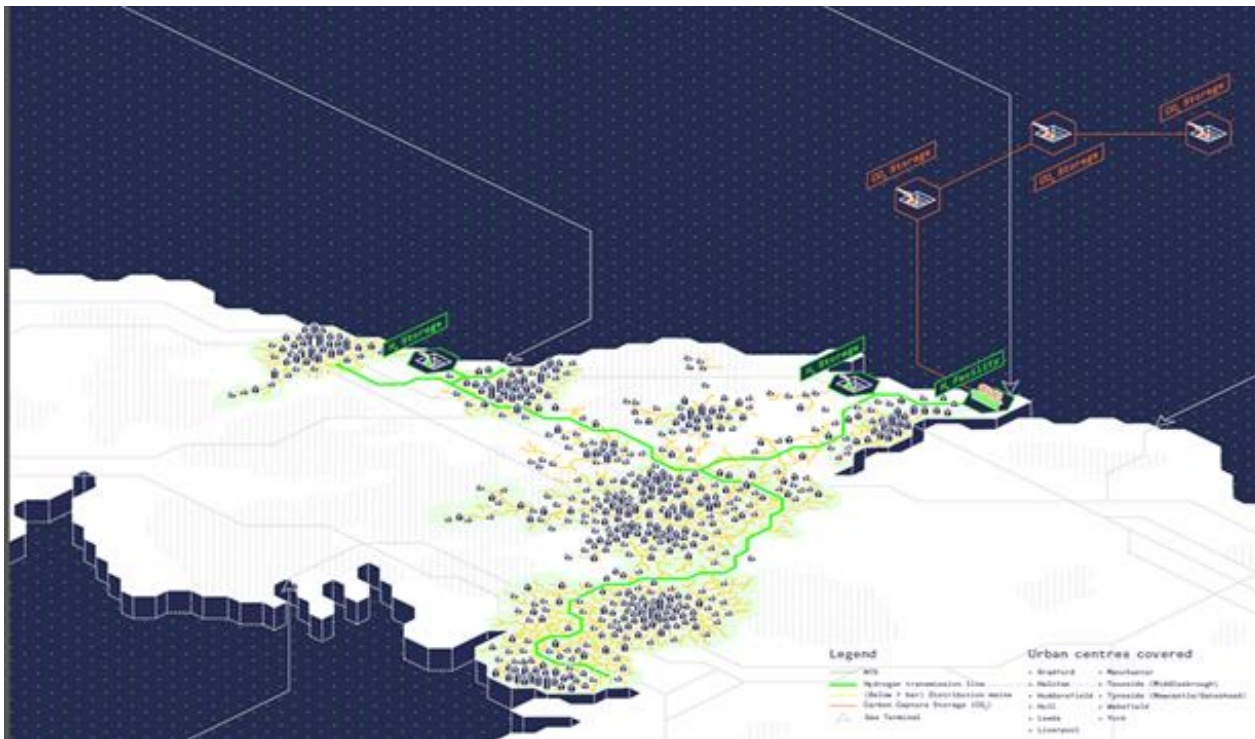


H21 North of England

Large scale decarbonisation of residential heat

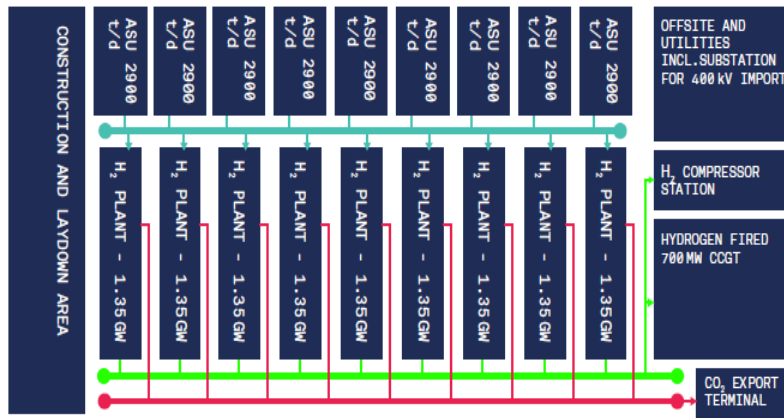
H21 North of England – Meeting the Climate Change Act 2008 based on proven and referenced technology



- Conversion start 2028 with stepwise expansion to 2035 replacing more than 3.7 million appliances
- Resilient design to fulfil security of supply during peak winter (the beast from the east)
- 12.5 Mtpa CO₂ per year avoided
- Developing a hydrogen and CO₂ transport and storage infrastructure decreasing the threshold for other sectors
- Enabling green hydrogen and sector coupling

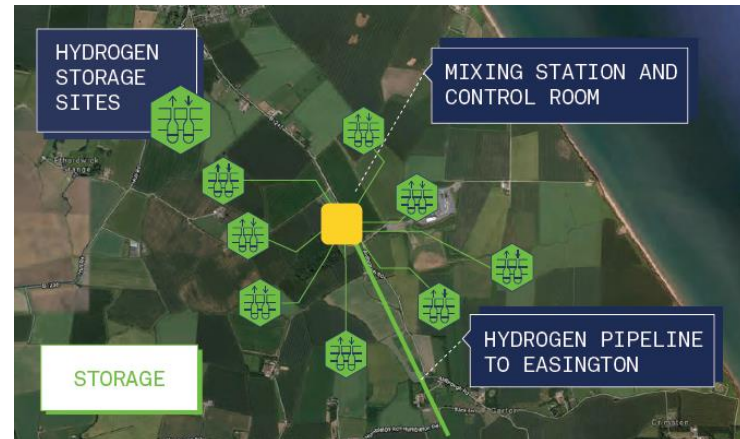
Hydrogen Supply and CCS

Greenfield Hydrogen Production



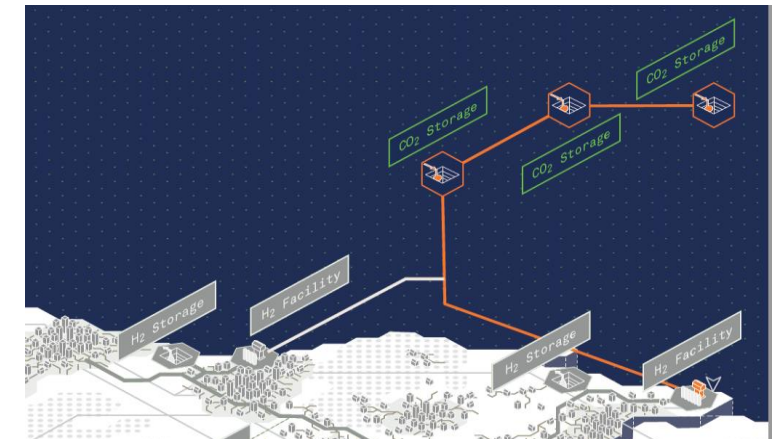
- Location Easington (Teeside)
- Capacity: 12.15 GW
- Modular design
- Plant efficiency: 75-80%
- CO₂ capture rate: 94-98%
- CO₂ footprint 14.14g/kWh

Hydrogen Storage



- Location: Aldbrough
- Capacity: 8 TWh
- Configuration : 56 caverns at 300,000 m³

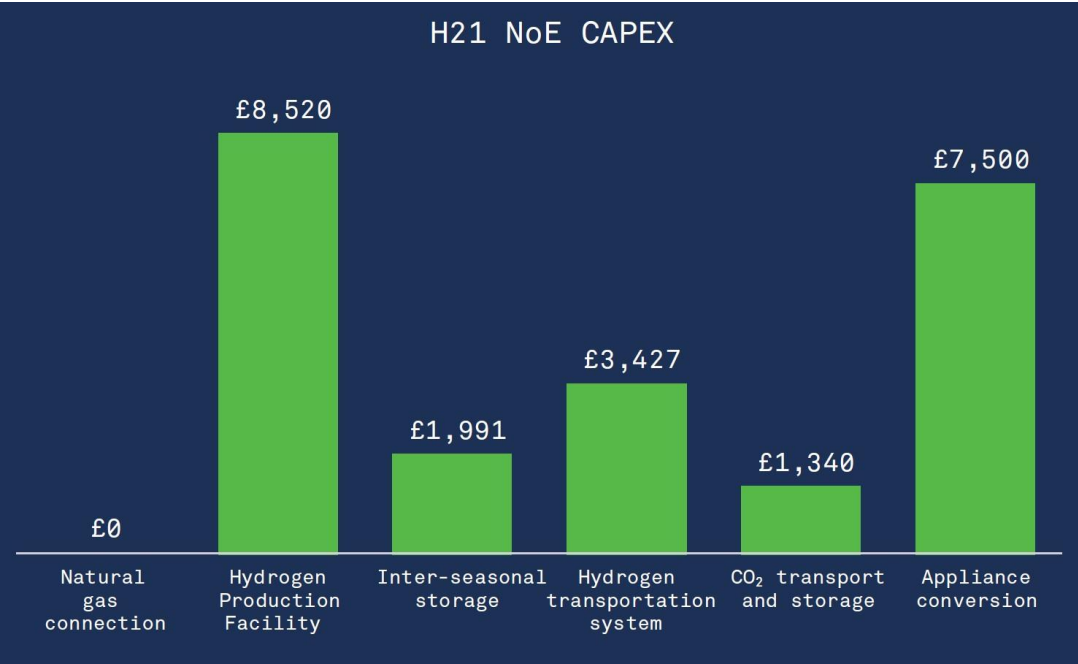
CO₂ Transport and Storage



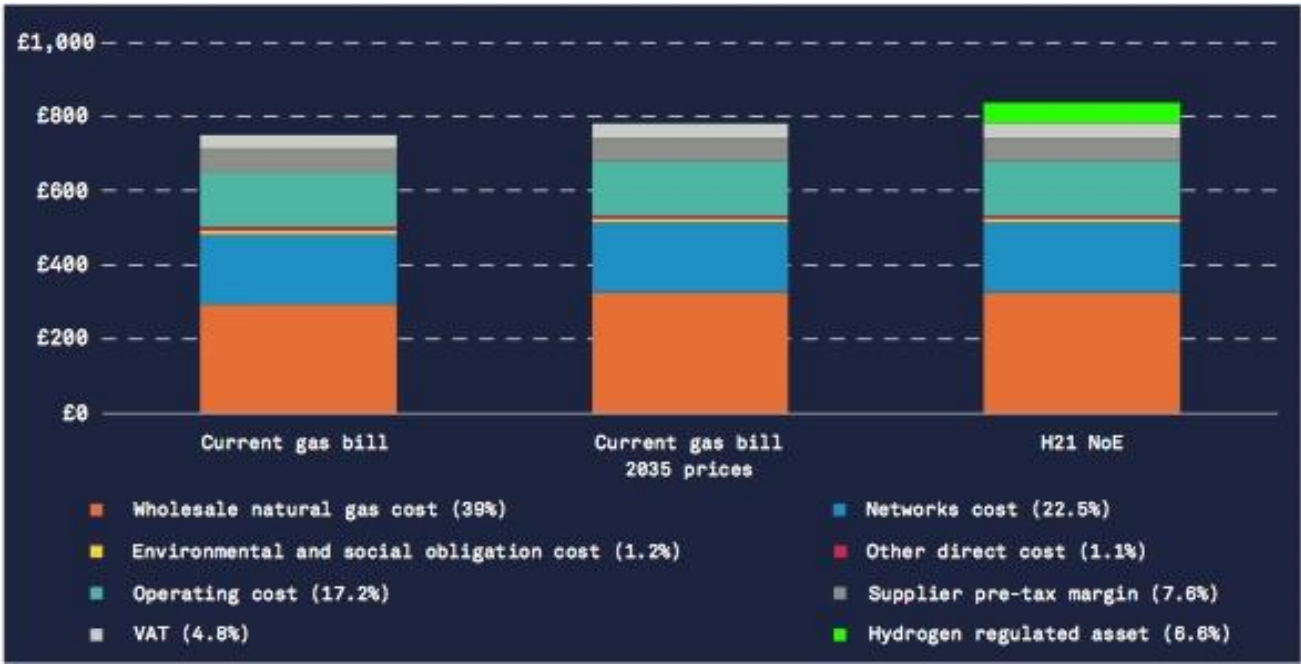
- Location: Bundter
- Capacity: +600 Million @ 17 mtpa
- Configuration: Saline aquifers

Cost and implications for the annual gas bill

H21NoE project cost

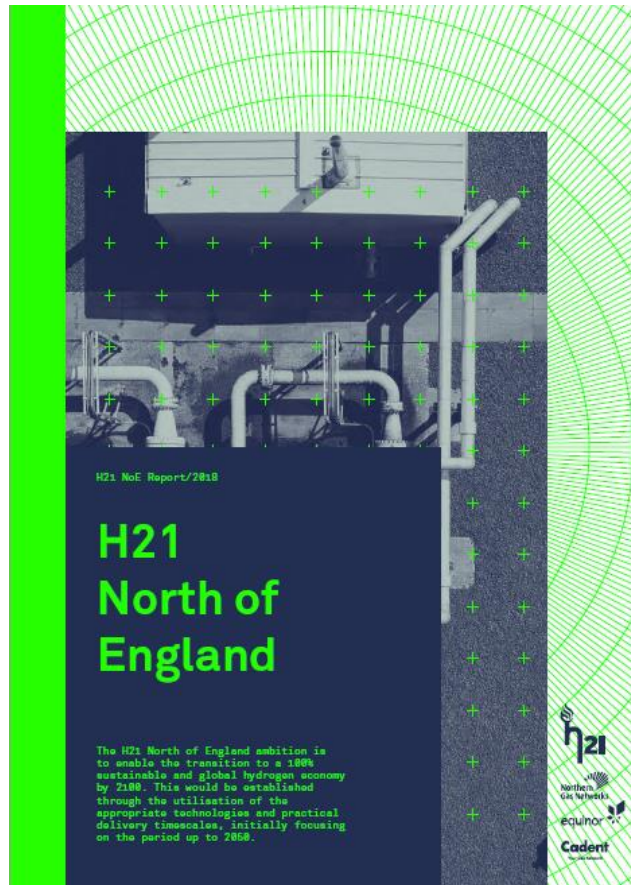


Impact on total annual gas bills (2035 peak)



7% increase (+GBP 53), based upon regulatory financing

H21 North of England report (2018)



- Defining demand requirement
- Large scale hydrogen production technologies
- Inter-seasonal hydrogen storage technologies
- Hydrogen Transmission and distribution
- CO2 transport and storage
- Commissioning
- Project cost and finance
- CO2 footprint analysis
- Next step and vision

H21 North of England

Johan Leuraers, Policy and Regulatory Affairs

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