

# Carbon Capture and Storage (CCS)

## Master Class Overview

### TRACS Training Master classes

One day Master classes are designed for people who want to update or refresh on specific topics without having to spend a week out of the office. The classes are led by experts in their respective fields and provide an opportunity for learning, inspiration, conversation and networking.

**Designed for:**

The course is designed for anyone with an interest in CCS, no prior technical knowledge is required.

**Duration:**

1 to 4 Days

Where does it start?

Where does it end?

What's the full story?

How would you design a solution?

The increasingly clear message we can read from the geological record is that we are causing significant disruption of Earth's carbon cycle.

The rocks tell us how, with the help of an enlightened oil industry, we can manage the transition to a low-carbon economy; an endeavour the scale of which is comparable to that of the oil & gas industry which preceded it.

This event follows the path of the Carbon from its underground source, to post-industrial capture and sequestration back into the ground.

Using rock outcrops, oil field reservoir data, engineering data and legal & commercial framing, supported by tuition in the technical essentials, course attendees will work through the logic of a full CCS scheme.



# Carbon Capture and Storage (CCS) continued

### Course Content:

Day 1 The carbon challenge - The evidence for anthropomorphic impact on the carbon cycle; the planet's likely response given the evidence from the geological record; the transition to a low carbon future and the potential role for the oil and gas sector; carbon at source.

Day 2 Facilities issues - Regional infrastructure; capture options at power stations; transportation; economics of CCS; building a local case for CCS.

Day 3 Wells issues - The mechanics of recycling; adaptability of existing surface facilities; re-use of the existing well stock; well and completion implications; equipment integrity.

Day 4 Reservoir issues - The subsurface options for CO<sub>2</sub> storage, the suitability of depleted fields; the phase behaviour of CO<sub>2</sub>; top seal and repressurisation; timing and the EOR upside; modelling the response of the reservoir, monitoring using 4D seismic.

### Course Duration:

4 days residential, classroom course or online VILT. Core content can also be distilled into a one or two day workshop.

### Courses available from this series:

E&P Business in a Day  
Uncertainty and Risk in Development  
How to Make a Good Reservoir Model  
Common Fallacies in Casing and Tubing Design  
Reservoir Engineering Fundamentals  
Field Development Planning  
Geomechanics Integration  
New Trends in Data Analysis  
The Energy Transition in a Day  
Carbon Capture and Storage (CCS)

### Course Tutors



Geoscientist, Global Head of Training

#### Arndt Peterhänsel PhD

**Main series Tutoring:** E&P Overview, Reservoir, Open Air  
**Industry Experience:** 20 years, Geoscience  
**Career background:** University of Cambridge, Universität Potsdam, Saudi Aramco, Lukoil and TRACS  
**Personal:** Technical author, Global Head of Training (TRACS), Expert to The European Commission on Horizon Europe 2020 research programme



CCS screening practitioner

#### Mark Cook BSc, MBA

Mark Cook founded TRACS International in 1992 after working with Shell as a reservoir engineer for 11 years. As a Director of TRACS he managed the UK and Russia Reservoir Management consultancy business until 2011. His particular interests lie in the combination of technical and commercial risk analysis, and he released the textbook "Petroleum Economics and Risk Analysis" in 2021. He practises as a consultant on projects and in the delivery of related training courses, and has been an SPE Distinguished Lecturer.



Well Engineer

#### Jonathan Bellarby BSc (Hons), MSc

Jonathan has spent most of his 20+ year career working on technical Petroleum and Completions Engineering problems. This has often been at the cutting edge of these fields such as HPHT, Deepwater, Stimulation and Non-conventional Wells. His particular expertise is in the area of tubing and casing selection; specifically stress analysis. He has run over 100 courses on the subject and written the industry-standard textbook on completion design.



Reservoir Modelling for Storage

#### Mark Bentley PhD

Mark has spent most of his career working in or leading integrated study teams, initially with Shell and subsequently with AGR and TRACS where he currently designs and runs courses and directs the TRACS Training programme. His specialist fields of expertise are 3D reservoir modelling and scenario-based approaches to handling subsurface uncertainty and risk. Mark has served as a distinguished lecturer for the SPE and the EAGE, and has delivered training courses on every continent, except Antarctica. Mark is co-author of 'Reservoir Model Design', SPE and EAGE distinguished lecturer, associate professor Heriot-Watt University, Edinburgh, UK and a Fellow of the Geological Society, London



Reservoir Engineer

#### Jerry Hadwin BSc, MEng

Jerry has been in the oil and gas industry since 1982, 13 years with Shell International in locations worldwide, as a reservoir engineer, on exploration prospect evaluation and field development planning, corporate business planning and drilling operations. He joined TRACS in 1997, where he completed reservoir engineering assignments for a range of the UK and International companies and led various PE study teams to successful conclusions. Jerry set up and managed the TRACS Oman and later Abu Dhabi office. He now lives in Calgary, continuing to work on international petroleum projects whilst moving his focus to the energy transition. During his career, Jerry has conducted reservoir engineering and commercial training for national and international oil company staff.