Gigastack

Hydrogen Society
A prosperous, innovative and decarbonised UK

Orsted, ITM Power, Phillips 66 and Element Energy have come together to develop Gigastack, a project to demonstrate the benefits and potential of renewable hydrogen derived from offshore wind.

Since 2020, the project team has been developing a blueprint for deploying scaleable electrolyser technology across the UK with a 100MW electrolyser front-end engineering design (FEED) study. This has included the next generation of polymer electrolyte membrane (PEM) electrolyser system at the 5MW scale; and expanding ITM Power's electrolyser manufacturing capacity by moving to a new site and installing new semi-automated manufacturing equipment.

During this process the Gigastack team has explored potential challenges such as: accessing a water supply in an industrial area; integrating into a high voltage electrical substation a few miles away; integrating pipework into an operational refinery; and planning and permitting for a first-of-its-kind renewable hydrogen project.

The team will now focus on the key areas for the next phase of project development, with a technical concept ready to take to a detailed design phase and used for future energy integration projects.

The project received £7.5M as part of BEIS's Low Carbon Hydrogen Supply Competition and is expected to publish its final report in the summer of 2021.

www.gigastack.co.uk