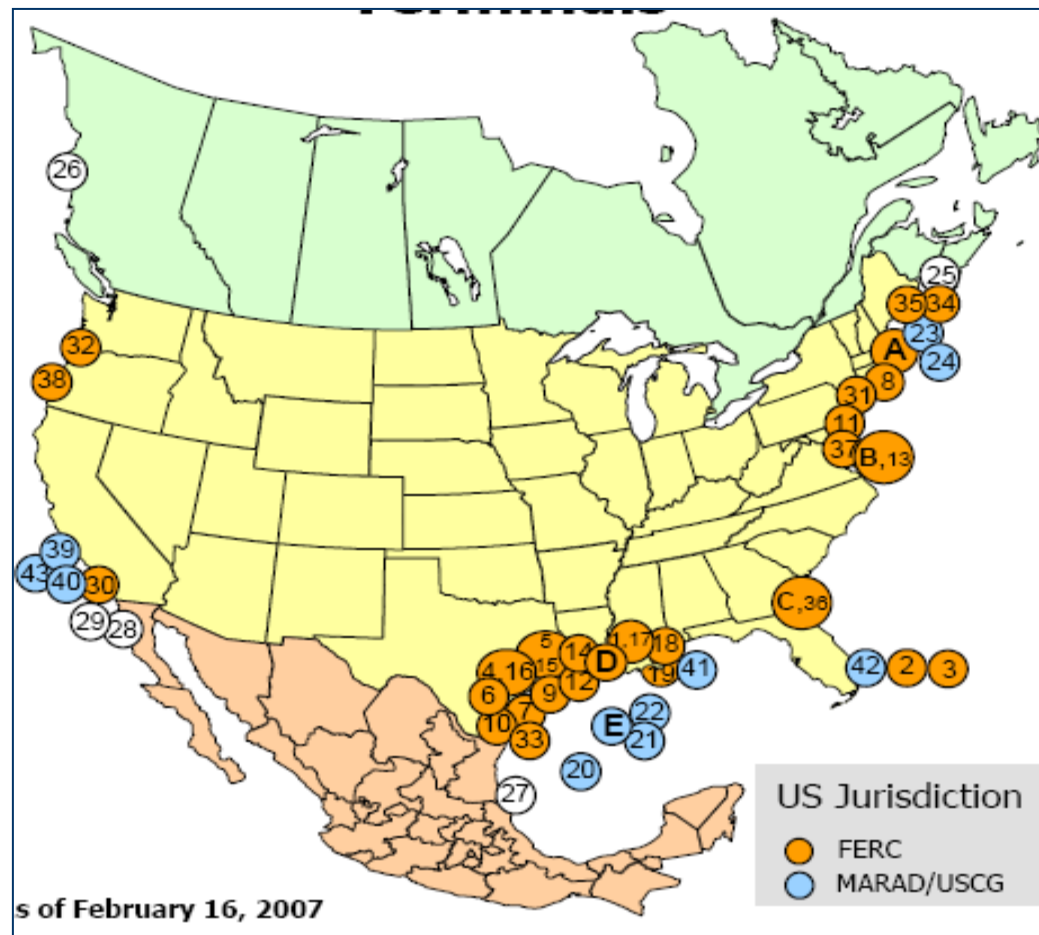
# “Adjacent Coastal State”

- MARAD required to designate an “adjacent coastal state” for each facility.
  - State directly connected by pipeline to port;
  - Located within 15 miles of any such proposed deepwater port; or
  - Designated by the Secretary as such.
- Secretary cannot issue license unless Governor of each adjacent coastal State approves, or is presumed to approve, the license.

## Controversy – Open vs. Closed Loop

- Open: Warm water drawn from ocean is used to re-gasify the LNG. Cooled water is discharge back into the sea.
  - Can adversely affect marine creatures by entrapping them in intake screens, changing water temperature, and releasing harmful anti-biofouling agents into the surrounding water.
- Closed: Uses smaller volumes of water which are heated by natural gas and re-used.

# Existing and Proposed Terminals



# Recent Developments

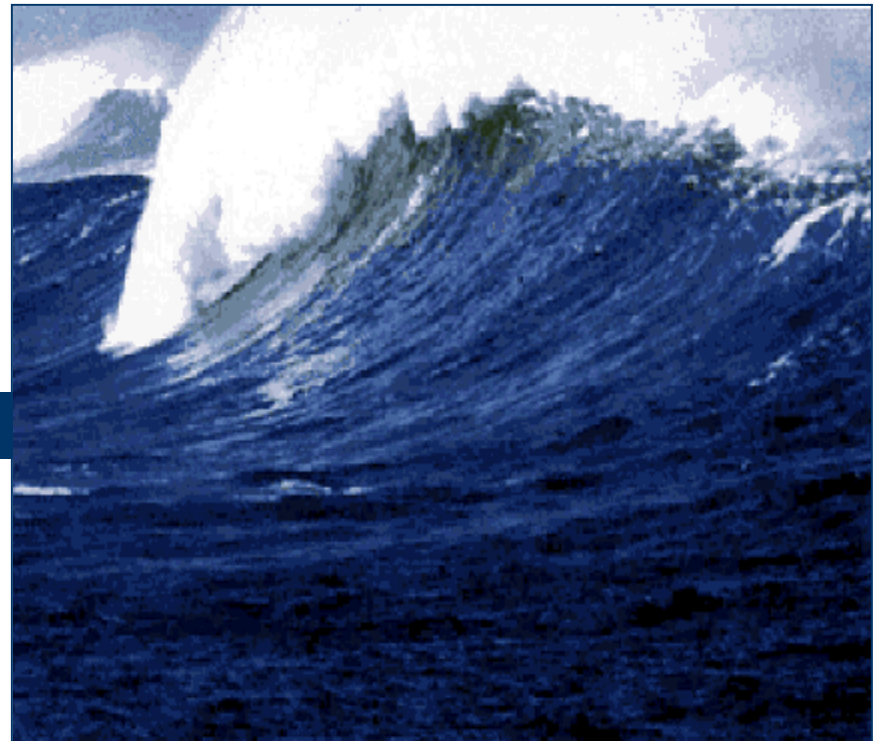
- Main Pass Energy Hub
  - Original project vetoed by Governor of Louisiana in May 2006 (Relied on a open-loop system).
  - Amended application (using closed-loop system) approved by MARAD in January 2007.
- Gulf Landing
  - Shell withdrew application in March 2007.

# Onshore or Near Shore Facilities

- Under Natural Gas Act, FERC has exclusive jurisdiction over the siting, construction and operation of facilities used to transport natural gas in interstate commerce and of facilities used for the export or import of natural gas.
- Jurisdictional conflict brewing with the states.
  - *AES Sparrows Point LNG v. Smith*
  - CZMA



# Unit 5: Offshore Renewable Energy



# Renewable Energy Development

- Sec. 388 of EPA Act authorizes DOI to grant 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, or
  - Allow for alternate uses of existing facilities on the OCS.

# OCS Renewable Energy and Alternate Use Program

- New MMS program covers, but is not limited to, offshore wind, wave, ocean current, and solar energy technologies.
- Draft Environmental Impact Statement currently available for review.
- Proposed rules expected September 2007.

# Wind Energy



Nysted offshore  
wind farm off  
the coast of  
Denmark in the  
Baltic Sea.

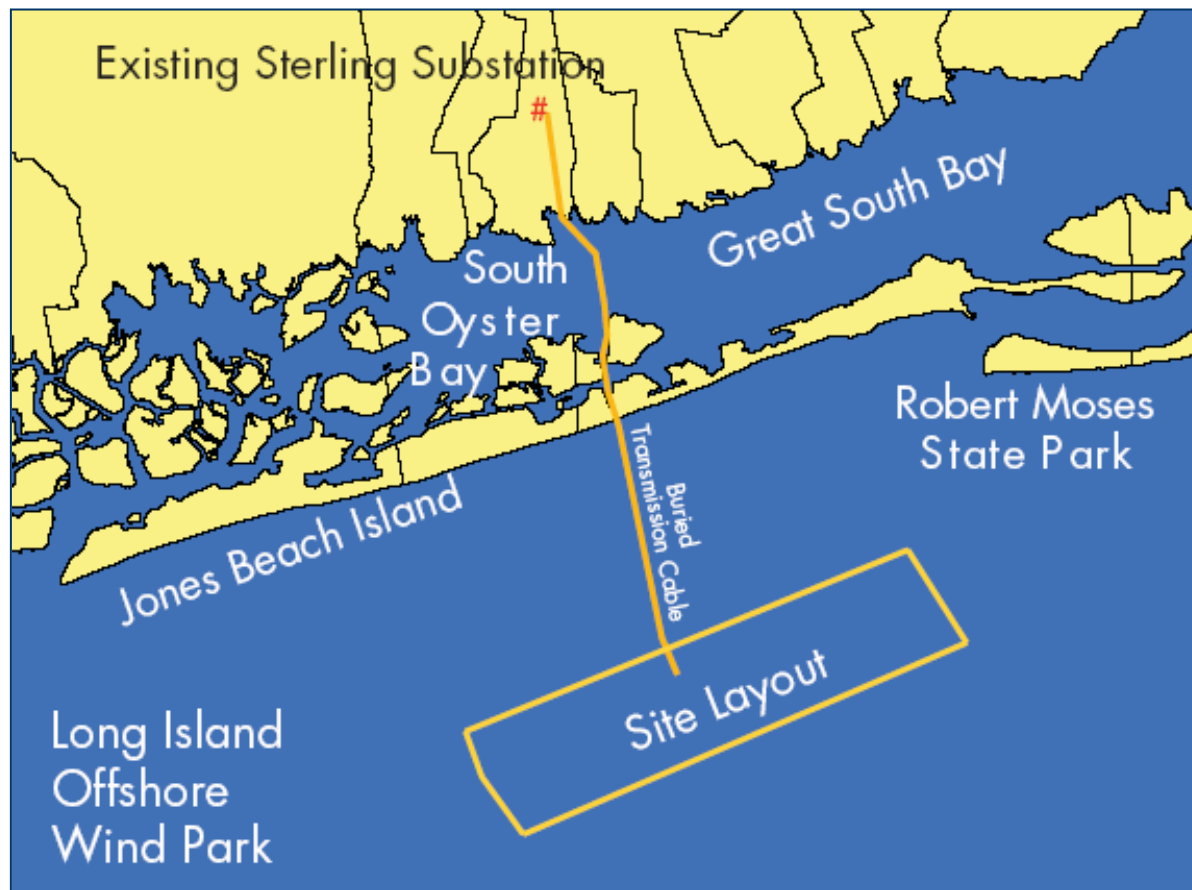
# Role of Army Corps of Engineers

- Prior to EPA Act, the Corps took the lead in the federal offshore wind permitting process.
  - Claimed jurisdiction under § 10 of the Rivers and Harbors Act and the OCSLA.
  - Authority to permit obstructions to navigation in “navigable waters of the U.S.” and on the OCS.
- Corps retains this jurisdiction under EPA Act, but MMS is lead for siting.

# Cape Wind

- Planned Location: Nantucket Sound, 5.5 miles off the coast of Martha's Vineyard.
- In sixth year of permitting.
  - Process was begun by Corps.
  - MMS took over after passage of EPA Act.
  - Received approval from Massachusetts in January 2007 to pursue state permits.

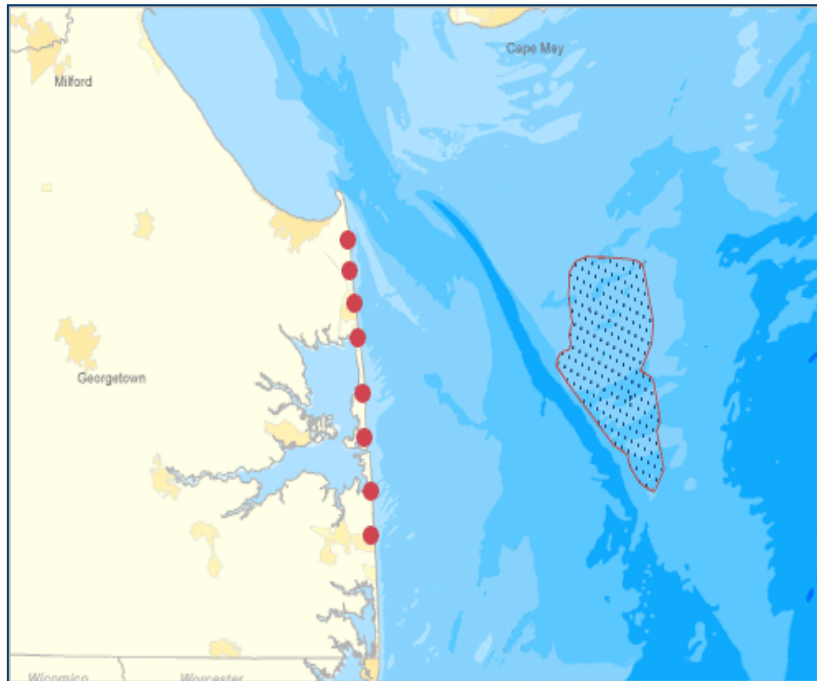
# LIPA Wind Park



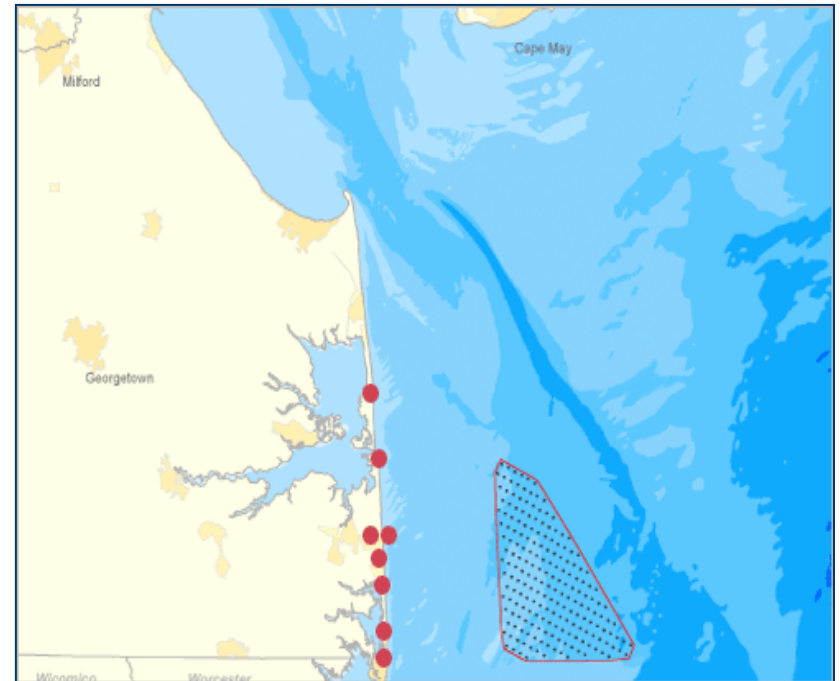
Proposed project calls for 40 turbines in 8 square miles.

# Bluewater Wind

## Atlantic North Proposal



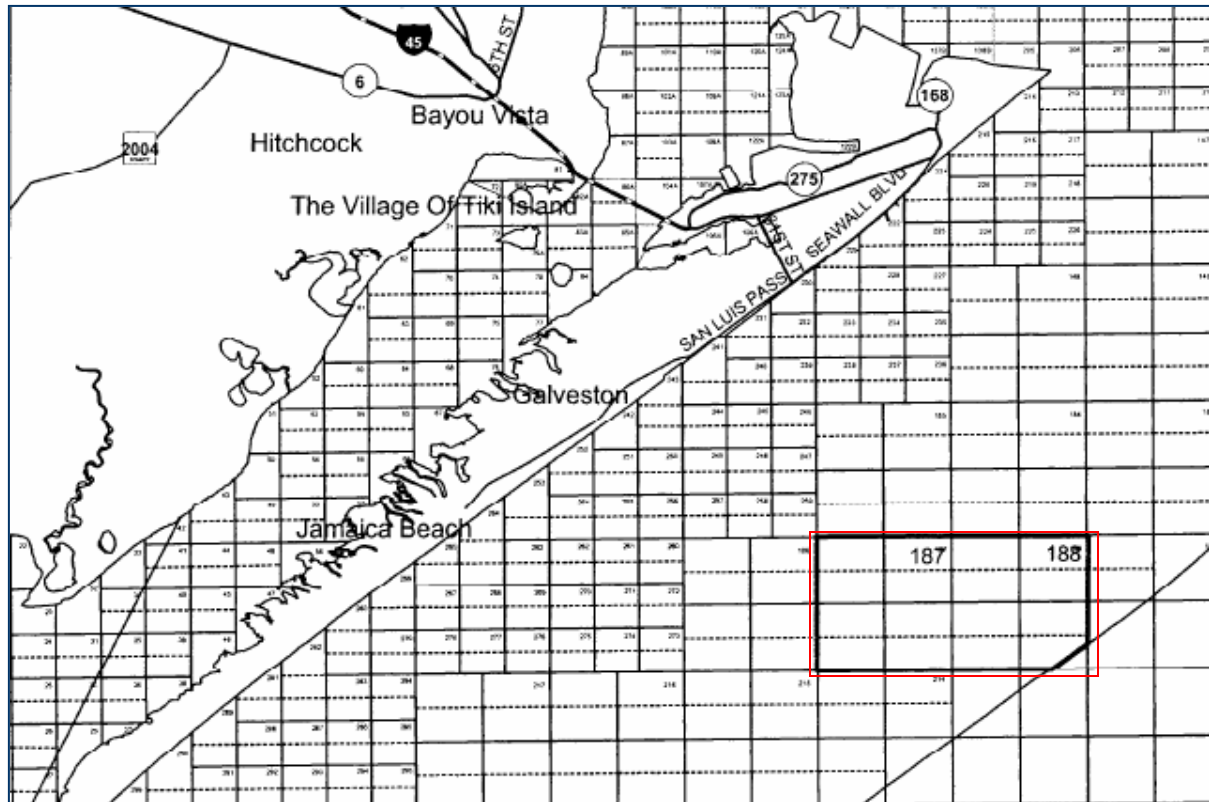
## Atlantic South Proposal



Project: 200 giant 3-megawatt turbines with 160-ft long blades



# Galveston Offshore Wind



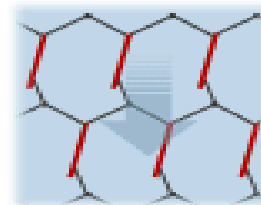
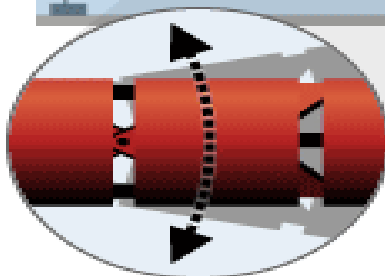
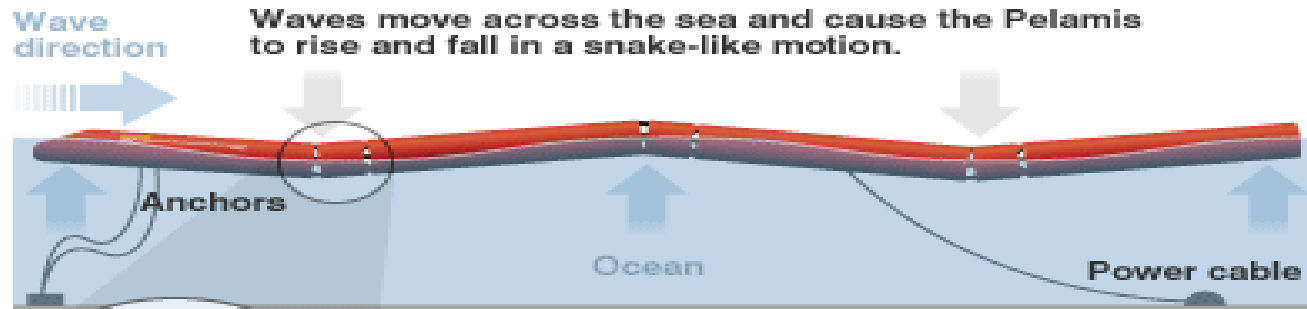
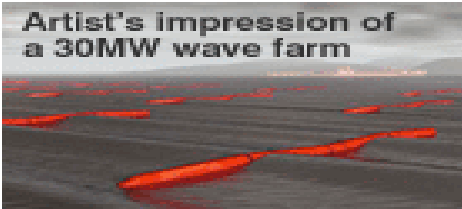
50 turbines  
planned 10 miles  
off Galveston  
Island (state  
waters).

# Wave Energy

- Three approaches to harnessing wave power
  - Floats or Pitching Devices
  - Oscillating Water Columns
  - Wave Surge or Focusing Devices

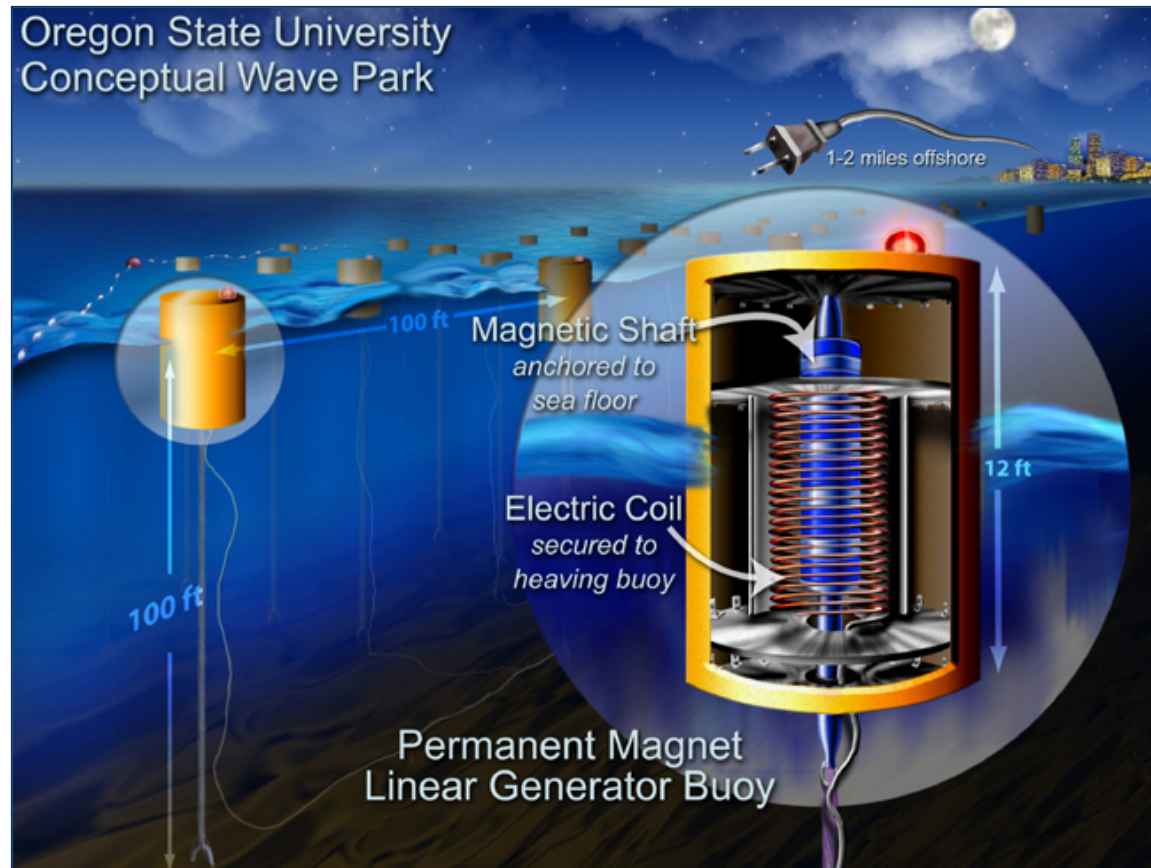
# Pelamis- “The Snake”

## PELAMIS WAVE POWER GENERATOR



SOURCE: Ocean Power Delivery Ltd.

# U.S. Activities

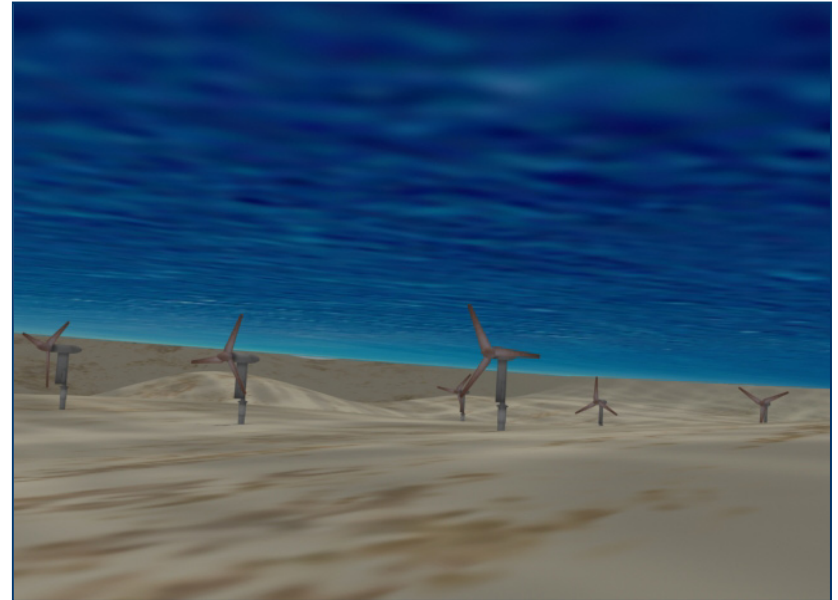


# Tidal Power Demonstration Project

Project Location



Aerial View of Roosevelt Island,  
New York



Artistic Impression of  
Underwater Turbine Field

# FERC vs. MMS

- Jurisdictional battle underway between FERC and MMS
  - FERC contends that it has regulatory authority over turbines designed to capture energy from moving water up to 12 miles offshore.
  - MMS argues that it has authority to license any water-powered project in federal waters and has filed a formal protest.

# Role of the States

- Portions of energy projects to be constructed in state waters, including cables necessary to transmit power back to shore, are subject to all state regulation or permitting requirements
- CZMA requires federal government and federally permitted activities affecting a state's coastal zone comply with that state's coastal management program.