



BOEM BUREAU OF OCEAN
ENERGY MANAGEMENT

7th International Workshop on Offshore Geologic CO₂ Storage

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BOEM Office of Environmental Programs



BOEM Mission and Jurisdiction

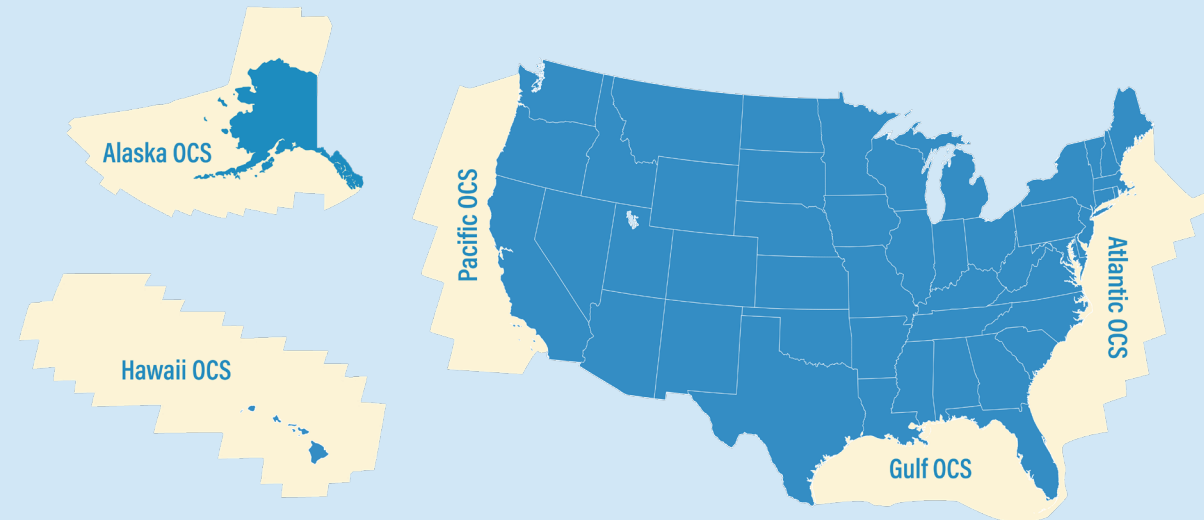
BOEM manages the responsible development of America's offshore energy, mineral, and geological resources in an environmentally and economically responsible way.

Our primary mission areas are conventional energy, renewable energy, carbon sequestration, and marine minerals.

Our statutory mandate is provided by the Outer Continental Shelf Lands Act (OCSLA).

3.2 billion acres
of the Outer Continental Shelf

Larger than the size of the nations' land acreage!



OCS Carbon Sequestration Rulemaking

The Infrastructure Investment and Jobs Act (IIJA, November 2021) amended the OCSLA and authorizes DOI to administer leases, easements, and rights-of-way (ROW) on the Outer Continental Shelf (OCS) that **“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.”**



Bureau of Ocean Energy Management

Authority to issue leases and grants and review/approve operational plans



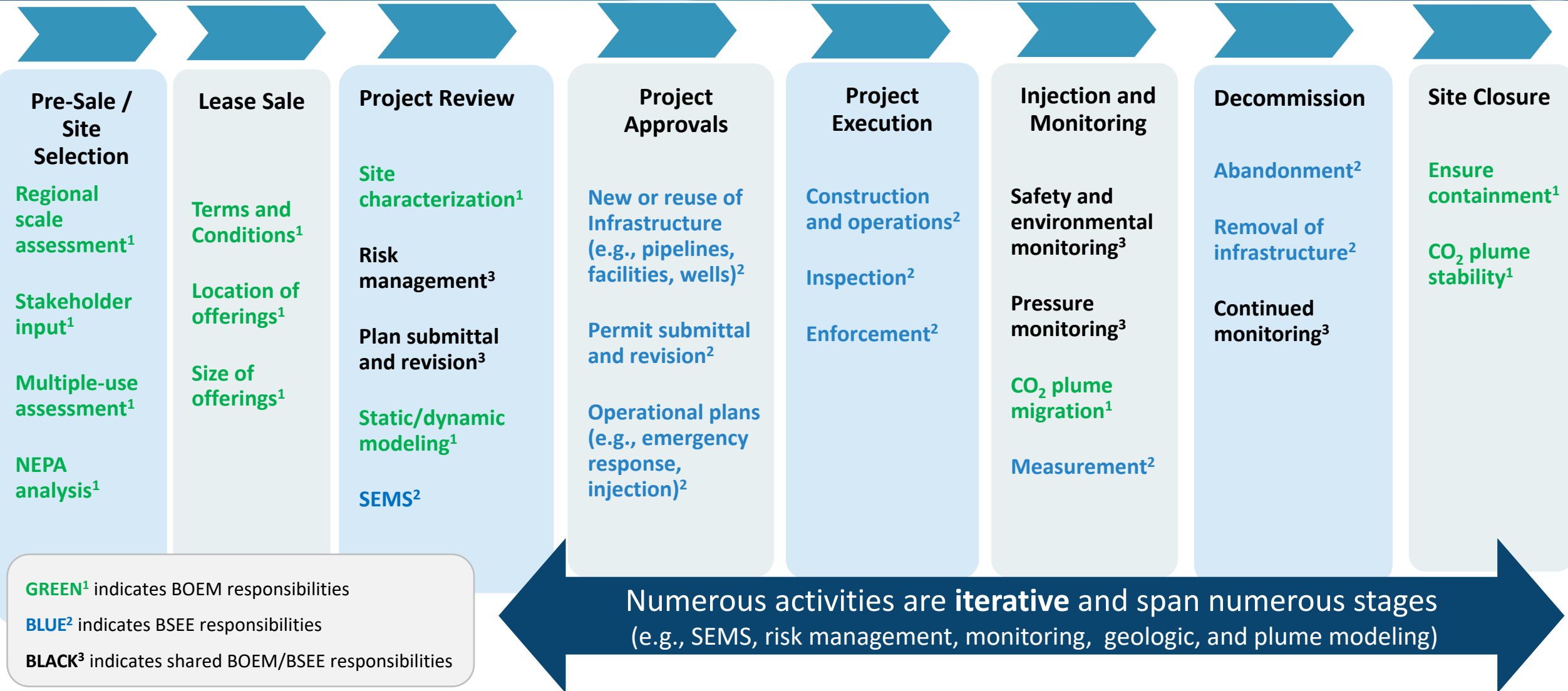
Bureau of Safety and Environmental Enforcement

Authority over operational permitting, and safety and environmental inspection and enforcement

OCS Carbon Sequestration Rulemaking

- The IJA directs the Secretary of the Interior to promulgate regulations to carry out the OCSLA amendments for carbon sequestration.
- Joint **Bureau of Ocean Energy Management (BOEM) – Bureau of Safety and Environmental Enforcement (BSEE)** rulemaking is underway.
- Topics under consideration for the rulemaking include:
 - **Financial and economic considerations**
 - **Pre-lease exploration**
 - **Leasing**
 - **Site characterization**
 - **Plans**
 - **Environmental considerations**
 - **Liability**
 - **Risk assessment and management**
 - **Monitoring and reporting**
 - **Well and infrastructure qualification**
 - **Operations, facilities, and pipelines**
 - **Emergency response and mitigation**
 - **Decommissioning**
 - **Site closure**

Regulatory Actions Overlaid with OCS Carbon Sequestration Project Lifecycle



OCS Legal, Regulatory, and Policy Framework for Carbon Sequestration

BOEM's & BSEE's Implementing Statute, Regulations, and Policies

Outer Continental Shelf Lands Act of 1953 with amendments in 2005 (EPA) and 2021 (IIJA/BIL – authority for sub-seabed CS delegated to BOEM and BSEE)

Code of Federal Regulations (CFR), 30 CFR Chapter II (BSEE) and Chapter V (BOEM) (New regs under development for CS)

Department of the Interior Manual, Part 516

Lead Federal Agency

National Environmental Policy Act of 1969

Oil Pollution Act of 1990

National Marine Sanctuaries Act of 1972

Executive Order 13840: Ocean Policy

Executive Order 11990 (1977): Protection of Wetland

Executive Order 12114 (1979): Environmental Effects Abroad

Executive Order 13007 (1996): Indian Sacred Site

Executive Orders 12898 (1994) and 14096 (2023): Environmental Justice

Executive Order 13089 (1998): Coral Reef Protection

Executive Orders 13112 & 13571: Invasive Species

Council on Environmental Quality 2020 NEPA Regulations and Secretarial Order 3355: Environmental Reviews

Federal, State, Tribal Consultations

Magnuson-Stevens Fishery Conservation and Management Act of 1976 (BOEM consults NOAA)

Endangered Species Act of 1973 (BOEM consults NOAA/FWS)

Migratory Bird Treaty Act of 1918 (BOEM consults FWS)

Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds (BOEM MOU with FWS)

Coastal Zone Management Act of 1972, as amended in 1996 (BOEM consults affected coastal states)

National Historic Preservation Act of 1966 (BOEM consults with SHPO)

Executive Order 13175: Tribal Consultation and Coordination (BOEM consults with Tribes)

Operators

Marine Mammal Protection Act of 1972 (Operators obtain permit from NOAA)

Clean Air Act of 1970, as amended 2012 (BOEM approves operator plan or operator obtains EPA air permit)

Clean Water Act of 1972, as amended 1990 (Operators obtain NPDES permit from EPA and submit Subpart RR reporting)

River and Harbors Act of 1899, Section 10 (Operators obtain permit from ACOE)

USC Title 26, 45Q (Operators submit CO₂ storage volumes to IRS for tax credit)

Code of Federal Regulations (CFR), 30 CFR Chapter II (BSEE) and Chapter V (BOEM)

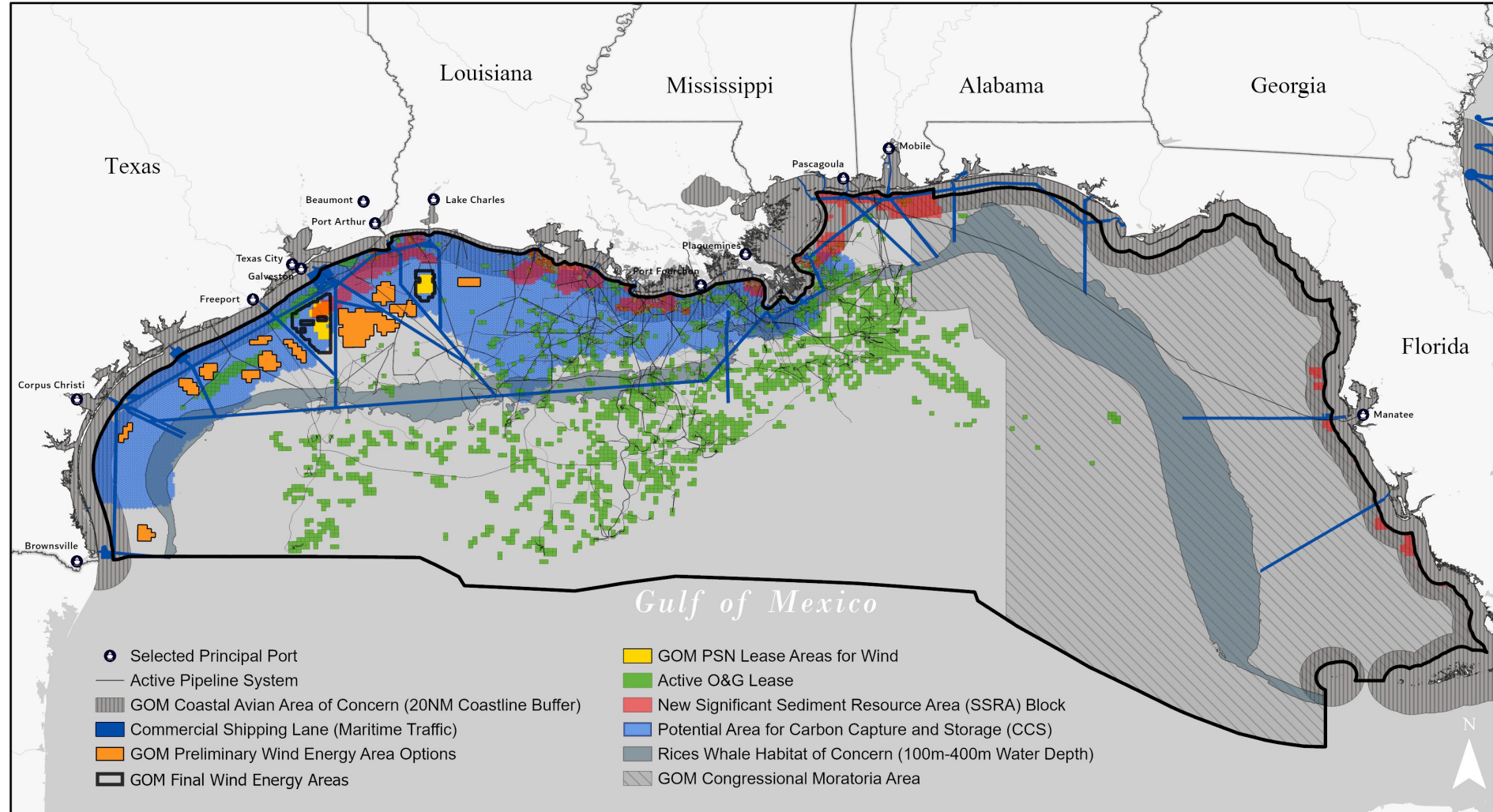
The Gulf is a Mature Energy, Multiple-use Basin

BOEM's Authorities:

- Conventional Energy
- Marine Minerals
- Renewable Energy
- Carbon Sequestration
- *Hydrogen*

Other Users & Resources

- Fisheries
- Ecosystem Services
- Transportation & Shipping
- Recreation
- Defense / Security



National OCS Carbon Sequestration Assessment

OCS Report
BOEM 2023-072

BOEM Carbon Storage National Assessment Methodology Report published in April 2024

- Identifies & characterizes subsurface storage locations
- Estimates storage capacity
- Informs leasing, environmental, regulatory, and multiple-use decisions

Leverages BOEM oil and gas geologic play framework and existing work on methodology; particularly other federal agencies, universities, private sector, etc.

Phased approach: National Methodology and Model; Regional Assessments with Storage Assessment Unit (SAU) development; regional alignment and aggregation of results

BOEM Carbon Storage Assessment Methodology



U.S. Department of the Interior
Bureau of Ocean Energy Management
Office of Strategic Resources
Resource Evaluation Division



BOEM Environmental Studies

BOEM Carbon Sequestration Studies:

- **NEW:** Understanding Offshore Carbon Sequestration Impacts on the Marine Environment: Literature Synthesis for Information Management
- **2018:** Best Management Practices for Offshore Transportation and Sub-Seabed Geologic Storage of Carbon Dioxide
 - <https://epis.boem.gov/final%20reports/5663.pdf>



Science & Data Needs – Environmental

- **All environmental resources (marine, coastal, human)**
 - Flora, fauna, water quality, air quality, cultural, sociological, recreational, visual, EJ, etc.
- **Baseline**
- **Environmental and cumulative impacts**
- **Risk assessment and management (mitigation measures)**
- **Appropriate & best monitoring**
- **Pressure management – site-specific and regional**
- **Leakage pathways**
- **Modeling of leakage scenarios (including worst-case)**
- **Sound**
- **Overpressuring and induced seismicity**
- **Geohazards**





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