

IMPERIAL



StrataTrapper Public Workshop to CCS Project Developers

CCUS Innovation 2.0

Key Knowledge Deliverable 4.3

April 2025

Key Knowledge Deliverable Cover Sheet

This Key Knowledge Deliverable (KKD) has been produced by Imperial College London as part of the DESNZ CCUS Innovation 2.0 programme. The document is reflective of the status of the project at the time of writing. The material presented could have been subject to change as the project matured. These documents should not be considered a full representation of the final project.

Description of the project: In StrataTrapper we translate cutting edge research carried out at Imperial College London and the University of Cambridge on the geological fluid dynamics and trapping of CO₂ into innovative characterisation and modelling software tools that will be used by industry to reduce risks and costs of CO₂ storage projects. The tools will be commercialised through incorporation into the CO₂ reservoir simulation platform OpenGoSim, in addition to being made open-source. We will work with industry partners bp, Storegga, and Drax power to demonstrate the applicability of these tools to the Endurance field in the Southern North Sea and the East Mey Site in the Central and Northern North Sea. The result of the work will be the commercialisation of the StrataTrapper reservoir simulation tools for the rapid screening, risking, project design, and management of CO₂ storage.

This report describes Key knowledge Deliverable 4.3, a StrataTrapper Workshop to CCS project developers.

The following is the full list of KKD's to be published under StrataTrapper:

KKD1.1 Open-source research codes for the characterisation of multiphase flow heterogeneity and conversion to flow functions for reservoir simulation

KKD1.2 A report detailing the workflows for reservoir characterisation, and model creation and use

KKD2.1 Open-source research codes for the rapid estimate of the impacts of heterogeneity on lateral plume migration, residual and dissolution trapping

KKD2.2 A report detailing the use and limitations of reduced physics models for various applications, including screening and probabilistic analysis

KKD3.1 Publicly available models of the Endurance and East Mey sites

KKD3.2 A report analysing the impacts of multiphase flow heterogeneity on CO₂ migration and trapping in the case study sites

KKD4.1 StrataTrapper user interface in Stratus

KKD4.2 Accelerated OGS simulator

KKD4.3 StrataTrapper Workshop to CCS project developers

KKD5.1 Annual reports

KKD5.2 Project final report



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StrataTrapper Public Workshop Overview

A public workshop was held for stakeholders in using the software. The morning was a public workshop on the research tools developed by Imperial College London and University of Cambridge. The afternoon comprised a hands-on workshop to in person participants of the tools as they have been incorporated into OpenGoSim.

Agenda

StrataTrapper Public Workshop

Version: 2

Meeting date: March 21, 2025, 9:00 – 12:00, followed by lunch

Location: Department of Earth Science & Engineering, Imperial College London, London SW7 2AZ. Room G41

Agenda

Time	Activity
9:00 – 9:15	Welcome and coffee + breakfast
9:15 – 9:35	Introduction and overview of StrataTrapper
9:35 – 10:20	Numerical reservoir simulation with capillary pressure upscaling
10:20 – 10:40	Coffee break
10:40 – 12:00	Overview and hands on demonstration of CO2Gravisim
12:00 – 13:00	Lunch and close

Participant Summary

The event had 30 in person participants and 80 online participants joining through Teams. Participants were largely from Industry and academia (Universities and National Laboratories), and a few from Government organisations. Due to the time zone, participants were from the Eastern Hemisphere.

Presentations

Presentations given as a part of the workshop are made available as pdf files.

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