

CSEG Technical Luncheon

February 2024

Carbon Capture and Storage, the CO2 Storage Resources Management System (SRMS), and application of geophysical techniques to CCS projects

After the lecture, members will understand the importance of carbon capture and storage in the transition to a lower carbon future and know how to evaluate quantities consistently using the SRMS.

As part of the international effort to combat global warming, significant attention is being given to ways to sequester (store for the long-term) carbon dioxide, which is a major contributor to the greenhouse effect. It is therefore critical that there is a universal means to record the storable quantities by recognizing the maturity of the projects to be implemented and the confidence that can be placed in the estimated volumes to be sequestered.

This talk will look at some of the ways in which carbon dioxide can be stored and provide a review of the CO2 Storage Resources Management System (SRMS) framework prepared by the Society of Petroleum Engineers to classify and categorize the storable quantities.

The talk will cover:

- An overview of carbon capture, utilization and storage, including the role of greenhouse gasses in global warming
- Discussion of typical modes of storage of carbon dioxide in saline aquifers and depleted oil and gas fields
- Review of the CO2 Storage Resources Management System (SRMS), including principles and key definitions
- Discussion of economics and evaluation methods
- A hypothetical example

The talk will also cover the main applications of geophysical and seismic methods that are commonly applicable to carbon capture and storage (CCS) projects. This includes standard techniques already used for subsurface evaluations to assist site selection but will also include more CCS-focused activities such as assistance with geomechanics and MMV (measurement, monitoring and verification), e.g., 4D seismic, VSP, micro-seismic.

Biography



Rawdon Seager is a reservoir engineer with over 50 years' experience in the international oil and gas arena with Shell, Huffco and, since 1985, Gaffney, Cline & Associates, where he is Chief Reservoir Engineer and Global Director of Quality Assurance. He is currently involved in CCS studies and application of the SRMS.

He has a BSc in Physics from Bristol University and an MSc in Petroleum Engineering from Imperial College, London. Rawdon is past Chairman of the SPE Oil and Gas Reserves Committee and past member of the Board and current Chair of the Reserves Definitions Committee of the SPEE.