



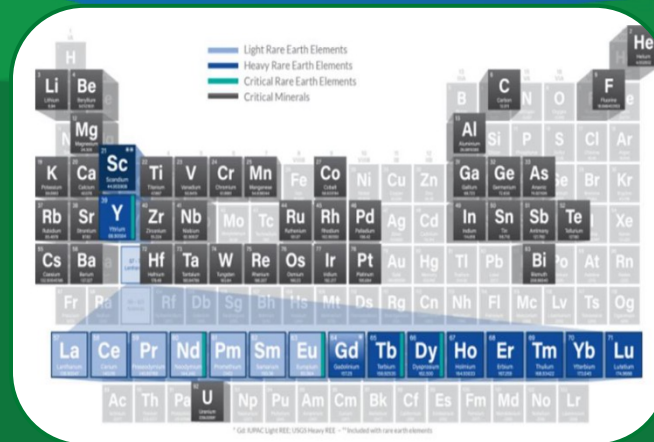
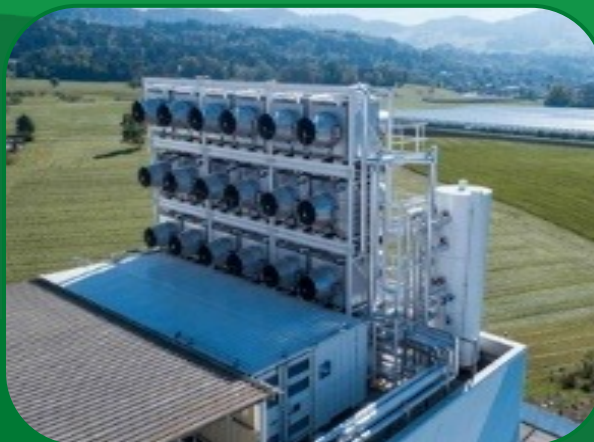
U.S. DEPARTMENT OF
ENERGY

Fossil Energy and
Carbon Management

US-NORWAY Bilateral

The Larger Picture – CO₂ Storage

June 30, 2022

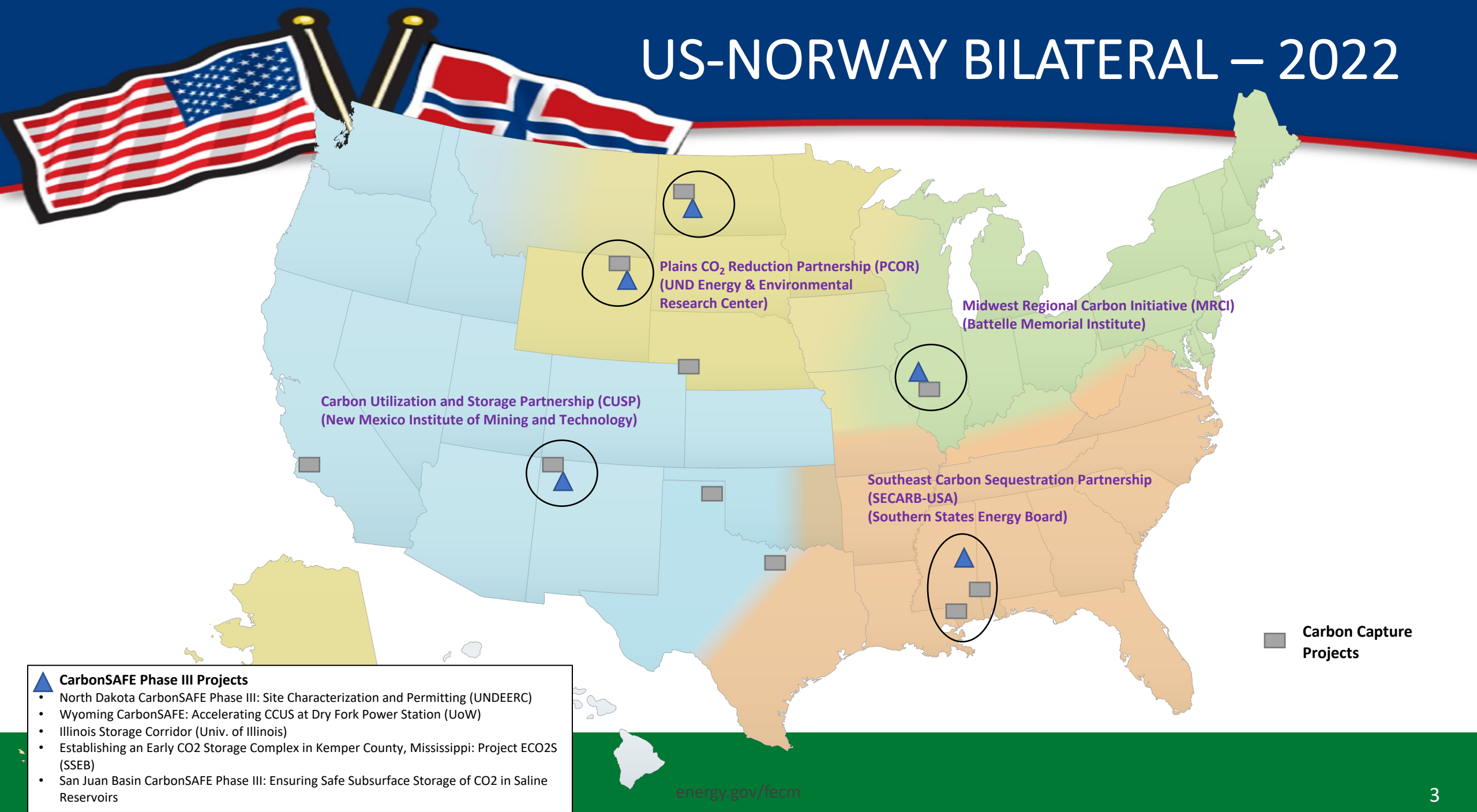




The Larger Picture – Carbon Storage



US-NORWAY BILATERAL – 2022





US-NORWAY BILATERAL – 2022

FECM - **\$6.5 billion** in new carbon management funding over 5 years through the Infrastructure Investment and Jobs Act (Bipartisan Infrastructure Law).

Carbon Dioxide Removal - Direct Air Capture

Regional Direct Air Capture Hubs: \$3.5 billion
DAC Technology Prize Competition: \$115 million

Carbon Dioxide Utilization and Storage

Carbon Storage Validation and Testing: \$2.5 billion
Carbon Utilization Program: \$310 million

Front-End Engineering Design Studies

Carbon Capture FEED Studies for
Pipelines/Infrastructure: \$100 million

Critical Minerals and Materials

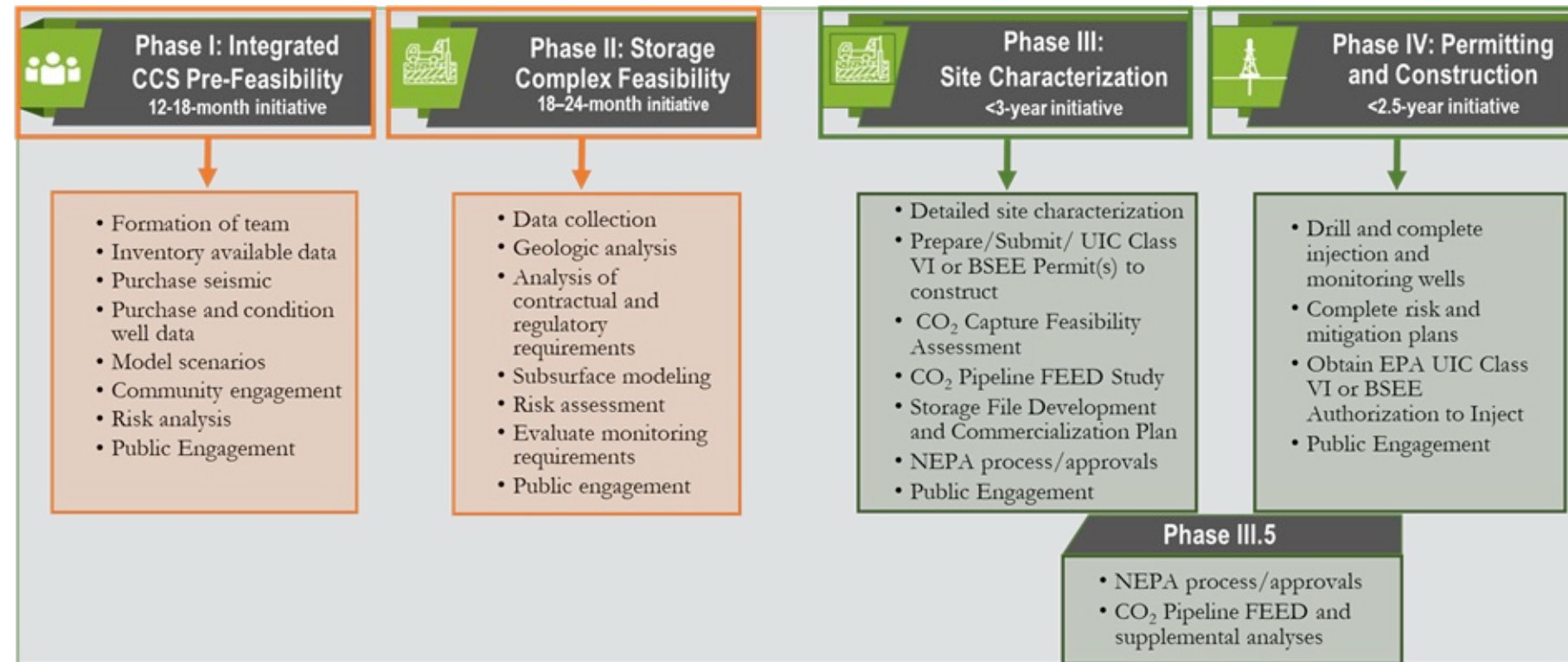
Rare Earth Element Demonstration: \$140 million
Rare Earth Mineral Security: \$127 million



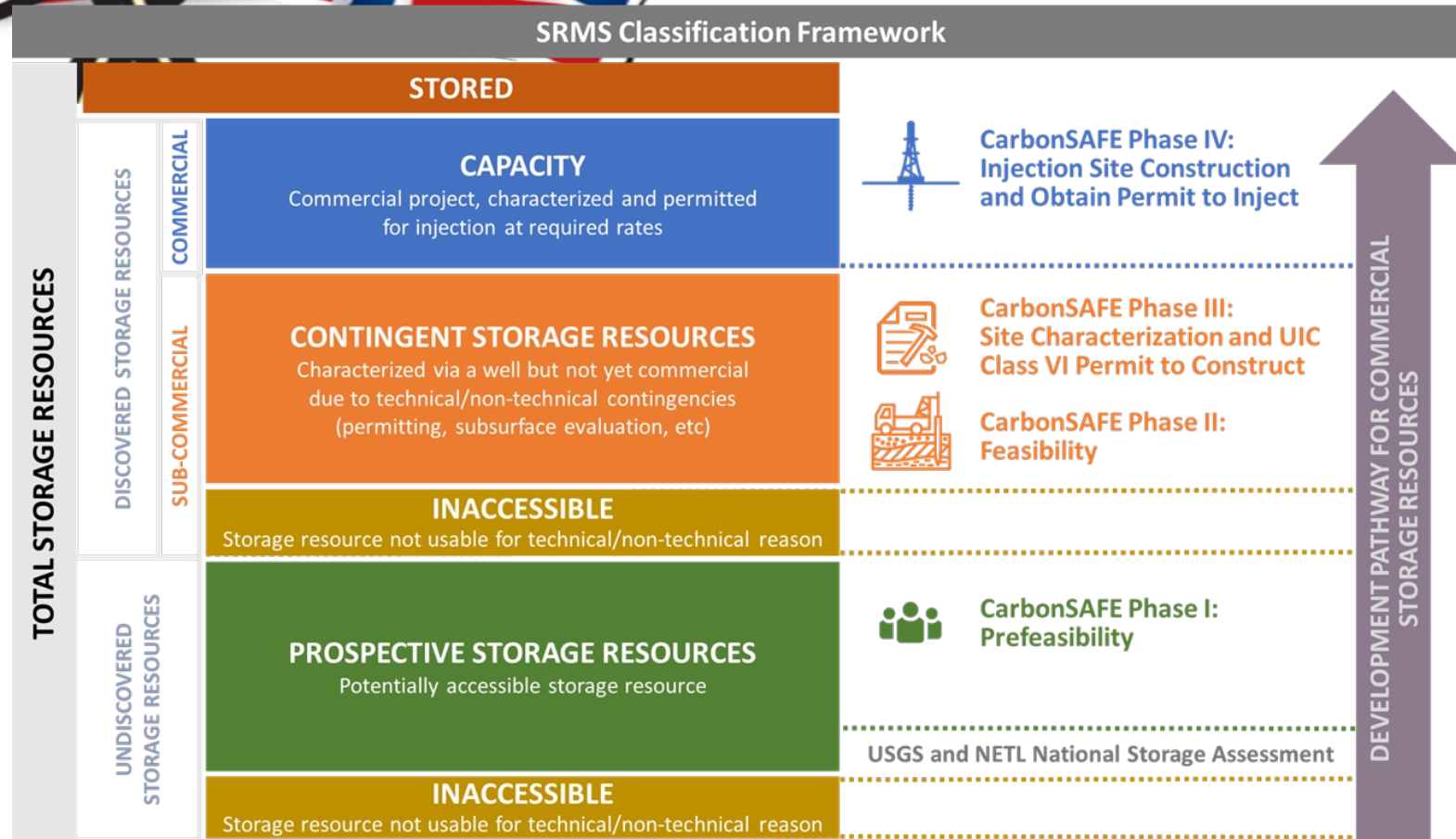
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Carbon Storage Assurance Facility Enterprise (CarbonSAFE)

- \$2.5 billion authorized, \$500 million per year
- **New or Expanded** large-scale commercialization carbon sequestration facilities
 - Open to hub development

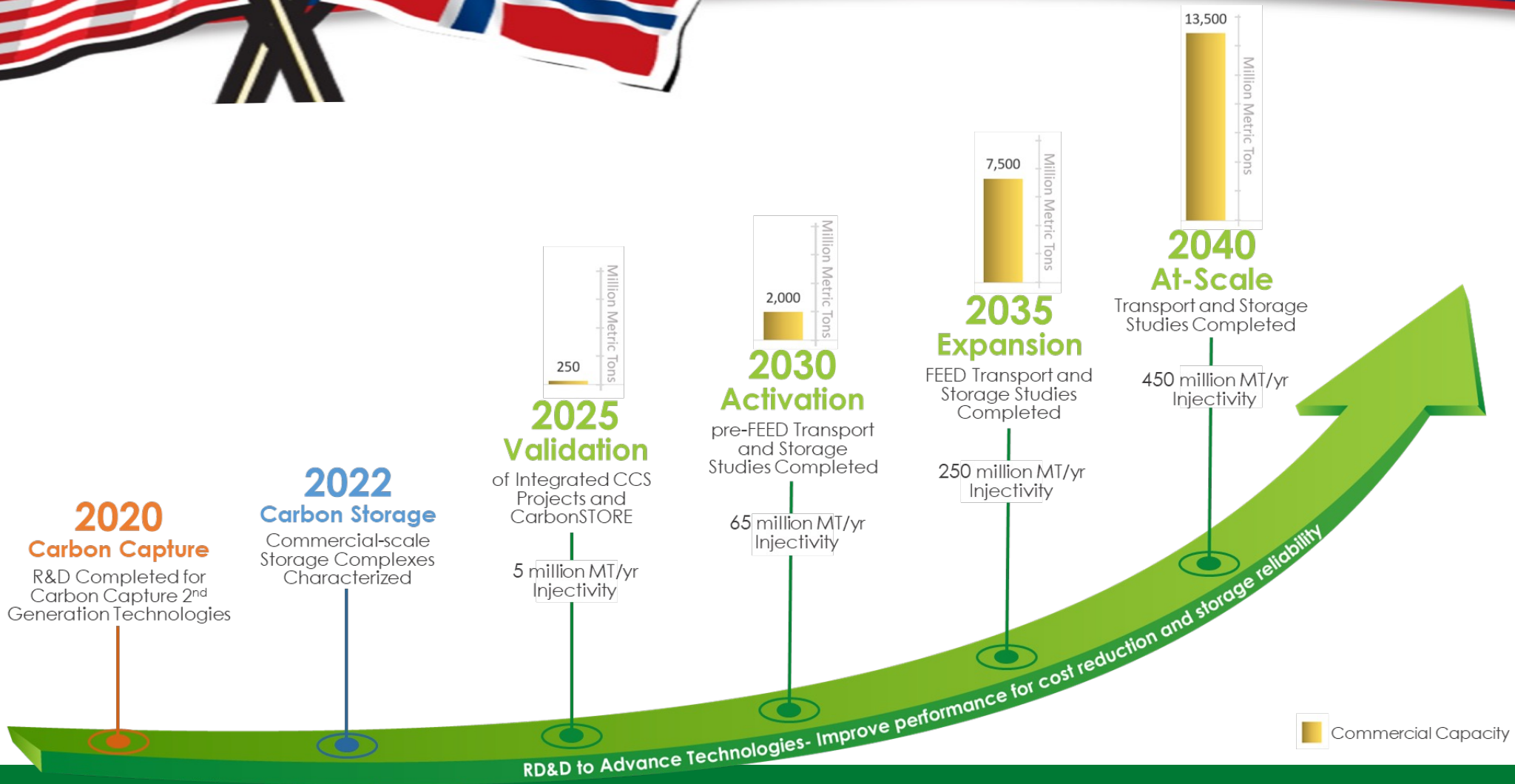


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<https://www.spe.org/en/industry/co2-storage-resources-management-system/>

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Storage Session US Activities Update



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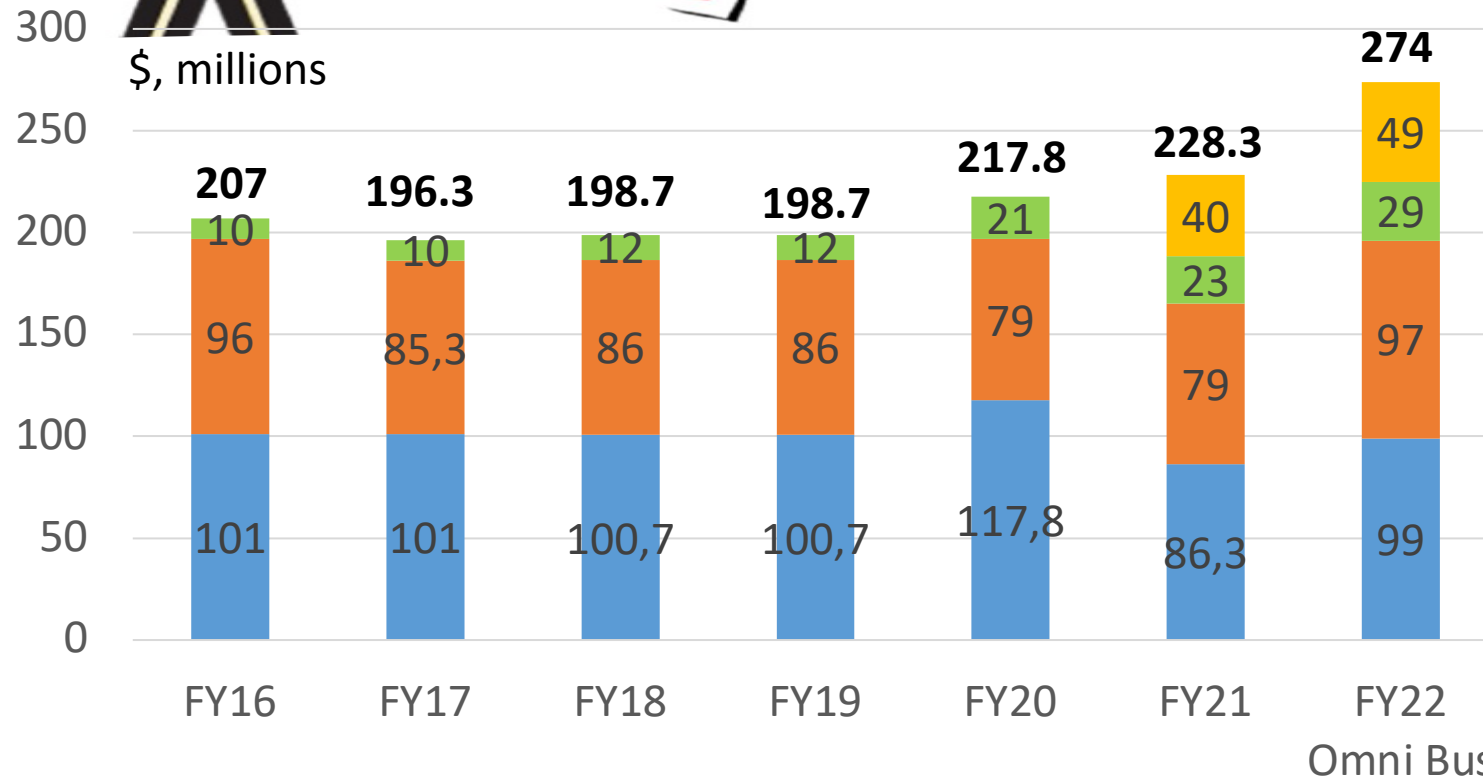
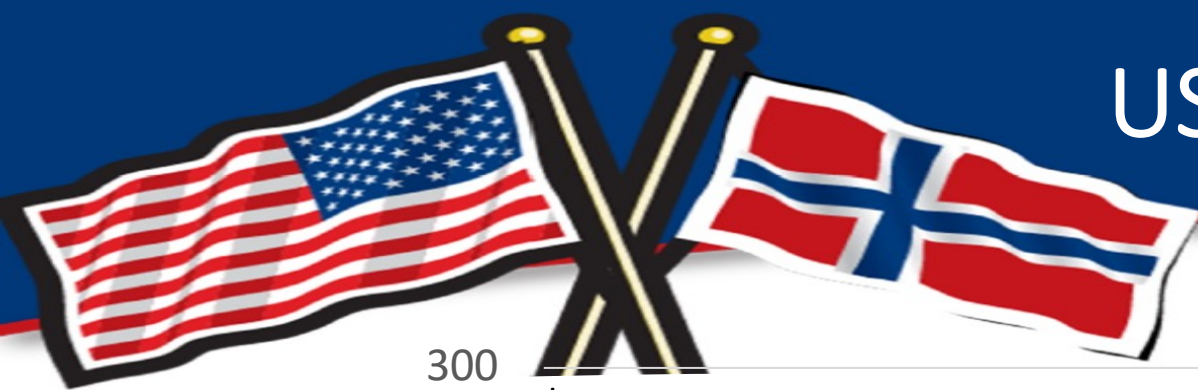
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- Well Integrity Atlas (LLNL/Sintef)
- Modeling and Simulating Gt-Scale Injection (Norse/UT Austin)
- CO2CAPII (ISGS/Norsar)
- ACT Calls 2 and 3 – 10 US/Norway Projects
 - US Investment \$6.5M (65M NOK)
 - Norway investment 74M NOK (\$7.4M)
 - US Commitment to ACT Call 4 = \$5.6M
- CO₂ DataShare (FECM/Gassnova)

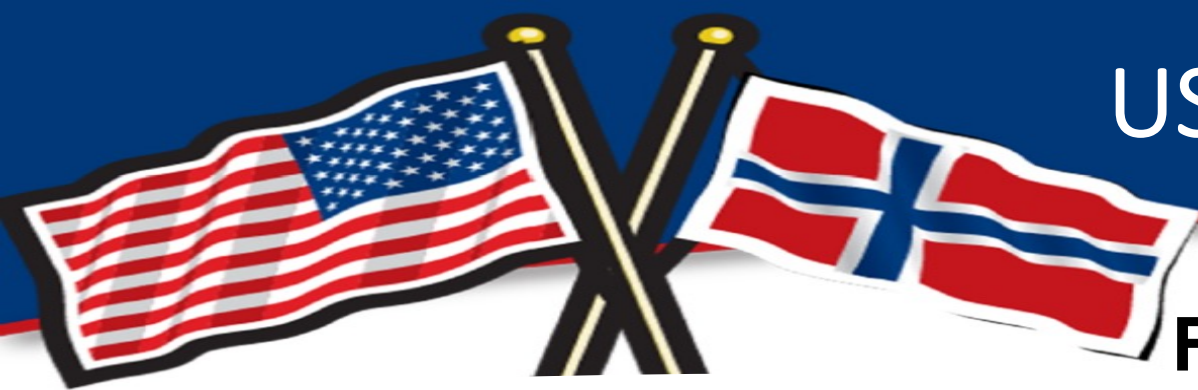


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- Carbon Capture
- Carbon Storage
- Carbon Conversion
- Carbon Dioxide Removal

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Funding Opportunity Announcements

- FOA2614 (Base Program) – Carbon Management; Area of Interest 4
 - Resource assessments of natural materials and industrial wastes that could be used to store large amounts of CO₂ via mineralization. \$4M for up to 4 projects. Application deadline July 22, 2022.
- FOA2610 (Base Program) – CarbonSAFE Phase II
 - Storage complex feasibility study. \$45M for up to 8 projects; Application deadline July 5, 2022
- FOA2711 (BIL) – CarbonSAFE Phases III, III.5, IV
 - Storage complex development, permitting, and construction. Notice of Intent posted April 29, 2022
- Pipeline FEED Studies (BIL)
 - Will consider other modes of transport (rail, ship, etc.) in future years. \$100M over 5 years. FOA is under development



Base FECM Carbon Storage Program R&D Interests

- Repurposing of O&G infrastructure for dedicated CO₂ storage (including injection back into reservoirs of natural CO₂)
- Conversion of depleted O&G fields to dedicated CO₂ storage
- Basin-scale carbon storage resource management
- Expansion of storage characterization to fill data gaps
- Unprecedented opportunity to collect real-world data from commercial scale CCS operations – field labs?



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CarbonSTORE (Carbon Storage Technology and Operations REsearch Facility)

CarbonSTORE leverages DOE investments today to drive down the cost of CCS tomorrow

Will enable...

- ⇒ Enhanced data gathering for new tech development.
- ⇒ Fast tracking emerging technology validation.
- ⇒ Real-world performance feedback for operational improvements and optimization.

