



# H21 overview

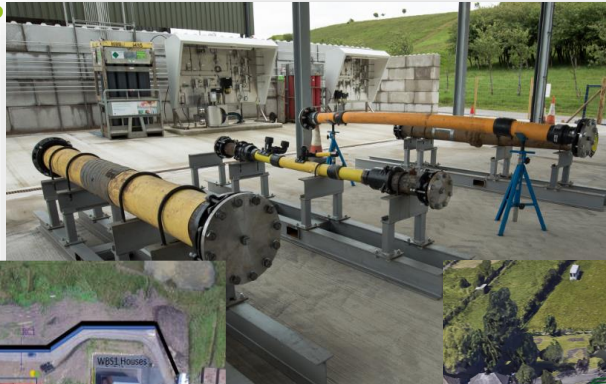
Tim Harwood – H21 Project Director

November 2020



# H21 Programme of Projects

H21 is a suite of pioneering gas industry projects sponsored by Ofgem and led by Northern Gas Networks, focused on demonstrating the existing UK gas grid can be repurposed to carry 100% hydrogen, in order to help meet the UK governments decarbonisation targets



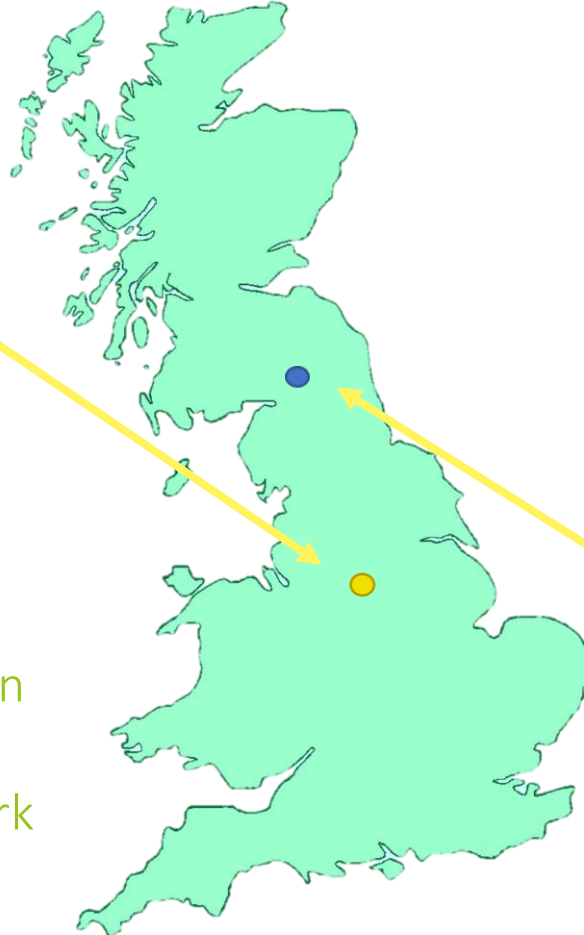
# H21 NIC: Phase 1a & 1b

## Phase 1a HSE – SD Buxton



### Leakage Testing

- Comparing leakage rates between natural gas and hydrogen.
- Testing on existing 0-7bar network assets.



## Phase 1b DNV GL Spadeadam

### Consequence Testing

- Tests to establish the consequences of a hydrogen leak.
- Include observation of tracking, dispersion, ignition potential and explosive limits.



# H21 Social Sciences

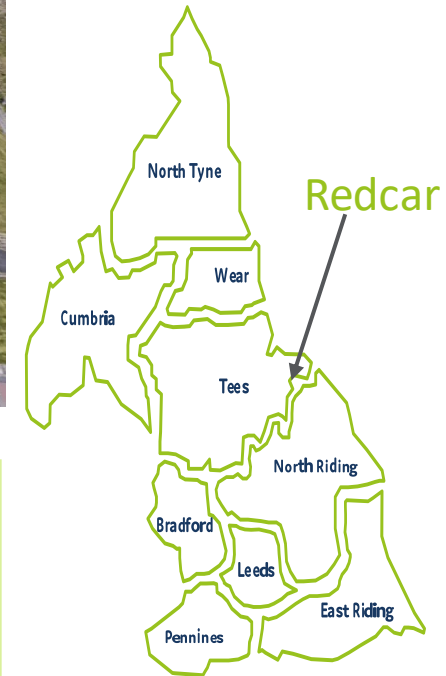
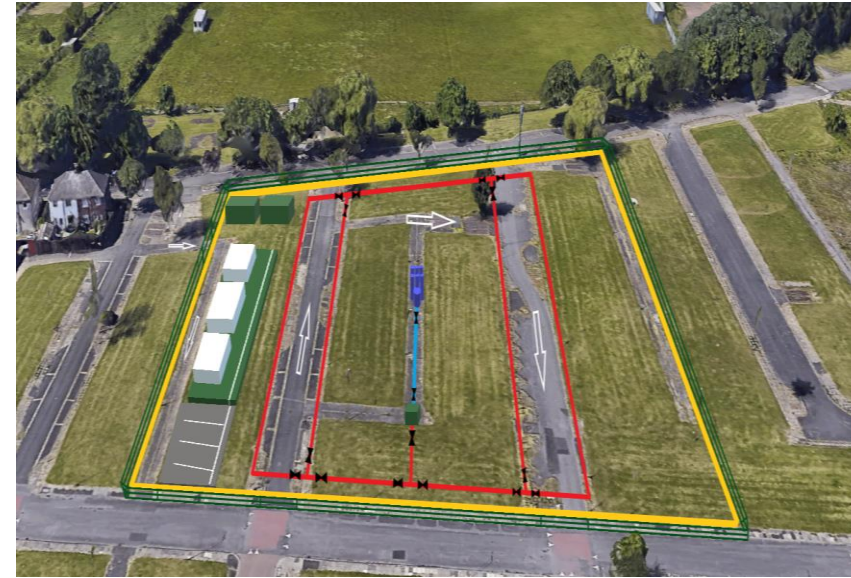


## High Level Results: (so far)

- Safety not a major concern for the public.
- Cost (general and of appliances) and disruption are barriers.
- Able to digest quite technical information and retain and explain it.
- Difficulty with some of the terms we use e.g. Decarbonisation, CCS, SMR, ATR etc.
- Want to be told the facts (not what might happen).
- Want to be brought along the hydrogen journey.
- Key words and phrases are important



# H21 phase 2a & 2b



## 2a - Microgrid at Spadeadam

- ✓ Built at Spadeadam next to the HyStreet
- ✓ Represents a typical distribution network
- ✓ Will run on 100% hydrogen
- ✓ Will be connected to NG “futuregrid” to enable full “beach to burner” research on one site (subject to NIC funding)

## 2b - Unoccupied Trial site

- ✓ Site is in Redcar near Middlesbrough
- ✓ Unoccupied network operations trial will be undertaken on an existing section of the gas network.
- ✓ Will run on 100% hydrogen
- ✓ A stepping stone to occupied trials



# H21 phase 3 and beyond

What's next?

