



1FTPS Hydrogen Control Skid

Hydrogen Trial Success at Hanson Cement Works

A cement kiln at Hanson's Ribblesdale works in Clitheroe has successfully been operated using a net zero fuel as part of a world first demonstration using hydrogen technology.

The trial, made possible by Department for Business, Energy and Industrial Strategy (BEIS) funding provided through the Mineral Products Association, used a mix of 100% net zero fuels including hydrogen for commercial scale cement manufacture for the very first time.

“During the demonstration, which is the culmination of several years of work, the proportion of fuels in the cement kiln’s main burner was gradually increased to a wholly net zero mix, which included tanker delivered hydrogen,” said plant manager Gary Young. “The trial demonstrated the pathway to moving away from using fossil fuels in cement and concrete production and, if fully implemented for the whole kiln system, we could save nearly 180,000 tonnes of CO₂ at Ribblesdale alone, compared to using the traditional industry fuel of coal at the site.

“We are already the largest producer of low carbon concrete in the UK, but the prospect of using hydrogen in the fuel mix at our cement plants will help us meet our ambition of supplying net zero carbon concrete by 2050.”

The trial at Ribblesdale follows a BEIS-funded feasibility study in 2019 which demonstrated that a combination of biomass, hydrogen and plasma energy could be used to eliminate 100 per cent of fossil fuel CO₂ emissions from cement manufacturing.

FT Pipeline Systems, using the trusty Gascat Domus Hydrogen regulator and slam shut devices in Active Slam/ Slam configuration, produced a fully CE/CA approved and PED certified pressure control, delivering pure hydrogen to the Hanson burner controls.



The results from the project will be shared within wider industries and supply chains both in the UK and globally, with the aim of spreading and maximising the environmental benefits of the technology.

It is envisaged that combining the use of net zero fuels with carbon capture, usage and storage technology will enable the production of cement to capture more CO₂ than it emits.

