



BOEM Bureau of
Ocean Energy Management

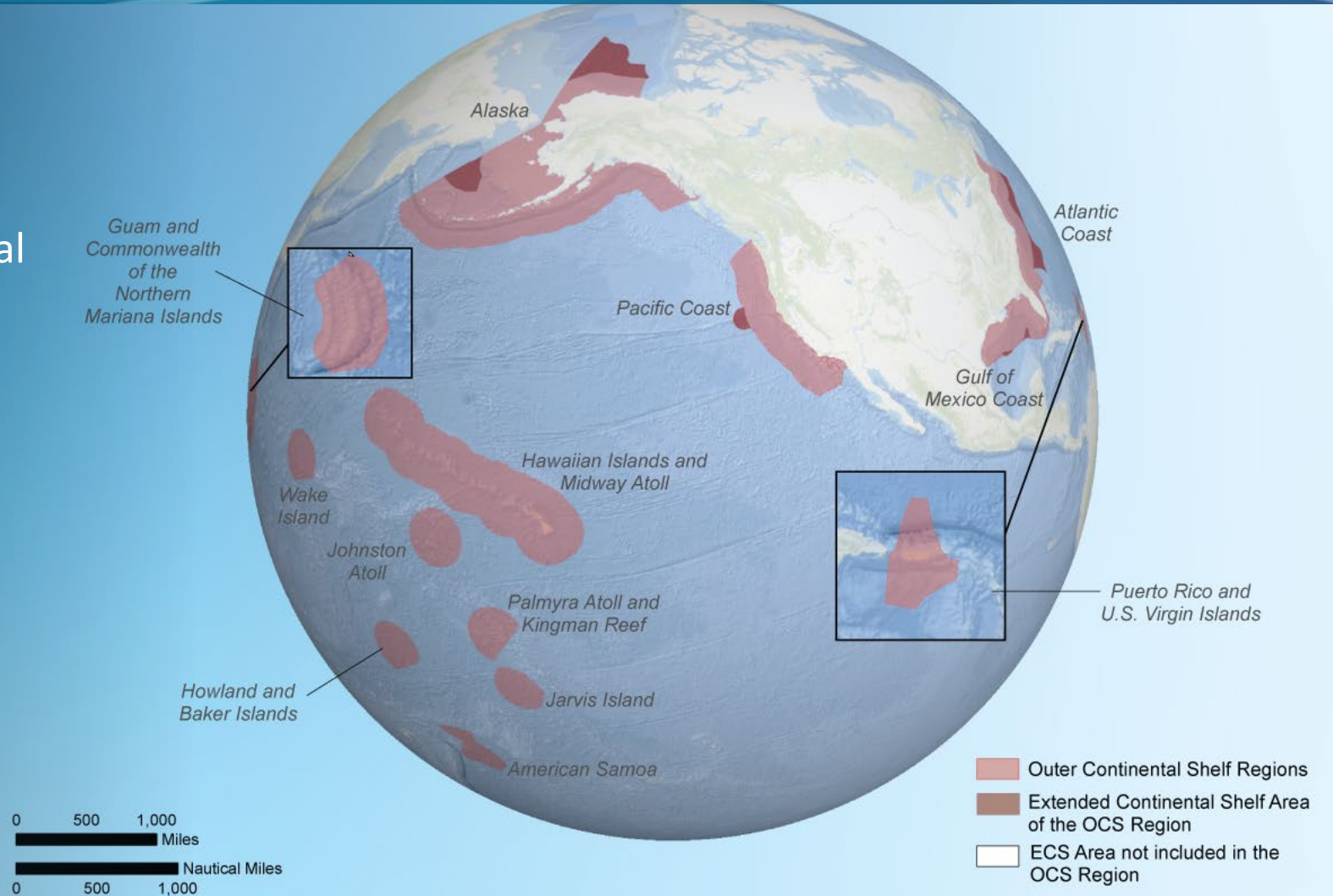
Bureau Overview

Dr. William Y. Brown | Chief Environmental Officer

BOEM's Mission

- The mission of the Bureau of Ocean Energy Management is to manage development of U.S. Outer Continental Shelf energy and mineral, and geological resources in an environmentally and economically responsible way.

○ OCS = 3.2 billion acres



Organization



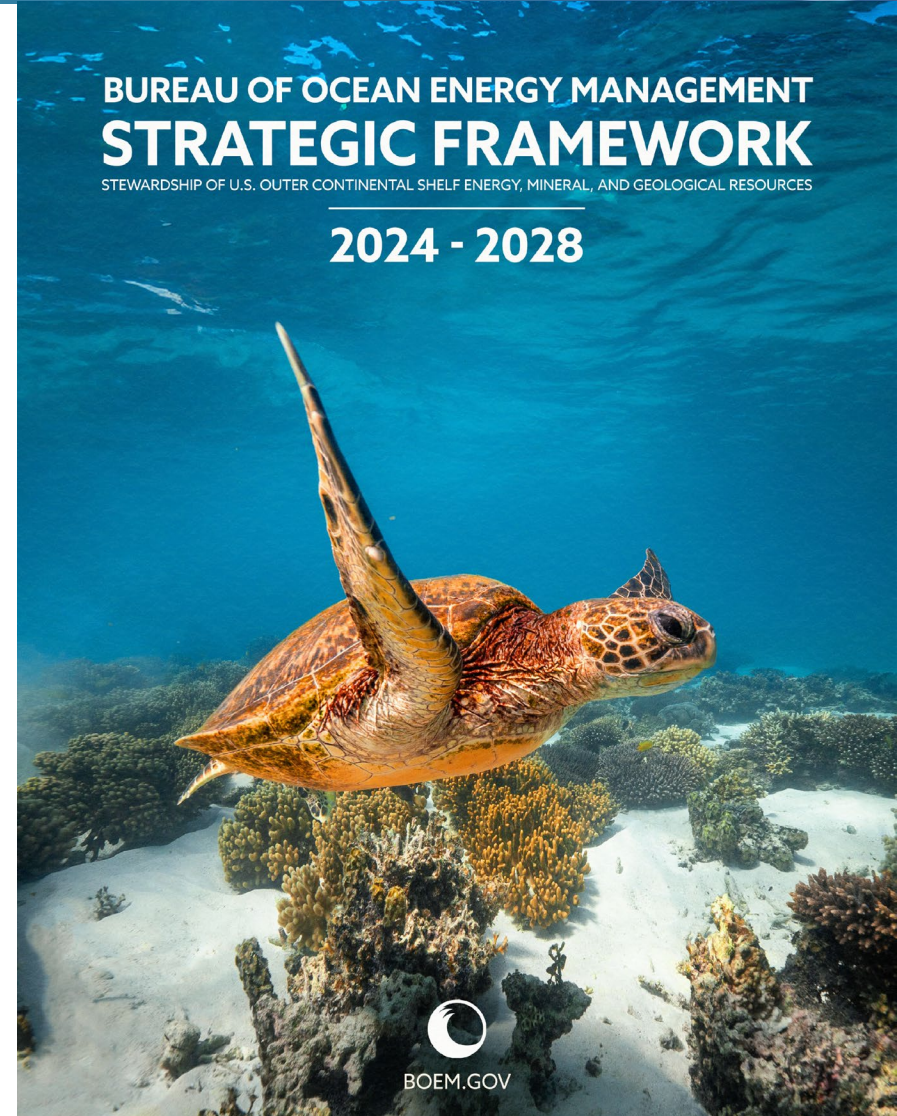
Operational Priorities

- Sustainably Manage **Outer Continental Shelf Energy and Mineral Resources**
- Position **BOEM to Address Emerging Offshore-Related Technologies, Opportunities, and Uses**
- Ensure BOEM has a **First in Class Environmental Program and Advances Environmental Stewardship**
- Build Effective Relationships with **Tribal Nations, Native Hawaiian Communities, and Pacific and Caribbean Indigenous Communities** in the U.S. Territories
- Meaningfully Engage with **Ocean Users, Partners, and Stakeholders**
- **Modernize Our Data and Technology Infrastructure**

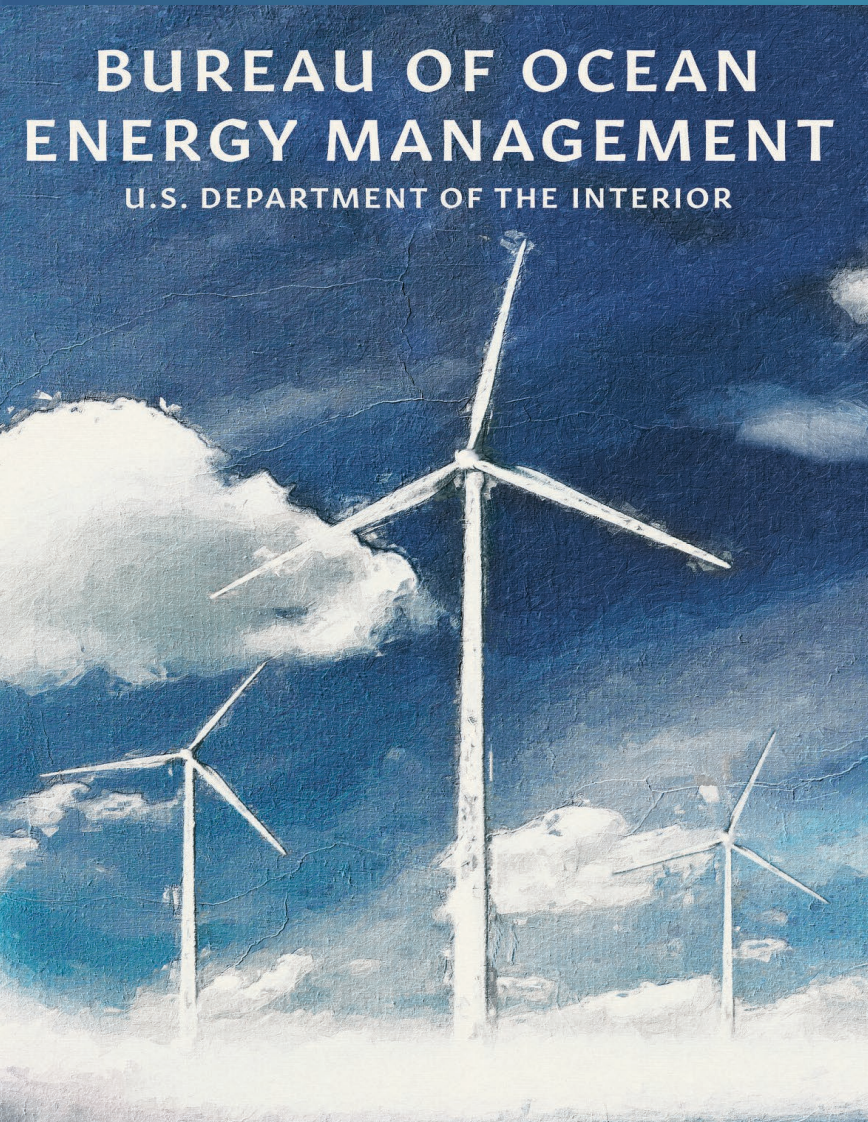
BUREAU OF OCEAN ENERGY MANAGEMENT **STRATEGIC FRAMEWORK**

STEWARDSHIP OF U.S. OUTER CONTINENTAL SHELF ENERGY, MINERAL, AND GEOLOGICAL RESOURCES

2024 - 2028



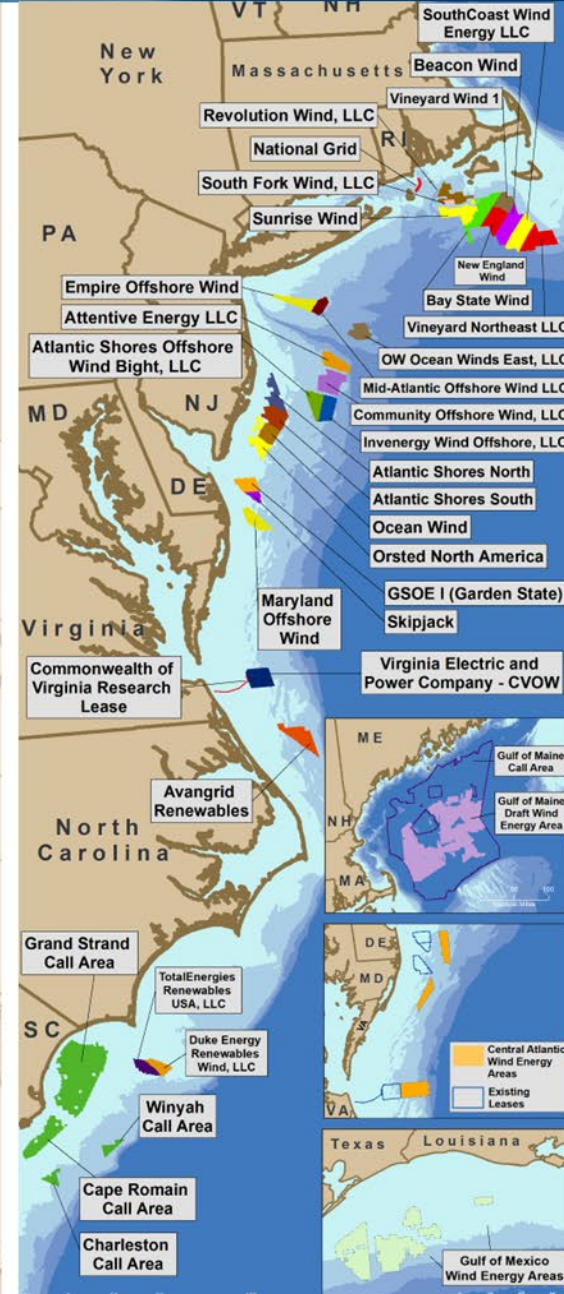
Renewable Energy



- BOEM is responsible for **planning and authorization of offshore renewable energy development** on the Outer Continental Shelf (OCS).
- The Department of the Interior (DOI) announced the **final regulations for the OCS Renewable Energy Program in 2009**, which was authorized by the Energy Policy Act of 2005 (EPAAct).
- These regulations provide a **framework for activities needed to support production and transmission of energy** from sources other than oil and natural gas.



Renewable Energy Program by the Numbers

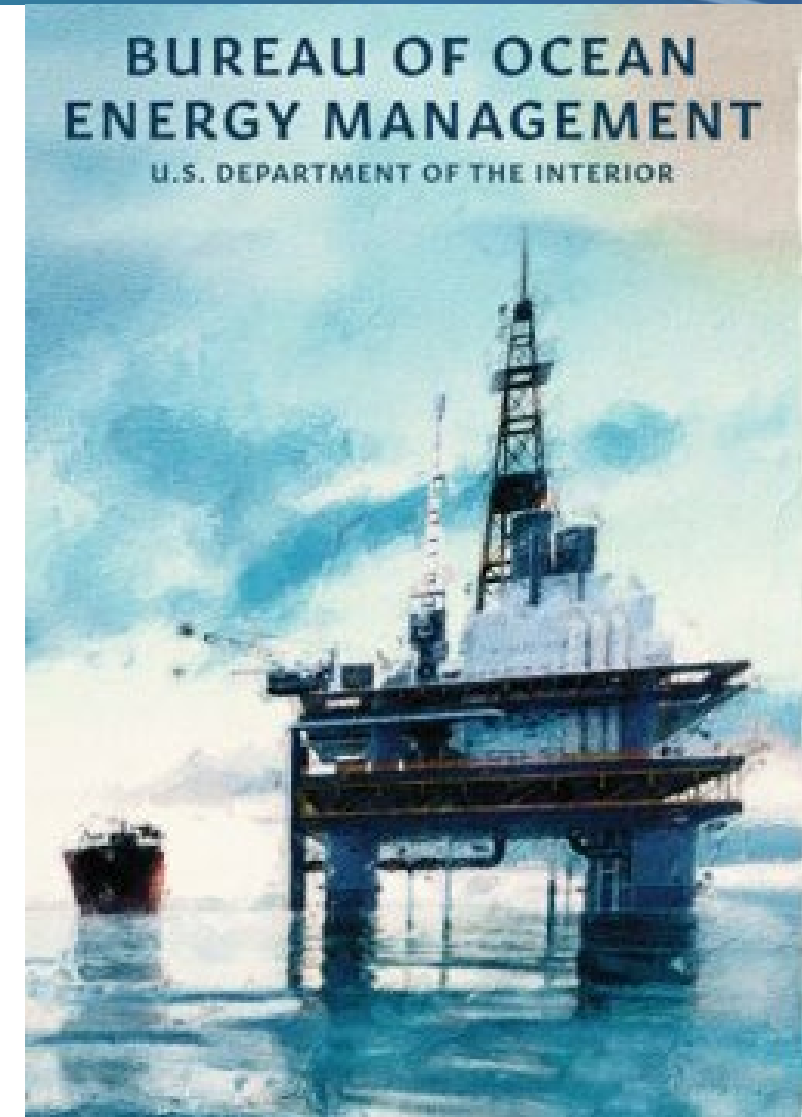


National Oil and Gas Program

The National Outer Continental Shelf Oil and Gas Leasing Program (National OCS Program) establishes a **5-year schedule of potential offshore oil and gas lease sales**.

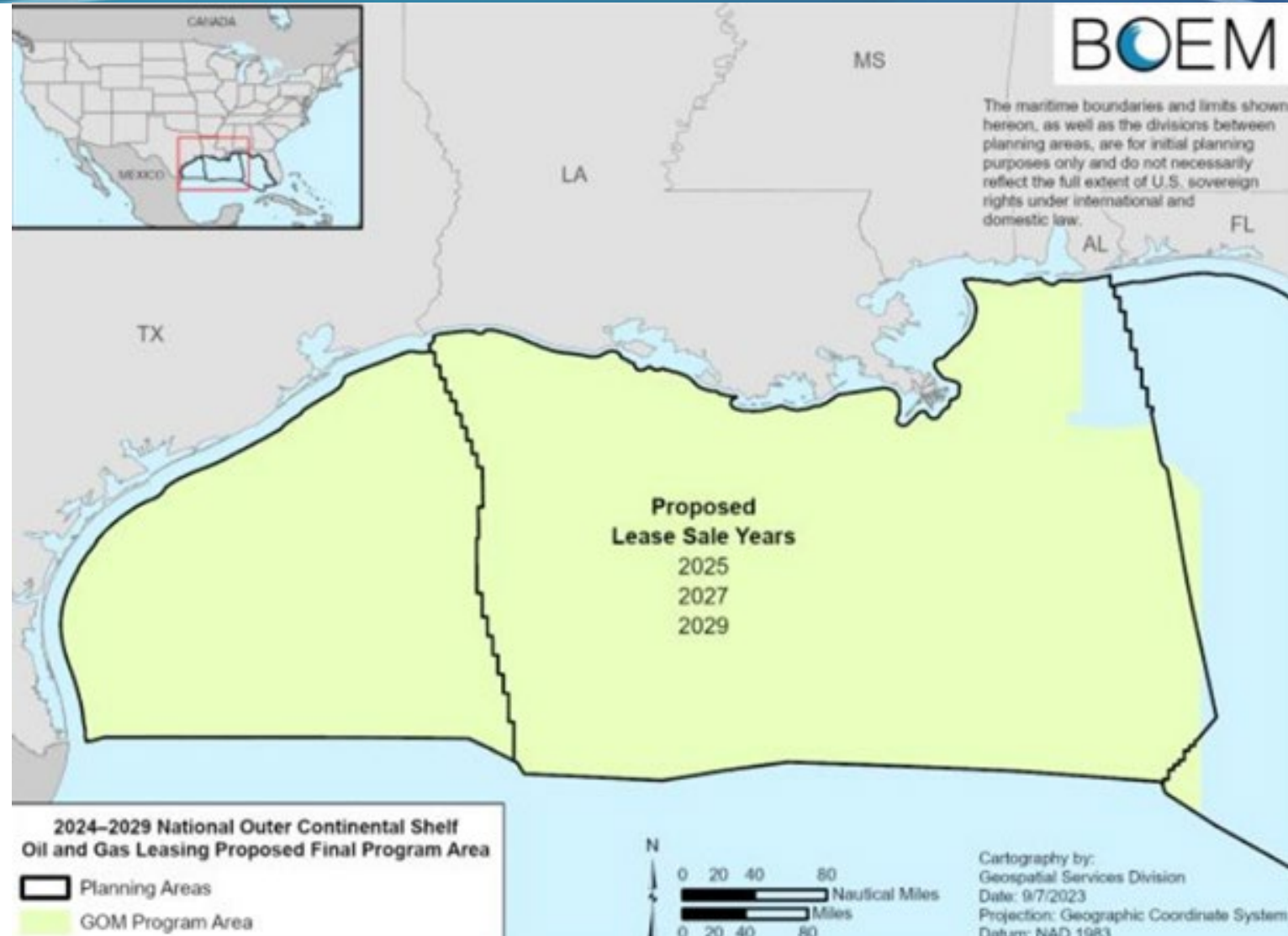
The 2024-2029 National OCS Program schedules **three oil and gas lease sales in the Gulf of Mexico (GOM) Program Area**. These three potential lease sales will help BOEM meet the IRA's requirements for future offshore renewable energy leasing and enable the Interior Department to continue to expand its offshore wind leasing program.

The National OCS Program specifies the size, timing, and location of potential leasing activity that the Secretary of the Interior determines **will best meet national energy needs as outlined in Section 18 of the OCS Lands Act**.



2024-2029 Oil and Gas Leasing

Sale Number	Sale Year	OCS Region and Program Area
262	2025	Gulf of Mexico: GOM Program Area
263	2027	Gulf of Mexico: GOM Program Area
264	2029	Gulf of Mexico: GOM Program Area



Marine Minerals Program



Promote **resilience** along our Nation's coasts



Protect national coastal **infrastructure** from storm damage



Respond to stronger and more frequent **storms**



Manage **multiple-use conflicts**

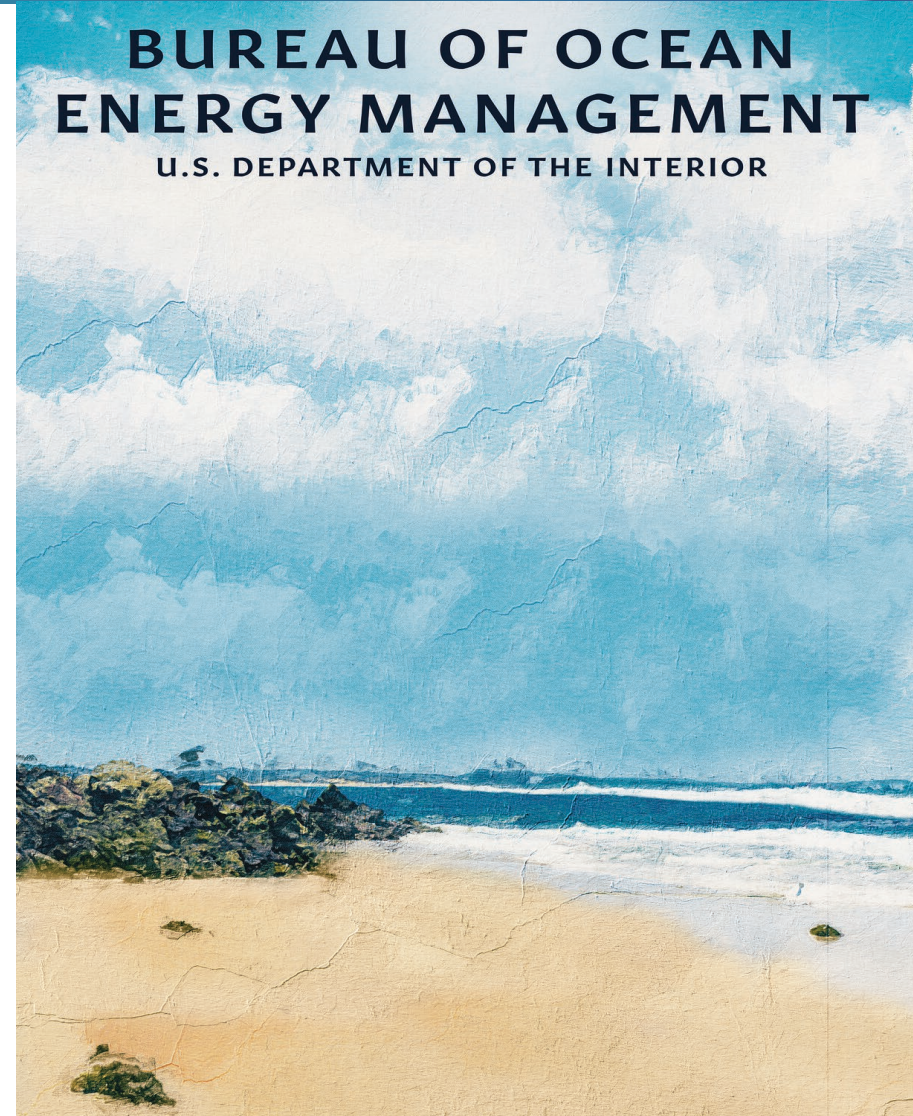


Develop a greater understanding of offshore **critical mineral** resources and characterize baseline environment conditions



Adapt to **sea level rise**

**BUREAU OF OCEAN
ENERGY MANAGEMENT**
U.S. DEPARTMENT OF THE INTERIOR



Carbon Sequestration



- The Bipartisan Infrastructure Law was signed into law on November 15, 2021, and authorizes the Secretary of the Interior to grant a lease, easement or right-of-way to:

“provide for, support, or are directly related to the injection of a carbon dioxide stream into sub-seabed geologic formations for the purpose of long-term carbon sequestration.”

- Rulemaking effort is in progress.



Recent BOEM Rulemaking

Completed

- BOEM BSEE Renewable Energy “Split Rule” ([88 FR 6376](#) January 31, 2023)
- U.S. Territory Jurisdiction ([88 FR 68460](#) October 4, 2023)

Proposed

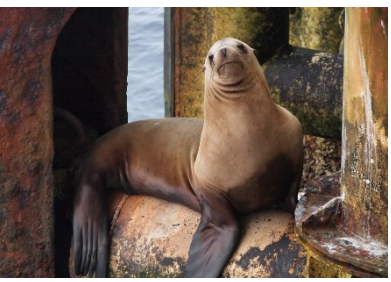
- Renewable Energy Modernization ([88 FR 5968](#) January 30, 2023, subsequently revised)
- Risk Management and Financial Assurance for Conventional Energy ([88 FR 42136](#) June 29, 2023)
- Protection of Marine Archaeological Resources ([88 FR 9797](#) February 15, 2023)

Proposal in development

- Carbon Sequestration: [Carbon Sequestration | Bureau of Ocean Energy Management \(boem.gov\)](#)



BOEM Environmental Program



- **Informs decision-makers and the public** about the potential impacts of Outer Continental Shelf (OCS) energy, mineral, and carbon sequestration activities on the marine, coastal, and human environment
- **Integrates applied science within BOEM's environmental analyses** that support programmatic decisions and ensure environmental protection
- Plays a leading role in BOEM to address **impacts on federally recognized tribes and communities with environmental justice concerns**
- Harnesses programmatic solutions and innovations



Long-Term Environmental Goals

Be a **“First in Class”** Environmental Program as advised by the US National Academies of Sciences, Engineering and Medicine

- 1** Protecting Ecosystems in the Context of Climate Change
- 2** Honoring Federal Trust Responsibility and Excelling in Consultation and Collaboration with Tribes
- 3** Advancing Environmental Justice



BOEM Environmental Leadership

Office of Environmental Programs

Dr. William Y. Brown
BOEM Chief Environmental Officer

Jessica Bravo
BOEM Deputy Chief Environmental Officer

Hillary Renick
BOEM Tribal Liaison Officer

Business Unit

Briana Smith
Manager

Regional & Program Environmental Supervisors

Dr. Arie Kaller
Gulf of Mexico Region

Rick Yarde
Pacific Region

Sharon Randall
Alaska Region

Jessica Stromberg
Renewable Energy Program

Jeff Reidenauer
Marine Mineral Program

Division of Environmental Sciences & Environmental Studies Program

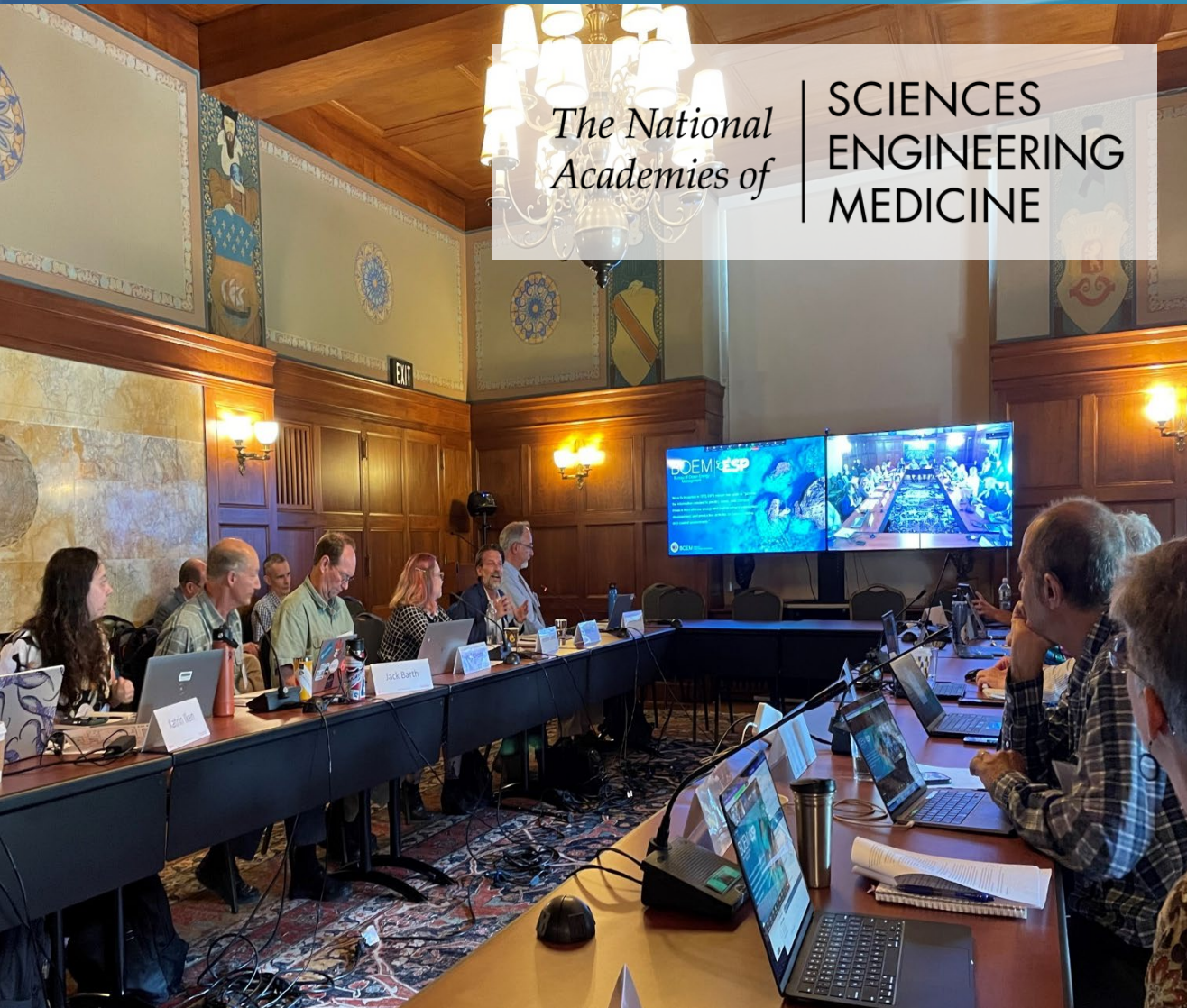
Dr. Rodney Cluck

Division of Environmental Assessment & Center for Marine Acoustics

Dr. Jill Lewandowski



Relationship with the National Academies



UMBRELLA CONTRACT FOR SCIENTIFIC ADVICE SINCE 2015

- **Standing advisory committees**
 - Offshore Science & Assessment (COSA) established in 2015
 - Offshore Wind and Fisheries established in 2023
- **Ongoing consensus studies**
 - Increasing Diversity in the US Ocean Studies Community
 - Potential Hydrodynamic Impacts of Offshore Wind Energy on Nantucket Shoals
 - Attributes of a First-in-Class Environmental Program
- **Peer review**
 - Air Quality Modeling in the Gulf of Mexico Study
- **Planned upcoming workshops**
 - Nantucket Shoals field monitoring program workshop



Environmental Studies Program (ESP)



ESP's mission is to provide the information needed to predict, assess, and manage impacts from offshore energy and marine mineral exploration, development, and production activities on human, marine, and coastal environments



Environmental Studies Program (ESP)

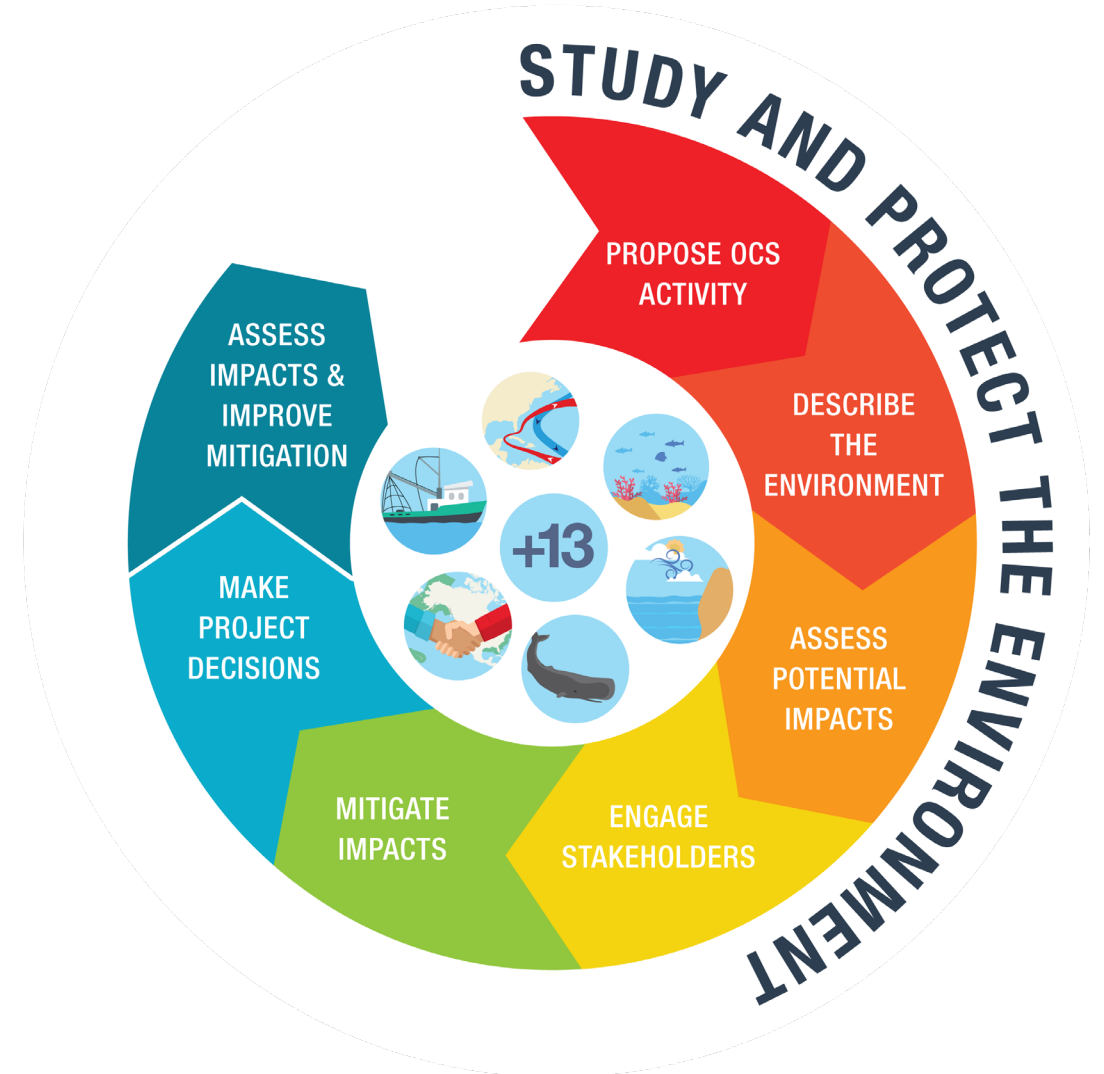
Information to protect the environment

- Serves **all BOEM Regions and Programs**
- Authorized by **Section 20 of the OCS Lands Act**
- Over **\$1.25 billion provided** for research since its inception in 1973
- **About \$30 million** in annual funding
- **Final reports** available at:
 - GovInfo (<https://www.govinfo.gov/collection/boem>)
 - BOEM ESP Hub (<https://esp-boem.hub.arcgis.com>)
- **Rigorous planning, review and procurement process** that adheres to DOI's scientific integrity principles



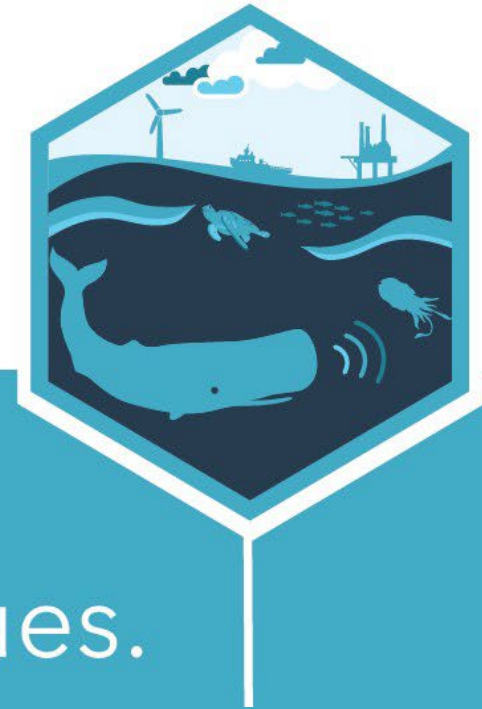
Environmental Assessment

Our experts **use the best available science and Indigenous knowledge** to analyze potential impacts to multiple marine resource areas



Bureau of Ocean Energy Management

Center for Marine Acoustics



VISION

Be a **trusted voice** on marine acoustic issues.



Center for Marine Acoustics

FUNCTIONS:

Modeling. Build models that address current needs and drive improvements in the field.

Knowledge. Track emerging science, fill data gaps, and apply new risk assessment methods.

Policy. Address key policy and management improvements, both internal and external.

Messaging. Improve stakeholder understanding of actual risks.

Strategy. Plan in six-year planning horizons. Adapt based on performance and emerging information.

Partnerships. Develop relationships with domestic and international organizations that advance shared goals.



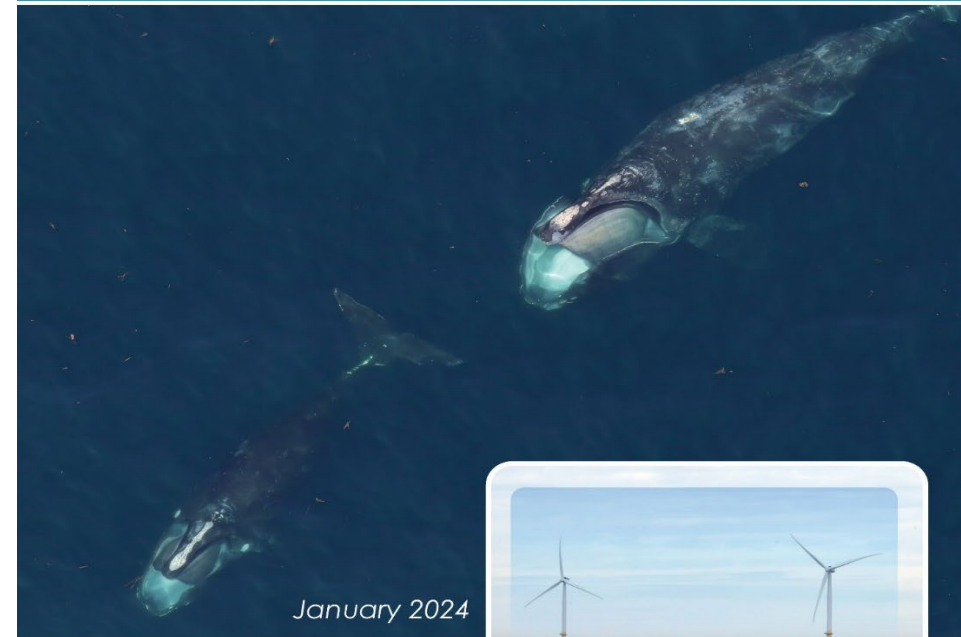
North Atlantic Right Whale Strategy

Interagency effort to protect and promote recovery of North Atlantic right whales while responsibly developing offshore wind

- **Goal 1:** Mitigation and decision-support tools
- **Goal 2:** Research and monitoring
- **Goal 3:** Collaboration, communication, and outreach

BOEM and NOAA Fisheries North Atlantic Right Whale and Offshore Wind Strategy

BOEM and NOAA Fisheries North Atlantic Right Whale and Offshore Wind Strategy



BOEM
Bureau of Ocean Energy
Management



**NOAA
FISHERIES**

Regulatory Web Requiring Assessment and Mitigation

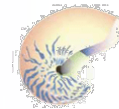


Partnerships

50 years of environmental
science & research partnering
and leveraging resources



Subcommittee on
Ocean Science &
Technology
Interagency Working Group
on Ocean Partnerships



Coastal
Marine
Institute
University of Alaska & Minerals Management Service



Tribal Engagement



- Better understand **Tribal connections to physical and biological resources**
- Be mindful of **Tribal communities' long-term horizon**
- Understand **impacts to Tribal communities**

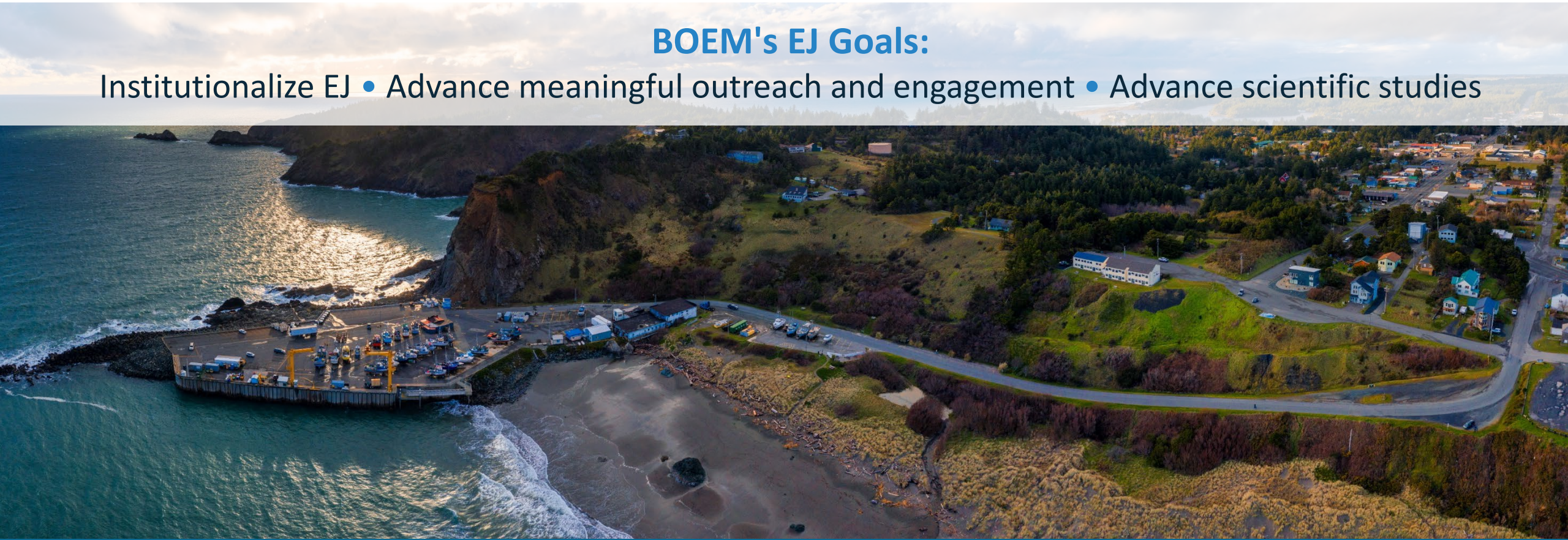


Environmental Justice

BOEM is committed to advancing inclusivity, equity, and environmental justice (EJ) through its programs, policies, and decisions.

BOEM's EJ Goals:

Institutionalize EJ • Advance meaningful outreach and engagement • Advance scientific studies



What Will an AI Foundation Model Be Able to Do In a Few Years?

- Read and generate text
- Know more than any single human about all subjects
- Browse the internet
- Use existing software infrastructure (**e.g., keyboard, mouse, calculator, python and other codes**)
- See and generate images and video
- Hear, speak, and generate music
- Think longer like a contemplating human
- Self-improve in domains that offer a reward function
- Be customized and fine-tuned for specific tasks, with many apps already available in app stores
- Communicate with other LLMs

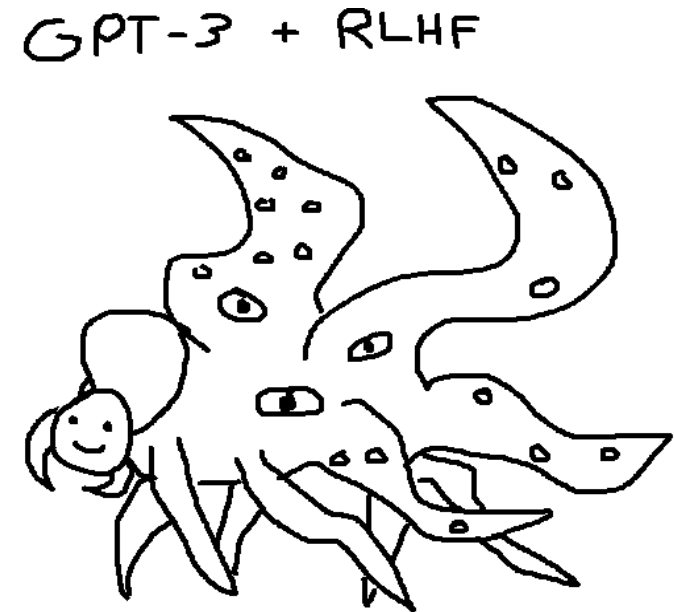
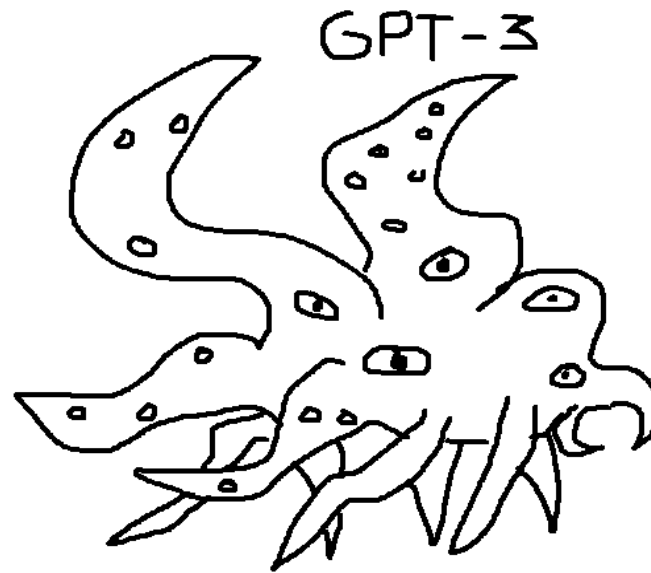


AI and the Shoggoth

Will the Shoggoth kill us after the
Singularity!?

Is it good to be a “**specist?**”

Will humans kill each other with
AI if the Shoggoth doesn't?



- o @TetraspaceWest See also: “Why an Octopus-like Creature Has Come to Symbolize the State of A.I.” Kevin Rouse, NYT, 30 May 2023. RLHF is Reinforcement Learning From Human Feedback.

What Might BOEM Be Able to Do with an AI Foundation Model?

- **Perform analyses and write reports** of any kind using assisting apps and fine-tuned training within the DOI firewall, getting more thoroughly researched products much faster and with less expense.
- **Particularly**, use an AI foundation model trained with the SOCS/EBM information base and model to **produce environmental documents and analyses including draft EISs.**



Status of the Outer Continental Shelf

