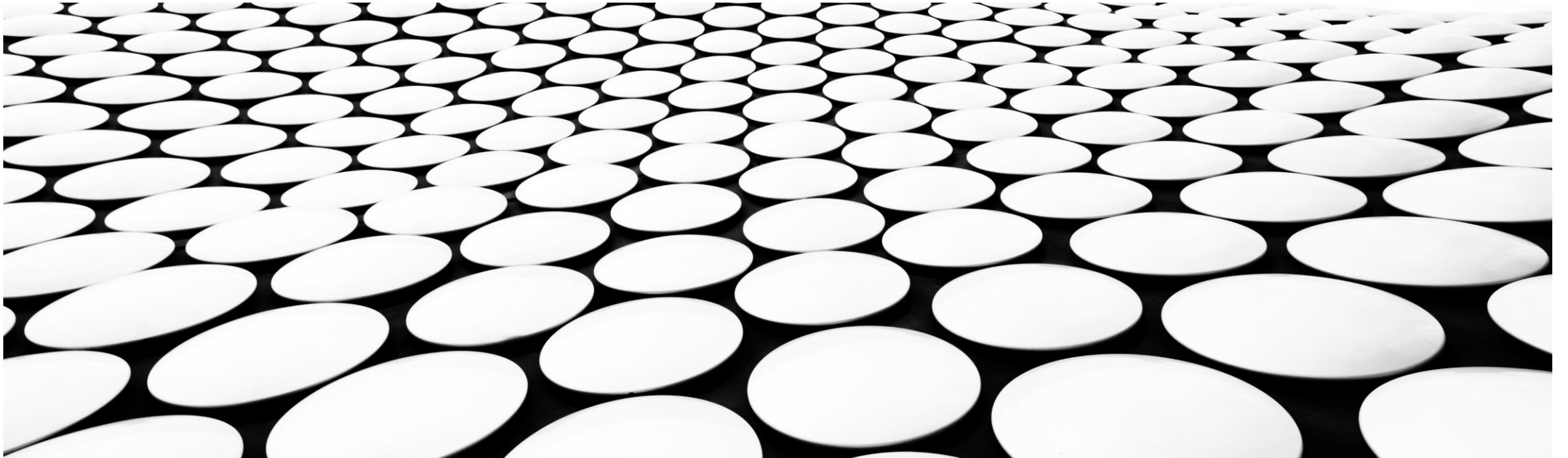

DECARBONISING THE HUMBER

PROJECT OVERVIEW



THE HUMBER – FACTS AND FIGURES

20 existing offshore windfarms, and
85% of the UKs planned
development

The region contributes
£18bn
to UK economy each
year

Home to **Europe's largest
bio-mass power station**
with potential for 16Mtpa of BECCS - 1/4 of the
UKs total target figure.

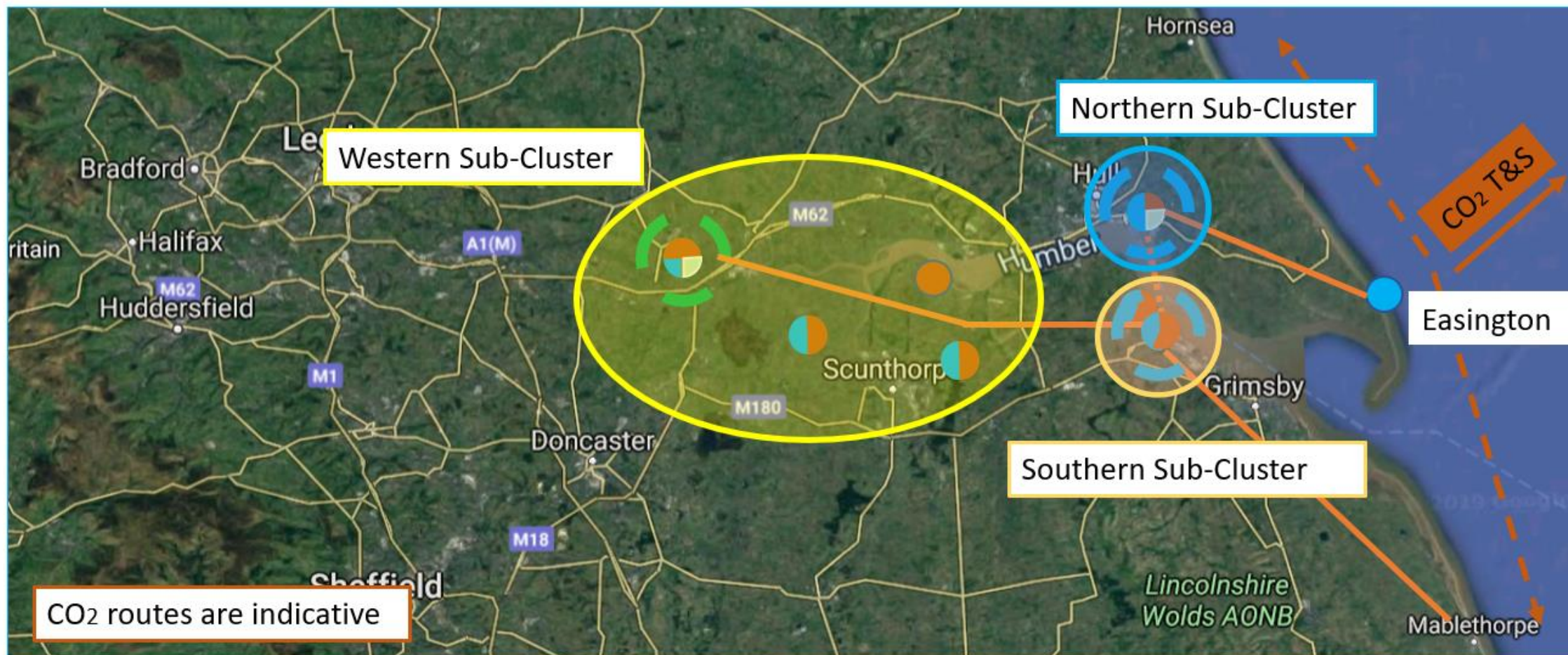
UKs largest industrial cluster Providing the
**maximum benefit of
economies of scale** for the
CO₂ T&S system

55,000
Employed in
manufacturing and
engineering

The UKs busiest port area
77 million tonnes of cargo
per annum

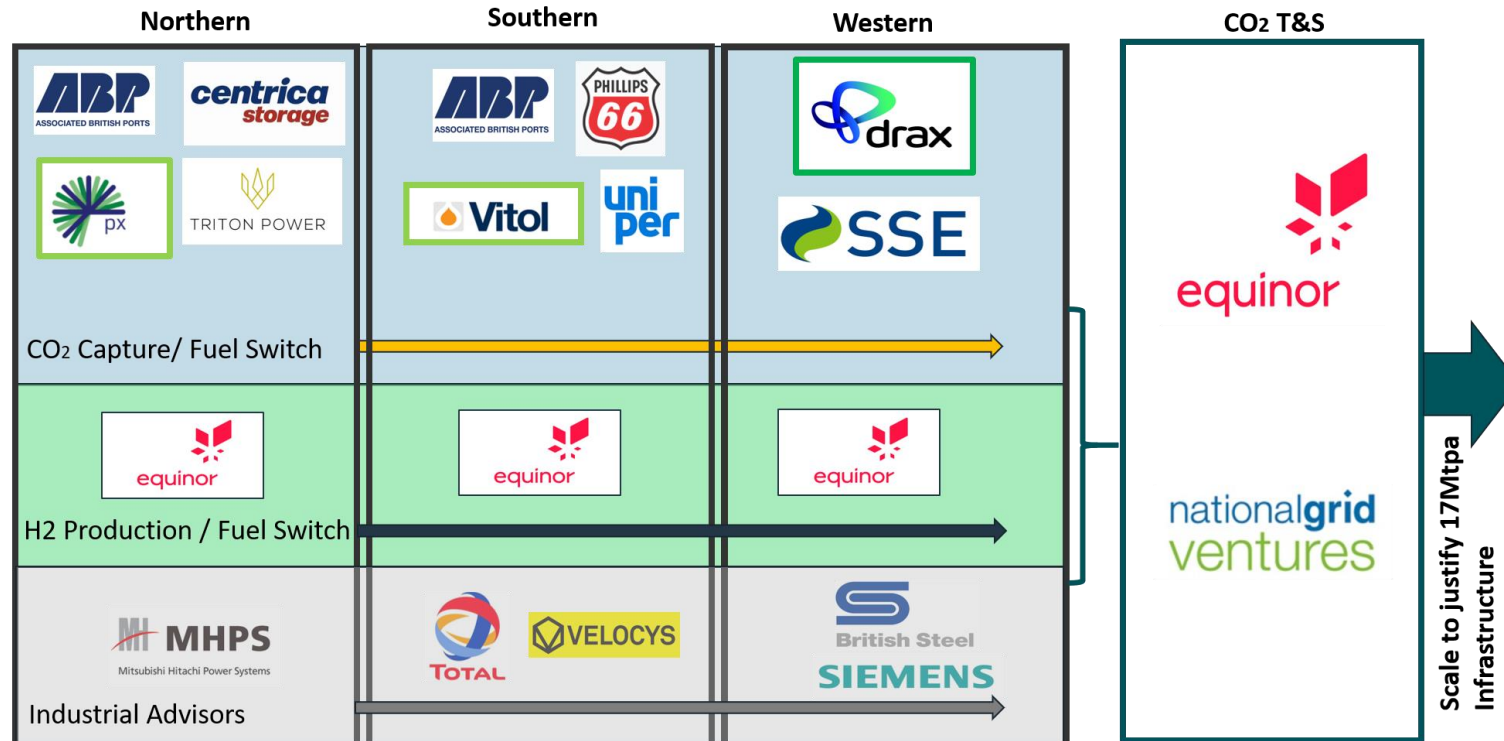
43,000 new jobs created across UK
industrial clusters with onset of
hydrogen economy,
c. **20,000** in the Humber

HUMBER DEPLOYMENT PROJECT PHASE 1

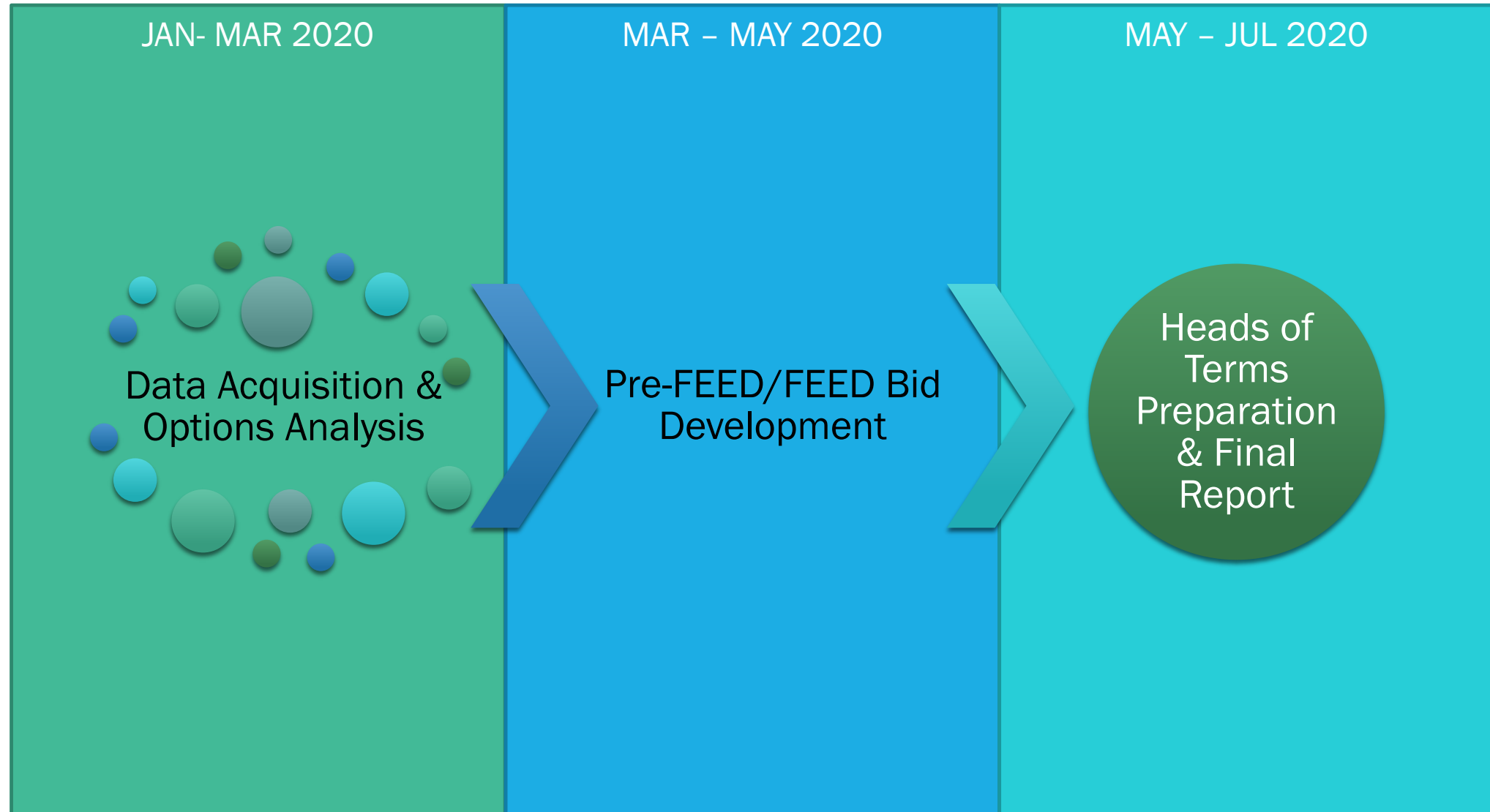


THE PARTNERSHIP

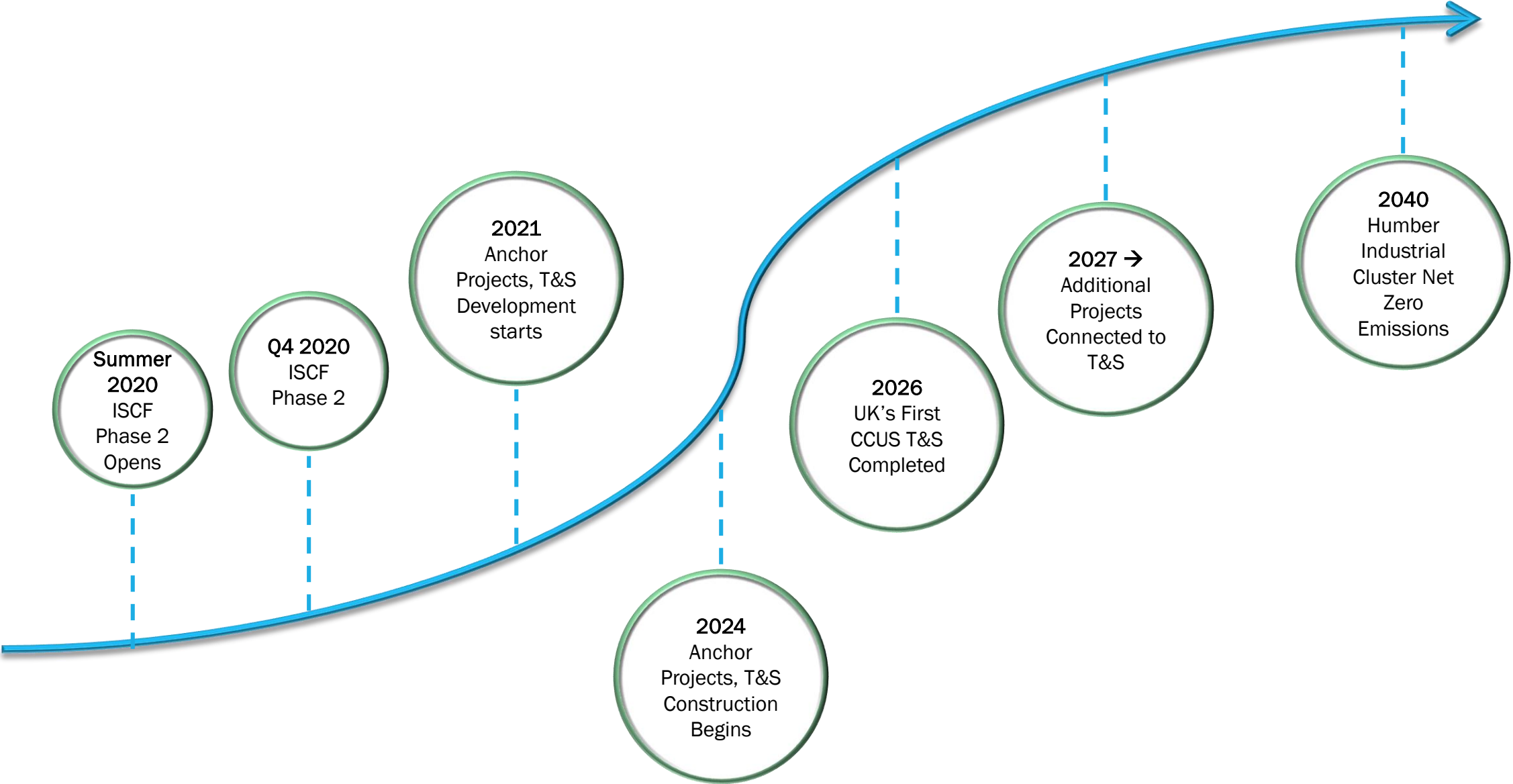
- A consortium of 11 leading companies across the Humber pulling together with the credibility to deliver
- Co-ordinated approach maximises the potential for decarbonisation in the Humber
- Variety of industries provides the widest possible options for deploying CCS and hydrogen at scale
- Close alignment of parties ensures transportation and storage infrastructure can be developed to the right size and scale



THE TIMELINE



ACHIEVING A NET ZERO HUMBER



SUPPORTING UK CLIMATE OBJECTIVES

	Clean Growth Strategy / Industrial Strategy	CCC 'Net Zero' Report
Deploying negative emissions	●	●
Deploying BECCS at scale by 2030		●
Enabling the use of hydrogen in multiple sectors	●	●
Deploying hydrogen production at scale by 2030		●
Deploying CCUS infrastructure in the Humber		●
Enabling the Humber cluster to be 'net zero' by 2040	●	●
Enabling the use of hydrogen in power generation	●	●
Supporting the UK's position as a climate leader	●	●
Prevent the 'offshoring' of emissions		●
Create and retain highly skilled jobs in the Humber	●	
Supporting the deployment of the H21 project		●
Enabling hydrogen use in heavy transport	●	●
Exploring the use of liquid fuels in aviation	●	●

NGV's Role



Why is CCS important?

- Key to unlocking negative emissions from BECCS (bioenergy with CCS)
- Removes over 90% of emissions from fossil fuel generation
- Facilitates the economic production of hydrogen from methane reformation (known as blue hydrogen)
- A technology that allows the decarbonisation of industry through post combustion capture or fuel switching, tackling an otherwise hard to decarbonise sector
 - Protecting and creating jobs in industrial clusters
 - Keeping industry in the UK
- CCS considered critical to meeting net zero targets

Catalysing CCS in the UK

- Industry are working together with Government to develop realistic proposals for establishing CCUS anchor projects in industrial clusters
- Hinges on Government policy announcements, timing and funding
- Government expected to support CCS through the upcoming budget, Energy White Paper and BEIS business model consultation outputs
- CCUS will need direct Government monetary injection (grant / loan) in the absence of policy frameworks
- A carefully designed Regulated Asset Base (RAB) model is favoured for the continued support of CCS T&S (akin to electricity & gas networks)

The makings of a strategic CCS Transport & Storage network?

- Potential for a strategic transportation and storage system for CO₂
 - Teeside (OGCI Clean Gas Project): ‘Net Zero Teeside’
 - Humber (3# sub-clusters): ‘Zero Carbon Humber’
- Connecting multiple industrial clusters to strategic storage assets in the North Sea
 - Larger and more diverse customer base, de-risks revenue risks (Government and T&S Co.)
 - Can be staged development to reduce investment risk
 - Creates necessary scale to meet decarbonization goals (two large industrial regions)
- Combines skills and experience developed through ownership and operation of electricity and gas transmission networks
 - National Grid regulated asset management and gas transmission skills
 - Oil and Gas marine and sub-sea skills
- Supporting the UK on it’s journey to net zero

