

NGN Hydrogen Briefing

Hydrogen for heat: UK Government overview

The Government's commitment to grow the low-carbon hydrogen economy is significant:

Ten Point Plan	Evidence for hydrogen blending – 2023
	Hydrogen village trial – 2025
	5GW of hydrogen production – by 2030
	Hydrogen town trial – 2030
Hydrogen Strategy	Hydrogen could represent up to 35% of the future energy mix
	Attract £4bn of private investment
	Consultations on low carbon hydrogen standard and vital economic models
Heat and Buildings Strategy	Heat Policy Decision – 2026



Delivering the 10 Point Plan



H21 Progress to Date – Phases 1 & 2

Mini distribution network tested operational procedures on hydrogen at **DNV Spadeadam**



An unoccupied and undisturbed section of our network trialled with hydrogen at **South Bank, Teesside**.



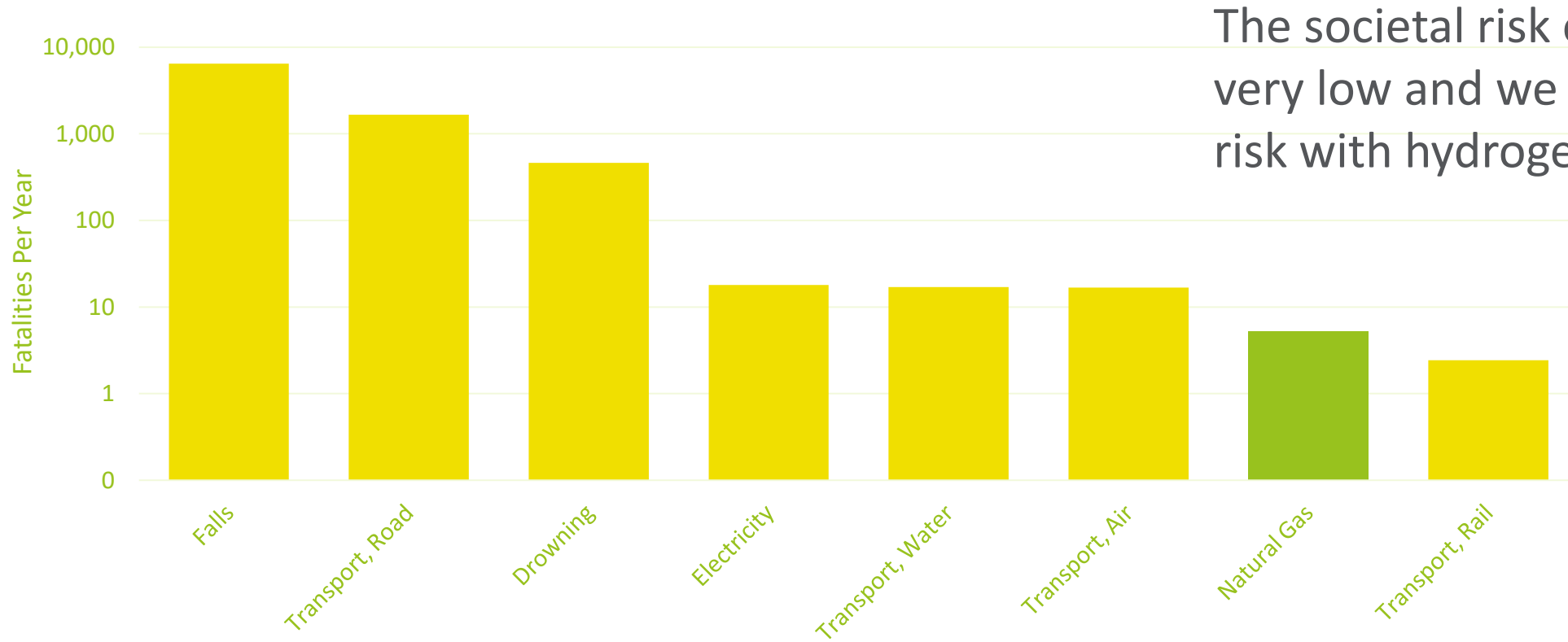
Comparing leakage rates between natural gas and hydrogen at **HSE-SD Buxton**



Establishing the consequence of hydrogen leaks at **DNV Spadeadam**



Societal Risks



The societal risk of natural gas is very low and we will ensure the risk with hydrogen is lower

Risk	Falls	Transport, road	Drowning	Electricity	Transport, water	Transport, Air	Natural Gas	Transport, Rail
Fatalities (per year)	6,434	1,663	462	18	17	17	5	2



Has demonstrated the safe blend
a 20% hydrogen into an existing
gas network and public
acceptance

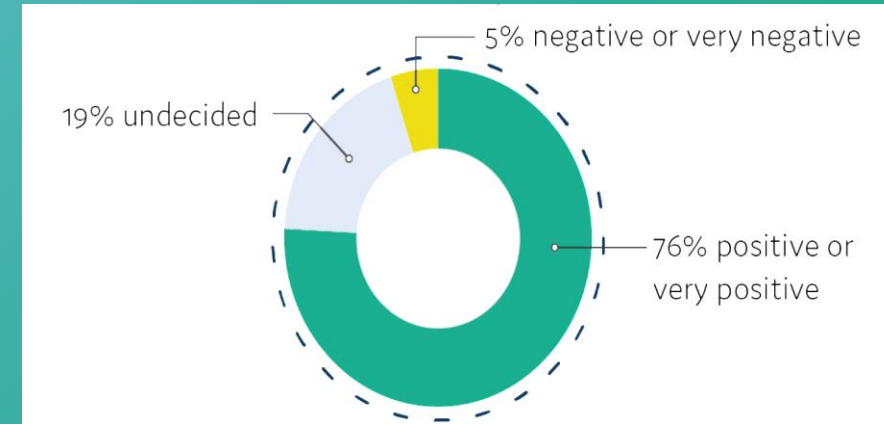
- Located in the North East outside Gateshead (Winlaton)
- Isolated network for **20% injection**
- **670** trial properties
- Trial commenced **August 2021 – completed June 2022**
- Government policy decision on blending in 2023

Redcar Hydrogen Community

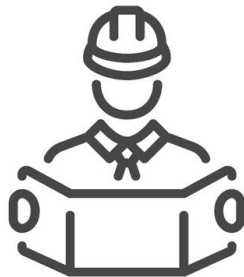
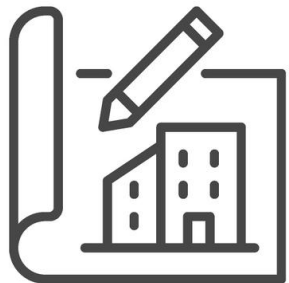
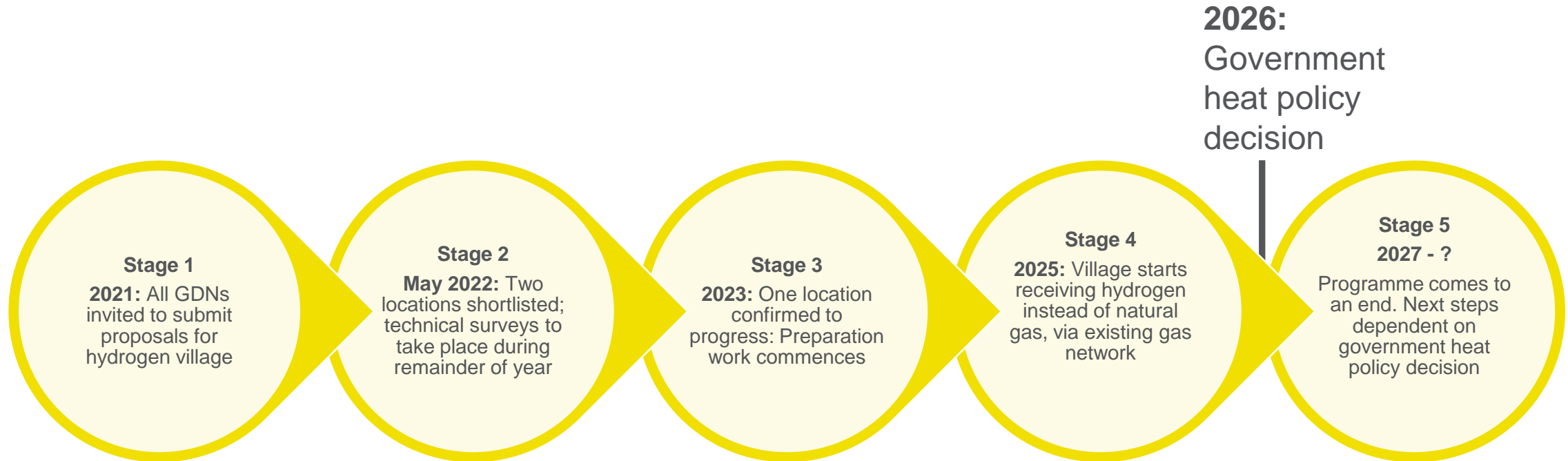
with Northern Gas Networks



- Approximately 2,000 gas users including homes and businesses of varying sizes
- A hydrogen-fuelled college and leisure centre
- Engineering & consultation surveys completed
- Citizen's Panel and Consultation Meetings held
- Our Hydrogen Hub is located on the High Street



Hydrogen Village Timings

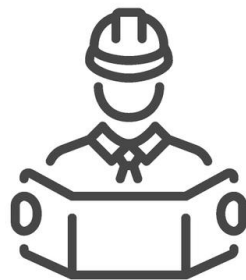
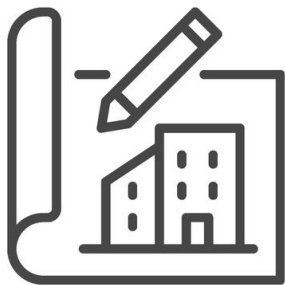
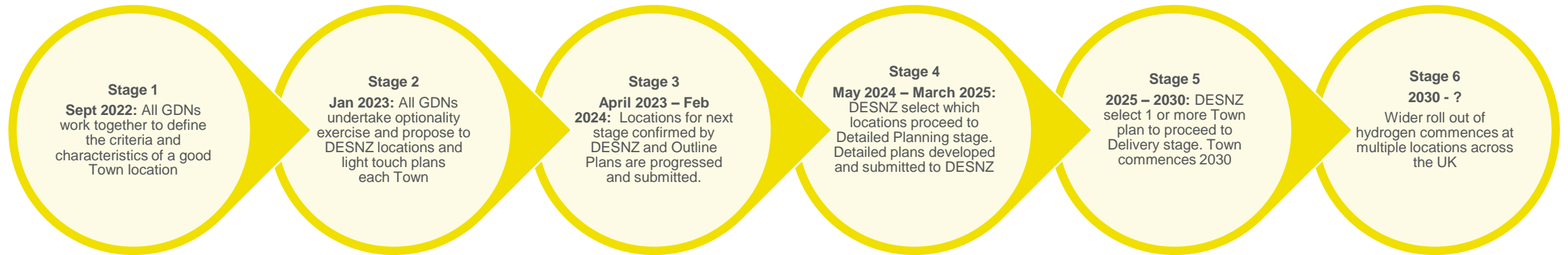


Hydrogen Town

- Initial locations submitted January 2023
- Decision of shortlisting expected imminently
- Around 10,000 properties converted around 2030
- Subject to 2026 decision but planning in advance due to scale
- A pilot leading to a roll out rather than a ‘trial’

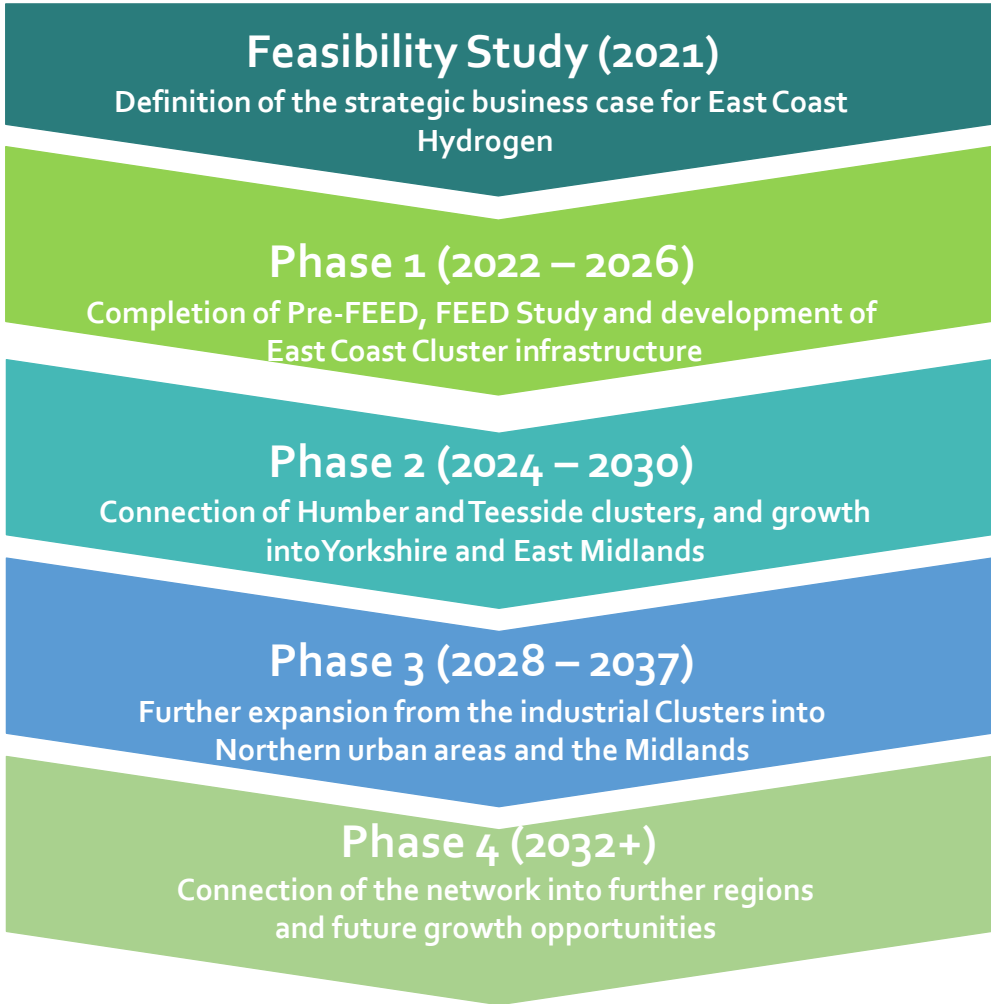
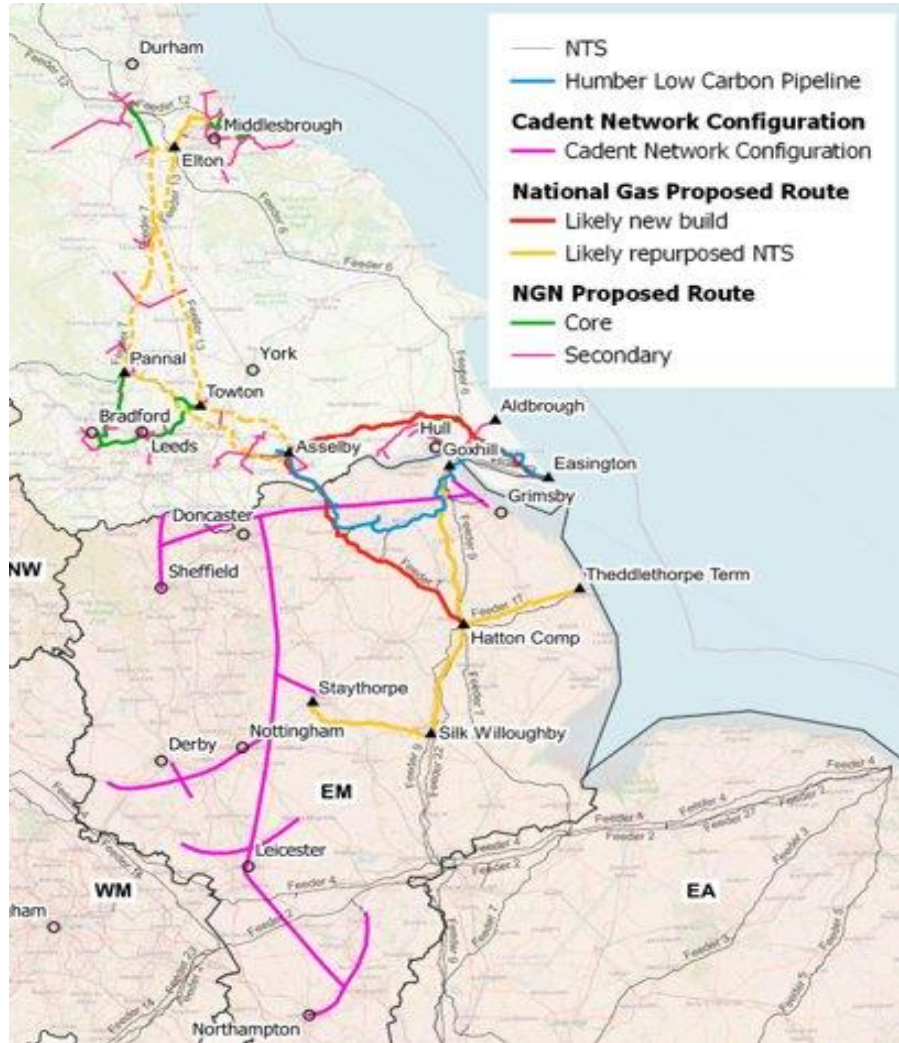


Hydrogen Town Timings



East Coast Hydrogen

East Coast Hydrogen is a long term project that will be carried out in multiple, discrete phases to decarbonise industrial processes and domestic heating in the East Coast region in partnership with National Gas and Cadent.



Hydrogen Demonstration Home

We built a typical pair of semi detached houses at Low Thornley, Gateshead, to showcase the 100% hydrogen appliances developed through the Hy4Heat programme. This demonstrates to policy-makers that the potential of hydrogen can be achieved now, not just in the future.



Project Outcomes

- ✓ **Practical demonstration** – Provide a tangible deliverable to demonstrate that hydrogen is something you can “touch and feel” now, not just something for future consideration
- ✓ **Minimal disruption** – Demonstrate how a typical UK home can run off of 100% hydrogen without any visible difference
- ✓ **Supply chain development** – Demonstrate maturity of hydrogen supply chain by showcasing technologies that are “market ready”
- ✓ **Public awareness** – Provide a facility that can be used long-term to generate public awareness and support for hydrogen
- ✓ **Green recovery** – can be used as a training facility to train green apprentices and via EUSR

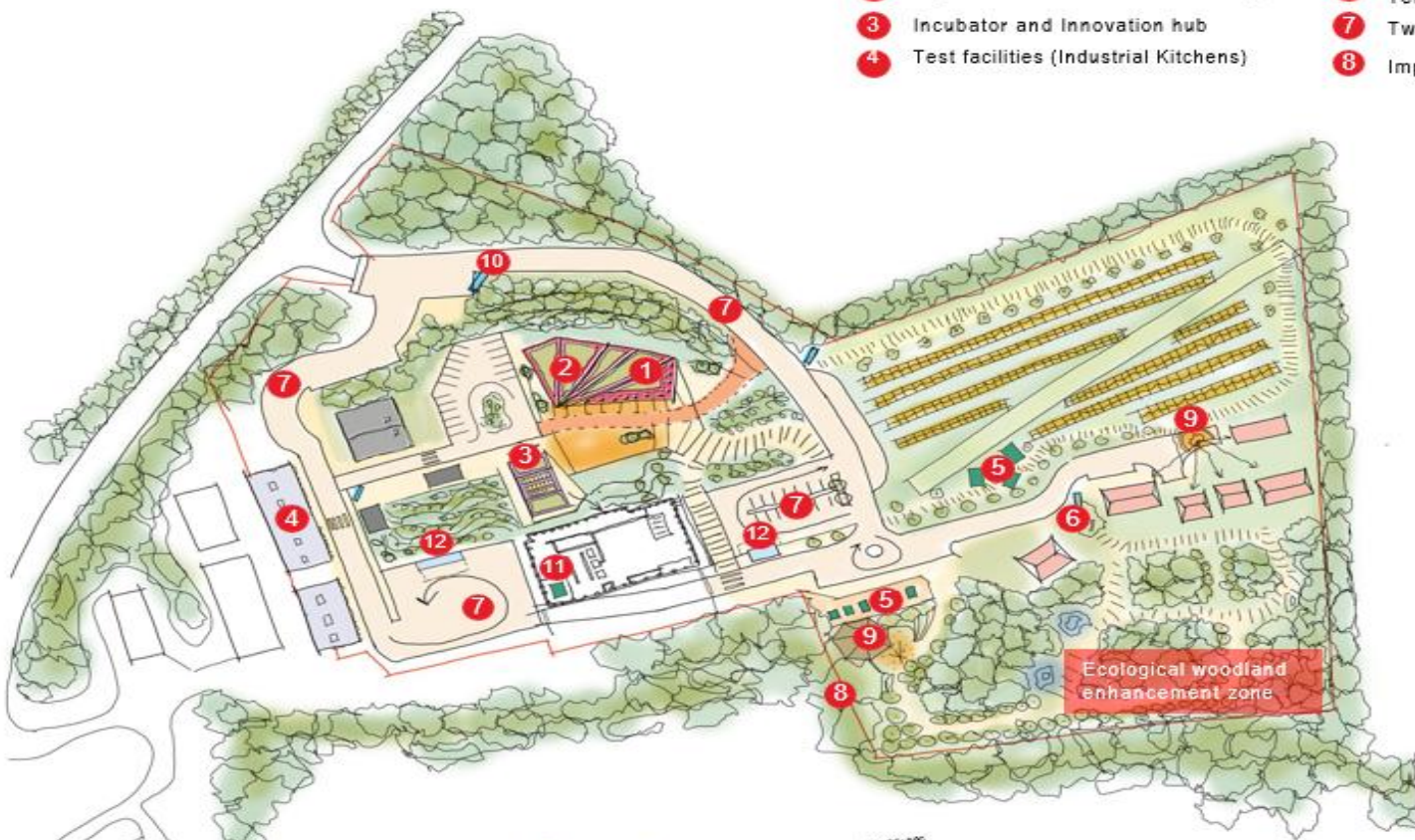
Hydrogen Home Appliances

The homes showcase 100% hydrogen appliances and meters. Since opening in August 2021 almost 3,000 visitors have crossed the threshold.

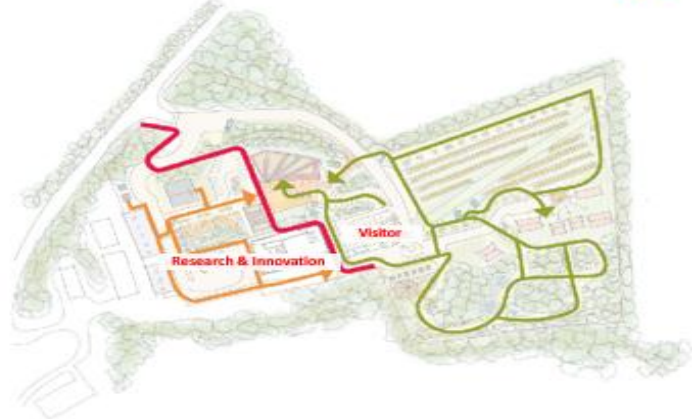
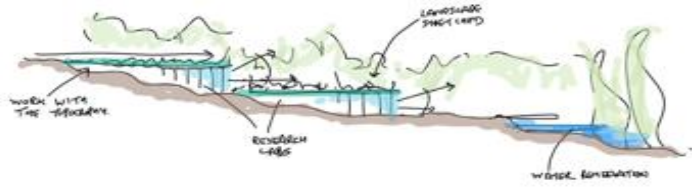


National Energy Research Village

- 1 Arrival, café and educational hub
- 2 Digital labs and decision theatre space
- 3 Incubator and Innovation hub
- 4 Test facilities (Industrial Kitchens)
- 5 Pop-up Plug and test space and incubation pods
- 6 Temporary public realm
- 7 Two way road with clustered parking
- 8 Improved security fence
- 9 Outdoor educational amphitheatre
- 10 Wayfinding
- 11 HyDeploy repurposed as flexible test facility (Green hydrogen)
- 12 EV charging and refuelling



Rationalise – Indicative Masterplan Framework



Visitor
Operational
Boundary

Customer Energy Village

A representation of the 20+ million existing homes that require good decarbonisation solutions.



A research facility for a whole system approach and for decarbonisation solutions in the home

Thank you