



GLASCO₂

**Add value.
Inspire trust.**

GLASCO₂ Liquid and Supercritical (dense phase) CO₂ Flow Measurement Facility

Similar to how oil and gas is traded worldwide, carbon capture utilisation and storage (CCUS) is built on a framework of government subsidies, regulations and commercial contracts which are underpinned by quantity and quality measurements of the CO₂ captured, transported and stored.

To maintain confidence in these measurements' accuracy, calibration of the custody transfer flow meters and composition analysers is critical.

TÜV SÜD National Engineering Laboratory, through the ENCASE Project and the Flow Programme, has developed a world first primary standard flow calibration facility for liquid and supercritical CO₂ (i.e. dense phase). This facility will provide SI-traceable flow calibrations and R&D testing, ensuring measurement reliability.

The Facility

The facility is a DN80, ANSI#1500 stainless steel closed loop flow calibration facility with an inline heat exchanger to allow fine temperature control of flowing liquid CO₂. The test section can be configured flexibly to suit the equipment under test, and can be utilised for research, development, testing, calibration and validation by OEMs, operators and academia.

Reference Measurements

- Piston prover primary reference standard
- DN25 and DN80 Coriolis secondary reference
- Direct density measurement at reference measurements

Fluids

- Pure CO₂
- CO₂ with added impurities (minimum 95% CO₂ concentration)

Flow Rates

- 0.7 to 70 m³/h

Pressure & Temperature

- Saturation Curve to 200 bar.g
- 5 to 50 °C

Device Under Test

- Line Size: 1" to 4" (nominal 3")
- Available for testing of fluid sampling systems and composition analysers in flowing conditions
- Data/comms protocol: Pulse, mA, Modbus (TCP/IP, RTU), Foundation Fieldbus

Why Choose TÜV SÜD National Engineering Laboratory?

TÜV SÜD National Engineering Laboratory is a world class provider of technical consulting, research, measurement, and testing services to clients across many industries including oil & gas, water, power & energy, and government.

TÜV SÜD National Engineering Laboratory is the UK's National Measurement Institute responsible for the management of the UK National Standard for Flow Measurement.

Associated Services

TÜV SÜD offers comprehensive support for organisations implementing Carbon Capture, Utilisation, and Storage (CCUS) technologies, focusing on accurate measurement and monitoring of CO₂ throughout the entire CCUS chain.

Services include:

- Oil and gas flow measurement, testing and calibration, including gaseous CO₂
- Dispersion modelling and process modelling using Computational Fluid Dynamics (CFD)
- Pipeline packing estimating and allocation measurement
- Pipeline and process simulation and regulatory support
- Validation and verification of CCUS projects
- Verification of emission reductions
- Accreditation and compliance
- Digital verification initiatives

