



# Bacton Hydrogen Project



# Bacton Hydrogen Project Overview

*“Bacton is a strategic gas processing hub in the UK and is ideally positioned to become a significant Hydrogen production site to support meaningful decarbonisation of London, the South East and beyond by 2030”*

*Executive Summary – Bacton Energy Hub Final Report*

*Joint Development Agreement, May 2023*

- *SEEL – Summit Energy Evolution Limited*
- *PEL – Progressive Energy Limited*



Joint Development Objectives:

- **Transition** the Bacton hydrogen concept into a deliverable project
- Establish the **value proposition** of a hydrogen production facility in the Bacton area
- Deliver enhanced **technical** and **commercial** definition
- **De-risk** key areas of the development
- **Deliver** outputs to inform commercial gateway decisions to progress the project to the next stage
- Support a potential **Track 2 submission** for the wider Regional decarbonisation cluster

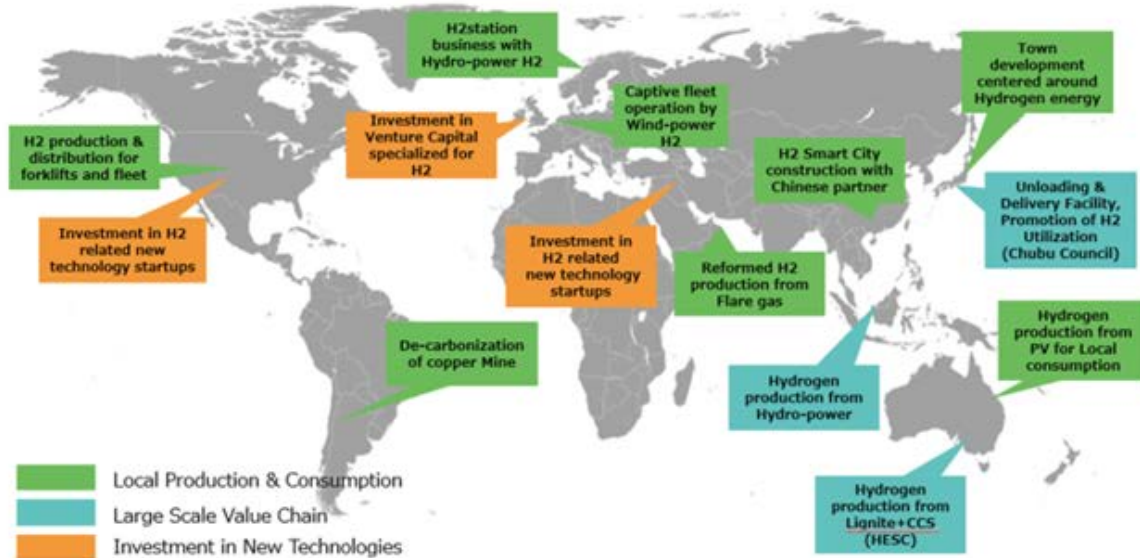


# Bacton Hydrogen Project Collaboration

## SEEL – Summit Energy Evolution Limited

A wholly owned subsidiary of Sumitomo Corp. focusing on full value chain energy projects targeting decarbonisation and low carbon/net zero solutions.

Sumitomo Corp. hydrogen and ammonia portfolio overview



## Progressive Energy Limited

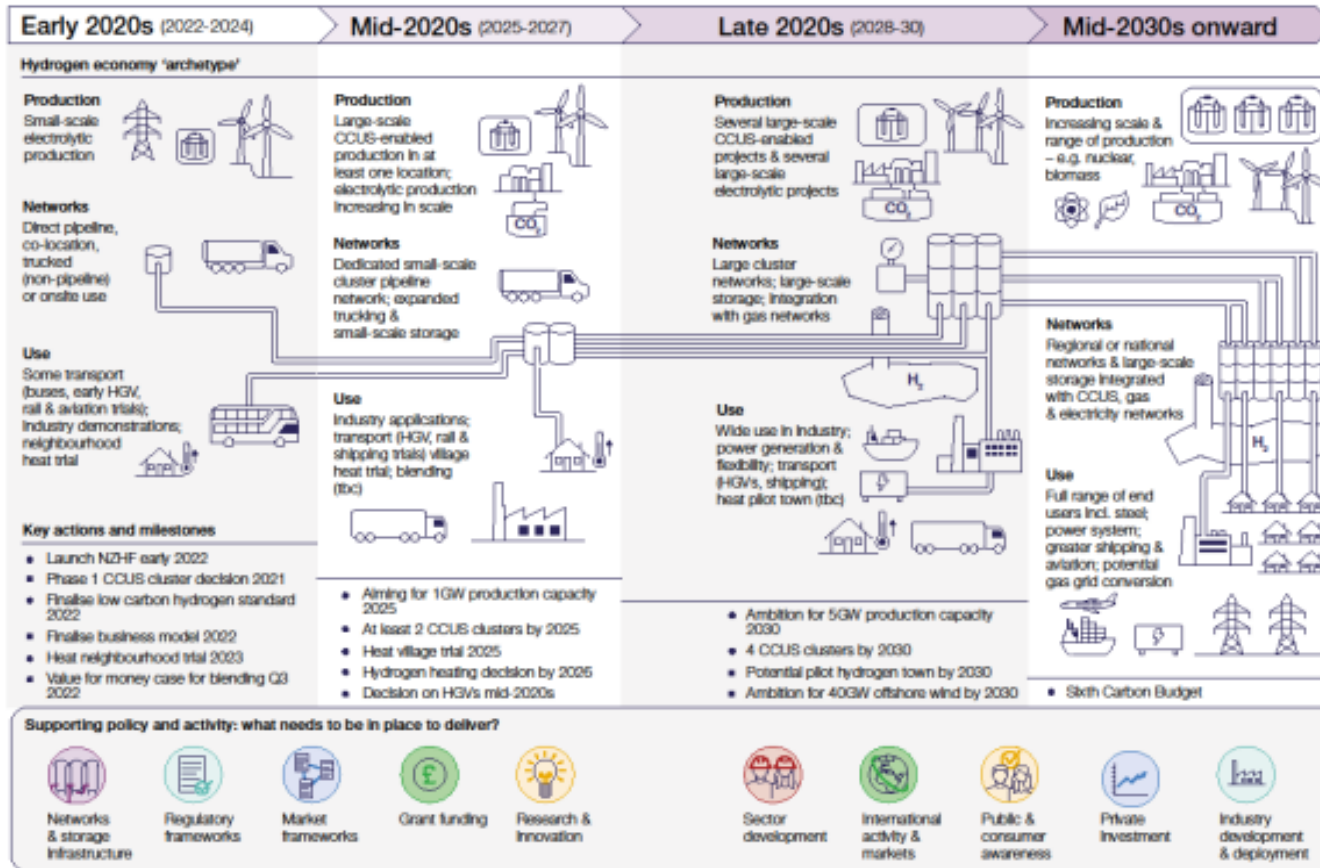
“A clean-energy project development company”

Exists to develop and deliver low carbon energy projects at a scale to make a material reduction in carbon emissions as we fight against climate change. Conceived “HyNet” in 2016.

1998 - 2008	2008 - 2016	2016-2020	2020 – 2023+
<b>Vision:</b> NG CCGT Renewables Coal IGCC Oil IGCC	<b>Vision:</b> Waste-to-chemicals Coal IGCC +CCS	<b>Vision:</b> Waste-to-chemicals NG reformation +CCS Industrial CCS NG/H2 mixtures	<b>Vision:</b> Waste-to-chemicals “Blue” Hydrogen for industry Industrial H2 combustion Industrial CCS NG/H2 mixtures “Green” Hydrogen

# UK Hydrogen Strategy

Figure 1: Hydrogen Economy 2020s Roadmap (Hydrogen Strategy)



- Carbon Budget 6:
  - 250 – 460TWh hydrogen production
  - ~ 20 – 35% UK final energy consumption
- Ambition for 10GW low carbon hydrogen production by 2030 (50% electrolytic).
- Hydrogen Economy 2020s Roadmap, outlines the expectation for the hydrogen economy by the mid 2030s

# Bacton Hydrogen Project Rationale

## Key Strategic Drivers

*Establish a sustainable hydrogen ecosystem, building on Bacton's role as a key regional Energy Hub, transitioning it to a low carbon future.*

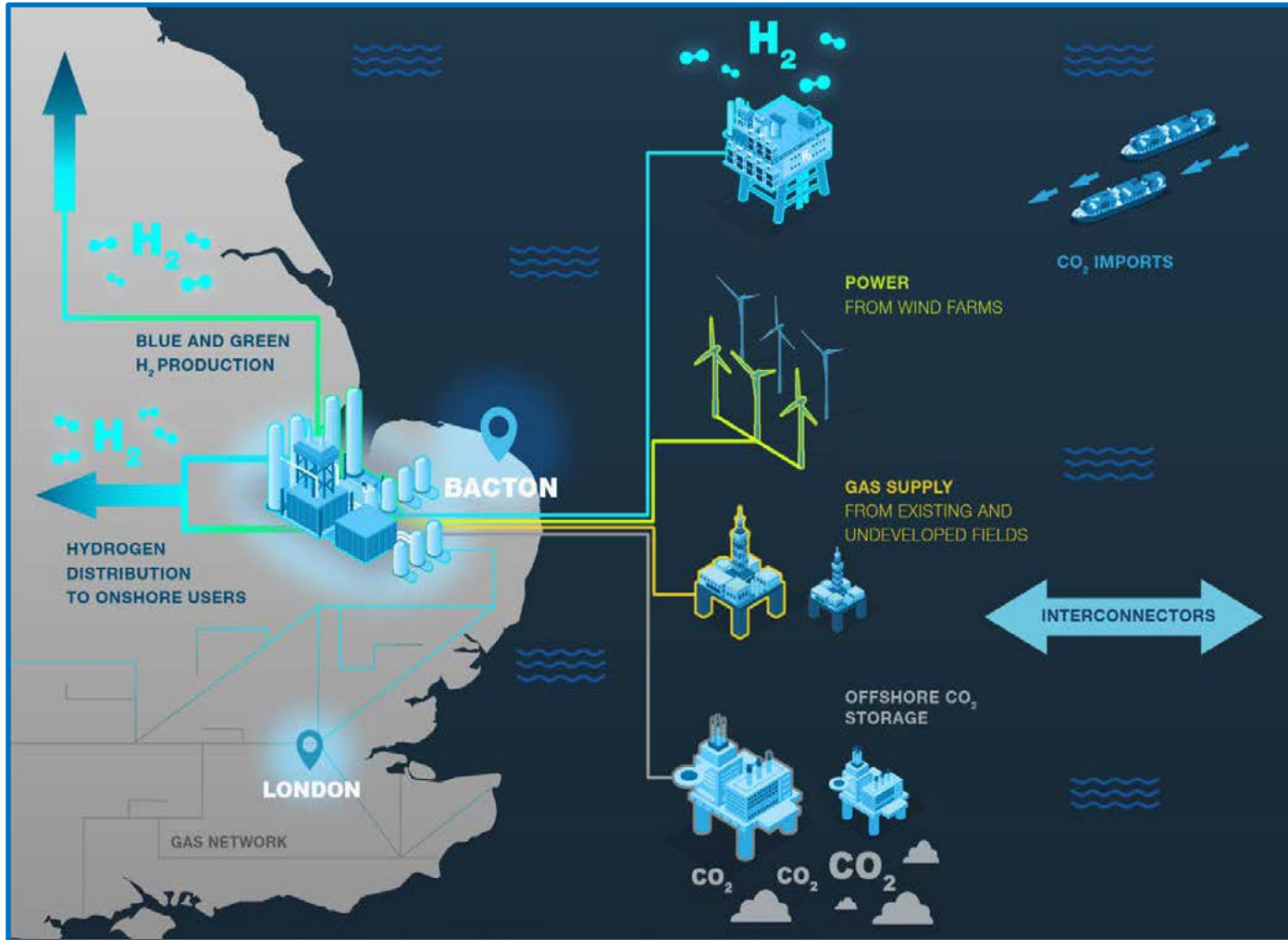
*Contributing the regional growth, through supply chain and employment development*

*Note, as identified in Bacton Energy Hub, Final Report*

## Key Project Factors

- To design, build and operate facilities that are:
  - **safe** and reliable
  - have minimal **emissions** and **environmental** impact
  - respect all stakeholders associated with the project
  - Demand led capacity
- Optimised project to deliver attractive **economics**
- **Timely delivery**, choreographed with development of CCS infrastructure, consumers work programmes, and fulfils market requirements
- **Scalable** (circa 400MW – 1GW) to help meet the energy transition needs for hydrogen production in the South and East of England and to facilitate the transition to electrolytic hydrogen production
- Supports key initiatives such as **Capital Hydrogen, Hydrogen Valley, Project Union**

# Why Bacton?



- Opportunity to be quickly established providing a significant contribution to UK Government Targets.
- Access to large gas demand, with very little demand side build out.
- Access to upstream feedstock.
- Opportunity to abate meaningful amounts of CO<sub>2</sub> in early 2030s.
- It is recognised that speed of action is critical to achieve Paris aligned carbon reduction pathways.

*Extracted from Bacton Energy Hub Final Report*



# Gas Network Hydrogen Transition Initiatives



Project Union – National Grid



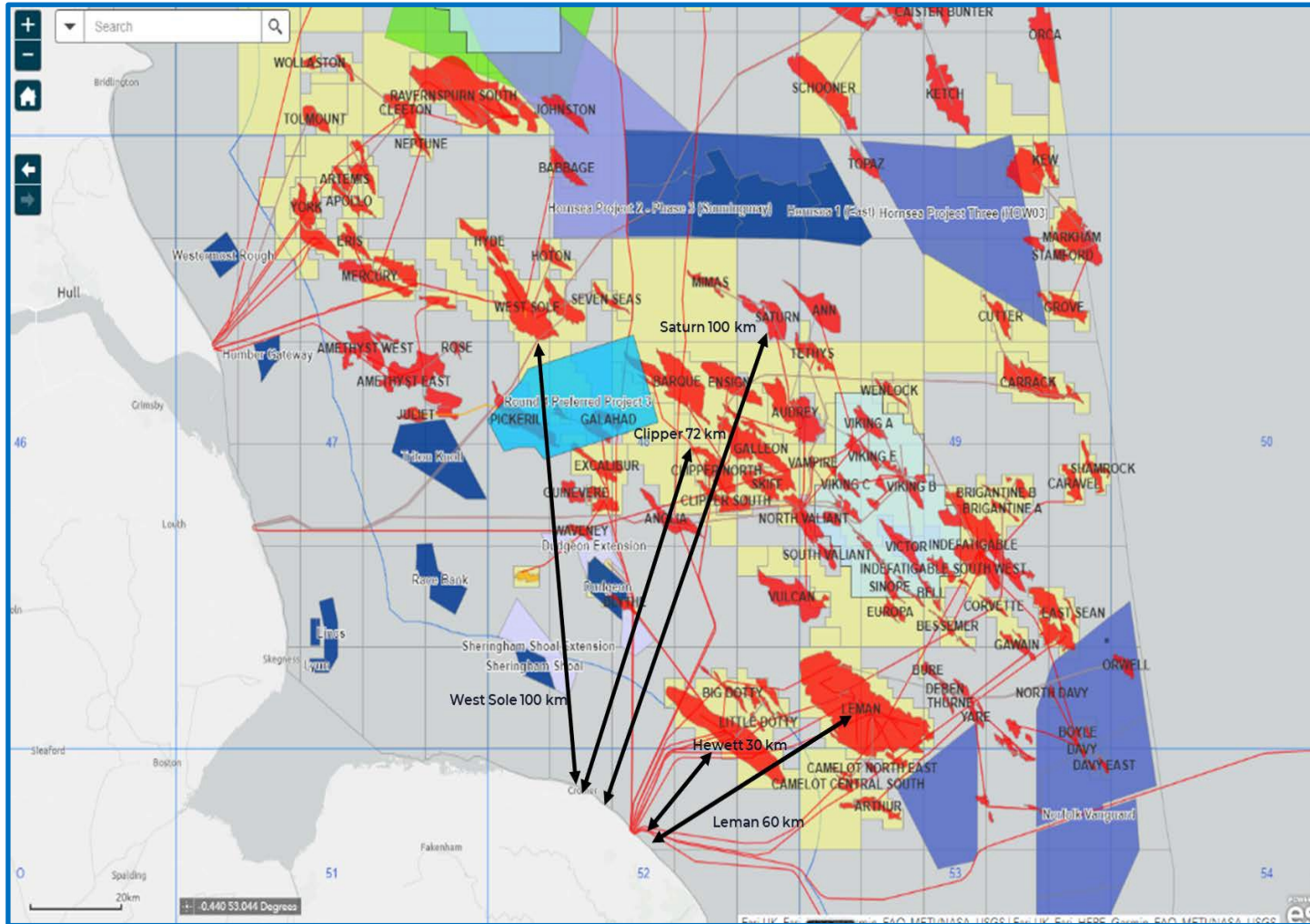
Capital Hydrogen – Cadent / SGN / National Grid



Hydrogen Valley – Cadent / National Grid

Bacton hydrogen can play a key role in enabling these initiatives.

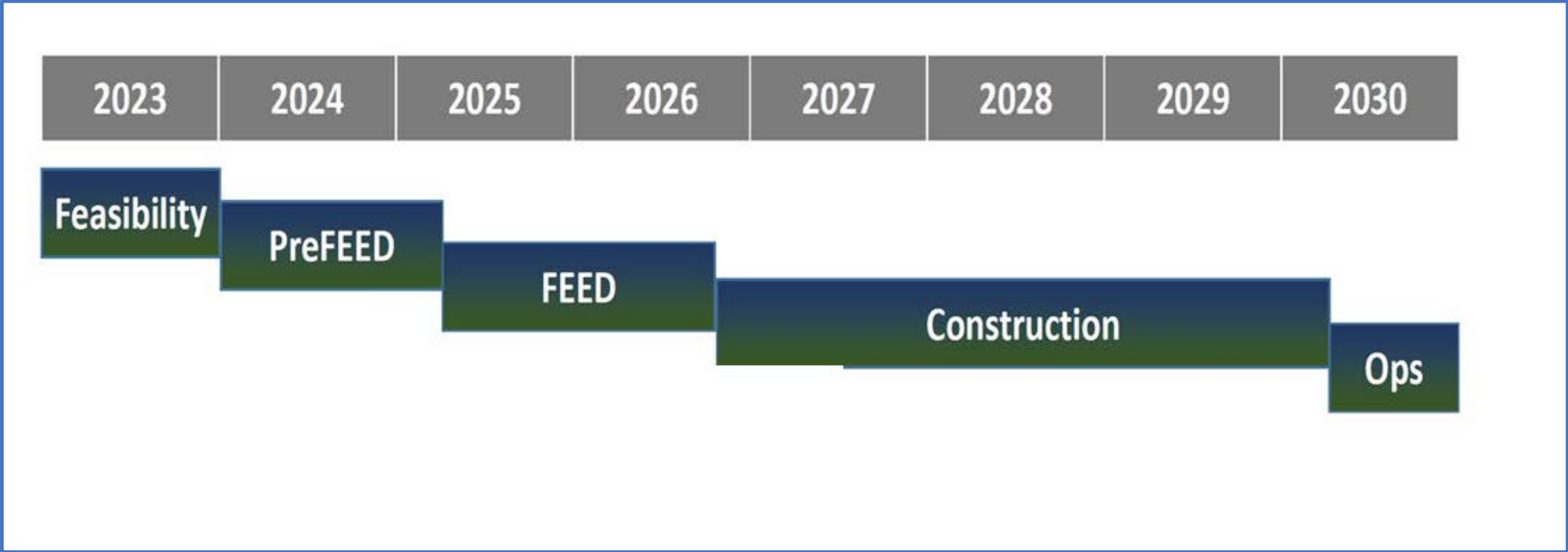
# SNS Development; CCS, OWF



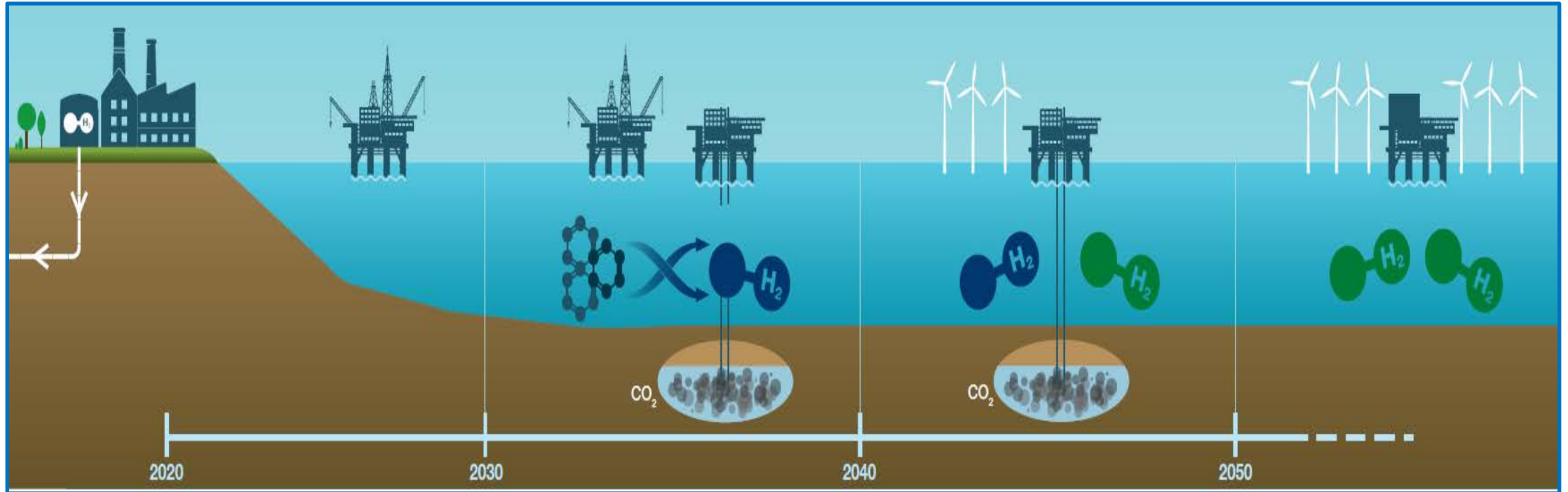
- Access to immediate **gas feedstock** for CCS enabled low carbon Hydrogen
- Access to **OWF** power for future Electrolytic Hydrogen
- Existing offshore infrastructure for CCS
- Existing offshore infrastructure for potential **hydrogen storage**
- Access to **gas connections** (South East & London)
- Potential **export market** (Interconnectors)



# Preliminary Project Schedule (Short Term)



# Project Schedule (Long Term )



- Multiple vectors are required to deliver reliable low carbon energy to users
- The benefit of hydrogen versus other vectors is its potential for large scale and long term storage
- The development of short-term CCS enabled low carbon hydrogen drives the establishment of significant onshore and offshore infrastructure
- Driving the transition to electrolytic low carbon hydrogen

Thank you