

## CONSULTATION REPORT

### Appendix C Pre-consultation materials

#### HyNet Carbon Dioxide Pipeline DCO

Planning Act 2008

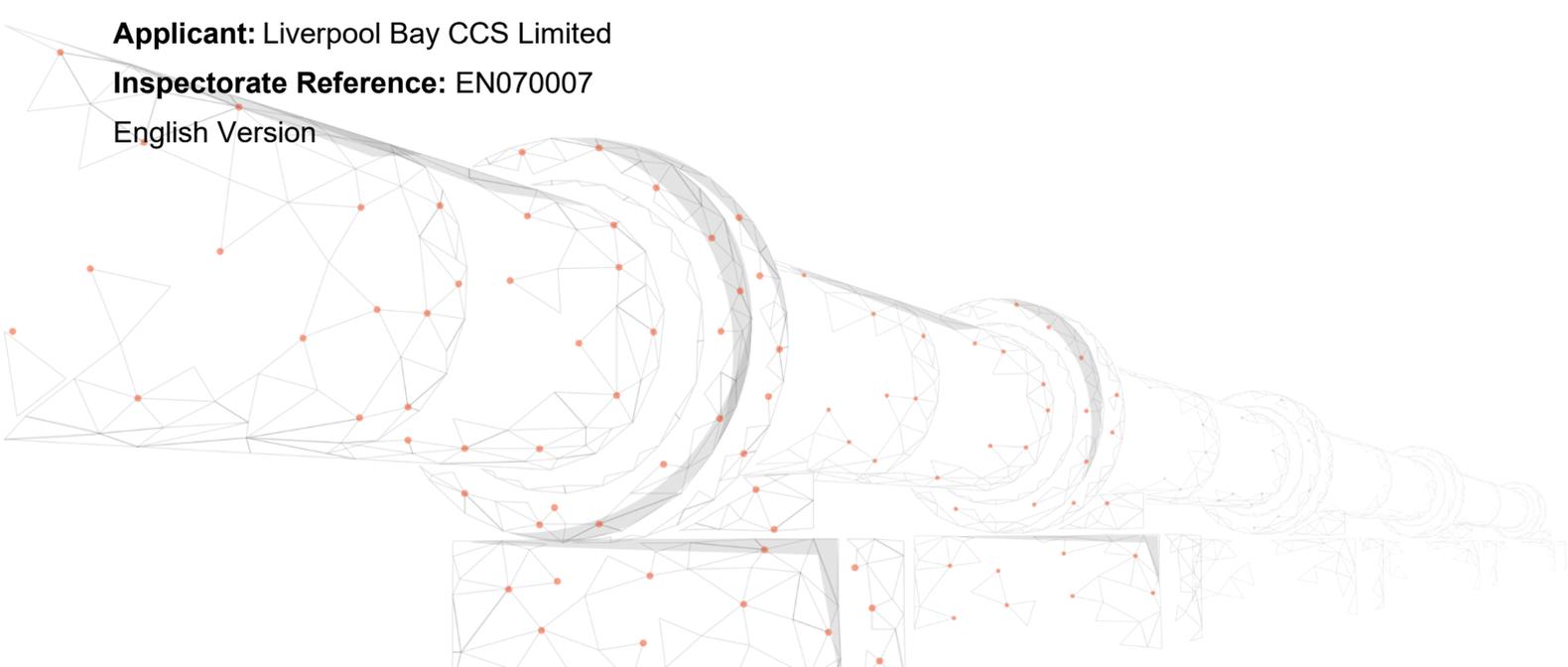
The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulations 5(2)(q)

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# Appendix C

## Pre-consultation materials

# HyNet North West

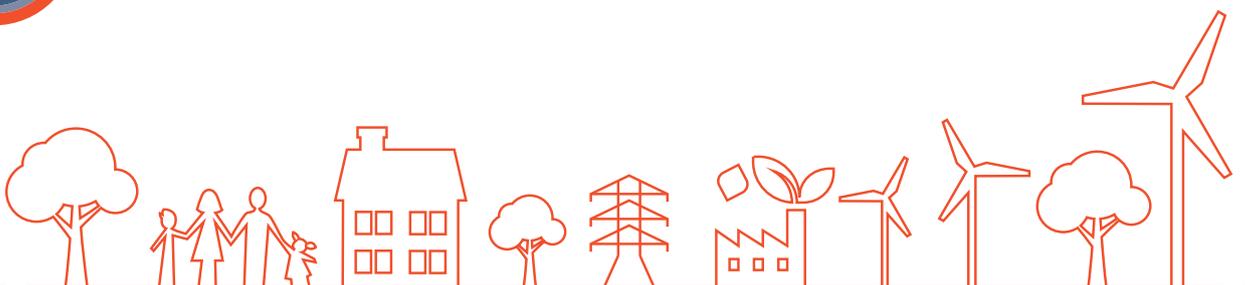
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# C1

## Soft Launch Letter

**HyNet**  
**North West**



Address line 1  
Address line 2  
Address line 3  
Address line 4  
Address line 5

Progressive Energy Ltd  
Swan House  
Bond's Mill  
Stonehouse  
GL10 3RF

13 October 2020

Dear [Insert name],

## **HyNet North West launches its vision**

I am writing to provide you with an update on HyNet North West, which as you already know is an exciting hydrogen project that will play an essential role in decarbonising the economy and put the region on the map for clean energy innovation. Today we launched our vision brochure, which we have enclosed *[attached]*.

Titled *Unlocking net zero for the UK*, our vision document paints a picture of what the project will mean for the region, the country and local people in terms of the economy, setting out a clear plan for the project – looking at the immediate benefits of operation starting in 2025, all the way to the wholesale transformation it will unlock by 2030 and beyond. We hope it helps to bring the project to life for you, but we would welcome the opportunity to answer any questions you might have.

HyNet North West is leading the way in hydrogen innovation, with a network that produces, distributes, stores and uses hydrogen to decarbonise North West England and North Wales. This ambitious project offers value for money in sustainable, incremental stages and is essential for *[delete for stakeholder]*

- Greater Manchester Combined Authority (GMCA) to meet its carbon net zero target of 2038
- Liverpool City Region (LCR) to meet its carbon net zero target of 2040 and removing natural gas from the grid by 2035
- Cheshire West and Cheshire Council (CW&C) to respond to its stated climate emergency, helping to meet its carbon net zero target of 2038. With the majority of CO<sub>2</sub> emissions today being industrial, HyNet North West offers the route to address these well ahead of the 2045 Net Zero target.

The scale and ambition of HyNet North West is significant, but the technology is safe and proven. When produced, stored and transported through HyNet North West, hydrogen is just as safe as natural gas and a critical tool towards decarbonising North West England and North Wales.

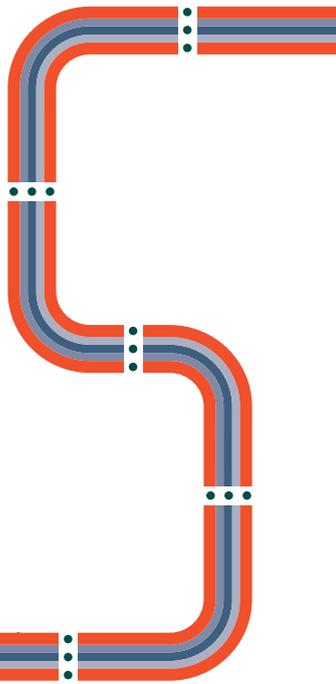
Supported by





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## Vision Brochure



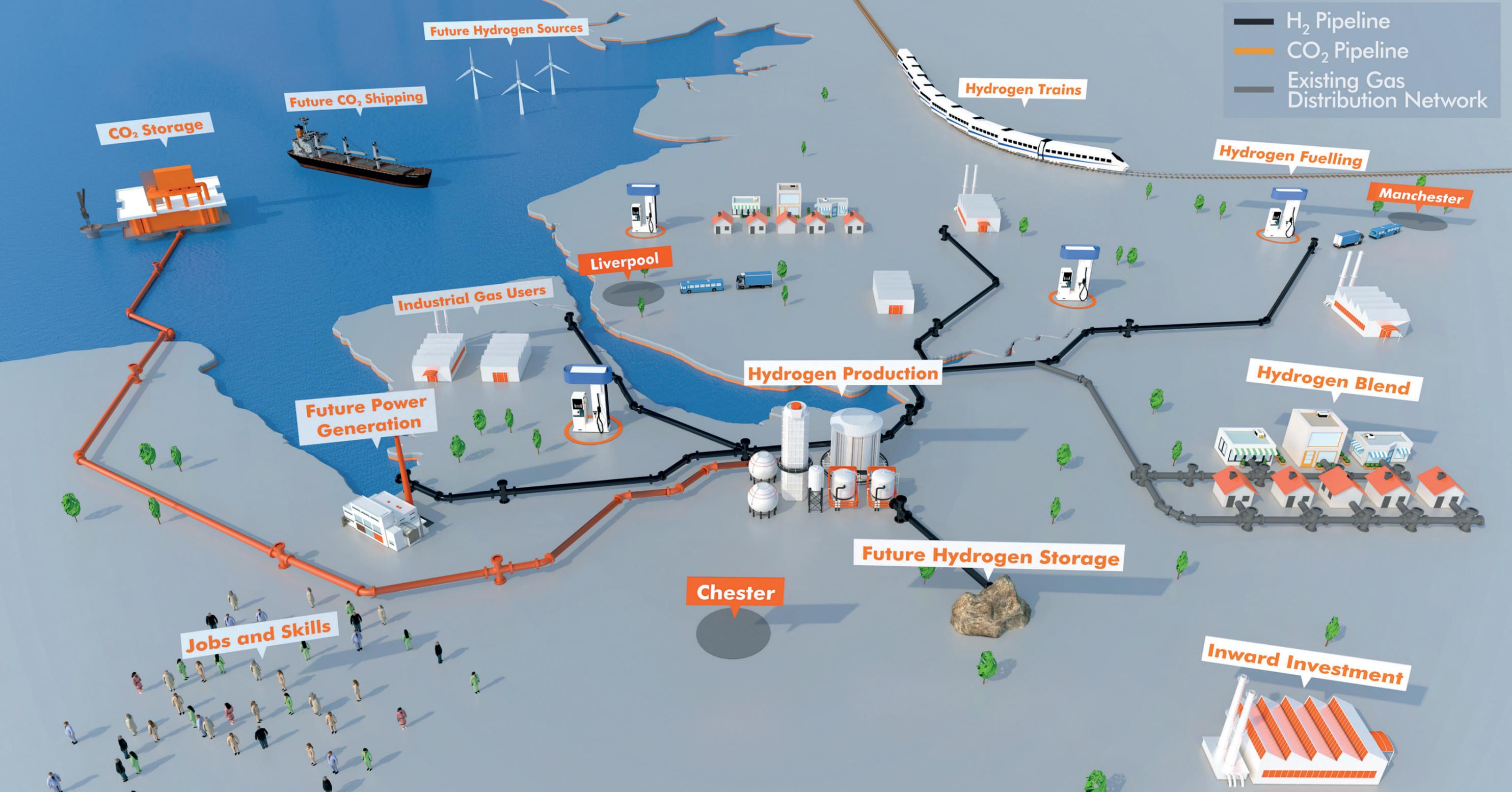
# HyNet North West





# HyNet North West

UNLOCKING NET ZERO FOR THE UK



— H<sub>2</sub> Pipeline  
 — CO<sub>2</sub> Pipeline  
 — Existing Gas Distribution Network

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**IN SUMMARY: AN UNMISSABLE OPPORTUNITY**

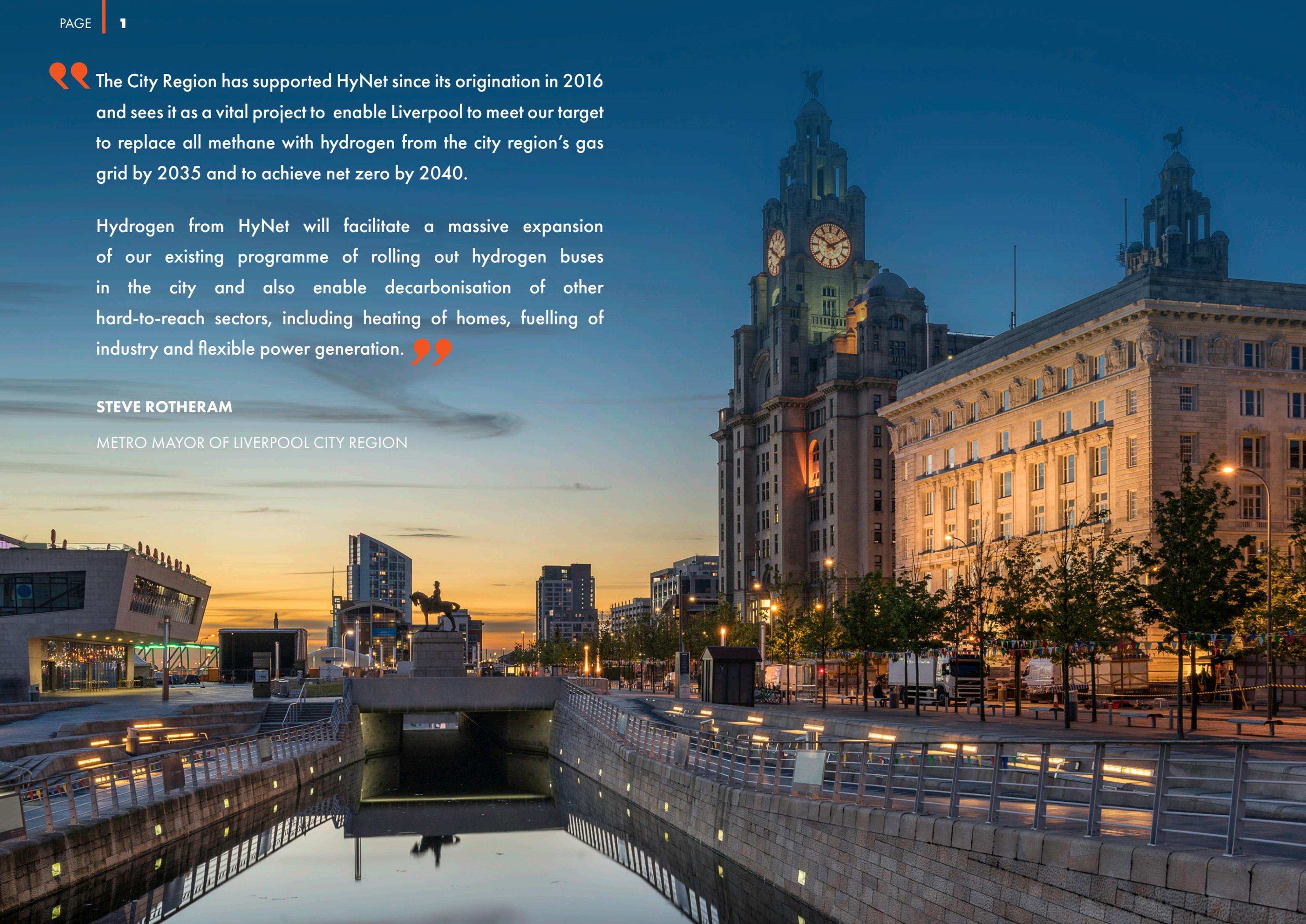
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📍 The City Region has supported HyNet since its origination in 2016 and sees it as a vital project to enable Liverpool to meet our target to replace all methane with hydrogen from the city region's gas grid by 2035 and to achieve net zero by 2040.

Hydrogen from HyNet will facilitate a massive expansion of our existing programme of rolling out hydrogen buses in the city and also enable decarbonisation of other hard-to-reach sectors, including heating of homes, fuelling of industry and flexible power generation. ”

**STEVE ROTHERAM**

METRO MAYOR OF LIVERPOOL CITY REGION

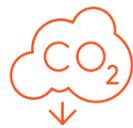


# 01 HYDROGEN: BUILDING A SUSTAINABLE FUTURE

HyNet North West will play a critical role in the world's fight against climate change, accelerating the UK's transition to 'net zero' greenhouse gas emissions by 2050.

As a collection of world-leading organisations coming together to develop HyNet North West, our hydrogen network will produce, store and distribute hydrogen to decarbonise the North West of England and North Wales. Together with carbon capture and storage (CCS), these technologies have the potential to reduce carbon dioxide (CO<sub>2</sub>) emissions by 10 million tonnes every year by 2030 – the equivalent of taking four million cars off the road.

The project is a game-changer. It will realise the potential of the hydrogen economy through the creation of state-of-the-art infrastructure. It will offer a viable alternative to the use of natural gas, providing a safe transition to a decarbonised world.



**HyNet North West** will provide a lasting legacy for generations to come in North West England and North Wales. It will establish the region as a world leader in clean energy innovation, building on its rich industrial heritage with new solutions to combat climate change, and promoting the area as an attractive place for businesses to operate and invest.

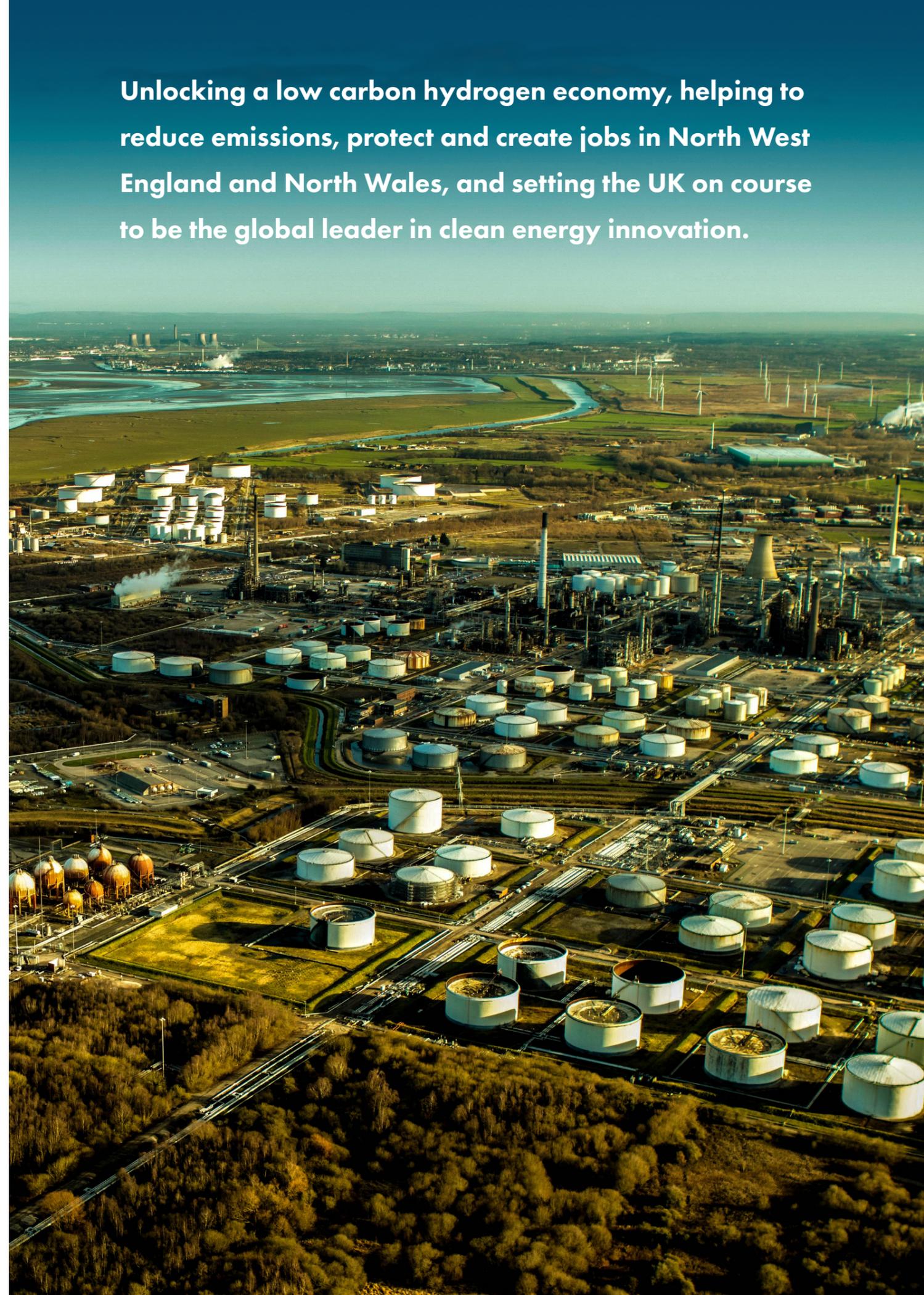


**HyNet North West** is a regional project with national and global benefits. According to a 2020 report from the UK Hydrogen Taskforce, scaling up hydrogen solutions in the UK could support 75,000 jobs by 2035. This would offer opportunities for people in North West England and North Wales, and further afield, to develop new skillsets and train to work in exciting new sectors.



**HyNet North West** offers a once-in-a-generation opportunity to effect real change in energy production and consumption, creating the building blocks for a safer and cleaner world for generations to come.

Unlocking a low carbon hydrogen economy, helping to reduce emissions, protect and create jobs in North West England and North Wales, and setting the UK on course to be the global leader in clean energy innovation.





Doing things differently doesn't just mean a new set of policies – it means a new approach to managing energy altogether and, in working to decarbonise in the North West, we can create a blueprint for the world.

It wouldn't be the first time. We can change ourselves, and we can inspire change in others.

ANDY BURNHAM

MANCHESTER METRO MAYOR

## 02 THE TIME IS NOW

The hydrogen economy has been promised for many years with the prospect of low carbon, low cost fuel.

This can become a reality with **HyNet North West**.

Following the UK Government's announcement in 2019 to set a legally binding target of net zero greenhouse emissions by 2050, nearly 70% of local authorities in England and Wales declared a climate emergency with many setting net zero goals earlier than the national 2050 target.

Working to implement this change will involve wholesale transformation of the way people live, travel, shop, work and do business. **HyNet North West** is a critical part of achieving net zero; the project will realise the ambitions of local and city authorities across Manchester, Liverpool, Cheshire, Warrington and North Wales, helping the wider decarbonisation of the UK.

Both Government and industry see hydrogen as having a clear role, alongside electrification, in creating a greener and cleaner future.



Now is the time to set the wheels in motion to deliver **HyNet North West**.

### REGIONAL CONTEXT

HyNet North West is working with a wide variety of organisations to develop the project, and has strong support from regional leaders and business groups:

**Liverpool City Region Combined Authority** has declared a climate emergency and set a net zero target date of 2040.

**Greater Manchester Combined Authority** has declared a climate emergency and set a net zero target date of 2038.

**Cheshire West and Chester Council** has declared a climate emergency and set a net zero target date of 2045.

**North West Hydrogen Alliance:** an organisation comprising 21 members, which is helping drive the creation of an industrial hydrogen cluster in the North West.

**Net Zero North West:** a collaboration of industry leaders, which has come together to drive investment into the net zero economy and post COVID-19 green recovery in the North West.

### NATIONAL CONTEXT

Our approach is supported by both central Government and industry.

**The Committee on Climate Change (CCC)**, in its 2020 Progress Report to Parliament, recognises that hydrogen has an integral role to play in the UK's transition to net zero.

In its 2020 **Future Energy Scenarios** report, National Grid cites hydrogen as a central component in decarbonising industry and the heating of homes.

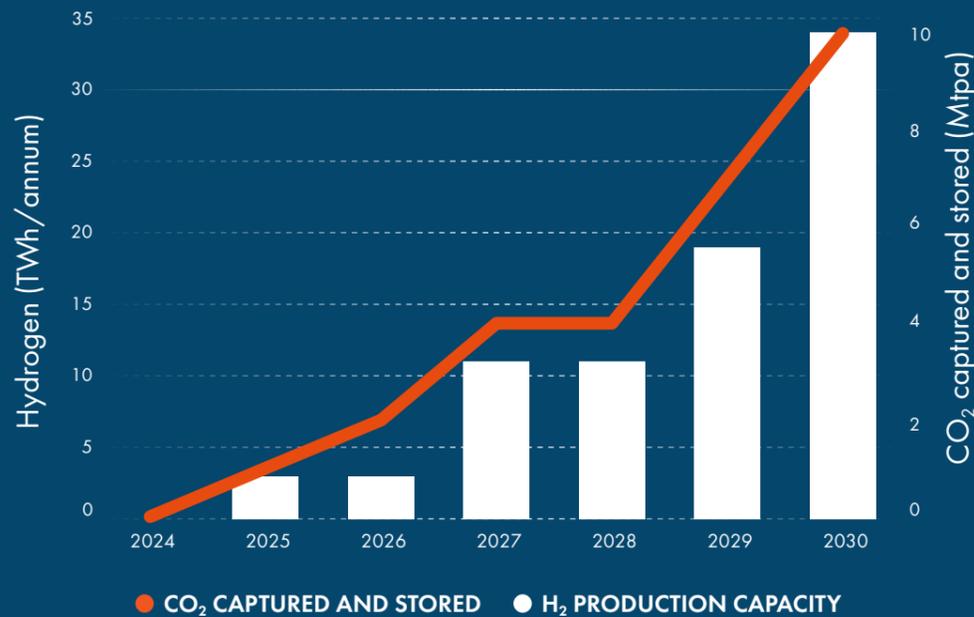
**The Department for Business, Energy and Industrial Strategy's (BEIS) Industrial Decarbonisation Challenge** aims to deploy carbon capture and storage (CCS) and hydrogen at scale across the UK's industrial clusters.

Early next year, the Government is set to publish its much anticipated national **hydrogen strategy**, where firm measures to facilitate delivery will be announced

Longer-term funding mechanisms and regulatory regimes to support the development and safe operation of **HyNet North West** are either in place or in development (see Chapter 8 for more information).

# 03 DELIVERABLE AND SCALABLE

While ambitious, we have deliberately planned HyNet North West in distinct, achievable stages to ensure that the first phase is delivered as soon as 2025, with expansion happening shortly thereafter to deliver widespread decarbonisation of the economy by 2030. These incremental stages will expand HyNet North West's capacity to deliver up to 10 million tonnes per annum (Mtpa) of carbon reduction by 2030, paving the way for wholesale hydrogen use in the future.



**1 Mtpa**

TAKING **0.4M** CARS OFF THE ROAD

**4Mtpa**

TAKING **1.6M** CARS OFF THE ROAD

**10Mtpa**

TAKING **4M** CARS OFF THE ROAD

= 50,000 cars

## 2025: CO<sub>2</sub> ABATEMENT BEGINS

The initial phase of HyNet North West will reduce CO<sub>2</sub> emissions by over 1 Mtpa.



Direct capture of **400,000** tonnes per year of CO<sub>2</sub> from one of our partners' major industrial sites.



Construction of the UK's first **low-carbon hydrogen (LCH™)**\* plant to produce 3TWh per year of low carbon hydrogen at Stanlow Refinery. This is equivalent to the energy used for heating around a third of a million households with natural gas boilers for a year.



Repurposing existing natural gas pipelines for CO<sub>2</sub> and transporting over 1 million tonnes of CO<sub>2</sub> for **storage in depleted gas reservoirs under the seabed in Liverpool Bay.**



Building the UK's **first hydrogen pipeline network** to supply to local industry and to blend hydrogen with natural gas into local networks. Blending up to 20% hydrogen does not require changes to boilers or cookers, so provides meaningful decarbonisation of buildings with zero disruption for households and businesses.

\*LCH is a trademark of the Johnson Matthey Group of Companies

## 2027-28: A FURTHER REDUCTION OF CO<sub>2</sub> EMISSIONS TO 3-4Mtpa

This will be achieved by deploying additional hydrogen production capacity, enabling us to expand blending into the network and supply a wider range of industry sites.

## 2030: CAPACITY TO REDUCE CO<sub>2</sub> EMISSIONS BY 10Mtpa

This is equal to 20% of the improvement needed to meet the UK's legally binding 5th Carbon budget for the period between 2028 and 2032. There is a clear plan for delivering this:



A further **one million** tonnes per year of direct CO<sub>2</sub> capture from industry.



Over **30TWh per year of hydrogen**, initially from Stanlow, then extending to further production sites across the region. This will be supplied to at least one major power station which runs on 100% hydrogen and used to decarbonise heavy transport (trains, heavy goods vehicles, buses and ships).



Development of the first large-scale **underground storage** of hydrogen in the UK, with greater than 1TWh of capacity across multiple underground salt caverns in the Cheshire salt basin.



Around **350km of new-build pipelines** to create the first hydrogen network in the UK.



**The CO<sub>2</sub> saving delivered by HyNet North West in 2030 is equivalent to the emissions from heating over 5 million households with natural gas boilers for a year.**

## EXTENDING DECARBONISATION TO THE WIDER UK ECONOMY

**HyNet North West** will subsequently be expanded into other areas, including further into Lancashire and Cumbria, Derbyshire, parts of the West Midlands and into additional areas of Wales.

To meet net zero, all buildings will need to move away from fossil-fuelled heating. To achieve this goal, in the 2030s, **HyNet North West** will supply **100% hydrogen** to heat buildings by converting relevant parts of the existing gas distribution network. Using hydrogen alongside electrification of heating will result in the lowest cost solution for households and businesses. Hydrogen is likely to be used both in standalone hydrogen boilers or as part of a hybrid solution involving electric heat pumps.

**130TWh**

By 2050, the project could deliver up to 130TWh per year of hydrogen.

**50%**

According to the Committee on Climate Change (CCC) in its 2019 Progress Report to Parliament, this is nearly 50% of the total hydrogen the UK needs to meet its net zero target.



## 04 CREATING JOBS AND OPPORTUNITIES

The concentration of industry, existing technical skill base and unique geology in North West England and North Wales offers an unparalleled opportunity for a hydrogen energy cluster.

The North West has a long and rich history as the home of industry in the UK and has the most manufacturing jobs of any UK region. Leading the way in hydrogen innovation is the next chapter in its story.



The North West has the most manufacturing jobs of any region in the UK, employing **345,000** people in 2019. (Office of National Statistics)



There are more than **30** major manufacturing sites in the region operated by multinational companies including those in chemicals, glass, oil refining and various other sectors.



The North West currently contributes **£174 billion** in gross value added (GVA) to the UK economy, behind only London and the South East.



The combined effects of direct spend on HyNet North West, and from related inward investment, will result in **£31 billion** GVA for the UK as a whole and around **£17 billion** for the North West to 2050.

**HyNet North West** will help to protect and expand on the North West's deep industrial heritage. The region is home to localised expertise and capacity for oil and gas exploration and storage, and its chemicals and refining sector is the largest in the UK.

### New, exciting careers

**HyNet North West** is made up of a series of 'links' in a chain of hydrogen production, hydrogen pipelines, hydrogen storage, CO<sub>2</sub> capture, CO<sub>2</sub> pipelines and CO<sub>2</sub> storage. It offers significant growth prospects for people and businesses in a range of sectors and would establish the region as a world leader in energy innovation.

The diversity and scale of our approach will enhance the region's supply chain with opportunities for new and existing businesses, and expand the reach of local subcontractors across North West England and Wales.

A hydrogen-fuelled local economy will support ongoing growth for the region, while protecting and creating high-skilled career opportunities. HyNet North West will help maintain existing jobs and create a further **6,000** permanent jobs in the region, and many more during construction and across the wider UK. By kick-starting the hydrogen economy, HyNet will help support up to **75,000** jobs across the country by 2035.

### Export of skills and services

The hydrogen and carbon capture and storage (CCS) chain represent major steps forward for low carbon energy technology and innovation in the UK. The North West's manufacturing verve and know-how will enable the region to capitalise on this opportunity.

Other nations have taken the lead on clean technologies like offshore wind energy and battery storage; HyNet North West is the UK's chance to be a global leader in energy innovation and build a skills base that can be exported to lead the world in clean hydrogen and CCS.



**HyNet North West would establish the region as a global exporter of new technologies, skills and services.**

HyNet is a critical part of the low carbon infrastructure that is needed in Cheshire & Warrington, and more widely across the region, to both make a material contribution to CO<sub>2</sub> emissions reduction from 2025 and to help the UK meet its net zero target in 2050.

HyNet is a highly deliverable project that can protect existing jobs and bring much needed new employment to the region at a time of great uncertainty resulting from the impacts of Covid-19 and Brexit.

**CLARE HAYWARD**

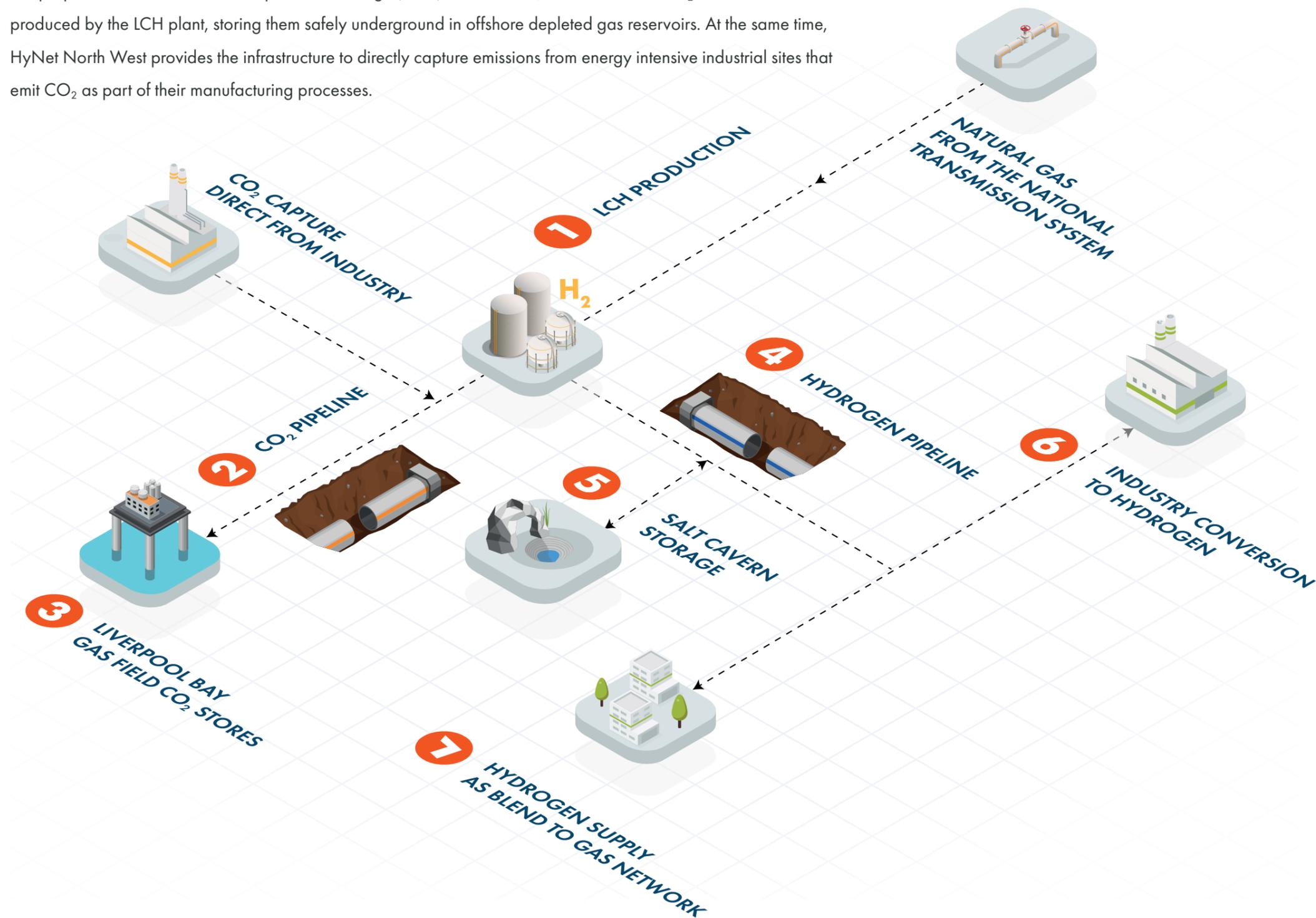
CHAIR OF CHESHIRE AND WARRINGTON  
LOCAL ENTERPRISE PARTNERSHIP



## 05 HOW IT ALL FITS TOGETHER

HyNet North West plans to build a low-carbon hydrogen production (LCH) plant at Stanlow Refinery. The hydrogen we produce will be transported by pipeline and provided for industrial, transport, home and business use.

The project also includes carbon capture and storage (CCS) infrastructure, which takes the CO<sub>2</sub> emissions produced by the LCH plant, storing them safely underground in offshore depleted gas reservoirs. At the same time, HyNet North West provides the infrastructure to directly capture emissions from energy intensive industrial sites that emit CO<sub>2</sub> as part of their manufacturing processes.



**1** Natural gas will be fed into our LCH plant at Stanlow Refinery. The process splits this into hydrogen and CO<sub>2</sub>, around 95% of which is captured for safe storage.

**2** The CO<sub>2</sub> is then sent along a pipeline with CO<sub>2</sub> directly captured from other local industrial sites.

**3** All the CO<sub>2</sub> captured is transported underground to be safely stored offshore in depleted gas reservoirs beneath Liverpool Bay.

**4** The hydrogen produced will be both used as a fuel at Stanlow Refinery and distributed via new hydrogen pipelines.

**5** To manage peaks in demand, hydrogen will be stored safely in underground salt caverns

**6** Hydrogen will be supplied to manufacturing sites, and potentially power stations, across the region.

**7** Some of the hydrogen will be blended with natural gas into the local pipeline distribution network for two million gas customers in and around Liverpool, Manchester, Warrington, Wigan and North Cheshire. This will result in no disruption to either domestic households or businesses.

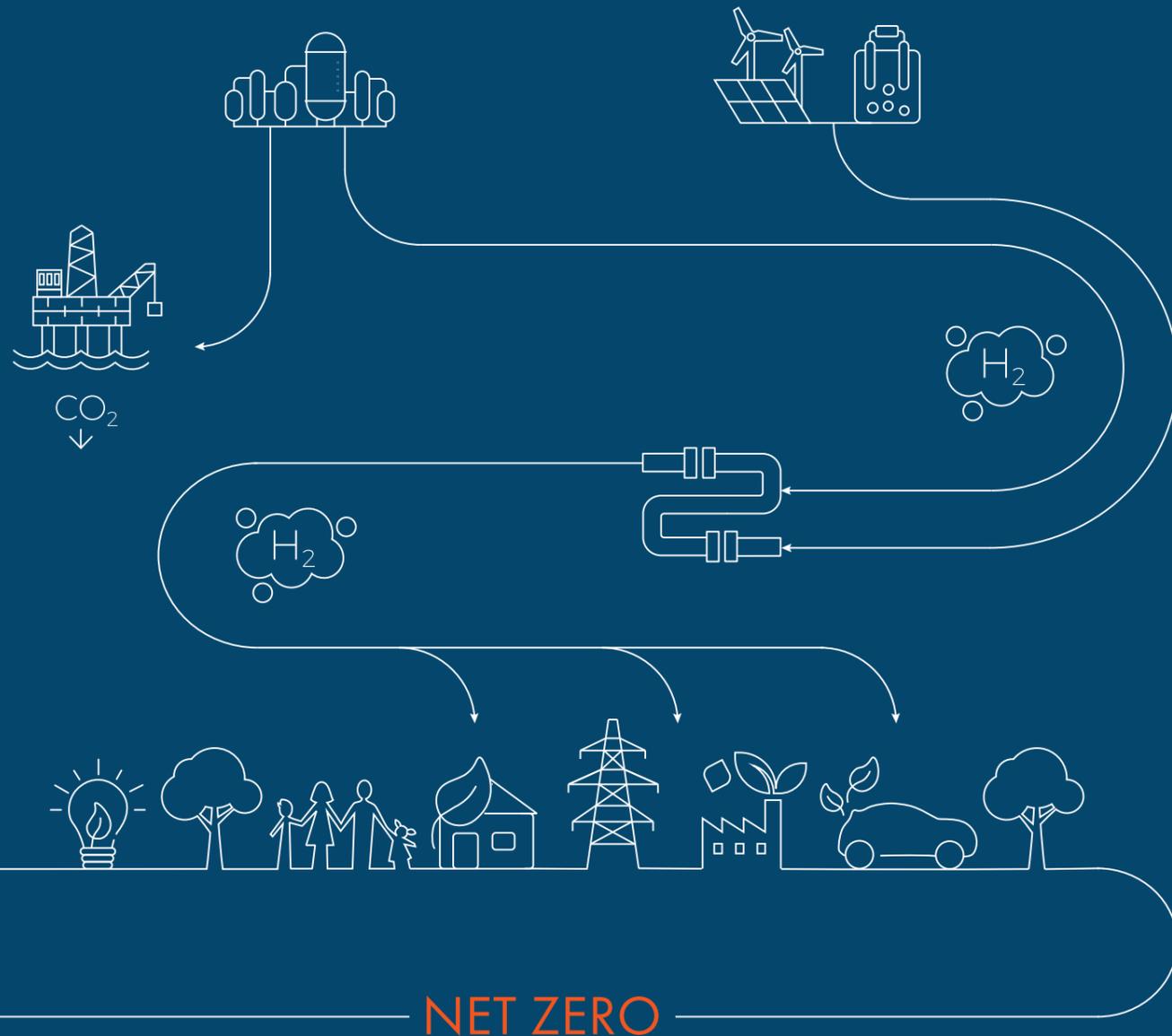
## WHAT IS THE DIFFERENCE BETWEEN BLUE AND GREEN HYDROGEN?

### BLUE HYDROGEN:

produced, on a continuous, non-stop basis, from natural gas using the low-carbon hydrogen (LCH) process. This is an advanced, highly efficient approach to splitting natural gas into hydrogen and CO<sub>2</sub> which is captured and safely stored.

### GREEN HYDROGEN:

usually created using intermittent forms of renewable electricity generation (wind, tidal or solar) to extract hydrogen molecules from water using a process known as electrolysis



## THE ROLE OF HYDROGEN IN REACHING NET ZERO

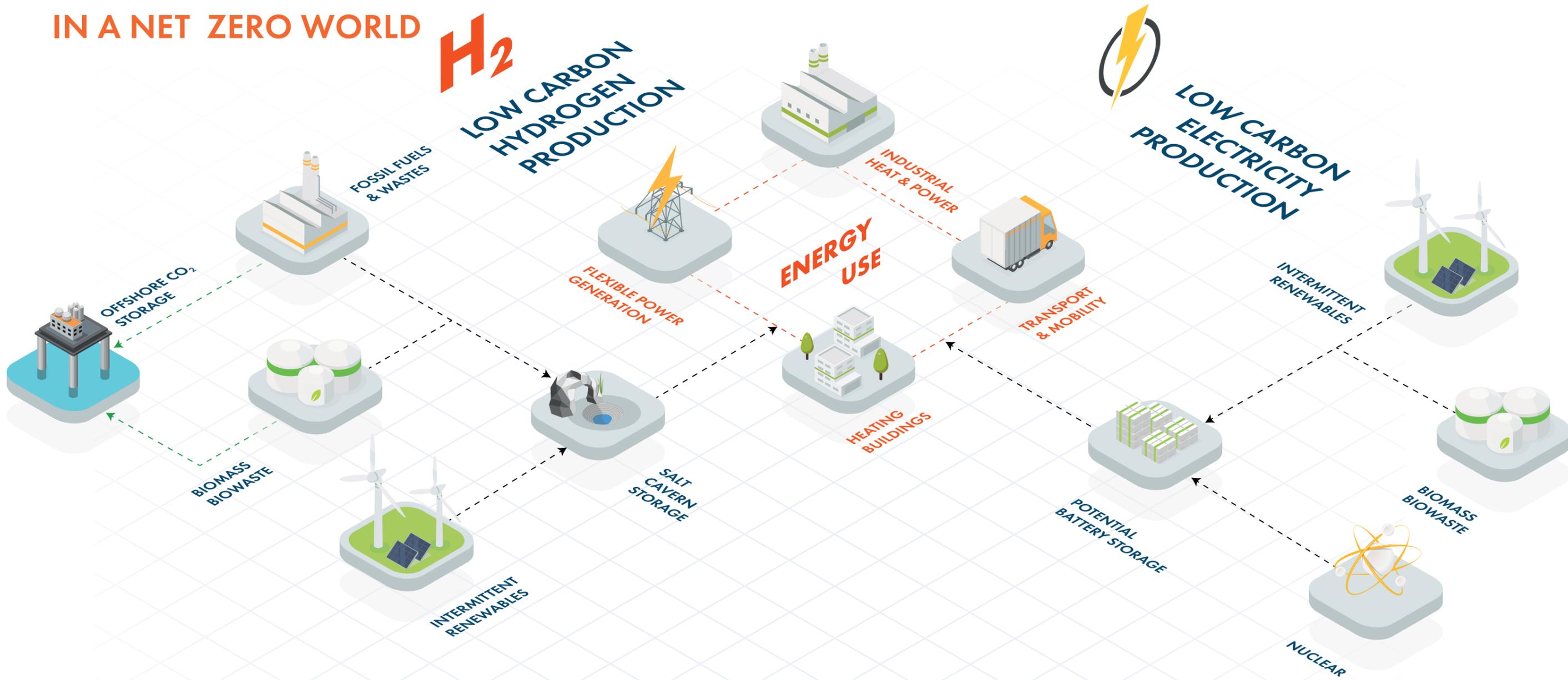
To meet net zero, the independent Committee on Climate Change (CCC) states that massive deployment of both blue and green hydrogen is necessary. We must move quickly on the path to net zero and blue hydrogen can be delivered by projects like **HyNet North West** at far lower cost in the shorter-term.

Blue hydrogen can now be delivered at the scale necessary to enable investment in the essential pipeline network, which significantly reduces the costs of transporting hydrogen.

Much in the same way as biomethane plants currently 'plug in' to supply green gas to the natural gas network today, green hydrogen will, in the future, supply into the hydrogen network and storage infrastructure created by **HyNet North West**.

# ROLE OF HYDROGEN IN A NET ZERO WORLD

## H<sub>2</sub>



### INDUSTRIAL HEAT & POWER

- Easy conversion to hydrogen of equipment already running on gaseous fuel
- Limited applications suitable for electrification, particularly 'direct-firing' processes

### POWER GENERATION

- Flexible generation from hydrogen balances intermittent renewable electrical power generation

### HEATING BUILDINGS

- Use of hydrogen in boilers and to meet peaks for hybrid heat pumps

### TRANSPORT AND MOBILITY

- Hydrogen offers fast refuelling, longer range and is a light weight option for HGVs, buses, trains and ships
- Electrification is more suited to cars, vans and other 'stop-start' vehicles

HyNet is an exciting and ambitious industry-led project... Blue hydrogen projects such as this are recognised by the Committee on Climate Change as essential to supporting the UK's journey to carbon neutrality.

HyNet will lay the foundations and infrastructure for a long-term transition to renewable green hydrogen and transform West Cheshire into a world-leading location for clean growth.

**COUNCILLOR LOUISE GITTINS**

LEADER OF CHESHIRE WEST AND CHESTER COUNCIL



## 06 THE NATURAL PLACE TO SET NET ZERO IN MOTION

The North West and North Wales are perfectly set up to deliver the lowest cost hydrogen production and use in the UK.

Building upon and using existing infrastructure, we can support one of the UK's largest industrial clusters and help to re-energise the regional economy with new technology, skills, and jobs.

The North West industrial cluster is located close to ideal geological structures, reducing the cost of moving and storing both hydrogen and CO<sub>2</sub>. The gas reservoirs in Liverpool Bay are due to reach the end of their economic life in time for CO<sub>2</sub> storage to begin in 2025. Further potential for CO<sub>2</sub> storage also exists in the nearby Morecambe Bay gas fields, which similarly could be repurposed for CO<sub>2</sub> storage in future. Both these sets of fields are relatively close to shore, reducing CO<sub>2</sub> transport and storage costs. Reusing existing natural gas infrastructure for CO<sub>2</sub> transport and storage minimises the capital cost of HyNet North West. Typically, operators and Government both share the costs of decommissioning oil and gas assets. By repurposing the depleted gas reservoirs, HyNet North West negates the need to decommission them, significantly reducing the burden on UK taxpayers.

- CO<sub>2</sub> will be stored in depleted gas reservoirs under the seabed of Liverpool Bay
- Existing onshore and offshore pipelines will be reused for transporting CO<sub>2</sub>
- Current offshore platforms will be reused to facilitate CO<sub>2</sub> storage

The Cheshire salt basin is already used extensively for natural gas storage, and is suitable and available for hydrogen storage. In the longer term, additional salt fields are available in Lancashire and offshore in Morecambe Bay.

The scale and ambition of **HyNet North West** is significant, and the technology is safe and proven. Added to its low cost, the project is the UK's most attractive opportunity to drive the regional economy

Industrial users in the North West will benefit from HyNet North West's **continued development and expansion**. Industry use of hydrogen typically involves low cost conversion rather than major new equipment, enabling deep, cost-effective decarbonisation, which cannot be achieved by other means.



HyNet North West helps decarbonise power generation, which will provide the grid with the flexibility it needs to balance electricity supply from intermittent renewables. This will enable the construction of a **greater number of offshore wind farms**, supporting the wider journey to net zero.



To bridge the gap between the cost of natural gas and low carbon hydrogen, HyNet North West only needs support of around £25 per MWh of hydrogen produced. This is a **significantly lower level of support than needed by many other forms of clean energy** and so reduces the costs of the transition to net zero for both households and businesses.



According to a Government-funded study, the Hamilton gas field in Liverpool Bay is the UK's **most suitable, safe site for CO<sub>2</sub> storage**.



## 07 COLLABORATIVE LEADERSHIP

**Progressive Energy** is leading the development of the CO<sub>2</sub> pipeline, and the hydrogen production plant. The company was formed over 20 years ago to commercialise CCS and is a project development business with significant commercial 'know-how' and engineering expertise. Progressive Energy has led other regional cluster projects, which included direct capture of CO<sub>2</sub> from industry and building of a new hydrogen power plant.

**Cadent** is leading the development of the hydrogen network and is the largest operator of gas networks in the UK, making it ideally placed to operate the hydrogen network. Cadent owns several other regional gas networks, so will be well positioned for the future expansion of HyNet.

Progressive Energy and Cadent are supported by a range of organisations which are either consortium partners or closely engaged on the project.

HyNet North West has received funding support from the Cheshire & Warrington Local Enterprise Partnership through their Local Growth Fund.

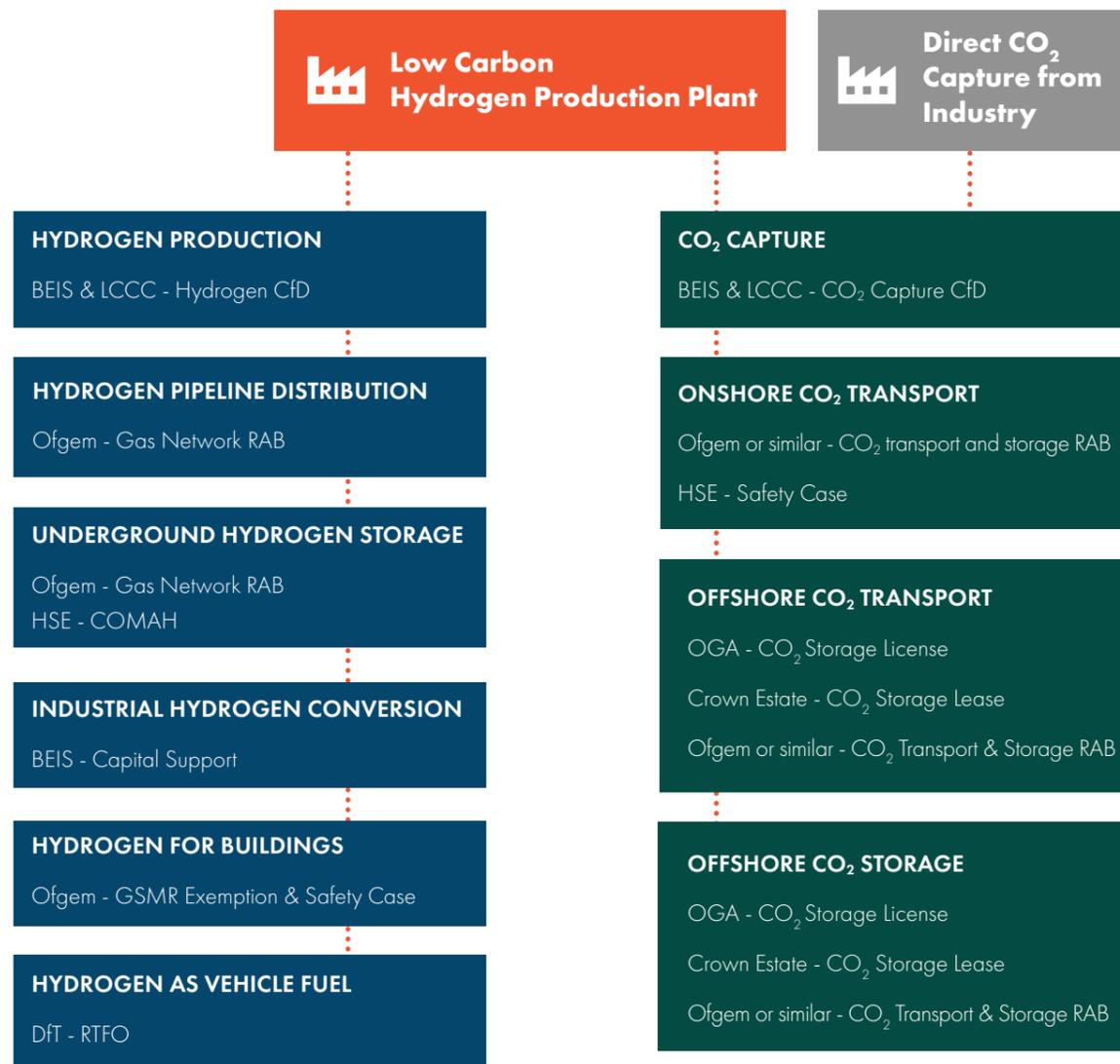


**HyNet** North West is a network of separate but integrated consortia that together will deliver remarkable benefits. Each is led by industry experts who are working collaboratively across the network of hydrogen production, distribution, usage and storage and in carbon capture and storage.



## 08 KEEPING IT SIMPLE FOR INVESTORS

To bridge the gap between the basic costs of natural gas and hydrogen, tried-and-tested policy mechanisms will be used. There is a lot of perceived complexity to funding integrated hydrogen and CCS projects, but much has been done in the UK to develop policy and regulatory mechanisms that facilitate investment. Below is a comprehensive picture of all those mechanisms. Clarity in respect of these mechanisms will reduce perceived risk for investors and so lower the cost of capital for the project.



## WHO IS INVOLVED?

The **Department for Business, Energy and Industrial Strategy (BEIS)** is responsible for UK energy policy and is working with industry to agree the most efficient approach to supporting hydrogen production (and storage) and CO<sub>2</sub> capture. This Expert Working Group is considering such approaches as a **'Contract for Difference' (CfD)** a version of which already exists to support low carbon electricity generation. A CfD guarantees that the low carbon generator will receive a fixed price for the electricity it sells into the market. This gives generators and their investors price certainty throughout the length of the contract, usually 15 years.

The existing **Low Carbon Contracts Company (LCCC)**, a private company funded by BEIS, is well placed to manage and make payments to companies which have been awarded CfDs, as is the current case for electricity generation.

The **Department for Transport (DfT)** is responsible for transport policy and can amend the existing **Renewable Transport Fuel Obligation (RTFO)**, to enable hydrogen to be sold as vehicle fuel at a price comparable with petrol and diesel.

Hydrogen and CO<sub>2</sub> pipelines along with hydrogen storage can be funded using the existing **Regulated Asset Base (RAB)** model, an existing system managed by the **Office of Gas and Electricity Markets (Ofgem)**. The RAB model provides for regulated returns which are suited to investment from the likes of pension funds, which rely on long-term, stable returns.

The **Crown Estate** owns the seabed below British waters, and has an established system to enable leasing of sub-sea land for transport and storage of CO<sub>2</sub>.

The **Oil and Gas Authority (OGA)** runs an existing licensing regime for CO<sub>2</sub> storage license. Eni UK, a collaborating party in HyNet North West, has been awarded a CO<sub>2</sub> storage licence for fields in the Liverpool Bay Area for a work programme leading to an application for a storage permit.

The **Health and Safety Executive (HSE)** will regulate and oversee the safety of hydrogen distribution to homes and businesses, along with hydrogen storage and CO<sub>2</sub> transport. For hydrogen blending, this will be undertaken using the existing **Gas Safety Management Regulations (GSMR)**, with the transport and storage of hydrogen and CO<sub>2</sub> governed by the existing **Control of Major Accident Hazards (COMAH) regime**.

Planning permissions for HyNet North West will be managed by both the Secretary of State for **BEIS** and local planning authorities.

## 09 STARTING AN ONGOING CONVERSATION

We will proactively bring stakeholders, local communities, industry and the supply chain along with us on every step of the journey. We want our proposals to be a true reflection of the needs and priorities of the area and attract a skilled and experienced workforce.

We will collaborate with government agencies, councils, combined authorities, regional planners, delivery bodies and local communities to enhance their understanding of HyNet North West as the UK's best hydrogen cluster proposition. These efforts will help shape our considerations and planning for the design of the hydrogen network, hydrogen production and CCS infrastructure.

This conversation will run parallel to continued dialogue with utilities, industry associations and prospective partners to increase awareness of HyNet North West's environmental benefits and economic potential.

The game-changing nature of HyNet North West will deliver exciting employment, training and education opportunities for local communities, but we know there may be concern about local effects of the scheme, particularly during construction. That's why we will carry out consultation with local people and businesses to ensure we can take their views on our plans into account to minimise these effects wherever possible.

As momentum for hydrogen builds, we will continue to work with Government and industry to highlight HyNet's essential role in decarbonising the North West and wider UK. We will engage at a level that demonstrates the magnitude of the opportunity for clean growth and involves more people in the conversation about the positive legacy we can create for future generations.



# 10 ON TARGET DELIVERY

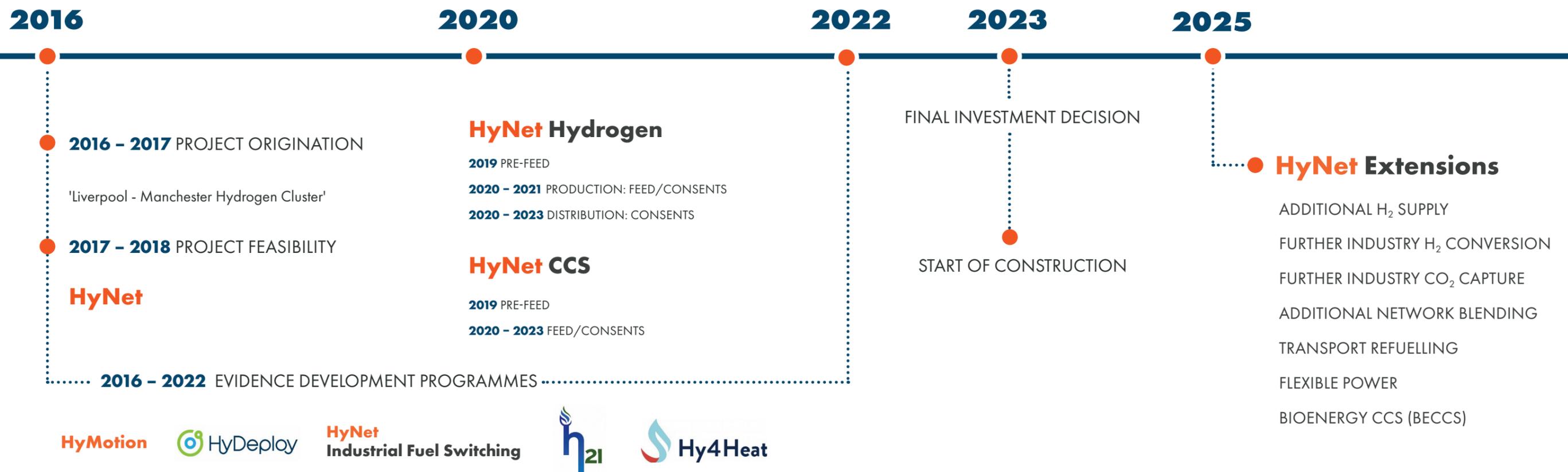
**HyNet North West** is targeting 2025 for first operation. The project has hit its first major milestone by beginning the planning process for the pipeline infrastructure, and is on course to meet its target date.

There are several key stages to developing and deploying **HyNet North West**. As shown below, we have completed all feasibility activities and are well into the second main phase of development which consists of detailed engineering design and planning.

**HyNet North West** is undertaking significant work to demonstrate that the technologies we plan to use will be safe and deliverable:

- **HyNet Industrial Fuel Switching (IFS)** programme – this includes hydrogen demonstrations at Unilever and Pilkington and an associated project at Essar’s Stanlow Refinery.
- **HyNet Hydrogen Supply (HSP)** – this is a Front-End Engineering Design (FEED) study of the hydrogen production plant at Stanlow Refinery, which also includes application for planning consent.
- **HyDeploy** – we are currently injecting a hydrogen blend into a ‘closed’ gas network at Keele University and will shortly inject a similar blend to a greater number of houses and businesses in an open network.
- **HyMotion** and **H2GV** – we are gathering a range of technical evidence to support hydrogen demonstrations for heavy good vehicles (HGVs), trains and other freight transport.

**HyNet North West** is also working closely with the Government’s **Hy4Heat** programme and the Gas Network Innovation Competition funded **H21** programme, both of which focus on longer-term conversion of the existing natural gas network to hydrogen.





# AN UNMISSABLE OPPORTUNITY



## CRITICAL STEP TOWARDS NET ZERO



HyNet North West will reduce CO<sub>2</sub> emissions by up to 10 million tonnes every year by 2030. This is the equivalent of taking over 4 million cars off the road, or heating over 5 million households.



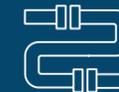
Could provide nearly 50% of the total hydrogen the Committee on Climate Change says is required to meet UK's net zero target.



Plays a critical role in the UK's net zero energy system by enabling more offshore wind generation and later green hydrogen production.



## LOW COST AND DELIVERABLE



The North West's gas network is getting 'hydrogen ready', with 77% of gas pipelines recently replaced to enable hydrogen transportation.



A Government-funded study highlighted HyNet North West's CO<sub>2</sub> storage site in Liverpool Bay as the safest, most suitable site in UK waters.



Proximity to sites for CO<sub>2</sub> and hydrogen storage and the reuse of existing infrastructure means this is the lowest-cost hydrogen and carbon capture and storage (CCS) solution in the UK.



## AN AMBITIOUS GROWTH OPPORTUNITY



By 2050, direct spend on HyNet North West and related inward investment would mean £17 billion for the regional economy, and £31 billion for the UK.



Regionally HyNet North West would directly provide 6,000 permanent new jobs and contribute to a further 75,000 jobs nationally by 2035, with thousands more temporary jobs in construction.



HyNet North West will secure first-mover advantage for the UK and make the North West a global exporter of new technologies, skills and services.

**C3**

**Non-Statutory  
Consultation  
Report**

**HyNet  
North West**



## NON-STATUTORY CONSULTATION REPORT

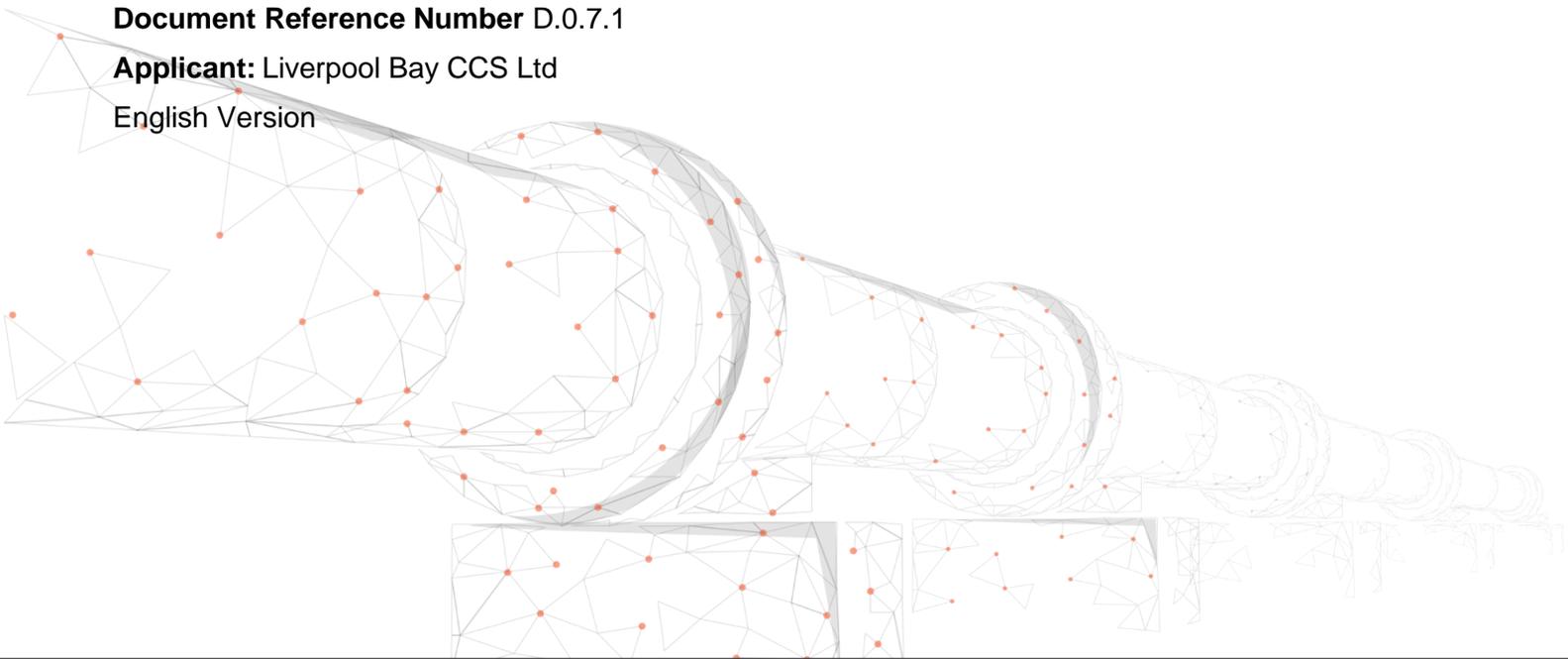
### HyNet North West Carbon Dioxide Pipeline

Non-Statutory Consultation Report

Document Reference Number D.0.7.1

**Applicant:** Liverpool Bay CCS Ltd

English Version



REVISION: 01

DATE: October 2021

DOCUMENT OWNER: WSP UK Ltd

AUTHOR: Kirsty Scott

APPROVER: Iain Roberts

PUBLIC

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# 1. INTRODUCTION

---

## 1.1. BACKGROUND ON HYPNET NORTH WEST

- 1.1.1. HyNet North West is a ground-breaking low carbon energy project that will unlock a sustainable future for the North West and North Wales. It will place the region at the forefront of the UK's journey to net zero and help to decarbonise many sectors of the economy from the mid-2020s. The project will produce low carbon hydrogen to replace the fossil fuels we use today for industry, transport and homes. HyNet will also capture and store carbon dioxide (CO<sub>2</sub>) emissions produced by energy intensive industries.
- 1.1.2. The project is made up of several different elements, including upgrades to existing facilities as well as the development of new infrastructure. The breadth of the project makes HyNet a leader in the creation of the UK's low carbon economy, bringing economic and environmental benefits to the local area and across the UK.
- 1.1.3. As part of the HyNet North West project, we will build low-carbon hydrogen production plants. The hydrogen we produce will be used in the region's industry, transport, homes and businesses. The project also includes infrastructure to capture CO<sub>2</sub> emissions from energy-intensive industries in the area, and from the hydrogen plant, transporting and safely storing these emissions underground.
- 1.1.4. The project will be developed in stages, the first of which is the CO<sub>2</sub> pipeline and the initial hydrogen plant. The hydrogen distribution network and other CO<sub>2</sub> capture projects will be developed next and will be consented separately.

## 1.2. NON-STATUTORY CONSULTATION

- 1.2.1. An initial non-statutory consultation was held between 9 June and 11 July 2021, with a statutory consultation planned for later in the process. We held this initial consultation to introduce HyNet North West and to listen to the public's views on our project ambitions. The consultation also set out our early proposals for the pipeline that will take CO<sub>2</sub> emissions from the hydrogen plant and existing industries in the Ince and Stanlow area to be stored in depleted gas reservoirs in Liverpool Bay.
- 1.2.2. As part of our consultation, we set out an overview of the project, including the different carbon dioxide pipeline route options we have identified. During the consultation we captured public and stakeholder feedback on these early proposals and to help inform the ongoing designs of the route options.

### **1.3. PURPOSE OF THIS DOCUMENT**

- 1.3.1. This report contains a summary of the scope of the consultation including outlining the route options and the HyNet message. It also contains details of how we engaged with the public and how we analyse the feedback received. Finally, the report analyses the feedback received on HyNet's ambitions and the route feedback.

## 2. SCOPE OF THE CONSULTATION

---

### 2.1. INTRODUCTION

2.1.1. We are currently in the stage of identifying a suitable route for the new carbon dioxide pipeline to follow whilst also building awareness of, and engagement with, the ambition of HyNet North West to create a net zero region in the North West.

### 2.2. ROUTE OPTIONS

2.2.1. The carbon dioxide pipeline will comprise of two parts: the construction of a new underground pipeline, which then connects with an existing natural gas pipeline that will be repurposed to transport CO<sub>2</sub>.

2.2.2. We identified potential routes through a staged approach of research and studies. We firstly considered wide ‘corridors’ (broad areas of land) where the pipeline could be located. See Figure 2-1. We then assessed various options within these corridors, scoring them against a set of criteria, to identify two potential route options for consultation. Option I and Option G scored highest in this evaluation process. (See Figure 2-2 below). This consultation looked to gather views on these proposals from the public.

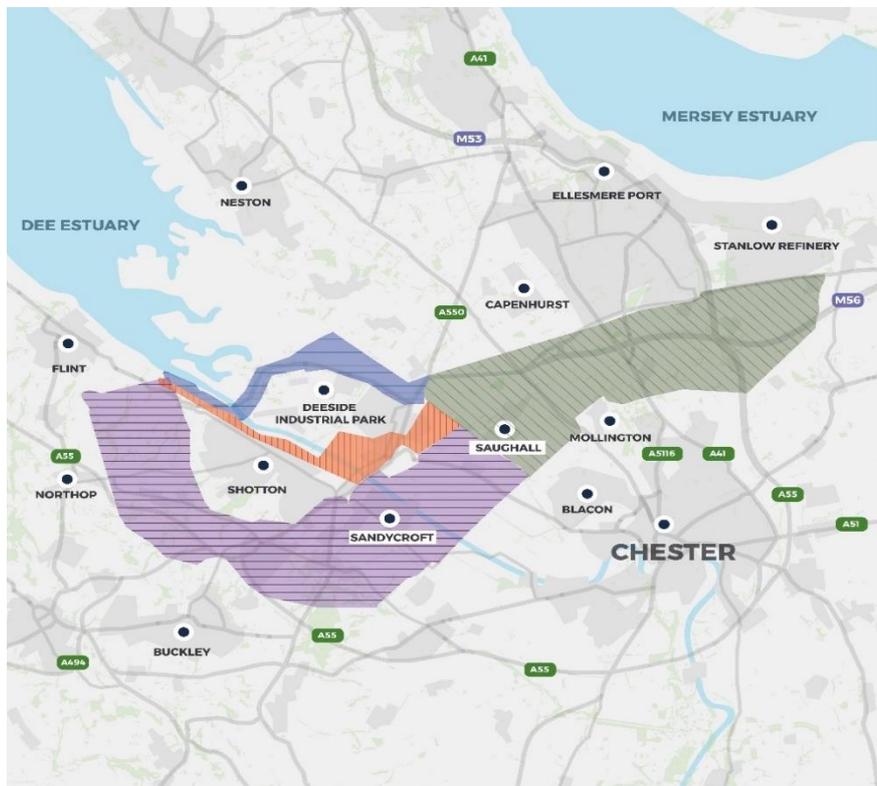
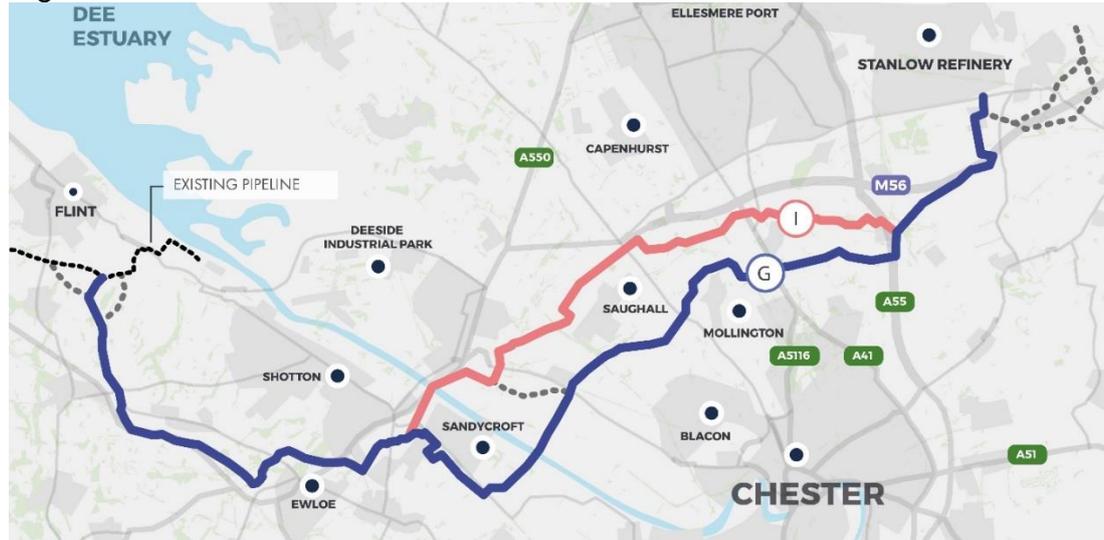


Figure 2-1 – Carbon Dioxide Pipeline Strategic Corridors

Figure 2-2 –



**Figure 2-2 – Carbon Dioxide Pipeline Route Options**

2.2.3. The routes separate between the River Dee and the M53. Option G (coloured blue in Figure 2-2) takes a more southerly route, running to the south of Saughall and the north of Mollington. Option I (coloured pink in Figure 2-2) takes a more northerly route, to the north of Saughall and Backford.

2.2.4. Option G and Option I share some similarities, but also have some important differences for consideration. For further detail see the consultation brochure.

## 2.3. PIPELINE VARIATIONS

2.3.1. There are also some variations to consider which could be applied to either of the two route options. These include options for how the routes connect into the existing pipeline, as well as an alternative crossing location for the River Dee.

### CONNECTION TO EXISTING PIPELINE NEAR CONNAH'S QUAY VARIATION

2.3.2. This variation to the connection to the existing pipeline South of Flint will determine the location of the above ground installation. In this consultation we considered three different locations; A connection close to the A5119, connection close to Coed Onn Road / Allt-Goch Lane or connection close to Leadbrook Drive. Pictured in Figure 2-3.

## RIVER DEE CROSSING VARIATION

- 2.3.3. The variation we are considering means that Option G could use the cross-over to divert and cross the River Dee at the same location as Option I and the same in the alternative direction. Pictured in Figure 2-3.

## CONNECTION FROM STANLOW TO INCE

- 2.3.4. We have also developed two route options for the new carbon dioxide pipeline which will run between the Stanlow Refinery and Ince Industries. Pictured in Figure 2-3.



Figure 2-3 – Carbon Dioxide Pipeline Route Variations

## 2.4. HYPNET NORTH WEST'S AMBITIONS

- 2.4.1. Alongside the route proposals we also used this consultation to promote HyNet's ambitions to create a net zero region in the North West and North Wales
- 2.4.2. HyNet will benefit the North West and North Wales in many ways. Environmental benefits include reducing carbon emissions by 10 million tonnes a year by 2030, providing 50% of the UK's total hydrogen needs, and delivering 80% of the UK's clean power target for transport, industry and homes by 2030.
- 2.4.3. From an economic standpoint HyNet would provide benefit: providing an additional 6000 local jobs to the region, supporting up to 75,000 jobs across the UK by 2035 and generating up to £17 billion for the local region by 2050.
- 2.4.4. This consultation set out to gather the public's views on HyNet's ambitions, particularly on the future use of carbon capture and storage as well as the future use of hydrogen.

## 3. PROCESS OF CONSULTATION

---

### 3.1. CONSULTATION OBJECTIVES

3.1.1. The objectives of this non-statutory consultation are to support the development of the carbon dioxide pipeline and to promote the vision and ambitions of HyNet. The focus of the consultation activities was on delivering the following outcomes:

- Explaining the rationale behind the carbon dioxide pipeline route options, and their benefits and dis-benefits.
- To raise awareness of the HyNet project and encourage engagement in the process.
- To inform the local community of the designs and seek views from across all sections of the community to help shape the project being taken forward to statutory consultation.

### 3.2. CONSULTATION MATERIALS AND CHANNELS

3.2.1. The consultation was open from 9 June to 11 July 2021. A range of channels were used to raise awareness of the consultation exercise and encourage participation:

#### **HYNET HUB**

3.2.2. Information about the consultation was published on a dedicated interactive consultation portal called the HyNet Hub, at web address [REDACTED]. This URL was included on all the channels listed below. It was also linked from a tab on the main HyNet website [REDACTED] under a tab 'tell us your thoughts'. The portal provided the following information:

- Information on the HyNet North West project.
- Details on the proposals being considered, accompanied by an information video, webinar sign up, brochure and survey.
- Details on HyNet's ambition to create a net zero region.
- Details on carbon capture and storage, including an animation.
- Details on hydrogen.

3.2.3. The HyNet Hub was designed to guide people through distinct topic areas, helping to provide a step-by-step explanation of this complex project, as well as providing 'bite-size' questionnaire sections for people to provide their feedback. This allowed visitors more freedom to find the information that was of most interest to them, giving consultees the opportunity to 'pick

and choose' which aspects of the consultation they want to provide feedback on.

- 3.2.4. The Hub included a variety of information and materials which were designed specifically to cater to different levels of interest and detail. This included animations and videos for strategic overviews, as well as more detailed brochures and factsheets for those were interested in more specific aspects of the proposals.

### **SURVEY/FEEDBACK MAP**

- 3.2.5. In order to collect feedback from the public, the HyNet Hub included a series of surveys targeted at gathering views on different aspects of HyNet and the carbon dioxide pipeline route options. Respondents were able to select which of these elements of the consultation they wanted to respond to. These topics covered:

- Creating a net zero region.
- Carbon capture.
- Hydrogen.
- Our current consultation (carbon dioxide pipeline route options).

- 3.2.6. The Hub also included an interactive feedback map section. This allowed respondents to provide location-specific comments on the carbon dioxide pipeline route options. The comments were categorised as; "Something I like", "Something that is important to me" and "Something I would change".

- 3.2.7. All feedback from the survey and feedback map has been analysed and reported in Section Analysis of responses<sup>4</sup> of the report.

### **CONSULTATION BROCHURE AND FACTSHEETS**

- 3.2.8. On the HyNet Hub there were a series of consultation materials available, including factsheets, for more detailed information on different aspects of HyNet including: carbon capture and storage, hydrogen, the hydrogen economy, consents and net zero.

- 3.2.9. There was also a brochure which included detailed information on the consultation, route options, construction considerations and early understanding of environmental impacts.

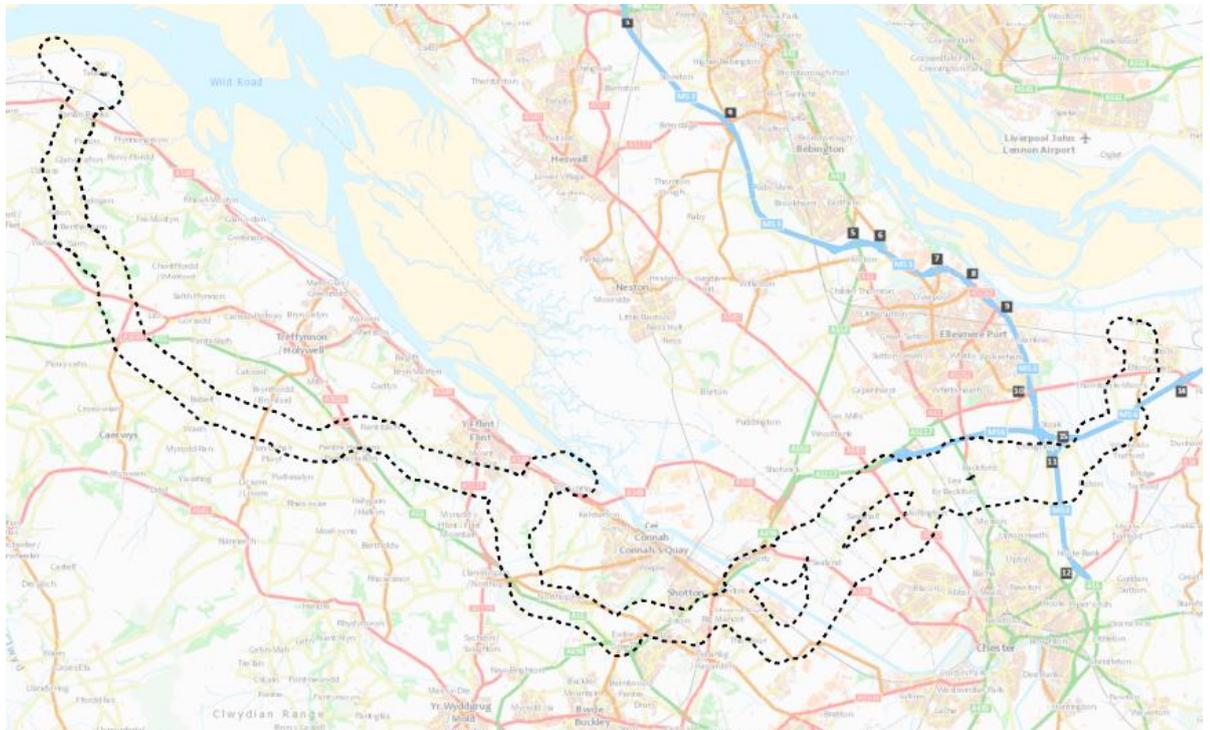
### **STAKEHOLDER EMAIL**

- 3.2.10. Emails and letters were sent to stakeholders on 9 June 2021 (outlined in Appendix A) to inform them of the consultation exercise and encouraging them to provide their feedback on the proposals, as well as to share the details of the consultation among their networks. Any key stakeholder we did not have an email address for was sent the letter to their postal

address. Two stakeholders were contacted by post in this way. This email enabled us to communicate with: healthcare and education sectors, transport operators and professional road user groups (e.g. bus operators and Royal Mail), environmental bodies, emergency services and other relevant stakeholders.

### **COMMUNITY POSTAL MAIL-OUT**

- 3.2.11. A letter was also issued to the local community surrounding the carbon dioxide pipeline proposals. Similar to the stakeholder letter, this introduced the HyNet project and encouraged participation in the consultation. This letter was sent to residents and businesses within 500m of the new carbon dioxide pipeline route options and the existing pipeline. 9,942 letters were distributed. Please see Figure 3-1 for detail of this.



**Figure 3-1 - Postal Distribution Area**

### **SOCIAL MEDIA**

- 3.2.12. HyNet has its own social media accounts including on Facebook, Twitter and LinkedIn, which were used to raise awareness of the consultation period and publish up to date project information. The Facebook account was launched for the purpose of public engagement during this consultation, this platform allowed us to engage with communities through targeted sponsored posts. A series of posts were made before, during and after the consultation period providing a summary of each of the proposals, myth busting videos and background on the HyNet project.

Tailored assets such as images, infographics and video snippets were created for each post to increase engagement. Each post encouraged readers to follow the link to the consultation website where they could find out more information and complete the surveys. This also included interaction with other accounts: retweeting, sharing, liking and commenting on other relevant project news. Please see Figure 3-2 for examples of posts.



**Figure 3-2 - Example Social Media Posts (Facebook and Twitter)**

## WEBINAR

3.2.13. The project team hosted a series of webinars which could be booked via Eventbrite. These were held via Zoom on:

- Saturday 19 June, 2.30pm – 3.30pm
- Tuesday 22 June, 6pm – 7pm
- Thursday 1 July, 10am – 11am

3.2.14. Each webinar included a presentation from the project team on the project and the purpose of the consultation, followed by a Q&A session for the project team to answer questions from the public. The presentation can be found in Appendix B.

## BRIEFINGS

3.2.15. Prior to the start of the consultation, briefings were held with local elected representatives within the project area, including council officers and community / parish councillors. This presented an overview of HyNet, the carbon dioxide pipeline route options and consultation. The briefings

allowed the opportunity to ask the project team any questions they had prior to the consultation starting. These were held on 7 and 8 June 2021 via Microsoft Teams. The presentation can be found in Appendix C.

### **CONTACT CHANNELS**

- 3.2.16. Multiple contact channels were available for the public to communicate with the project team. This included an email address [REDACTED] Freepost address and phone number. The team could also be contacted through the HyNet Hub channel. These channels were monitored daily and enquires received were responded to by the relevant members of the project team.

### **ACCESSIBILITY AND COVID-19**

- 3.2.17. Due to COVID-19 restrictions, this initial consultation was primarily held online, using the HyNet Hub and digital events. No in-person events were held. To ensure that there were opportunities to participate in a non-digital format, all consultation materials were available in hard copy by request. This was made clear throughout all briefings and the postal mail-out which was issued to the community. Responses and discussions by phone and freepost were also welcomed if preferred.
- 3.2.18. Welsh versions of all consultation materials were available (online and hard copies upon request). A Welsh translator was present at the Tuesday webinar and this was advertised to enable Welsh speakers to choose to attend this event if they wished.

## **3.3. METHODOLOGY OF COLLECTING/ANALYSING FEEDBACK**

- 3.3.1. The sections on the HyNet Hub website covered different elements of the project and each included its own survey. These sections included: creating a net zero region, hydrogen production, carbon capture and storage and information on the carbon dioxide pipeline route options. Respondents were able to provide responses to one or more of these sections; they were not required to respond to every section to submit their feedback.
- 3.3.2. The questions in these surveys included closed questions (with set responses to select) and open questions (free-text responses for respondents to provide written comments). The feedback map also allowed for respondents to provide location-specific comments in a free-text response.
- 3.3.3. Responses were also accepted via letter and email. These were coded in the same way as the open question responses on the survey.

### **CLOSED QUESTION ANALYSIS**

- 3.3.4. The majority of questions within the survey were closed questions, where respondents could choose one or more answers from a specific list or a slider scale. The data from these responses have been analysed and are presented in Section 5 below.

### **OPEN QUESTION ANALYSIS**

- 3.3.5. The surveys contained multiple open questions inviting free-text responses. These asked participants a series of questions including:
- Any key issues, concerns or interests with HyNet North West.
  - Anything further they would like to know about HyNet North West.
  - Which aspects of hydrogen production they are most interested in.
  - Which aspects of carbon capture, transport and storage they are most interested in.
  - Which aspects of the construction and operation of the carbon dioxide pipeline they are most interested in.
  - Any general comments they have on the current consultation.
- 3.3.6. These responses were analysed through a process called 'coding' to identify common high-level themes. The codes were then analysed quantitatively to identify the most frequently recurring issues and comments. A copy of the list of codes can be found in Appendix D.
- 3.3.7. The feedback map was also analysed using the same coding process. To analyse location-specific comments, the feedback map was split into 14 separate sections, each section given a separate code. A copy of this map can be found in Appendix D.
- 3.3.8. The results of the coding are presented in Section 5. Responses to the comments and queries raised during the consultation are responded to in Section 6.

## 4. ANALYSIS OF RESPONSES

---

### 4.1. RESPONSE TOTALS

- 4.1.1. There were over 2,200 visitors to the HyNet Hub during the consultation. A total of 60 survey responses were received over the course of the consultation, in addition to 56 comments pinned onto the interactive map and seven responses sent in by email. The difference in numbers between the website visitors and number of consultation responses indicates that a majority of visitors may have been content or neutral with regards to the information provided, and therefore less inclined to provide written feedback. No responses were received by post or telephone.

**Table 1: Total number of responses**

Response type	Count
Survey responses	60
Feedback map responses	56
Email responses	7
<b>Total number of responses:</b>	<b>123</b>

- 4.1.2. One respondent may have provided both a survey response and a comment on the feedback map. We have considered these separately as part of our analysis.
- 4.1.3. As mentioned in Section 3.3 above, respondents were able to select which sections of the survey they wanted to respond to. Please see **Error! Reference source not found.** for a summary of the total number of respondents to each section of the survey. Respondents were able to respond to more than one survey section, and were not required to respond to all of them.

**Table 2: Number of respondents to survey sections**

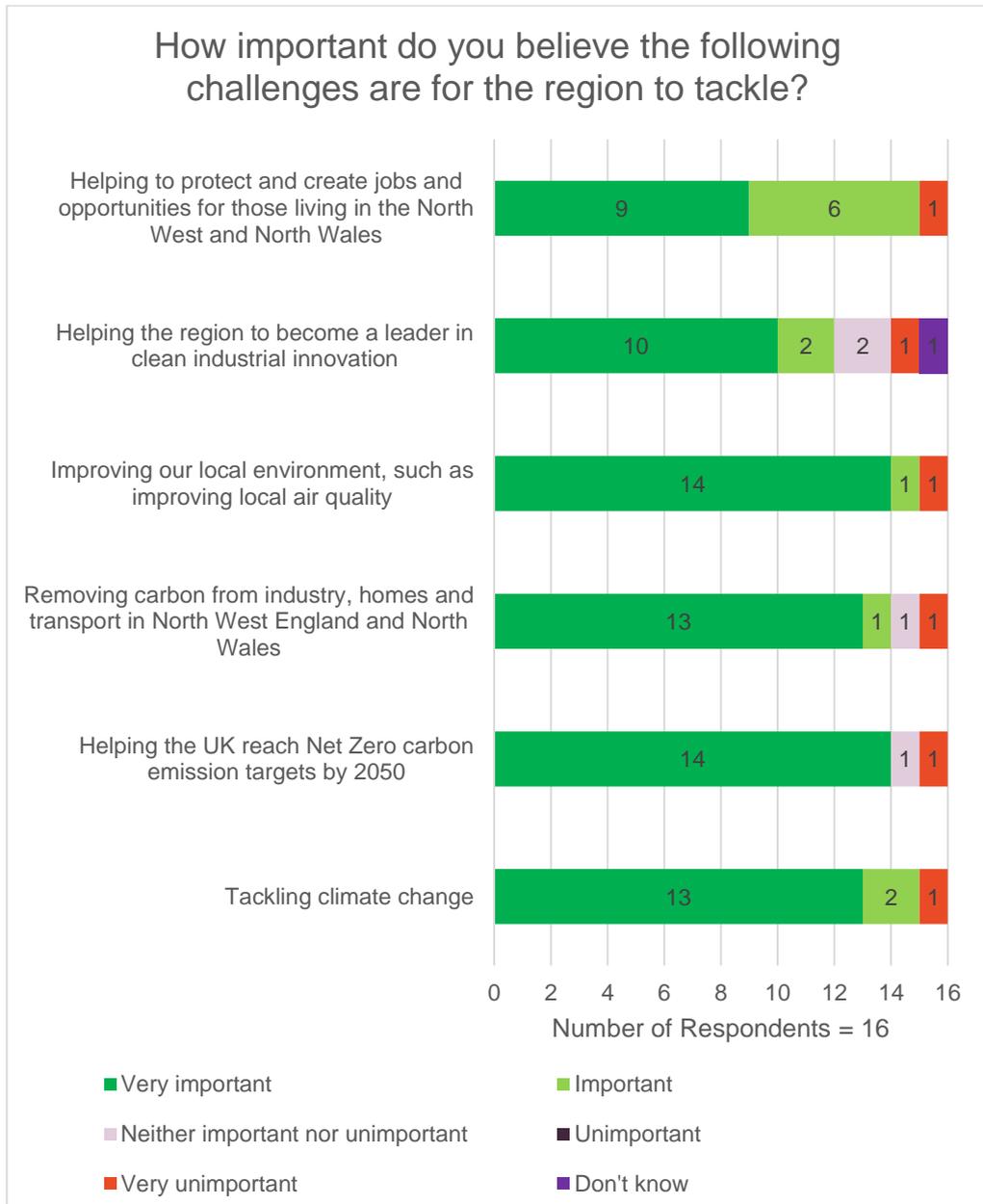
Survey Section	Total number of Respondents
Creating a net zero region	16
Hydrogen	16
Carbon Capture and Storage	13

<b>Our current consultation (CO<sub>2</sub> pipeline proposals)</b>	33
---	----

## **4.2. HYPNET NORTH WEST'S AMBITIONS**

4.2.1. One of the main objectives for this consultation was to outline HyNet's ambition to help the North West become a net zero region. Three sections of the HyNet Hub enabled respondents to provide their views on these ambitions specifically on three key areas: creating a net zero region, carbon capture and hydrogen production. This section outlines the responses to these ambitions.

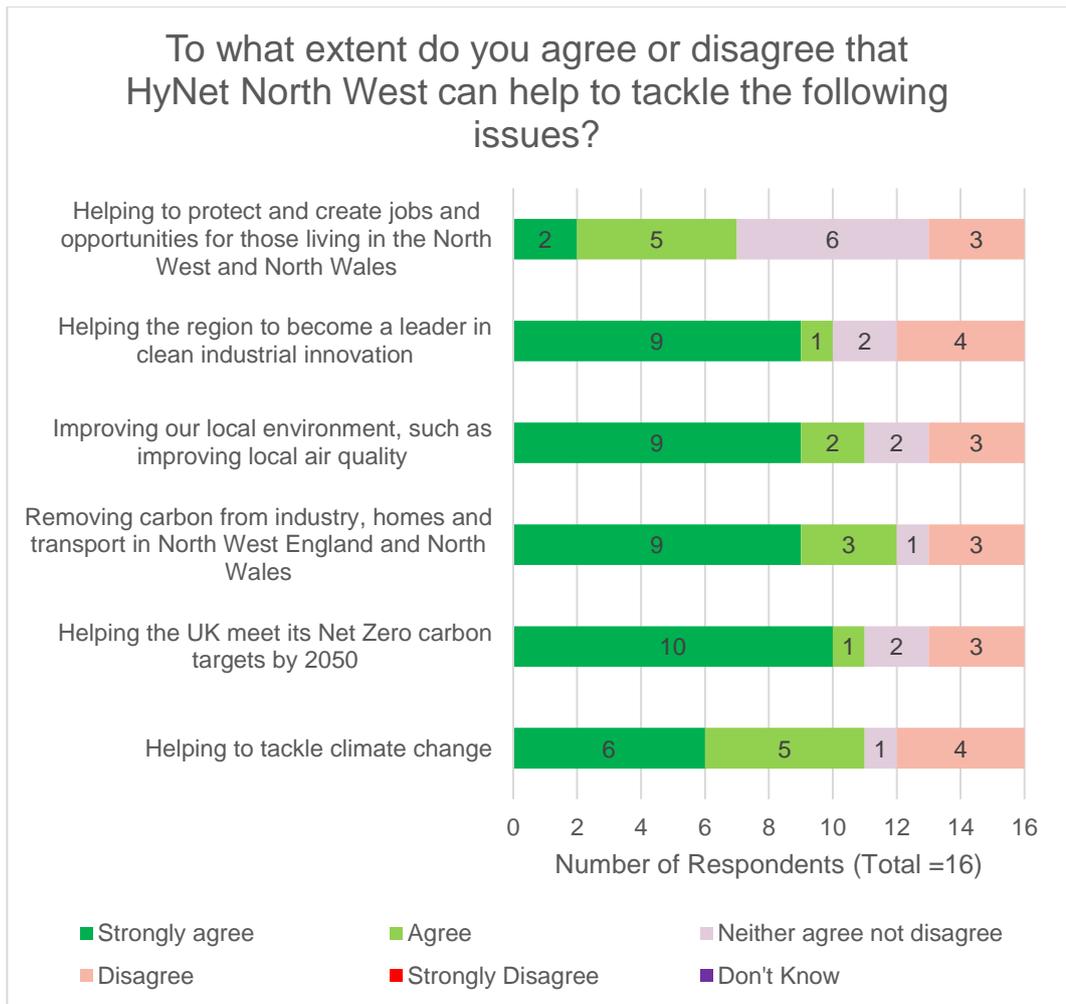
## CREATING A NET ZERO REGION



**Figure 4-1 – Regional Challenges**

4.2.2. The above Figure 4-1 outlines, in line with HyNet’s ambitions, the challenges the region faces. It is clear that many respondents believe the above challenges are important to tackle. All six issues were rated as either important or very important by at least three-quarters of respondents.

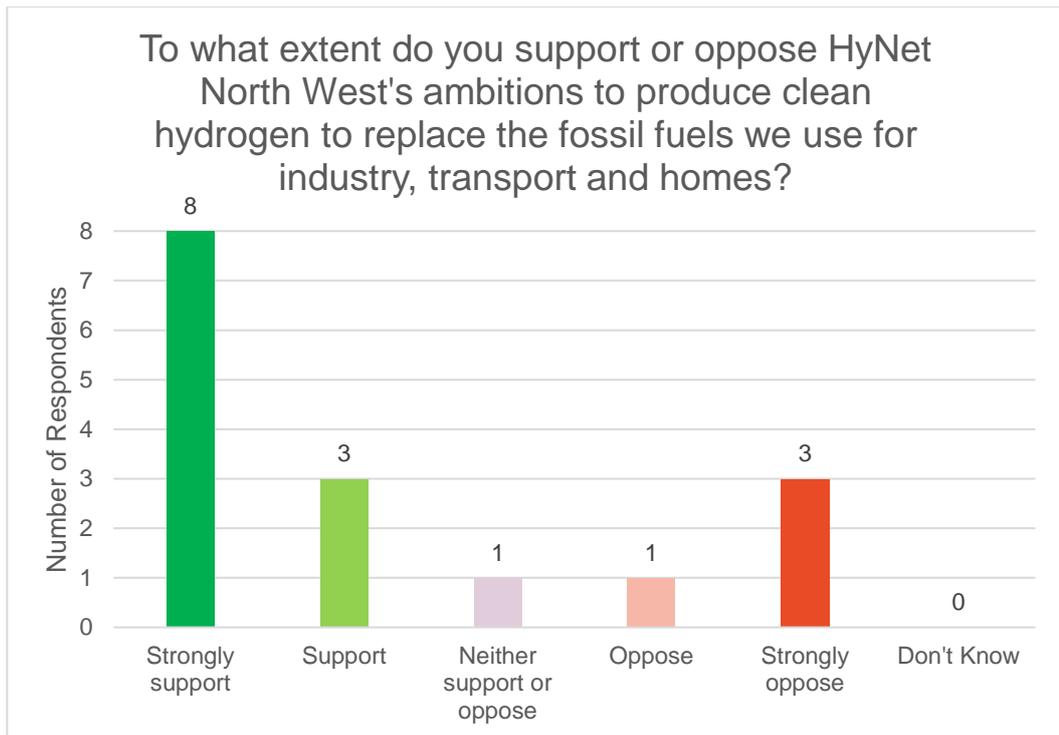
4.2.3. In the above question no respondents selected the “unimportant” option. If the colour stated in the legend does not appear in the cluster graph, no respondents selected that option.



**Figure 4-2 – HyNet North West’s ambitions**

4.2.4. Figure 5-2 above outlines the extent to which the respondents agree with the project’s ability to tackle the above challenges. There is a strong agreement across the board with the highest being 75% either strongly agreeing or agreeing that HyNet is able to remove carbon from industry, home and transport. The lowest is 44% who either strongly agree or agree that HyNet can help protect jobs and opportunities. HyNet’s ability to help protect and create jobs and opportunities for those living in the North West and North Wales received a mixed result with 38% saying they neither agree nor disagree. 25% also disagreed with HyNet’s ability to help tackle climate change and help the region become a leader in clean industrial innovation.

4.2.5. In the above question no respondents selected the “don’t know” or the “strongly disagree” option.



**Figure 4-3 – Support for HyNet North West’s ambitions**

4.2.6. Figure 5-3 above outlines to what extent the respondents support or oppose the project’s ambition to replace fossil fuels with clean hydrogen. 69% of respondents either support or strongly support this ambition for clean hydrogen. However, 19% of respondents strongly opposed the use of clean hydrogen for industry, transport and homes.

**KEY ISSUES TO CONSIDER AS PART OF HYNET NORTH WEST**

4.2.7. Respondents were asked if there are any other key issues they felt should be considered as part of HyNet North West. A total of five respondents provided a response to this question. 2 responses discussed potential issues with the usability of hydrogen, for example, hydrogen being hard to use or that HyNet should not use it. One response discussed doubts that climate change existed. Negative impacts brought on by HyNet mentioned in the comments included: impact on environment, soil, biodiversity, wildlife, or marine life (two responses), impact on air quality (one response) and impact on the village/people/buildings (one response).

**ANYTHING MORE YOU WOULD LIKE TO KNOW ABOUT HYNET NORTH WEST**

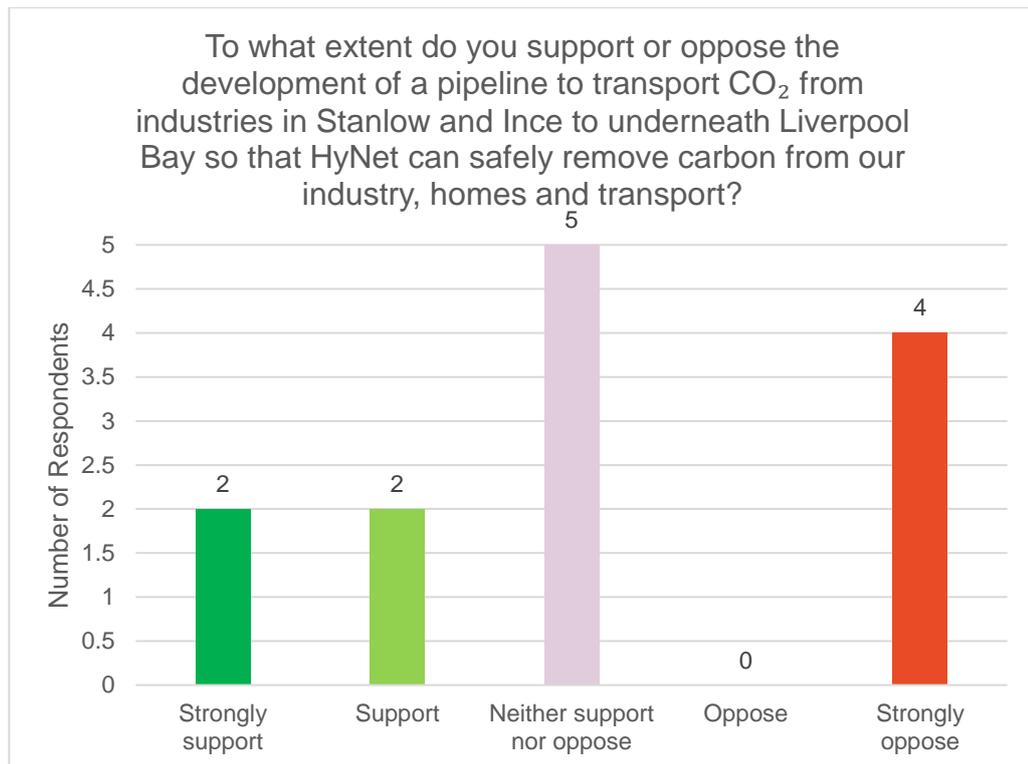
4.2.8. Respondents were asked if there was anything more they would like to know about HyNet North West. Four responses were received to this question. Two responses requested more information around funding for the project and purchase of shares, the long-term storage of carbon

dioxide as well as the project HyNet is basing that storage on. The answers for these can be found in section 6.

4.2.9. This feedback and noted areas of interest will help to inform later stages of consultation for the project and the supporting details we produce for the public.

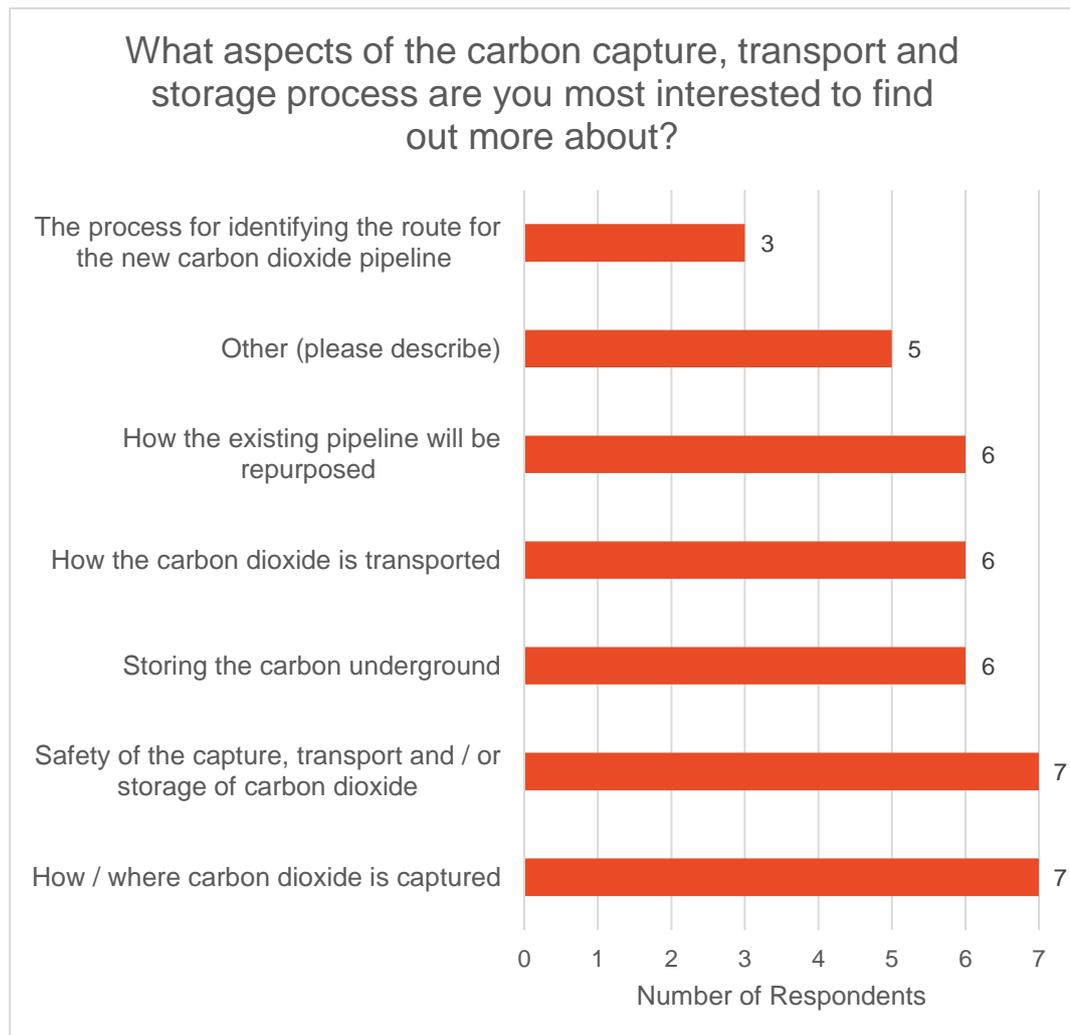
### CARBON CAPTURE – LOCKING UP CARBON DIOXIDE

4.2.10. This section of the HyNet Hub allowed respondents to provide feedback and comment on the process of carbon capture and storage as well as how it applies to HyNet North West.



**Figure 4-4 – Extent of Support for carbon dioxide pipeline**

4.2.11. The Figure 4-4 above outlines the responses on the transportation of carbon dioxide by pipeline from Stanlow and Ince to Liverpool Bay. 41% of respondents said they neither supported nor opposed the development of a carbon dioxide pipeline. This might suggest that more information is needed for the public to make an informed decision. 33% of respondents said they strongly opposed the transportation of carbon dioxide.



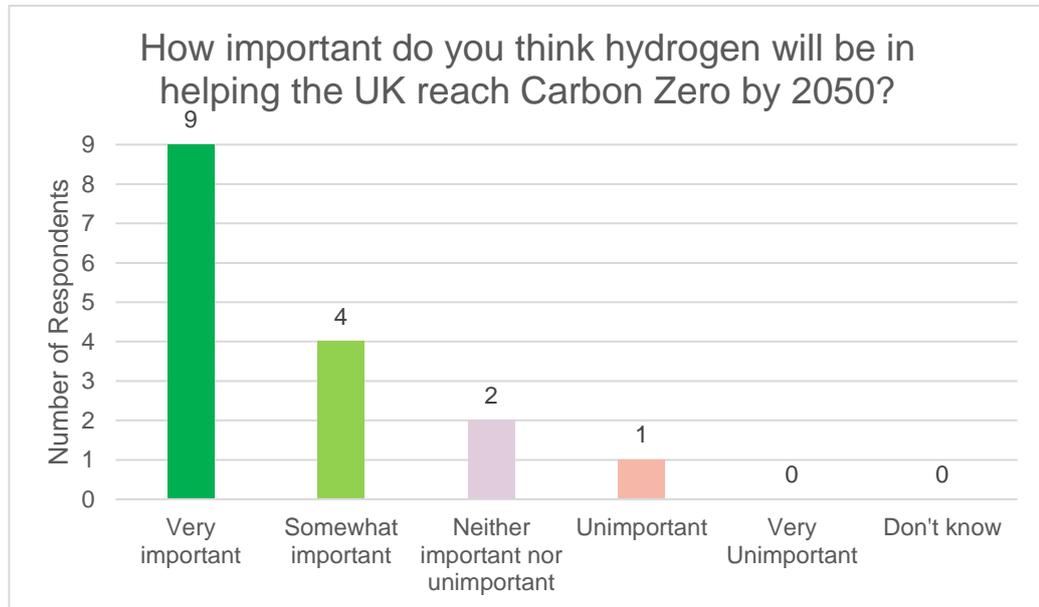
**Figure 4-5 – What area of Carbon are you most interested in?**

- 4.2.12. The Figure 4-5 above outlines the aspects of carbon capture, transport and storage that respondents are most interested in finding out about. In this question respondents could select more than one choice.
- 4.2.13. Seven respondents requested more detail on the “safety of the capture, transport and / or storage of carbon dioxide” and “how / where carbon dioxide is captured”. The respondents were the least interested in “the process for identifying the route for the new carbon dioxide pipeline” with only three respondents selecting that option.
- 4.2.14. Other areas of interest included requests for information on the energy costs involved in carbon capture and storage, the process of maintenance and the safety of carbon capture and storage. Hydrogen was another area of interest with questions such as: “how are you extracting the hydrogen in the first place?” and “What produces the CO<sub>2</sub>/carbon”. This feedback and

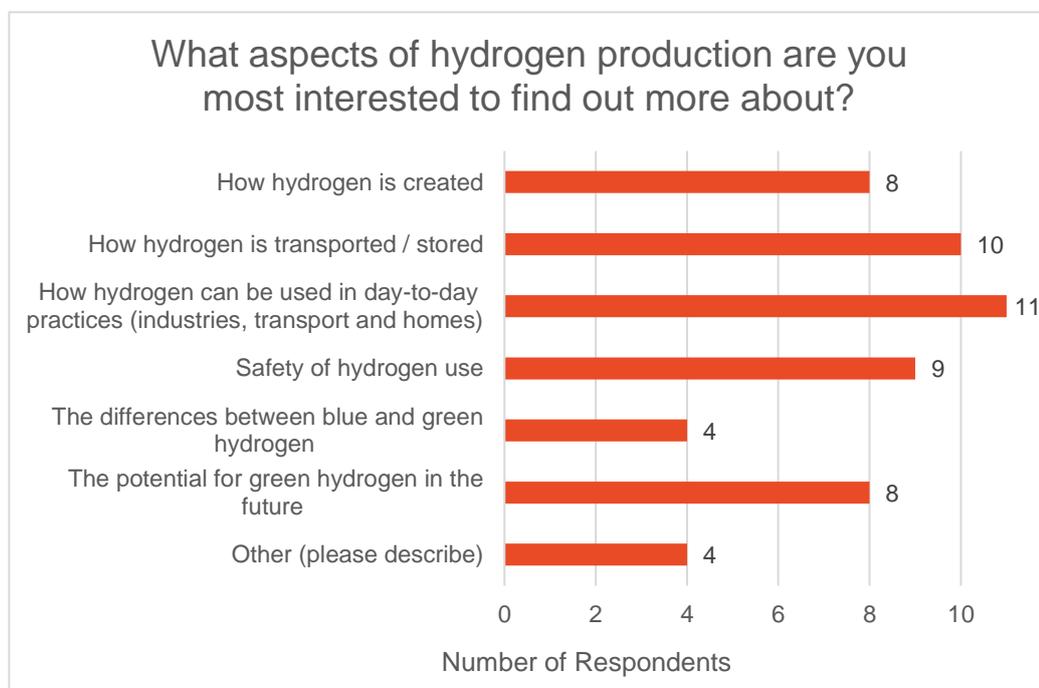
noted areas of interest will help to inform later stages of consultation for the project and the supporting details we produce for the public.

## HYDROGEN – POWERING A CLEANER FUTURE

4.2.15. This section of the survey provided respondents the opportunity to provide feedback and comment on the use of hydrogen as well as how it applies to HyNet North West.



**Figure 4-6 – How important is hydrogen?**



**Figure 4-7 – What aspects of hydrogen are you most interested in?**

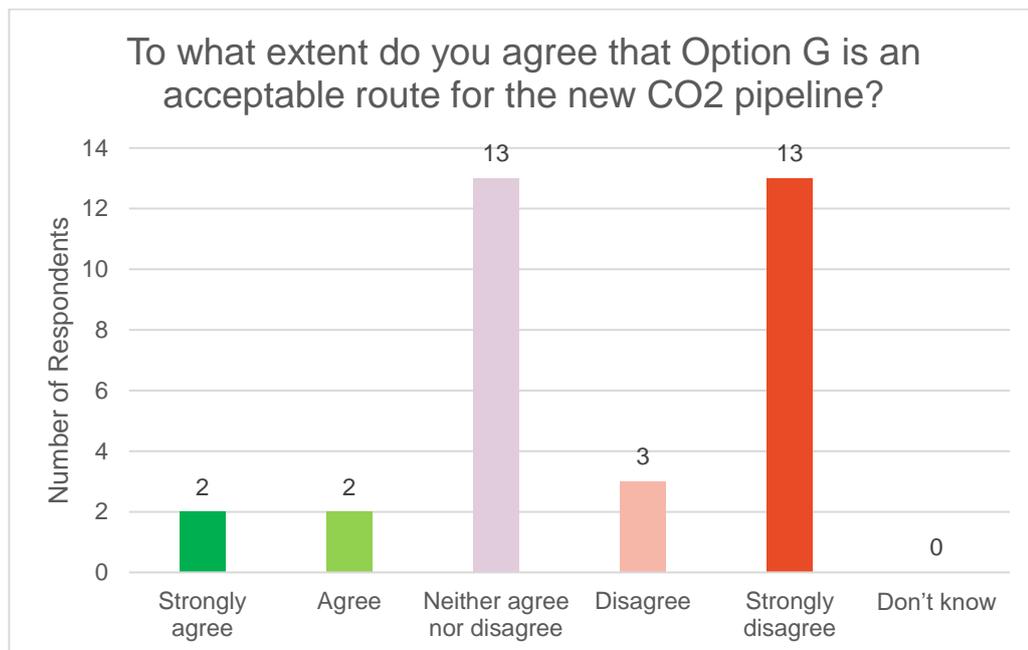
- 4.2.16. Figure 4-6 outlines how important respondents believe hydrogen will be in helping the UK reach Carbon Zero. There is strong support for this as 56% said they thought it will be very important and 13% said they thought it will be somewhat important. Only 7% believe that hydrogen will be unimportant in helping the UK reach Carbon Zero.
- 4.2.17. Figure 4-7 above outlines the aspects of hydrogen that respondents are most interested in. In this question respondents could select more than one choice. Topics of most interest were around how hydrogen can be used in day-to-day practices (ten respondents), how hydrogen is transported and stored (nine respondents), the safety of hydrogen use (nine respondents) and how hydrogen is created (eight respondents).
- 4.2.18. Other noted areas of interest included plans to switch to green hydrogen, requests for more information about the production of hydrogen, how utilising hydrogen will affect the value of energy to the customer and the hydrogen economy.

### 4.3. CARBON DIOXIDE PIPELINE ROUTE OPTIONS FEEDBACK

4.3.1. This section of the survey asked respondents to provide their feedback on the route options put forward for the new carbon dioxide pipeline, including the potential variations. The below analysis combines the feedback collected through the survey and the feedback map.

#### FEEDBACK ON OPTION G

4.3.2. The below section outlines public opinion of Option G route.



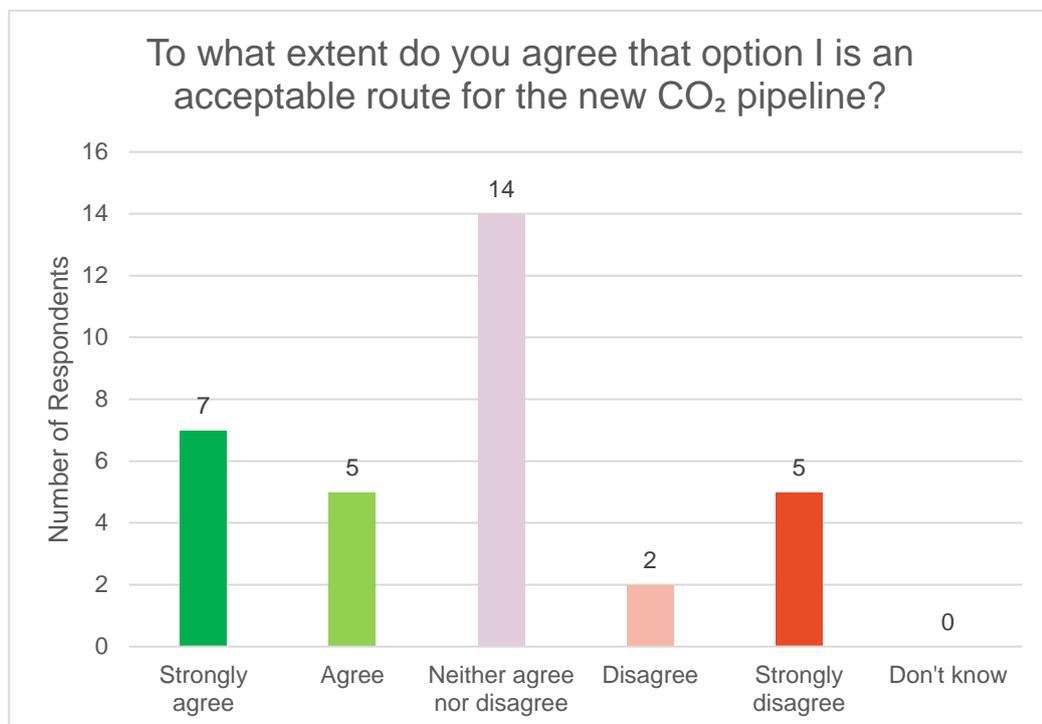
**Figure 4-8 – The extent to which respondents agree with Option G**

4.3.3. Figure 4-8 above outlines whether the respondents felt that Option G is an acceptable route. A total of 16 respondents noted that they either disagree or strongly disagree it is an acceptable route. This is compared to four respondents that agree or strongly agree.

4.3.4. A total of 37 responses were pinned on the feedback map in proximity to Option G, these included 82 separate coded comments. 11% of comments mentioned the negative impact the project may have on buildings, villages and people. 6% of comments mentioned general support for option I and 4% mentioned general opposition to Option G. **Error! Reference source not found.** below shows a more detailed representation of the spread of coded comments from the feedback map. The codeframe can be found in Appendix D.

### FEEDBACK ON OPTION I

4.3.5. The below section outlines public opinion on the Option I route.



**Figure 4-9 – Agreement with Option I**

4.3.6. Figure 4-9 above outlines the respondents' opinions on Option I as an acceptable route for the new carbon dioxide pipeline. A total of 12 respondents either agree or strongly agree with Option I being an acceptable route compared to seven who either strongly disagree or disagree. 14 respondents neither agree nor disagree.

4.3.7. A total of 28 responses were pinned on the feedback map in proximity to Option I, consisting of 49 separate coded comments. 14% of comments

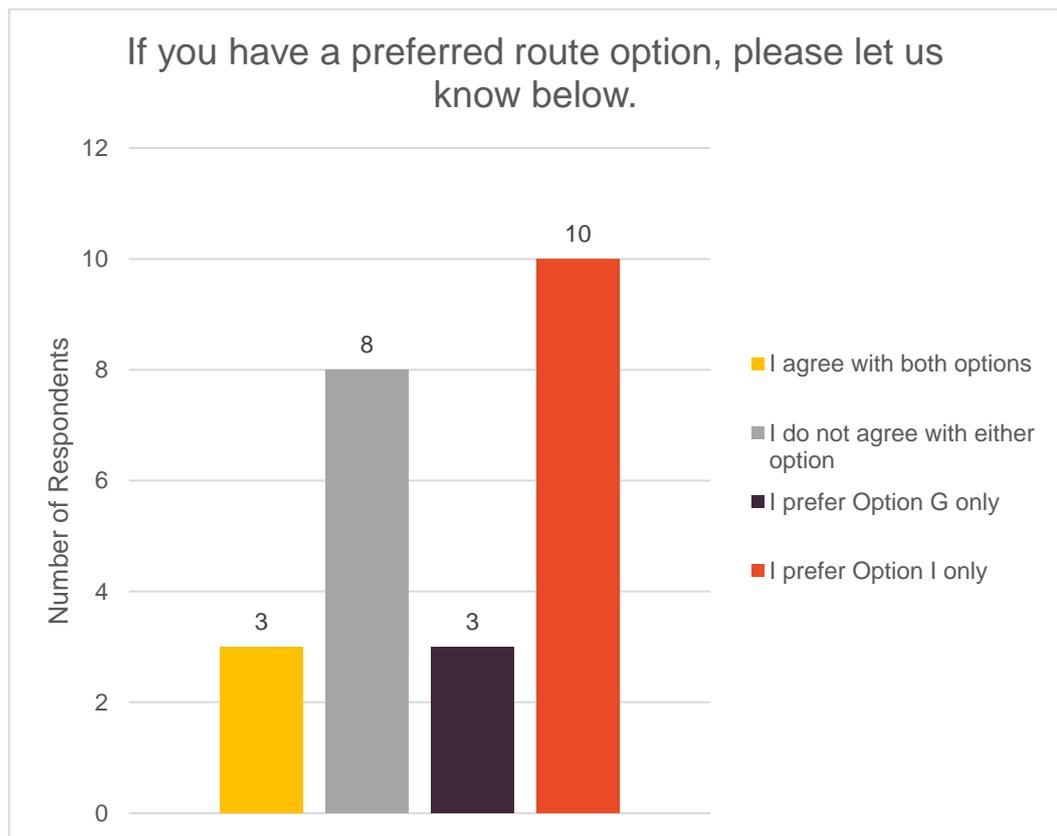
stated there will be a negative impact on Public Rights of Way (PRoW) along this route, including reference to the importance of safeguarding public paths, and noting the importance they play for people in the area. 14% of comments also suggested that a positive impact of the project could be the improvement of the land where the pipeline is laid, including comments on an opportunity to improve public facilities and paths.

4.3.8. Two responses also demonstrated support for Option I. Four responses described the use of existing infrastructure or a different route suggestion. These included:

- *“It looks like the route in this area is close to the old railway corridor. Would there be benefit in following this corridor more exactly?”*
- *“Is there an opportunity to make use of the proposed rebuilding of the A494 to provide the River Dee crossing?”*

### OVERALL ROUTE PREFERENCE

4.3.9. The below graph outlines the overall public opinion about the preferred route option.



**Figure 4-10 – Overall Preferred Route Option**

4.3.10. Figure 4-10 above details respondents’ preferences towards route options. Ten respondents stated they prefer Option I, compared to three

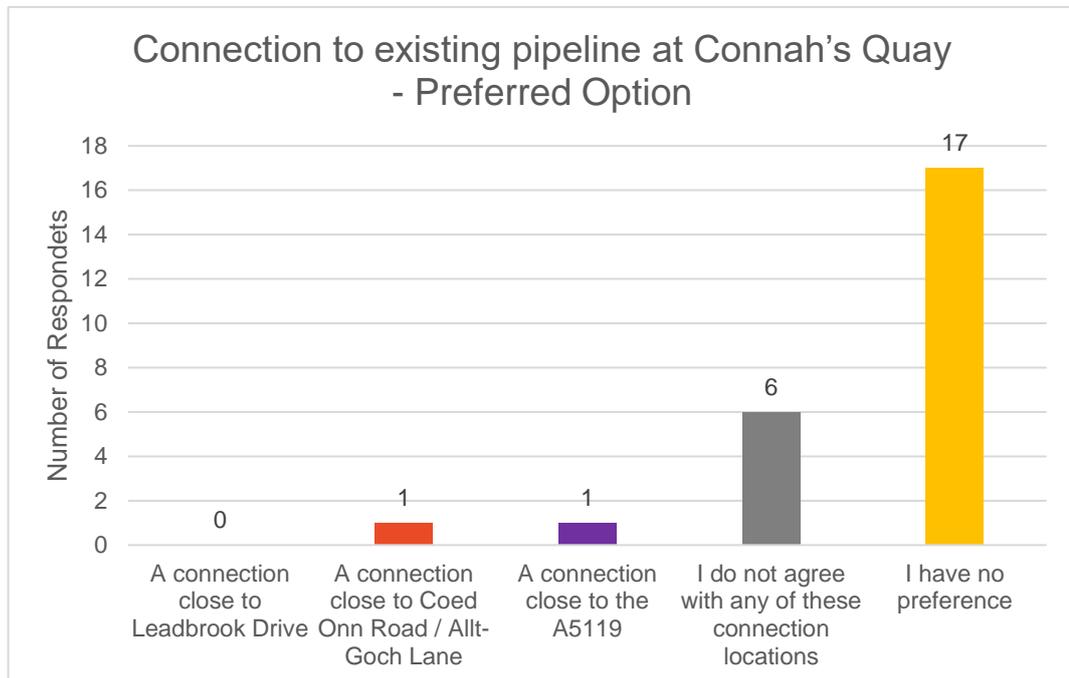
respondents preferring Option G. Eight respondents did not agree with either option.

4.3.11. Six out of 52 responses from the feedback map supported Option I whilst only two responses demonstrated opposition to Option G. This information and the information gathered in Figure 4-10 suggests preference for Option G among those responding to our consultation.

### ROUTE VARIATIONS FEEDBACK

#### Connection to existing pipeline near Connah’s Quay

4.3.12. The analysis below refers to the variation in the connection to existing pipeline south of Flint.



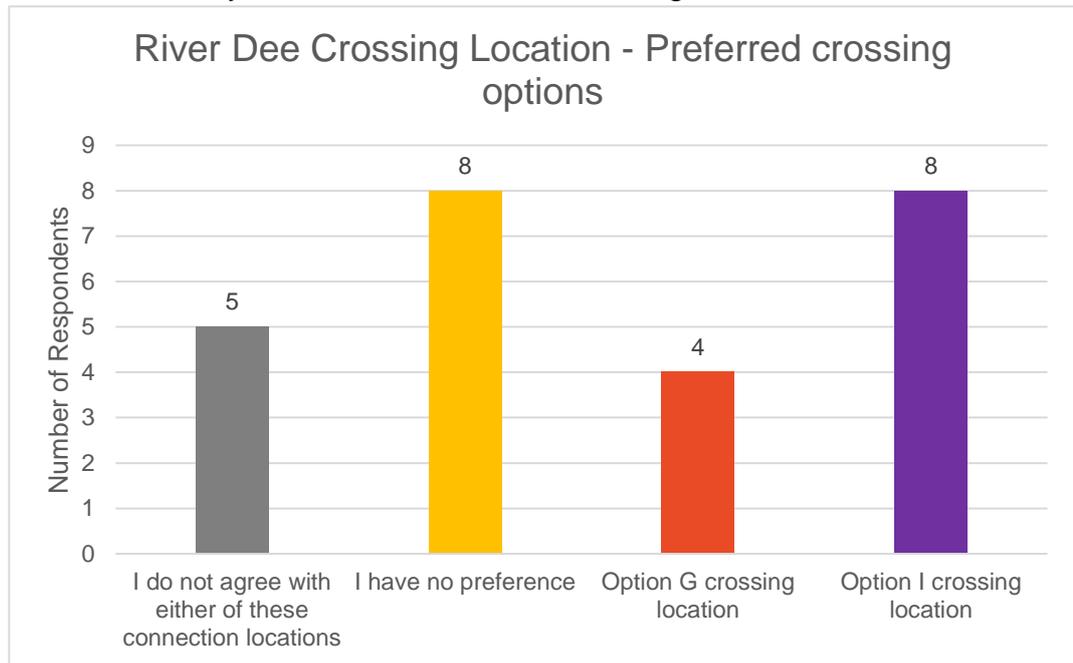
**Figure 4-11 - Connection to existing pipeline near Connah’s Quay - Preferred Option**

4.3.13. The above Figure 5-13 shows that there is little preference between the variations, with a majority of respondents stating they have no preference. No more than one respondent voted for each variation option. Six out of the 25 respondents said they did not agree with any of the connection locations.

4.3.14. A total of five responses were pinned on the feedback map in proximity to this location, consisting of 11 separate coded comments. 27% of comments mentioned the negative impact the pipeline will have on PRow. 27% of comments mention the impact on PRow specifically during construction.

### River Dee Crossing Location

4.3.15. The below analysis is of the River Dee crossing variation of the route.



**Figure 4-12 - River Dee Crossing Location - Preferred crossing options**

4.3.16. Figure 5-14 above demonstrates the preferences respondents have on the crossing between Option G and Option I. Eight out of 25 respondents agreed with the Option I crossing location, however, eight respondents also said they had no preference between the option G or I crossing location. Five of 25 respondents also said they didn't agree with either option.

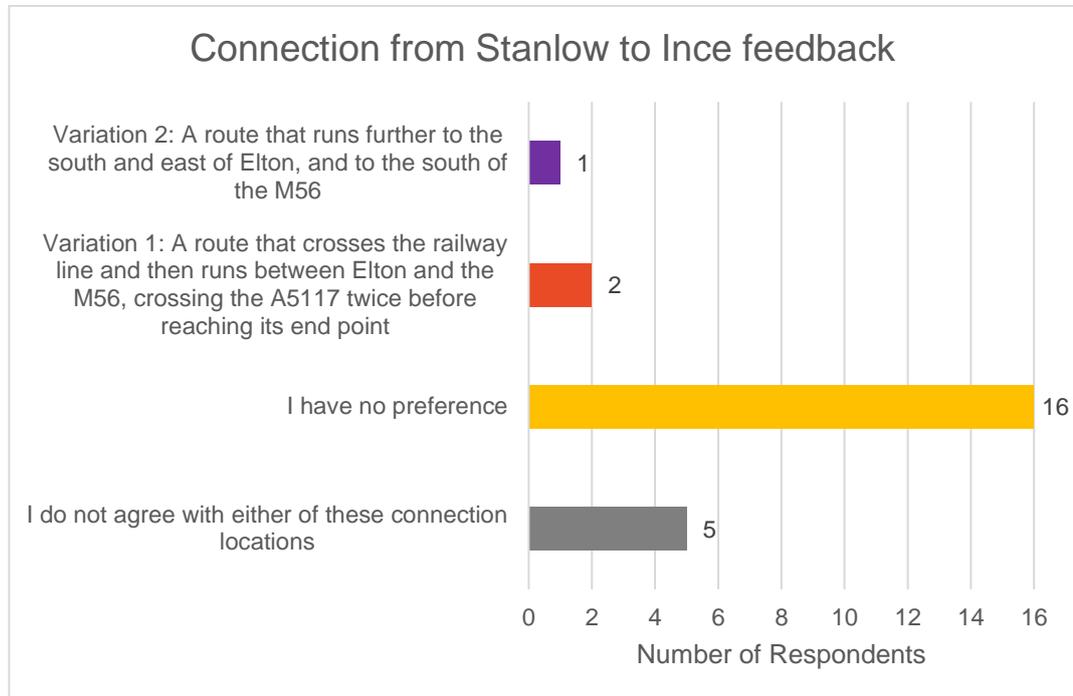
4.3.17. Eight responses were pinned on the feedback map in close proximity to the River Dee crossings, which consisted of 15 separate comments. 27% of comments mentioned the use of existing infrastructure or a suggested route option. These included:

- *“Is there an opportunity to make use of the proposed rebuilding of the A494 to provide the River Dee crossing?”*
- *“Would running the cross connection along the cycle path not be an easier option to progress?”*

4.3.18. 7% of comments mentioned negative impact on general environment discussing concern for “amount of green-field excavation”, as well as negative impact on floodplains and on PRow.

### Connection from Stanlow to Ince

4.3.19. The analysis below refers to the variation on how the pipeline will run between Stanlow Refinery and Ince Industries. **Error! Reference source not found.**



**Figure 4-13 – Connection from Stanlow to Ince Variation**

4.3.20. Figure 5-15 above outlines the respondents preference as to which variation is better on the Stanlow to Ince location. 16 out of 24 respondents said they had no preference between the two options, with five respondents saying they disagree with both options.

4.3.21. One comment was made on the feedback map in proximity to the connection with the existing pipeline at Connah’s Quay. This expressed concern about the impact the pipeline may have on the environment specifically the “Ince marshes”.

## 4.4. GENERAL COMMENTS

4.4.1. Respondents were also given the opportunity to provide wider and general comments through three open questions of the survey as well as the feedback map. The survey questions were:

- *We will be undertaking a series of studies to understand the potential impacts of the construction and operation of the CO<sub>2</sub> pipeline on the local area and, importantly, how we can include for ways to reduce, remove or offset those impacts as part of our design work. We will be looking at a variety of environmental and social aspects. Which of*

*these topics are you most interested in finding out more about? If other, please describe?*

- *Do you have any general comments or questions you would like to add about the CO<sub>2</sub> pipeline option or the alternatives within those options?*
- *Do you have any information which you feel would be useful for us to know as we progress with our studies?*

4.4.2. In the below analysis the responses received via email were also included.

4.4.3. Through the coding process, we have categorised these by their key themes. Responses to these various comments and issues can be found in Section 6 below.

### **CONSTRUCTION CONCERNS**

4.4.4. Many comments raised were in relation to the construction process and impacts when installing the carbon dioxide pipeline. In response to whether respondents had any general comments or questions, 4.9% of the comments mentioned the impact of the project on buildings and villages during construction this included reference to numerous locations. Several comments also stated concerns about the maintenance of the pipeline and the general impact of construction.

4.4.5. Another key construction concern raised throughout the survey responses and the feedback map related to the potential impact of construction on PRoWs. This included gaining “legal permissions to be obtained to divert paths temporarily during construction” also noting “white roads” and “green lanes” including “Accra Yr Vran track, Leadmills Drive, Starkey Lane, Croes Atti Lane”.

4.4.6. Responses also highlighted a concern for traffic impacts and access during the construction phase of the project. This includes concerns about the effect on traffic flow in the areas around the Chester Road both through towards Sandycroft and the Shotton end.

### **NEGATIVE IMPACTS OF THE PIPELINE**

4.4.7. Within all the general questions and the feedback map comments, respondents noted concern over the negative impact of the project on villages, people and buildings. These comments discussed the close proximity of the pipeline to houses and schools.

4.4.8. On the potential impacts questions the main concern is the impact of utilities including “Impacts on existing utility services- electricity, phone/broadband, drainage”. This code also occurs in the useful

information question including “You need to think harder about impacts on existing utility services”.

- 4.4.9. Other main concerns are the impact on the environment including comments relating to the negative impact on wildlife, marine life and biodiversity:
- *“Option G cuts across greenfield land which is abundant with wildlife”*
  - *“How much destruction of trees and habitat will there be for this new pipeline?”*
  - *“The pipeline is running through an environment which is full of wildlife trees and close to very rural housing communities.”*

- 4.4.10. Comments on the feedback map and the useful information question also highlighted the impact on PRowS including:
- *“Safeguard paths and any "unclaimed routes" eg Leadbrook Drive track?”*
  - *“This track from Flint Mountain to Flint is a well-used track, but not yet recorded as a "public path or bridleway". A claim has been pending with FCC since 1996. Please treat as a "public right of way". Minimise disturbance during construction etc.”*

## **SUGGESTIONS**

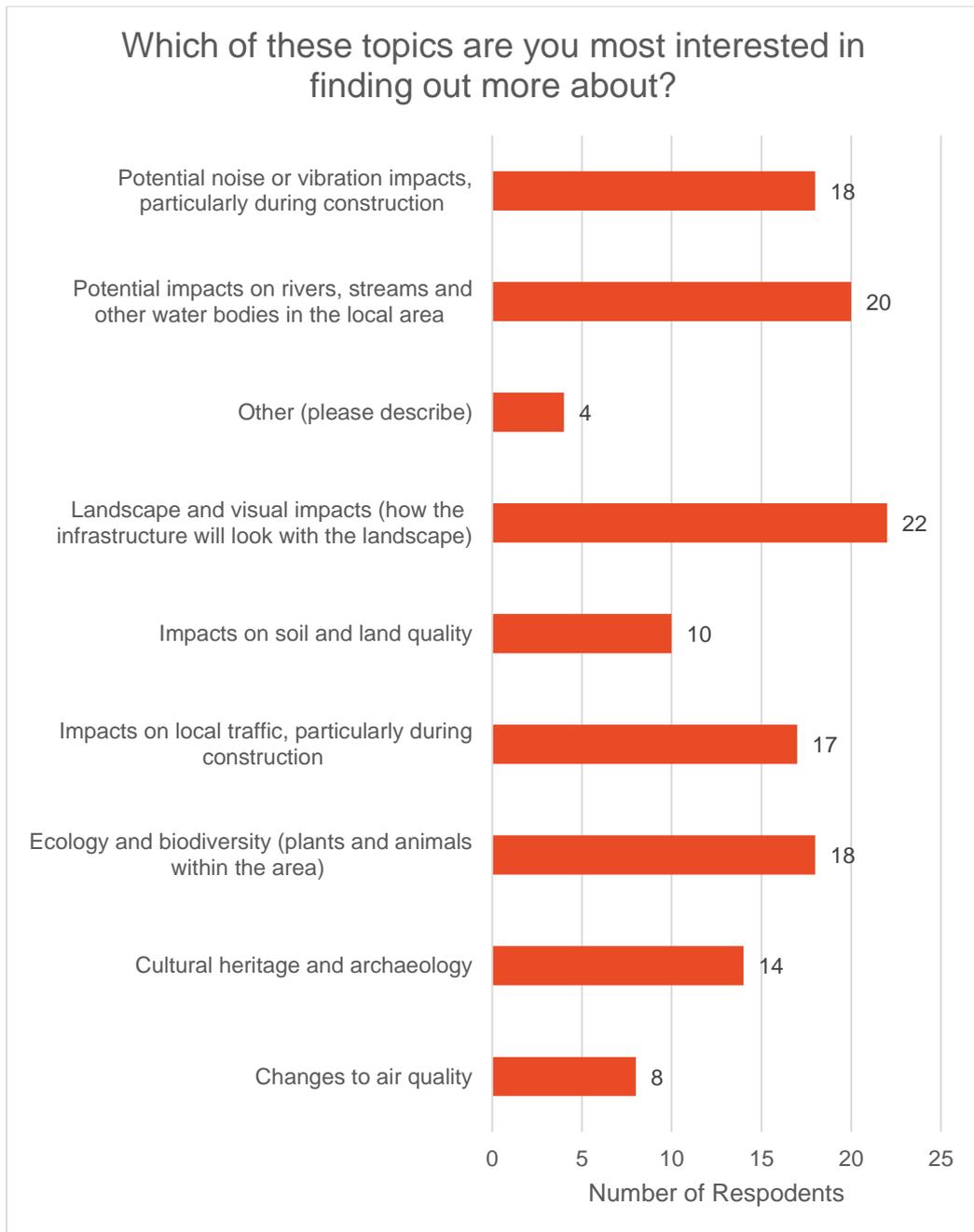
- 4.4.11. The most common suggestions were how the land where the pipeline is laid could be improved. These comments included:
- *“The route looks like it goes through Vickers Close park. At the moment the park is in need of some investment - it may currently be closed. Opportunity to improve public facilities as part of the works.”*
  - *“Opportunity to improve footpath as part of works.”*
- 4.4.12. Similar to the above points on the useful information question some responses suggested an opportunity to improve utility facilities.
- *“existing utility services, and about opportunities to improve these as part of the constructions. This could provide some mitigation to those of us in Lea and Mollington who are going to be massively negatively impacted by either route I or G.”*
- 4.4.13. On the general comments question there was one response which discussed returning the land to its original use “Will the land then be returned to a nicer state on completion? For example, grassed areas will return to being grassed areas?”

## **SAFETY CONCERNS**

- 4.4.14. On the general comments questions two responses suggested doubts on the safety of CCS including “I do not believe the claim that carbon capture and storage is 'a safe and proven technology'” and “The HSE web site acknowledges that Carbon Capture is a new technology and as such no guidelines exist in terms of safe construction, monitoring of and long term maintenance of the technology”.
- 4.4.15. On the useful information question there was concern for potential leaks including “there is nothing you can do to prevent leaks in pipes or seepage from the seabed” and “provide proposed detailed safety and mitigating measures in the event of a leak or explosion”.
- 4.4.16. The majority of comments on safety came from the feedback map with some expressing a general concern for safety, expressing a concern for the potential of leaks and discussing doubts on the safety of CCS. This included comments such as:
- *“I am concerned about the presence of a high-pressure pipeline so close to houses & schools & do not support this route”*
  - *“Very concerned that pressure caused putting this back underground can cause earthquakes as off Spain’s failed gas storage”*
  - *“I am concerned about risks of gradual or catastrophic leaks of CO<sub>2</sub>, which can have harmful effects on human health”*

## **WHICH ENVIRONMENTAL AND SOCIAL TOPICS ARE YOU MOST INTERESTED IN?**

- 4.4.17. Figure 4-14 below outlines what aspects respondents would like to know more about regarding environmental and social topics involved in the current consultation. There is a widespread range of items of interest with the 22 respondents wanting to know more about “Landscape and visual impacts (how the infrastructure will look with the landscape)” and 20 wanting to know more about “Potential noise or vibration impacts, particularly during construction”.



**Figure 4-14 – The environmental and social topics respondents are most interested in.**

4.4.18. Other areas of interest included ways the land could be improved where the pipeline is laid, including the potential to improve the utilities in the area and a concern that there may be a negative impact on utilities.

## 5. RESPONSE TO ISSUES AND QUERIES RAISED

5.1.1. A range of concerns, queries and interests have been raised as part of the consultation. This section includes responses to the comments and topics of concern that have been analysed as part of the coding process outlined above. It also includes responses to general queries that have been received throughout the consultation responses.

Query	Project Team Response
<b>Environmental impacts</b>	
<p><b>Query regarding environmental targets to reach, and the potential to exceed these to improve the environment</b></p>	<p>The Environmental Impact Assessment process will seek to identify potential effects by avoiding, reducing, mitigating or compensating any possible impacts. In addition, we will also be seeking to achieve Biodiversity Net Gain, which seeks to leave the natural environment in a measurably better state than before the development. For this, we will be using the Department for Environment, Food and Rural Affairs's (DEFRA) most recent metric.</p> <p>Habitat surveys are underway to understand the type and quality of the existing environment. Once these are completed and further design work undertaken, calculations on the amount of Biodiversity Net Gain which will aim to be achieved will be undertaken. Further information on this, including an update on the results of the habitat surveys, will be presented in the Preliminary Environmental Information Report (PEIR).</p>
<p><b>Concern over impact on wildlife and habitats (during construction and operation)</b></p>	<p>The Environmental Impact Assessment process will include establishing a thorough understanding of the existing environment and habitat, through surveys, consultation and third-party data collection. From this, the assessment will identify potential impacts, including during construction. In the first instance, potential impacts will aim to be avoided through incorporating amendments into the iterative design process. For example, this may include ensuring that construction compounds are not located in areas of sensitive habitat.</p> <p>The assessment will then also consider whether further mitigation measures are appropriate for any remaining potentially significant effects, including any measures to reduce or mitigate potential construction effects. Any such measures will be documented in the Environmental Statement and included in the accompanying Register of Commitments, which through the granting of the Development Consent Order, would become legally binding and would be implemented by the contractor(s) through a</p>

Query	Project Team Response
	<p>Construction Environmental Management Plan. This would also include industry best-practice measures to protect habitat, trees and wildlife, such as ensuring that any trees near areas of work are protected by demarcated root-protection-zones and pre-construction ecological surveys are undertaken, where relevant.</p> <p>Further detail of any specific measures to be implemented during construction is dependent upon completion of the surveys and assessment and will be documented in the Environmental Statement. However, initial findings will be presented for consultation in the Preliminary Environmental Information Report.</p>
<p><b>Concern over impact on floodplains</b></p>	<p>The Environmental Impact Assessment will include an assessment of water resources and flood risk. This will include a standalone Flood Risk Assessment and Flood Consequence Assessment. Amongst other aspects of this topic, the assessment will consider potential impacts upon the flood plain and areas of flood risk.</p> <p>Initial desktop work has identified areas of flood plain, including those associated with the Dee Estuary. Measures to avoid flood risk will be incorporated into the design such as avoiding loss of flood plain storage capacity wherever practicable, while sustainable urban drainage systems and drainage strategies for the above-ground installations and block valve stations will be incorporated, to avoid flood risk impacts. Similar measures will also be incorporated during construction, such as avoiding the storage of materials or site compounds within active floodplain areas, where possible. Should the water resources and flood risk assessment identify any potentially significant effects, further mitigation measures will be identified.</p>
<p><b>Community impacts</b></p>	
<p><b>Concern over impact on local communities (including schools, villages and buildings) during construction and operation</b></p>	<p>We will avoid and reduce potential impacts on local communities as far as possible. The main mechanism through which we will do this is through our Environmental Impact Assessment which will include a 'Population and Human Health' assessment. Full details of the proposed scope of this assessment are included in Chapter 14 of the Scoping Report. In summary this will include consideration of potential impacts upon land use and accessibility (including disruptions to access and use of private property and community land), impacts to walkers, cyclists and horse riders with regards to changes in routes and journey times and impacts to human health (including air quality, noise, accessibility to community, healthcare, social and employment facilities and</p>
<p><b>Query around consideration of impacts on humans</b></p>	

Query	Project Team Response
	<p>opportunities for physical activity). The results of this assessment will be presented in a dedicated chapter of the Environmental Statement, with initial findings provided for consultation in the Preliminary Environmental Information Report.</p>
<p><b>Concern over impact of carbon dioxide pipeline on Public Rights of Way (PRoWs)</b></p>	<p>There are a number of Public Rights of Way (PRoW) comprising footpaths, bridleways, restricted byways and byways open to all traffic ('BOAT') that are expected to interact with the Proposed Development. The Environmental Impact Assessment will need to consider how the construction and operation of the Proposed Development may impact the routing and accessibility of individual PRoW and their users. In addition, the Environmental Impact Assessment will also need to consider any change in views towards the Proposed Development from surrounding PRoW.</p> <p>During construction, the likelihood and scale of impacts at individual PRoW will be considered following an on-site review of existing conditions and an assessment of the proposed construction activities. It is anticipated that, where relevant, the crossing of any PRoW may require a temporary closure, a temporary diversion, and/or on-site management to mitigate impacts and minimise disruption to PRoW users.</p>
<p><b>Request to see map of risk zones and whether consideration has been given to overall current routing near habitation.</b></p>	<p>The Environmental Impact Assessment will include an assessment of reasonable alternatives. This will assess the alternative solutions and routes which were considered for the Proposed Development and will present why other options were discounted and, accordingly, why the chosen route was taken forward. Further information on the route selection process will also be provided for consultation as part of the Preliminary Environmental Information Report, with the full results of the assessment of alternatives presented in the Environmental Statement.</p>
<p><b>Query over impact on houses and church at Old Aston Hill</b></p>	<p>The Environmental Impact Assessment will consider the potential impacts upon residential properties and other buildings including churches. We will undertake the Environmental Impact Assessment by carrying out surveys to find out more about the existing environment. We will then work with the design team to understand if the pipeline may cause impacts - including during the period of construction, such as noise, vibration, landscape and visual, and identify ways to reduce potential for any impact on what we have found.</p>

Query	Project Team Response
	<p>Initial findings will be presented in the Preliminary Environmental Information Report. This will be ready for our next consultation. The full results of the assessment will be presented in the Environmental Statement which will make up part of our planning application.</p> <p>We would like to reassure you that we would not install any pipeline under homes.</p>
<p><b>Query over impact on Berthengam</b></p>	<p>In the area around the village of Berthengam, we will not be building a new pipeline. We would therefore not need to carry out a full excavation and replacement of the existing pipeline. In areas in which we are repurposing existing pipeline, we would need to inspect the pipeline with the potential for some parts to be modified.</p> <p>This would involve re-assessing of the original pipeline to make sure it can meet the standards required to transport CO<sub>2</sub> and ensure it is fit-for-purpose for the intended life of the repurposed pipeline. This could include an internal inspection of the pipeline to check for internal corrosion or third-party damage.</p>
<p><b>Will there be any changes/modifications made to the existing pipeline between Flint and Talacre?</b></p>	<p>The existing pipeline between Flint and Talacre will require modification works to ensure it is suitable to transport carbon dioxide. This will include works to the existing 24" pipeline including construction of block valves stations; modifications to the existing Point of Ayr Terminal; and works to the foreshore area. We have submitted an Environmental Impact Assessment scoping report to Flintshire County Council and further consultation will be undertaken on the proposals. We intend to submit a separate planning application under the Town and Country Planning Act 1990 to Flintshire County Council in 2022.</p>
<p><b>Will using the existing pipeline prolong the life of the Point of Ayr facility, and what new infrastructure above ground will HyNet require at this location?</b></p>	<p>The Point of Ayr facility will see a period of decommissioning within the security perimeter with some repurposing of land and sea lines. This will form part of the repurposing works to the existing pipeline, which will be progressed later in the year, but that will be minimal in terms of impact. Inside the facility, we will be repurposing the existing building. This will form part of the later TCPA planning application and we will continue to communicate throughout this process. The existing planting in place since the initial development of the terminal facility is now well matured to assist with screening the facility from the neighbouring residences.</p>
<p><b>Carbon capture and storage</b></p>	

Query	Project Team Response
<b>Will the carbon dioxide pipeline ever be on show or will it be completely underground?</b>	The pipeline will be underground and will not be visible, but we will need to build some above ground installations which will be used for the maintenance and operation of the pipeline. This includes sites where the pipeline will connect into existing industries, as well as ‘block valves’ (used for safety and maintenance purposes, helping to break the long pipeline into distinct sections). These would generally be a few metres squared, single storey facilities - approximate size of a garden shed. The location and details of these will be confirmed at a later date once we have determined the details.
<b>What is the diameter of the pipeline?</b>	The pipeline is relatively small, with a maximum diameter of about 36 inches (or 91cm).
<b>General opposition to the carbon dioxide pipeline</b>	The carbon dioxide pipeline will be a critical component of the HyNet North West project to unlock a low carbon future for the North West of England and North Wales. The pipeline will help to reduce harmful emissions produced by energy intensive industries in the region, helping to decarbonise a wide range of industry sectors, including chemicals, glass, ceramics, oil refining, food, paper and automotive.
<b>Which proven CCS project are you basing your storage on?</b>	<p>The different parts of the CCS chain have been used around the world for many decades. Carbon dioxide storage operations have successfully been carried out in Norway for more than 20 years – permanently storing 1 million tonnes of CO<sub>2</sub> every year deep under the Norwegian North Sea (Sleipner and Snøhvit Projects).</p> <p>There are currently 21 large-scale CCUS projects in operation around the world, capturing up to 40 MtCO<sub>2</sub> each year. Our storage project is utilising state-of-the-art industry knowledge together with the specific geological and reservoir experience gained from producing hydrocarbons from these fields over the past 20 years.</p>
<b>Concern and queries over maintenance of the pipeline</b>	Throughout all phases of operation of the carbon dioxide transportation infrastructure, the pipelines will be continuously monitored to ensure their integrity is maintained and the potential risk of leakage is proactively controlled and prevented. This would include the regular use of internal, non-intrusive inspection tools and, in addition, on the ground and fly-over inspections conducted by pipeline technical specialists, as has been done for natural gas pipelines for many years. There are some instances when excavation may be required for maintenance but this will be minimal. Any instances where excavation is required will be

Query	Project Team Response
	communicated in advance and the ground restored back to the original condition upon completion.
<p><b>Interest in more detail on the CCS process including maintenance</b></p>	<p>Once depleted, the gas reservoirs in Liverpool Bay will have the capacity to securely and permanently store approximately 20 years-worth of carbon dioxide captured by the HyNet project.</p> <p>Eni has operated the reservoirs in Liverpool Bay for many years and understand them very well. All pipeline operators ensure the highest safety standards in their operations and pipelines for the transition to carbon capture and storage (CCS) will be approached in the same way. The highest safety standards will continue to be met for the new and re-purposed sections of the pipeline. The design and operation of the CCS infrastructure is subject to detailed and comprehensive safety studies and risk assessments to ensure compliance with all relevant standards and regulations. The operation of the pipeline will be strictly regulated by the UK and Welsh Governments' Regulators &amp; Authorities.</p> <p>Throughout the lifetime of the carbon dioxide transportation infrastructure, there will be regular inspections to ensure its integrity is maintained, including on the ground and fly-over inspections conducted by pipeline technical specialists, as has been done for natural gas pipelines for many years.</p>
<p><b>Concern over safety of carbon capture and storage</b></p>	<p>Oil and gas operators are used to ensuring the highest safety standards in their operations. The transition to CCS will be approached in the same way. Any CCS project, its infrastructure and operation will be strictly regulated by the UK Government's Oil and Gas Authority (OGA) and Offshore Petroleum Regulator for Environment and Decommissioning (OPRED).</p>
<p><b>Concern over potential carbon dioxide leaks from the underground reservoir</b></p>	<p>We would like to reassure you that the safety of the new carbon dioxide pipeline will be our primary focus, as it is with all of our existing infrastructure. There are natural gas pipelines running underground all over the UK and their management is covered by, and closely monitored under, the Pipeline Safety Regulations. In contrast to natural gas, CO<sub>2</sub> is non-combustible and, consequently, inherently less hazardous but standards of safety will not be reduced.</p>
<p><b>Concern over potential carbon dioxide leaks from the pipeline</b></p>	
<p><b>What emergency measures will be in place in the event of a leak or explosion including</b></p>	
	<p>Eni UK has operated the existing natural gas pipeline infrastructure from Liverpool Bay to Connah's Quay for many years. Its safety is a priority for us and it remains in good condition. We carry out regular safety inspections and</p>

Query	Project Team Response
<p><b>measure to protect people and the environment.</b></p>	<p>maintenance in a variety of ways, from the above ground and aerial inspections mentioned previously, to internal inspections using specialist equipment designed to measure the internal integrity of the pipe. These inspections allow us to understand the condition of the pipeline at regular intervals and help to identify any need for proactive maintenance activity if required. This is part of Eni's expertise and we are confident in our technology and our capability in this area.</p> <p>We will also be carrying out an Environmental Impact Assessment (EIA). EIA is a procedure that is needed before the project can be given 'development consent'. Through the EIA we assess the project's potential environmental effects. Any environmental risks (which includes risks to human health and local communities) associated with the new carbon dioxide pipeline would be identified and assessed so that we can then put measures in place to ensure these impacts are prevented or mitigated. The EIA and design processes interact with each other, with both being informed by, and informing, ongoing consultation and engagement.</p>
<p><b>Could the pipeline create vibrations, and cause any ground movement?</b></p>	<p>The pipeline will not vibrate. Prior to deciding on a final route for the pipeline, geological surveys are carried out to determine the suitability of the ground to minimise the potential for ground movement. Modern construction methods are designed to ensure that the backfill is stable.</p> <p>Whilst is not currently anticipated that there would be an impact during the operation of the pipeline, there may be short term, temporary impacts during construction. As part of our of the Environmental Impact Assessment, we will study the potential impact of noise and vibration on places such as residential buildings, hospitals, schools and Public Right of Ways. Mitigation measures will be specified if effects are predicted.</p>
<p><b>Will carbon dioxide be buried in Ince Marshes?</b></p>	<p>No. The intention is to store the carbon dioxide in depleted oil and gas wells under Liverpool Bay.</p>
<p><b>Hydrogen production</b></p>	
<p><b>How do you plan to repurpose the network given Hydrogen needs to be compressed to four times the amount Methane currently is to deliver the</b></p>	<p>HyNet is not repurposing the existing natural gas network. We are constructing a new network which will run in parallel with natural gas. It will take time for the hydrogen network to achieve the same resilience as the existing natural gas network, so both will run together while the hydrogen economy is established.</p>

Query	Project Team Response
<p><b>same energy value to the customer?</b></p>	
<p><b>Request for more detail on the production of hydrogen, particularly when carbon capture is involved.</b></p>	<p>In the first stages of the HyNet project, hydrogen will be produced using a licensed technology from Johnson Matthey known as Low Carbon Hydrogen™. This is an innovative, efficient form of autothermal reforming, which splits natural gas into hydrogen and carbon dioxide. The carbon dioxide is immediately captured at source and transported by pipeline to storage. The process has been optimised to ensure high capture rates and high thermal efficiency.</p>
<p><b>When exactly do you plan to switch to green hydrogen?</b></p>	<p>Blue hydrogen (where the CO<sub>2</sub> created in production is captured and stored) is already deliverable and, therefore, is likely to be the source of the majority of hydrogen production within the UK over the next few decades. It can be delivered at the scale necessary to enable investment in the essential pipeline network, which significantly reduces the costs of transporting hydrogen in the longer term. During this time, the technology and costs associated with green hydrogen (where no CO<sub>2</sub> is produced) production will be improved. In the meantime, blue hydrogen will offer a viable alternative to natural gas, providing a safe transition to decarbonisation, whilst delivering the infrastructure and storage needed to allow for the delivery of green hydrogen at scale. The HyNet hydrogen infrastructure is "colour-blind" and can be used for green hydrogen as well as blue.</p>
<p><b>Query around the cost of production and the impetus this will provide to conservation efforts as opposed to fuel switching and carrying on over-consuming.</b></p>	<p>Low carbon hydrogen production is a growing technology, and as such, costs are higher than the current use of natural gas as a fuel in the short-term whilst technologies are established.</p> <p>Funding mechanisms are currently under review within government, but it is expected that all routes for reducing our carbon emissions, including conservation efforts, will need to be needed to get the UK to net-zero. The use of hydrogen allows large scale emissions cuts to be made quickly.</p>
<p><b>Construction impacts</b></p>	
<p><b>Concern over the general impact of construction</b></p>	<p>For much of the pipeline construction, we plan to use an open trench technique. This will involve the digging of soil, lowering the pipe into the trench, and backfilling it with the excavated soil. Any hedges, fences or other ground features would be either replanted or replaced after construction.</p>

Query	Project Team Response
	<p>Although the pipeline is relatively small, with a maximum diameter of about 36 inches (or 91 cm), the space needed to safely install this type of pipeline is usually between 20m and 30m. This width allows enough space to dig the trench and lay the pipe, as well as providing space for storing soil during installation and enabling access for vehicles.</p> <p>Temporary facilities would be needed during the construction phase. These would be set up to provide site teams with offices, staff welfare and storage facilities. Details of these will be developed after we have identified the preferred pipeline corridor.</p> <p>As we continue to develop our designs and define how we will construct the infrastructure we need, we will produce a Construction Environmental Management Plan. This will be used to ensure that we are reducing the impacts of construction works on people and the environment as much as possible. It will set a framework to monitor and manage potential impacts during the construction process</p> <p>At times, we will need to use trenchless techniques to install the pipeline, for example when installing it under railway lines, major roads and riverbeds. In these cases, we will use methods such as directional drilling or auger boring. These techniques allow us to install the pipeline while allowing roads and railways to remain open and rivers to continue flowing.</p> <ul style="list-style-type: none"> <li>• Horizontal drilling: A tunnel is drilled below a river, road or other crossing point. The pipe is then pulled through the drilled tunnel.</li> <li>• Auger boring: A tunnel is drilled into the ground using an 'auger' at the same time as laying the pipe into the tunnel.</li> </ul>
<p><b>How long are the works expected to last in each area? How long would the digging and 'sinking' of the pipeline take to go through the field and road?</b></p>	<p>We anticipate that the construction of the entire new pipeline will take approximately 12 months. Typically, installation of the pipeline itself should take around 1 to 2 months in a location. In complex areas, it might take longer. Once the pipeline installation is complete, we will reinstate the land as close as possible to its original condition.</p>
<p><b>Concern over impact of noise / vibration during construction</b></p>	<p>Prior to deciding on a final route for the pipeline, geological surveys are carried out to determine the suitability of the ground to minimise the potential for ground movement. Modern construction methods are designed to ensure that the backfill is stable.</p>

Query	Project Team Response
	<p>As part of the noise and vibration assessment, the impact of noise and vibration on places such as residential buildings, hospitals, schools, nurseries, elderly homes, places of worship and Public Right of Ways will be studied. It is not currently anticipated that there would be adverse impacts during the operation of the proposed development, however, there may be short term, temporary impacts during construction. These construction impacts will be fully assessed as part of the Environmental Impact Assessment, and mitigation measures will be specified if significant effects are predicted to occur.</p>
<p><b>Query over how the land will look after construction</b></p>	<p>Once the pipeline installation is complete, we will reinstate the land as close as possible to its original condition. We will also be seeking to achieve 'Biodiversity Net Gain', which seeks to leave the natural environment in a measurably better state than before the development.</p>
<p><b>Queries around returning the land to its original use</b></p>	
<p><b>Suggestions to improve the area where the pipeline is installed</b></p>	<p>We will look at opportunities for improvements that may accompany the pipeline installation. For example, it may be necessary in some cases to expose a short length of other utility assets alongside our pipeline. If, as a part of the agreement with the utility, some minor improvements in the vicinity of the new pipeline can be undertaken by that utility whilst their asset is exposed, then this should be possible.</p>
<p><b>Query over the legacy benefits of the pipeline</b></p>	
<p><b>Concern over the impact of pipeline construction on footpaths / PRoWs</b></p>	<p>There are several Public Rights of Way (PRoW) comprising footpaths, bridleways, restricted byways and byways open to all traffic ('BOAT') that are expected to interact with the Proposed Development. The Environmental Impact Assessment (EIA) will need to consider how the construction and operation of the Proposed Development may impact the routing and accessibility of individual PRoW and their users. In addition, the EIA will also need to consider any change in views towards the Proposed Development from surrounding PRoW.</p> <p>During construction, the likelihood and scale of impacts at individual PRoW will be considered following an on-site review of existing conditions and an assessment of the proposed construction activities. It is anticipated that, where relevant, the crossing of any PRoW may require a temporary closure, a temporary diversion, and/or on-site management to mitigate impacts and minimise disruption to PRoW users.</p>

Query	Project Team Response
<p><b>Concern over impact of construction on local traffic</b></p>	<p>A detailed Traffic Management Plan has not yet been developed for the project. However, with the installation methods we envisage for the pipeline we do not expect to impact any of the major roads during construction, although there may be restrictions along Chester Road which may require traffic lights during the works. However, if this is the case we do not expect it to be in place for more than 8 weeks. There will be open trenches across minor roads and tracks which will be wither temporally re-routed or controlled by traffic lights. Any disruption there will not likely exceed a couple of weeks. There will be an effort to ensure that the major equipment and materials required during construction will be transported out of peak periods to minimise any disruption that will cause.</p>
<p><b>Query over how the pipeline will cross Wepre and the ravine</b></p>	<p>The proposed route skirts round the South and West of Wepre park. Whilst the ravine is relatively shallow at the Green Lane crossing point, the ravine north-west of Pinfold lane is steeper, however, this is not exceptionally so and the pipeline can be buried for the entirety of its length in this area.</p>
<p><b>Other queries or comments</b></p>	
<p><b>Concern over impact on utilities and query whether there is the potential to improve utilities facilities during construction</b></p>	<p>Wherever possible, detailed route planning will avoid existing utilities. Where this is not possible, discussions will be held with the owners. Often, an agreement is reached in which the owner is able to inspect and assess their asset once the pipeline has been constructed. If, while the assets are exposed, some minor improvements in the vicinity of the new pipeline can be undertaken by that utility whilst his asset is exposed, then this will be considered but will ultimately be a decision for the utility owner.</p>
<p><b>Need for coordination between local authorities and consideration of local plans</b></p>	<p>HyNet North West regularly engages with local authorities within the region to ensure that they are aware of the latest project updates and have the opportunity to provide their inputs. We also ensure that local authorities have sufficient information to hand to enable coordination and collaboration between HyNet, local authorities and other partners.</p> <p>Local Development Plans and other local / national planning policy are considered as part of the project planning. A planning statement will also be written where we will be assessing compliance with local and national policy.</p>

Query	Project Team Response
<p><b>Suggestion to use existing infrastructure</b></p>	<p>The route for the Proposed Development was subject to an initial stage 1 appraisal to identify the most appropriate strategic corridor which aligned best with the objectives and guiding principles for the new pipeline. This was followed by a stage 2 appraisal which scored individual route options against approximately 30 environment, planning, land, engineering and cost criteria to identify the best performing options.</p> <p>As part of the design work we need to consider the complexity and safety of building the pipeline. The use of existing infrastructure corridors (instead of a new pipeline) presents a number of constraints such as buried infrastructure (utilities and high voltage cables) which restricts possible routes due to clearance distances required and increases construction risk, especially in areas which are heavily industrialised.</p>
<p><b>Could the pipeline cross the Dee as part of the rebuilt A494 bridges?</b></p>	<p>A lot of time was spent looking at this possibility, but in the final analysis there were too many obstacles. The location of the pipeline crossing the River Dee is particularly challenging due to the lack of flexibility at this site. This is because of multiple existing features, utilities and potentially difficult ground conditions. The A494 road is one of these constraints and it would not be suitable to locate the pipeline in this area because of the limited amount of ground space available, and the requirement to provide maintenance access to the pipeline once constructed.</p> <p>As part of the options we presented as part of the non-statutory consultation however, we have included a potential variation to the River Dee crossing.</p> <p>We will undertake a further design review considering the feedback received from the non-statutory consultation before we decide on a final route option.</p>
<p><b>Could cycle routes / footpaths be constructed along the wayleaves required?</b></p>	<p>We are keen to work with local communities to ensure that the work we are doing will maximise any potential benefits and will continue to explore options for that in the next stage.</p>
<p><b>Can shares be bought in HyNet?</b></p>	<p>HyNet North West is a joint project rather than a company, so you cannot buy shares in the project. However, some of the partner companies are publicly listed. A full list of the partner companies is available on the HyNet North West website.</p>

Query	Project Team Response
<p><b>Query over the impact of the project on housing developments in the future</b></p>	<p>There will be certain restrictions for further development. We will need to ensure that there is maintenance access along the pipeline route which generally means that no permanent structures can be constructed within the area. For this reason, this type of land is often used as green space which allow for a certain amount of access which is needed to the easements. However, existing easements, such as this, can sometimes be worked into developers designs.</p>
<p><b>Consultation related comments</b></p>	
<p><b>How will you keep the public informed on how the project is going?</b></p>	<p>We post regularly on our social media channels on Twitter and LinkedIn with our latest news, including project updates. We also update our recent news stories on the HyNet website [REDACTED]. You can also keep up-to-date through our newsletter which you can sign up to at the HyNet hub [REDACTED]).</p>
<p><b>More detailed information required on the design / routing of the carbon dioxide pipeline</b></p>	<p>This initial consultation was held early in the design development process for the carbon dioxide pipeline. Therefore, we do not yet have specific details on the design of the pipeline. The route corridors that have been presented are approximately 50-100m wide, which gives some flexibility within which the pipeline can be constructed. This early consultation was important to be able to gather feedback on our proposals before designs have been more firmly developed.</p> <p>As the project develops and we refine one specific route, we will hold a further consultation which will provide more detail on the pipeline, include routeing as well as construction approach and environmental / community considerations.</p>
<p><b>Not enough detail provided in consultation materials</b></p>	
<p><b>Support for Option I</b></p>	<p>Feedback on the two route options will be duly considered and the core concerns and opportunities across both options understood. Ongoing work will be undertaken on the carbon dioxide pipeline proposals. Following feedback from this consultation and ongoing technical studies, a single pipeline route will be selected and developed in more detail, including consideration construction approach and environmental impacts.</p>
<p><b>Opposition for Option G</b></p>	
<p><b>Query over the width of the route on the interactive map</b></p>	<p>As we are at an early stage of the project, the lines you see on the map are route corridors. These are approximately 50-100m wide, which gives some flexibility within which the pipeline can be constructed within the corridor. The pipeline itself is relatively small, with a maximum diameter of about 36 inches (or 91 cm).</p>

<b>Query</b>	<b>Project Team Response</b>
	The space needed to safely install this type of pipeline is usually between 20m and 30m which allows enough space to dig the trench and lay the pipe, as well as providing space for storing soil during installation and enabling access for vehicles.

## **6. CONCLUSION**

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### **6.1. SUMMARY OF RESULTS**

#### **HYNET NORTH WEST'S AMBITIONS**

- 6.1.1. The public opinion of HyNet's ambitions is, in general, very supportive. There is a strong agreement on all the ambitions. Over 75% of respondents agreed with the challenges laid out that HyNet will tackle. There was also a noted interest in several aspects of hydrogen production and carbon capture. We have provided some responses in the sections above, and we will ensure that future consultation activities provide more narrative around these aspects.
- 6.1.2. Respondents' views on hydrogen and carbon capture and storage would suggest that the public is interested in being given more information on these topics. There is a clear interest in more information to do with safety of carbon/hydrogen, how carbon is captured and how hydrogen can be used in day-to-day practices. We will continue to provide wider information to raise awareness of hydrogen and carbon capture processes.

#### **CARBON DIOXIDE PIPELINE ROUTE OPTIONS**

- 6.1.3. Of the main route options, respondents highlighted a preference for Option I over option G. This was on the basis of 10 respondents outlining Option I as the preferred option (and 11 respondents who agreed or strongly agreed that it was an acceptable route). This compared to two respondents who had a preference for Option G (and 3 respondents who agreed or strongly agreed that this was an acceptable route). There was no strong preference between any of the potential variations at either end of the route or to cross the River Dee.
- 6.1.4. Seven respondents opposed option I and 16 opposed option G. This is significant but needs to be considered in the context of the number of people engaged with through this consultation. Only a small proportion of those who attended a webinar or visited the HyNet Hub website went on to express an opinion on either route.
- 6.1.5. Some of the main queries or concerns in relation to the route options focused on potential impacts of the pipeline on villages and local people, as well as the impact of construction on public rights of way and buildings. There were also concerns about the traffic flow disruption during construction, and over the impact of the project on the environment, wildlife, biodiversity and marine life. Respondents made suggestions on how to minimise the impact of the pipeline including improving the utilities in the area and the land where the pipeline will be laid. There were some

key safety concerns including the potential of leaks and doubts over the safety of CCS.

## **6.2. NEXT STEPS**

- 6.2.1. Ongoing work will be undertaken on the carbon dioxide pipeline route. Following feedback from this consultation and technical studies, a single pipeline route will be selected and developed in more detail, including consideration of the construction approach and environmental impacts. This will include planning for the upgrades on the existing section of pipeline which will be re-purposed.
- 6.2.2. Dialogue continues with interested parties, landowners and technical stakeholders to further develop and refine our proposals ahead of our statutory consultation.
- 6.2.3. As well as assessing feedback we are also continuing to collect survey data and undertaking analysis to inform our proposals.
- 6.2.4. The developed proposals for the new carbon dioxide pipeline will be subject to a statutory consultation in early 2022, where further detail will be presented to communities and stakeholders. This will enable the team to gather and consider feedback before submitting an application for a Development Consent Order (DCO).
- 6.2.5. In parallel to work on the carbon dioxide pipeline, work will continue on other aspects of HyNet North West including hydrogen production and network.

## APPENDIX A: STAKEHOLDERS CONSULTED

Organisation	Name	Role	Email/Letter/ E-Bulletin
<b>Governmental</b>	Alok Sharma MP	COP26 President (previous BEIS SOS)	Email
<b>Governmental</b>	Rt Hon Kwasi Kwarteng MP	Secretary of State for Business, Energy and Industrial Strategy	Email
<b>Governmental</b>	Matthew Pennycook MP	Shadow Minister (Business, Energy and Industrial Strategy)	Email
<b>Governmental</b>	Alan Whithead MP	Shadow Minister (Green New Deal and Energy)	Email
<b>Governmental</b>	Justin Madders MP	Justin Madders MP is MP for Ellesmere Port and Neston and a Member of North Wales Mersey Dee APPG	Email
<b>Governmental</b>	Christian Matheson MP	CO <sub>2</sub> Cheshire - MP for City of Chester	Email
<b>Governmental</b>	Mark Tami MP	CO <sub>2</sub> Flintshire - MP for Alyn and Deeside	Email
<b>Governmental</b>	Rob Roberts MP	Rob Roberts MP is a MP for Delyn and Member of North Wales Mersey Dee APPG	Email
<b>Governmental</b>	David Jones MP	David Jones MP is a Member of North Wales Mersey Dee APPG	Email
<b>Governmental</b>	The Rt Hon. the Lord Jones	The Rt Hon. the Lord Jones is a Member of North Wales Mersey Dee APPG	Email
<b>Governmental</b>	Edward Timpson MP	MP for Eddisbury	Email
<b>Cheshire and Warrington LEP</b>	Philip Cox	Philip Cox is the President of Cheshire and Warrington LEP (The Chief Executive)	Email
<b>Cheshire and Warrington LEP</b>	Andy Hulme	Andy Hulme is the Manager of Cheshire and Warrington LEP (Head of Policy and Strategy)	Email

<b>Cheshire and Warrington LEP</b>	Clare Hayward	Clare Hayward is the Manager of Cheshire and Warrington LEP (Chair of Cheshire and Warrington LEP)	Email
<b>Welsh Government</b>	Amanda Thomas	Amanda Thomas is the Manager of Welsh Government (Regional Delivery Manager)	Email
<b>Police and Crime Commissioner for North Wales</b>	Andy Dunbobbin	Arfon Jones is a Member of Police and Crime Commissioner for North Wales	Email
<b>Assembly Member</b>	Jack Sargeant MS	Jack Sargeant MS is a Member of Welsh Government (Constituency member for Alyn and Deeside)	Email
<b>Assembly Member</b>	Sam Rowlands MS	Regional member for North Wales	Email
<b>Assembly Member</b>	Mark Isherwood MS	Regional member for North Wales	Email
<b>Assembly Member</b>	Llyr Gruffydd MS	Regional member for North Wales	Email
<b>Assembly Member</b>	Carolyn Thomas MS	Regional member for North Wales	Email
<b>Assembly Member</b>	Hannah Blythyn MS	Hannah Blythyn MS is a Member of Welsh Government (Constituency member for Delyn)	Email
<b>Welsh Government</b>	John Howells	John Howell is a Director of Welsh Government (Climate Change and Energy Director)	Email
<b>Cheshire West and Chester Borough Council</b>	Andrew Lewis	Andrew Lewis is the CEO of Cheshire West and Chester Borough Council (Chief Executive)	Email
<b>Cheshire West and Chester Borough Council</b>	Cllr Louise Gittins	Cllr Louise Gittins is a Director of Cheshire West and Chester Borough Council (Leader of the Council)	Email

<b>Cheshire West and Chester Borough Council</b>	Cllr Bob Rudd	Cllr Bob Rudd is a Member of Cheshire West and Chester Borough Council (Council Chairman)	Email
<b>Cheshire West and Chester Borough Council</b>	Cllr Karen Shore	Cllr Karen Shore is a Member of Cheshire West and Chester Borough Council (Deputy Leader of the Council and Cabinet Member - Environment, Highways & Strategic Transport)	Email
<b>Cheshire West and Chester Borough Council</b>	Cllr Mark Williams	Cllr Mark Williams is a Member of Cheshire West and Chester Borough Council (Lord Mayor of Chester)	Email
<b>Cheshire West and Chester Borough Council</b>	Cllr Simon Eardley	Cllr Simon Eardley is a Member of Cheshire West and Chester Borough Council (Shadow Cabinet Member for Environment and Climate Change)	Email
<b>Cheshire West and Chester Borough Council</b>	Morgan Jones	Morgan Jones is the Manager of Cheshire West and Chester Borough Council (Strategy and Innovation Manager)	Email
<b>Cheshire West and Chester Borough Council</b>	Charlie Seward	Charlie Seward is a Director of Cheshire West and Chester Borough Council (Deputy Chief Executive)	Email
<b>Cheshire West and Chester Borough Council</b>	Gemma Davies	Director of Housing and Economy	Email
<b>Cheshire West and Chester Borough Council</b>	Catherine Walker	Regeneration and Economic Development	Email
<b>Cheshire West and Chester Borough Council</b>	Rob Charnley	Head of Planning	Email
<b>Cheshire West and Chester</b>	Sean Traynor	Sean Traynor is the Manager of Cheshire West and Chester Borough Council	Email

<b>Borough Council</b>		(Senior Manager - Transport and Infrastructure, Places Strategy)	
<b>Cheshire West and Chester Borough Council</b>	Cllr Richard Beacham	Cllr Richard Beacham is a Member of Cheshire West and Chester Borough Council (Cabinet member for Housing, Regeneration and Growth)	Email
<b>Cheshire West and Chester Borough Council</b>	Will Pearson	Will Pearson is the Manager of Cheshire West and Chester Borough Council (Leading on climate emergency response)	Email
<b>Cheshire West and Chester Borough Council</b>	Cllr Matt Bryan	Cllr Matt Bryan is a Member of Cheshire West and Chester Borough Council (Cabinet member and Champion for Climate Emergency Response)	Email
<b>Flintshire County Council/ Sir y Flint</b>	Cllr Chris Bithell	Cllr Chris Bithell is a Member of Flintshire County Council/ Sir y Flint (Cabinet Member for Planning and Public Protection)	Email
<b>Flintshire County Council/ Sir y Flint</b>	Cllr Derek Butler	Cllr Derek Butler is a Member of Flintshire County Council/ Sir y Flint (Cabinet Member for Economic Development)	Email
<b>Flintshire County Council/ Sir y Flint</b>	Cllr David Wisinger	Cllr David Wisinger is a Member of Flintshire County Council/ Sir y Flint (Chair of Planning Committee)	Email
<b>Flintshire County Council/ Sir y Flint</b>	Cllr Patrick Heesom	Cllr Patrick Heesom is a Member of Flintshire County Council/ Sir y Flint (Leader of the New Independents Group; Chair of Environment Overview & Scrutiny Committee)	Email
<b>Flintshire County Council/ Sir y Flint</b>	Colin Everett	Colin Everett is the CEO of Flintshire County Council/ Sir y Flint (Chief Executive)	Email
<b>Flintshire County Council/ Sir y Flint</b>	Cllr Ian Roberts	Cllr Ian Roberts is a Director of Flintshire County Council/ Sir y Flint (Leader of the Council)	Email

<b>Police and Crime Commissioner for Cheshire</b>	John Dwyer	David Keane is a Director of Police and Crime Commissioner for Cheshire (Police and Crime Commissioner)	Email
<b>Welsh Government</b>	Eleanor Knight	Eleanor Knight is the Manager of Welsh Government (Head of Smart Living, Decarbonisation and Energy Division, Department for Environment, Energy and Rural Affairs)	Email
<b>Police and Crime Commissioner for Merseyside</b>	Emily Spurrell	Jane Kennedy is a Director of Police and Crime Commissioner for Merseyside (Police and Crime Commissioner)	Email
<b>Welsh Government</b>	Kevin Friis	Kevin Friis is the Manager of Welsh Government (Industry Decarbonisation Manager)	Email
<b>Cheshire Fire and Rescue Service</b>	Mark Cashin	Mark Cashin is a Director of Cheshire Fire and Rescue Service	Email
<b>Merseyside Fire &amp; Rescue</b>	Nick Searle	Nick Searle is a Director of Merseyside Fire & Rescue	Letter
<b>SP Energy Networks</b>	Rachel Shorney	Stakeholder & Community Engagement Manager	Email
<b>North Wales Fire and Rescue Service</b>	Simon Smith	Simon Smith is a Director of North Wales Fire and Rescue Service	Email
<b>Welsh Government</b>	Wendy Boddington	Wendy Boddington is the Manager of Welsh Government (Head of Regional Delivery, North Wales)	Email
<b>Elton Parish Council</b>		Parish Clerk	Email
<b>Ince Parish Council</b>		Parish Clerk	Email
<b>Backford Parish Council</b>		Parish Clerk	Email

<b>Lea-by-Backford Parish Council</b>		Parish Clerk	Email
<b>Mickle Trafford and District Parish Council</b>		Parish Clerk	Email
<b>Mollington Parish Council</b>		Parish Clerk	Email
<b>Moston Parish Council</b>		Parish Clerk	Email
<b>Saughall and Shotwick Park Parish Council</b>		Parish Clerk	Email
<b>Thornton-le-Moors Parish Council</b>		Parish Clerk	Email
<b>Hawarden Community Council</b>		Community Council Clerk	Email
<b>Northop Community Council</b>		Community Council Clerk	Email
<b>Northop Hall Community Council</b>		Community Council Clerk	Email
<b>Queensferry Community Council</b>		Community Council Clerk	Email
<b>Sealand Community Council</b>		Community Council Clerk	Email
<b>Buckley Town Council</b>		Parish Clerk	Email
<b>Shotton Parish Council</b>		Parish Clerk	Email

<b>British Trust for Ornithology</b>			Email
<b>rECOrd – Biodiversity Information Centre for Cheshire, Halton, Warrington and Wirral</b>			Email
<b>Cheshire and Wirral Ornithological Society</b>			Email
<b>Merseyside BioBank</b>			Email
<b>Greater Manchester Local Record Centre</b>			Email
<b>Cofnod – North Wales Environmental Information Service</b>			Email
<b>North Wales Economic Ambition Board</b>	Iwan Prys-Jones		Email
<b>North Wales Economic Ambition Board</b>	Henry Aron		Email
<b>North West Hydrogen Alliance</b>			Email
<b>North West Business</b>	Emma Degg		Email

<b>Leadership Team</b>			
<b>Friends of the Earth</b>			Email
<b>Greenpeace UK</b>			Email
<b>Chester Sustainability Forum</b>			Email
<b>The Campaign for the Protection of Rural Wales (CPRW)</b>			Email
<b>Campaign to Protect Rural England</b>			Email
<b>National Farmers Union (NFU)</b>			Email
<b>National Farmers Union Wales</b>			Email
<b>Connah's Quay Town Council</b>			Email
<b>Flint Town Council</b>			Email
<b>Little Stanney and District Parish Council</b>			Email
<b>Royal Society for the Protection of Birds</b>			Email
<b>British Trust for Ornithology</b>			Email

<b>Country Landowners Association (CLA)</b>			Email
<b>Extinction Rebellion</b>			Email
<b>Dunham-on-the-Hill and Hapsford Parish Council</b>			Email
<b>Upton-by-chester parish</b>			Email
<b>Bagillt Parish Council</b>			Email
<b>Croughton Civil parish</b>			Email
<b>Saltney Town Council</b>			Email
<b>Broughton and Bretton Community Council</b>			Email
<b>Brynford Community Council</b>			Email
<b>Caerwys Town Council</b>			Email
<b>Llanasa Community Council</b>			Email
<b>Whitford Community Council</b>			Email
<b>Ysceifiog Community Council</b>			Email

<b>Halkyn Community Council</b>			Email
<b>Wales and West Utilities</b>			Email
<b>Natural England</b>			Email
<b>Natural Resources Wales</b>			Email
<b>Crown Estate</b>			Email
<b>The Health and Safety Executive</b>			Email
<b>NHS England and NHS Improvement – Greater Manchester</b>			Email
<b>NHS England and NHS Improvement – Cheshire and Merseyside</b>			Email
<b>NHS England</b>			Email
<b>English Heritage</b>			Email
<b>Historic England</b>			Email
<b>Environment Agency</b>			Email
<b>Canal and River Trust</b>			Email
<b>Highways England</b>			Email

<b>North Wales Mersey Dee Business Council</b>	Ashley Rogers		Email
<b>Sandycroft and Mancot Facebook Group</b>			Email
<b>Northop Hall News Link Facebook Group</b>			Email
<b>Flint, North Wales Facebook Group</b>			Email
<b>Pentre Halkyn Community Page</b>			Email
<b>Trelogan Community Facebook Group</b>			Email
<b>Trelogan Grasslands Action Group</b>			Email
<b>Llanasa Village Hall Facebook group</b>			Email
<b>Welsh Government</b>	Lesley Griffiths MS		Email
<b>NHS Cheshire CCG</b>			Email
<b>NHS West Cheshire CCG</b>			Email
<b>NHS Wales</b>	Neil Davies		Email

<b>NHS England, NHS Commissioning Board</b>			Email
<b>Betsi Cadwaladr University health board</b>			Email
<b>Equality and Human Rights Commission</b>			Email
<b>Royal Commission On Ancient and Historical Monuments Of Wales</b>			Email
<b>Homes and Communities Agency</b>			Email
<b>The Joint Nature Conservation Committee (JNCC)</b>	John Goold		Email
<b>The Maritime and Coastguard Agency</b>	Katy Ware		Email
<b>The Marine Management Organisation</b>			Email
<b>Civil Aviation Authority</b>			Email
<b>Secretary of State for Transport</b>	Grant Schapps		Email

<b>Merseyside Passenger Transport Authority - AKA Mersey Travel</b>			Email
<b>Cheshire West and Chester Council</b>	Martin Grainger		Email
<b>Flintshire County Council</b>	Janet Waggot		Email
<b>Transport Focus</b>			Email
<b>Transport for Greater Manchester</b>			Email
<b>Merseytravel</b>			Email
<b>Focus transport</b>			Email
<b>The Disabled Persons Transport Advisory Committee</b>			Email
<b>The Coal Authority</b>			Email
<b>Office of Road and Rail</b>			Email
<b>The Gas and Electricity Markets Authority (OFGEM)</b>			Email
<b>The Water Services Regulation</b>			Email

<b>Authority (OFWAT)</b>			
<b>Trinity House</b>			Email
<b>Public Health England</b>			Email
<b>Cheshire Resilience forum</b>			Email
<b>Merseyside Resilience Forum</b>			Email
<b>Wales Resilience Forum</b>			Email
<b>Welsh Ambulance Service</b>			Email
<b>Mid Cheshire NHS trust</b>			Email
<b>East Cheshire NHS Trust</b>			Email
<b>Countess Of Chester Hospital</b>			Email
<b>North West Ambulance Service</b>			Email
<b>Cheshire and Wirral Partnership NHS Foundation Trust</b>			Email
<b>Warrington and Halton Hospitals NHS</b>			Email

<b>Foundation Trust</b>			
<b>Public Health Wales</b>			Email
<b>Velindre NHS Trust</b>			Letter
<b>Clwydian Range and Dee Valley AONB Conservation Board</b>			Email
<b>North Wales Fire and Rescue Service</b>			Email
<b>Cheshire Fire and Rescue Service</b>	Mark Cashin		Email
<b>The Secretary of State for Defence</b>	Ben Wallace		Email
<b>The Health and Safety Executive</b>			Email
<b>Network Rail Infrastructure Ltd</b>			Email
<b>Highways England Historical Rail Estate</b>			Email
<b>The Canal and River Trust</b>			Email
<b>North East Waterways</b>			Email

<b>Forestry Commission</b>			Email
<b>Marine Management Organisation (MMO)</b>			Email
<b>Rail Safety and Standards Board</b>			Email
<b>NATS Ltd</b>			Email
<b>Royal Mail</b>			Email
<b>Cadw</b>			Email
<b>Welsh Language Commissioner</b>			Email
<b>ESP Electricity Limited</b>			Email
<b>Energetics Electricity Limited</b>			Email
<b>G2 Energy IDNO Limited</b>			Email
<b>Independent Power Networks Limited</b>			Email
<b>The Electricity Network Company Limited</b>			Email
<b>Leep Electricity Network Limited</b>			Email

<b>UK Power Distribution Limited</b>			Email
<b>Utility Distribution Networks Limited</b>			Email
<b>National Grid Electricity Transmission Plc</b>			Email
<b>Cadent Gas Limited</b>			Email
<b>Energetics Gas Limited</b>			Email
<b>Energy Assets Pipelines Limited</b>			Email
<b>ES Pipelines Ltd</b>			Email
<b>ESP Connections Ltd</b>			Email
<b>ESP Networks Ltd</b>			Email
<b>ESP Pipelines Ltd</b>			Email
<b>Fulcrum Pipelines Limited</b>			Email
<b>GTC Pipelines Limited</b>			Email
<b>Independent Pipelines Limited</b>			Email

<b>Indigo Pipelines Limited</b>			Email
<b>Quadrant Pipelines Limited</b>			Email
<b>National Grid Gas Plc</b>			Email
<b>Scotland Gas Networks Plc</b>			Email
<b>Wales and West Utilities Ltd</b>			Email
<b>Northern Gas Networks Limited</b>			Email
<b>Yorkshire Water Services</b>			Email
<b>FDF (Formerly know as Flintshire Disability Forum)</b>	Janet Thomas		E-Bulletin
<b>Fieldsman Trails</b>	Mr Colin Antwis		E-Bulletin
<b>Five Villages Chronicle</b>	Mr Shaun Evans		E-Bulletin
<b>Flint and District Lions Club</b>	Mr J Gregory		E-Bulletin
<b>Flint Local History Society</b>	Vicky Perfect		E-Bulletin
<b>Flintshire Community Walks</b>	Mr Colin Herbert (Chair)		E-Bulletin

<b>Flintshire Countryside Service (Wepre Park Visitor Centre)</b>			E-Bulletin
<b>Flintshire Historical Society</b>	Mrs Norma Parker		E-Bulletin
<b>Flintshire Local Voluntary Council (FLVC)</b>			E-Bulletin
<b>Friends of Wepre Park</b>			E-Bulletin
<b>Cheshire Wildlife Trust</b>			E-Bulletin
<b>Chester Zoo</b>			E-Bulletin
<b>Old Oaks golf course</b>			E-Bulletin
<b>Mere Lane Fishery</b>			E-Bulletin
<b>Lower Ridge Farm and Fisheries</b>			E-Bulletin
<b>Foregolf</b>			E-Bulletin
<b>The big shoot - Clay pigeon experience</b>			E-Bulletin
<b>greenacres animal park</b>			E-Bulletin
<b>Hawarden &amp; Ewloe Community Woodland</b>			E-Bulletin

<b>Northop Hall Cricket &amp; Hockey Club</b>			E-Bulletin
<b>Northop Golf Club</b>			E-Bulletin
<b>Highfield Hall - wedding venue north wales</b>			E-Bulletin
<b>Northop cricket club</b>			E-Bulletin
<b>Leadbrook hall shooting ground</b>			E-Bulletin
<b>Deeside Naturalists' Society Field Studies Centre</b>			E-Bulletin
<b>OYO Mountain Park Hotel</b>			E-Bulletin
<b>Flint golf club</b>	Andrea Richards		E-Bulletin
<b>Castles of Wales</b>			E-Bulletin
<b>CLWYD-POWYS ARCHAEOLOGICAL TRUST</b>			E-Bulletin
<b>Gwynedd Archaeological Trust</b>			E-Bulletin
<b>Glamorgan-Gwent Archaeological Trust</b>			E-Bulletin
<b>CEMEX Halkyn Quarry</b>			E-Bulletin

<b>Halkyn Mountain</b>			E-Bulletin
<b>The Ridings Caravan and Camping Park</b>			E-Bulletin
<b>Marian Bach Equestrian Centre</b>			E-Bulletin
<b>Wilder ways Bushcraft North Wales</b>			E-Bulletin
<b>Misty Waters Caravan and Chalet Park</b>			E-Bulletin
<b>pen-y-glwl caravan park</b>			E-Bulletin
<b>Caerwys &amp; District Clay Target Club</b>			E-Bulletin
<b>Gyrn Estate Carp Fisheries</b>			E-Bulletin
<b>Gyrn Castle</b>			E-Bulletin
<b>Ynyshir Farm Campsite</b>			E-Bulletin
<b>Emlyn's Coppice - Luxury Glamping</b>			E-Bulletin
<b>Tree Tops Caravan Park North Wales</b>			E-Bulletin
<b>Lyons Mounds Holiday Home Park</b>			E-Bulletin

Dee Estuary - Point of Ayr			E-Bulletin
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## Stakeholder Letter/Email

Dear Sir / Madam,

### **HyNet North West – seeking your views on our CO<sub>2</sub> pipeline proposals**

HyNet North West is an exciting new project supporting the decarbonisation of the North West and North Wales region whilst safeguarding thousands of local jobs. The project involves the development of a low carbon cluster which, from the mid-2020s, will reduce greenhouse gas emissions from industry, homes and transport, helping the UK reach net zero carbon emissions by 2050.

Part of the project involves the capture and long-term storage of carbon dioxide (CO<sub>2</sub>) emissions from industry. It will enable large-scale carbon emitters in the area to capture their carbon emissions and store them securely, deep below the seabed in a process known as Carbon Capture and Storage, or CCS.

We are writing to you to inform you of our plans for a CO<sub>2</sub> pipeline. The pipeline is the first part of the much larger project to make the region an international leader in hydrogen technology: producing clean, environmentally friendly hydrogen gas to power our industry, transport and homes.

There are several possible routes for this underground pipeline, which will run from Ince and Stanlow before joining with an existing pipeline past Connah's Quay to Point of Ayr and out under Liverpool Bay. We are dedicated to involving the local community at every stage. We want to ensure that every area benefits from HyNet North West and that you have the opportunity to have your say on how we develop the best project for local communities, the surrounding landscape and the environment. We are therefore running a consultation to hear your input on our plans.

This consultation will be open from 9 June 2021 to 11 July 2021 at: **[www.hynethub.co.uk](http://www.hynethub.co.uk)**. Here you can watch a video about HyNet North West, read more about the project and the pipeline plans and tell us your thoughts. In addition, we will be holding three live webinar events to give you the opportunity to hear more about the project and our proposals and ask any questions you may have. You can see the dates and register for these events at **[www.hynethub.co.uk](http://www.hynethub.co.uk)**.

If you have any questions or would like to request a paper copy of our plans and questionnaire, you can contact us using the details shown below.

Kind regards,



David Parkin – Director, Progressive Energy Ltd

Annwyl Syr / Fadam,

### **HyNet North West – holi eich barn ar ein cynigion piblinell CO<sub>2</sub>**

Mae HyNet North West yn brosiect newydd cyffrous sy'n cefnogi datgarboneiddio rhanbarth gogledd-orllewin Lloegr a gogledd Cymru gan ddiogelu miloedd o swyddi lleol. Mae'r prosiect yn cynnwys datblygu clwstwr carbon isel a fydd, o ganol y 2020au, yn lleihau allyriadau nwyon tŷ gwydr o ddiwydiant, cartrefi a thrafnidiaeth, gan helpu'r DU i gyflawni allyriadau carbon sero net erbyn 2050.

Mae rhan o'r prosiect yn cynnwys dal allyriadau carbon deuocsid (CO<sub>2</sub>) o ddiwydiant a'u storio yn y tymor hir. Bydd yn galluogi allyrwyr carbon ar raddfa fawr yn yr ardal i ddal eu hallyriadau carbon a'u storio'n ddiogel, yn ddwfn o dan waelod y môr drwy broses o'r enw Dal a Storio Carbon.

Rydym yn ysgrifennu atoch i roi gwybod i chi am ein cynlluniau ar gyfer piblinell CO<sub>2</sub> (carbon deuocsid). Y biblinell yw rhan gyntaf prosiect fwy o lawer i wneud y rhanbarth yn arweinydd rhyngwladol ym maes technoleg hydrogen: gan gynhyrchu nwy hydrogen glân, ecogyfeillgar i bweru ein diwydiant, trafndiaeth a chartrefi.

Mae sawl llwybr posibl ar gyfer y biblinell danddaearol hon, a fydd yn mynd o Ince a Stanlow cyn ymuno â phiblinell bresennol heibio Cei Connah i'r Parlwr Du ac allan o dan Fae Lerpwl. Rydym wedi ymrwymo i gynnwys y gymuned leol ym mhob cam. Rydym yn awyddus i sicrhau bod pob ardal yn elwa ar HyNet North West a'ch bod yn cael cyfle i ddweud eich dweud ynghylch sut yr ydym yn datblygu'r prosiect gorau ar gyfer cymunedau lleol, y dirwedd gyfagos a'r amgylchedd. Felly, rydym yn cynnal ymgynghoriad i glywed eich sylwadau ynghylch ein cynlluniau.

Bydd yr ymgynghoriad hwn ar agor rhwng 9 Mehefin 2021 hyd 11 Gorffennaf 2021 dyddiad yn: **[www.hynethub.co.uk](http://www.hynethub.co.uk)**. Yma gallwch wyllo fideo ynglŷn â HyNet North West, darllen mwy am y prosiect a chynlluniau'r biblinell a dweud wrthym eich syniadau. Yn ogystal, byddwn yn cynnal tri digwyddiad gweminar byw i roi cyfle i chi glywed mwy am y prosiect a'n cynigion a gofyn unrhyw gwestiynau sydd gennych. Gallwch weld y dyddiadau a chofrestru ar gyfer y digwyddiadau yn **[www.hynethub.co.uk](http://www.hynethub.co.uk)**.

Os oes gennych unrhyw gwestiynau neu os hoffech ofyn am gopi papur o'n cynlluniau a'n holiadur, gallwch gysylltu â ni fel hyn.

**E-mail / E-** 

**Phone / Ffôn:** 0203 116 5919

**Post:** Freepost HYPNET NORTH WEST

Cofion gorau,

  
David Parkin – Director, Progressive Energy Ltd

## Postal Stakeholders

We could not find a contact email for two contacts, so we posted them a version of the email: Merseyside Fire and Rescue and Velindre NHS Trust.

# APPENDIX B: WEBINAR PRESENTATION



## Agenda

- What is HyNet North West?
- Introducing our CO<sub>2</sub> pipeline proposals
- Consultation details and how to get involved
- Q&A Session

If you have any questions throughout the presentation, please submit them through the chat function.

HyNet North West

## The Climate Change Challenge

- Climate change has far reaching effects on our planet from increase intensity of weather events to global warming.
- In November 2019 the UK declared a climate emergency.
- The UK Government understands that in order to successfully tackle climate change, all parts of the economy must decarbonise and become greener, including heavy industry.



HyNet North West

## UK's Carbon Net Zero 2050 aspirations

- The UK Government has created a legally binding Net Zero CO<sub>2</sub> emissions target in response to the global climate emergency.
- This means that by 2050, any CO<sub>2</sub> emissions to the atmosphere must be eliminated, captured or offset by equivalent emissions removal

Nearly 70% of the UK's local authorities have set even stronger targets and are aiming for net zero carbon emissions by 2040 or earlier.

HyNet North West

## Why do we need HyNet North West?

- Many industrial emissions come from fuel combustion, and currently the fuel used is generally natural gas. Natural gas can be easily replaced with low-carbon hydrogen which emits no CO<sub>2</sub> when combusted.
- A smaller proportion of industrial emissions come from the raw materials themselves, and for these industries, carbon capture and storage will be required.
- HyNet brings together many major CO<sub>2</sub> emitters across these sectors in a collective effort to reduce their emissions. By switching fuels, from natural gas to hydrogen, these companies can cut their CO<sub>2</sub> emissions, making these industries consistent with the UK's net zero pathway and therefore helping to protect jobs as well as the environment.

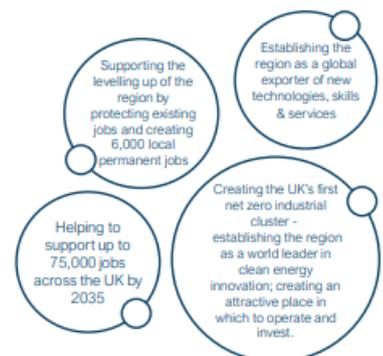


HyNet North West

## HyNet North West Jobs and investment

- Transforming North Wales and the North West by building on the region's rich industrial heritage to provide a lasting legacy for generations to come.
- Benefits at the local, regional and national level.
- Tapping into the area's industrial experience and scientific expertise to create a hotspot for innovation and growth.

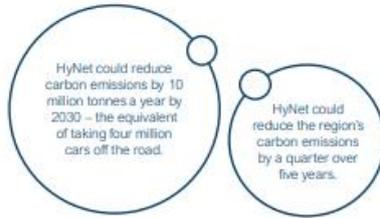
HyNet North West



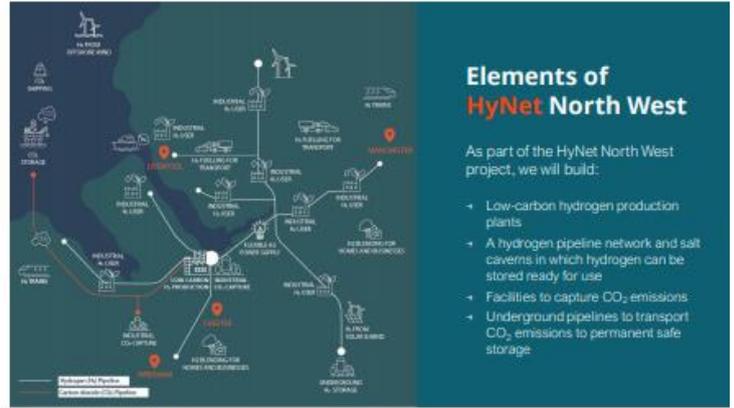
## HyNet North West

### Environmental benefits

- World-leading solutions for a cleaner, greener world for generations to come.
- Improving local air quality to make the region a safer and healthier place.



HyNet North West



## Elements of HyNet North West

As part of the HyNet North West project, we will build:

- Low-carbon hydrogen production plants
- A hydrogen pipeline network and salt caverns in which hydrogen can be stored ready for use
- Facilities to capture CO<sub>2</sub> emissions
- Underground pipelines to transport CO<sub>2</sub> emissions to permanent safe storage

## The HyNet North West Consortium

HyNet North West is a collaboration of separate but integrated organisations that have joined together to decarbonise the North West region.

Each partner is led by industry experts who are working collaboratively across the network of hydrogen production, distribution, usage and storage as well as carbon capture and storage.



HyNet North West

## About Liverpool Bay CCS Ltd

- Responsible for the CO<sub>2</sub> transport and storage project
- Large organisation with significant expertise in gas transport and storage
- Well-established in the local area

HyNet North West

## Our first public consultation

We are holding this initial consultation from 9 June to 11 July 2021 to:

- Introduce HyNet North West and to listen to views on our project ambitions.
- Present our early proposals for one of the first elements of the project: a pipeline removing CO<sub>2</sub> emissions from industries in Stanlow and Ince area, to be stored in existing gas reservoirs in Liverpool Bay.

This is an initial consultation to introduce the project. Further consultations will be held later in the process when more detail is available for comment.

HyNet North West

## What is Carbon Capture and Storage?

- Carbon Capture and Storage (CCS) is a safe and proven technology that stores CO<sub>2</sub> and prevents it from being released into the atmosphere.
- The UK Government and the Climate Change Committee see it as an essential technology for the UK to achieve its net zero emissions reduction target.

HyNet North West



## HyNet North West CO<sub>2</sub> pipeline

The CO<sub>2</sub> will be transported safely by pipeline to the gas reservoirs in Liverpool Bay. The CO<sub>2</sub> pipeline will comprise of two parts:



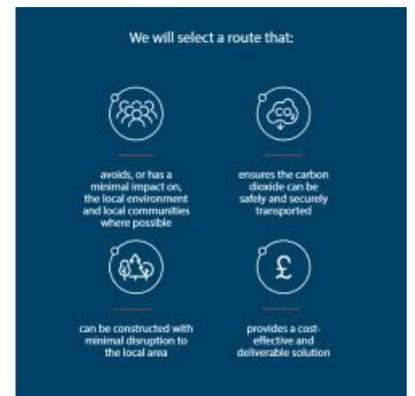
HyNet North West

- The construction of a new underground pipeline from industries in the Ince and Stanlow area, to a location near Flint.
- The new pipeline will connect with an existing natural gas pipeline that will be repurposed so that it can transport CO<sub>2</sub>.

## Finding a route for the new pipeline

- We are currently identifying a suitable route for the new CO<sub>2</sub> pipeline to follow.
- We undertook an appraisal process to refine the pipeline route options which we are currently presenting.
- The final stage of our route appraisal process will be to select a single route for which we will be seeking consent.

HyNet North West



## HyNet North West CO<sub>2</sub> pipeline

Defining broad corridors

- We first considered broad corridor options. We compared these against a range of planning, environmental, land and engineering criteria.
- Concluded that the Southern and Core Corridor were the most suitable to progress.



HyNet North West

## HyNet North West CO<sub>2</sub> pipeline

Defining routes

- We then identified 9 more defined routes (50-100m wide) within the most suitable corridors.
- We scored these route options against criteria relating to: environment, economy, engineering, planning and communities.
- From these appraisals we identified the two route options we are currently consulting on: Option G and Option L.



HyNet North West



### HyNet North West New CO<sub>2</sub> pipeline option

We are consulting on Option G and Option L.

There are also some variations to consider which could be applied to either of the two route options. These include:

- Where the newbuild pipeline connects into the existing pipeline;
- Crossing the River Dee;
- How the newbuild pipeline extends from Stanlow to Ince.

### HyNet North West CO<sub>2</sub> pipeline

The variations

#### CONNECTION TO EXISTING PIPELINE AT CONNAH'S CLIFF



- A connection close to the A5117
- A connection close to Coed Orm Road / AB-Goch Lane
- A connection close to Leadbrook Drive

#### RIVER DEE CROSSING



- Option G could use the cross-over to divert and cross the River Dee at the same location as Option L.
- Or Option L could be diverted to the more south westerly River Dee crossing.

#### CONNECTION FROM STANLOW TO INCE



- A route that crosses the A5117 at a point south of Elton and north of the M55 motorway services
- A route that runs further to the south westwards, crossing the M55 motorway twice before reaching Ince.

## About the CO<sub>2</sub> pipeline

- The pipeline will be buried underground at a depth of 1.2 metres or lower.
- You will not be able to see the pipeline although some above ground marker posts will be visible.
- We will need to build some above ground installations which will be used for the maintenance and operation of the pipeline.
- Our proposals will also include for the installation of 'block valves' to allow isolation of sections of the pipeline.

Further information on location and sizes of the elements above ground will be developed as the designs progress.

HyNet North West



## What happens to the CO<sub>2</sub> offshore?

- The CO<sub>2</sub> will be transported in a pipeline under the sea to an offshore platform, located approximately 30km offshore in Liverpool Bay.
- From here, the CO<sub>2</sub> will be injected into the depleted gas reservoir. As an offshore pipeline, this will be regulated by the Oil and Gas Authority.

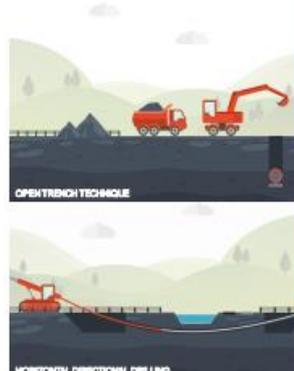


HyNet North West

## Construction

- Entire newbuild pipeline would take approximately 12 months to construct (typically 1-2 months for the installation of the pipeline in a particular location).
- Once pipeline is installed, we will reinstate the land as close as possible to its original condition.
- For much of the pipeline, we will use an open trench technique. In more complex areas, we will use methods such as horizontal directional drilling or auger boring.

HyNet North West



## DCO Application Stages



## How can you provide your feedback?

The consultation is open from 9 June to 11 July 2021.

- You can view information and provide responses online
  - + Consultation brochure
  - + Interactive map of the route options
  - + Online questionnaire
- Hard copies of materials are available on request.
- Deadline for consultation responses: midnight on 11 July 2021.



## Q&A

If you have any questions, please submit them in the chat function.

HyNet North West



HyNet North West

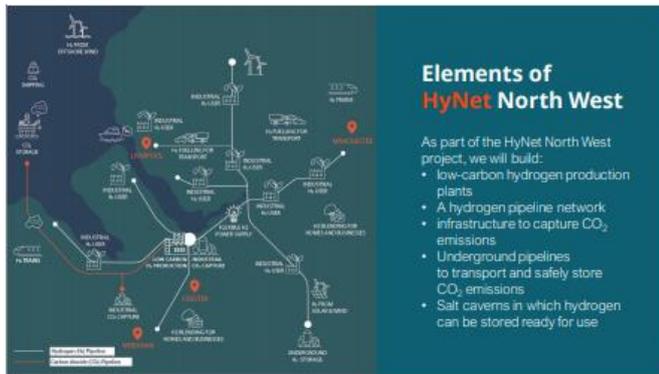
# APPENDIX C: STAKEHOLDER BRIEFING PRESENTATION



## Agenda

- HyNet North West recap
- Cluster sequencing
- Introducing our CO<sub>2</sub> pipeline proposals
  - Background to our proposals
  - The options we are consulting on
- Consultation details and how to get involved
  - Separate EIA Scoping Consultation
- Q&A

HyNet North West

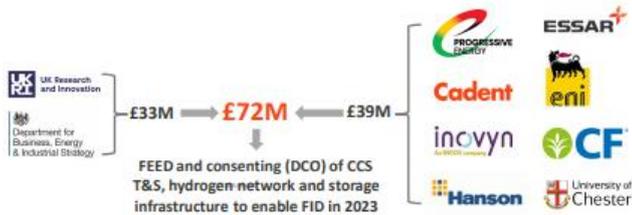


## Delivering HyNet by 2025



HyNet North West

## Major funding announcement in Mar 2021



HyNet North West

## Cluster Sequencing Phase 1



HyNet North West

## Launching our first public consultation

We are holding this initial consultation from 9 June to 11 July 2021 to:

- Introduce HyNet North West and to listen to views on our project ambitions.
- Present our early proposals for one of the first elements of the project: a pipeline removing CO<sub>2</sub> emissions from industries in Stanlow and Ince area, to be stored in existing gas reservoirs in Liverpool Bay.

This is an initial non-statutory consultation to introduce the project. Further consultations will be held later in the process when more detail is available for comment.

HyNet North West

## HyNet North West CO<sub>2</sub> pipeline

The CO<sub>2</sub> will be transported safely by pipeline to the gas reservoirs Liverpool Bay. The CO<sub>2</sub> pipeline will comprise of two parts:



HyNet North West

## HyNet North West CO<sub>2</sub> pipeline

We undertook an appraisal process to refine the pipeline route options which we are currently presenting.

- We first considered broad corridor options. We compared these against a range of planning, environmental, land and engineering criteria.
- We then identified 9 more defined routes (50-100m wide) within the most suitable corridors.
- We scored these route options against criteria relating to environment, economy, engineering, planning and communities.
- From these appraisals we identified the two route options we are currently consulting on: Option G and Option I.

HyNet North West



## HyNet North West New CO<sub>2</sub> pipeline option

We are consulting on **Option G** and **Option I**.

There are also some **variations** to consider which could be applied to either of the two route options. These include:

- Where the newbuild pipeline connects into the existing pipeline;
- Crossing the River Dee;
- How the newbuild pipeline extends from Starlow to Ince.

## About the CO<sub>2</sub> pipeline

- The pipeline will be buried underground at a depth of 1.2 metres or lower.
- You will not be able to see the pipeline although some above ground marker posts will be visible.
- We will need to build some above ground installations which will be used for the maintenance and operation of the pipeline.
- Our proposals will also include for the installation of 'block valves' (for safety and maintenance).

Further information on location and sizes of the elements above ground will be developed as the designs progress.

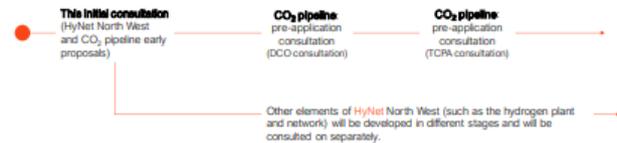
HyNet North West



## The consenting process

The new CO<sub>2</sub> pipeline exceeds 16km in length, it is classed as a Nationally Significant Infrastructure Project. This means that we will be applying to obtain a Development Consent Order (DCO) to be able to progress the project.

We will also be seeking planning approval from Flintshire County Council for potential works to modify the existing pipeline and the facilities at the Point of Ayr Gas Terminal.



HyNet North West

## Participating in the consultation

The consultation will be open from 9 June to 11 July 2021.

- Information will be available online at: [www.hynethub.co.uk](http://www.hynethub.co.uk)
- Hard copies of materials will be available on request.
- We will be holding three public webinars
  - Saturday 19 June 2021 2.30pm – 3.30pm
  - Tuesday 22 June 2021 6pm – 7pm
  - Thursday 1 July 2021 10am – 11am
- Deadline for consultation responses: midnight on 11 July 2021.

HyNet North West

## Reaching out to the local community

We understand the value in listening to local communities and stakeholders. We are working to generate interest and participation in the consultation.

- Mail-out to the local area / emails and e-bulletins to stakeholder groups
- Digital-first consultation due to COVID-19 restrictions. We will provide hard-copy materials on request. Contact details also supplied for non-digital discussions.
- Social media outreach
- Public webinars – opportunity for Q&A (via chat function)

HyNet North West



## EIA Scoping Consultation

The Environmental Impact Assessment (EIA) Scoping Report sets out the extent of the issues and topics to be considered as part of the environmental assessments.

For this project, the EIA Scoping Report has been submitted to the Planning Inspectorate (PINS) and is currently also being consulted on. This is a separate but complementary consultation with a technical focus, specifically related to the EIA for the CO<sub>2</sub> pipeline proposals. The EIA Scoping report is available on the PINS website: [infrastructure.planninginspectorate.gov.uk/hynet-north-west-carbon-dioxide-pipeline](http://infrastructure.planninginspectorate.gov.uk/hynet-north-west-carbon-dioxide-pipeline)

EIA Scoping Consultation	Non-statutory public consultation
→ Responses to EIA Scoping consultation will specifically inform the Scoping Opinion	→ Wider remit (seeking feedback on HyNet North West ambitions, as well as CO <sub>2</sub> pipeline proposals)
→ Responses to the EIA Scoping consultation should be directed to PINS	→ Responses to go directly to HyNet North West team

Any queries or uncertainties, please let us know.

HyNet North West



## APPENDIX D: CODEFRAME

<b>Hydrogen</b>	
HYD-001	Creation of Hydrogen
HYD-002	Usability of hydrogen
HYD-003	Hydrogen economy
<b>Carbon pipeline</b>	
CAR-001	Further developments/extension of scheme
CAR-002	Coordination of organisations/projects across the route
CAR-003	Use of existing infrastructure/suggested route option
<b>Climate Change</b>	
CLI-001	Support of positive actions for climate change
CLI-002	Doubts of climate change
CLI-003	Comments on educating people/schools about climate change/hydrogen
<b>Safety</b>	
SAF-001	General concern on safety
SAF-002	Potential for leaks
SAF-003	Doubts on safety of CCS
<b>Negative Impacts</b>	
NEG-001	Impact of Noise/vibration
NEG-002	Impact on environment/soil/biodiversity/wildlife/marine life
NEG-003	Impact on rivers/streams
NEG-004	Impact on floodplains
NEG-005	Impact on air quality
NEG-006	Impact on schools
NEG-007	Impact on the village/people/buildings
NEG-008	Impact on landscape/visual
NEG-009	Impact on traffic
NEG-010	Impact on PRow
NEG-011	Impact on utility
<b>Positive Impacts</b>	
POS-001	Opportunity to improve utility facilities
POS-002	Returning the land to original state
POS-003	Community benefit fund
POS-004	Improvement of area where pipeline is laid
<b>Construction</b>	
CON-001	Impact on footpaths
CON-002	Maintenance
CON-003	General impact
CON-004	Impact on wildlife/nature
CON-005	Impact on buildings/villages
CON-006	Impact on traffic/access
<b>Routing options</b>	
ROU-001	General support

ROU-002	General opposition
ROU-003	Support option I
ROU-004	Oppose option I
ROU-005	Support option G
ROU-006	Oppose of G

#### Request for more information

INF-001	More information required on modifications/repurposing
INF-002	More information required on design
INF-003	More information require on impact
INF-004	More information required on hydrogen
INF-005	More information required on safety
INF-006	More information required on funding/cost
INF-007	More information required on Carbon/CCS

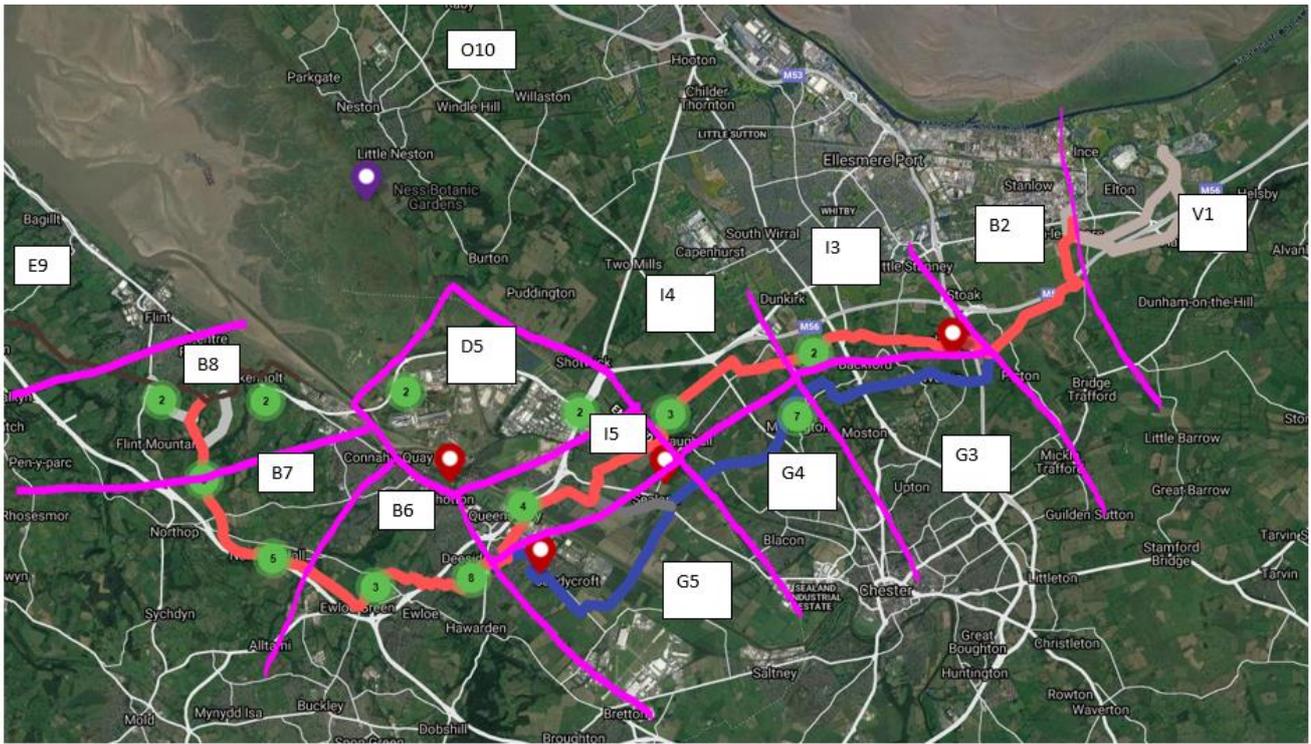
#### Consultation

CONS-001	Not enough detail in consultation materials
CONS-002	Not enough assessment criteria
CONS-003	Request inclusion in the consultation

#### Other

OTH-001	Discussion of different project/area
OTH-002	Comments unrelated to scheme
OTH-003	No comment

Feedback Map - Location Tags	
V1	Comments on the variation by Elton
B2	Comments on both route between Thornton-le-moors and Stoak
I3	Comments of I route between Stoak and Backford
G3	Comments of G route between Stoak and Backford
I4	Comments on I route between Mollington and Saughall
G4	Comments on G route between Mollington and Saughall
D5	Comments on and around Deeside industrial estate
I5	Comments on I route between Saughall and Queensferry
G5	Comments on G route between Saughall and Queensferry
B6	Comments on both routes between deeside and Northop Hall
B7	Comments on both routes between Northop Hall and Flint Mountain
B8	Comments around Flint variations
E9	Comments on existing routes
O10	Comments away from the route

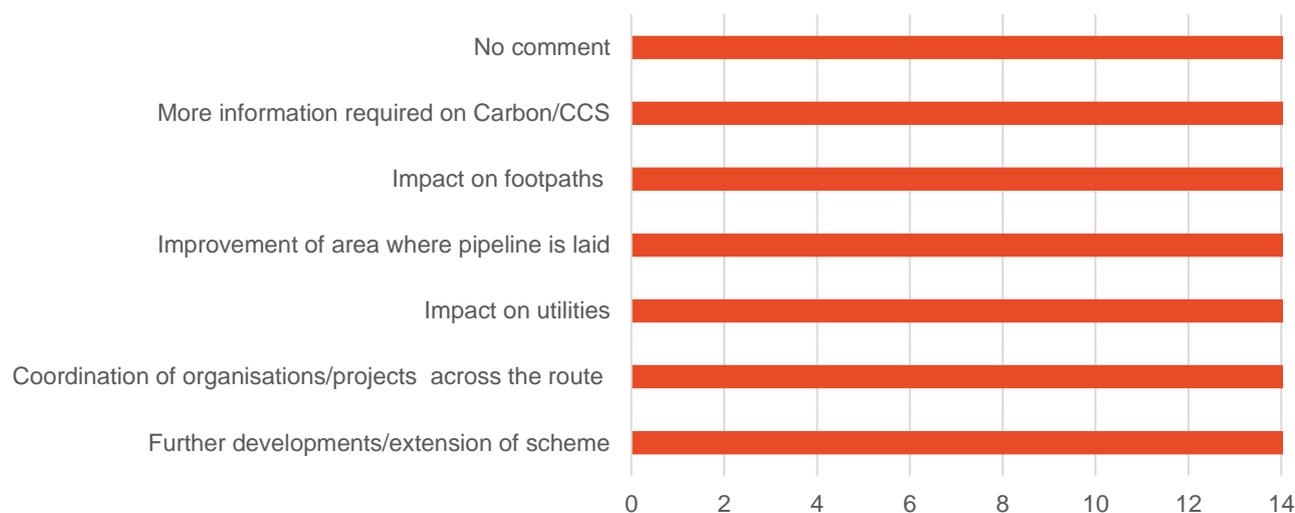


## APPENDIX E: FREETEXT ANALYSIS DATA

We will be undertaking a series of studies to understand the potential impacts of the construction and operation of the CO<sub>2</sub> pipeline on the local area and, importantly, how we can include for ways to reduce, remove or offset those impacts as part of our design work. We will be looking at a variety of environmental and social aspects. Which of these topics are you most interested in finding out more about? If other, please describe?

Total Number of Responses = 4 Total Number of Codes = 7	Number of Coded Comments	Percentage of Coded Comments
Further developments/extension of scheme	1	14%
Coordination of organisations/projects across the route	1	14%
Impact on utilities	1	14%
Improvement of area where pipeline is laid	1	14%
Impact on footpaths	1	14%
More information required on Carbon/CCS	1	14%
No comment	1	14%

Which environmental topics would you like to know more about? (%)



**Do you have any general comments or questions you would like to add about the CO<sub>2</sub> pipeline option or the alternatives within those options?**

<b>Total Number of Responses = 24 Total Number of Codes = 62</b>	<b>Number of Coded Comments</b>	<b>Percentage of Coded Comments</b>
<b>Creation of Hydrogen</b>	1	1.6%
<b>Hydrogen Economy</b>	1	1.6%
<b>Use of existing infrastructure/suggested route option</b>	4	6.5%
<b>Comments on educating people/schools about climate change/hydrogen</b>	1	1.6%
<b>Doubts on safety of CCS</b>	2	3.2%
<b>Impact on environment/soil/biodiversity/wildlife/marine life</b>	3	4.8%
<b>Impact on the village/people/buildings</b>	8	13%
<b>Impact on traffic</b>	2	3.2%
<b>Impact on utilities</b>	1	1.6%
<b>Returning the land to original state</b>	1	1.6%
<b>Improvement of area where pipeline is laid</b>	1	1.6%
<b>Maintenance</b>	2	3.2%
<b>General impact of Construction</b>	2	3.2%
<b>Construction impact on wildlife/nature</b>	1	1.6%
<b>Construction impact on buildings/villages</b>	3	4.8%
<b>General support</b>	2	3.2%
<b>General opposition</b>	2	3.2%
<b>Oppose option I</b>	2	3.2%
<b>Oppose of G</b>	3	4.8%

<b>More information required on modifications/repurposing</b>	2	3.2%
<b>More information required on design</b>	4	6.5%
<b>More information required on impact</b>	4	6.5%
<b>More information required on hydrogen</b>	1	1.6%
<b>More information required on safety</b>	2	3.2%
<b>More information required on funding/cost</b>	1	1.6%
<b>More information required on Carbon/CCS</b>	1	1.6%
<b>Not enough detail in consultation materials</b>	2	3.2%
<b>Request inclusion in the consultation</b>	1	1.6%
<b>Discussion of different project/area</b>	2	3.2%

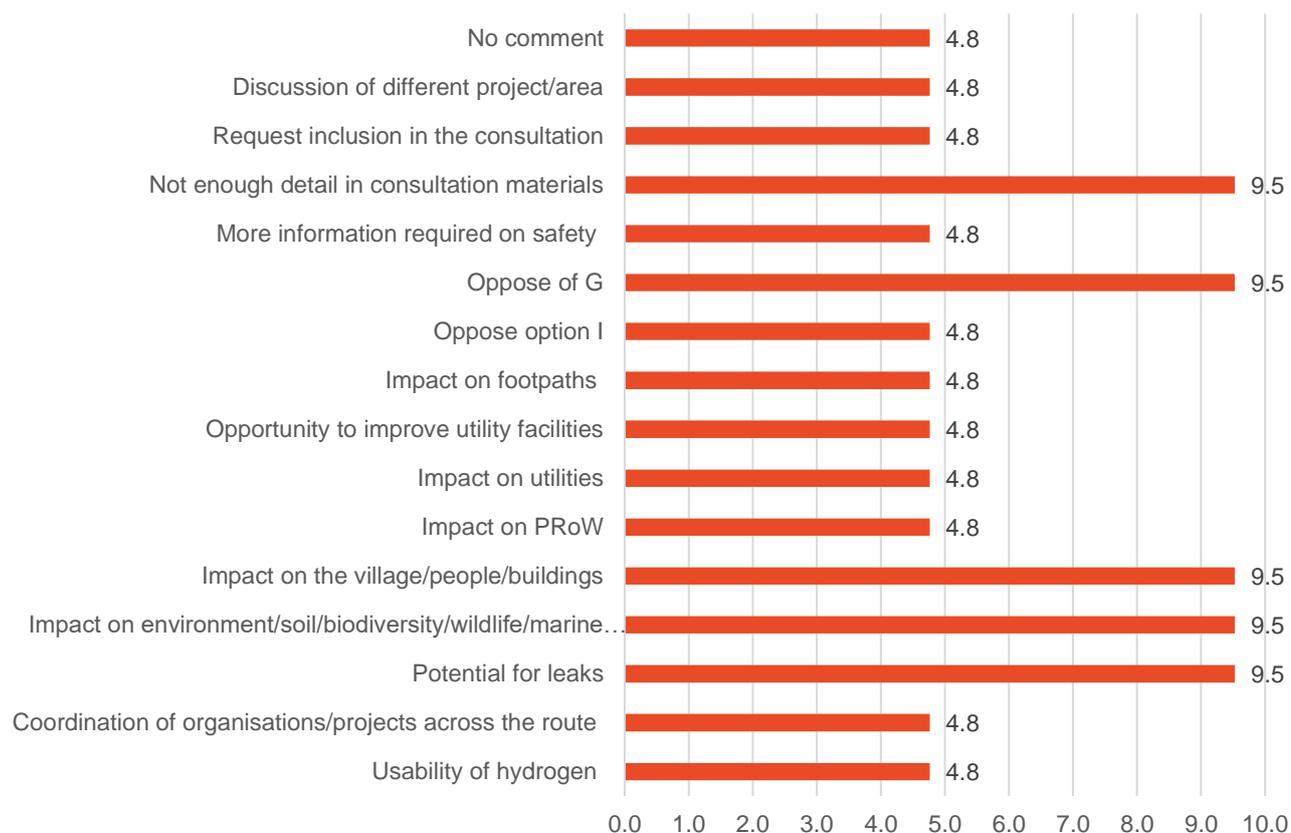
Do you have any general comments or questions you would like to add about the CO<sub>2</sub> pipeline option or the alternatives within those options? (%)



**Do you have any information which you feel would be useful for us to know as we progress with our studies?**

<b>Total Number of Responses = 8 Total Number of Codes = 21</b>	<b>Number of Coded Comments</b>	<b>Percentage of Coded Comments</b>
<b>Usability of hydrogen</b>	1	4.8%
<b>Coordination of organisations/projects across the route</b>	1	4.8%
<b>Potential for leaks</b>	2	9.5%
<b>Impact on environment/soil/biodiversity/wildlife/marine life</b>	2	9.5%
<b>Impact on the village/people/buildings</b>	2	9.5%
<b>Impact on PRow</b>	1	4.8%
<b>Impact on utility</b>	1	4.8%
<b>Opportunity to improve utility facilities</b>	1	4.8%
<b>Impact on footpaths</b>	1	4.8%
<b>Oppose option I</b>	1	4.8%
<b>Oppose of G</b>	2	9.5%
<b>More information required on safety</b>	1	4.8%
<b>Not enough detail in consultation materials</b>	2	9.5%
<b>Request inclusion in the consultation</b>	2	9.5%
<b>Discussion of different project/area</b>	1	4.8%
<b>No Comment</b>	1	4.8%

Do you have any information which you feel would be useful for us to know as we progress with our studies? (%)



**Feedback map – Your comments or Suggestions**

<b>Total Number of Responses = 52</b> <b>Total Number of Codes = 106</b>	<b>Number of Coded Comments</b>	<b>Percentage of Coded Comments</b>
<b>Coordination of organisations/projects across the route</b>	2	1.9%
<b>Use of existing infrastructure/suggested route option</b>	14	13.2%
<b>General concern on safety</b>	3	2.8%
<b>Potential for leaks</b>	3	2.8%
<b>Doubts on safety of CCS</b>	1	0.9%
<b>Impact of Noise/vibration</b>	2	1.9%

<b>Impact on environment/soil/biodiversity/wildlife/marine life</b>	10	9.4%
<b>Impact on floodplains</b>	1	0.9%
<b>Impact on schools</b>	2	1.9%
<b>Impact on the village/people/buildings</b>	12	11.3%
<b>Impact on landscape/visual</b>	3	2.8%
<b>Impact on traffic</b>	1	0.9%
<b>Impact on PRow</b>	8	7.5%
<b>Improvement of area where pipeline is laid</b>	7	6.6%
<b>Impact on footpaths</b>	5	4.7%
<b>General impact</b>	1	0.9%
<b>Impact on wildlife/nature</b>	2	1.9%
<b>Impact on buildings/villages</b>	5	4.7%
<b>Impact on traffic/access</b>	2	1.9%
<b>General opposition</b>	3	2.8%
<b>Support option I</b>	6	5.7%
<b>Oppose of G</b>	3	2.8%
<b>More information required on design</b>	5	4.7%
<b>More information requires on impact</b>	3	2.8%
<b>More information required on safety</b>	1	0.9%
<b>Not enough detail in consultation materials</b>	1	0.9%

<b>Location Code</b>	<b>Number of Responses</b>
<b>B6</b>	13
<b>B7</b>	6
<b>B7/B8</b>	1
<b>B8</b>	4
<b>D5</b>	4
<b>D5/B7</b>	1
<b>E9</b>	1
<b>G3</b>	2
<b>G4</b>	7
<b>G4/G3</b>	1
<b>G5</b>	4
<b>I3</b>	2
<b>I4</b>	2
<b>I5</b>	3
<b>O10</b>	2
<b>V1</b>	1

## Feedback Map - Coded Comments (%)



**C4**

**Non-Statutory  
Consultation  
Summary Report**

**HyNet  
North West**



# HyNet North West

November 2021

## Non-Statutory Consultation Summer 2021 Feedback summary

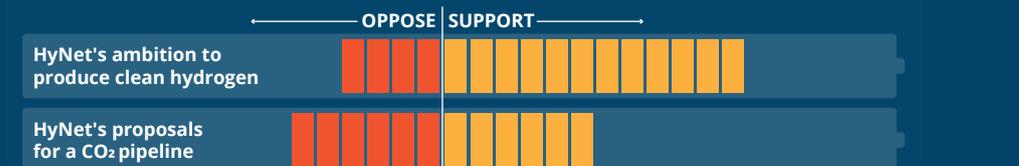
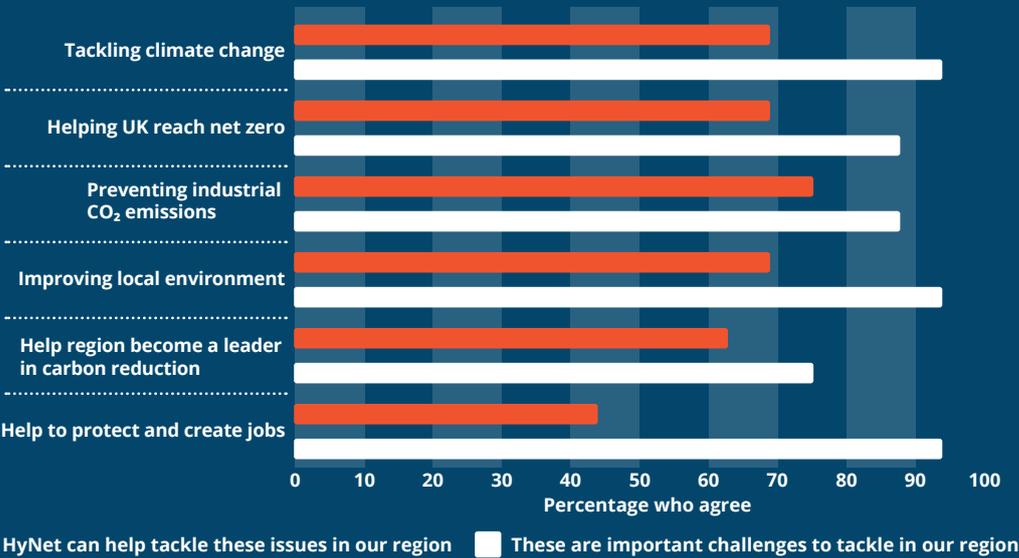
HyNet is a ground-breaking clean energy project that will unlock a low carbon future for the North West and North Wales. The project will produce low carbon hydrogen to replace the fossil fuels we use today for industry, transport and homes. HyNet will also capture and store carbon dioxide (CO<sub>2</sub>) emissions produced by energy intensive industries.

We held a consultation in Summer 2021 to introduce HyNet to the public and to listen to the views on HyNet's ambitions. The consultation also set out our early proposals for the pipeline that will take CO<sub>2</sub> emissions from industries in North Wales and the Ince and Stanlow area to be stored in depleted gas reservoirs in Liverpool Bay.

The feedback we've received as part of the consultation will help in developing our proposals further.

### HyNet North West's ambitions

Through HyNet, we want to help the region tackle important environmental and climate change challenges, as well as support the local economy.



Your feedback suggests that you agree that the challenges listed are important to consider. However, more evidence is required to help you understand the various elements of HyNet and how they support in tackling these issues, particularly around carbon capture and storage.

### As part of our consultation:



We received 123 responses from consultees.



Over 2,200 visitors viewed our online HyNet Hub.



We issued over 9,900 letters to local communities.



Three public webinars were held online.



Over 50 comments received on our interactive feedback map.

# Carbon dioxide pipeline route options

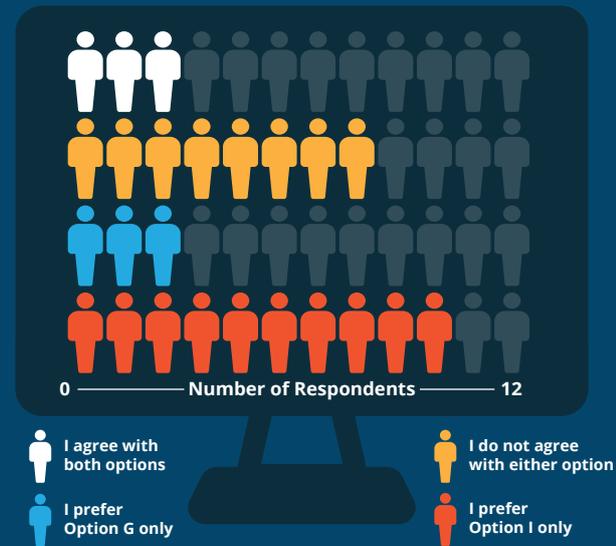
We presented two carbon dioxide pipeline route options: Option I and Option G. You can find out more details on our proposals at [www.hynethub.co.uk](http://www.hynethub.co.uk)

Among the 24 people who responded, there was an overall preference for Option I over Option G. Some comments and questions were raised about the carbon dioxide pipeline.

Total number of website visits:  
**2200**

Total number of responses:  
**24**

Total number of people expressing a route preference:  
**13**



Some of the key comments and interests around the carbon dioxide pipeline included:



## Safety of carbon capture and storage

A number of people expressed a desire to understand more about the long term security and safety of carbon dioxide storage.



## Potential impacts of the pipeline on local communities

Including queries over how the pipeline would impact local schools, public rights of way, properties and other community facilities.



## Potential impacts of the pipeline on the environment

Especially in relation to local wildlife and natural habitats, as well as consideration of local flooding.



## Interest in how the pipeline will appear once installed

Including queries over how land will look and how it can be used following construction of the pipeline.



## Questions about the general impact of construction

Some respondents were keen to learn more about how the pipeline would be installed, how long it would take and whether the installation would be disruptive.



## Interest in the hydrogen production process

Including queries around the transition to green hydrogen, costs of production and the impact on energy values for customers.

You can find more detail on the feedback received, as well as our responses to the key issues raised, in our Non-statutory consultation report which you can read at [www.hynethub.co.uk](http://www.hynethub.co.uk), where you can also find more information about the project

**C5**

**Non-Statutory  
Stakeholder  
Email**

**HyNet  
North West**



Progressive Energy Ltd  
Swan House  
Bond's Mill  
Stonehouse  
GL10 3RF

«TableStart:Document»

«ProperOfficer»  
«ContactName»  
«AddressLine1»  
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«AddressLine4»  
«AddressLine5»  
«AddressLine6»  
«Town»  
«Postcode»

«SentDate»

Dear Sir / Madam,

## **HyNet North West – seeking your views on our CO<sub>2</sub> pipeline proposals**

HyNet North West is an exciting new project supporting the decarbonisation of the North West and North Wales region whilst safeguarding thousands of local jobs. The project involves the development of a low carbon cluster which, from the mid-2020s, will reduce greenhouse gas emissions from industry, homes and transport, helping the UK reach net zero carbon emissions by 2050.

Part of the project involves the capture and long-term storage of carbon dioxide (CO<sub>2</sub>) emissions from industry. It will enable large-scale carbon emitters in the area to capture their carbon emissions and store them securely, deep below the seabed in a process known as Carbon Capture and Storage, or CCS.

We are writing to you to inform you of our plans for a CO<sub>2</sub> pipeline. The pipeline is the first part of the much larger project to make the region an international leader in hydrogen technology: producing clean, environmentally friendly hydrogen gas to power our industry, transport and homes.

There are several possible routes for this underground pipeline, which will run from Ince and Stanlow before joining with an existing pipeline past Connah's Quay to Point of Ayr and out under Liverpool Bay. We are dedicated to involving the local community at every stage. We want to ensure that every area benefits from HyNet North West and that you have the opportunity to have your say on how we develop the best project for local communities, the surrounding landscape and the environment. We are therefore running a consultation to hear your input on our plans.

This consultation will be open from 9 June 2021 to 11 July 2021 at: **[www.hynethub.co.uk](http://www.hynethub.co.uk)**. Here you can watch a video about HyNet North West, read more about the project and the pipeline plans and tell us your thoughts. In addition, we will be holding three live webinar events to give you the opportunity to hear more about the project and our proposals and ask any questions you may have. You can see the dates and register for these events at **[www.hynethub.co.uk](http://www.hynethub.co.uk)**.

If you have any questions or would like to request a paper copy of our plans and questionnaire, you can contact us using the details shown below.

Kind regards,



David Parkin – Director, Progressive Energy Ltd

Annwyl Syr / Fadam,

## **HyNet North West – holi eich barn ar ein cynigion piblinell CO<sub>2</sub>**

Mae HyNet North West yn brosiect newydd cyffrous sy'n cefnogi datgarboneiddio rhanbarth gogledd-orllewin Lloegr a gogledd Cymru gan ddiogelu miloedd o swyddi lleol. Mae'r prosiect yn cynnwys datblygu clwstwr carbon isel a fydd, o ganol y 2020au, yn lleihau allyriadau nwyon tŷ gwydr o ddiwydiant, cartrefi a thrafnidiaeth, gan helpu'r DU i gyflawni allyriadau carbon sero net erbyn 2050.

Mae rhan o'r prosiect yn cynnwys dal allyriadau carbon deuocsid (CO<sub>2</sub>) o ddiwydiant a'u storio yn y tymor hir. Bydd yn galluogi allyrwyr carbon ar raddfa fawr yn yr ardal i ddal eu hallyriadau carbon a'u storio'n ddiogel, yn ddwfn o dan waelod y môr drwy broses o'r enw Dal a Storio Carbon.

Rydym yn ysgrifennu atoch i roi gwybod i chi am ein cynlluniau ar gyfer piblinell CO<sub>2</sub> (carbon deuocsid). Y biblinell yw rhan gyntaf prosiect fwy o lawer i wneud y rhanbarth yn arweinydd rhyngwladol ym maes technoleg hydrogen: gan gynhyrchu nwy hydrogen glân, ecogyfeillgar i bweru ein diwydiant, trafndiaeth a chartrefi.

Mae sawl llwybr posibl ar gyfer y biblinell danddaearol hon, a fydd yn mynd o Ince a Stanlow cyn ymuno â phiblinell bresennol heibio Cei Connah i'r Parlwr Du ac allan o dan Fae Lerpwl. Rydym wedi ymrwmo i gynnwys y gymuned leol ym mhob cam. Rydym yn awyddus i sicrhau bod pob ardal yn elwa ar HyNet North West a'ch bod yn cael cyfle i ddweud eich dweud ynghylch sut yr ydym yn datblygu'r prosiect gorau ar gyfer cymunedau lleol, y dirwedd gyfagos a'r amgylchedd. Felly, rydym yn cynnal ymgynghoriad i glywed eich sylwadau ynghylch ein cynlluniau.

Bydd yr ymgynghoriad hwn ar agor rhwng 9 Mehefin 2021 hyd 11 Gorffennaf 2021 dyddiad yn:  Yma gallwch wyllo fideo ynglŷn â HyNet North West, darllen mwy am y prosiect a chynlluniau'r biblinell a dweud wrthym eich syniadau. Yn ogystal, byddwn yn cynnal tri digwyddiad gweminar byw i roi cyfle i chi glywed mwy am y prosiect a'n cynigion a gofyn unrhyw gwestiynau sydd gennych. Gallwch weld y dyddiadau a chofrestru ar gyfer y digwyddiadau yn 

Os oes gennych unrhyw gwestiynau neu os hoffech ofyn am gopi papur o'n cynlluniau a'n holiadur, gallwch gysylltu â ni fel hyn.



**Post:** Freepost HYPNET NORTH WEST

Cofion gorau,



David Parkin – Director, Progressive Energy Ltd

# C6

# Non-Statutory Online Presentation

## HyNet North West



# HyNet North West

Consultation Webinar

June – July 2021



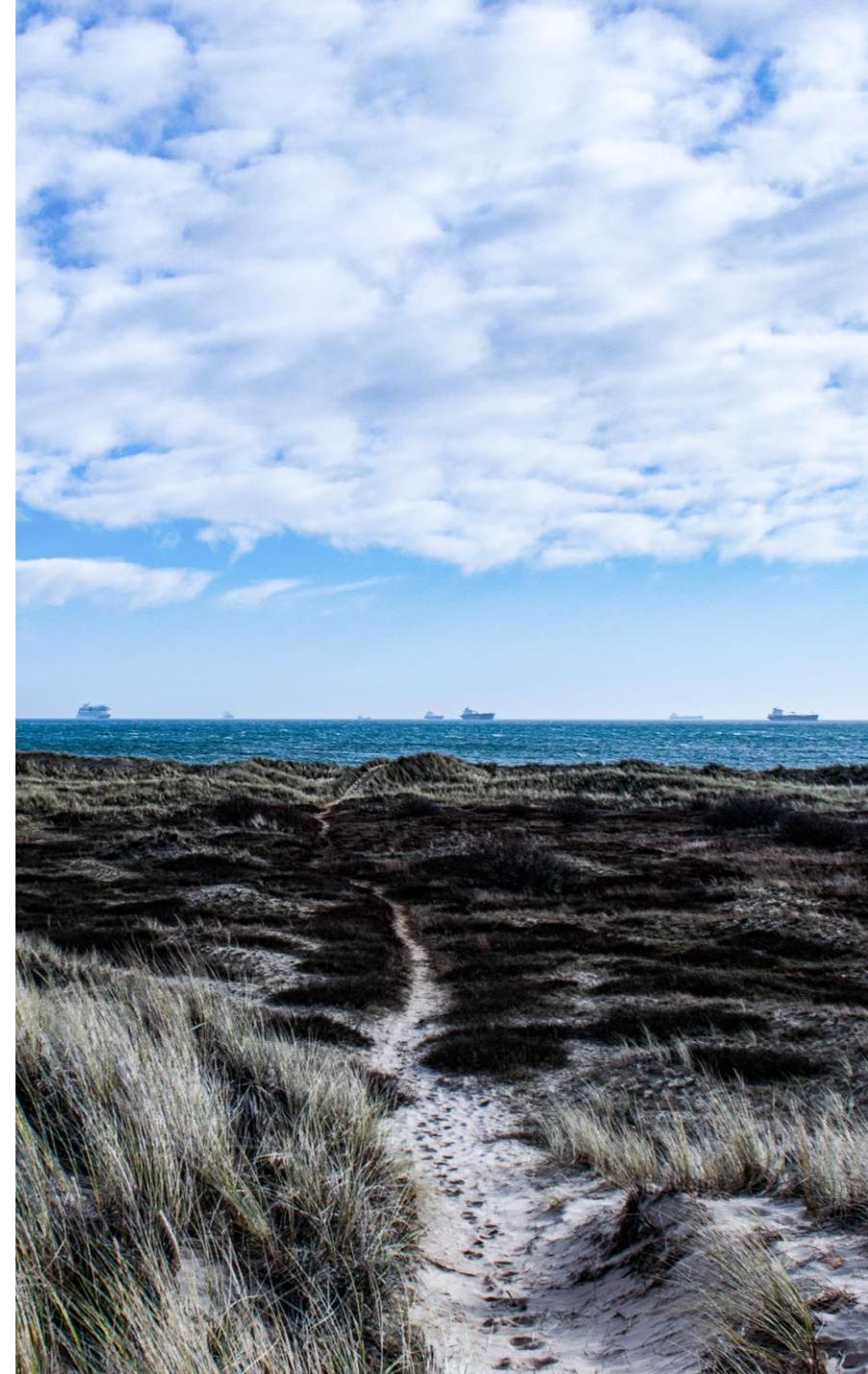
# Agenda

- What is HyNet North West?
- Introducing our CO<sub>2</sub> pipeline proposals
- Consultation details and how to get involved
- Q&A Session

If you have any questions throughout the presentation, please submit them through the chat function.

# The Climate Change Challenge

- Climate change has far reaching effects on our planet from increase intensity of weather events to global warming.
- In **November 2019** the UK declared a climate emergency.
- The UK Government understands that in order to successfully tackle climate change, all parts of the economy **must decarbonise** and become **greener**, including heavy industry.



# UK's Carbon **Net Zero 2050** aspirations

- The UK Government has created a legally binding **Net Zero CO<sub>2</sub> emissions** target in response to the global climate emergency.
- This means that by **2050**, any CO<sub>2</sub> emissions to the atmosphere must be eliminated, captured or offset by equivalent emissions removal



Nearly 70% of the UK's local authorities have set even stronger targets and are aiming for net zero carbon emissions by 2040 or earlier.

# Why do we need **HyNet** North West?

- Many industrial emissions come from fuel combustion, and currently the fuel used is generally natural gas. Natural gas can be easily replaced with low-carbon hydrogen which emits no CO<sub>2</sub> when combusted.
- A smaller proportion of industrial emissions come from the raw materials themselves, and for these industries, carbon capture and storage will be required.
- **HyNet** brings together many major CO<sub>2</sub> emitters across these sectors in a collective effort to reduce their emissions. By switching fuels, from natural gas to hydrogen, these companies can cut their CO<sub>2</sub> emissions, making these industries consistent with the UK's net zero pathway and therefore helping to protect jobs as well as the environment.



# HyNet North West

## Jobs and investment

- Transforming North Wales and the North West by building on the region's rich industrial heritage to provide a lasting legacy for generations to come.
- Benefits at the local, regional and national level.
- Tapping into the area's industrial experience and scientific expertise to create a hotspot for innovation and growth.

Supporting the levelling up of the region by protecting existing jobs and creating 6,000 local permanent jobs

Establishing the region as a global exporter of new technologies, skills & services

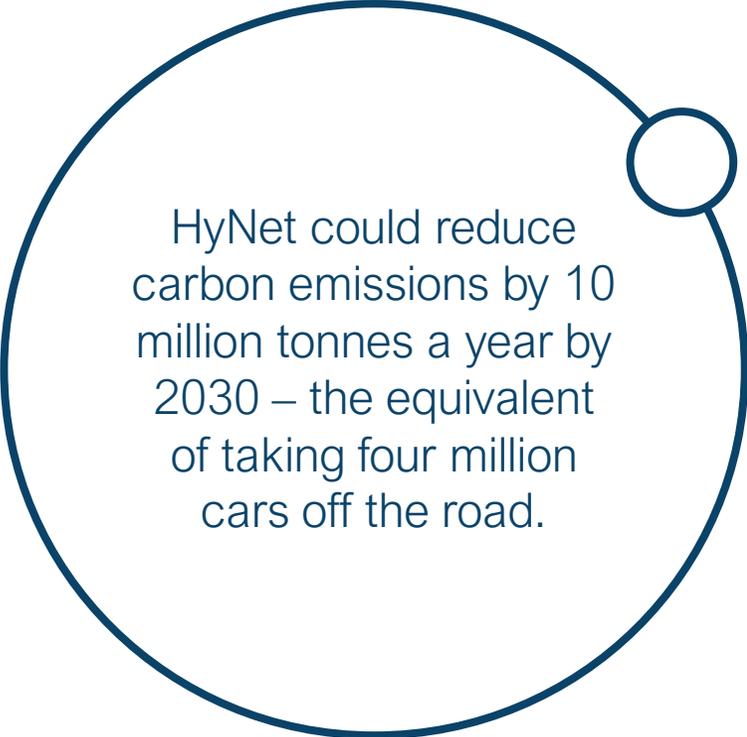
Helping to support up to 75,000 jobs across the UK by 2035

Creating the UK's first net zero industrial cluster - establishing the region as a world leader in clean energy innovation; creating an attractive place in which to operate and invest.

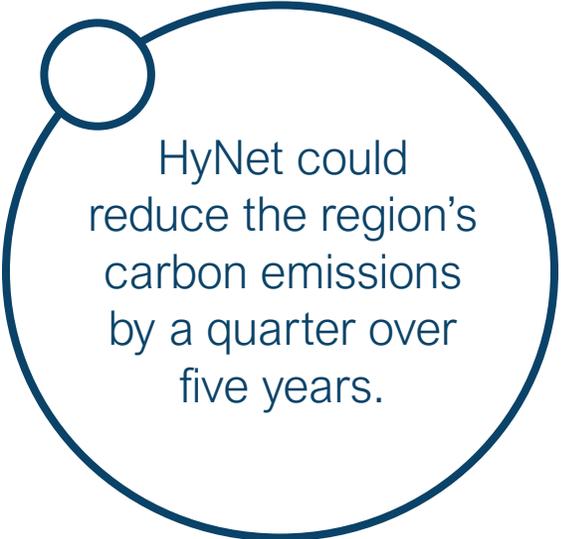
# HyNet North West

## Environmental benefits

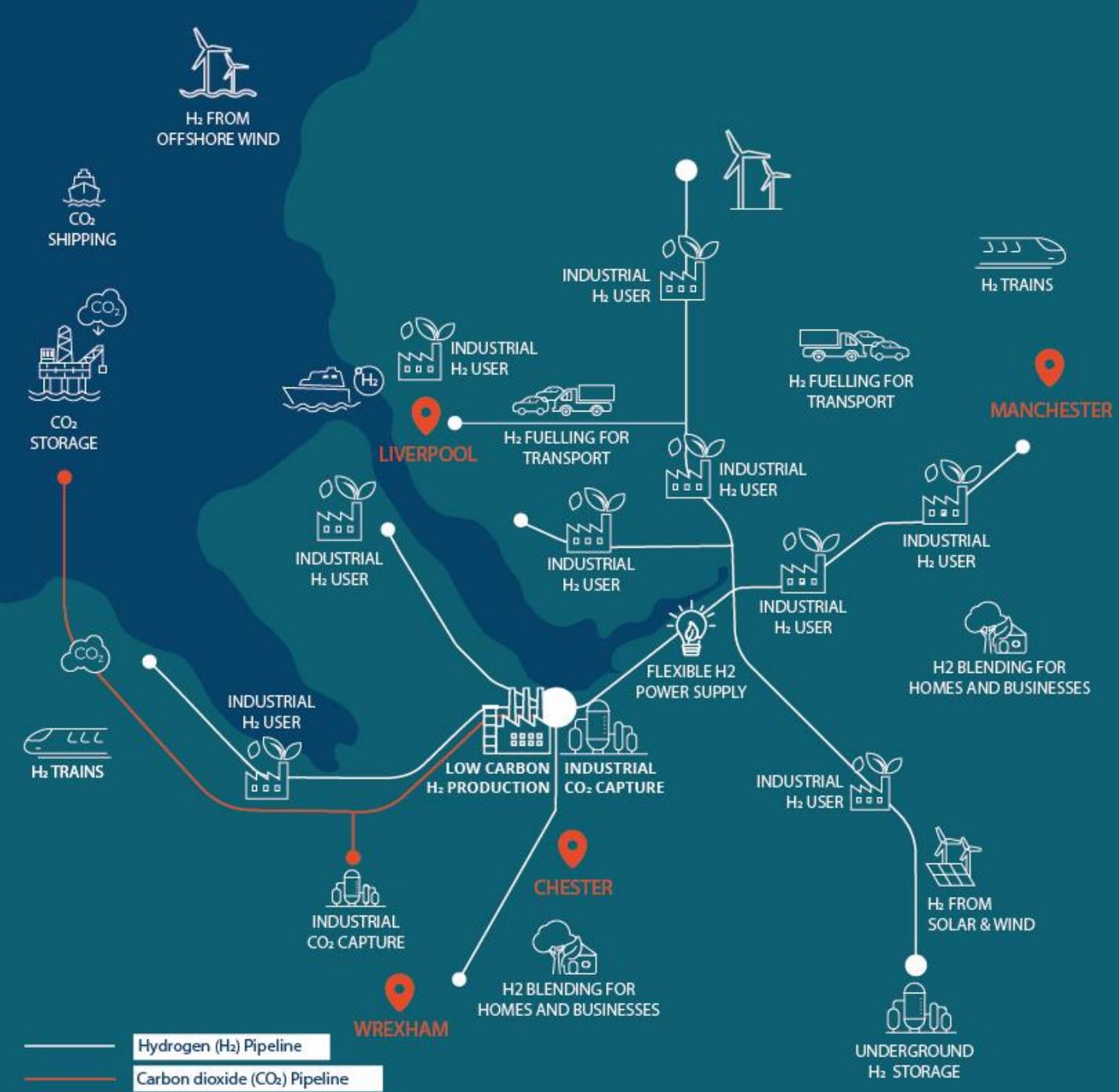
- World-leading solutions for a cleaner, greener world for generations to come.
- Improving local air quality to make the region a safer and healthier place.



HyNet could reduce carbon emissions by 10 million tonnes a year by 2030 – the equivalent of taking four million cars off the road.



HyNet could reduce the region's carbon emissions by a quarter over five years.



# Elements of HyNet North West

As part of the HyNet North West project, we will build:

- Low-carbon hydrogen production plants
- A hydrogen pipeline network and salt caverns in which hydrogen can be stored ready for use
- Facilities to capture CO<sub>2</sub> emissions
- Underground pipelines to transport CO<sub>2</sub> emissions to permanent safe storage

# The HyNet North West Consortium

HyNet North West is a collaboration of separate but integrated organisations that have joined together to decarbonise the North West region.

Each partner is led by industry experts who are working collaboratively across the network of hydrogen production, distribution, usage and storage as well as carbon capture and storage.



# About Liverpool Bay CCS Ltd

- Responsible for the CO<sub>2</sub> transport and storage project
- Large organisation with significant expertise in gas transport and storage
- Well-established in the local area

# Our **first** public consultation

We are holding this initial consultation from 9 June to 11 July 2021 to:

- Introduce **HyNet** North West and to listen to views on our project ambitions.
- Present our early proposals for one of the first elements of the project: a pipeline removing CO<sub>2</sub> emissions from industries in Stanlow and Ince area, to be stored in existing gas reservoirs in Liverpool Bay.

This is an initial consultation to introduce the project. Further consultations will be held later in the process when more detail is available for comment.

# What is Carbon Capture and Storage?

- Carbon Capture and Storage (CCS) is a safe and proven technology that stores CO<sub>2</sub> and prevents it from being released into the atmosphere.
- The UK Government and the Climate Change Committee see it as an essential technology for the UK to achieve its net zero emissions reduction target.



Capture of CO<sub>2</sub> from industrial sources, including manufacturing facilities and hydrogen production processes



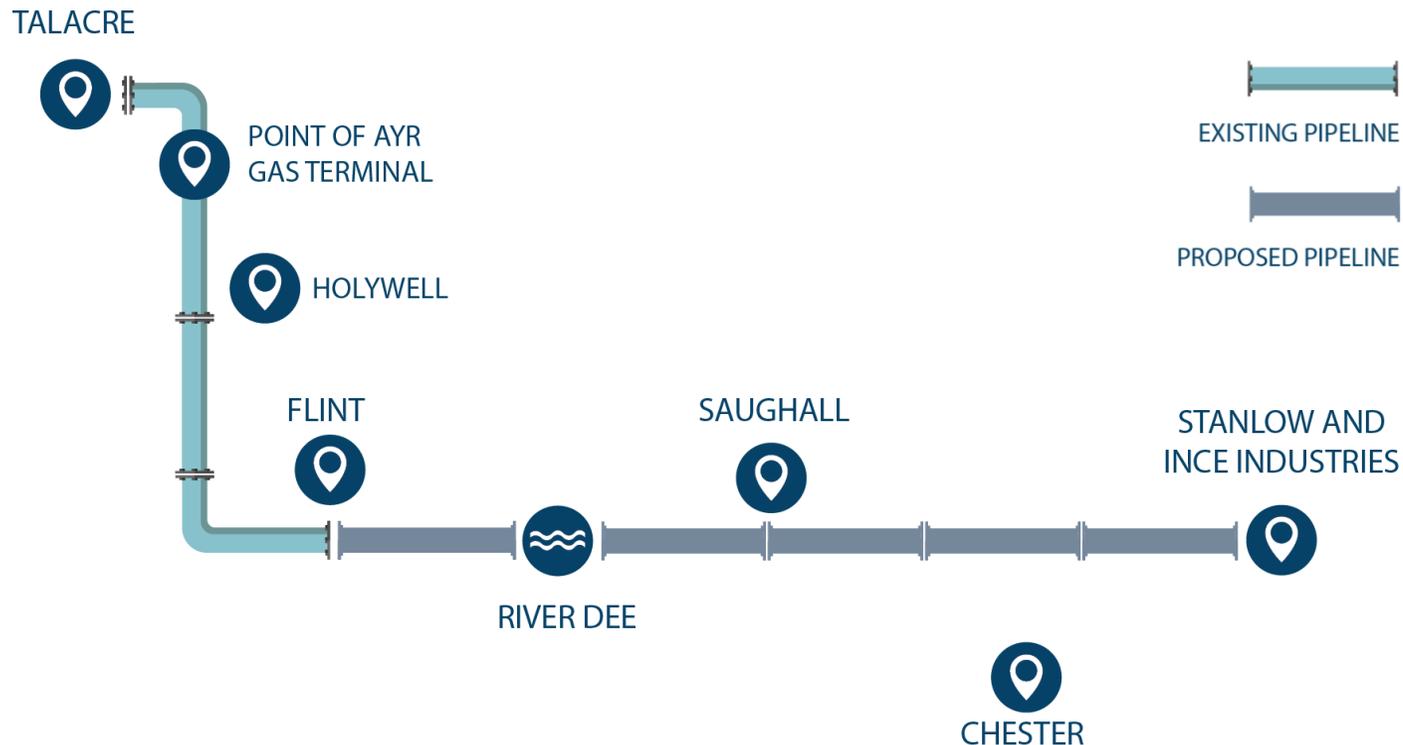
Transporting carbon dioxide (usually in pipelines) to a storage site



Permanent storage of carbon dioxide under the sea

# HyNet North West CO<sub>2</sub> pipeline

The CO<sub>2</sub> will be transported safely by pipeline to the gas reservoirs in Liverpool Bay. The CO<sub>2</sub> pipeline will comprise of two parts:



- The construction of a new underground pipeline from industries in the Ince and Stanlow area, to a location near Flint.
- The new pipeline will connect with an existing natural gas pipeline that will be repurposed so that it can transport CO<sub>2</sub>.

# Finding a route for the new pipeline

- We are currently identifying a suitable route for the new CO<sub>2</sub> pipeline to follow.
- We undertook an appraisal process to refine the pipeline route options which we are currently presenting.
- The final stage of our route appraisal process will be to select a single route for which we will be seeking consent.

We will select a route that:



avoids, or has a minimal impact on, the local environment and local communities where possible



ensures the carbon dioxide can be safely and securely transported



can be constructed with minimal disruption to the local area

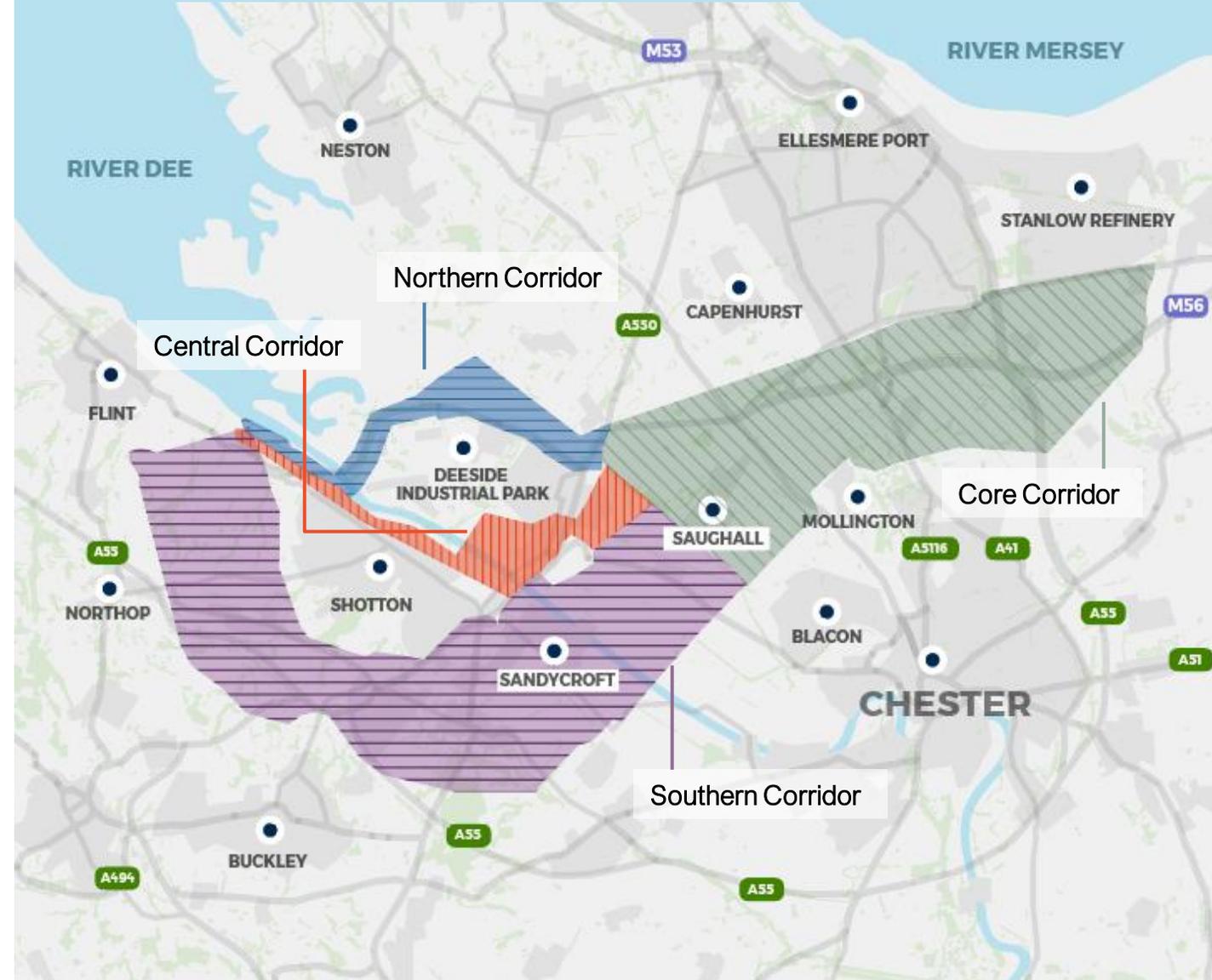


provides a cost-effective and deliverable solution

# HyNet North West CO<sub>2</sub> pipeline

## Defining broad corridors

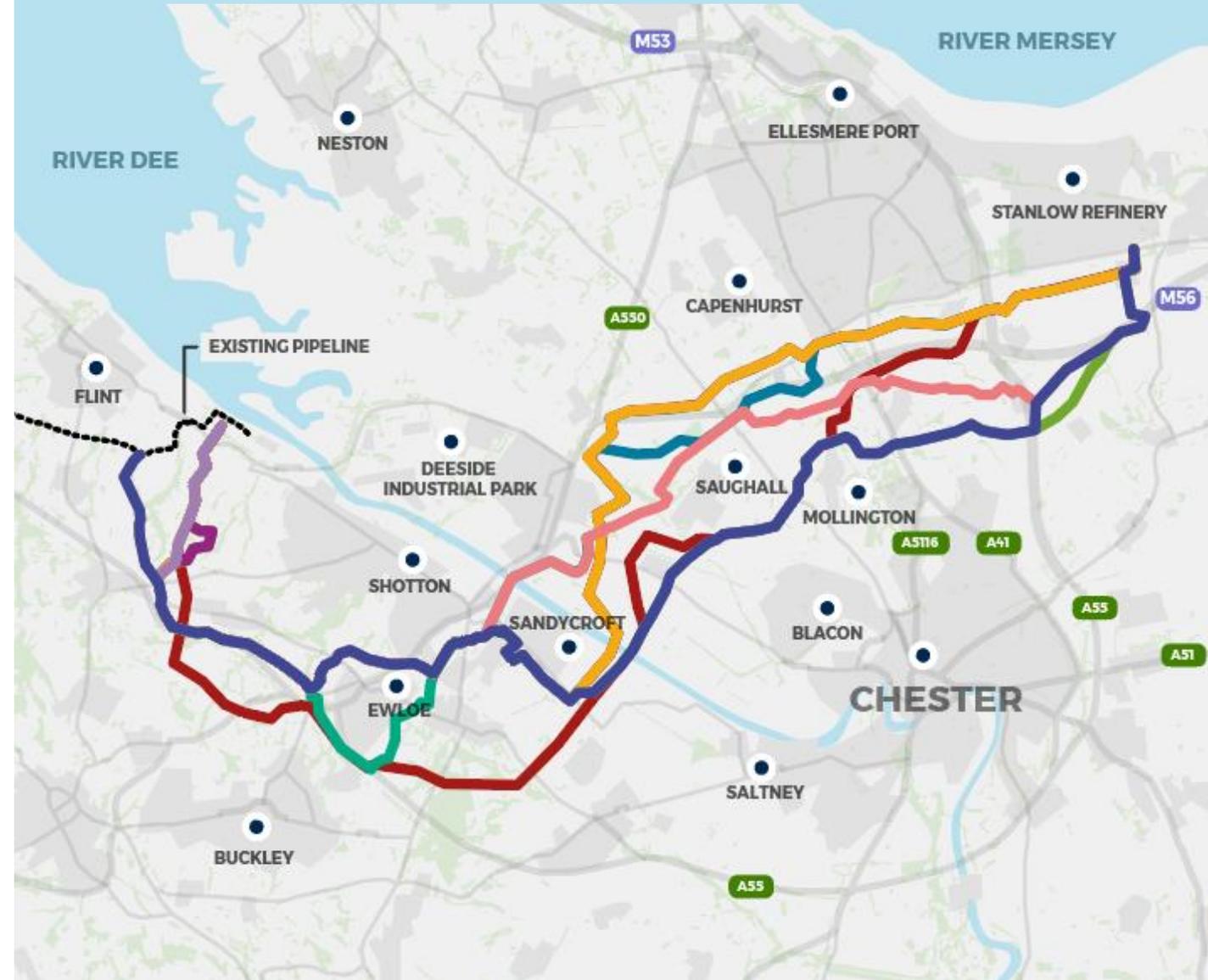
- We first considered broad corridor options. We compared these against a range of planning, environmental, land and engineering criteria.
- Concluded that the Southern and Core Corridor were the most suitable to progress.



# HyNet North West CO<sub>2</sub> pipeline

## Defining routes

- We then identified 9 more defined routes (50-100m wide) within the most suitable corridors.
- We scored these route options against criteria relating to: environment, economy, engineering, planning and communities.
- From these appraisals we identified the two route options we are currently consulting on: Option G and Option I.





## HyNet North West New CO<sub>2</sub> pipeline option

We are consulting on **Option G** and **Option I**.

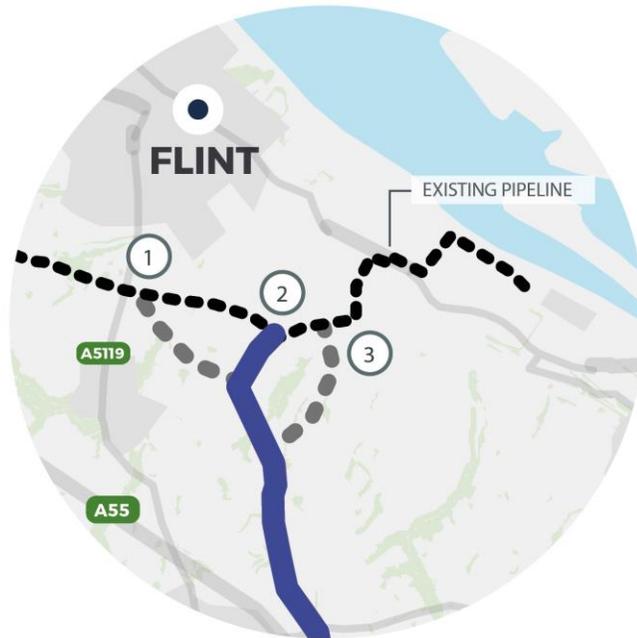
There are also some **variations** to consider which could be applied to either of the two route options. These include:

- Where the newbuild pipeline connects into the existing pipeline;
- Crossing the River Dee;
- How the newbuild pipeline extends from Stanlow to Ince.

# HyNet North West CO<sub>2</sub> pipeline

## The variations

### CONNECTION TO EXISTING PIPELINE AT CONNAH'S QUAY



- A connection close to the A5119
- A connection close to Coed Onn Road / Allt-Goch Lane
- A connection close to Leadbrook Drive.

### RIVER DEE CROSSING



- Option G could use the cross-over to divert and cross the River Dee at the same location as Option I.
- Or Option I could be diverted to the more south easterly River Dee crossing.

### CONNECTION FROM STANLOW TO INCE



- A route that crosses the A5117 at a point south of Elton and north of the M56 motorway services.
- A route that runs further to the south and east, crossing the M56 motorway twice before reaching Ince Industries.

# About the CO<sub>2</sub> pipeline

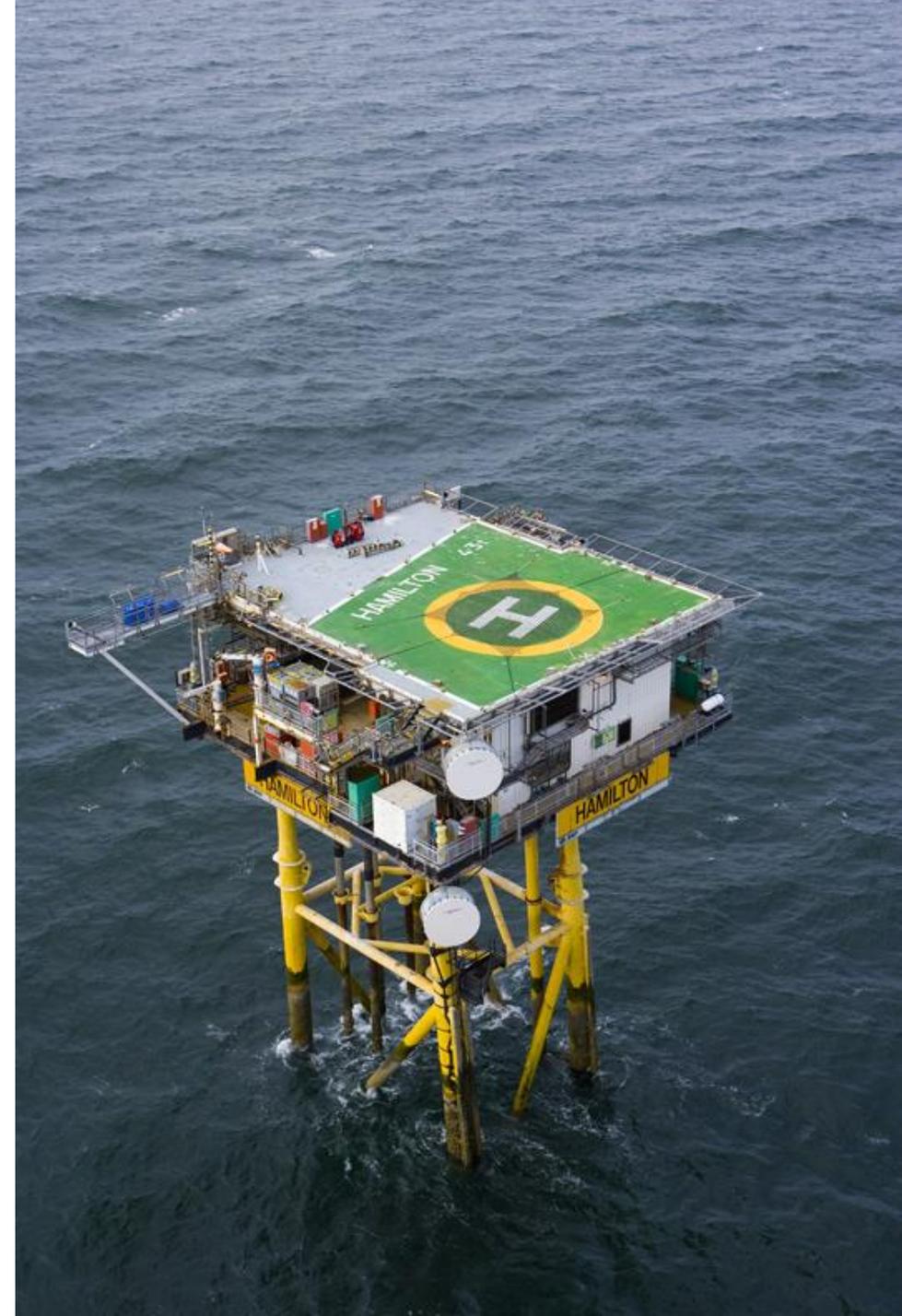
- The pipeline will be buried underground at a depth of 1.2 metres or lower.
- You will not be able to see the pipeline although some above ground marker posts will be visible.
- We will need to build some above ground installations which will be used for the maintenance and operation of the pipeline.
- Our proposals will also include for the installation of 'block valves' to allow isolation of sections of the pipeline.

Further information on location and sizes of the elements above ground will be developed as the designs progress.



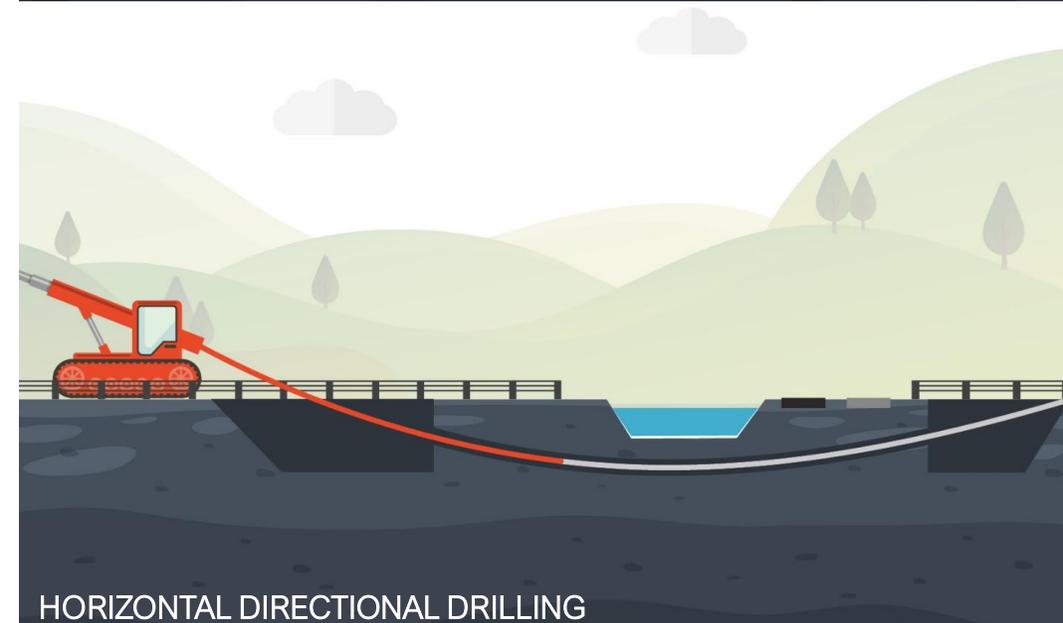
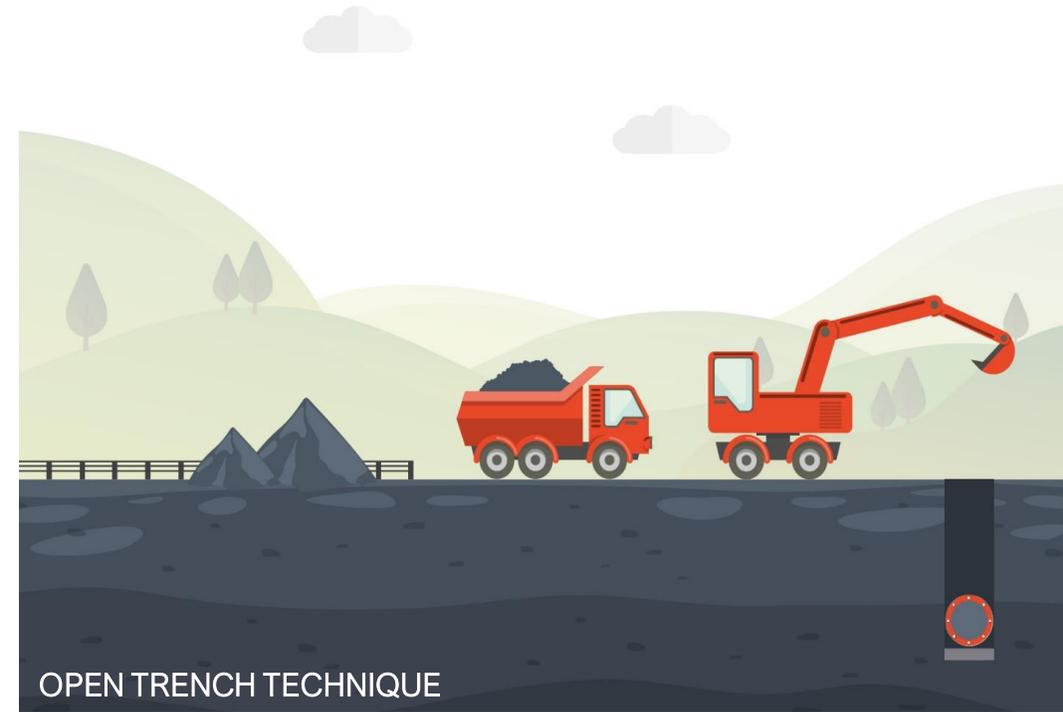
# What happens to the CO<sub>2</sub> offshore?

- The CO<sub>2</sub> will be transported in a pipeline under the sea to an offshore platform, located approximately 30km offshore in Liverpool Bay.
- From here, the CO<sub>2</sub> will be injected into the depleted gas reservoir. As an offshore pipeline, this will be regulated by the Oil and Gas Authority.

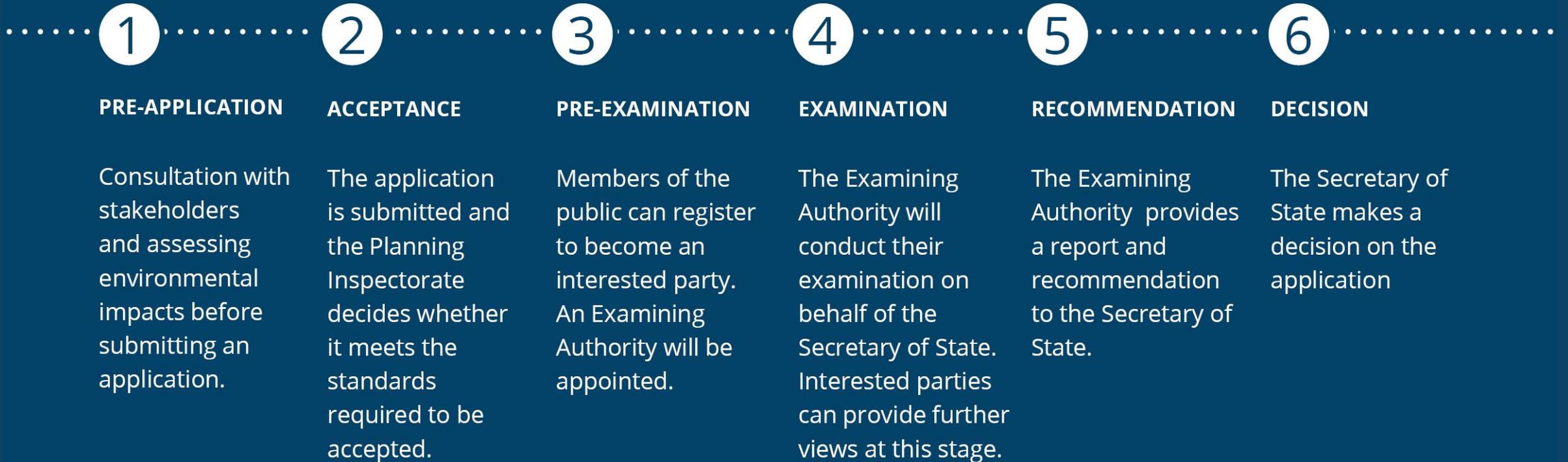


# Construction

- Entire newbuild pipeline would take approximately 12 months to construct (typically 1-2 months for the installation of the pipeline in a particular location).
- Once pipeline is installed, we will reinstate the land as close as possible to its original condition.
- For much of the pipeline, we will use an open trench technique. In more complex areas, we will use methods such as horizontal directional drilling or auger boring.

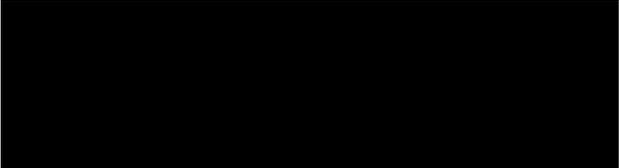


# DCO Application Stages



# How can you provide your feedback?

The consultation is open from 9 June to 11 July 2021.

- You can view information and provide responses online at: 
  - Consultation brochure
  - Interactive map of the route options
  - Online questionnaire
- Hard copies of materials are available on request.
- Deadline for consultation responses: midnight on 11 July 2021.



# Q&A

If you have any questions, please submit them in the chat function.

**Thank you for your time.**

# C7

# Environmental Survey Letter

## HyNet North West



WSP  
c/o Land Services  
No 8 First Street  
Manchester  
M15 4RP

Ref:

(Insert Date)

## **SUBJECT TO CONTRACT**

Dear Sir / Madam,

HyNet North West is a game changing energy project which aims to reduce carbon emissions from industry, homes and transport in the UK's challenge to meet net zero carbon emissions.

The HyNet North West project includes the development of new hydrogen production facilities and new hydrogen and carbon capture transportation pipelines; and the creation of the UK's first carbon capture and storage (CCS) project infrastructure across north west England and north east Wales. It will play an essential role in delivering considerable carbon reductions across the region starting as early as 2025. You will find more information about the project enclosed with this letter. You can also find out more about HyNet North West on our project .

### **Who are we?**

Progressive Energy Limited (Progressive) is the original project developer for the HyNet North West project's carbon dioxide transportation pipeline project. The first phase of the project will focus on developing the design for the carbon dioxide transportation pipeline, which Progressive shall do in cooperation with Eni UK Limited, the company leading the development of the carbon dioxide storage element of the project. Progressive's consultants, WSP, will be arranging access to land and completion of surveys on Progressive's behalf in the vicinity of the proposed pipeline.

### **Why are we carrying out these surveys?**

We are in the very early stages of developing the carbon capture transportation pipeline project and, in order to understand the environmental conditions in the area and take account of these as we plan and design the project, we will need to undertake surveys. We will be carrying out surveys for habitats and species, noise and vibration, landscape and visual impact, land and soils, water, traffic, heritage and arboriculture in the area. All the information and data gathered will help us design the best project for the area and become part of our planning application.

### **Where are we carrying out the surveys?**

### **Where are we carrying out the surveys?**

The land to which we are requesting access is highlighted on the attached plan. As we believe this is land you own and/or occupy, we are requesting your permission for access in order to carry out these surveys. If you do not own and/or occupy this land, we would be grateful if you could please let us know.

We have enclosed a template licence which sets out the surveys that we may need to complete on your land. We would like to offer a single payment of £1,000 to the freeholders / leaseholders / persons with other proprietary interest in this land to sign up to this licence to permit us to undertake these surveys. The 'Summary of the key terms in the Licence for access to undertake surveys agreement' table at the end of this letter provides a high level summary of the key terms included in the licence. If we identify that we need to do some limited intrusive ground surveys, we will agree with you the locations for this, and further payments will be offered.

In order to determine the location of the project's infrastructure, surveys are required over a wide area, and so our requirement for access does not necessarily mean that the pipeline will impact your land. Once our design is further progressed, we will get back in contact with you if the pipeline is anticipated to affect your land in any way.

### **What do the surveys involve?**

There are two potential types of survey: non-intrusive and intrusive surveys. Non-intrusive surveys are all those that involve walkovers and observation from the surface only, with no impact or intrusion into the ground. The non-intrusive surveys that we may wish to undertake on the land are listed in Schedule 2 of the licence, alongside a description of the work involved, likely timeframes and regularity of visit, and any equipment required to be left in place. Where possible, we will use public rights of way to access locations or will keep to property boundaries. These surveys are unlikely to cause any disturbance or damage. In the unlikely event that any damage is caused we will make good any damage to the same condition on the date the surveys are undertaken.

Some limited, intrusive surveys may also be required. These may include a form of intrusion in the ground, such as boreholes and trial pits as listed in Schedule 3 of the licence. We do not yet know exactly where these will be required as the location of the pipeline is still being developed. When we understand the locations required for these surveys, we will discuss these with you, along with the details of access routes. Additional payments will be made for any intrusive activities and any land damage will be reinstated.

Please let us know if you have specific requirements in relation to these surveys, such as in cases of access requirements, health and safety risks or land uses.

### **When will the surveys take place?**

Different surveys will be required at different times over the course of 2021 and 2022, allowing for seasonal windows for surveys and different methodologies. Sometimes a survey may require multiple visits to monitor, or to leave equipment in place. The details of each survey, including its outline methodology, frequency and estimated timeframe is included in Schedule 2 and Schedule 3 of the licence.

### **Considerations for accessing your land**

No surveys will be required within any residential properties, and we will not need to enter your home. Surveyors will undertake these surveys in a low impact manner sticking mostly to field margins where possible. There may be a need to cross fields on foot to get clear lines of sight, but this will be avoided within arable fields. Some photography may be needed. Any images taken will be treated in accordance with the Data Protection Act 1998. Surveyors will maintain social distancing requirements at all times and will use personal protective equipment for safety where appropriate.

**What happens next?**

We would be grateful if you could please:

1. Complete and return the enclosed Access Request Form;
2. Complete and return the enclosed Payment Form; and
3. Enter the site specific details (such as your details and details of your land) into the first page of both copies of the licence and sign both copies. Please do not date the licence.

Please return these documents using the enclosed return envelope or by email to [REDACTED] at your earliest possible convenience. Once returned, we will arrange for both copies of the licence to be signed by Progressive and completed, and we will return one copy of the completed licence to you for your records. The licence will not take effect until signed by both you and Progressive. If you have any queries, or would like to discuss the terms of this licence, please contact us on the email or number below. If we do not hear from you, our land team will try to make contact with you.

Any personal information you provide will be treated as confidential and in accordance with the Data Protection Act 1998.

**Contact us**

If you have any queries about this letter, please contact us at [REDACTED] or on 0203 116 5919. Your assistance is greatly appreciated.

Yours faithfully,

[REDACTED]  
Chris Sharples  
Lead Land Consultant  
(WSP on behalf of HyNet North West)

## Summary of the key terms in the Licence for access to undertake surveys agreement

1	<b>How long will the licensee be able to access my property under the agreement?</b>	One year from the date of the agreement.
2	<b>Who is the licensee?</b>	As outlined in the covering letter, Progressive Energy Limited (Progressive) is the original project developer for the HyNet North West project's carbon dioxide transportation pipeline project. Progressive are working in cooperation with Eni UK Limited, the company leading the development of the carbon dioxide storage element of the project who hold a carbon dioxide appraisal and storage licence from the Oil and Gas Authority. Whilst Progressive is the original licensee Progressive requires the right to assign the agreement to Eni UK Limited or any of its affiliates without your consent. If the agreement is assigned by Progressive you will receive a notice of assignment confirming this.
3	<b>What will be allowed on to the property?</b>	The licensee may need to use vehicles, plant and equipment to carry out the surveys. Where possible the licensee intends to carry out non-intrusive surveys on foot so as to minimise any disruption to your property.
4	<b>What surveys will be carried out?</b>	We do not know exactly which surveys will need to be carried out on which land. We believe some of the non-intrusive surveys will be required, however (if the agreement indicates on the front page that intrusive surveys may be undertaken) intrusive surveys may also be required.
5	<b>Which intrusive surveys will be carried out on the property?</b>	If the front page of the agreement indicates that intrusive surveys may be undertaken, the exact details of such intrusive surveys are not known at the date hereof. The licensee may need to carry out all of the non-intrusive surveys detailed in the agreement or only need to carry out a few. Please see a list of all of the possible non-intrusive surveys in schedule 2 of the agreement and a list of all possible intrusive surveys in schedule 3 of the agreement.
6	<b>What additional protection is offered to me if intrusive surveys are needed?</b>	The licensee must: <ul style="list-style-type: none"> <li>- notify you of the type of intrusive survey</li> <li>- tell you the location of the intrusive survey</li> <li>- tell you which intrusive works are to be carried out</li> <li>- prepare a schedule of condition documenting the condition of the property before carrying out such works.</li> </ul>
7	<b>What times can the licensee access?</b>	Monday to Friday: 7am – 7pm Weekends: 7am – 5pm (Access may be required outside these times in limited circumstances).
8	<b>How much will the licensee pay?</b>	You will receive payment of £1,000 (excluding VAT).
9	<b>When will I receive the payment?</b>	Within 30 days of completion of the access licence.
10	<b>Will I receive additional payments for intrusive surveys?</b>	Yes, you will receive the following additional payments for each intrusive survey: <ul style="list-style-type: none"> <li>- £350 for each Ground investigation borehole.</li> <li>- £250 for each Ground investigation trial pit.</li> <li>- £250 for each Cultural heritage intrusive survey.</li> </ul>
11	<b>How much notice will I receive for a non-intrusive survey?</b>	Not less than 2 business days' notice.
12	<b>How much notice will I receive for an intrusive survey?</b>	Not less than 5 business days' notice.
13	<b>What reassurance do I have from the licensee that any damage will be repaired?</b>	The licensee is obliged to: <ul style="list-style-type: none"> <li>- carry out all survey activities with skill, care and diligence;</li> <li>- cause as little damage and disruption to you;</li> <li>- repair any damage it causes;</li> <li>- pay you compensation for any crop loss; and</li> <li>- maintain public liability insurance of at least £5,000,000.00 for each and every claim.</li> </ul>
14	<b>Will the licensee indemnify me?</b>	Yes, the licensee will indemnify you for up to £5,000,000.00 in respect of damage to the property caused by any default of the licensee.

In the event of any inconsistency between this summary and the terms of the Licence for access to undertake surveys agreement, the terms of the Licence for access to undertake surveys agreement shall prevail

**Landowner Ref:****Access Request Form**

Please complete the following form<sup>1</sup> and return by 15 October 2021 using the enclosed return envelope, or scan and return it by email to [REDACTED]

I agree to sign up to the licence to enable Progressive Energy Limited or its representatives access to my land for the purpose of carrying out surveys – please complete and sign the enclosed licence and return alongside this form and the Payment Details form

Please call me on the number below to discuss your request to access my land. Comments:

Print name(s)	
Date	
Signed	
My address	
Tel No	
Best time(s) for contact on the above number	
Email	
Land Agent/Site contact's name (Company & Name of agent) (if required)	
Land Agent/Site contact's telephone number (if required)	
Address or description of the land	
Does anyone else own, tenant or occupy this land? If tenant, please confirm if Farm Business Tenancy (FBT) or Agricultural Holdings Agreement (AHA). Please provide their names and contact details so we can seek permission from them	
Is there anything we should be aware of on the land? (e.g. Farming patterns, presence of livestock, shooting season, restricted access, any known health and safety hazards etc.)	

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<sup>1</sup>Progressive and its agents will process your personal information provided in your responses to this questionnaire solely for the purpose of the Hynet North West scheme and in accordance with the General Data Protection Regulation and the Data Protection Act 1998.

## Payment Form

Please return this form with the access Licence agreement for payment to be issued.

### DETAILS

Name:	
Site Contact's Name:	
Address:	
Telephone No:	
Email Address:	
VAT* Registration Number/ or not registered:	
Land Elected/ or not elected for VAT*:	

(N.B. – if the land subject to the licence is elected for VAT please provide an invoice for the agreed amount to process the payment)

#### **\*Note on VAT**

It is important that we treat VAT in accordance with HMRC guidance. Here we ask two questions, the first relates to whether the payee is registered or not. The second relates to the land subject to licence, most land will not attract VAT but in some cases the owner will have waived the exemption so that VAT can be charged on rent received. If this is the case we need to know, otherwise VAT will not be added to the licence access payment.

### BANKING DETAILS

Sort Code:	
Account Number:	
Account Name:	
Bank:	

Please note that your banking details shall be treated as confidential and kept in accordance with the General Data Protection Regulation and Data Protection Act 1998.

**Licence for access to undertake surveys agreement**

In order to receive payment, please sign this agreement where indicated, and return the agreement (undated).		
Licensor	(Please insert full name(s)/company name and number here)	
	(Please insert address or registered office address here)	
Licensee	means PROGRESSIVE ENERGY LIMITED incorporated and registered in England and Wales with company number 03620177 whose registered office is at 38F Swan House, Bonds Mill, Bristol Road, Stonehouse, GL10 3RF “ <b>Progressive</b> ” and all those authorised by Progressive including its contractors, employees and agents.	
Licensor’s Property	means the freehold or leasehold property known as (insert description of licensor’s property):  and registered with title number(s) (insert title number(s) of licensor’s property):	
Property	means that part of the Licensor’s Property shown edged red on the Plan at Schedule 1	
Licence Fee	means £1,000 (one thousand pounds sterling)	
Licence Period	means the period from and including the date of this agreement until the date one year after the date of this agreement subject to the provisions of clause 6 of the Agreed Terms.	
Non-Intrusive Survey Activity	means any or all of the surveys, searches or investigations as set out in Schedule 2	
Intrusive Survey Activity	means any or all of the surveys, searches or investigations as set out in Schedule 1	
	will Intrusive Survey Activities potentially be undertaken at the Property? If Yes, clauses 3.2 and 4.3 of this agreement will apply in relation to such surveys	No
Survey Activities	means together a Non-Intrusive Survey Activity and (if applicable) an Intrusive Survey Activity	
Intrusive Survey Payment (per borehole, trial pit or survey as applicable)	Ground investigation boreholes	£350
	Ground investigation trial pits	£250
	Cultural heritage intrusive surveys	£250

**1 GRANT OF LICENCE**

- 1.1 Subject to the provisions of this agreement on the following pages, the Licensor grants to the Licensee during the Licence Period (in common with the Licensor and all others entitled) licence to enter the Property with or without vehicles, plant, machinery, equipment and materials to carry out the Survey Activities for the Licence Period and during the Designated Hours in common with the Licensor and all others authorised by the Licensor (so far as is not inconsistent with the rights given to the Licensee to access the Property to carry out the Survey Activities).
- 1.2 The Licensor grants the Licensee a right of access over the Licensor’s Property with or without vehicles, plant, machinery, equipment and materials to access the Property for the purposes detailed in clause 1.1.
- 1.3 The Licence for access to undertake surveys agreement consists of this page, the following Agreed Terms and Schedules 1 to 3.

<p><b>SIGNED</b> by .....</p> <p>duly authorised for and on behalf of the Licensor</p> <p><b>PRINT NAME</b> .....</p>	<p><b>SIGNED</b> by .....</p> <p>duly authorised for and on behalf of the Licensee</p> <p><b>PRINT NAME</b> .....</p>
<p><b>DATE OF THIS LICENCE:</b></p>	<p>.....2021</p> <p>(To be left blank by Licensor. Date to be inserted by Licensee on completion of the agreement)</p>

## AGREED TERMS

### 1 INTERPRETATION

1.1 The following definitions and rules of interpretation apply in this agreement:

"**Agreed Terms**" means these agreed terms;

"**agreement**" means the Licence for access to undertake surveys agreement page signed by the Licensor and the Licensee, these Agreed Terms and Schedule 1 to 3 and reference to this agreement is a reference to this agreement as varied or novated (in each case, other than in breach of the provisions of this agreement) from time to time;

"**Business Day**" means a day other than a Saturday, Sunday or public holiday in England when banks in London are open for business;

"**Competent Authority**" means any statutory undertaker or any statutory public local or other authority or regulatory body or any court of law or government department or any of them or any of their duly authorised officers;

"**day**" means a period of 24 consecutive hours ending at 12.00 midnight;

"**Designated Hours**" means 7am – 7pm Monday to Friday and 7am to 5pm on Saturdays and Sundays or such other hours which shall be agreed in writing by the Licensor provided that such hours shall also be extended outside of these stipulated hours referred to above where specialist surveys are carried out or where poor weather has affected the schedule of the Survey Activities;

"**Environment**" means all or any of the following media, namely air, water (**including** without limitation water in drains and sewers) or land (including without limitation such media within buildings or other natural and man-made structures, above, on or below ground) and any living organisms or ecosystems supported by such media;

"**Environmental Law**" means all laws, regulations, directives, statutes, subordinate legislation, rules of common law and generally all international, EU, national and local laws and all judgments, orders, instructions, directions, by-laws, statutory guidance and codes of practice, notices, decisions, guidance awards and other lawful statements of any government or regulatory authority having force of law from time to time which relate to or concern the pollution of or protection of the Environment or the control, use, movement or storage of Hazardous Substances;

"**Hazardous Substances**" means any natural or artificial material, substance or article or combination of materials, substances or articles (whether in solid, liquid, gas, vapour or other form whatsoever) capable of causing harm to the Environment including but not limited to any hazardous, toxic or dangerous material, substance or article;

"**Historic Contamination**" means:

- (a) the presence of any Hazardous Substances at in on over or under the Licensor's Property or the Property at any time at or prior to the date of this agreement; and/or
- (b) the escape or migration of any of the same;

"**Intrusive Survey Activity Notice**" means a notice served by the Licensee pursuant to clause 4.3(a)(i) (and for the avoidance of doubt the Licensee may serve as many Intrusive Survey Activity Notices as the Licensee in its discretion deems necessary during the Licence Period);

"**Intrusive Survey Payment**" means the payments detailed in Schedule 3 and paid in accordance with clause 3.2;

"**Licence Payment Date**" means 30 days after the date of this agreement;

"**month**" means a calendar month;

"**Necessary Consents**" means all permits, consents, licences, permissions, certificates, authorisations and approvals whether of a public or private nature which shall be required by any Competent Authority in order to carry out the Survey Activities;

"**Plan**" means the plan attached to this agreement at Schedule 1;

"**Schedule of Condition**" a schedule of condition as defined in clause 4.3(b);

"**VAT**" means value added tax chargeable under the Value Added Tax Act 1994;

"**week**" means any period of seven consecutive days; and

"**year**" means any period of 12 consecutive months.

1.2 Clause, Schedule and paragraph headings shall not affect the interpretation of this agreement.

1.3 A person includes a natural person, corporate or unincorporated

body (whether or not having separate legal personality).

1.4 The Schedules form part of this agreement and shall have effect as if set out in full in the body of this agreement. Any reference to this agreement includes the Schedules.

1.5 A reference to a company shall include any company, corporation or other body corporate, wherever and however incorporated or established.

1.6 Unless the context otherwise requires, words in the singular shall include the plural and in the plural shall include the singular.

1.7 Unless the context otherwise requires, a reference to one gender shall include a reference to the other genders.

1.8 A reference to a statute or statutory provision is a reference to it as amended, extended or re-enacted from time to time and shall include all subordinate legislation made from time to time under that statute or statutory provision.

1.9 A reference to writing or written excludes fax and email.

1.10 Any obligation on a party not to do something includes an obligation not to allow that thing to be done.

1.11 References to a document in agreed form are to that document in the form agreed by the parties and initialled by or on their behalf for identification.

1.12 References to clauses and Schedules are to the clauses and Schedules of this agreement.

1.13 Any words following the terms including, include, in particular, for example or any similar expression shall be construed as illustrative and shall not limit the sense of the words, description, definition, phrase or term preceding those terms.

1.14 If any provision or part-provision of this agreement is or becomes invalid, illegal or unenforceable, it shall be deemed deleted, but that shall not affect the validity and enforceability of the rest of this agreement and if any provision or part-provision of this agreement is deemed deleted, the parties shall negotiate in good faith to agree a replacement provision that, to the greatest extent possible, achieves the intended commercial result of the original provision.

### 2 LICENCE ACKNOWLEDGMENT

2.1 The Licensee acknowledges that:

- (a) no relationship of landlord and tenant is created between the Licensor and Licensee by this agreement;
- (b) the Licensor retains control, possession and management of the Property and the Licensee has no right to exclude the Licensor from the Property;
- (c) subject always to clause 2.1(d), neither party shall assign, transfer, mortgage, charge, subcontract, declare a trust over or deal in any other manner with any of its rights and obligations under this agreement. The agreement can only be exercised by the Licensee and those authorised by the Licensee including, its contractors, employees and agents; and
- (d) notwithstanding anything to the contrary in this agreement the Licensee may assign this agreement to Eni UK Limited (company number 00862823) or any of its affiliates without the consent of the Licensor. Eni UK Limited is the company leading the development of the carbon dioxide storage element of the HyNet North West project and holds a carbon dioxide appraisal and storage licence from the Oil and Gas Authority.

### 3 LICENCE FEE PAYMENT

3.1 On or before the Licence Payment Date the Licensee shall pay the Licensor the Licence Fee.

3.2 On any and each occasion the Licensee serves an Intrusive Survey Activity Notice on the Licensor the Licensee will pay the Licensor the respective Intrusive Survey Payment specified in the relevant Intrusive Survey Activity Notice within 30 days' of service of the relevant Intrusive Survey Activity Notice and for the avoidance of doubt if an Intrusive Survey Activity Notice provides for only one Intrusive Survey Activity to be undertaken only one corresponding Intrusive Survey Payment shall be payable and if an Intrusive Survey Activity Notice provides for two Intrusive Survey Activities to be undertaken then two corresponding Intrusive Survey Payments will be payable under such Intrusive Survey Activity Notice.

3.3 Where VAT is properly chargeable the Licensee shall on the production of a valid VAT invoice pay to the Licensor VAT in respect of all supplies made by the Licensor under this agreement.

#### 4 LICENSEE'S OBLIGATIONS IN RELATION TO THE SURVEY ACTIVITIES

4.1 The Licensee agrees and undertakes that before commencing any Non-Intrusive Survey Activity the Licensee will:

- (a) give the Licensor not less than 2 Business Days' notice of the Licensee's intention to access the Property and carry out the Non-Intrusive Survey Activity; and
- (b) obtain any Necessary Consents and if requested in writing provide copies to the Licensor.

4.2 The Licensee agrees to undertake the Non-Intrusive Survey Activity with skill, care, diligence as is reasonably expected of skilled and competent professional undertaking surveys on projects of similar size, scope and complexity.

4.3 In relation to any Intrusive Survey Activity:

(a) the Licensee agrees and undertakes before commencing any Intrusive Survey Activity to:

(i) give the Licensor not less than 5 Business Days' written notice of the Licensee's intention to access the Property and carry out any Intrusive Survey Activity such notice to specify:

- (A) which Intrusive Survey Activity is to be carried out; and
- (B) the location on the Property of such Intrusive Survey Activity; and
- (C) details of the works to be undertaken in carrying out the Intrusive Survey Activity; and
- (D) the Intrusive Survey Payment payable to the Licensor.

(b) after providing the Licensor with an Intrusive Survey Activity Notice and prior to commencing any Intrusive Survey Activity the Licensee may access the Property to complete a photographic schedule of condition of the relevant parts of the Property including access routes ("**Schedule of Condition**") and shall no later than two Business Days before commencing any Intrusive Survey Activity provide to the Licensor a Schedule of Condition and the Licensee shall consider any reasonable representations made by the Licensor and make any reasonably required amendments to the Schedule of Condition and if no response is received from the Licensor within two Business Days of receipt of the Schedule of Condition the Licensor shall be deemed to have approved the Schedule of Condition.

(c) the Licensee shall obtain any Necessary Consents and if requested in writing provide copies to the Licensor; and

(d) the Licensee shall undertake any Intrusive Survey Activity with skill, care, diligence as is reasonably expected of skilled, and competent professional undertaking surveys on projects of similar size, scope and complexity; and

(e) the Licensee shall use all reasonable but commercially prudent endeavours to ensure that any Intrusive Survey Activity carried out at the Property does not interfere with, damage or affect any existing service pipes, cables, conduits or any other equipment or apparatus installed in, on or under the Property; and

(f) the Licensee will use all reasonable endeavours to procure that any Intrusive Survey Activity does not result in the release, escape or migration of Hazardous Substances onto, into, under or from the Property in breach of Environmental Law and as soon as reasonably possible after becoming aware of a material release or escape or migration of Hazardous Substances onto, into, under or from the Property in breach of Environmental Law the Licensee shall as soon as reasonably practicable:

- (i) give notice to the Licensor;
- (ii) if requested to do so by the Licensor within 10 Business Days of the date of the notice referred to in clause 4.3(f)(i) identify whether any remediation in respect of any such release, escape or migration caused by the relevant Intrusive Survey Activity is required at the Property in order to comply with Environmental Law (and provide written details of the same to the Licensor); and
- (iii) if the Licensor makes a request and remediation is subsequently identified and required at the Property in accordance with clause 4.3(f)(ii), propose (and the Licensor shall approve, acting reasonably) a scheme of works to

undertake the remediation necessary at the Property in respect of any such release, escape or migration caused by the relevant Intrusive Survey Activity as is required in order to comply with Environmental Law, and shall implement such scheme following receipt of the Licensor's said approval of such scheme. If no response is received from the Licensor within 10 Business Days of receipt of the scheme of works the Licensor shall be deemed to have approved the scheme of works,

and the Licensor shall grant to the Licensee all rights reasonably required by the Licensee to allow the Licensee to implement such scheme of works and for the avoidance of doubt the Licensee shall not be liable (whether to the Licensor or its successors in title or any other person) in respect of any Historic Contamination.

(g) the Licensee will as soon as reasonably practicable make good at its own cost to the standard subsisting as evidenced by the Schedule of Condition or (where it is impracticable so to make good or where the Licensor has made good in default) pay compensation for any damage caused to the Property as a direct result of any Intrusive Survey Activity (including without limitation the infilling of boreholes reinstatement of land drains trees, hedges and other boundary structures and the reinstatement and reseeded of topsoil) PROVIDED THAT nothing in this clause 4.3(g) shall require the Licensee to undertake any remediation of any Hazardous Substances in, on under or emanating from the Property save as referred to in clause 4.3(f).

4.4 Within a reasonable timeframe following completion of the Survey Activities the Licensee agrees to make good at its own cost to the Licensor's reasonable satisfaction any physical damage directly caused by the carrying out of the Survey Activities to the Property and or the Licensor's Property whether caused by the Licensee, its contractors, employees and agents or if so agreed otherwise to reimburse the reasonable and proper costs incurred by the Licensor in making good such damage within a reasonable period of demand (being not less than 30 days) and the Licensee shall pay reasonable compensation for any crop loss resulting directly from any damage caused by the Survey Activities.

4.5 The Licensee agrees:

- (a) to cause as little damage and disruption as reasonably practicable to the Licensor in carrying out the Survey Activities;
- (b) not leave loose tools, plant, equipment or materials on the Property in a manner which may be likely to cause damage or injury and to remove as soon as practicable from the Property and dispose of lawfully, any waste arising from the Survey Activities.

4.6 The Licensee will maintain (or procure that its contractors shall maintain) public liability insurance of at least £5,000,000.00 (five million pounds sterling) for each and every claim (and on written request shall provide a copy of such insurance policy to the Licensor as soon as reasonably practicable as well as evidence that the appropriate premiums have been paid).

#### 5 LICENSEE INDEMNITY

5.1 The Licensee shall indemnify the Licensor from and against all claims, demands, actions, awards, judgments, settlements, costs, expenses, liabilities, damages and losses (including all interest and legal and other professional costs and expenses reasonably and properly incurred by the Licensor) in respect of damage to the Property arising directly as a result of any wrongful act or omission, neglect or default of the Licensee (or other persons at the Property expressly or impliedly with the Licensee's authority under this agreement) or its or their apparatus and equipment on the Property (excluding loss of environmental or agricultural subsidy) provided that the Licensor shall:

- (a) notify the Licensee promptly in writing of any third party action, demand or claim under clause 5.1 ("**Claim**") of which it is aware and shall give the Licensee (at its option) express authority to conduct all negotiations and litigation, and settle all litigation, arising from the Claim;
- (b) provide the Licensee with all such available information and assistance as the Licensee may reasonably require (at the Licensee's expense) in relation to any Claim and keep the Licensee informed of any reasonable settlement proposals made by the claimant;
- (c) not make any admission as to liability or agree to any settlement or compromise of any Claim without the prior written consent of the Licensee (not to be unreasonably withheld or delayed); and

(d) use all reasonable endeavours to mitigate any losses or liabilities caused by an event that may give rise to a Claim.

5.2 To the extent permissible by law, the Licensee's liability under this agreement shall:

(a) expire 2 years after completion of the Survey Activities at the Property but without prejudice to any prior obligation to either party;

(b) not exceed the sum of £5 million in the aggregate for any and all claims under this agreement;

(c) not extend to:

(i) loss and/or deferral of production, loss of revenue, loss of profit or anticipated profit (if any), economic loss, loss of product, loss of use, loss of contract, loss of goodwill, in each case whether direct or indirect and whether or not foreseeable at the date of this agreement; or

(ii) any consequential or indirect loss or damage,

whatsoever suffered by the Licensor whether or not the Licensee knew (or ought to have known) that the loss or damage would be likely to be suffered as a result of the wrongful act, neglect or default giving rise to the loss or damage;

(d) not extend to any claims, demands, actions, awards, judgments, settlements, costs, expenses, liabilities, damages and losses (including all interest and legal and other professional costs and expenses) to the extent that they:

(i) are attributable solely to any act or default of the Licensor; or

(ii) would not have arisen or were increased or made more costly as a result of the Licensor volunteering information or otherwise making any disclosure to any regulatory authority or third party (other than where required by law); or

(iii) relate to any Historic Contamination save as prescribed by clause 4.3(f).

## 6 TERMINATION OF THE LICENCE

The Licensee may determine this agreement with immediate effect at any time by serving written notice on the Licensor.

## 7 MAKING GOOD

On completion of the Survey Activities or on termination of this agreement in accordance with clause 6, the Licensee agrees to promptly:

(a) remove all materials, plant and equipment from the Property and make good the Property; and

(b) notify the Licensor of completion of the Survey Activities and make good so that the Licensor may inspect the Property.

## 8 CONFIDENTIALITY

8.1 The Licensor undertakes that it shall not at any time disclose to any person the existence and terms of this agreement (along with any associated documentation pursuant to it) or any confidential information concerning the business, affairs, customers, clients or suppliers of the Licensee, except as permitted by clause 8.2.

8.2 The Licensor may disclose the Licensee's confidential information:

(a) to its employees, officers, representatives or advisers who need to know such information for the purposes of exercising the Licensor's rights or carrying out its obligations under or in connection with this agreement. The Licensor shall ensure that its employees, officers, representatives or advisers to whom it discloses the Licensee's confidential information comply with this clause 8; and

(b) as may be required by law, a court of competent jurisdiction or any governmental or regulatory authority.

8.3 The Licensor shall not use the Licensee's confidential information for any purpose other than to exercise its rights and perform its obligations under or in connection with this agreement.

## 9 ACKNOWLEDGEMENTS

The Licensee acknowledges that:

(a) the Property may be contaminated with substances that may be hazardous to health;

(b) the Property is operational and operational equipment may be present on or under the Property;

(c) the Necessary Consents will be exercised and the Survey Activities will be carried out at the Licensee's own risk and expense.

## 10 CONSEQUENCES OF TERMINATION

10.1 Any provision of this agreement that expressly or by implication is intended to come into or continue in force on or after termination or expiry of this agreement shall remain in full force and effect.

10.2 Termination or expiry of this agreement shall not affect any rights, remedies, obligations or liabilities of the parties that have accrued up to the date of termination or expiry, including the right to claim damages in respect of any breach of the agreement which existed at or before the date of termination or expiry.

## 11 FORCE MAJEURE

Neither party shall be in breach of this agreement nor liable for delay in performing, or failure to perform, any of its obligations under this agreement if such delay or failure result from events, circumstances or causes beyond its reasonable control. In such circumstances the affected party shall be entitled to a reasonable extension of the time for performing such obligations.

## 12 VARIATION

No variation of this agreement shall be effective unless it is in writing and signed by the parties (or their authorised representatives).

## 13 RIGHTS AND REMEDIES

The rights and remedies provided under this agreement are in addition to, and not exclusive of, any rights or remedies provided by law.

## 14 FURTHER ASSURANCE

Each party shall, and shall use all reasonable endeavours to procure that any necessary third party shall, promptly execute and deliver such documents and perform such acts as may reasonably be required for the purpose of giving full effect to this agreement.

## 15 NOTICES

15.1 Any notice given to a party under or in connection with this agreement shall be in writing and shall be delivered by hand or by pre-paid first-class post or other next working day delivery service at its registered office (if a company) or its principal place of business (in any other case).

15.2 Any notice shall be deemed to have been received:

(a) if delivered by hand, on signature of a delivery receipt;

(b) if sent by pre-paid first-class post or other next working day delivery service, at 9.00 am on the second Business Day after posting or at the time recorded by the delivery service.

15.3 This clause does not apply to the service of any proceedings or other documents in any legal action or, where applicable, any arbitration or other method of dispute resolution.

15.4 A notice given under this agreement is not valid if sent by email or fax.

## 16 RIGHTS OF THIRD PARTIES

Subject to clause **Error! Reference source not found.**, a person who is not a party to this agreement shall not have any rights under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of this agreement.

## 17 GOVERNING LAW

This agreement and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims) shall be governed by and construed in accordance with the law of England.

## 18 JURISDICTION

Each party irrevocably agrees that the courts of England shall have exclusive jurisdiction to settle any dispute or claim arising out of or in connection with this agreement or its subject matter or formation (including non-contractual disputes or claims).

## Schedule 2

### Non-Intrusive Survey Activity Details

This is the list of potential non-intrusive surveys that may be required as part of the scheme's investigations. Not all these will be required on the Property. These surveys will require pedestrian access or drone flights only. Timeframes are subject to change but will be discussed with the Licensor in advance.

<b>Non-intrusive surveys</b>			
<b>Survey type</b>	<b>Description of method used</b>	<b>Frequency</b>	<b>Estimated timeframe</b>
Noise and vibration	<p>Noise surveys at locations representative of the nearest noise and vibration sensitive receptors. This involves a combination of attended and unattended noise measurements at circa 10 locations across the route to ensure that the baseline data gathered are representative.</p> <p>The noise survey at unattended locations will be supplemented with short term noise measurements during the daytime.</p>	<p>Attended surveys: one short term visit with noise monitoring equipment</p> <p>Unattended surveys: equipment left in place for approx. one week.</p>	Spring to Summer
Cultural heritage	<p>A site walkover inspection to determine the topography of the site and existing land use/the nature of the existing buildings, earthworks and historic landscape features on the site, and to provide further information on areas of possible past ground disturbance and general historic environment potential. The walkover will extend to selected designated heritage assets beyond the site, in order to consider potential impacts to their setting (e.g. visible changes to historic character and views).</p> <p>A non-intrusive geophysical survey comprising a standard gradiometer survey, which will identify buried anomalies of potential archaeological origin at specified locations.</p>	<p>Walkover: One-time survey</p> <p>Geophysical survey: One-time survey with teams with handheld/cart equipment</p>	Late February to Summer
Biodiversity – habitats and plants	Extended Phase 1 habitat survey – a non-intrusive, walked survey to map and categorise habitats present. Species of flora are recorded and an assessment of the potential for protected and/or notable species made. The Extended Phase 1 habitat survey will additionally help to determine whether further protected and/or notable species surveys are required (beyond those detailed below).	One-time survey	Late February to April inclusive
	National Vegetation Classification surveys of key habitats – a non-intrusive walked survey comprising a more intensive survey of vegetation species and composition within habitats.	One-time survey	June to August inclusive
	Hedgerows Regulations survey – a non-intrusive walked survey categorising hedgerows in line with relevant guidelines, recording information about height, width, species composition	One-time survey	May to June inclusive
	Aquatic ecology walkover survey – a non-intrusive walkover survey assessing habitats present along and within waterbodies and watercourses. Species of flora are recorded and an assessment of the potential for protected and/or notable species made. The aquatic ecology walkover survey will determine whether there is	One-time survey	Late February to mid-April inclusive

<b>Non-intrusive surveys</b>			
<b>Survey type</b>	<b>Description of method used</b>	<b>Frequency</b>	<b>Estimated timeframe</b>
	a need for further targeted surveys.		
Biodiversity – great crested newts and other amphibians	Habitat Suitability Index (HSI) surveys and environmental DNA (eDNA) surveys – HSI surveys comprise a bankside assessment of ponds scoring waterbodies against ten predefined indices. eDNA surveys comprise the collection of water samples from the bankside edge of waterbodies	HSI – One-time survey eDNA – One-time survey	HSI – Late-February to mid-April inclusive eDNA – mid-March to June inclusive
	Conventional presence/absence surveys – surveys comprises surveys installing bottle traps in an evening, installing bottles every 1-2m around the edge of a waterbody. Surveyors then return the following morning to inspect traps and record any great crested newts present. Additional surveys consist of ‘torching’ waterbodies during hours of darkness in search of great crested newt activity within a waterbody, as well as undertaking egg searches on aquatic vegetation,	Minimum of 4 survey visits (evening and then morning), maximum of 6 survey visits	March and July inclusive
Biodiversity – birds	Breeding bird surveys – a non-intrusive survey consisting of surveyors walking predetermined routes (transects) through a variety of habitat types, observing and listening for birds. Species are recorded on paper maps in the field.	Each transect is walked once per month for three/four months	April to July inclusive
	Targeted survey to assess potential for agricultural buildings/trees to be used by roosting barn owl – a non-intrusive survey to assess the potential of buildings and trees to support roosting barn owl. Assessments are completed from ground-level and externally only for buildings but may be supplemented by an aerial tree-climbed inspection for trees (where possible).	One-time survey	March to May inclusive
Biodiversity – bats	Preliminary Bat Roost Assessment (PBRA) to assess suitability of buildings and trees for use by roosting bats and record any evidence of use/presence – a survey of buildings and trees in search of features with the potential to support roosting bats or evidence of bat occupancy/activity indicating the presence of a roost. The PBRA will determine whether there is a need for further additional surveys to determine the presence of roosting bats/roosts.	One-time survey	March to May inclusive
Biodiversity – otter and water vole	Survey of land, watercourses and waterbodies in search of evidence of otter and water vole – surveys will encompass a walked survey in search of evidence or presence of otter and water vole. Where possible, surveys will be completed from within watercourse channels, otherwise they shall be completed from banksides.	Two surveys required	April/May and July/August inclusive
Biodiversity – badger	Survey of land and field boundaries in search of evidence of badger – surveys comprise walking through habitats and notable boundary features in search of evidence or activity associated with badger.	One-time survey	Late February to April inclusive
Land and soils	An agricultural land survey, undertaking targeted samples of the shallow soil at specified locations along the pipeline route.	One-time survey	Summer
Landscape and visual	Two survey visits across 10 locations across the route. The first visit will be	Two visits (Summer and	Summer and Winter

<b>Non-intrusive surveys</b>			
<b>Survey type</b>	<b>Description of method used</b>	<b>Frequency</b>	<b>Estimated timeframe</b>
	undertaken to verify the desk study and consultation requirements (confirming landscape characteristics, key visual receptors and preliminary viewpoint locations) and cover the study area and pipeline corridor from publicly accessible locations. The second visit will be to take verified photographs.	Winter)	
Water	A walkover survey of watercourses considered to be at greatest risk of impact. The walkover survey will involve an assessment of valley form, land use, floodplain and riparian zone, channel geometry, bank material and structure, evidence of bank and channel erosion processes, and channel and bank modifications.	One-time survey	Summer
Traffic and Transport	Traffic surveys at 48 locations (access to private land not anticipated).	Access for one time survey and two visits for installation of and retrieval of automatic traffic count equipment	Outside school holidays
Arboriculture	Ancient and veteran trees, those covered by a Tree Preservation Order, or those identified as of high or moderate value along the pipeline route will be subject to a walkover survey.  The purpose of the walkover survey will be to identify their position, species, lowest canopy height, stem diameter and root protection area. The walkover survey will be targeted to include only trees with a height in excess of 3m.	One-time survey	Summer to Autumn

### **Schedule 3**

#### Intrusive Survey Activity Details

<b>Intrusive surveys</b>		
<b>Survey type</b>	<b>Description of method used</b>	<b>Applicable Intrusive Survey Payment</b>
Ground investigation boreholes	<p>Cone Penetration Tests (CPTs) are a quick and efficient way of determining soil properties and involve the pushing of a small diameter probe (less than 1 ½ inches) into the ground using a CPT rig attached to a small lorry/4x4.</p> <p>In some areas the CPTs will be supplemented by the drilling of boreholes (less than 6 inches in diameter) and taking soil samples for laboratory testing. This will be required in locations where more detail is required about the soils at depth, such as at proposed locations of pipeline crossings to railways, major roads and rivers. Borehole rigs vary in size, but for this investigation it is expected that they will be truck-mounted. The boreholes will be backfilled on completion of the work and surface reinstated, although at certain locations, such as at major crossings of railways, it will be necessary to leave in place a borehole containing a piezometer device that can be used to monitor seasonal variations in ground water levels. It is proposed that these remain in place for 12-18 months. The locations of these will be clearly identified with a marker post.</p>	£350
Ground investigation trial pits	<p>There may also be areas where trial pits, up to 4m deep, will need to be excavated by a mechanical digger to allow visual inspection of subsoil structure and composition. The pits would be backfilled on completion of the work and the surface reinstated.</p>	£250
Cultural heritage intrusive surveys	<p>Intrusive surveys may include trial trench investigations, which would require mechanical excavation of topsoil and subsoil, followed by hand excavation by archaeologists to identify and record any archaeological deposits and artefacts present.</p>	£250

**Licence for access to undertake surveys agreement**

In order to receive payment, please sign this agreement where indicated, and return the agreement (undated).		
Licensor	(Please insert full name(s)/company name and number here)	
	(Please insert address or registered office address here)	
Licensee	means PROGRESSIVE ENERGY LIMITED incorporated and registered in England and Wales with company number 03620177 whose registered office is at 38F Swan House, Bonds Mill, Bristol Road, Stonehouse, GL10 3RF “ <b>Progressive</b> ” and all those authorised by Progressive including its contractors, employees and agents.	
Licensor’s Property	means the freehold or leasehold property known as (insert description of licensor’s property):  and registered with title number(s) (insert title number(s) of licensor’s property):	
Property	means that part of the Licensor’s Property shown edged red on the Plan at Schedule 1	
Licence Fee	means £1,000 (one thousand pounds sterling)	
Licence Period	means the period from and including the date of this agreement until the date one year after the date of this agreement subject to the provisions of clause 6 of the Agreed Terms.	
Non-Intrusive Survey Activity	means any or all of the surveys, searches or investigations as set out in Schedule 2	
Intrusive Survey Activity	means any or all of the surveys, searches or investigations as set out in Schedule 1	
	will Intrusive Survey Activities potentially be undertaken at the Property? If Yes, clauses 3.2 and 4.3 of this agreement will apply in relation to such surveys	Yes
Survey Activities	means together a Non-Intrusive Survey Activity and (if applicable) an Intrusive Survey Activity	
Intrusive Survey Payment (per borehole, trial pit or survey as applicable)	Ground investigation boreholes	£350
	Ground investigation trial pits	£250
	Cultural heritage intrusive surveys	£250

**1 GRANT OF LICENCE**

- 1.1 Subject to the provisions of this agreement on the following pages, the Licensor grants to the Licensee during the Licence Period (in common with the Licensor and all others entitled) licence to enter the Property with or without vehicles, plant, machinery, equipment and materials to carry out the Survey Activities for the Licence Period and during the Designated Hours in common with the Licensor and all others authorised by the Licensor (so far as is not inconsistent with the rights given to the Licensee to access the Property to carry out the Survey Activities).
- 1.2 The Licensor grants the Licensee a right of access over the Licensor’s Property with or without vehicles, plant, machinery, equipment and materials to access the Property for the purposes detailed in clause 1.1.
- 1.3 The Licence for access to undertake surveys agreement consists of this page, the following Agreed Terms and Schedules 1 to 3.

<b>SIGNED</b> by ..... duly authorised for and on behalf of the Licensor	<b>SIGNED</b> by ..... duly authorised for and on behalf of the Licensee
PRINT NAME .....	PRINT NAME .....
<b>DATE OF THIS LICENCE:</b>	.....2021 (To be left blank by Licensor. Date to be inserted by Licensee on completion of the agreement)

## AGREED TERMS

### 1 INTERPRETATION

1.1 The following definitions and rules of interpretation apply in this agreement:

**"Agreed Terms"** means these agreed terms;

**"agreement"** means the Licence for access to undertake surveys agreement page signed by the Licensor and the Licensee, these Agreed Terms and Schedule 1 to 3 and reference to this agreement is a reference to this agreement as varied or novated (in each case, other than in breach of the provisions of this agreement) from time to time;

**"Business Day"** means a day other than a Saturday, Sunday or public holiday in England when banks in London are open for business;

**"Competent Authority"** means any statutory undertaker or any statutory public local or other authority or regulatory body or any court of law or government department or any of them or any of their duly authorised officers;

**"day"** means a period of 24 consecutive hours ending at 12.00 midnight;

**"Designated Hours"** means 7am – 7pm Monday to Friday and 7am to 5pm on Saturdays and Sundays or such other hours which shall be agreed in writing by the Licensor provided that such hours shall also be extended outside of these stipulated hours referred to above where specialist surveys are carried out or where poor weather has affected the schedule of the Survey Activities;

**"Environment"** means all or any of the following media, namely air, water (including without limitation water in drains and sewers) or land (including without limitation such media within buildings or other natural and man-made structures, above, on or below ground) and any living organisms or ecosystems supported by such media;

**"Environmental Law"** means all laws, regulations, directives, statutes, subordinate legislation, rules of common law and generally all international, EU, national and local laws and all judgments, orders, instructions, directions, by-laws, statutory guidance and codes of practice, notices, decisions, guidance awards and other lawful statements of any government or regulatory authority having force of law from time to time which relate to or concern the pollution of or protection of the Environment or the control, use, movement or storage of Hazardous Substances;

**"Hazardous Substances"** means any natural or artificial material, substance or article or combination of materials, substances or articles (whether in solid, liquid, gas, vapour or other form whatsoever) capable of causing harm to the Environment including but not limited to any hazardous, toxic or dangerous material, substance or article;

**"Historic Contamination"** means:

- (a) the presence of any Hazardous Substances at in on over or under the Licensor's Property or the Property at any time at or prior to the date of this agreement; and/or
- (b) the escape or migration of any of the same;

**"Intrusive Survey Activity Notice"** means a notice served by the Licensee pursuant to clause 4.3(a)(i) (and for the avoidance of doubt the Licensee may serve as many Intrusive Survey Activity Notices as the Licensee in its discretion deems necessary during the Licence Period);

**"Intrusive Survey Payment"** means the payments detailed in Schedule 3 and paid in accordance with clause 3.2;

**"Licence Payment Date"** means 30 days after the date of this agreement;

**"month"** means a calendar month;

**"Necessary Consents"** means all permits, consents, licences, permissions, certificates, authorisations and approvals whether of a public or private nature which shall be required by any Competent Authority in order to carry out the Survey Activities;

**"Plan"** means the plan attached to this agreement at Schedule 1;

**"Schedule of Condition"** a schedule of condition as defined in clause 4.3(b);

**"VAT"** means value added tax chargeable under the Value Added Tax Act 1994;

**"week"** means any period of seven consecutive days; and

**"year"** means any period of 12 consecutive months.

1.2 Clause, Schedule and paragraph headings shall not affect the interpretation of this agreement.

1.3 A person includes a natural person, corporate or unincorporated

body (whether or not having separate legal personality).

1.4 The Schedules form part of this agreement and shall have effect as if set out in full in the body of this agreement. Any reference to this agreement includes the Schedules.

1.5 A reference to a company shall include any company, corporation or other body corporate, wherever and however incorporated or established.

1.6 Unless the context otherwise requires, words in the singular shall include the plural and in the plural shall include the singular.

1.7 Unless the context otherwise requires, a reference to one gender shall include a reference to the other genders.

1.8 A reference to a statute or statutory provision is a reference to it as amended, extended or re-enacted from time to time and shall include all subordinate legislation made from time to time under that statute or statutory provision.

1.9 A reference to writing or written excludes fax and email.

1.10 Any obligation on a party not to do something includes an obligation not to allow that thing to be done.

1.11 References to a document in agreed form are to that document in the form agreed by the parties and initialled by or on their behalf for identification.

1.12 References to clauses and Schedules are to the clauses and Schedules of this agreement.

1.13 Any words following the terms including, include, in particular, for example or any similar expression shall be construed as illustrative and shall not limit the sense of the words, description, definition, phrase or term preceding those terms.

1.14 If any provision or part-provision of this agreement is or becomes invalid, illegal or unenforceable, it shall be deemed deleted, but that shall not affect the validity and enforceability of the rest of this agreement and if any provision or part-provision of this agreement is deemed deleted, the parties shall negotiate in good faith to agree a replacement provision that, to the greatest extent possible, achieves the intended commercial result of the original provision.

### 2 LICENCE ACKNOWLEDGMENT

2.1 The Licensee acknowledges that:

- (a) no relationship of landlord and tenant is created between the Licensor and Licensee by this agreement;
- (b) the Licensor retains control, possession and management of the Property and the Licensee has no right to exclude the Licensor from the Property;
- (c) subject always to clause 2.1(d), neither party shall assign, transfer, mortgage, charge, subcontract, declare a trust over or deal in any other manner with any of its rights and obligations under this agreement. The agreement can only be exercised by the Licensee and those authorised by the Licensee including, its contractors, employees and agents; and
- (d) notwithstanding anything to the contrary in this agreement the Licensee may assign this agreement to Eni UK Limited (company number 00862823) or any of its affiliates without the consent of the Licensor. Eni UK Limited is the company leading the development of the carbon dioxide storage element of the HyNet North West project and holds a carbon dioxide appraisal and storage licence from the Oil and Gas Authority.

### 3 LICENCE FEE PAYMENT

3.1 On or before the Licence Payment Date the Licensee shall pay the Licensor the Licence Fee.

3.2 On any and each occasion the Licensee serves an Intrusive Survey Activity Notice on the Licensor the Licensee will pay the Licensor the respective Intrusive Survey Payment specified in the relevant Intrusive Survey Activity Notice within 30 days' of service of the relevant Intrusive Survey Activity Notice and for the avoidance of doubt if an Intrusive Survey Activity Notice provides for only one Intrusive Survey Activity to be undertaken only one corresponding Intrusive Survey Payment shall be payable and if an Intrusive Survey Activity Notice provides for two Intrusive Survey Activities to be undertaken then two corresponding Intrusive Survey Payments will be payable under such Intrusive Survey Activity Notice.

3.3 Where VAT is properly chargeable the Licensee shall on the production of a valid VAT invoice pay to the Licensor VAT in respect of all supplies made by the Licensor under this agreement.

#### 4 LICENSEE'S OBLIGATIONS IN RELATION TO THE SURVEY ACTIVITIES

4.1 The Licensee agrees and undertakes that before commencing any Non-Intrusive Survey Activity the Licensee will:

- (a) give the Licensor not less than 2 Business Days' notice of the Licensee's intention to access the Property and carry out the Non-Intrusive Survey Activity; and
- (b) obtain any Necessary Consents and if requested in writing provide copies to the Licensor.

4.2 The Licensee agrees to undertake the Non-Intrusive Survey Activity with skill, care, diligence as is reasonably expected of skilled and competent professional undertaking surveys on projects of similar size, scope and complexity.

4.3 In relation to any Intrusive Survey Activity:

(a) the Licensee agrees and undertakes before commencing any Intrusive Survey Activity to:

(i) give the Licensor not less than 5 Business Days' written notice of the Licensee's intention to access the Property and carry out any Intrusive Survey Activity such notice to specify:

- (A) which Intrusive Survey Activity is to be carried out; and
- (B) the location on the Property of such Intrusive Survey Activity; and
- (C) details of the works to be undertaken in carrying out the Intrusive Survey Activity; and
- (D) the Intrusive Survey Payment payable to the Licensor.

(b) after providing the Licensor with an Intrusive Survey Activity Notice and prior to commencing any Intrusive Survey Activity the Licensee may access the Property to complete a photographic schedule of condition of the relevant parts of the Property including access routes ("**Schedule of Condition**") and shall no later than two Business Days before commencing any Intrusive Survey Activity provide to the Licensor a Schedule of Condition and the Licensee shall consider any reasonable representations made by the Licensor and make any reasonably required amendments to the Schedule of Condition and if no response is received from the Licensor within two Business Days of receipt of the Schedule of Condition the Licensor shall be deemed to have approved the Schedule of Condition.

(c) the Licensee shall obtain any Necessary Consents and if requested in writing provide copies to the Licensor; and

(d) the Licensee shall undertake any Intrusive Survey Activity with skill, care, diligence as is reasonably expected of skilled, and competent professional undertaking surveys on projects of similar size, scope and complexity; and

(e) the Licensee shall use all reasonable but commercially prudent endeavours to ensure that any Intrusive Survey Activity carried out at the Property does not interfere with, damage or affect any existing service pipes, cables, conduits or any other equipment or apparatus installed in, on or under the Property; and

(f) the Licensee will use all reasonable endeavours to procure that any Intrusive Survey Activity does not result in the release, escape or migration of Hazardous Substances onto, into, under or from the Property in breach of Environmental Law and as soon as reasonably possible after becoming aware of a material release or escape or migration of Hazardous Substances onto, into, under or from the Property in breach of Environmental Law the Licensee shall as soon as reasonably practicable:

- (i) give notice to the Licensor;
- (ii) if requested to do so by the Licensor within 10 Business Days of the date of the notice referred to in clause 4.3(f)(i) identify whether any remediation in respect of any such release, escape or migration caused by the relevant Intrusive Survey Activity is required at the Property in order to comply with Environmental Law (and provide written details of the same to the Licensor); and
- (iii) if the Licensor makes a request and remediation is subsequently identified and required at the Property in accordance with clause 4.3(f)(ii), propose (and the Licensor shall approve, acting reasonably) a scheme of works to

undertake the remediation necessary at the Property in respect of any such release, escape or migration caused by the relevant Intrusive Survey Activity as is required in order to comply with Environmental Law, and shall implement such scheme following receipt of the Licensor's said approval of such scheme. If no response is received from the Licensor within 10 Business Days of receipt of the scheme of works the Licensor shall be deemed to have approved the scheme of works,

and the Licensor shall grant to the Licensee all rights reasonably required by the Licensee to allow the Licensee to implement such scheme of works and for the avoidance of doubt the Licensee shall not be liable (whether to the Licensor or its successors in title or any other person) in respect of any Historic Contamination.

(g) the Licensee will as soon as reasonably practicable make good at its own cost to the standard subsisting as evidenced by the Schedule of Condition or (where it is impracticable so to make good or where the Licensor has made good in default) pay compensation for any damage caused to the Property as a direct result of any Intrusive Survey Activity (including without limitation the infilling of boreholes reinstatement of land drains trees, hedges and other boundary structures and the reinstatement and reseeded of topsoil) PROVIDED THAT nothing in this clause 4.3(g) shall require the Licensee to undertake any remediation of any Hazardous Substances in, on under or emanating from the Property save as referred to in clause 4.3(f).

4.4 Within a reasonable timeframe following completion of the Survey Activities the Licensee agrees to make good at its own cost to the Licensor's reasonable satisfaction any physical damage directly caused by the carrying out of the Survey Activities to the Property and or the Licensor's Property whether caused by the Licensee, its contractors, employees and agents or if so agreed otherwise to reimburse the reasonable and proper costs incurred by the Licensor in making good such damage within a reasonable period of demand (being not less than 30 days) and the Licensee shall pay reasonable compensation for any crop loss resulting directly from any damage caused by the Survey Activities.

4.5 The Licensee agrees:

- (a) to cause as little damage and disruption as reasonably practicable to the Licensor in carrying out the Survey Activities;
- (b) not leave loose tools, plant, equipment or materials on the Property in a manner which may be likely to cause damage or injury and to remove as soon as practicable from the Property and dispose of lawfully, any waste arising from the Survey Activities.

4.6 The Licensee will maintain (or procure that its contractors shall maintain) public liability insurance of at least £5,000,000.00 (five million pounds sterling) for each and every claim (and on written request shall provide a copy of such insurance policy to the Licensor as soon as reasonably practicable as well as evidence that the appropriate premiums have been paid).

#### 5 LICENSEE INDEMNITY

5.1 The Licensee shall indemnify the Licensor from and against all claims, demands, actions, awards, judgments, settlements, costs, expenses, liabilities, damages and losses (including all interest and legal and other professional costs and expenses reasonably and properly incurred by the Licensor) in respect of damage to the Property arising directly as a result of any wrongful act or omission, neglect or default of the Licensee (or other persons at the Property expressly or impliedly with the Licensee's authority under this agreement) or its or their apparatus and equipment on the Property (excluding loss of environmental or agricultural subsidy) provided that the Licensor shall:

- (a) notify the Licensee promptly in writing of any third party action, demand or claim under clause 5.1 ("**Claim**") of which it is aware and shall give the Licensee (at its option) express authority to conduct all negotiations and litigation, and settle all litigation, arising from the Claim;
- (b) provide the Licensee with all such available information and assistance as the Licensee may reasonably require (at the Licensee's expense) in relation to any Claim and keep the Licensee informed of any reasonable settlement proposals made by the claimant;
- (c) not make any admission as to liability or agree to any settlement or compromise of any Claim without the prior written consent of the Licensee (not to be unreasonably withheld or delayed); and

(d) use all reasonable endeavours to mitigate any losses or liabilities caused by an event that may give rise to a Claim.

5.2 To the extent permissible by law, the Licensee's liability under this agreement shall:

(a) expire 2 years after completion of the Survey Activities at the Property but without prejudice to any prior obligation to either party;

(b) not exceed the sum of £5 million in the aggregate for any and all claims under this agreement;

(c) not extend to:

(i) loss and/or deferral of production, loss of revenue, loss of profit or anticipated profit (if any), economic loss, loss of product, loss of use, loss of contract, loss of goodwill, in each case whether direct or indirect and whether or not foreseeable at the date of this agreement; or

(ii) any consequential or indirect loss or damage,

whatsoever suffered by the Licensor whether or not the Licensee knew (or ought to have known) that the loss or damage would be likely to be suffered as a result of the wrongful act, neglect or default giving rise to the loss or damage;

(d) not extend to any claims, demands, actions, awards, judgments, settlements, costs, expenses, liabilities, damages and losses (including all interest and legal and other professional costs and expenses) to the extent that they:

(i) are attributable solely to any act or default of the Licensor; or

(ii) would not have arisen or were increased or made more costly as a result of the Licensor volunteering information or otherwise making any disclosure to any regulatory authority or third party (other than where required by law); or

(iii) relate to any Historic Contamination save as prescribed by clause 4.3(f).

## 6 TERMINATION OF THE LICENCE

The Licensee may determine this agreement with immediate effect at any time by serving written notice on the Licensor.

## 7 MAKING GOOD

On completion of the Survey Activities or on termination of this agreement in accordance with clause 6, the Licensee agrees to promptly:

(a) remove all materials, plant and equipment from the Property and make good the Property; and

(b) notify the Licensor of completion of the Survey Activities and make good so that the Licensor may inspect the Property.

## 8 CONFIDENTIALITY

8.1 The Licensor undertakes that it shall not at any time disclose to any person the existence and terms of this agreement (along with any associated documentation pursuant to it) or any confidential information concerning the business, affairs, customers, clients or suppliers of the Licensee, except as permitted by clause 8.2.

8.2 The Licensor may disclose the Licensee's confidential information:

(a) to its employees, officers, representatives or advisers who need to know such information for the purposes of exercising the Licensor's rights or carrying out its obligations under or in connection with this agreement. The Licensor shall ensure that its employees, officers, representatives or advisers to whom it discloses the Licensee's confidential information comply with this clause 8; and

(b) as may be required by law, a court of competent jurisdiction or any governmental or regulatory authority.

8.3 The Licensor shall not use the Licensee's confidential information for any purpose other than to exercise its rights and perform its obligations under or in connection with this agreement.

## 9 ACKNOWLEDGEMENTS

The Licensee acknowledges that:

(a) the Property may be contaminated with substances that may be hazardous to health;

(b) the Property is operational and operational equipment may be present on or under the Property;

(c) the Necessary Consents will be exercised and the Survey Activities will be carried out at the Licensee's own risk and expense.

## 10 CONSEQUENCES OF TERMINATION

10.1 Any provision of this agreement that expressly or by implication is intended to come into or continue in force on or after termination or expiry of this agreement shall remain in full force and effect.

10.2 Termination or expiry of this agreement shall not affect any rights, remedies, obligations or liabilities of the parties that have accrued up to the date of termination or expiry, including the right to claim damages in respect of any breach of the agreement which existed at or before the date of termination or expiry.

## 11 FORCE MAJEURE

Neither party shall be in breach of this agreement nor liable for delay in performing, or failure to perform, any of its obligations under this agreement if such delay or failure result from events, circumstances or causes beyond its reasonable control. In such circumstances the affected party shall be entitled to a reasonable extension of the time for performing such obligations.

## 12 VARIATION

No variation of this agreement shall be effective unless it is in writing and signed by the parties (or their authorised representatives).

## 13 RIGHTS AND REMEDIES

The rights and remedies provided under this agreement are in addition to, and not exclusive of, any rights or remedies provided by law.

## 14 FURTHER ASSURANCE

Each party shall, and shall use all reasonable endeavours to procure that any necessary third party shall, promptly execute and deliver such documents and perform such acts as may reasonably be required for the purpose of giving full effect to this agreement.

## 15 NOTICES

15.1 Any notice given to a party under or in connection with this agreement shall be in writing and shall be delivered by hand or by pre-paid first-class post or other next working day delivery service at its registered office (if a company) or its principal place of business (in any other case).

15.2 Any notice shall be deemed to have been received:

(a) if delivered by hand, on signature of a delivery receipt;

(b) if sent by pre-paid first-class post or other next working day delivery service, at 9.00 am on the second Business Day after posting or at the time recorded by the delivery service.

15.3 This clause does not apply to the service of any proceedings or other documents in any legal action or, where applicable, any arbitration or other method of dispute resolution.

15.4 A notice given under this agreement is not valid if sent by email or fax.

## 16 RIGHTS OF THIRD PARTIES

Subject to clause **Error! Reference source not found.**, a person who is not a party to this agreement shall not have any rights under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of this agreement.

## 17 GOVERNING LAW

This agreement and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims) shall be governed by and construed in accordance with the law of England.

## 18 JURISDICTION

Each party irrevocably agrees that the courts of England shall have exclusive jurisdiction to settle any dispute or claim arising out of or in connection with this agreement or its subject matter or formation (including non-contractual disputes or claims).

## Schedule 2

### Non-Intrusive Survey Activity Details

This is the list of potential non-intrusive surveys that may be required as part of the scheme's investigations. Not all these will be required on the Property. These surveys will require pedestrian access or drone flights only. Timeframes are subject to change but will be discussed with the Licensor in advance.

<b>Non-intrusive surveys</b>			
<b>Survey type</b>	<b>Description of method used</b>	<b>Frequency</b>	<b>Estimated timeframe</b>
Noise and vibration	<p>Noise surveys at locations representative of the nearest noise and vibration sensitive receptors. This involves a combination of attended and unattended noise measurements at circa 10 locations across the route to ensure that the baseline data gathered are representative.</p> <p>The noise survey at unattended locations will be supplemented with short term noise measurements during the daytime.</p>	<p>Attended surveys: one short term visit with noise monitoring equipment</p> <p>Unattended surveys: equipment left in place for approx. one week.</p>	Spring to Summer
Cultural heritage	<p>A site walkover inspection to determine the topography of the site and existing land use/the nature of the existing buildings, earthworks and historic landscape features on the site, and to provide further information on areas of possible past ground disturbance and general historic environment potential. The walkover will extend to selected designated heritage assets beyond the site, in order to consider potential impacts to their setting (e.g. visible changes to historic character and views).</p> <p>A non-intrusive geophysical survey comprising a standard gradiometer survey, which will identify buried anomalies of potential archaeological origin at specified locations.</p>	<p>Walkover: One-time survey</p> <p>Geophysical survey: One-time survey with teams with handheld/cart equipment</p>	Late February to Summer
Biodiversity – habitats and plants	Extended Phase 1 habitat survey – a non-intrusive, walked survey to map and categorise habitats present. Species of flora are recorded and an assessment of the potential for protected and/or notable species made. The Extended Phase 1 habitat survey will additionally help to determine whether further protected and/or notable species surveys are required (beyond those detailed below).	One-time survey	Late February to April inclusive
	National Vegetation Classification surveys of key habitats – a non-intrusive walked survey comprising a more intensive survey of vegetation species and composition within habitats.	One-time survey	June to August inclusive
	Hedgerows Regulations survey – a non-intrusive walked survey categorising hedgerows in line with relevant guidelines, recording information about height, width, species composition	One-time survey	May to June inclusive
	Aquatic ecology walkover survey – a non-intrusive walkover survey assessing habitats present along and within waterbodies and watercourses. Species of flora are recorded and an assessment of the potential for protected and/or notable species made. The aquatic ecology walkover survey will determine whether there is	One-time survey	Late February to mid-April inclusive

<b>Non-intrusive surveys</b>			
<b>Survey type</b>	<b>Description of method used</b>	<b>Frequency</b>	<b>Estimated timeframe</b>
	a need for further targeted surveys.		
Biodiversity – great crested newts and other amphibians	Habitat Suitability Index (HSI) surveys and environmental DNA (eDNA) surveys – HSI surveys comprise a bankside assessment of ponds scoring waterbodies against ten predefined indices. eDNA surveys comprise the collection of water samples from the bankside edge of waterbodies	HSI – One-time survey eDNA – One-time survey	HSI – Late-February to mid-April inclusive eDNA – mid-March to June inclusive
	Conventional presence/absence surveys – surveys comprises surveys installing bottle traps in an evening, installing bottles every 1-2m around the edge of a waterbody. Surveyors then return the following morning to inspect traps and record any great crested newts present. Additional surveys consist of ‘torching’ waterbodies during hours of darkness in search of great crested newt activity within a waterbody, as well as undertaking egg searches on aquatic vegetation,	Minimum of 4 survey visits (evening and then morning), maximum of 6 survey visits	March and July inclusive
Biodiversity – birds	Breeding bird surveys – a non-intrusive survey consisting of surveyors walking predetermined routes (transects) through a variety of habitat types, observing and listening for birds. Species are recorded on paper maps in the field.	Each transect is walked once per month for three/four months	April to July inclusive
	Targeted survey to assess potential for agricultural buildings/trees to be used by roosting barn owl – a non-intrusive survey to assess the potential of buildings and trees to support roosting barn owl. Assessments are completed from ground-level and externally only for buildings but may be supplemented by an aerial tree-climbed inspection for trees (where possible).	One-time survey	March to May inclusive
Biodiversity – bats	Preliminary Bat Roost Assessment (PBRA) to assess suitability of buildings and trees for use by roosting bats and record any evidence of use/presence – a survey of buildings and trees in search of features with the potential to support roosting bats or evidence of bat occupancy/activity indicating the presence of a roost. The PBRA will determine whether there is a need for further additional surveys to determine the presence of roosting bats/roosts.	One-time survey	March to May inclusive
Biodiversity – otter and water vole	Survey of land, watercourses and waterbodies in search of evidence of otter and water vole – surveys will encompass a walked survey in search of evidence or presence of otter and water vole. Where possible, surveys will be completed from within watercourse channels, otherwise they shall be completed from banksides.	Two surveys required	April/May and July/August inclusive
Biodiversity – badger	Survey of land and field boundaries in search of evidence of badger – surveys comprise walking through habitats and notable boundary features in search of evidence or activity associated with badger.	One-time survey	Late February to April inclusive
Land and soils	An agricultural land survey, undertaking targeted samples of the shallow soil at specified locations along the pipeline route.	One-time survey	Summer
Landscape and visual	Two survey visits across 10 locations across the route. The first visit will be	Two visits (Summer and	Summer and Winter

<b>Non-intrusive surveys</b>			
<b>Survey type</b>	<b>Description of method used</b>	<b>Frequency</b>	<b>Estimated timeframe</b>
	undertaken to verify the desk study and consultation requirements (confirming landscape characteristics, key visual receptors and preliminary viewpoint locations) and cover the study area and pipeline corridor from publicly accessible locations. The second visit will be to take verified photographs.	Winter)	
Water	A walkover survey of watercourses considered to be at greatest risk of impact. The walkover survey will involve an assessment of valley form, land use, floodplain and riparian zone, channel geometry, bank material and structure, evidence of bank and channel erosion processes, and channel and bank modifications.	One-time survey	Summer
Traffic and Transport	Traffic surveys at 48 locations (access to private land not anticipated).	Access for one time survey and two visits for installation of and retrieval of automatic traffic count equipment	Outside school holidays
Arboriculture	Ancient and veteran trees, those covered by a Tree Preservation Order, or those identified as of high or moderate value along the pipeline route will be subject to a walkover survey.  The purpose of the walkover survey will be to identify their position, species, lowest canopy height, stem diameter and root protection area. The walkover survey will be targeted to include only trees with a height in excess of 3m.	One-time survey	Summer to Autumn

### **Schedule 3**

#### Intrusive Survey Activity Details

<b>Intrusive surveys</b>		
<b>Survey type</b>	<b>Description of method used</b>	<b>Applicable Intrusive Survey Payment</b>
Ground investigation boreholes	<p>Cone Penetration Tests (CPTs) are a quick and efficient way of determining soil properties and involve the pushing of a small diameter probe (less than 1 ½ inches) into the ground using a CPT rig attached to a small lorry/4x4.</p> <p>In some areas the CPTs will be supplemented by the drilling of boreholes (less than 6 inches in diameter) and taking soil samples for laboratory testing. This will be required in locations where more detail is required about the soils at depth, such as at proposed locations of pipeline crossings to railways, major roads and rivers. Borehole rigs vary in size, but for this investigation it is expected that they will be truck-mounted. The boreholes will be backfilled on completion of the work and surface reinstated, although at certain locations, such as at major crossings of railways, it will be necessary to leave in place a borehole containing a piezometer device that can be used to monitor seasonal variations in ground water levels. It is proposed that these remain in place for 12-18 months. The locations of these will be clearly identified with a marker post.</p>	£350
Ground investigation trial pits	<p>There may also be areas where trial pits, up to 4m deep, will need to be excavated by a mechanical digger to allow visual inspection of subsoil structure and composition. The pits would be backfilled on completion of the work and the surface reinstated.</p>	£250
Cultural heritage intrusive surveys	<p>Intrusive surveys may include trial trench investigations, which would require mechanical excavation of topsoil and subsoil, followed by hand excavation by archaeologists to identify and record any archaeological deposits and artefacts present.</p>	£250

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# Environmental Survey Stakeholder List

## HyNet North West



Stakeholders who have been contacted for access to complete environmental surveys. These stakeholders were based on the DCO order limits.

Kevin Glyn Jones
Brock Limited
Christine Williams
Alexis Moores
Shell U.K. Limited
Jeanne Estelle Storrar
Thornton Manor Limited
Emma Banks
Bod Hotels Limited
Brian Raymond Fryer
Alison Bithell
Paul Leslie Jones
Caryle Steen Morgan
Hilary Lamb
Caroline Mary Whittaker
David Thomas Mccarrick
Leslie Anthony Sharps
Milan Plavsic
Muriel Patterson
Gemma Louise Stein
Colin John Evans
Joanna Sonia Mackintosh
Adrian William Adams
Eshrat Gostelow
CF Fertilisers UK Limited
Gillian Clare Stevenson
David Alan Wright
Jane Elizabeth Vaughan Boswell
Graham Smith
Ole Thorbjorn Myklestad
3C Waste Limited
Richard Benjamin Jones
Alison Violet Holmes
Gareth John Jones
Thomas Padre Pio Berry
Lorna Lloyd
Sir Charles Angus Gladstone
T. Anwyl & Son Limited
Gwilym Owen Jones
Ann Oultram
Michael David Hancock
Enid Banks
Doreen Emily Jones
Daniel Terence Harris
John Griffiths
Lloyd Williams
Frederick George Whilton
David Andrew Littler
Gillian Rose Jones
Julie Charlotte
John Horace George Bletcher
Paul Frank Moore
James Frederick Darlington

Jones Balers Farms Limited
Richard Reynolds
Guy James Noel Jones
Eryl Edward Williams
Peter Gleave
Keith Nixon Garner
Phillip Alistair Edge
Barbara Ellen Evans
John Calvin Peers
Violet Penney
Lee Povall
CCA Land Limited
Marian Morphet
Neil Anthony Whittaker
Rhondda Christine Whittaker
Jeffrey Stuart Whittaker
Doreen Joyce Spencer
Pauline Ann Morley
Gareth Jones Okell
Gwyneth Evans
Angela Goodwin
Susan Kay Foale Morris
Antony David Wynne Griffith
Robert John Spencer Hodgkinson
Kathleen Millington
Jon-Paul Nelson
Emma Clare Craven-Smith-Milnes
Michelle Elford
Christopher Duffy
Frances Isobel Jones
M.B. Building Company Limited
William Francis Somerset
Jeremy Doran
Lorraine Heather Earl
Richard Andrew Storrar
Peter Leonard Mort
Robert William Jones
Sheila Mary Thelwell
Shaun Terrance Moore
Katherine Joy Denna
Malcolm Arthur Shelbourne
Alan Newton
Michael John Cheers
Lee David Rawlinson
Nigel Donald Mackintosh
Rosemary Grace Sedgwick
Nell Eileen Theresa Doran
John Elfed Williams
Philip James Harding
Richard John Bancroft Warburton
Diana Everall Booth
Stuart Douglas Lloyd
Nicola Ann Allason
Zoe Hassall

Pauline Willshaw
Pamela Williams
Dennis John Winstanley
Stephen Anthony Maloney
Neil Hassall
Hayley Louise Wynne
Mark David Wynne
Chris Lee
Glyn Herbert Jones
Essar Oil (UK) Limited
Patricia Margaret Davies
United Utilities Water Limited
Mary Alice Bate
Martin Leonard Sedgwick
Janice Louise Platt
Interling Chester Limited
Ann Clare Lea
Rosemary Riley
David Thomas Cairns
Frederick Leonard Jones
Eric Andrew Harkness
Diana Littler
Andrew Maxwell Walton
John Richard Blackburn
Makro Self Service Wholesalers Limited
Neil Faulkner
Eugene James Flood
John Paul Flood
Margaret Sarah Kane
David Anthony Christopher Ruscoe
Jean Jones
John Littler
The North of England Zoological Society
Pierre Nicholas Bartlett
Nicolaus Stuart Jenkins
Andrew Booth
Melanie McDonnell
Tacia Holdings Limited
Ed's Stud Limited
Mary Elizabeth Mort
Jennifer Carol Harding
Anne Kirkpatrick Ratcliffe
Walter Snelson
Johnathan Dennan
Donatella Moores
Rosemary Ann Whilton
Stephen Derrick Boyling
Lock Stock Self Storage Limited
Stuart Watkin
Gerald Michael Watkin
Mary Boyling
Ivor Esmor Jones
Judith Fordham
Keith Joseph Cairns

Nora Yvonne Jones
Richard Hainsworth
Nicola Mary Binks
David Leigh Connah
Winifred Olwen Connah
Airbus Operations Limited
Wales and West Housing Association Limited
Andy Davies
Personal Representative of Glyn Herbert Jones
Joseph David Evans
Ruth Brown
Jennifer Mary Williams
William Thomas Banks
Jennifer Mary Harkness
Lesley Susan Griffiths
Robert Mark Povall
Jean Audrey Woods
Myles David Platt
Scott Alexander Cairney
Stanley Lewis Davies
John Miles Doran
Steven Andrew
Mari Lloyd Jones
Stephen William Oultram
Virginia Anne Smith
Thomas William Jones
Rosaleen Ann Jones
Sonia Priscilla Shelbourne
Huw Gwilym Jones
Myra Lloyd Jones
Richard John Earl
Sara Racheal Myklestad
Thelma Claire Cook
Patrick Doran
Robert Esmor Jones
Robert Gwyn Jones
Vivien Morris
Susan Dawn Edge
Kenneth Hughes
Stuart Banks
Richard Kirkpatrick Ratcliffe
Derek Thomas Wright
John Alexander Pickering
Whitehall Trustees Limited
Ann Cheers
Roy Greenwood
Pauline Martin
Cheshire West and Chester Borough Council
Kristin Rebecca Morris
Amber Real Estate Investments (Industrial) Limited
Paul Henry Warrington
David John Brown
Metro Properties B.V.
Julian Andre Davies

Allan Justin Jones
Alan Baden Smith
Edward Rawson Clark
Canal & River Trust
Trevor Manning Foster
Margaret Anne Boyling
Brian Ivor Cook
David William Lewis
Edward Delaney
The Corbett Group Limited
Dwr Cymru Cyfyngedig
John Garry Sunderland
David Thomas Binks
Roadchef Motorways Limited
Hornbuckle Mitchell Trustees Limited
Pamela Elizabeth Warburton
Tower Pension Trustees Limited
Ian Forsyth Lee Duncan
Mark Rupert Feeny
M J F Pension Trustee Limited
Edward Charles Harry Trevor-Barnston
Robert James Andrews
John Christopher Baker
SP Manweb plc
Russell Carl Morris
Geoffrey George Wall
Philip William Warrington
Gillian Deborah Nicholson
Matthew James McGhee
Flintshire County Council
Paul Geoffrey Smith
Jane Challoner
E Flood Construction Limited
Michael Richard Harley
Harold Richard Schofield
Michael Anthony Jones
Sarah Margaret Jones
Robin Charles Bennett
Philippa Margaret Massey
Northop Hall Country House Hotel Limited
Carl Winston Woods
Anno Hellanus Glazenberg
Jennifer Mary Martin
Natural Resources Body for Wales
Regal Developments (Buckley) Limited
Marie Lorraine Smith
Janet Mary Walton
David John Bickerton
David John Edge
Leah Louise Cairney
Janice Mary Moore
Par Golf (Chester) Limited
Edna Hughes
Church Farm Dairies (Hawarden) Limited

James Edward Brown
Ronald Spencer
Emyr Williams
Iona Kay Lewis
Michael Anthony Tudor Trevor-Barnston
Clive Mervyn Holmes
James Carwithen Greenwood
Karen Duffy
John Lamb
Sandra Plavsic
Sheila Jean Greenwood
Wynne Morgan
Fred Littler
Sarah Harley
James Delaney
Peter Alexander Nicholson
Ian Sidney Jones
Vena Jocelyn Newton
Alison Wendy Dutton
Georgina Jones
Andrew John Hirst
Gordon James Dutton
Barbara Bates
Dawn Irene Tickle
Renny Hamer
Lesley Judith Arrowsmith
The Owner (Brookwood Green Lane Ewloe Green Deeside CH5 3BP)
Thomas Benjamin Jones
Howard Warrington
David Randle Hewitt
Mark Brassington
Edward Gerrig Booker
Gareth Jones
Patricia Jean Schofield
Hayden Edward Rogers
Edward Crank
Encirc Limited
Lisa Jane Millington
Carol Thomas
Personal Representative of Frederick Leonard Jones
Sarah Faulkner
Peel NRE Limited
Lyons Holiday Park Limited
Paul Stanton Hancocks
Ann Hancocks
Christopher Evans
Richard John Bletcher
Michael Leonard Milbourne Jackson
Stephen Henry Richard Jackson
Network Rail Infrastructure Limited
Michelle Helen Dyer
John Wrench
Peter Whitwam

Anthony Durkin
The Cheshire Wildlife Trust Limited
Wilf Greenwood
John Jones
Personal Representative of Howard Warrington
Alan Johnson
Ian Bentley
Stephanie Roberts
Rose Nominees Limited
Haven Leisure Limited
Vyrna Bletcher
Alan James Field
Christine Olwyn Johnson
Jacqueline Woollam
Terence Leslie Woollam
Alexander Norman Gillanders
Ashley Lee Hodson
John Davies Jones
H W Oultram & Co
National Highways Limited
D. Morgan plc
The Representative Body of The Church In Wales
Annette Elizabeth Rowland
Catherine Oultram
Ian Wilfred Tickle
Butterfield Bank (Guernsey) Limited
Peter Harden
Nigel Winston Rowland
A White Events Limited
Culvery Power Limited
Sir Trustee 7 Limited
Sir Trustee 8 Limited
Travelodge Hotels Limited
Elton Parish Council
S & A Shaw
Executor of Mr Newton Moore
Ian Scott Gibbons
Gerald Smith
Christopher James Leighton
Jeremy Griffin
J G & J Johnson
W.T. Banks & Co (Farming) Limited
Jonathan Brown
Christopher Bernard Thomas
Kevin Glyn Jones
Brock Limited
Christine Williams
Alexis Moores
Shell U.K. Limited
Jeanne Estelle Storrar
Thornton Manor Limited
Emma Banks
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Muriel Patterson
Gemma Louise Stein
Colin John Evans
Joanna Sonia Mackintosh
Adrian William Adams
Eshrat Gostelow
CF Fertilisers UK Limited
Gillian Clare Stevenson
David Alan Wright
Jane Elizabeth Vaughan Boswell
Graham Smith
Ole Thorbjorn Myklestad
3C Waste Limited
Richard Benjamin Jones
Alison Violet Holmes
Gareth John Jones
Thomas Padre Pio Berry
Lorna Lloyd
Sir Charles Angus Gladstone
T. Anwyl & Son Limited
Gwilym Owen Jones
Ann Oultram
Michael David Hancock
Enid Banks
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Daniel Terence Harris
John Griffiths
Lloyd Williams
Frederick George Whilton
David Andrew Littler
Gillian Rose Jones
Julie Charlotte
John Horace George Bletcher
Paul Frank Moore
James Frederick Darlington
Jones Balers Farms Limited
Richard Reynolds
Guy James Noel Jones
Eryl Edward Williams
Peter Gleave
Keith Nixon Garner
Phillip Alistair Edge
Barbara Ellen Evans
John Calvin Peers
Violet Penney
Lee Povall

CCA Land Limited
Marian Morphet
Neil Anthony Whittaker
Rhondda Christine Whittaker
Jeffrey Stuart Whittaker
Doreen Joyce Spencer
Pauline Ann Morley
Gareth Jones Okell
Gwyneth Evans
Angela Goodwin
Susan Kay Foale Morris
Antony David Wynne Griffith
Robert John Spencer Hodgkinson
Kathleen Millington
Jon-Paul Nelson
Emma Clare Craven-Smith-Milnes
Michelle Elford
Christopher Duffy
Frances Isobel Jones
M.B. Building Company Limited
William Francis Somerset
Jeremy Doran
Lorraine Heather Earl
Richard Andrew Storrar
Peter Leonard Mort
Robert William Jones
Sheila Mary Thelwell
Shaun Terrance Moore
Katherine Joy Dennan
Malcolm Arthur Shelbourne
Alan Newton
Michael John Cheers
Lee David Rawlinson
Nigel Donald Mackintosh
Rosemary Grace Sedgwick
Nell Eileen Theresa Doran
John Elfed Williams
Philip James Harding
Richard John Bancroft Warburton
Diana Everall Booth
Stuart Douglas Lloyd
Nicola Ann Allason
Zoe Hassall
Pauline Willshaw
Pamela Williams
Dennis John Winstanley
Stephen Anthony Maloney
Neil Hassall
Hayley Louise Wynne
Mark David Wynne
Chris Lee
Glyn Herbert Jones
Essar Oil (UK) Limited
Patricia Margaret Davies

United Utilities Water Limited
Mary Alice Bate
Martin Leonard Sedgwick
Janice Louise Platt
Interling Chester Limited
Ann Clare Lea
Rosemary Riley
David Thomas Cairns
Frederick Leonard Jones
Eric Andrew Harkness
Diana Littler
Andrew Maxwell Walton
John Richard Blackburn
Makro Self Service Wholesalers Limited
Neil Faulkner
Eugene James Flood
John Paul Flood
Margaret Sarah Kane
David Anthony Christopher Ruscoe
Jean Jones
John Littler
The North of England Zoological Society
Pierre Nicholas Bartlett
Nicolaus Stuart Jenkins
Andrew Booth
Melanie McDonnell
Tacia Holdings Limited
Ed's Stud Limited
Mary Elizabeth Mort
Jennifer Carol Harding
Anne Kirkpatrick Ratcliffe
Walter Snelson
Johnathan Dennan
Donatella Moores
Rosemary Ann Whilton
Stephen Derrick Boyling
Lock Stock Self Storage Limited
Stuart Watkin
Gerald Michael Watkin
Mary Boyling
Ivor Esmor Jones
Judith Fordham
Keith Joseph Cairns
Nora Yvonne Jones
Richard Hainsworth
Nicola Mary Binks
David Leigh Connah
Winifred Olwen Connah
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Wales and West Housing Association Limited
Andy Davies
Personal Representative of Glyn Herbert Jones
Joseph David Evans
Ruth Brown

Jennifer Mary Williams
William Thomas Banks
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Lesley Susan Griffiths
Robert Mark Povall
Jean Audrey Woods
Myles David Platt
Scott Alexander Cairney
Stanley Lewis Davies
John Miles Doran
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Mari Lloyd Jones
Stephen William Oultram
Virginia Anne Smith
Thomas William Jones
Rosaleen Ann Jones
Sonia Priscilla Shelbourne
Huw Gwilym Jones
Myra Lloyd Jones
Richard John Earl
Sara Racheal Myklestad
Thelma Claire Cook
Patrick Doran
Robert Esmor Jones
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Susan Dawn Edge
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Richard Kirkpatrick Ratcliffe
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John Alexander Pickering
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Kristin Rebecca Morris
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David John Brown
Metro Properties B.V.
Julian Andre Davies
Allan Justin Jones
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Canal & River Trust
Trevor Manning Foster
Margaret Anne Boyling
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Robert James Andrews
John Christopher Baker
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Russell Carl Morris
Geoffrey George Wall
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Gillian Deborah Nicholson
Matthew James McGhee
Flintshire County Council
Paul Geoffrey Smith
Jane Challoner
E Flood Construction Limited
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Harold Richard Schofield
Michael Anthony Jones
Sarah Margaret Jones
Robin Charles Bennett
Philippa Margaret Massey
Northop Hall Country House Hotel Limited
Carl Winston Woods
Anno Hellanus Glazenborg
Jennifer Mary Martin
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Regal Developments (Buckley) Limited
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David John Bickerton
David John Edge
Leah Louise Cairney
Janice Mary Moore
Par Golf (Chester) Limited
Edna Hughes
Church Farm Dairies (Hawarden) Limited
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Ronald Spencer
Emyr Williams
Iona Kay Lewis
Michael Anthony Tudor Trevor-Barnston
Clive Mervyn Holmes
James Carwithen Greenwood
Karen Duffy
John Lamb
Sandra Plavsic
Sheila Jean Greenwood

Wynne Morgan
Fred Littler
Sarah Harley
James Delaney
Peter Alexander Nicholson
Ian Sidney Jones
Vena Jocelyn Newton
Alison Wendy Dutton
Georgina Jones
Andrew John Hirst
Gordon James Dutton
Barbara Bates
Dawn Irene Tickle
Renny Hamer
Lesley Judith Arrowsmith
The Owner (Brookwood Green Lane Ewloe Green Deeside CH5 3BP)
Thomas Benjamin Jones
Howard Warrington
David Randle Hewitt
Mark Brassington
Edward Gerring Booker
Gareth Jones
Patricia Jean Schofield
Hayden Edward Rogers
Edward Crank
Encirc Limited
Lisa Jane Millington
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Peel NRE Limited
Lyons Holiday Park Limited
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Christopher Evans
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Michael Leonard Milbourne Jackson
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Network Rail Infrastructure Limited
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Stephanie Roberts
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Haven Leisure Limited
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Alan James Field
Christine Olwyn Johnson
Jacqueline Woollam
Terence Leslie Woollam
Alexander Norman Gillanders
Ashley Lee Hodson
John Davies Jones
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National Highways Limited
D. Morgan plc
The Representative Body of The Church In Wales
Annette Elizabeth Rowland
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Nigel Winston Rowland
A White Events Limited
Culvery Power Limited
Sir Trustee 7 Limited
Sir Trustee 8 Limited
Travelodge Hotels Limited
Elton Parish Council
S & A Shaw
Executor of Mr Newton Moore
Ian Scott Gibbons
Gerald Smith
Christopher James Leighton
Jeremy Griffin
J G & J Johnson
W.T. Banks & Co (Farming) Limited
Jonathan Brown
Christopher Bernard Thomas