

HYDROGEN MINI GRID SYSTEM



The Hydrogen Mini Grid System is part of Yorkshire Forward's Regional Economic Strategy that aims to:

- Reduce Yorkshire's energy demand
- Maximise the generation of low carbon energy
- Lead the way in delivering secure and reliable energy supplies.



Artist Impression

The Hydrogen Mini Grid System, HMGS, is a unique development by Yorkshire Forward to showcase the potential for Hydrogen to be used as a reliable and sustainable energy source to fuel both buildings and transport. This innovative hydrogen based energy system is based at the Advanced Manufacturing Park (AMP), Waverley, and is a leading global example of how energy suppliers can respond to the threat posed by declining oil reserves and generate energy where it is needed.

The engineering facility being constructed at the AMP is an innovative demonstration of the infrastructure solutions required to respond to the predicted decentralisation of energy generation.

The sophisticated on-site hydrogen mini-grid system designed and managed by tnei and the Pure Energy Centre will supply the energy demands of the building and the activities of its occupiers.

The Hydrogen Mini Grid System aims to:

- Create a Carbon Neutral workspace for emerging energy technology companies
- Demonstrate the use of renewable energy to generate hydrogen as part of a future Hydrogen Economy

Excess electricity generated by the on-site wind turbine will be:

- Used by the neighbouring workspaces
- Used to generate high-pressure hydrogen
- Exported to the grid

More information on the various aspects of the HMGS

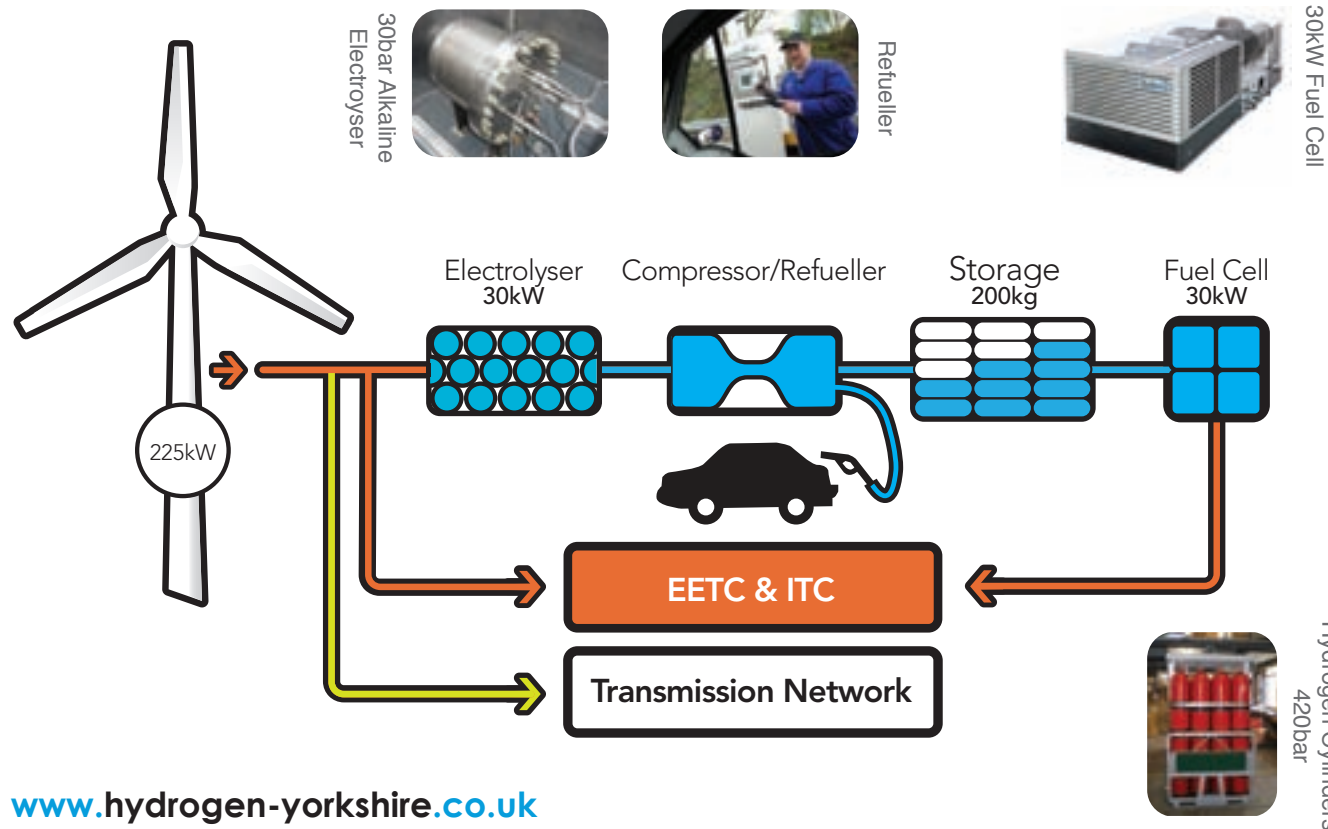
Wind Turbine – A V29 Vestas wind turbine, rated at 225kW, should generate in excess of 500MWh a year

Electrolyser – state-of-the-art 30kW electrolyser supplied by hydrogen specialists, the Pure Energy Centre, designed specifically for use with an intermittent electricity supply. Generates hydrogen at a pressure of 30bar

Hydrogen Storage – capable of storing 200kg of hydrogen at 420bar.

Hydrogen Compressor/Refueller – supplied by Air Products will dispense hydrogen at a pressure of 350bar, suitable for refuelling hydrogen vehicles.

Fuel Cell – 30kW Proton Exchange Membrane fuel cell (PEMFC) configured to supply both the EETC and the local distribution network



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