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Overview of BOEM's Environmental Analysis and Review Process

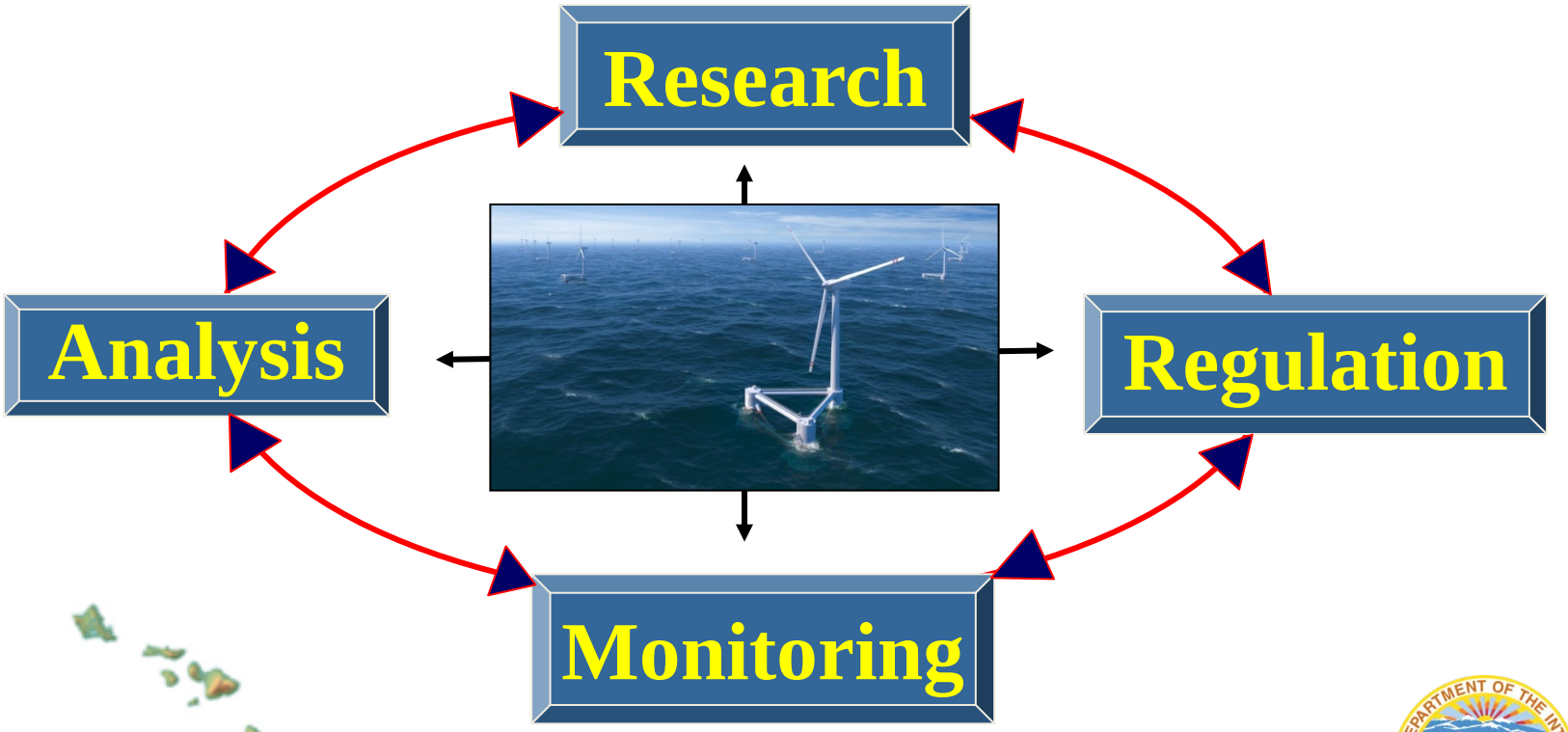
presented to

BOEM/Hawai'i Intergovernmental Renewable Energy Task Force

June 3, 2015

BOEM Environmental Protection Process

Environmental Protection is an Integrated Process



National Environmental Policy Act

The National Environmental Policy Act (NEPA) was established by Congress in 1969.

NEPA Key Points:

- Federal decision-making informed by environmental review
- Federal process with public involvement
- Cooperating agency involvement

Requires all Federal agencies to:

- Consider environmental factors when making decisions
- Involve the affected and interested public in environmental review process
- Discuss potential mitigation of environmental impacts of Federal Action
- Document in understandable plain language the environmental effects to the public and the decision maker

Overview of BOEM NEPA Review Process

NEPA Analysis Documents
2 NEPA Reviews!

Competitive Commercial (BOEM)	Non-Competitive Commercial (Applicant)
first NEPA review	
Lease Sale / SAP EA Consistency Determination	**Lease Issuance/ SAP EA**
second NEPA review	
COP EIS	**COP EIS**

SAP = Site Assessment Plan
COP = Construction and Operations Plan

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Competitive Commercial Lease Review

- Analyzes resource and site characterization activities
  - Associated site characterization surveys (e.g., shallow hazards, geological, geotechnical, archaeological, and biological surveys)
  - Subsequent site assessment activities (e.g., installation and operation of meteorological towers and/or buoys)
- Lease provides a 5-year period to collect site-specific data to determine site suitability and develop the COP
- *A separate NEPA analysis will be required for the construction or operation of any wind energy facility!*

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Site Assessment Information

Hazard information	Meteorology, oceanography, sediment transport, geology, and shallow geological or manmade hazards
Water quality	Turbidity and total suspended solids from construction
Biological resources	Benthic communities, marine mammals, sea turtles, coastal and marine birds, fish and shellfish, plankton, seagrasses, and plant life
Threatened or endangered species	As defined by the ESA (16 U.S.C. 1531 *et seq.*)
Sensitive biological resources or habitats	Essential fish habitat, refuges, preserves, special management areas identified in coastal management programs, sanctuaries, rookeries, hard bottom habitat, chemosynthetic communities, and calving grounds; barrier islands, beaches, dunes, and wetlands
Archaeological resources	As required by the NHPA (16 U.S.C. 470 *et seq.*), as amended
Social and economic factors	Employment, existing offshore and coastal infrastructure (including major sources of supplies, services, energy, and water), land use, subsistence resources and harvest practices, recreation, recreational and commercial fishing (including typical fishing seasons, location, and type), minority and lower income groups, coastal zone management programs, and viewshed
Coastal and marine uses	Military activities, vessel traffic, and energy and non-energy mineral exploration or development

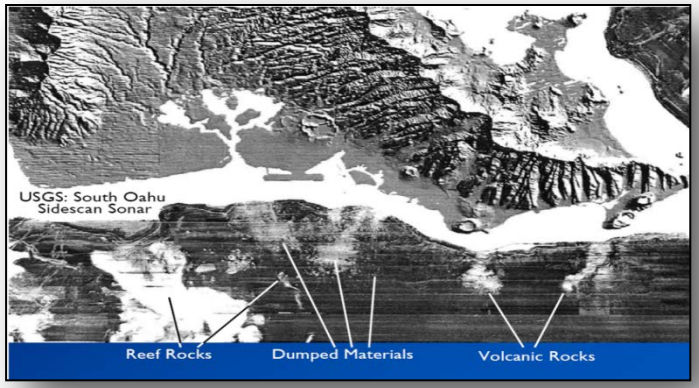
Challenges to Ocean Renewable Energy Siting

Environmental

- Physical Oceanographic Data
- Geological/Geotechnical
- Biological (marine mammals, seabirds, fish, benthic, etc.)
- Habitat, Management Areas

Technological

- Water Depths
- Seabed Composition
- Seafloor Obstructions



Socioeconomic

- Cultural & Archaeological
- Community Values
- Native Hawaiian Values
- Tourism

Regulatory

- Multiple Jurisdictions
- Permitting Requirements

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Environmental Resources and Socioeconomics

Physical

- Air Quality
- Water Quality

Biological

- Coastal Habitats
- Benthic Resources
- Marine Mammals
- Sea Turtles
- Avian and Bat Species
- Fish and Essential Fish Habitat (EFH)

Socioeconomic

- Cultural Resources
- Military Uses
- Environmental Justice
- Land Use and Coastal Infrastructure
- Commercial and Recreational Fishing Activities
- Aesthetics and Visual Impacts
- Demographics and Employment

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Coordination! Coordination! Coordination!

Organization	Role
State of Hawaii; DBEDT	Coastal Zone Management Act (Federal waters); Transition sites and activities in State waters (up to 3 miles offshore)
Department of the Interior, Fish and Wildlife Service	Endangered Species Act, Marine Mammal Protection Act, Migratory Birds
Department of Commerce, National Oceanic and Atmospheric Administration	
▪ Hawaii Humpback Whale National Marine Sanctuary	National Marine Sanctuaries Act
▪ National Ocean Service (NOS)	
▪ National Marine Fisheries Service	Endangered Species Act, Marine Mammal Protection Act, Magnuson-Stevens Fishery Conservation and Management Act
▪ Office of Ocean and Coastal Resource Management	CZMA
Environmental Protection Agency	Marine Protection, Research and Sanctuaries Act of 1972, Clean Air Act, Clean Water Act, RCRA
U.S. Coast Guard	Marking of Obstructions, Ports and Waterways Safety Act
Army Corps of Engineers	Rivers and Harbors Appropriation Act, Marine Protection, Research, & Sanctuaries Act, Section 400 Dredging and filling
Native Hawaiian Groups; Tribal Governments; National Park Service; Advisory Council on Historic Preservation; State and Tribal Historic Preservation Officers	Executive Orders on Indian Tribal Consultations and Indian Sacred Sites; National Historic Preservation Act, American Indian Religious Freedom Act
Federal Aviation Administration	Federal Aviation Act
Department of Defense; Navy, Marine Corps	Safety and Homeland Security
Council on Environmental Quality	National Environmental Policy Act
* not an inclusive list	

Best Management Practices and Policies

- Preconstruction Planning
- Seafloor Habitats
- Marine Mammals
- Sea Turtles
- Fish Resources & Essential Fish Habitat
- Fisheries
- Avian Resources
- Acoustic Environment
- Coastal Habitats
- Electromagnetic Fields
- Transportation & Vessel Traffic
- Visual Resources Operations

DOE PEIS Critical Resource Findings

The Department of Energy PEIS indicated the State of Hawai‘i has particular interest in the potential impacts to four environmental resource areas:

- Biological resources due to the large number of threatened and endangered species and unique island habitat
- Land and submerged land use based on the finite characteristics of this resource to the islands’ environments
- Cultural and historic resources because of the strong and long standing beliefs of the native population and their relationship with the islands’ physical environment
- Scenic and visual resources because of both the cultural and historic aspects, as well as the importance to the tourism appeal of the islands

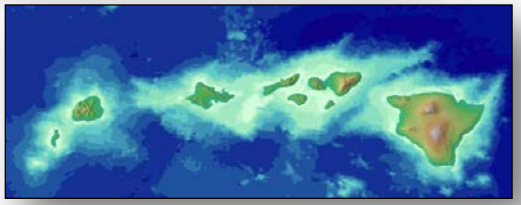
Pacific Region Environmental Studies

Ongoing Studies Informative to Hawai'i:

Inventory and Analysis of Coastal and Submerged Archaeological Site Occurrence near the Main Hawaiian Islands

Habitat Affinities and At-Sea Ranging Behaviors among Main Hawaiian Island Seabirds

A Marine Biogeographic Assessment of the Main Hawaiian Islands



Pacific Regional Ocean Uses Atlas – Hawaii Ocean Uses Atlas

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Pacific Region Studies Informative to Hawai'i

Inventory and Analysis of Coastal and Submerged Archaeological Site Occurrence near the Main Hawaiian Islands

Objectives:

- Accumulate information on submerged and terrestrial cultural and archaeological sites and site types
- Develop a geo-referenced database of known, reported, and potential historic shipwrecks on the Pacific OCS off the Main Hawaiian Islands
- Identify and develop a database of coastal historic properties that could be adversely impacted by the alteration of the view of the ocean

Pacific Region Studies Informative to Hawai'i

Habitat Affinities and At-Sea Ranging Behaviors among Main Hawaiian Island Seabirds

Objectives:

- Increase BOEM's understanding of at-sea habitat utilization and ranging behaviors for seabirds breeding within the Main Hawaiian Islands
- Conduct field studies of at-sea habitat utilization and ranging behaviors for seabirds breeding within the Main Hawaiian Islands
- Compile and analyze remotely sensed and modeled habitat data to examine habitat relationships to predict species' distributions and improve spatial vulnerability maps

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Pacific Region Studies Informative to Hawai'i

A Marine Biogeographic Assessment of the Main Hawaiian Islands

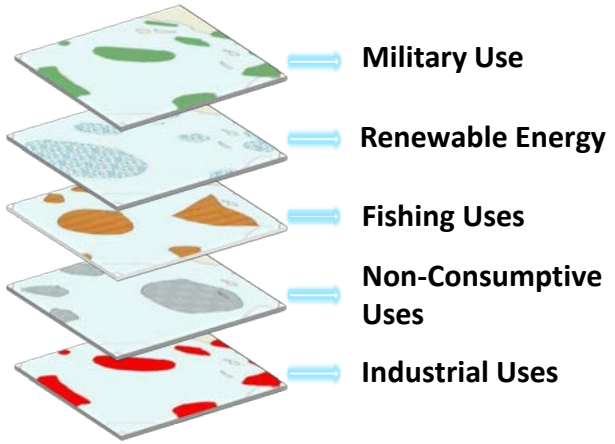
Objectives:

- Determine the spatial and temporal distribution of trophic groups, families, and species offshore the Main Hawaiian Islands
- Identify the location of ecologically unique and productive habitats offshore the Main Hawaiian Islands
- Determine how ecologically important areas are being utilized by living marine resources
- Identify where offshore renewable energy projects might be located to maximize energy production and minimize potential impacts to the marine environment

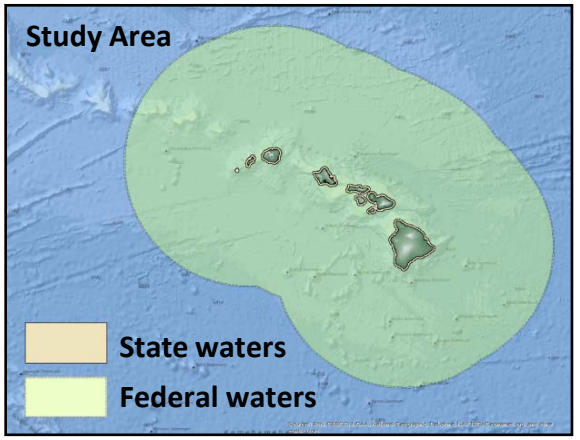
Pacific Regional Ocean Uses Atlas – Hawai'i Ocean Uses Atlas

PURPOSE: To collect ocean uses data to inform coastal and marine planning strategies and potential offshore renewable energy development

GOALS: To capture expert knowledge on the full range of human uses of the ocean through consultation with use experts, community stakeholders, and cultural use practitioners; to create data and analysis tools to assist in understanding use patterns, hotspots, conflicts and compatibilities



GEOGRAPHY: State and federal marine waters offshore the Main Hawaiian Islands (from shoreline to 200 nautical miles)



PARTNERSHIP: BOEM, NOAA, State of Hawaii Office of Planning

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Research into Operational Safety, Efficiency, and Pollution Prevention

Bureau of Safety and Environmental Enforcement Technology Assessment Program (TAP)

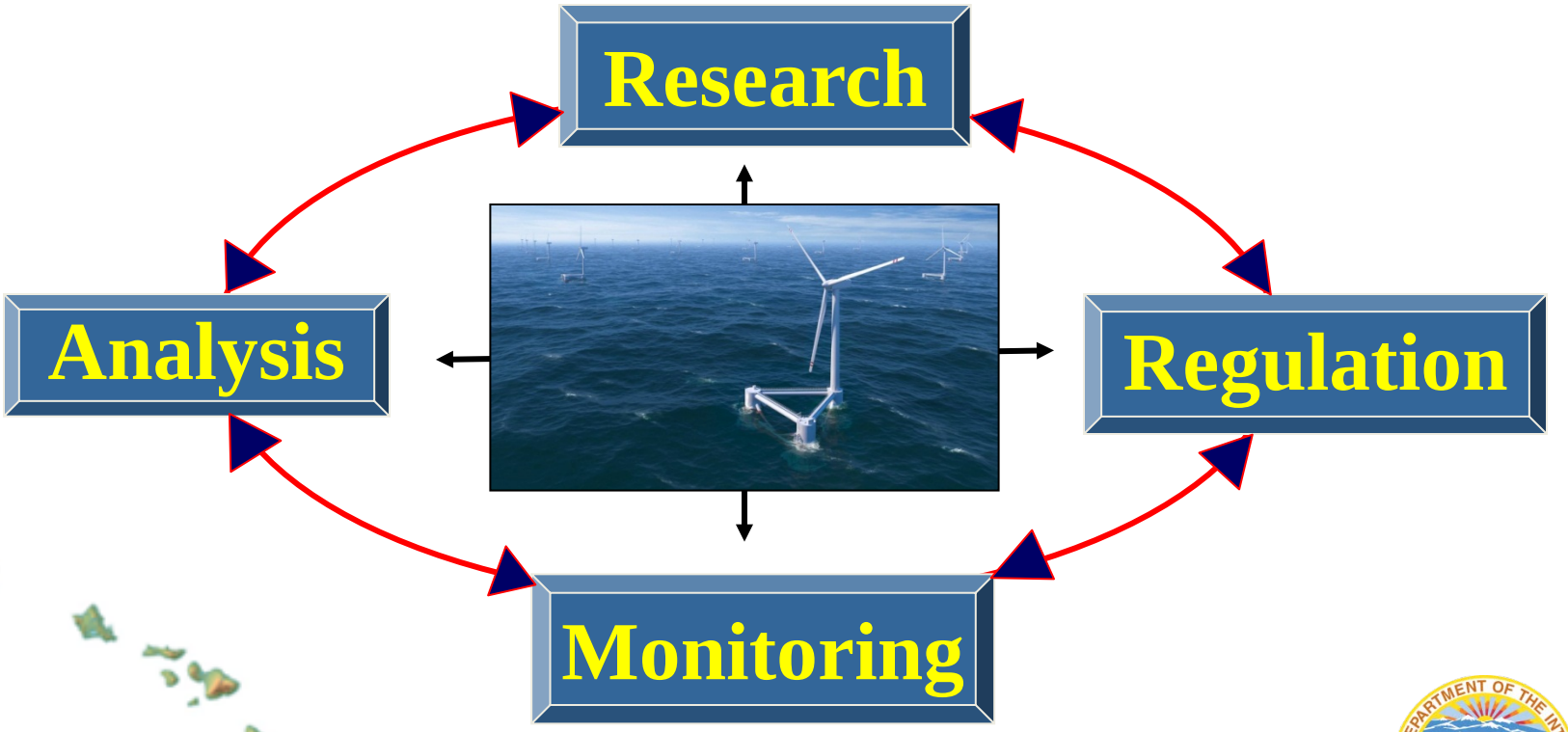
- Wind Farm Turbine Accidents and the Applicability to Risks to Personnel and Property on the OCS; Design Standards to Ensure Structural Safety/Reliability/Survivability of Offshore Wind Farms on the OCS

- Evaluate the Effect of Turbine Vibration Requirements on Structural Design Parameters
- Design Standards for Offshore Wind Farms

- Fatigue Design Methodologies Applicable to Complex Fixed and Floating Offshore Wind Turbines
- Determining the Infrastructure Needs to Support Offshore Floating Wind Facilities on the Pacific West Coast and Hawai'i (BOEM study)
- Assess/Develop Inspection Methodologies for Offshore Wind Turbine Facilities

http://www.bsee.gov/Research-and-Training/Renewable-Energy-Research-(REnR)/

Coordination, Collaboration & Consultation!



Mahalo!

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