U.S. DEPARTMENT OF ENERGY
Fossil Energy and Carbon Management

RFI 2660 Themes Overview:
Tech. Area 2 – Validation of Carbon Storage Resources for Commercial Development
Tech. Area 3 – Carbon Dioxide Pipeline Infrastructure at the Regional and National Scale

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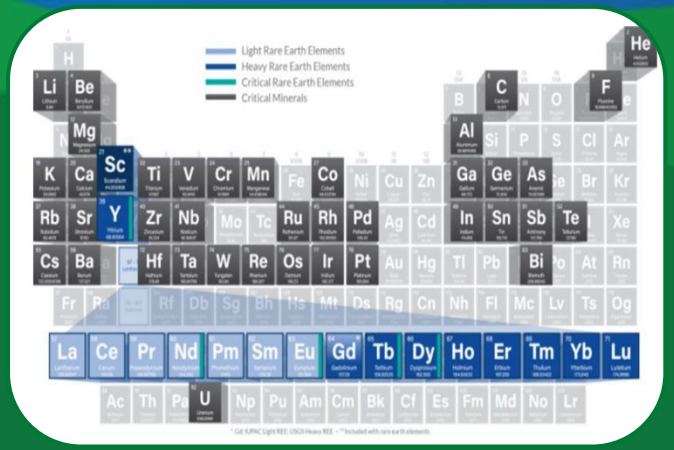
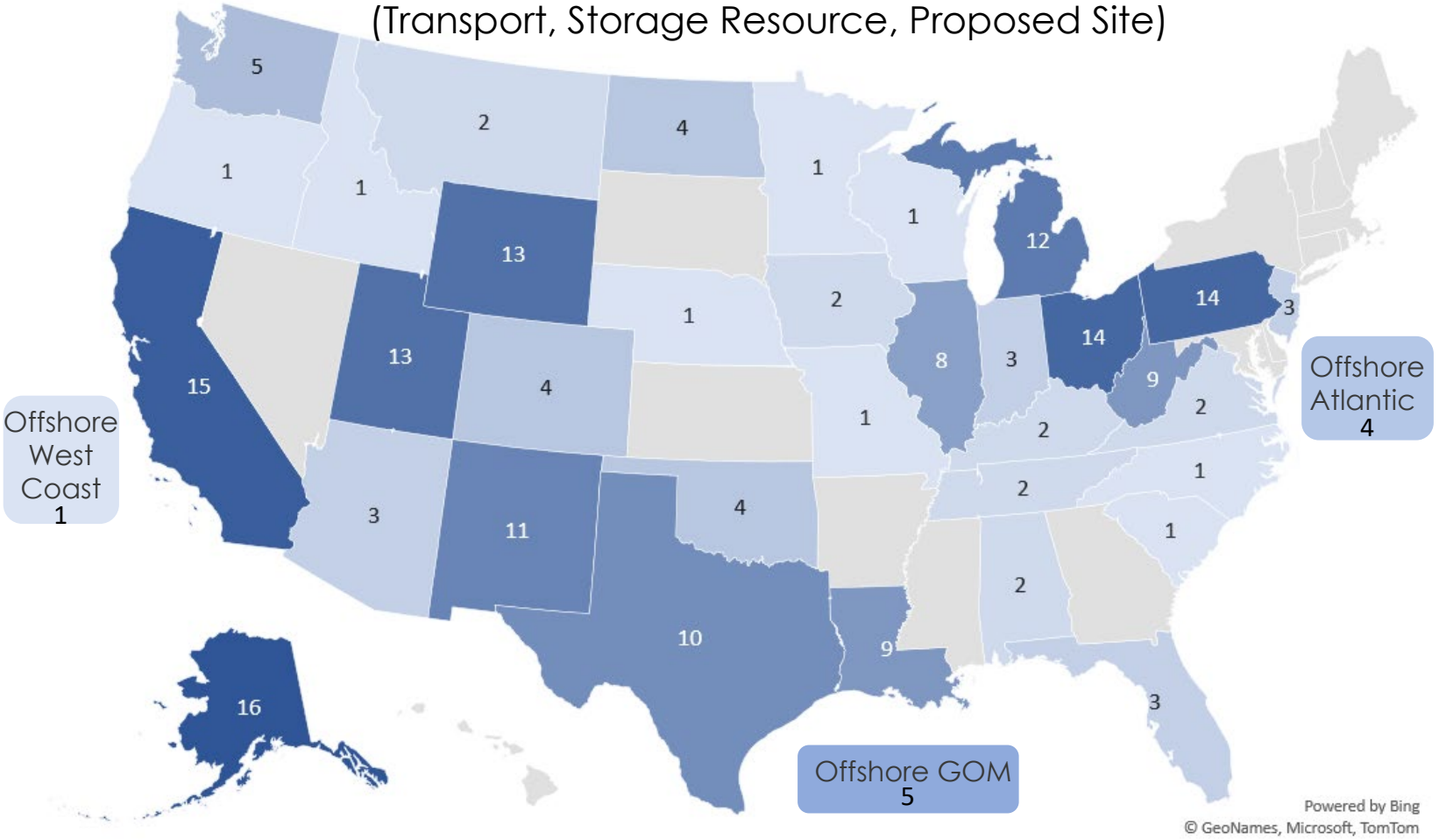


RFI 2660: Technical Area (TA) 2 & 3

States Mentioned By Respondents
(Transport, Storage Resource, Proposed Site)

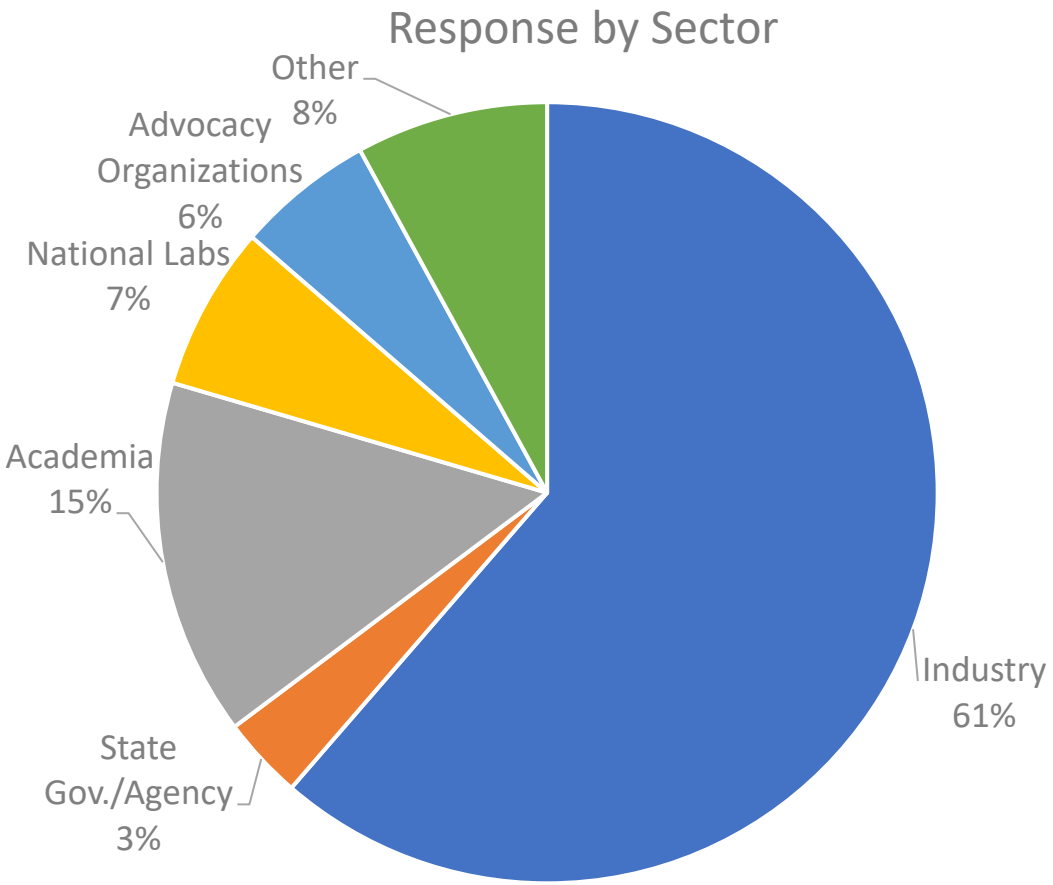


Over 144 RFI responses mentioned the highlighted states in the descriptions of resources, proposed sites, and infrastructure. Not all highlighted states had proposed sites or infrastructure identified.

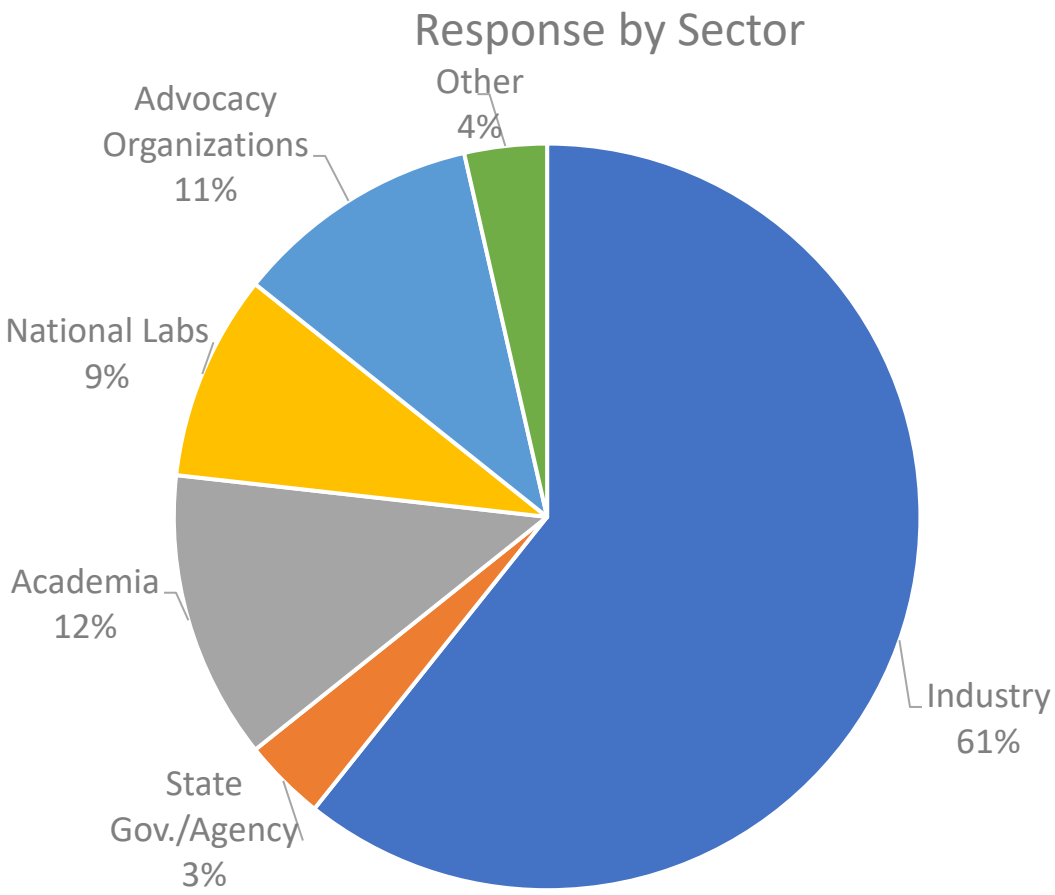
Objective: Solicit feedback on potential carbon management demonstration and deployment projects and their associated locations (TA2); and on the current and potential CO_2 Pipeline Infrastructure at the Regional and National Scale (TA3).

Response Overview

- 88 submissions in Technical Area 2

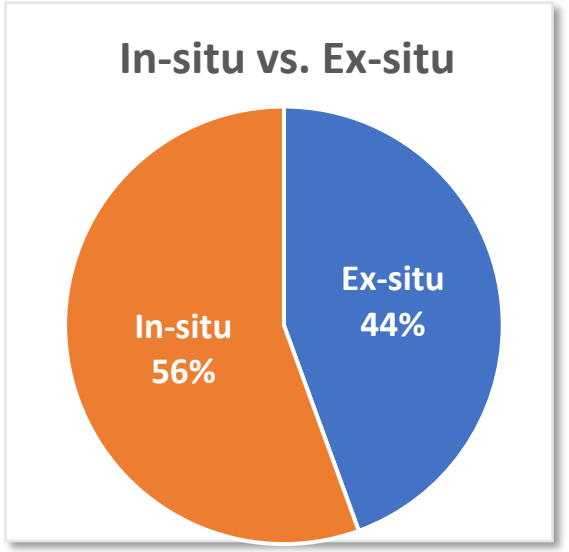


- 56 Submissions in Technical Area 3



Overview of Major Ideas from Technical Area 2 Responses

- Diversity in responses: conventional dedicated saline storage; unconventional storage; enhanced oil recovery (EOR); recommendations/comments on funding opportunity announcement (FOA) content.
- 27 point-source-sink projects were identified; concentrated in upper Midwest/Appalachia, Rocky Mountains, and California.
- 21 possible hub projects were discussed - “hub” concept mostly used as an expansion opportunity for point-source-sink projects.
- 13 projects have either submitted or are in the process of submitting a Class VI application.
- Respondents would like to see the Class VI process streamlined for faster, more efficient permitting.
- Public education and community engagement need to be integrated with and come to the forefront of CO_2 storage efforts.
- Carbon mineralization was described by respondents by either in-situ (basalt and ultramafic sources) or ex-situ (tailings and other industry byproducts) mineralization by utilizing atmospheric and industry sources.



RFI findings: Regional clusters and geographic factors

West Coast

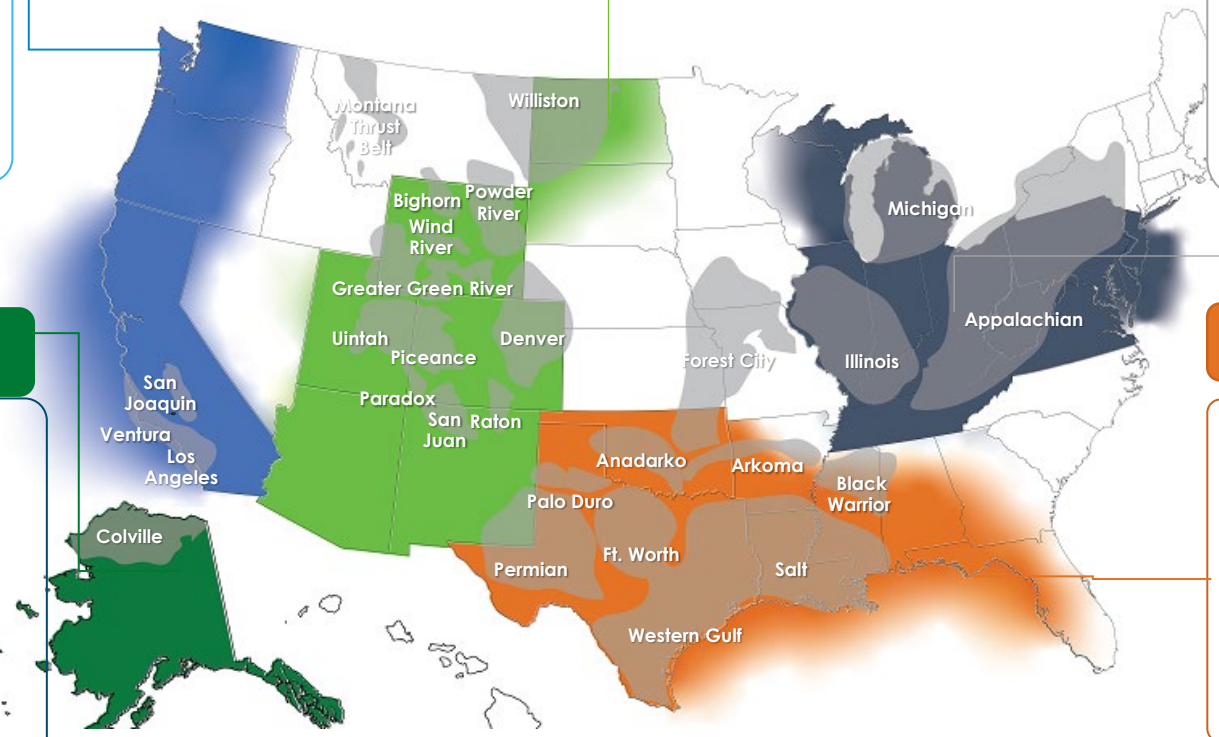
- 5 projects, >10MMT/year total; barge transport for 1 hub
- Two Class VI permits submitted.
- Basalt storage highighted
- Diverse sources including ethanol, BECCS

Plains/Rocky Mountains

- Regional preexisting CO2-EOR pipelines
- Multiple [3] hub projects proposed
- Significant potential storage resource
- 5 projects; saline storage;18MMT/year total

Midwest/East Coast

- Proposed reuse of sour gas pipelines and rights of way for CO_2 transport.
- 3 Class VI permits submitted
- WV has applied for Class VI primacy
- Stacked storage 15-20 MMT/Y potential
- Offshore Atlantic potential for in-situ mineral carbonation resources.



Alaska

- Focus on North Slope, Nenana (interior) and Cook Inlet basins
- Significant but not well-quantified saline and coal storage resources
- Extensive potential in-situ and ex-situ mineral carbonization resources

Gulf Coast/Southeast

- Current CO_2 pipeline network capacity of 54 MMT/year in the Permian region
- Potential Hub expansion in the Gulf Coast region
- 6 projects, >110 MMT/year total
- TX preparing for and LA have applied for Class VI primacy

Carbon Transport: Current CO_2 Infrastructure: >5,000 miles of CO_2 pipelines transporting >70 MMT of CO_2 per year from both natural and anthropogenic sources

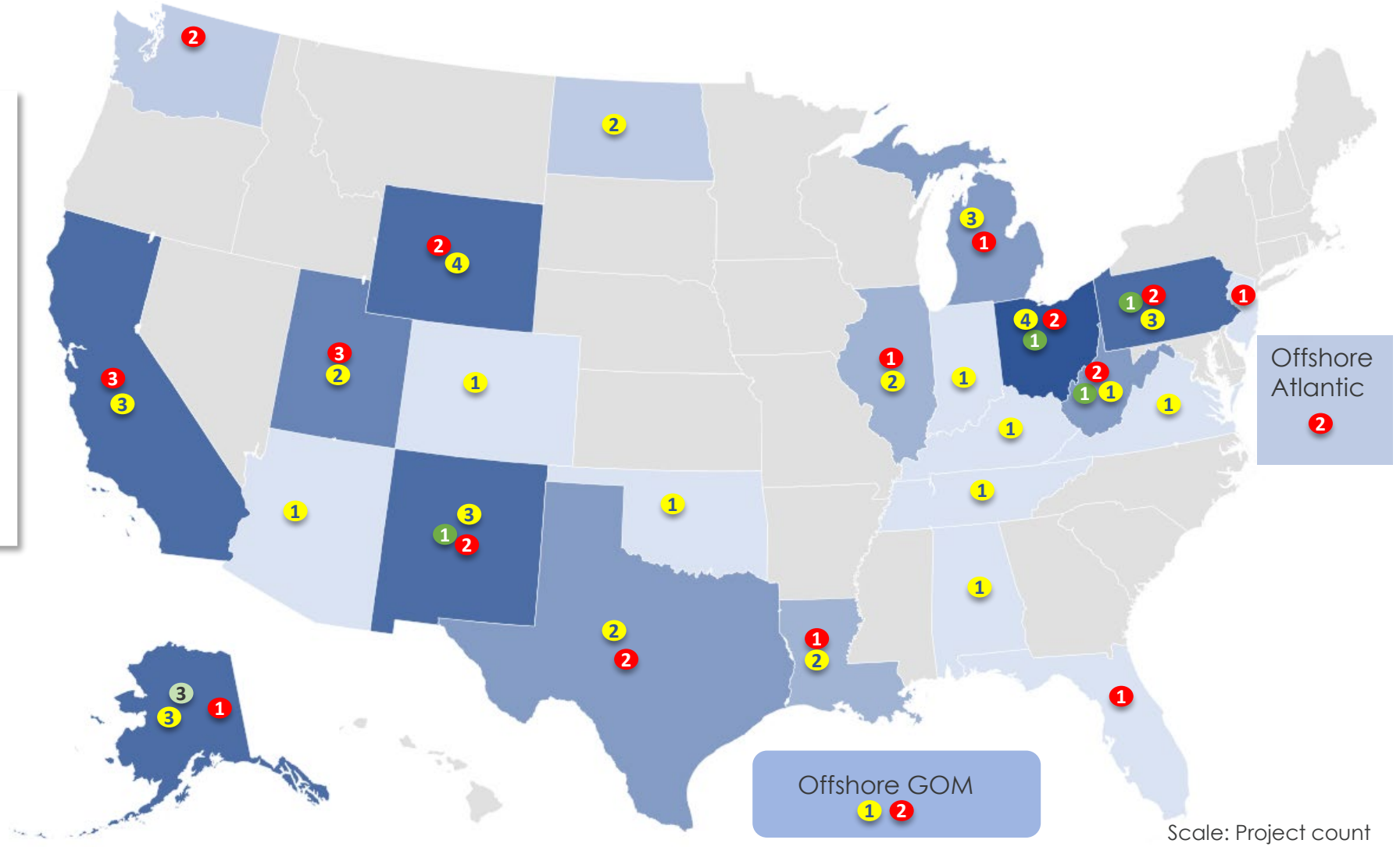
Proposed Sites by State

Project types

- Regional Characterization [7]
- Point-source-sink [43]
- Potential Storage Hub [30]

(Projects crossing state lines counted in each state)

Specific projects site locations are not specified in the map



Overview of Major Ideas from Technical Area 3 Responses

- Four projects identified areas in which they are planning to repurpose pipelines for CO_2 transport.
- In the Gulf Coast region, three projects are considering significant expansion for CO_2 transport.
- Existing rights-of-way to be leveraged (require review and possible re-negotiation).
- Accommodating pressure requirements for sCO_2 and pipeline integrity are the largest challenges to repurposing pipelines for CO_2 transport.
- Cost varied significantly among submissions for conversion, operation, and retrofit of existing pipelines for CO_2 transport.
- Majority of responses contained general/overall, non-specific, recommendations. Benefits focus on job creation. Emphasis on engagement with all entities within site boundaries/community.
- Regulatory requirements vary from state to state and are affected by the surrounding areas (population, land ownership, terrain, etc.).

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