

C-Save

Project to develop and improve instrumentation for CCS measurements

- CST01: Improved analyser for CO₂

Allan Peart, Signal Group Ltd

- CST02: Thermal imager for leak detection
- CST03: TDLS for ground leakage

Andrew Finlayson, National Physical Laboratory

C-Save task CST01: CO₂ CEM

- High resolution NDIR system
- Factor of 10 improvement in analyser precision
- Measures to 0.02 % CO₂ resolution
- Wet or dry measurement for total carbon emission
- 19" rack mount with full user interface
- Tested at NPL MCERTs facility
- Field trials at CCS pilot plant



C-Save task CST01: CO₂ CEM



Installation at CCS pilot plant

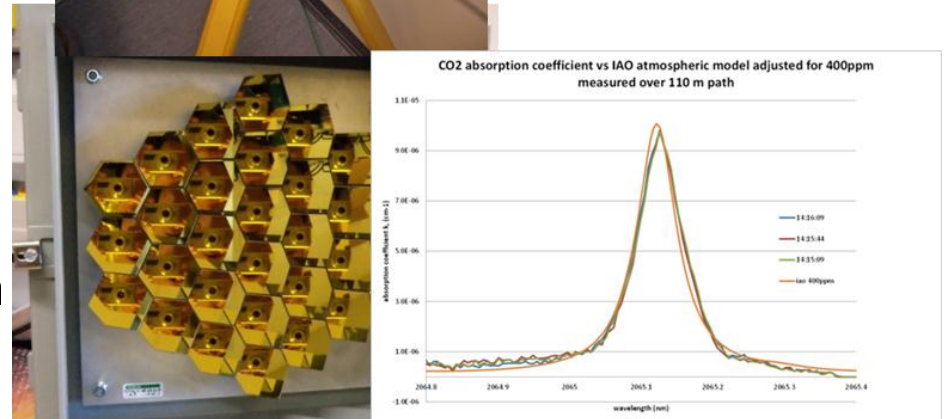
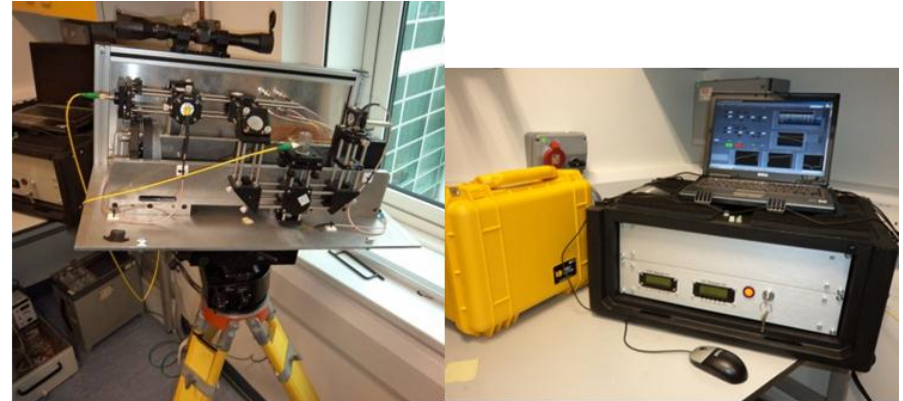
C-Save CST02: Thermal Imager

- Modified thermal imager for detection of CO₂ fugitive emissions
- Established technique for VOCs
- Optical filter used to modify spectral response of imager
- Initial tests at pilot Carbon Capture plant
- Can detect both cold and hot CO₂ gas



C-Save task CST03: TDLS

- Open path tuneable diode laser spectrometer for atmospheric CO₂ measurement
- Aim to measure amount of CO₂ over paths up to several 100 meters
- Determine diffuse emissions from carbon storage sites
- Uses O₂ measurement as reference
- Demonstrated over 110 m path
- Longer range tests planned



C Save: Next Steps

- Complete field trials
- Implement upgrades
- Dissemination of results
- Commercial exploitation

Thanks to TSB for supporting this project