



BOEM BUREAU OF OCEAN
ENERGY MANAGEMENT

BOEM National Ocean Priorities

Ocean Research Advisory Panel

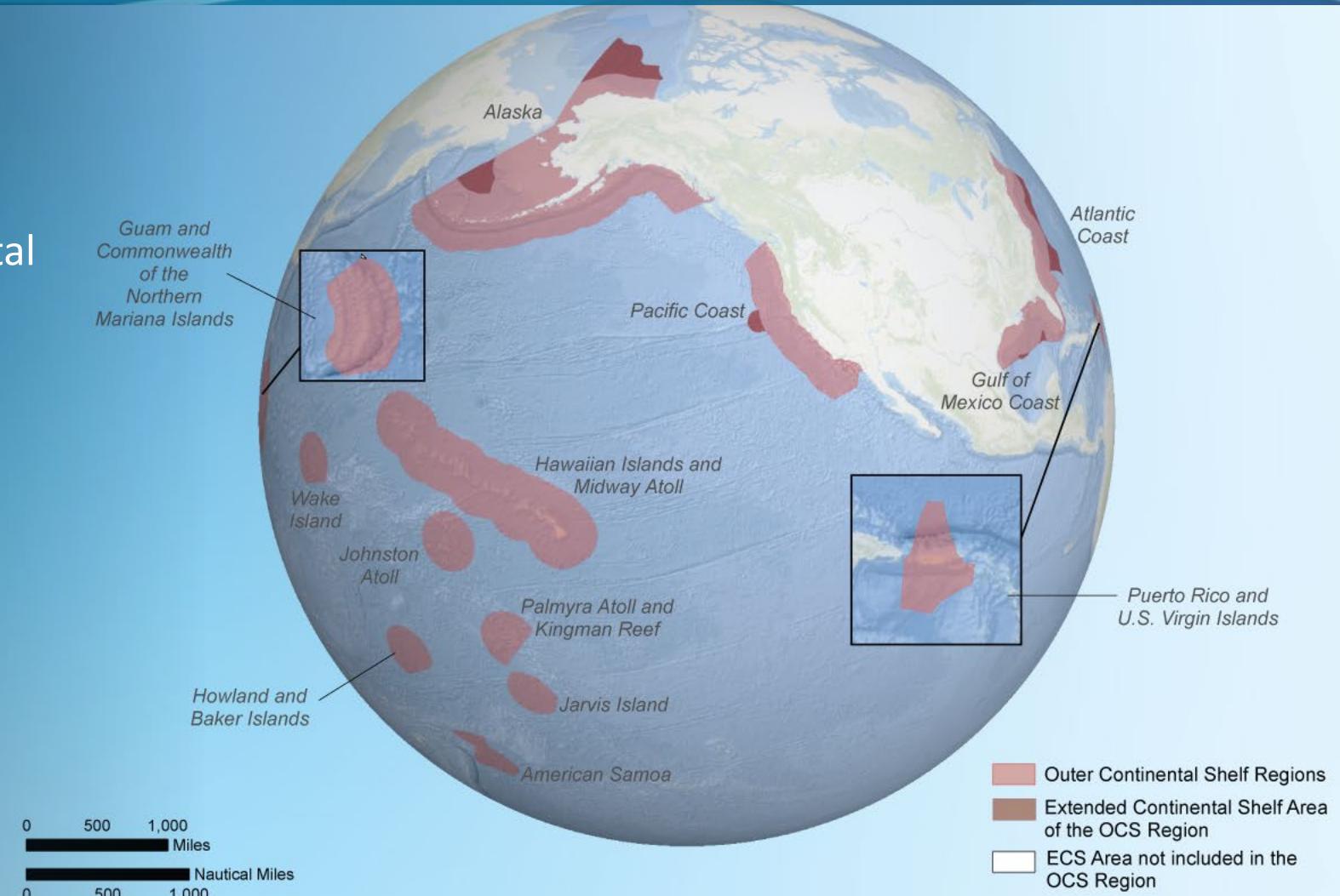
May 21, 2024

Dr. Rodney Cluck | Chief, BOEM's Environmental Studies Program

BOEM's Mission

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

- OCS = 3.2 billion acres

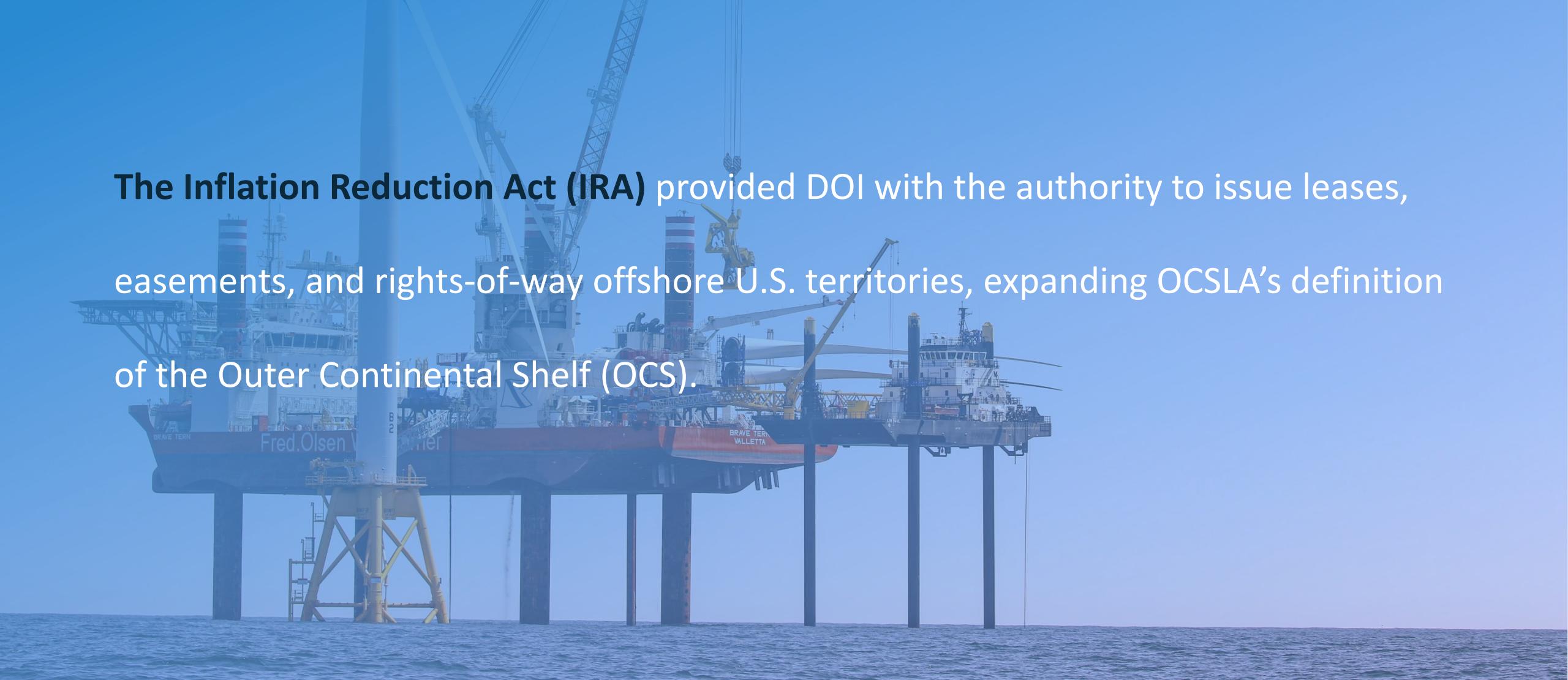


BOEM and the U.S. Territories

- Environmental Studies Program (ESP) coordinates and oversees studies, working closely with other BOEM programs.
- OREP (Office of Renewable Energy Program) conducts the planning process in both Puerto Rico and the U.S. Virgin Islands.
- BOEM Pacific Regional Office conducts planning in the Pacific Territories (Guam, America Samoa, Northern Mariana).



New Authority in the Territories

A large offshore oil rig with multiple levels of platforms and cranes is the central focus. In the background, a red and white supply vessel with the name 'Fred Olsen' is visible. The sky is clear and blue.

The Inflation Reduction Act (IRA) provided DOI with the authority to issue leases, easements, and rights-of-way offshore U.S. territories, expanding OCSLA's definition of the Outer Continental Shelf (OCS).



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](#))
- Risk Management and Financial Assurance for Conventional Energy ([89 FR 31544 April 24, 2024](#))

Proposed

- Renewable Energy Modernization ([88 FR 5968 January 30, 2023, subsequently revised](#))
- Protection of Marine Archaeological Resources ([88 FR 9797 February 15, 2023](#))

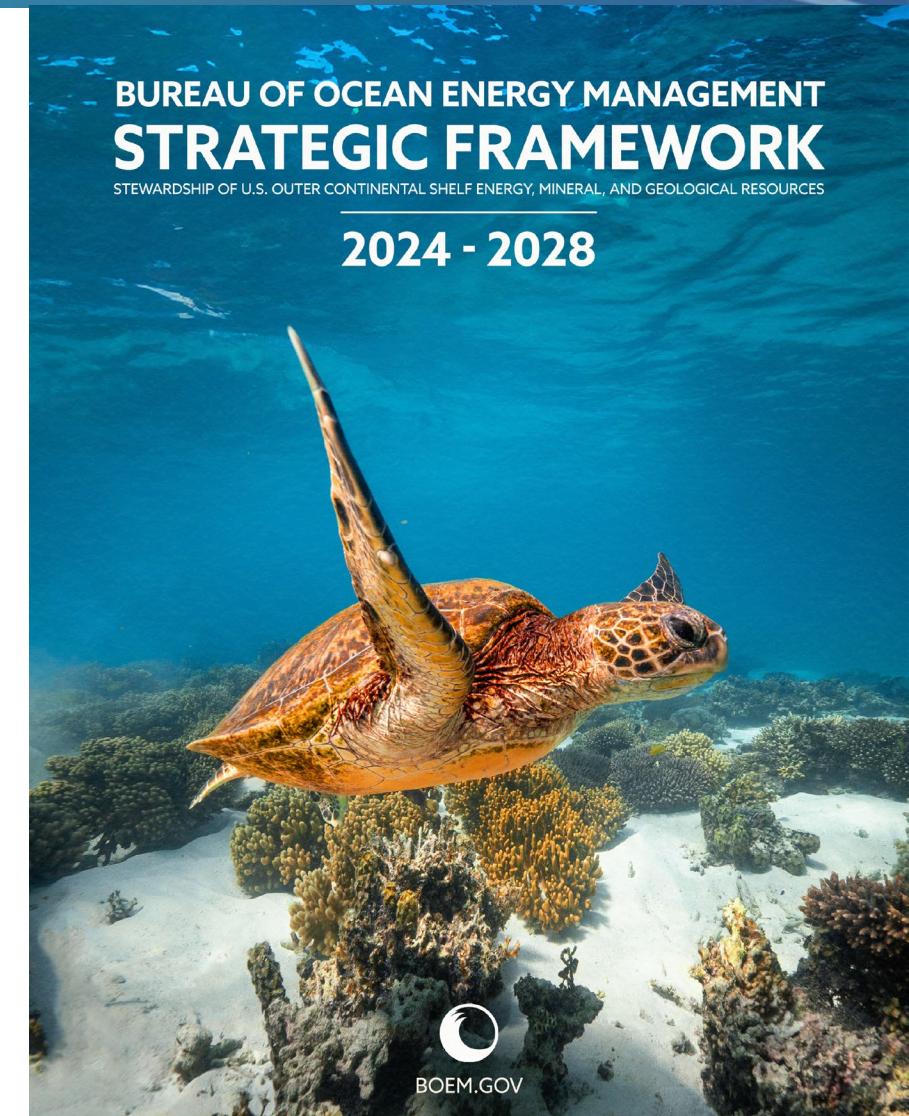
Proposal in development

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

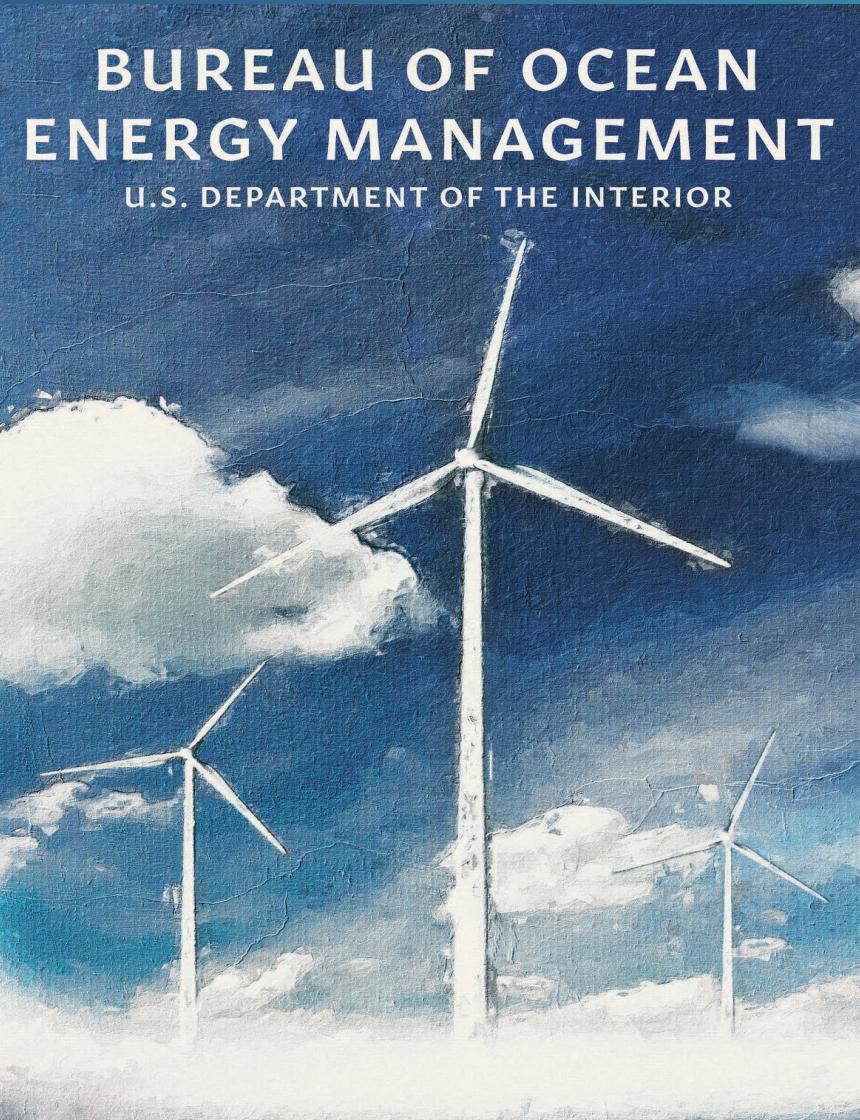


Operational Priorities

- Sustainably manage OCS 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**



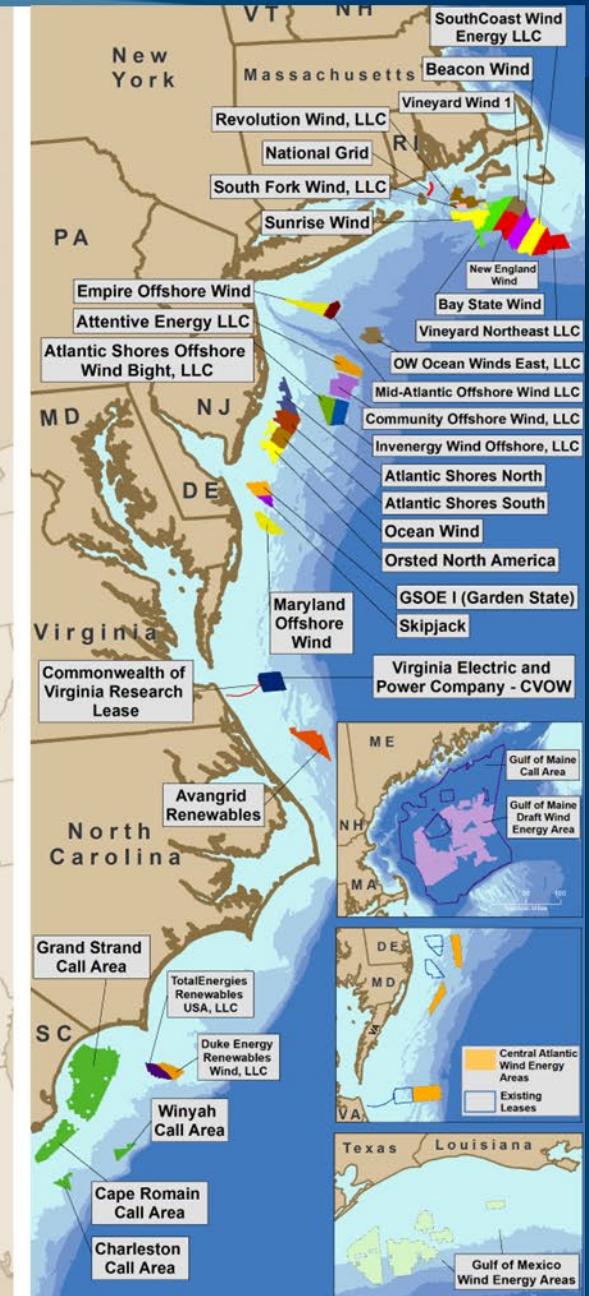
Renewable Energy



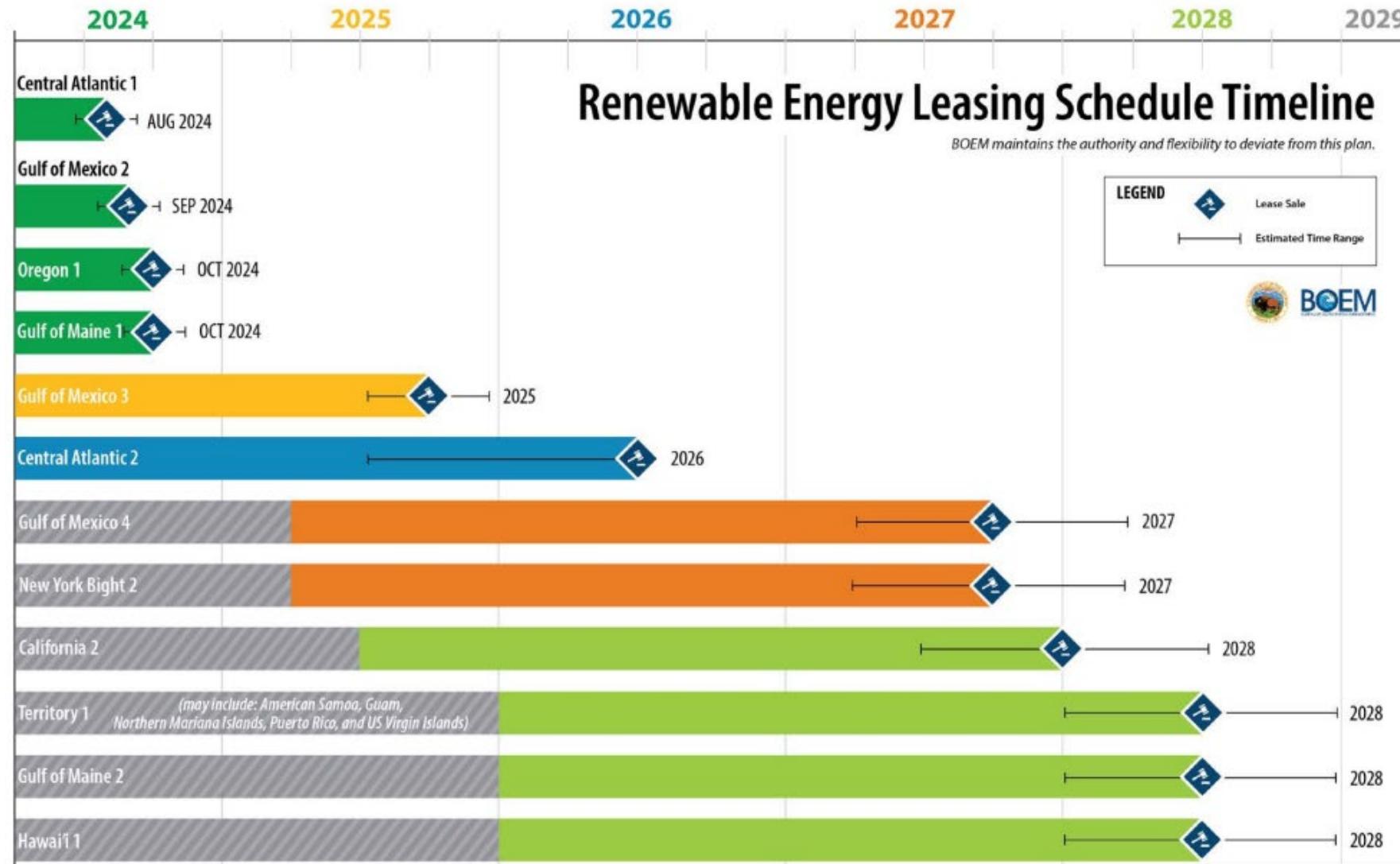
- BOEM is responsible for **planning and authorization of offshore renewable energy development** on the OCS.
- The Department of the Interior (DOI) announced the **final regulations for the OCS Renewable Energy Program in 2009**, which was authorized by the Energy Policy Act of 2005 (EPAct).
- These 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



Renewable Energy Leasing Schedule Timeline

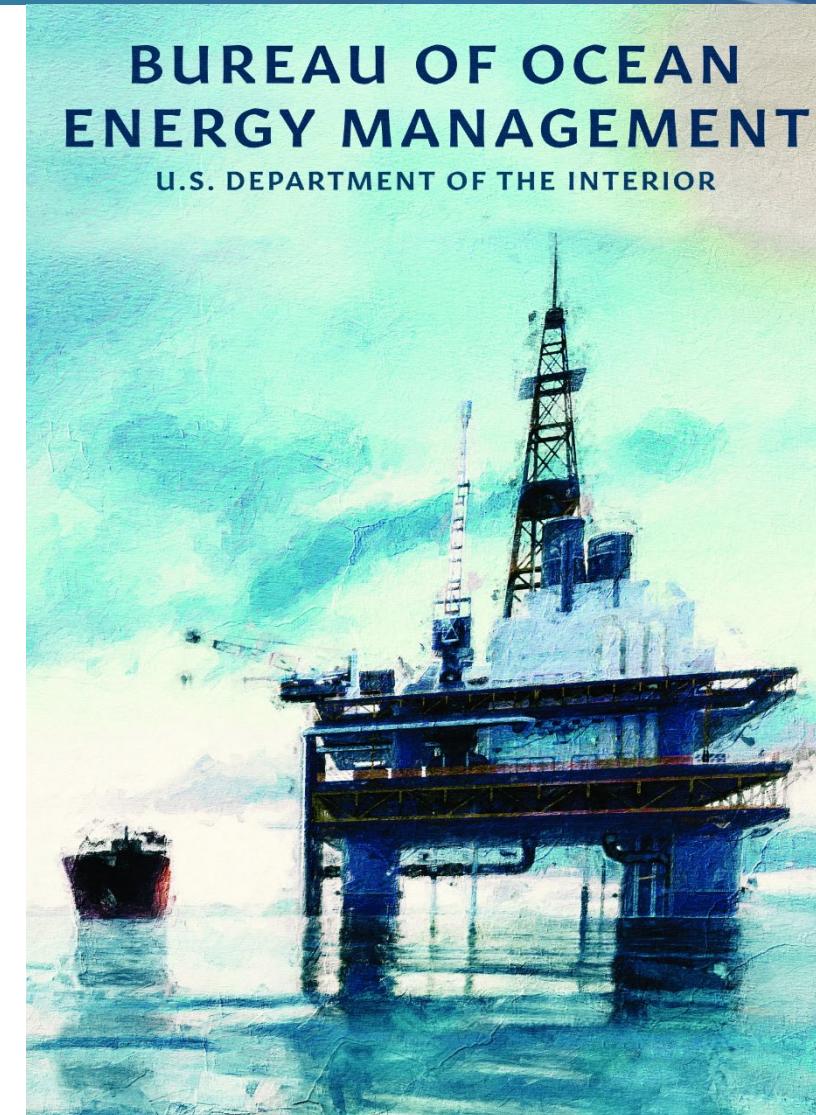


National Oil and Gas Program

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**.

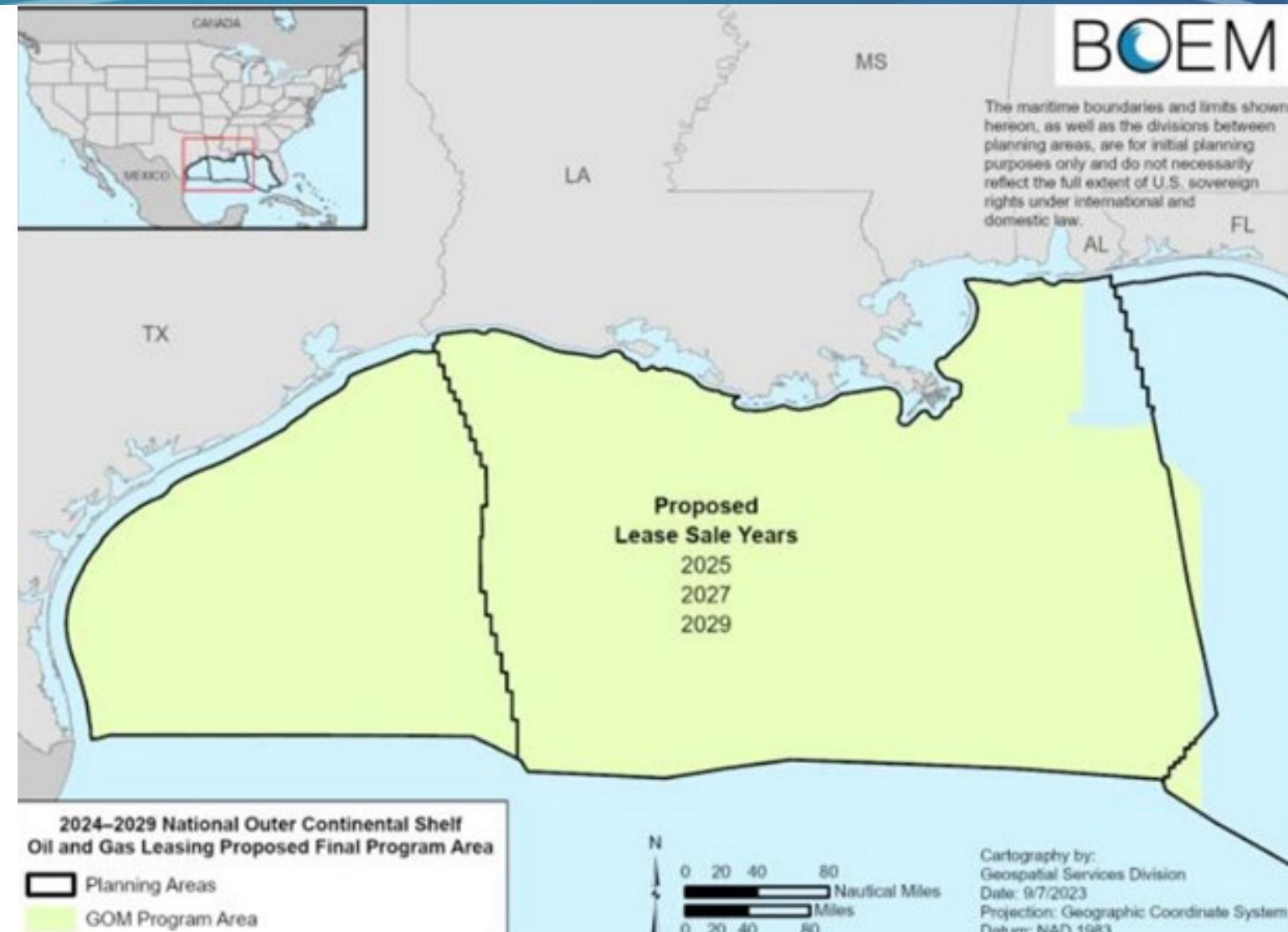
The 2024-2029 National OCS Program schedules **three oil and gas lease sales in the Gulf of Mexico (GOM) Program Area**. These potential lease sales will help BOEM meet the IRA's requirements for future offshore renewable energy leasing and enable the Interior Department to continue to expand its offshore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



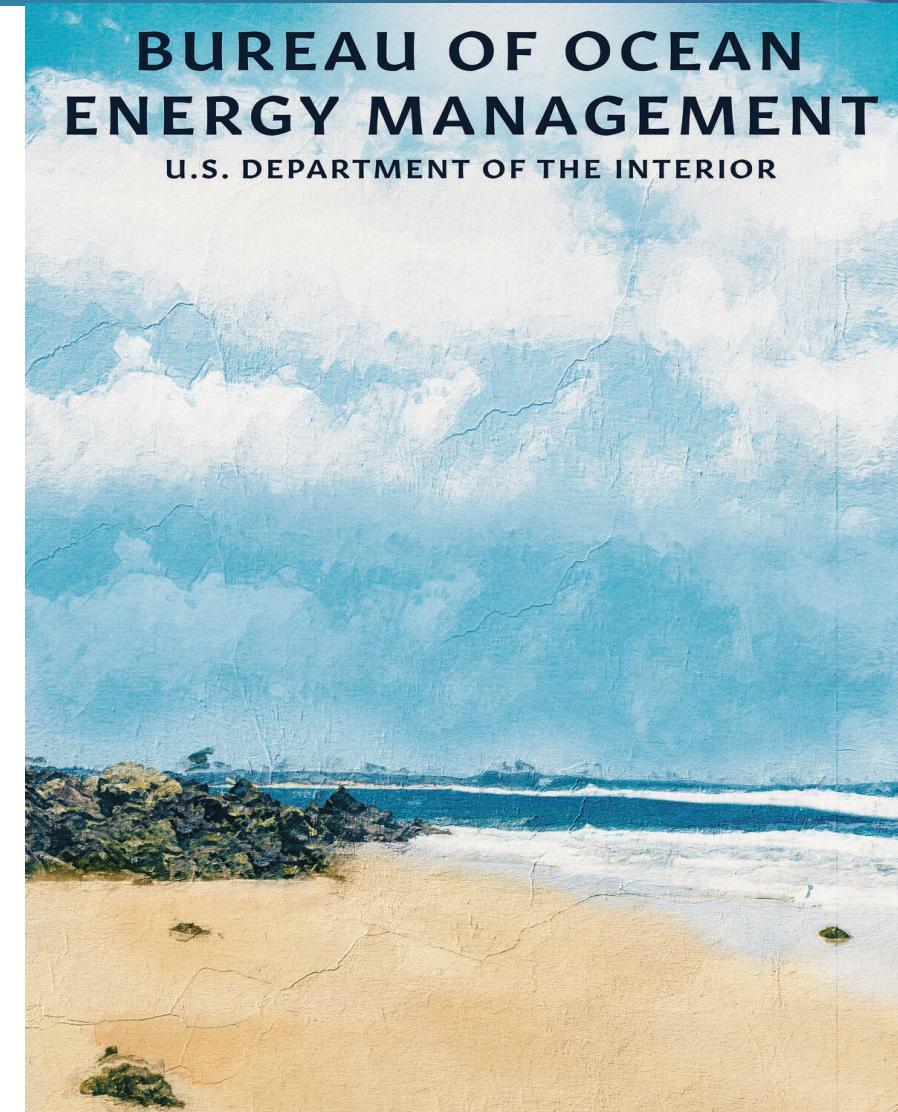
2024-2029 Oil and Gas Leasing

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

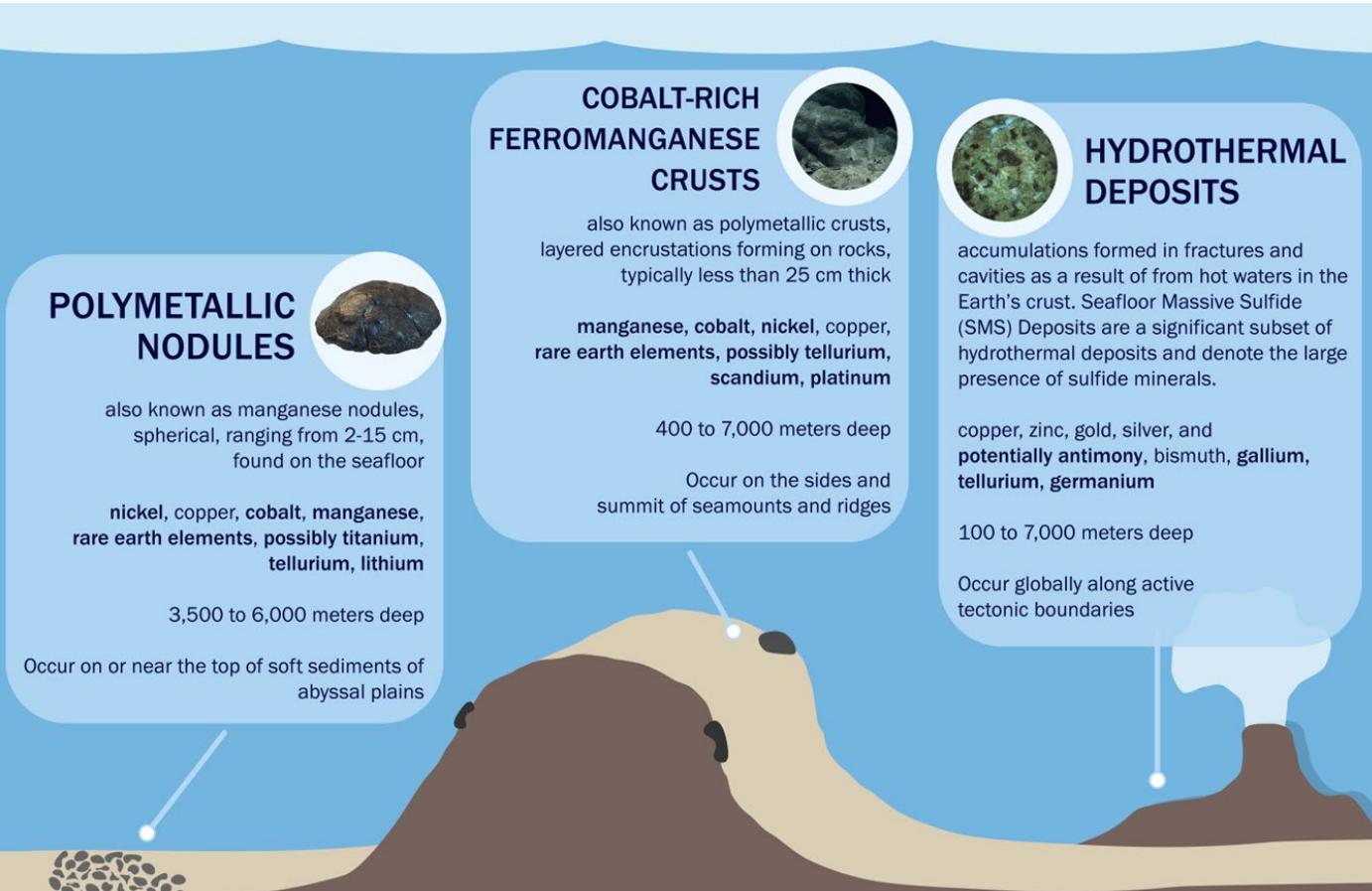


Marine Minerals Program

- °  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**



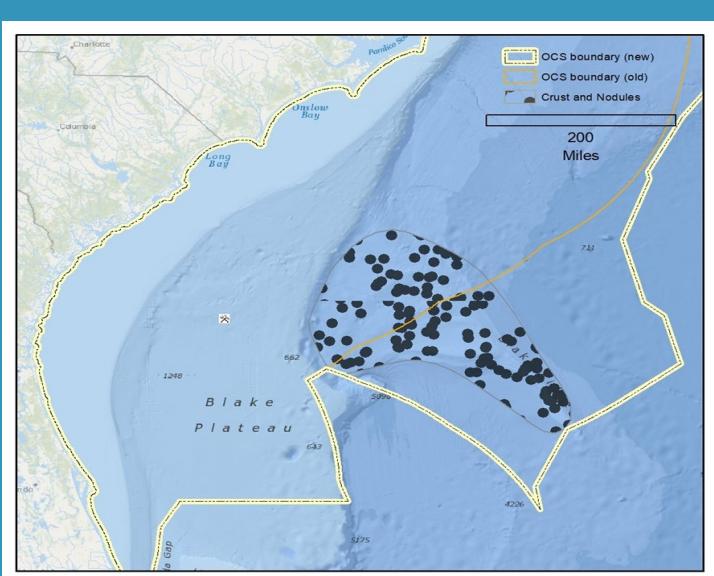
Marine Critical Minerals Research – Needs



BOEM and our partners are working to explore and characterize poorly understood marine critical mineral resources and habitats and **associated biological communities**. We are investigating potential environmental impacts such as long-term recovery.



Marine Critical Minerals Research – Partnerships

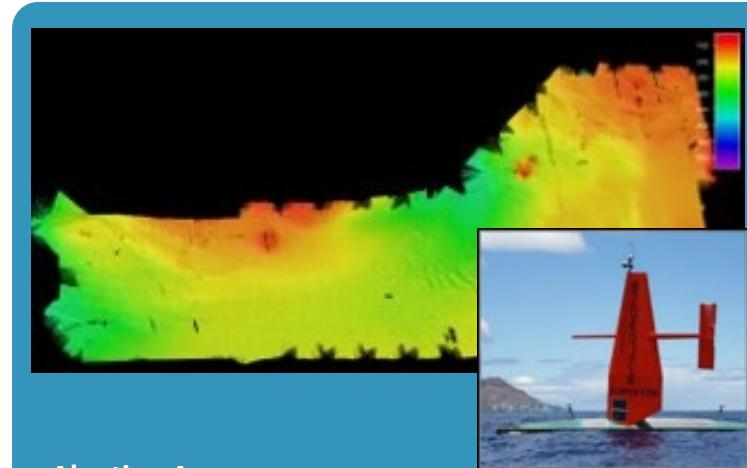


Blake Plateau Natural Experiment Site

- Nodule and crust; less economically valuable
- 300 km offshore, 800 m depth
- In 1970 a company tested collection methods
- Opportunity to study long-term ecological recovery
- 2023 AUV imagery, 2025 ROV samples

Research Partners:

- USGS
- NOAA



Aleutian Arc

- Hydrothermal vents (gas seeps)
- Seamount crusts
- Highly abundant deep sea corals/sponges
- Natural hazards (volcanism and earthquakes)
- Poorly mapped, explored, characterized
- 3 separate expeditions: 2022 Saildrone Surveyor prototype (mapping); 2023 NOAA Okeanos Explorer ROV (exploration); 2025 Alvin submersible (characterization)

Research Partners:

- Seascape Alaska (NOMEC Regional Campaign)
- USGS
- NOAA, Ocean Exploration Cooperative Institute (UNH, WHOI)



Offshore Hawaii

- Unknown but potential nodules (CCZ to south) in abyssal plains
- Seamounts (new one discovered by mapping)
- Poorly mapped, explored, characterized
- 3 separate expeditions: 2023 E/V Nautilus (mapping + eDNA); Summer 2024 Okeanos Explorer (mapping); Fall 2024 R/V Kilo Moana (USGS-led seafloor characterization and UAF water column)

Research Partners:

- USGS
- NOAA ,
- Ocean Exploration Cooperative Institute (Ocean Exploration Trust, Univ Rhode Island)
- R/V Kilo Moana via NSF / UNOLS
- Univ Alaska Fairbanks



Carbon Sequestration

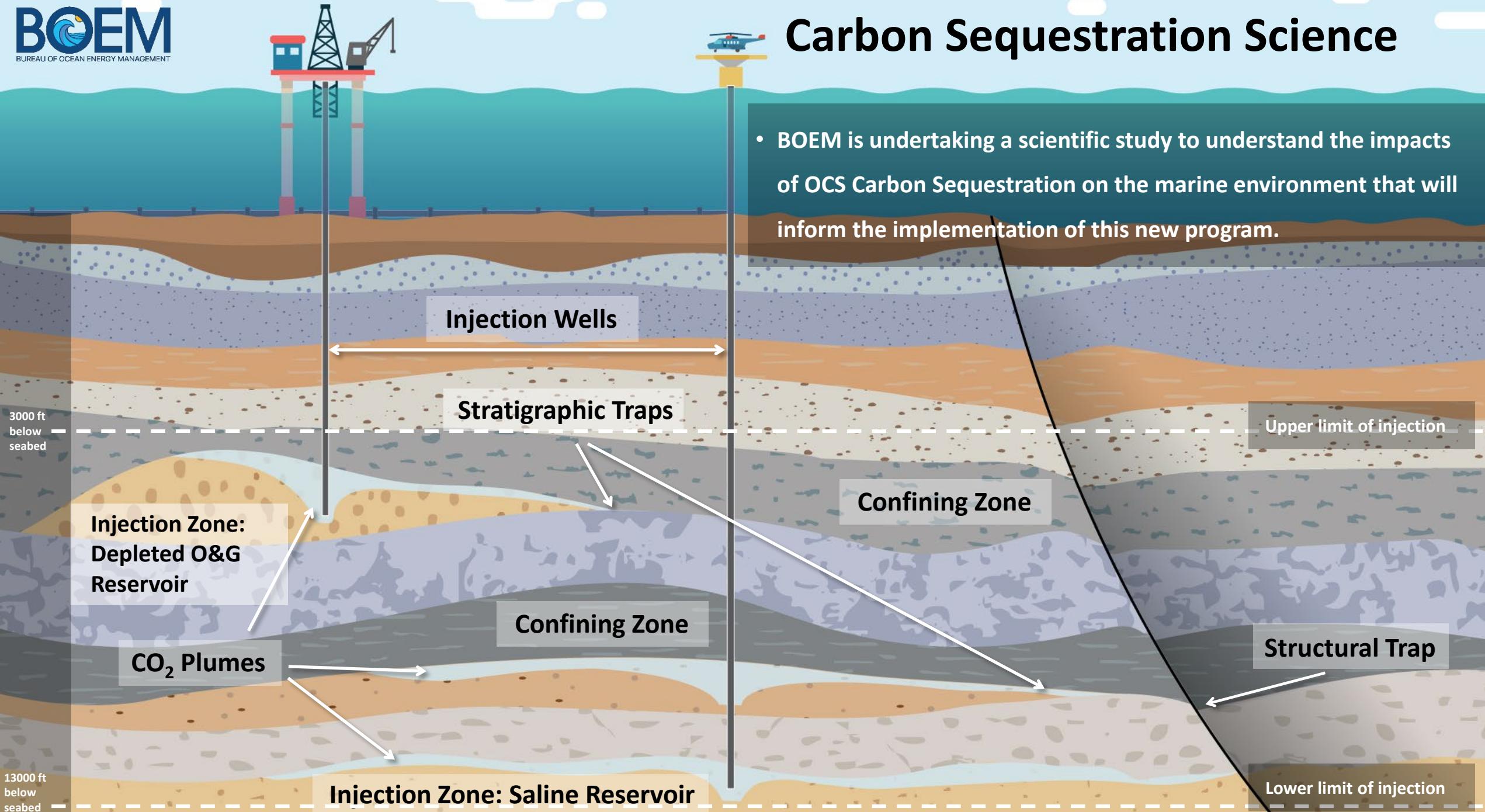


- The Bipartisan Infrastructure Law (BIL) was signed into law on November 15, 2021, and authorizes the Secretary of the Interior to grant a lease, easement or right-of-way to:

“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.”
- The BIL directs the Secretary of the Interior shall promulgate regulations to carry out the amendments made by this section.
- A joint BOEM and BSEE Rulemaking effort is in progress.



Carbon Sequestration Science



BOEM Environmental Program



- **Informs decision-makers and the public** about the potential impacts of 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



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

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
- **Rigorous planning, review and procurement process** that adheres to DOI's scientific integrity principles
- **Final reports** available at:
 - GovInfo (<https://www.govinfo.gov/collection/boem>)
 - BOEM ESP Hub (<https://esp-boem.hub.arcgis.com>)



Partnerships

50 years of environmental
science & research partnering
and leveraging resources



BOEM BUREAU OF OCEAN
ENERGY MANAGEMENT



National Oceanographic Partnership Program (NOPP)

Facilitates **partnerships** between **Federal agencies, academia, and industry** to advance ocean science research and education

The NOPP Approach

Identify areas of **ocean science research** and education that are important to two or more funding entities and that would most benefit from a partnership approach

Value Proposition

Working together achieves more, and does so more efficiently, than working alone



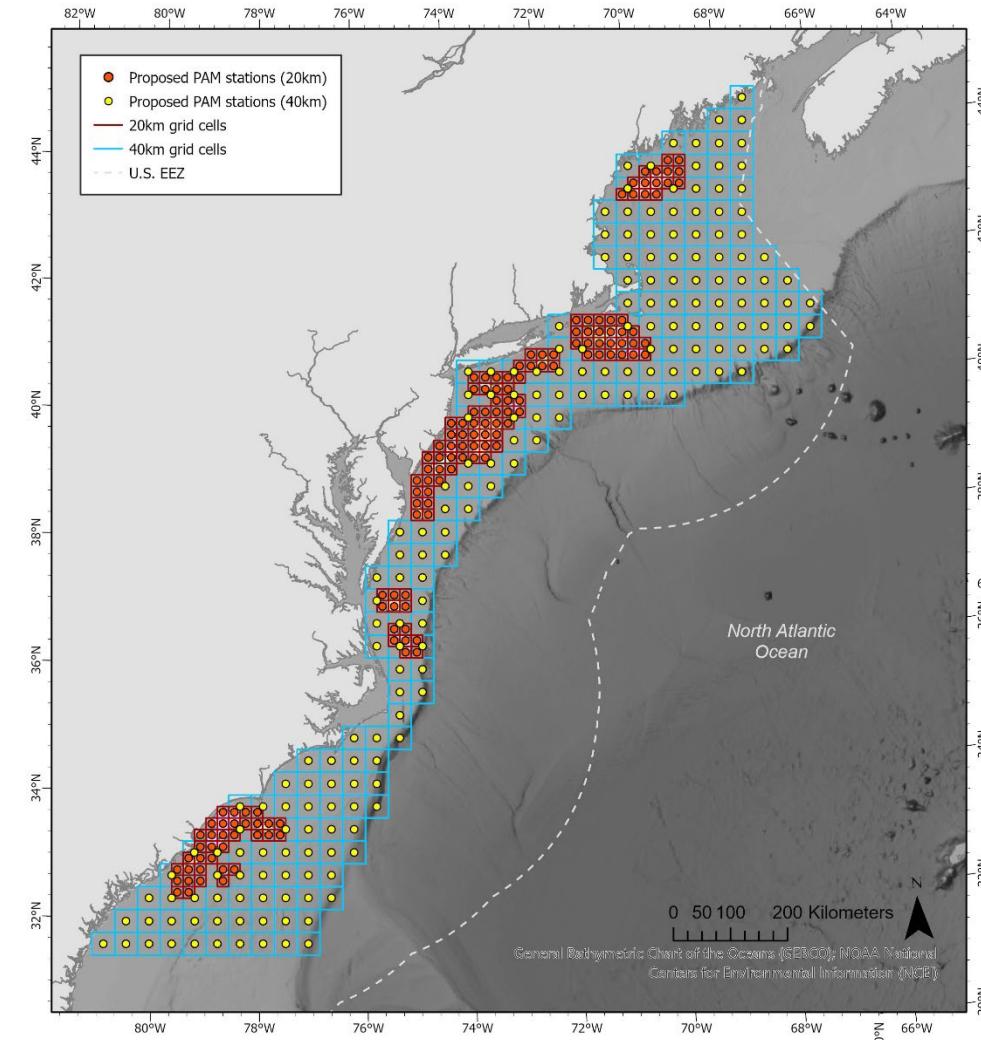
Public-Private Partnerships for Environmental Monitoring

Atlantic passive acoustic monitoring network

- Region-wide passive acoustic monitoring of marine mammals to understand their distribution and movement in relation to offshore wind development and ecosystem dynamics.
- Multi-partner effort with industry, Federal agencies, academia, Regional Wildlife Science Collaborative, and other stakeholders.

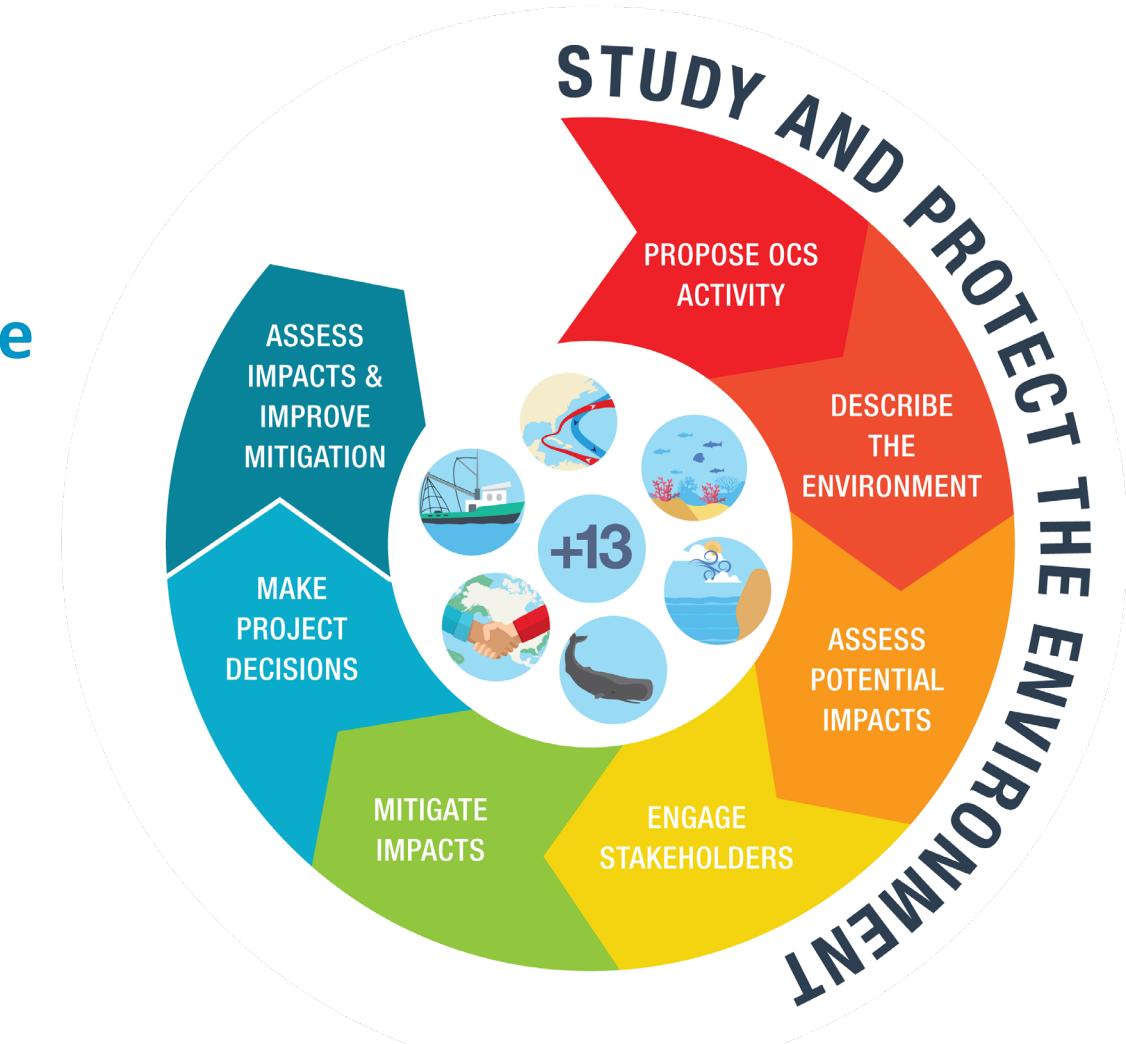
Regional environmental monitoring

- Potential to establish industry partnerships to conduct long-term, region-wide, systematic, and standardized analysis of oceanographic processes.
- Developers could contribute to shared monitoring effort in lieu of undertaking required monitoring themselves.
- Effective monitoring requires a whole system approach (PAM, eDNA, animal telemetry, radar-all using AI)

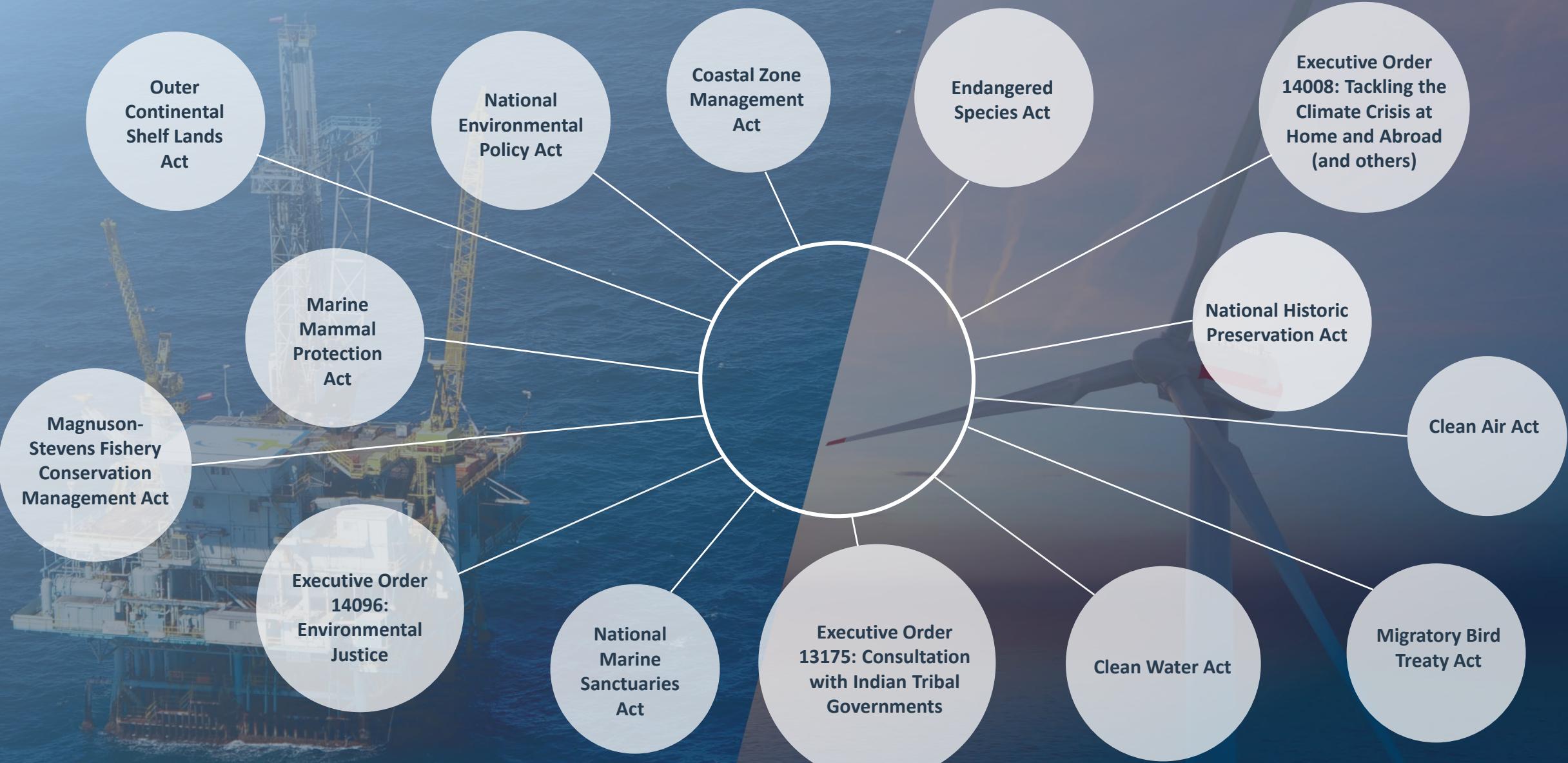


Environmental Assessment

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



Regulatory Web Requiring Assessment and Mitigation



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.



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

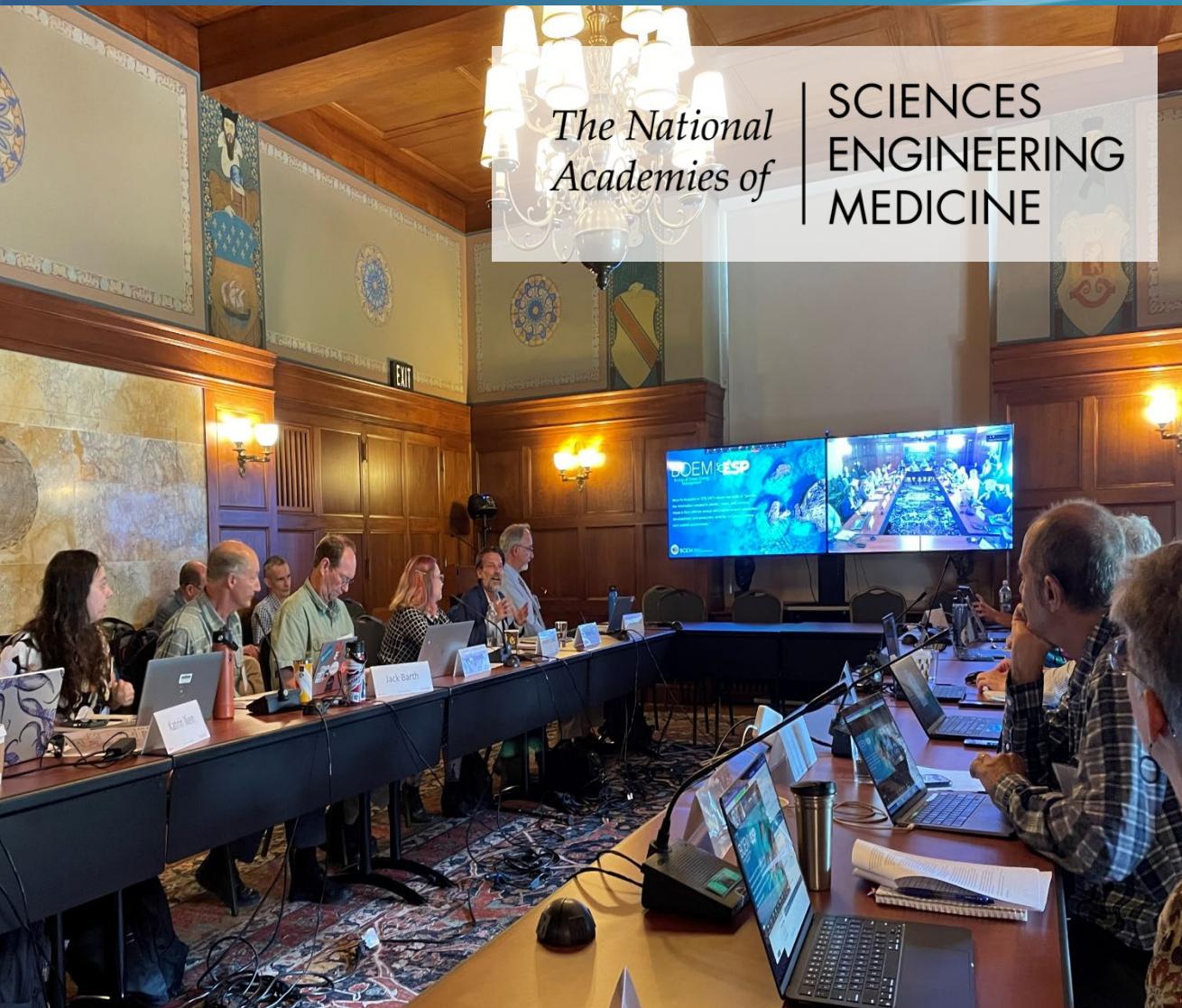
BOEM is committed to advancing inclusivity, equity, and environmental justice (EJ) through its programs, policies, and decisions. BOEM's EJ goals are to institutionalize justice, advance meaningful outreach and engagement, and advance scientific studies.

Recent Actions taken by BOEM:

- Contributed to the writing and review of the Ocean Justice Strategy (OJS) and currently integrating recommendations into BOEM's forthcoming EJ Strategy
- Implemented a pilot effort to advance meaningful engagement approaches by convening a quarterly Environmental Justice Forum tied to the New York Bight Programmatic EIS
- Finalized an EJ Best Practices guide to support effective and consistent consideration of EJ in NEPA
- Prioritized the proposal and funding of studies related to environmental justice



Relationship with the National Academies



- **Standing advisory committees**
 - Offshore Science & Assessment (COSA) established in 2015
 - Offshore Wind and Fisheries established in 2023
- **Ongoing consensus studies**
 - Increasing Diversity in the U.S. 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



Complimentary National Strategies are Consistent with BOEM Priorities

- **The National Ocean Biodiversity Strategy** aims to coordinate the U.S. Government around biodiversity science and stewardship. Important for long-term monitoring and understand ecosystem change (energy development and climate).
- **The National Aquatic eDNA Strategy** aims to coordinate and advance use of Environmental DNA (eDNA) - a powerful tool to discover, map, monitor, and manage aquatic life which supports goals of the National Ocean Biodiversity Strategy. Incorporating into BOEM's Science Strategy.
- **Ocean Climate Action Plan** supports offshore wind development, offshore carbon sequestration, coastal resilience through marine minerals, ESP science to inform decision-making.
- **Ocean Justice Strategy** supports the advancement of Environmental Justice and consultations (relationship building) with Tribes.





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For more information, see www.boem.gov/studies

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