The Tees Valley - A real Hydrogen Valley

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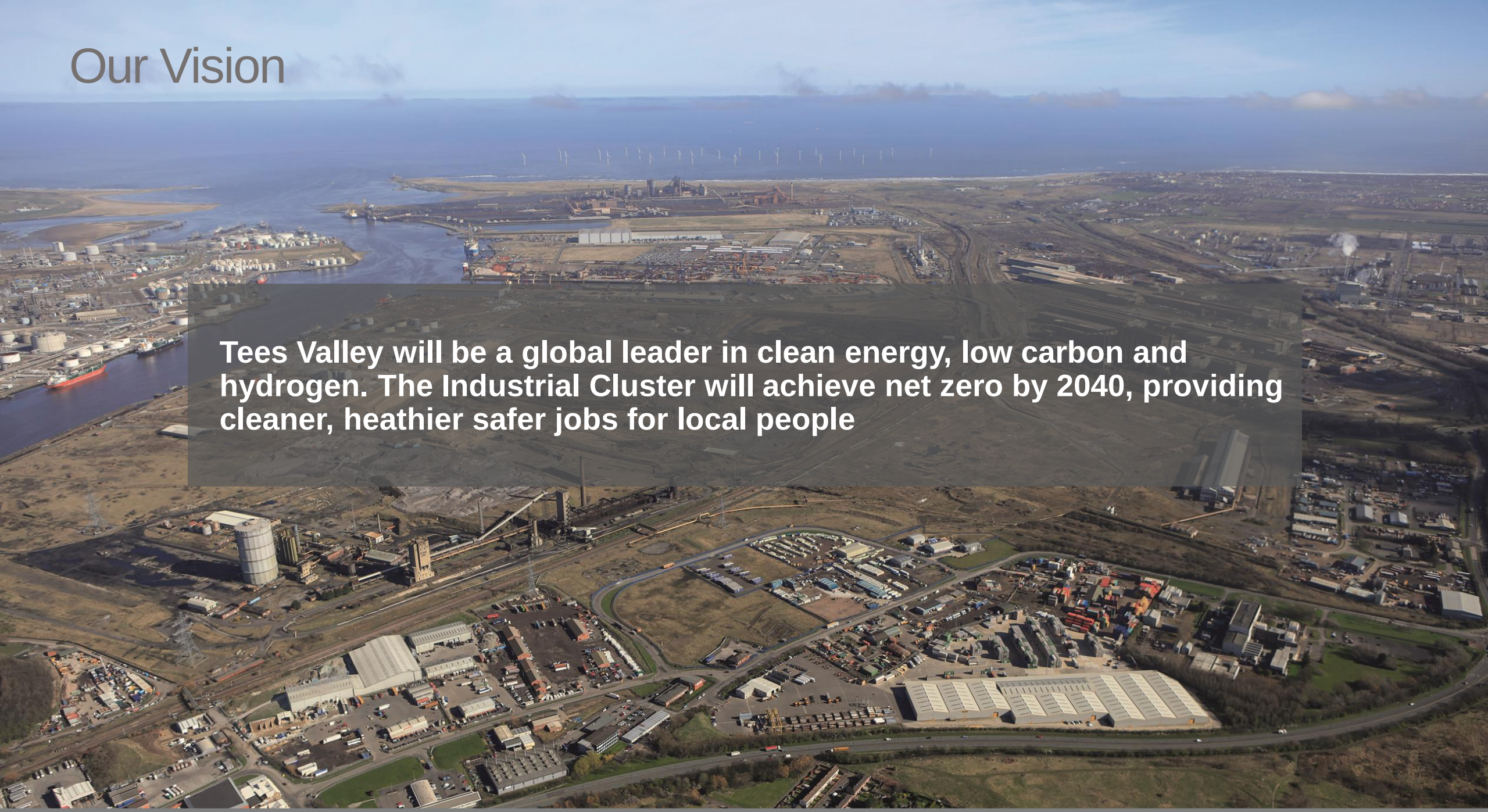
TEES VALLEY COMBINED AUTHORITY | TEES VALLEY MAYOR

Our Vision



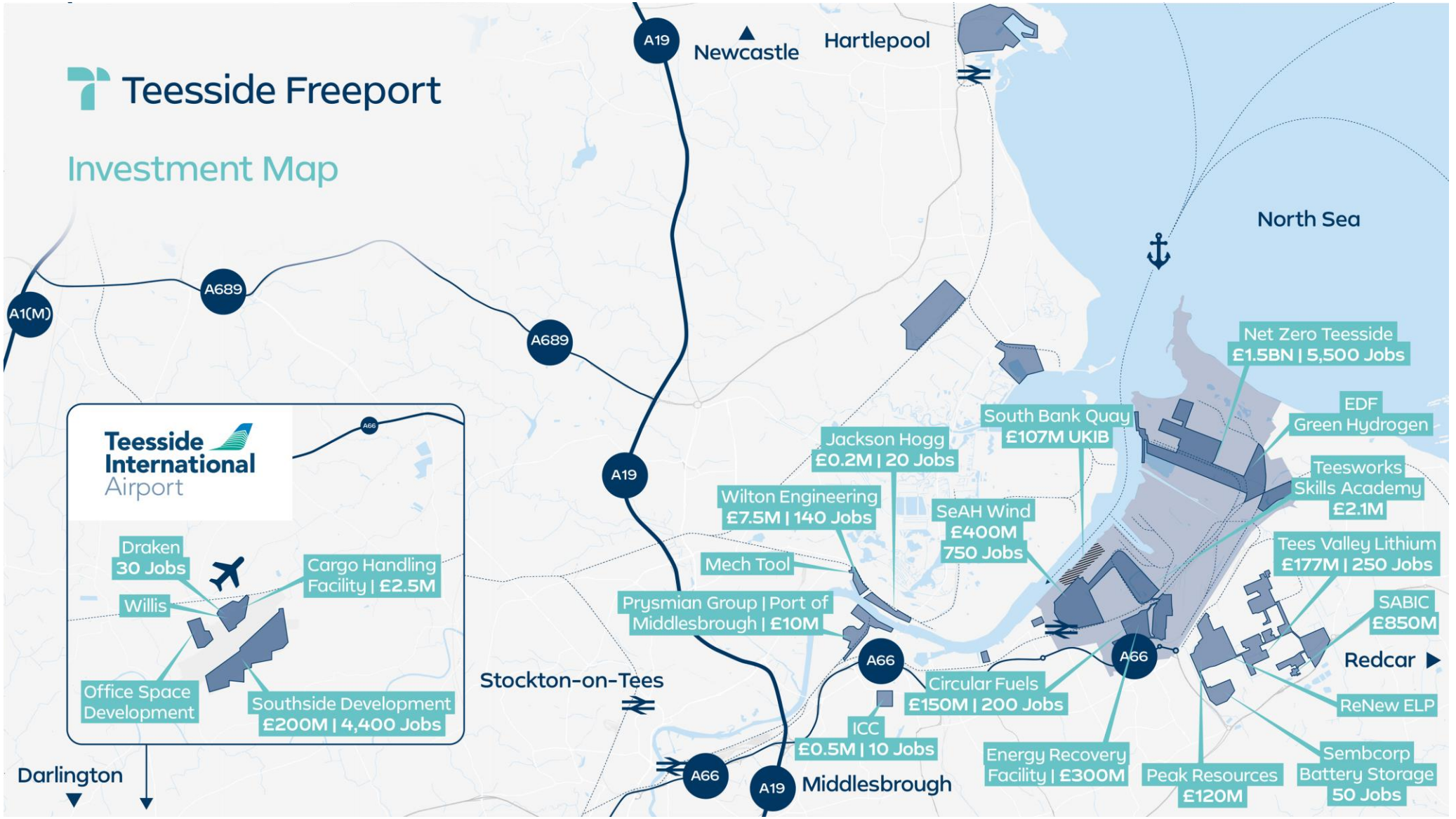
Tees Valley will be a global leader in clean energy, low carbon and hydrogen. The Industrial Cluster will achieve net zero by 2040, providing cleaner, heathier safer jobs for local people

WHY WE EXIST

SECURING INVESTMENT. CREATING JOBS. TRANSFORMING THE TEES VALLEY.

TEESSIDE FREEPORT

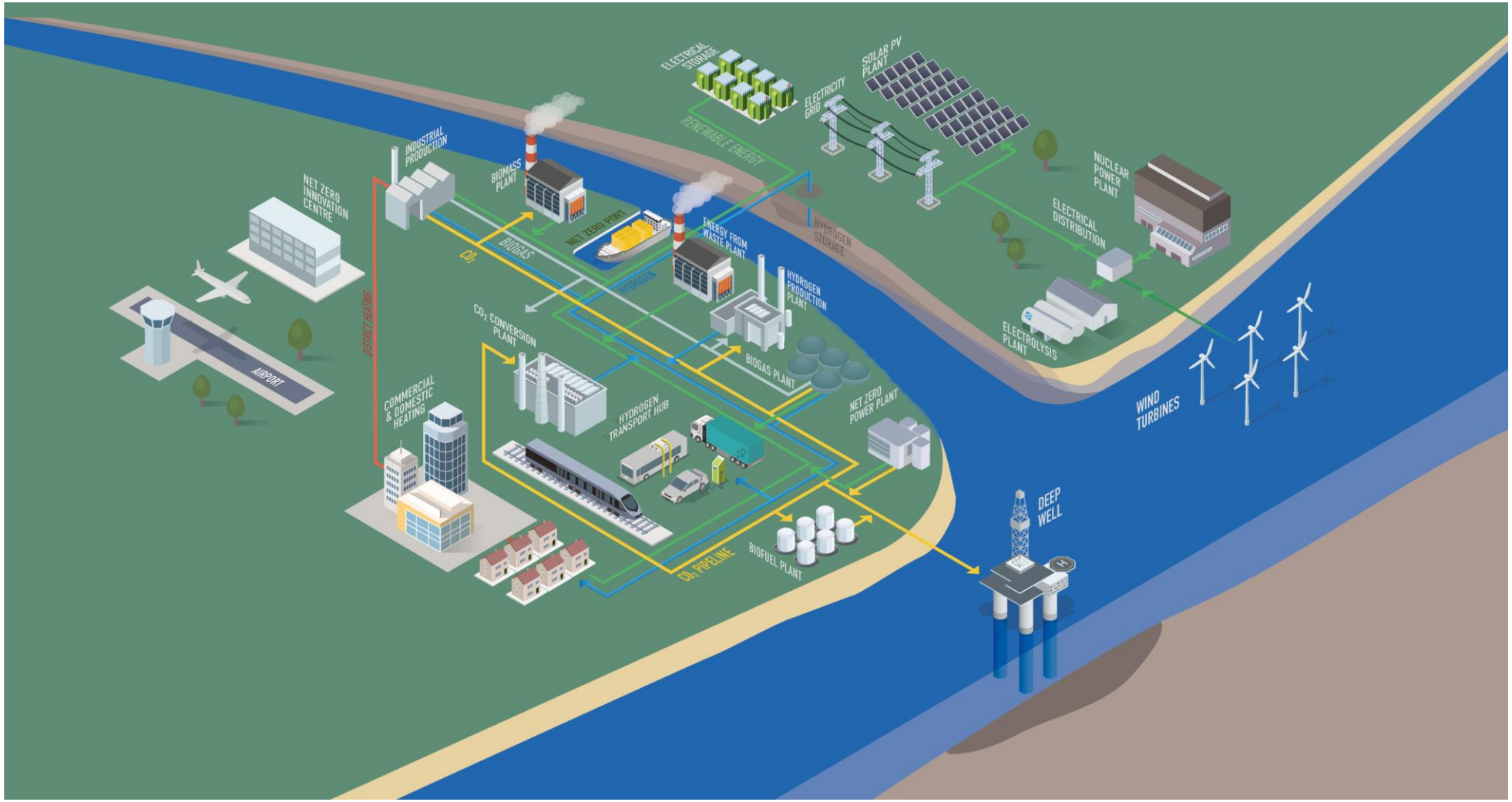
THE UK'S BIGGEST AND FIRST OPERATIONAL FREEPORT



TEESWORKS & SeAH WIND

CONSTRUCTION BEGINS ON £400MILLION OFFSHORE WIND FACILITY

THE TEES VALLEY CLUSTER PLAN



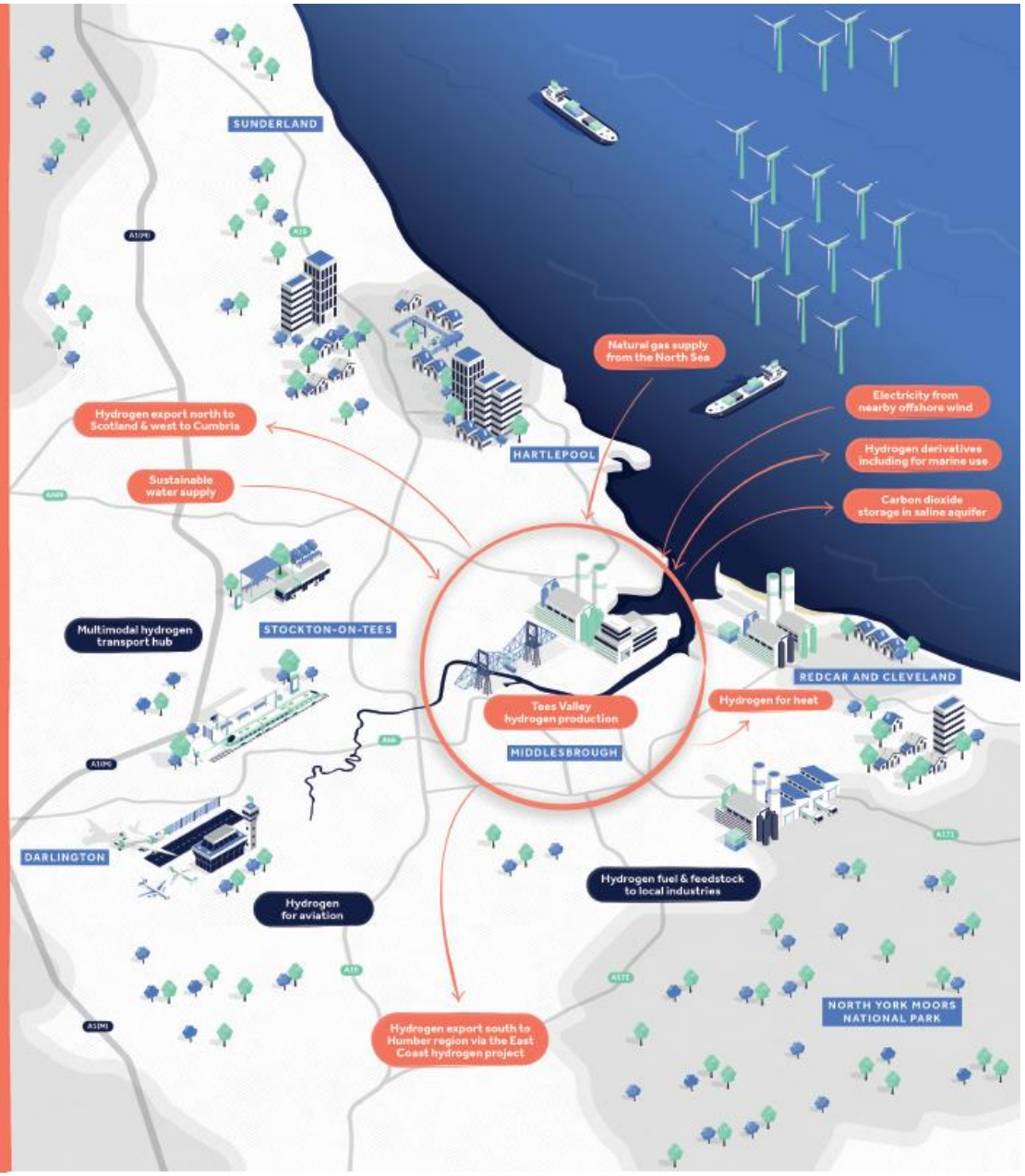
A roadmap to a Net Zero Industrial Cluster by 2040

A vision for hydrogen in the Tees Valley

Our vision is for the Tees Valley to be one of the UK's first hydrogen SuperPlaces. Hydrogen 'SuperPlaces' are industrial regions supporting the production, storage, distribution and end use of hydrogen at a significant scale. The Tees Valley is well placed to achieve this and already has a significant hydrogen economy. Low carbon hydrogen will accelerate its journey towards becoming one of the world's first net zero industrial clusters by 2040, and help to accelerate the UK towards its overarching 2050 net zero goal. The Tees Valley will produce 25% of the government's 2030 hydrogen production target of 10GW.

Due to its significant existing hydrogen capabilities, the Tees Valley has all the necessary components to create a hydrogen economy, supporting the production and local use of hydrogen as a fuel and feedstock for indigenous and new industries, supporting them to decarbonise, adapt, grow, and thrive.

Our vision is for the Tees Valley to maximise its inherent potential and to become a hydrogen SuperPlace. Hydrogen provides a platform for accelerating the Tees Valley's current growth into new industries, giving it the opportunity to rebalance the economic future of the north, especially the East Coast. Transporting hydrogen to the wider UK and abroad will provide a catalyst for industrial decarbonisation and green growth. At home, the Tees Valley's SuperPlace status will see it become a showcase for economic regeneration and inward investment. It will create secure, high value jobs and support up to 3,000 jobs in existing manufacturing and transport sectors, and thousands more during construction.



ARUP bp kellas MIDSTREAM Northern Gas Networks TEES VALLEY COMBINED AUTHORITY TEES VALLEY MAYOR

Tees Valley hydrogen supports Net Zero with other benefits

- 2.5GW of hydrogen production capacity by 2030 & more to follow
- Hydrogen - fuel & feedstock for industry, power to transport, and heat to buildings
- Particular benefits to hard to decarbonise sectors & industries – safeguarding businesses & jobs
- Transferred skills & new jobs in construction, operation & maintenance across hydrogen supply chain
- Tees Valley becomes part of the UK's net zero energy engine room
- One of the first net zero industrial clusters

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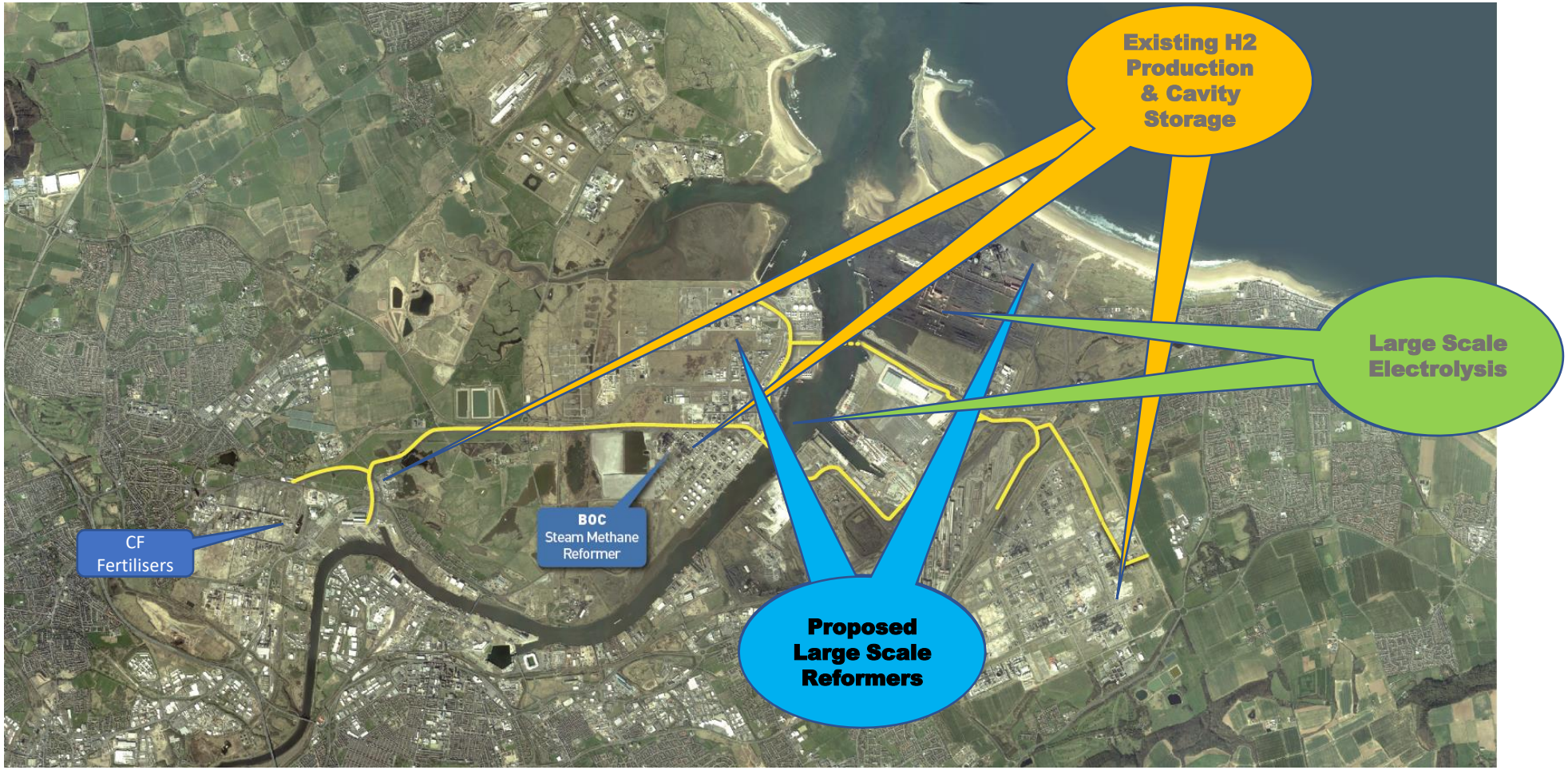
AT SCALE HYDROGEN PRODUCTION & STORAGE



bp hydrogen on Teesside

H2Teesside

1 GW

A major blue hydrogen production facility in the UK planning to start up in 2027 and targeting 1GW of hydrogen by 2030. That's 10% of the UK government's 10GW by 2030 target, and has the potential to kickstart the UK's hydrogen economy.

HyGreen Teesside

500 MW

bp plans to produce 500MWe of green hydrogen on Teesside by 2030. Aiming to start-up with 80MWe in 2025, it will scale up in multiple stages to match production with demand, helping to fuel the development of Teesside as a leading hydrogen transport hub.

- Creating jobs and building local talent & skills
- Developing the supply chain with a diverse demand portfolio
- Building a hydrogen transport hub in Teesside
- Partnering with the community to develop and realise the Net Zero & Hydrogen vision for the Tees Valley

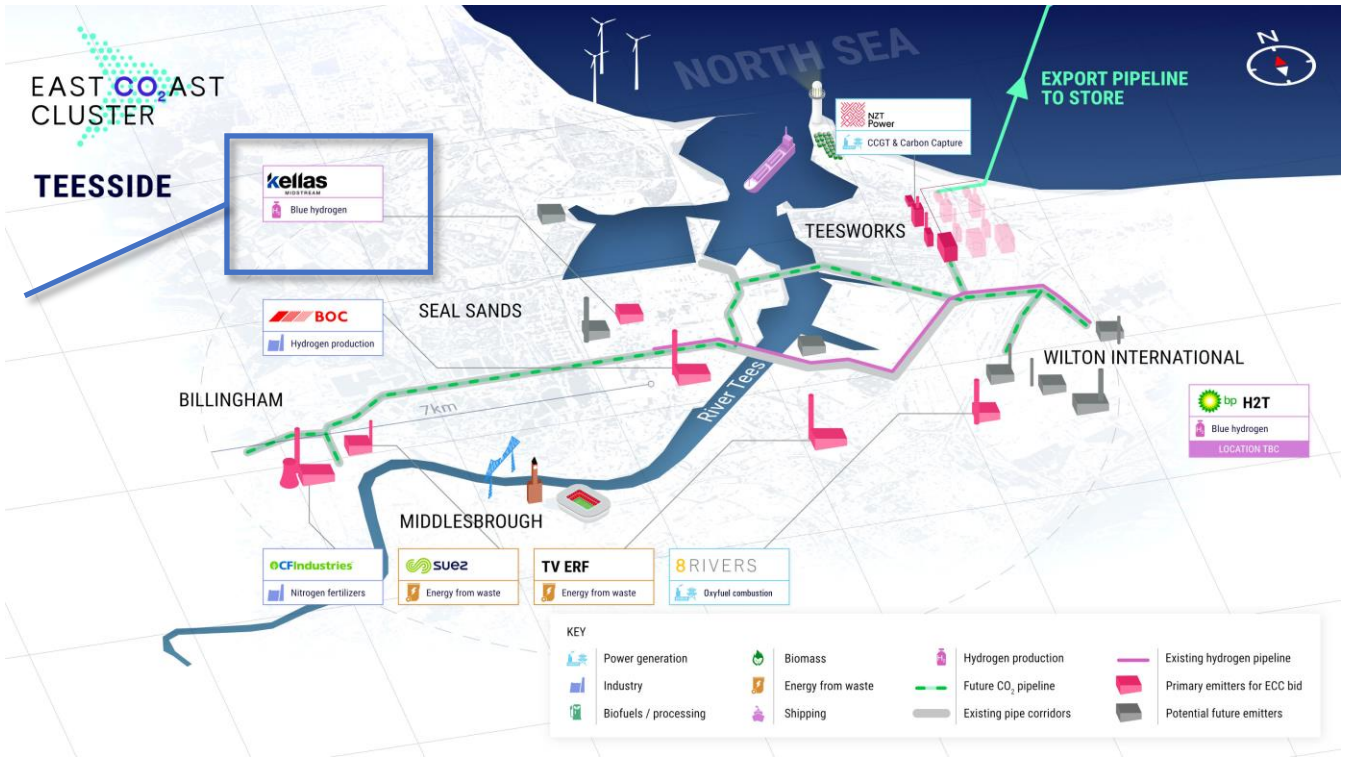
G&LCE

Kellas Midstream - H2NorthEast Project

Investing in a major blue hydrogen production facility on Teesside, linked to the Central Area Transmission System (CATS)

1 GW Blue Hydrogen Plant

- **Located at the CATS terminal**
- **Adequate land available**
- **Connection to National Gas Transmission System**
- **Enables local industry to decarbonise**
- **Ph 1 Online by 2027**
- **Long term investment**
- **Skilled local team**



northeast

PROTIUM'S TEESSIDE PROJECT

- 68.8MW of Electrolysis
- Onstream 2025
- Solar and Wind Renewable power
- UK largest H2 hub

Teesside University Net Zero Innovation Centre

The Net Zero Industry Innovation Centre (NZIIC)

- **New £13.1m facility**
- **Located at TeesAMP in Middlesbrough,**
- **Linked site located at the Materials Processing Institute (MPI) at the gateway of Teesworks**
- **Key component of Tees Valley Combined Authority's regional innovation strategy**
- **Positioning Teesside firmly at the heart of the UK's green industrial revolution**

HYDROGEN TRANSPORT IN THE TEES VALLEY

Phase 1

- **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

Phase 2 Potential

- **Refuelling Infrastructure**
  - **HGV Trucks**
  - **Buses**
  - **Vans**
  - **Cars**
- **Airport**
  - **Infrastructure**
  - **Service Vehicles**

Redcar Hydrogen Community

with Northern Gas Networks

Northern Gas Networks

WALES&WEST UTILITIES

Teesside off shore wind farm

Coatham

Warrenby

Redcar & Cleveland Leisure and Community Heart

Town Centre

Redcar & Cleveland College

Above ground hydrogen storage

The Redcar area boasts a skilled workforce, with strengths across engineering, process and energy, logistics, professional and business services and health related industries

Dormanstown

A1085

A1042

REDCAR

Underground salt cavern storage

Kirkleatham

This hydrogen is produced by using electricity to split water into hydrogen and oxygen via electrolysis

Green hydrogen production facility

A1085

Lazenby

Wilton International

Wilton International is one of the UK's leading process manufacturing clusters and is ideally suited for energy intensive industrial business

A174

Yearby

Wilton

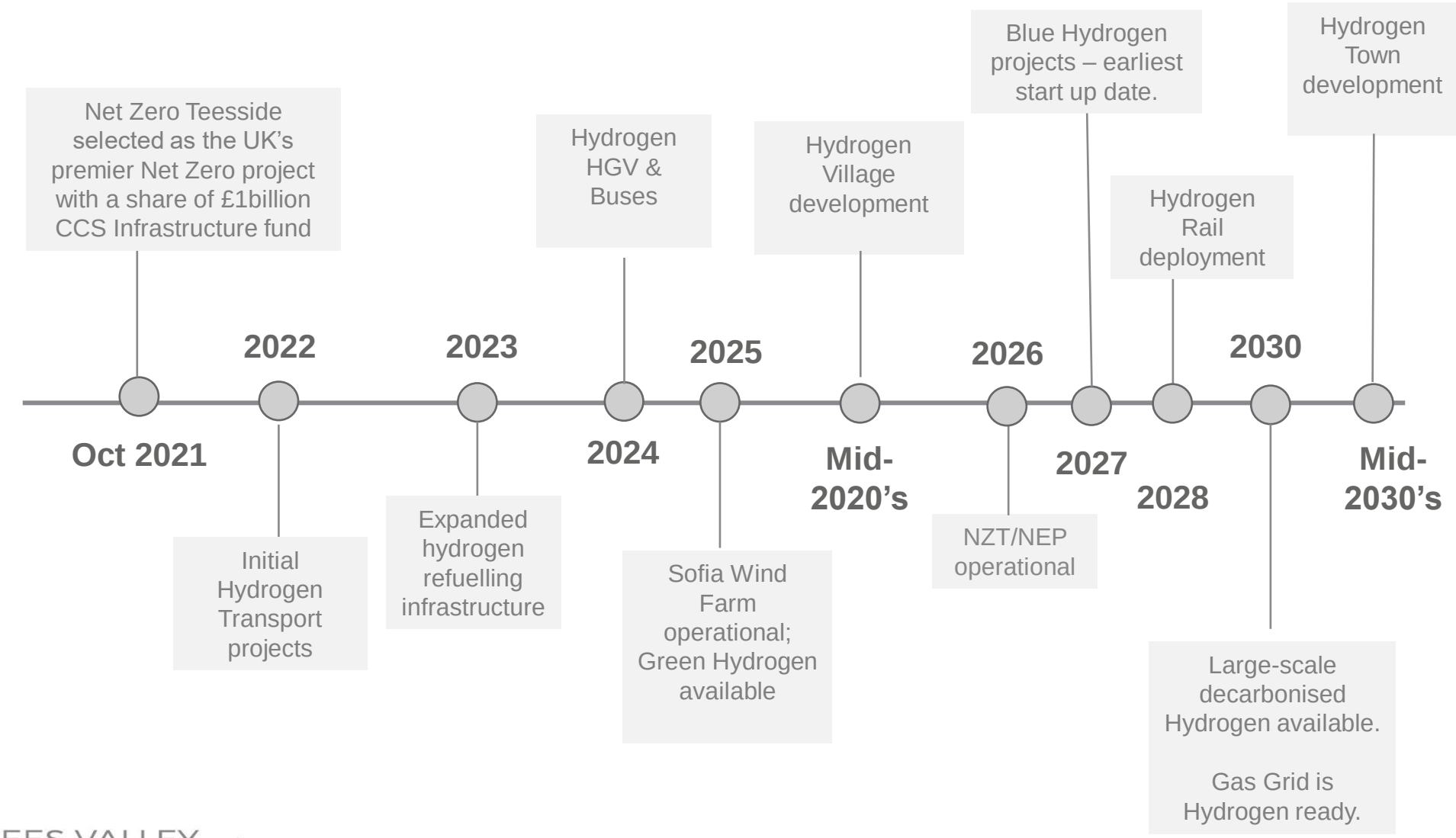
Electricity

Hydrogen

Oxygen

Water

TIMESCALE



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