Systems to Classify, Categorise and Report Geological CO2 Storage Capacity (G542)

Tutor(s)

Bob Harrison: Director, Sustainable Ideas Ltd.

Overview

While large scale carbon capture and storage (CCS) implementation continues to be debated, when it happens, a subsurface carbon storage management system will be needed. Such a framework must be capable of describing objective estimates of CO2 storage with respect to quantity and quality of available data, give a range of uncertainty in the estimation and provide injection project status from cradle to grave. This course reviews the subsurface carbon storage frameworks that are currently on offer worldwide.

Duration and Logistics

Classroom version: A 1.5-day course comprising a mix of lectures, case studies and exercises. The manual will be provided in digital format and participants will be required to bring a laptop or tablet computer to follow the lectures and exercises.

Virtual version: Three 3.5-hour interactive online sessions presented over 3 days. Digital course notes and exercise materials will be distributed to participants before the course.

Level and Audience

Intermediate. The course is intended for energy industry professionals, government regulatory bodies and energy sector investors.

Objectives

You will learn to:

1. Appreciate the requirement for an auditable carbon storage reporting system.
2. Gain familiarity with the different systems to report geologic carbon sequestration.
3. Understand the pros and cons and limitations of the reporting systems on offer.
4. Appreciate the key uncertainties in storage capacity estimates and how they may alter over time with increasing knowledge and experience.
5. Be aware of bias in reporting and how to mitigate against it.
6. Understand the need for appropriate ‘project boundaries’ to allow project comparison.

Course Content

Course Details

With any industrial scale CCS development, there will be a governmental obligation for transparent and auditable inventory management of the corresponding stored volumes. This requirement will become mandatory as it is very likely that many carbon storage projects will be funded in part by the public purse. To this end, the available frameworks that allow the classification and categorisation of subsurface storage capacity are introduced and compared.

The different approaches for estimating carbon storage capacity in saline aquifers and depleted gas fields and how these methods may change with increasing knowledge of the storage site will be discussed.

From experience of the oil and gas sector, the inherent flexibility in using reporting systems that are principles-based rather than rules-based is highlighted and debated.

As reporting bias may arise from following guidance rather than rules, mitigation strategies to combat prejudice are presented.

The need for a ‘cradle to grave’ system to report the appropriate storage efficiency on a level playing field is emphasised via the example of the setting of project boundaries for a CO2 Enhanced Oil Recovery project.

Case studies will be used to demonstrate carbon storage reporting systems at work.