Global Carbon Dioxide Storage Resource Assessments

Carbon Sequestration Leadership Forum - Technical Group Virtual Meeting
8 December 2021

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U.S. Geological Survey
Identification of Priority Regions/Countries of Interest

Geographical coverage of the status of storage resource assessments

Consoli and Wildgust (2017, https://doi.org/10.1016/j.egypro.2017.03.1866; Global CCS Institute)
Project Goals

• Identify countries, with an emphasis on emerging economies, that are interested to work towards estimating their CO$_2$ storage resources to meet their climate goals;

• Work with multilateral organizations and international initiatives related to assessments of global geologic CO$_2$ storage resources; and

• Generate or facilitate CO$_2$ storage assessments internationally, with an emphasis on emerging economies.
Storage Resource Management System

https://www.spe.org/en/industry/co2-storage-resources-management-system/
Salinity of water in storage formation must be > 10,000 mg/L total dissolved solids (U.S. Environmental Protection Agency, 2010)

Blondes and others (2013)

Brennan and others (2010)
Phase 1: Prioritization and Data Collection

• Prioritize countries or regions that could benefit from CO₂ storage resource estimates and subsurface characterization.

• Determine the availability of relevant geologic data and identify data gaps in those countries or regions.

• Start to collect relevant data.
USGS Storage Assessment Unit Input Data Form

Characteristics of the Storage Assessment Unit

Lines 1-9 concern data for the SAU at depths of (check one):

- 3,000-13,000 ft
- > 13,000 ft

(1) SAU depth from surface (ft):
   - minimum: __________
   - most likely: __________
   - maximum: __________

(2) Area of the SAU (acres):
   - minimum: __________
   - most likely: __________
   - maximum: __________

(3) Mean total SAU thickness (ft):
   - minimum: __________
   - most likely: __________
   - maximum: __________

(4) SAU water quality (check one):
   - Most of the water in the SAU is saline (greater than 10,000 mg/L TDS).
   - Water in this SAU is both saline and fresh.
   - Most of the water in the SAU is fresh (less than 10,000 mg/L TDS).

(5) Area fraction available for storage (generally, the area where SAU pore water has more than 10,000 mg/L TDS):
   - minimum: __________
   - most likely: __________
   - maximum: __________

(6) Mean thickness net porous interval (ft):
   - minimum: __________
   - most likely: __________
   - maximum: __________

(7) Mean porosity net porous interval (fraction):
   - minimum: __________
   - most likely: __________
   - maximum: __________

Buoyant Trapping Probabilistic Calculation Inputs

(8) Buoyant trapping pore volume (MMbbl):
   - minimum: __________
   - most likely: __________
   - maximum: __________

Residual Trapping Probabilistic Calculation Inputs

(9) Permeability of the net porous interval (mD):
   - minimum: __________
   - most likely: __________
   - maximum: __________
Phase 2: The Assessment

• The U.S. Geological Survey will facilitate focused CO$_2$ storage resource assessments by:
  o Doing the assessment with assistance from local geological staff;
  o Working directly with the local geological staff to do the assessment; or
  o Advising the local geological staff as they do the assessment;

• Training and assessment capacity building is integral to the effort.
Phase 3: Reporting

• Expected results include:
  o Publicly available reports of regional, country, or basin specific geologic CO₂ storage resources.
  o Publish accumulated non-proprietary data and derivative products of aggregated proprietary data.
For More Information

For more information on how to join this Global Carbon Dioxide Storage Resource Assessments collaborative effort, please contact:

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References Cited


