

## ENABLING INNOVATIVE CARBON CAPTURE TECHNOLOGY

### BACKGROUND

Process Instrument Solutions were approached by an established UK manufacturer to aid their capabilities in delivering a 10 tonne per day carbon capture plant with our extensive experience with a similar designed plant working successfully in the UAE.

This was on the back of a proposed concept for removing carbon from commercial exhaust fumes using innovative technology. The idea was to develop a functional test skid capable of extracting ten tonne of carbon per day.

### CHALLENGE

We were tasked with reviewing gas analysers, control valves and a suite of process instrumentation all ATEX certified to meet the extensive HAZOP, HAZID and ATEX analysis that was carried as part of the process engineering to ensure a safe to operate plant. The Skid has been designed with easy build and breakdown in mind, meaning it separates into 10 x 40ft skids, ideal for transportation, any additional challenge not normally faced on plant of this type.

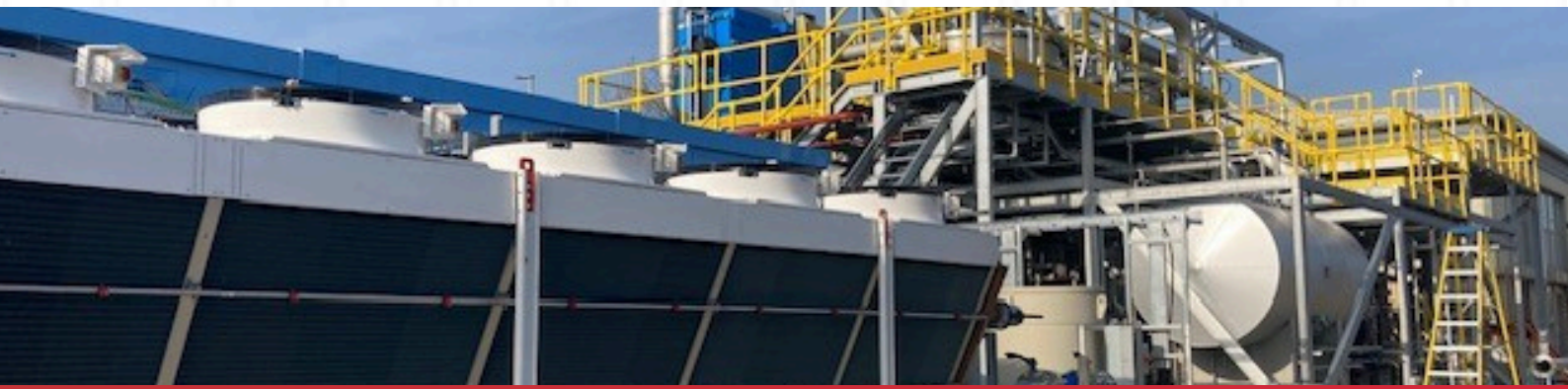
### SOLUTION

Having studied extensive piping and instrumentation diagrams PI proposed a range of gas analysers, control valves, flowmeters, pressure, temperature and level transmitters to provide detailed, accurate and repeatable data for the plant SCADA system and final control elements.

### RESULT

The carbon capture skid plant will be installed and tested in a quicklime production plant, a natural gas-fired power plant and an industrial gas boiler in three locations around Europe. The sites have performed preparatory work pertaining to positioning, connecting and permitting of the capture plant. The factory trials have all performed well, the final results from each site will be made available in the near future once trials have been completed.





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### EQUIPMENT SUPPLIED

#### Siemens ULTRAMAT 23 Extractive Gas Analyser

Due to its multi-component design with UV and NDIR technology for measuring up to three IR-active components and optionally available electrochemical sensors (O2 and H2S measurement), the Siemens ULTRAMAT 23 gas analyzer offers high cost efficiency and space savings.

#### Valve Solutions Series 110 Globe Control Valve

This type of control valve with its globe body shape, uses the variable area generated within the control valve trim to control fluid flow.

#### Siemens SIPART PS2 Electropneumatic Positioner

Siemens SIPART PS2 is the most widely used valve positioner for linear and part-turn actuators in industrial applications. The all-round positioner of Siemens provides an extensive range of functions and is well equipped – even for extreme ambient conditions.

Siemens coriolis, vortex, magnetic flowmeters, differential and gauge pressure transmitters, thermowells and temperature assemblies.



**Jon Tayler**  
Managing Director

