

Quantifying Risk, Uncertainty and Chance in Subsurface CO₂ Storage via Technical Insights, Analog Deep Dives, and a Staged Workflow

Course Description

This 3-day course/workshop focuses on evaluating subsurface CO₂ storage complexes and risking opportunities within them. **Day One** focuses on those key technical aspects controlling project success and failure with an emphasis on uncertainty and risk. **Day Two** consists of teams evaluating case study posters to understand the real- world challenges in existing CO₂ storage projects. **Day Three** combines the technical and case study learnings in a Capstone exercise that includes a screening stage to identify candidates with the greatest technical potential, followed by a deeper evaluation of these to identify the candidate(s) with the greatest commercial potential.

Course/Workshop Outline

1. DAY 1: Key Technical Aspects
 - a. Introduction, Global Status of CCS
 - b. Reservoir Properties, Trapping, Storage Resources and Storage Efficiency
 - c. Injectivity, Containment, Storage Hazards, Monitoring, Compliance
2. DAY 2: Case Study Posters (4 in each category) and Risking/Staging
 - a. Saline aquifers
 - b. Depleted natural gas fields
 - c. EOR projects
 - d. Assessing risk, uncertainty and chance; Applying a staged approach to CCS projects
3. DAY 3: Capstone exercise (in teams)
 - a. Understand the fundamentals of play-based assessment
 - b. Analyze and extract static and dynamic values from maps; build tables of key technical parameters
 - c. Screen CO₂ storage candidates using a traffic light approach
 - d. Quantify the range of storage volumes and injectivity
 - e. Estimate the chances of discovery (Pg) and development (Pd)
 - f. Calculate the economics and stress test the candidates to determine the best investment option

Who Should Attend

This course/workshop is intended for geoscientists, engineers, managers and others who are focused on extracting value from potential subsurface CO₂ storage reservoirs. It is comprehensive, practical, and emphasizes a rigorous treatment of uncertainties to identify, quantify, and mitigate the subsurface risks associated with these projects in order to make good investment decisions.