

BODEN BUREAU OF OCEAN ENERGY MANAGEMENT

Assessment of Carbon Storage Resources on the US Outer Continental Shelf

GCCSI Americas Members Meeting

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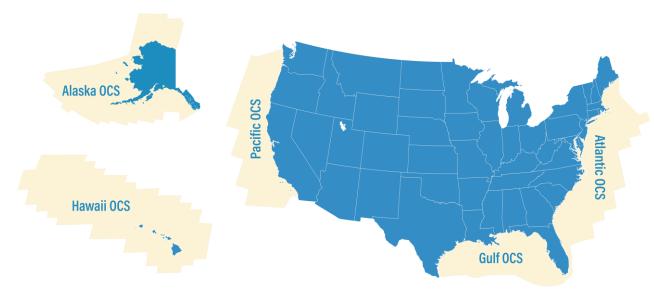
BOEM Mission and Jurisdiction

- 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, and marine minerals.
- Our core 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!





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 longterm carbon sequestration".



Bureau of Ocean Energy Management

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



Bureau of Safety and Environmental Enforcement

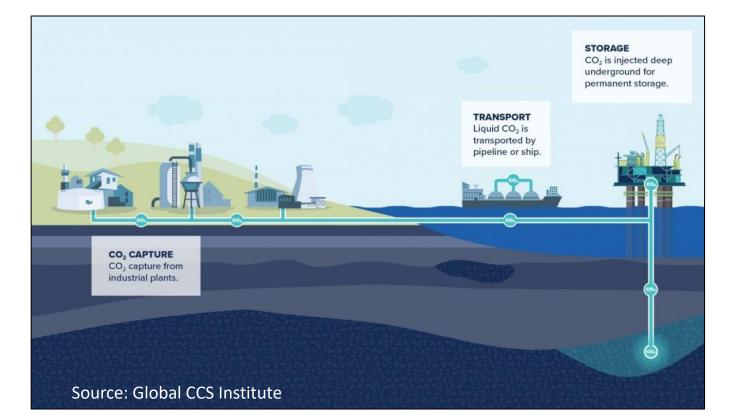
Authority over operational permitting, safety, and environmental risk



Carbon Sequestration Rulemaking – Topics Considered

Topics considered in the rulemaking:

- Financial & economic considerations
- Environmental considerations
- Pre-lease exploration/site characterization
- Leasing
- Plans
- Liability
- Operations, facilities, and pipelines
- Well qualification and offset infrastructure
- Emergency response and mitigation
- Decommissioning





Regulatory Actions Overlaid with Offshore CS Project Lifecycle

Pre-Sale / Site Selection Regional scale assessment Stakeholder input Multiple-use assessment NEPA analysis	Lease Sale Terms and Conditions Location of offerings Size of offerings	Project ReviewSite characterizationRisk managementPlan submittal and revisionStatic/ Dynamic modelingSEMS	Project ApprovalsNew or reuse of Infrastructure (e.g., pipelines, facilities, wells)Permit submittal and revisionOperational plans (e.g., emergency response, injection)	Project Execution Construction and operations Inspection Enforcement	Injection and Monitoring Safety and environmental monitoring Pressure monitoring CO2 plume migration Measurement	Decommission Abandonment Removal of infrastructure Continued monitoring	Site Closure Ensure containment CO2 plume stability
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BOEM Carbon Storage Assessments

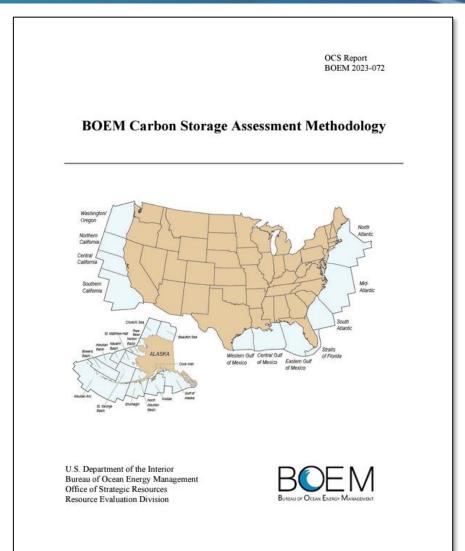
BOEM Carbon Storage National Assessment <u>Methodology</u> Report published in April 2024

- Identifying & characterizing subsurface storage locations
- Estimating storage capacity
- Inform leasing, environmental, regulatory, and multiple-use decisions

Builds upon our existing geologic framework & leveraging the work from other federal agencies, universities, private sector, etc.

Phased approach:

- 1. Methodology and model
- 2. Storage Assessment Unit (SAU) development
- 3. Regional alignment and aggregation of results





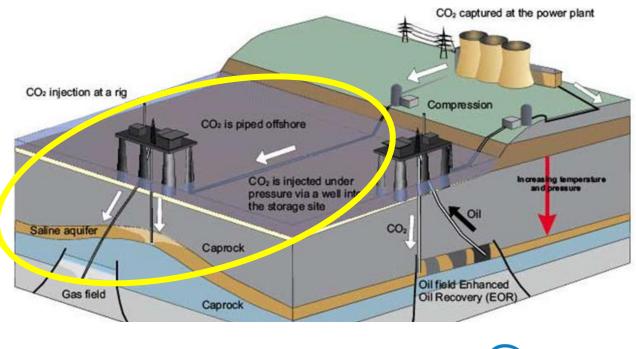
Carbon Storage Net Present Value Analysis

BOEM has developed a full cycle asset simulation model for calculating CS project NPVs

- Utilizing a COTS product PetroVR with carbon storage fiscal terms
- Using a service fee model
- Initially focusing on the offshore component of the development
- Various development scenarios being considered, i.e. platform, caisson, etc.

BOEM uses multiple sources for OCS cost information, including:

- Oil and gas cost files (scalable as necessary)
- Que\$tor commercial database











Thank You !

BOEM technical CO₂ content available at:

https://www.boem.gov/oil-gas-energy/resource-evaluation







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