

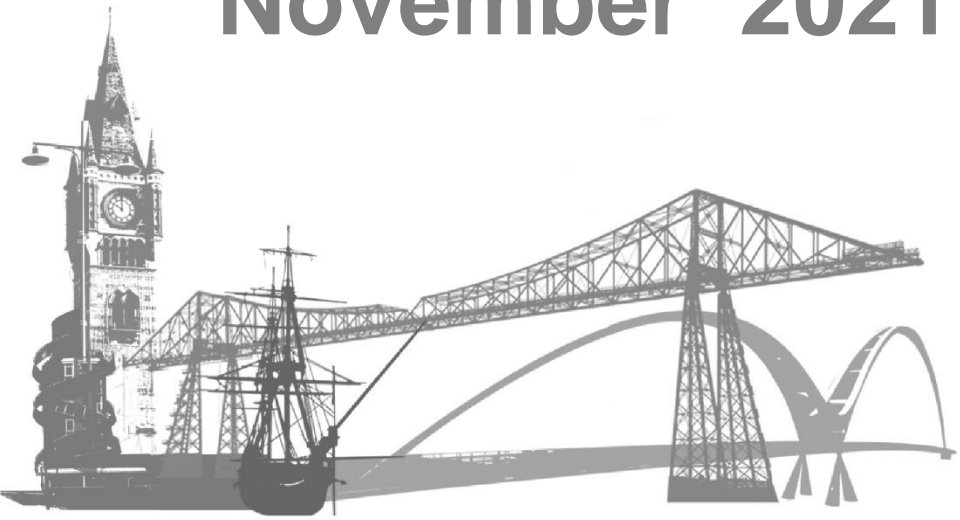


TEES VALLEY
COMBINED
AUTHORITY

TEES VALLEY MAYOR

Moving forward with hydrogen in the Tees Valley

November 2021



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The Tees Valley

Edinburgh
Tees Valley – Edinburgh
2hr

Newcastle
North East
of England

Leeds
Manchester
Liverpool

Hull
Tees Valley – London
2hr 20min by rail

Three railway stations
connected to London

Tees Valley is centrally
located for easy access
to the whole of the UK



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Our Vision

An aerial photograph of an industrial valley. In the foreground, there are residential houses and green spaces. The middle ground is dominated by large industrial buildings, parking lots, and roads. A river flows through the valley. In the background, a large body of water is visible with several wind turbines. The sky is blue with some clouds.

Tees Valley will be a global leader in clean energy, low carbon and hydrogen. The Industrial Cluster will achieve net zero by 2040, providing cleaner, healthier safer jobs for local people

Tees Valley Cluster Plan



Department for
Business, Energy
& Industrial Strategy



Innovate
UK

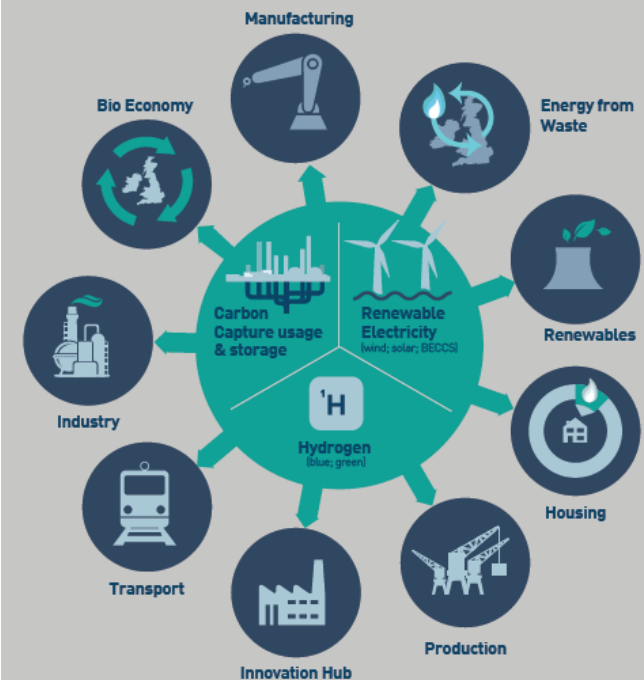
Collaboration

- TVCA ; NEPIC ; bp

Tees Valley Net Zero Cluster Plan - Stage 2

- £1.13 million funding > *Innovate UK*
- 2 years to March 2023
- All aspects of decarbonisation
CCUS | Renewable & Green Electricity | Hydrogen
- **Key Aims:**
 - Produce a *roadmap* to decarbonisation 2040
 - Identify barriers & enablers to decarbonisation

WHAT THE CLUSTER OFFERS



Tees Valley Hydrogen & CCUS Development

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- Northern Endurance Partnership & Net Zero Teesside CCUS scheme for industrial decarbonisation - H₂ & NH₃
- H₂ Teesside & H₂ Northeast supplying a Hydrogen Economy
- 40MW Electrolyser
- Hydrogen Transport Hub

EAST CO₂AST CLUSTER

Teesside, including

Net Zero Teesside

kellas
MIDSTREAM
Blue hydrogen

BOC
Hydrogen production

BILLINGHAM

SEAL SANDS

MIDDLESBROUGH

CF
Nitrogen fertilizers

suez
Energy from waste

TV ERF
Energy from waste

8 RIVERS
Oxyfuel combustion

TEESWORKS

FUTURE EXPORT PIPELINE TO STORE

NZT Power
CCGT & Carbon Capture

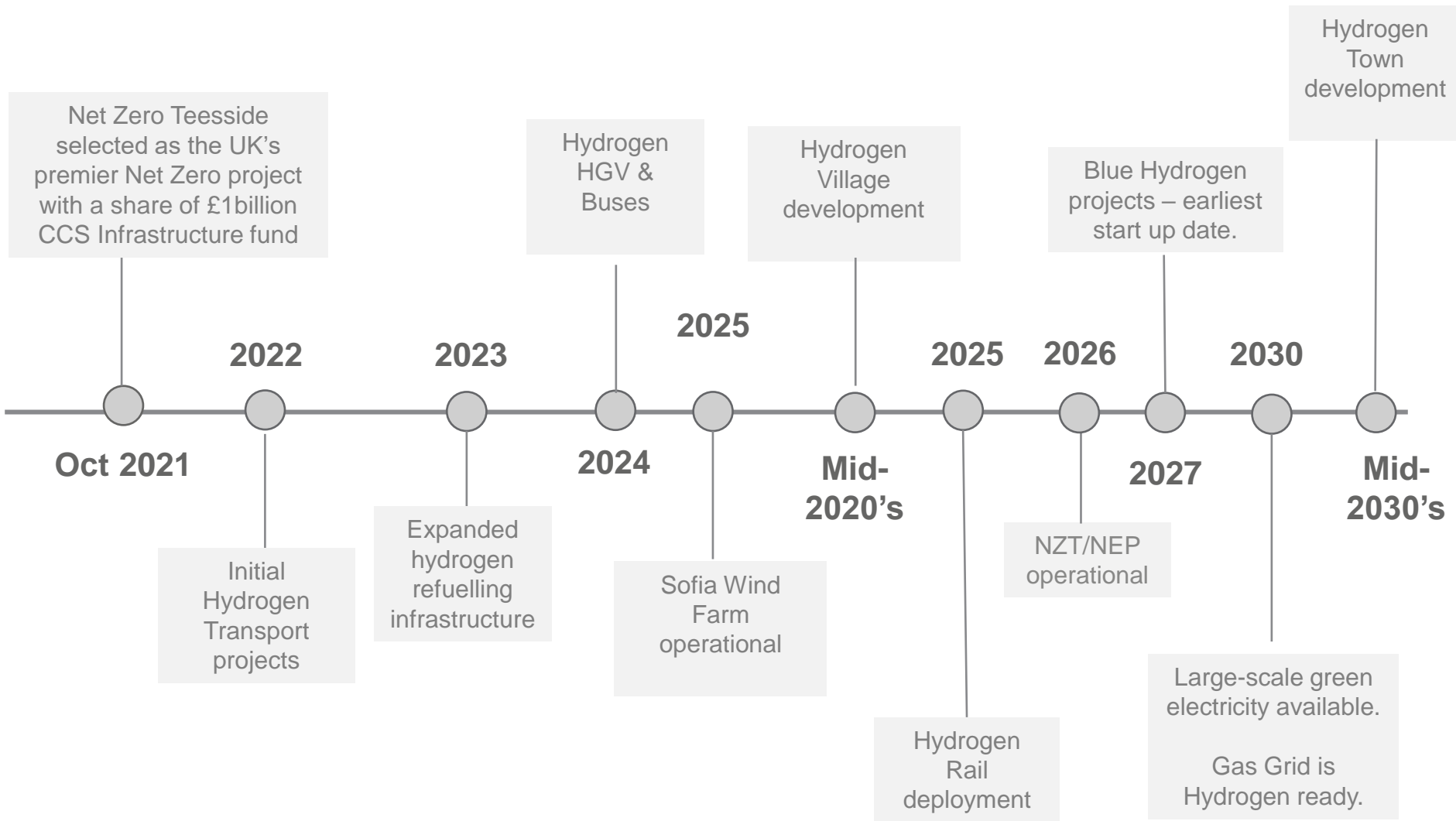
WILTON INTERNATIONAL

bp H2T
Blue hydrogen
LOCATION TBC

KEY

- | | | | |
|-----------------------|-------------------|---------------------------------|------------------------------|
| Power generation | Biomass | Hydrogen production | Existing hydrogen pipeline |
| Industry | Energy from waste | Future CO ₂ pipeline | Primary emitters for ECC bid |
| Biofuels / processing | Shipping | Existing pipe corridors | Potential future emitters |

Timescales



Hydrogen Transport Hub Development

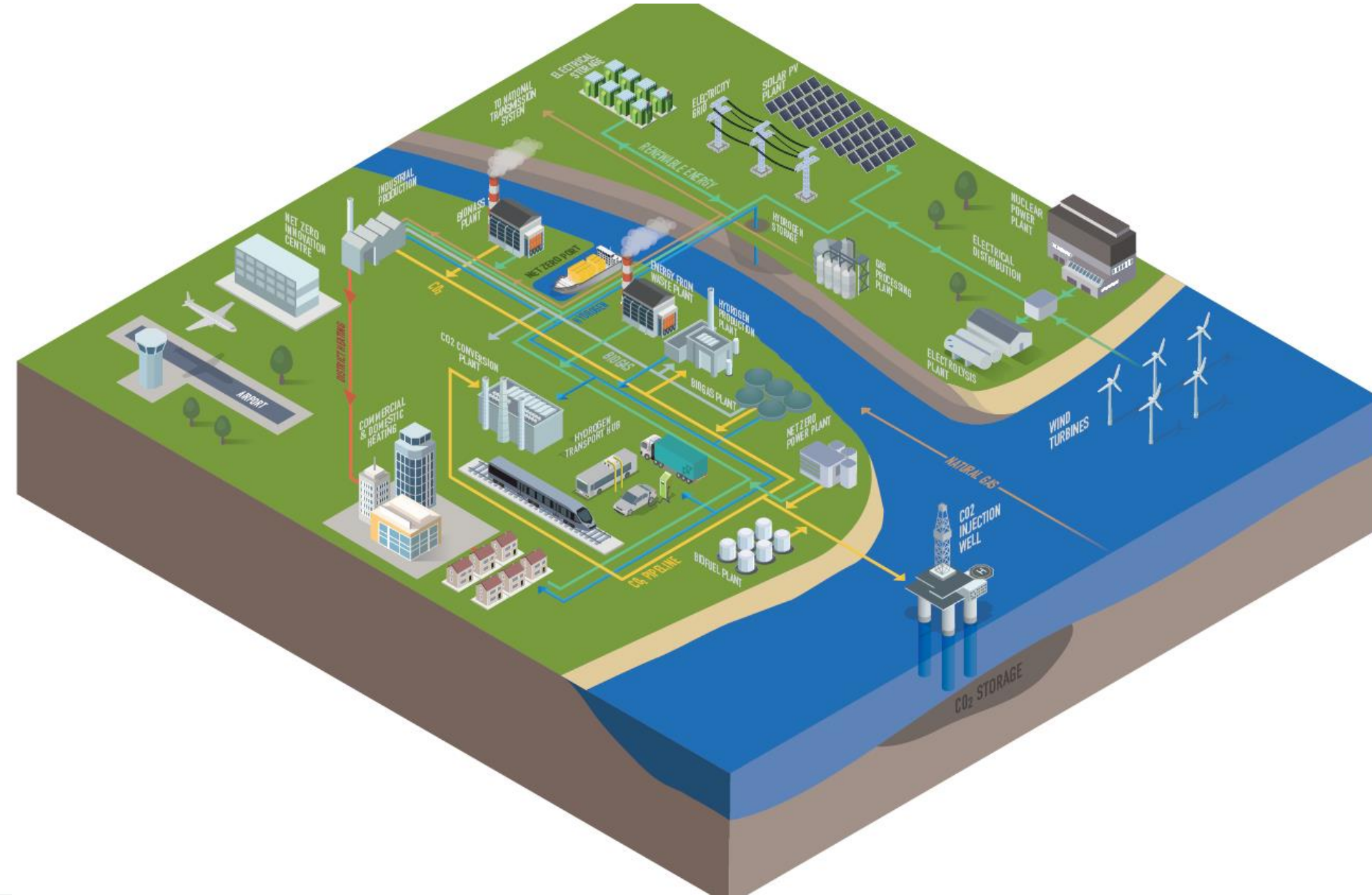
- **R&D:**
 - 2021/2 pilots
 - Accelerating hydrogen demand
 - Delivering longer-term multi modal trials for economies of scale/joint learning etc.
- **Energy:**
 - Meeting early demand
 - Delivering long-term production, storage and distribution infrastructure
 - Making the Hub sustainable beyond 2024/5
- **Hub Institute/Centre:**
 - A focal point for overseeing the Hub programme
 - Bringing together the insights of all hydrogen-related transport programmes
 - Testing and certification equipment
 - Innovation space for SMEs
 - High value skills/training/retraining for the local population

Hydrogen Transport Projects in the Tees Valley

- **Stagecoach,& Ricardo PLC**
 - Retrofit of a double-decker diesel bus with a hybrid fuel cell system
- **Toyota hydrogen vehicles**
 - Forklift truck for warehouse and airport operations
 - Passenger bus
 - 10 fuel cell passenger cars for Cleveland Police and NHS patient support
- **HV Systems**
 - Hydrogen delivery vans between 19 superstores and their main distribution centre
- **Sainsbury's & Element Energy**
 - Trialing an HGV from a local distribution centre



The Tees Valley – Ground Zero for Net Zero





TEES VALLEY MAYOR

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TeesValleyCA