

Operation of a Carbon Capture and Storage Network – a primer

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Abstract:

Carbon capture, utilisation, and storage (CCUS) is a key building block in the drive towards net zero greenhouse gas production worldwide. Waste CO₂ gas from power production, industrial users, hydrogen production, and other sources can be captured and sequestered in geologically stable long-term storage.

A pipeline network is typically required to transport CO₂ from capture to storage. These networks must be designed to safely and reliably operate under all possible scenarios: with CO₂ from any combination of suppliers; from very low flowrates to maximum sequestration rate; from minimum storage pressure to abandonment. They must operate with CO₂ as a gas, as a liquid, and as a two-phase fluid.

The design of a pipeline network is complicated by impurities in the CO₂, by limitations of the capture technologies, by limitations of the injection well, and of the long-term storage target. There are challenges associated with compression, startup, and both deliberate and accidental release of the CO₂. And there are knowledge gaps around the behaviour of CO₂ fluids, and sometimes politics plays an important role.

This webinar presents a primer for how to design and operate a CCUS pipeline transport network.



Biography:

Matthew Healey is the founder and director of Pace Flow Assurance, the largest independent flow assurance consultancy in the UK.

Matt has been at the forefront of CO₂ flow assurance for ten years. He wrote the industry- standard methodology for true multicomponent flow assurance modelling of CO₂ with impurities. He, and Pace generally, are industry leaders in thermodynamic modelling of CCUS fluids, CCUS flow assurance, and operation of CO₂ transport pipeline networks.

Matt has led a wide range of CO₂ and CCUS projects.



Registration for the Webinar available at IChemE Clean Energy Website:

<https://www.icheme.org/membership/groups/special-interest-groups/clean-energy/events/>

Instructions on how to access the webinar will be sent to all registrants.

The webinar is free of charge.