



Carbon Storage on the U.S. Outer Continental Shelf

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PACE Plugging and Abandonment Collaborative Environment 2024

Overview

- **BOEM and BSEE Mission Overview**
- **Offshore Carbon Sequestration Program Development**
 - Statutory Authority
 - Development of Regulations
 - CO₂ Sequestration Resource Assessment
- **Current and Future U.S. Carbon Sequestration Activities**
- **Open Discussion**

BOEM and BSEE Mission and Jurisdiction

The **Bureau of Ocean Energy Management (BOEM)** manages the responsible development of America's offshore energy, mineral and geological resources in an environmentally and economically responsible way.

The **Bureau of Safety and Environmental Enforcement (BSEE)** works to promote safety, protect the environment, and conserve resources offshore through vigorous regulatory oversight and enforcement.

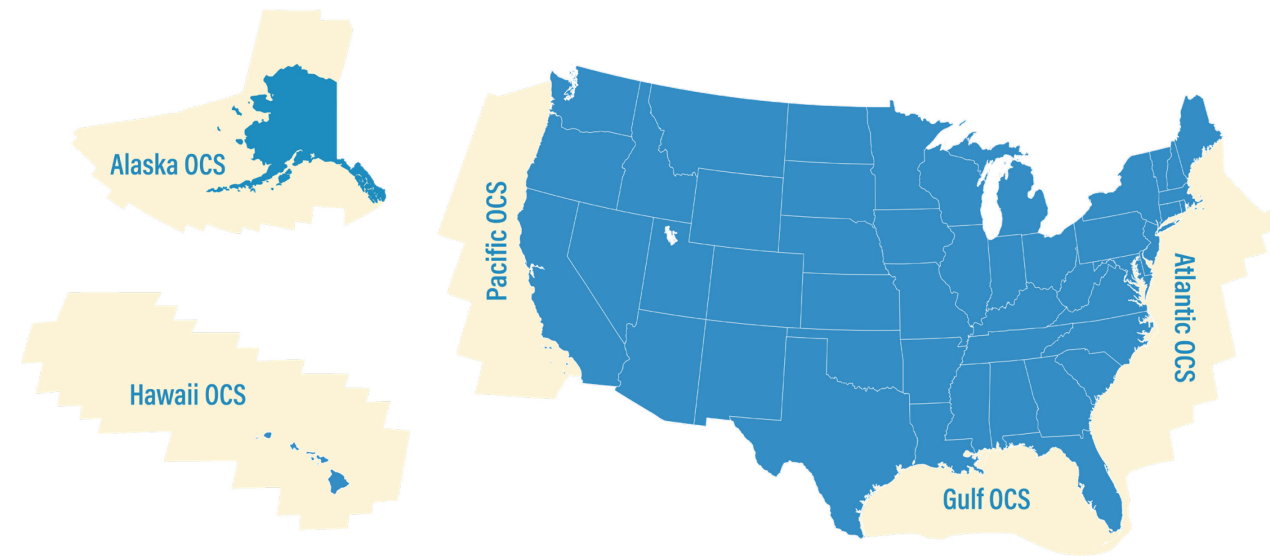
Our primary mission areas are conventional energy, renewable energy, and marine minerals.

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

3.2 billion acres

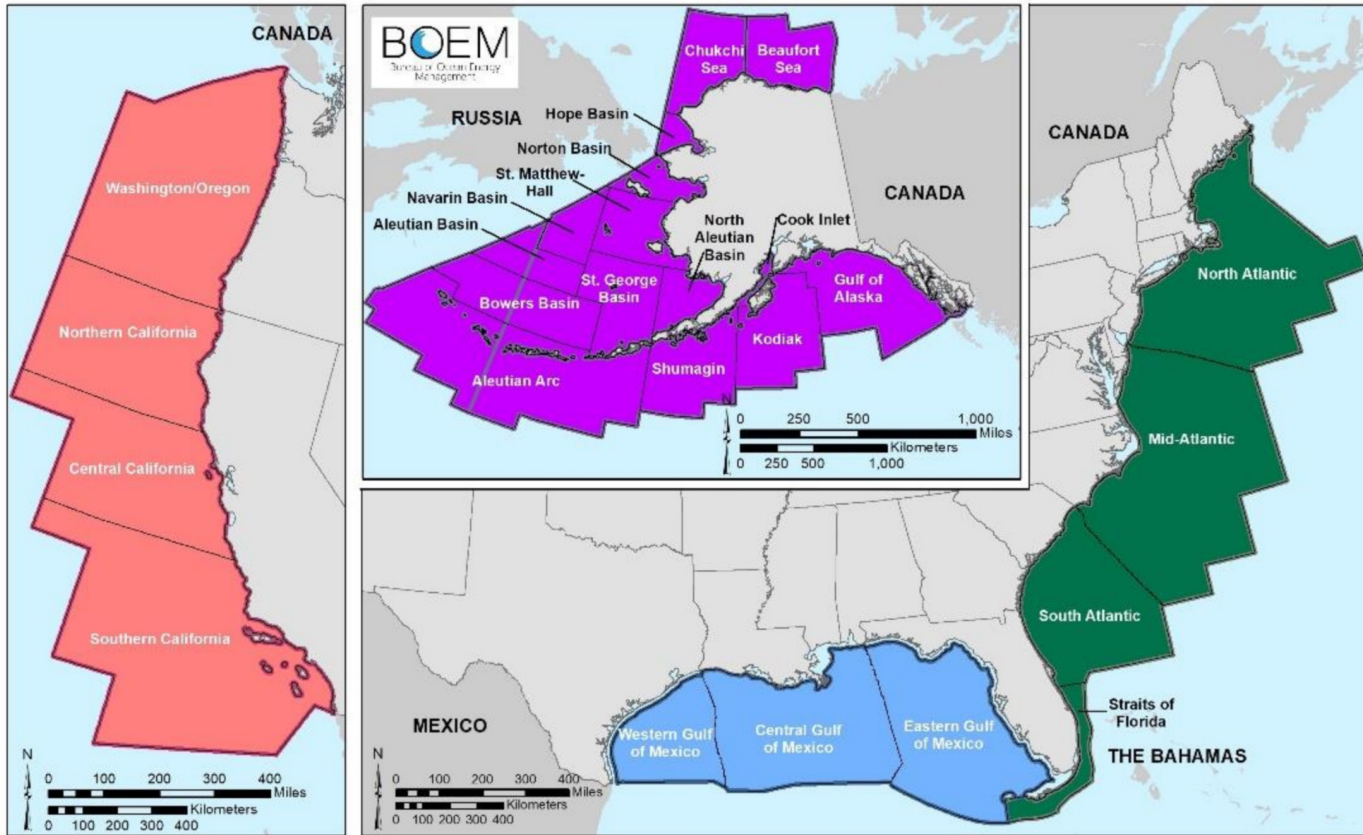
of the Outer Continental Shelf

Larger than the size of the nations' land acreage!

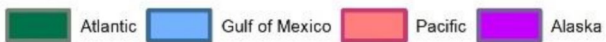




Statutory Authority



Regions



The maritime boundaries and limits shown hereon, as well as the divisions between planning areas, are for initial planning purposes only and do not necessarily reflect the full extent of U.S. sovereign rights under international and domestic law.

On November 15, 2021, the Infrastructure Investment and Jobs Act, known as the Bipartisan Infrastructure Law (BIL), became law.

Section 40307 of the BIL amends the Outer Continental Shelf Lands Act (OCSLA) to authorize the Secretary of the Interior to grant a **lease, easement, or right-of-way** on the Outer Continental Shelf for activities 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.**”



Carbon Sequestration Rulemaking

As part of the agreement, The Committees direct the Bureaus to complete the necessary technical, safety, and environmental work expeditiously to begin implementation and ensure long-term secure storage while reducing the risk of harm to people and environmental impacts.



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

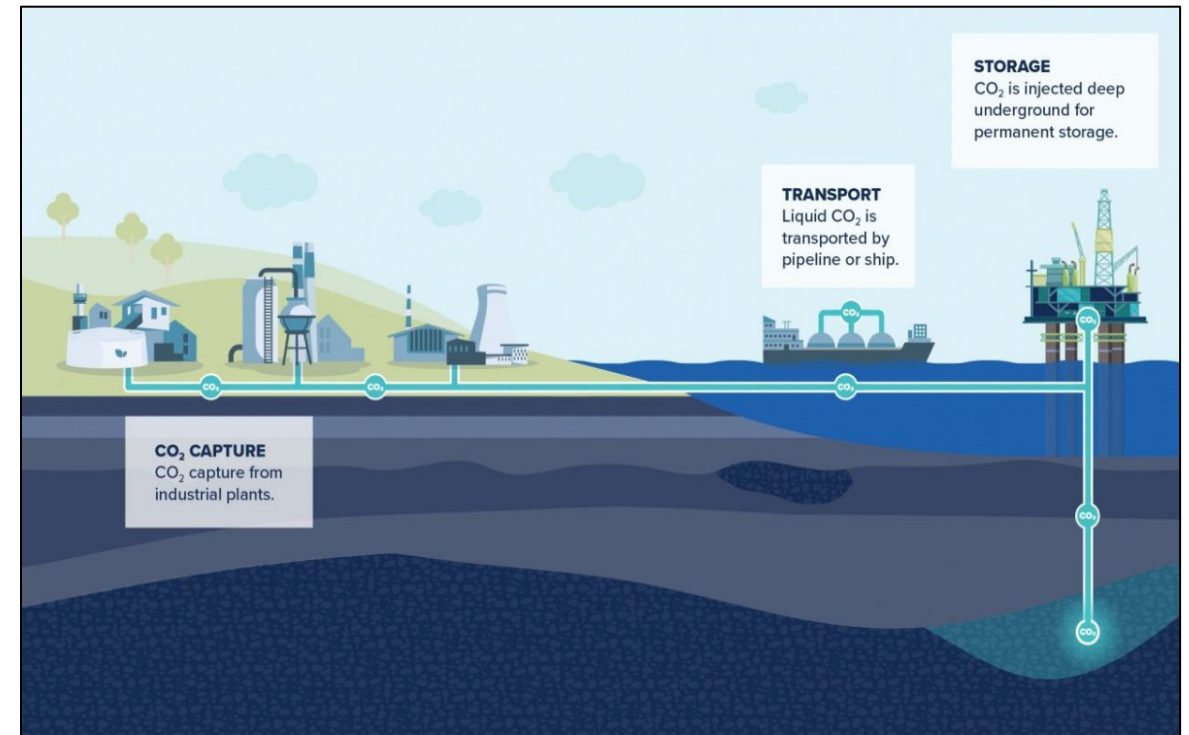


Carbon Sequestration Rulemaking Cont.

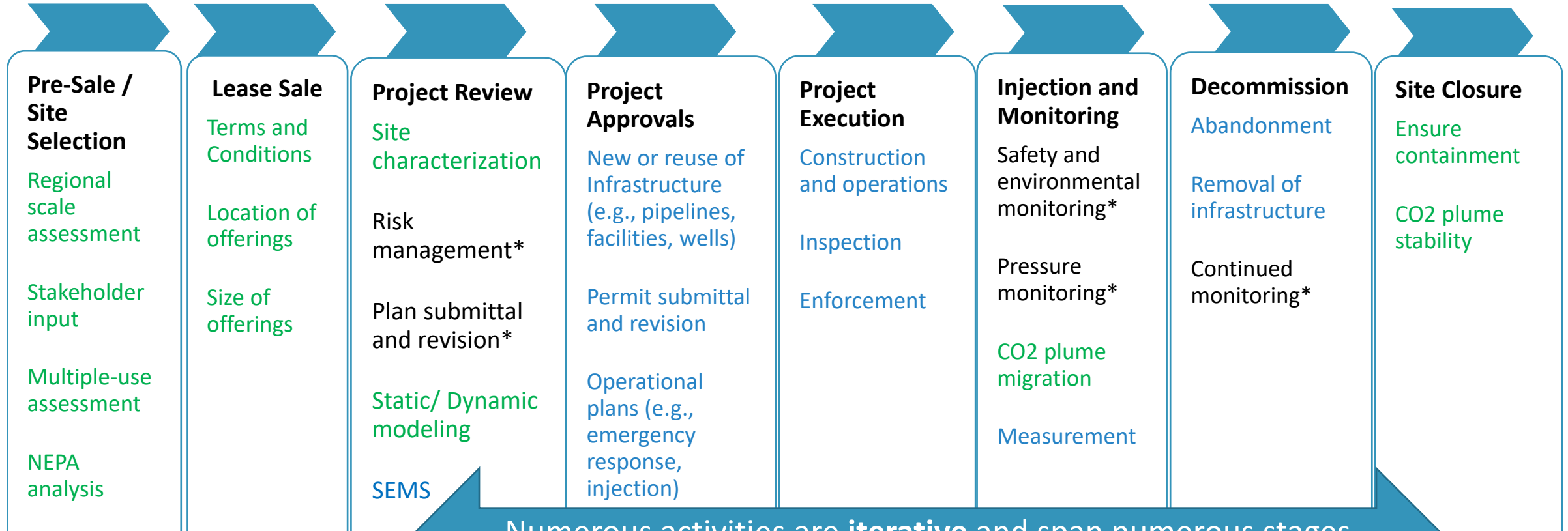
BOEM and BSEE's joint carbon sequestration (CS) rulemaking is being finalized. Our rulemaking uses the best available science and considers the various perspectives of **diverse stakeholders**. We have undertaken extensive outreach efforts in the rulemaking process and are committed to advancing **inclusivity, equity,** and **environmental justice** in its policies and decisions.

Topics under consideration for the rulemaking include:

- Financial and 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



Numerous activities are **iterative** and span numerous stages (e.g., SEMS, risk management, monitoring, plume assessment)

GREEN indicates BOEM responsibilities
BLUE indicates BSEE responsibilities
BLACK* indicates shared BOEM/BSEE responsibilities

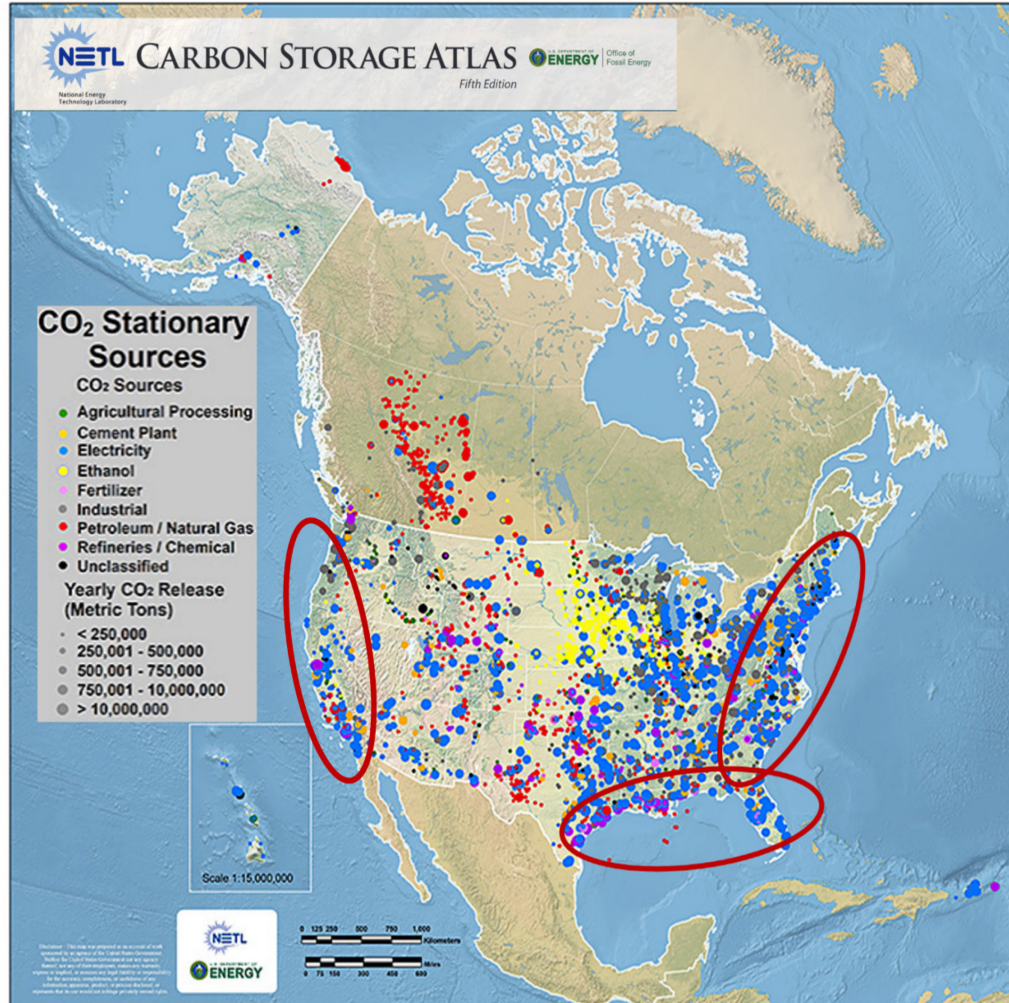
Environmental Analysis

Environmental Analysis

- Environmental analysis is required by NEPA and is essential to evaluate and mitigate the potential impacts of major federal actions, in this case, Carbon Sequestration activities.
- BOEM will prepare Environmental Assessments or Environmental Impact Statements, depending on the nature or significance of the potential impacts. BSEE uses this analysis to make a NEPA determination and inform bureau decision-making.
- Public input, engagement, and outreach are critical components of the environmental review process



Current and Future CS Projects



Current and Future Projects:

There are currently no active projects for CS on the US OCS.

Numerous stationary CO₂ emission point sources exist along our southern and eastern seaboard mainly from:

- Electric power generation
- Petroleum / Natural gas
- Refineries / Chemical

The Gulf of Mexico and Atlantic OCS exhibit many of the attributes thought to be conducive to safely and permanently store large amounts of CO₂ in offshore sub-seabed geologic formations.

The U.S. Gulf of Mexico region has a large offshore storage capacity for CO₂ and is an area of initial focus given its abundant coastal industries that could benefit from CS.

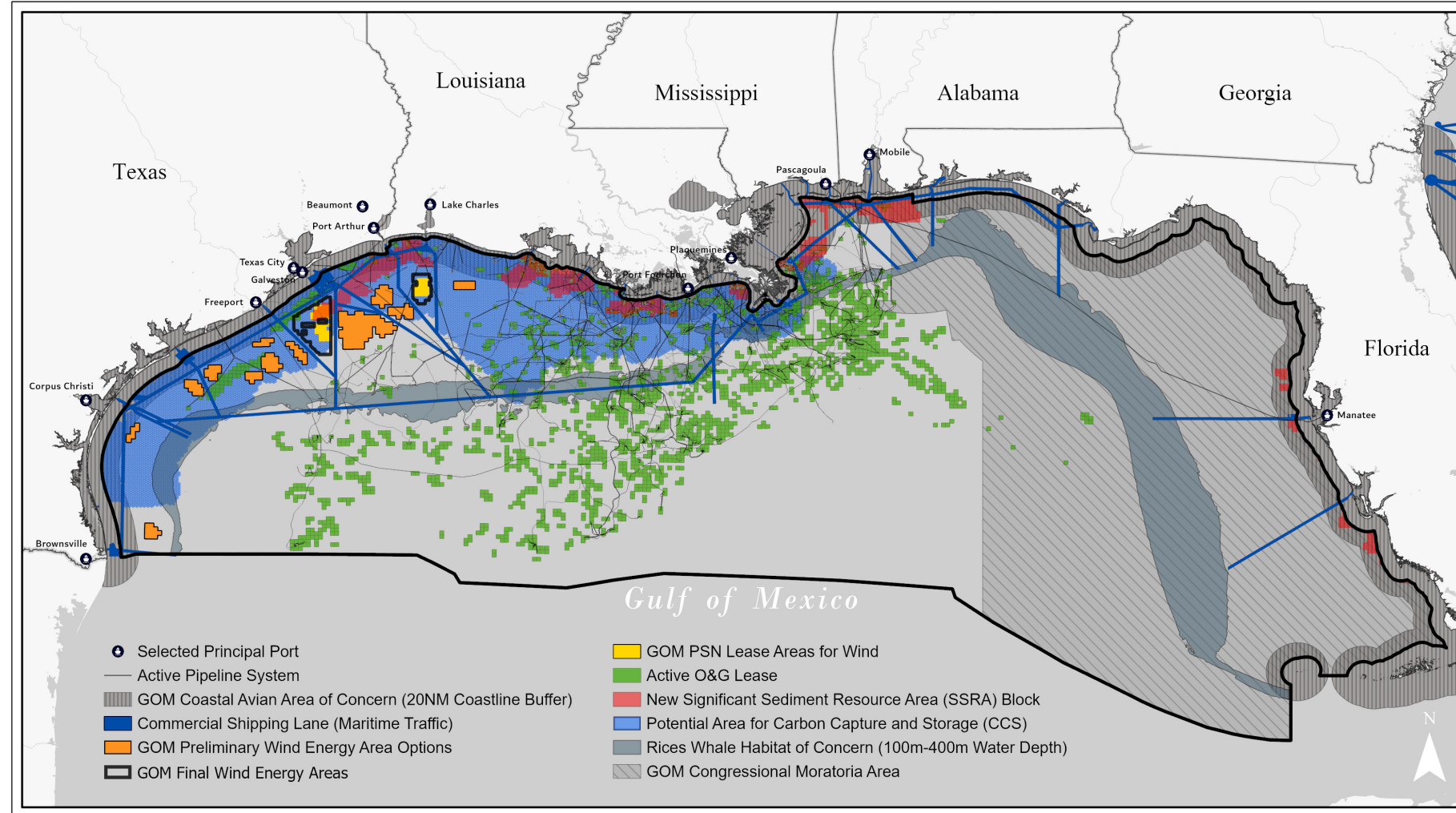
The Gulf is a Mature Energy, Multiple Use Basin

BOEM's & BSEE's Authorities:

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

Other Users & Resources!

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



How Do We Address This Multiple Use In Terms of Sustainability?

We must ...

- **Acknowledge & Accept** - *Social, Economic, Environmental, & International Components*
- **Recognizing & Engaging All Stakeholders & Partners**
- **Accepting that Change & Transition are Occurring**
- **Build Upon What We Already Know** - *Lessons from the Conventional Energy Industry*
- **Collaboration** - *the Highest Level of Partnership*
- **Using of the Best Available Information** - *Social, Economic, Tribal, & Environmental*

To Do this We Are ...

- **Using Adaptive Management:** -*Adapt & Adjust as We Learn*
- **Map the Different Activities:** -*Now & for the Future using State-of-the-Art Tools*
- **Anticipating, Seeking Out, & Address:** -*Cause & Effect Relationships, Cumulative Impacts, & Mitigation Actions*
- **Using an Ecosystem-Based Approach to Management:** -*Use the Best & Most Recent Information Available*

Open and Interactive Discussion

Common challenges and concerns that are frequently discussed across various Carbon Capture and Storage (CCS) engagements:

- How do you assess the condition of the existing plugged and abandoned legacy wells to determine their quality in a corrosive environment?
- What types of technologies or applications does PACE envision that could enhance the understanding of uncertainties related to plugged and abandoned wells?
- Is PACE currently researching any emerging technologies that would enhance the quality of well abandonment in such environments?
- Do you anticipate changes in industry standards, and if so, is your organization involved in those initiatives?
- What challenges are you encountering when attempting to re-enter a plugged well or conduct intervention work from the outside? Could you elaborate on the evolving technologies that are being developed to address these challenges?



Thank you



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