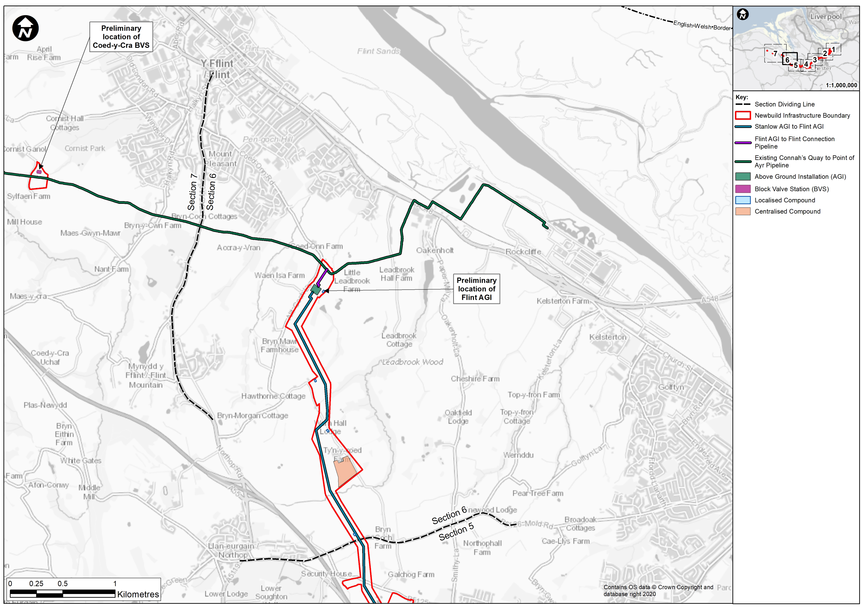
HyNet North West



Section 6

Section 6 is located entirely within the Flintshire Local Authority boundary and spans three Community boundaries (Northop, Flint and Halkyn). The Flint AGI is located within this Section, and it signals the end of the Stanlow to Flint CO_2 pipeline. This section also includes the section of 24" underground pipeline which connects the Flint AGI with the existing Flint to PoA pipeline.

From Connah's Quay Road, the route heads northwards, running east of Leadbrook Wood. The section is wider here to accommodate for temporary working areas, and to allow for flexibility in the design. The route continues northwards, running parallel with Alt Goch Lane, before reaching the Flint AGI.

From the Flint AGI, the short section of 24" pipeline runs for approximately 200m in a north-easterly direction before connecting into the existing Flint Connection to Point of Ayr pipeline.

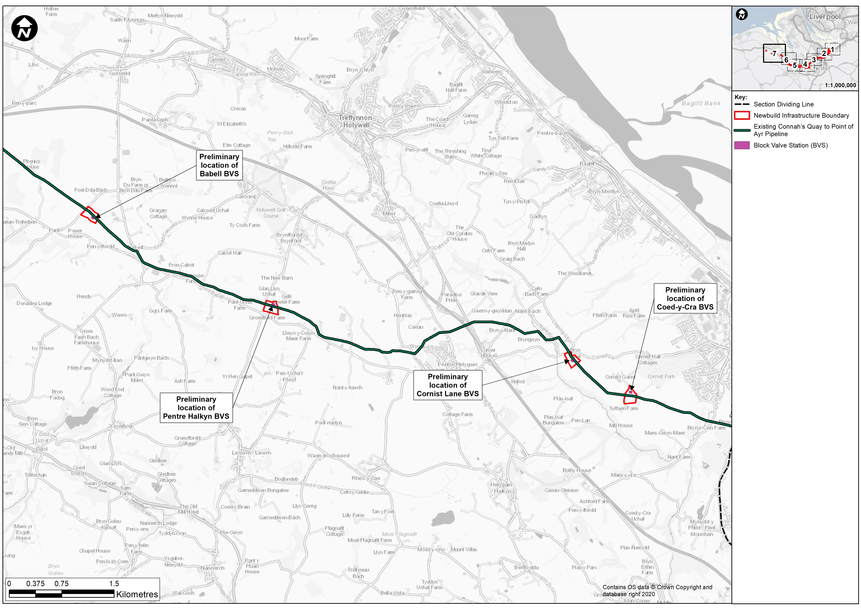
[redacted]

0203 116 5919

info@hynet.co.uk

FREEPOST HYNET NORTH WEST

HyNet North West



Section 7

Section 7 is located entirely within the Flintshire Local Authority boundary and comprises the four new BVSs located along the existing Flint Connection to Point of Ayr pipeline. Coed-y-Cra and Cornist Lane BVS are located within the Flint Community, Pentre Halkyn BVS is located within Brynford Community and Babell BVS is located within Ysceifiog Community. All are located in rural locations.

Each area shown accounts for the extent required for temporary working areas as well as the footprint of the BVS, however the final dimensions of the BVSs are yet to be confirmed.

Coed-y-Cra BVS is located to the south west of Flint, between Sylfaen Farm and Cornist Ganol, and to the south west of Cornist Wood.

Cornist Lane BVS is located to the west of Flint, immediately adjacent to Cornist Lane and 150m east of Nant-y-Flint.

Pentre Halkyn BVS is located between Babell and Pentre Halkyn, immediately adjacent to the B5121 Allt Y Chwiler. It is located between Gelli Fowler Farm and Groesfford Farm.

Babell BVS is located in the Parish of Ysceifog, on the outskirts of the settlement of Babell.

[redacted]

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info@hynet.co.uk

FREEPOST HYNET NORTH WEST

HyNet North West

CO_2 pipeline construction

Constructing the new CO_2 pipeline

How long will it take?

We anticipate that the construction of the entire new CO_2 pipeline will take approximately 16 months. Installation of the CO_2 pipeline itself should take around one to two months in each location, although in complex areas it might take longer.

How will we lay the CO_2 pipeline?

For much of the CO_2 pipeline, 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. Although the CO_2 pipeline has a maximum diameter of about 36 inches (or 91cm), 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.

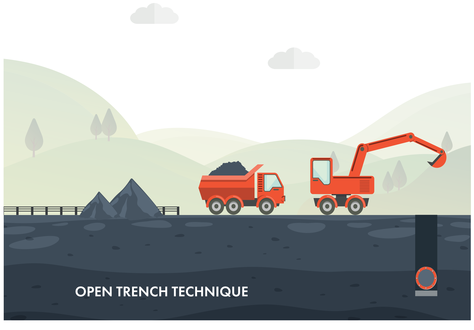
At times, we will need to use trenchless techniques to install the CO_2 pipeline, for example when installing it under railway lines, major roads and riverbeds. In these cases, we will use methods such as directional drilling or auger boring. These techniques allow us to install the CO_2 pipeline while allowing roads and railways to remain open and rivers to continue flowing.

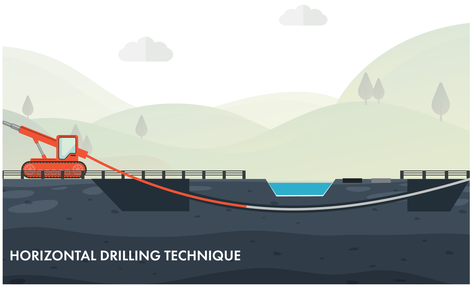
— Horizontal directional drilling: A tunnel is drilled below a river, road or other crossing point. The pipe is then pulled through the drilled tunnel.

— Auger boring: A tunnel is drilled into the ground using an auger at the same time as laying the pipe into the tunnel.

What will we do with the land when we're done?

Once the CO_2 pipeline installation is complete, we will reinstate the land as closely as possible to its original condition. We will replant or replace any hedges, fences or other ground features after construction.





[redacted]

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FREEPOST HYNET NORTH WEST

HyNet North West

What happens next?

We are committed to involving the local community and our stakeholders at every stage of the CO_2 pipeline development and the wider HyNet North West Project.

We want to ensure that everyone has the opportunity to have their say on how we develop the best project for local communities, the surrounding landscape and the environment. This consultation will help inform our proposals and the Secretary of State's decision on whether to approve our CO_2 pipeline.

We will use the feedback and information received as part of this consultation, as well as outputs from ongoing engineering work and the environmental studies we are undertaking, to develop a more detailed route for the new CO_2 pipeline.

There will also be work happening in parallel on other elements of HyNet North West: a pipeline to transport hydrogen around the North West, hydrogen generation in Stanlow and underground hydrogen storage in salt caverns near Northwich. There will be further opportunity to have your say on these elements of HyNet as they progress.

How to get involved

This consultation will be open from 9 February to 22 March 2022.

Please provide your comments by 11.59pm on 22 March 2022. You can find more information on our consultation and provide your comments on our HyNet Hub by [redacted] or completing a feedback form at this exhibition.

[redacted]

0203 116 5919

info@hynet.co.uk

FREEPOST HYNET NORTH WEST

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Feedback Form

HyNet
North West

HyNet North West

HYNET NORTH WEST CARBON DIOXIDE (CO_2) PIPELINE CONSULTATION

HyNet is a ground-breaking energy project that will unlock a low carbon future for the North West England 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 2020's onwards.

HyNet will achieve this in two ways by:

- Capturing and locking away carbon dioxide (CO_2) emissions produced by energy intensive industries.
- Producing low carbon hydrogen (H_2) to replace the fossil fuels we use today for industry, transport and for heating homes.

The project is made up of several different components, including upgrades to existing facilities as well as the development of new infrastructure.

HyNet will play a big part in helping to create the UK's low carbon economy, bringing economic and environmental benefits to the local area and across the UK.

ABOUT YOU

Q.1 Please provide your name.

Q.2 If responding on behalf of an organisation, please provide your organisation name.

Q.3 Please provide your postcode.

Q.4 If you would like to be kept informed of future updates on HyNet, please provide your email address.

SECTION 1 OF THE PIPELINE (from Ince via Stanlow to Cryers Lane)

Q.5 Do you have any comments on the pipeline route in section 1, in particular information about specific locations?

Q.6 Do you have any comments on the Ince Above Ground Installation (AGI)?

Q.7 Do you have any comments on the Stanlow Above Ground Installation (AGI)?

SECTION 2 OF THE PIPELINE (from Cryers Lane to the A41)

Q.8 Do you have any comments on the pipeline route in section 2, in particular information about specific locations?

Q.9 For the Shropshire Union Canal section, do you favour the North or South sub-option?

☐ North ☐ South ☐ No preference ☐ Neither

Q.10 On which of the following key issues are your views based?

☐ Environment (including heritage and historic environment, landscape and how it looks and land use)

☐ Construction (including engineering and maintenance)

☐ Community (including local businesses, Rights of Way and local amenities)

☐ Safety (during and after installation)

☐ Other If 'other', please specify

Q.11 Do you have any comments on the Rock Bank Block Valve Station (BVS)?

SECTION 3 OF THE PIPELINE (from the A41 to the A548)

Q.12 Do you have any comments on the pipeline route in section 3, in particular information about specific locations?

Q.13 Do you have any comments on the Mollington Block Valve Station (BVS)?

Q.14a Do you favour Chester and Birkenhead Railway Line North sub-option or Chester and Birkenhead Railway Line South sub-option?

☐ North ☐ South ☐ No preference ☐ Neither

Q.14b On which of the following key issues are your views based? (Please pick all that apply)

☐ Environment (including heritage and historic environment, landscape and how it looks and land use)

☐ Construction (including engineering and maintenance)

☐ Community (including local businesses, Rights of Way and local amenities)

☐ Safety (during and after installation)

☐ Other If 'other', please specify

Q.14c Please give us any further information about these issues.

SECTION 4 OF THE PIPELINE (from the A548 to the A550)

Q.15 Do you have any comments on the pipeline route in section 4, in particular information about specific locations?

SECTION 5 OF THE PIPELINE (from the A550 to the B2156)

Q.16 Do you have any comments on the pipeline route in section 5, in particular information about specific locations?

Q.17 Do you have any comments on the Aston Hill Block Valve Station (BVS)?

Q.18 Do you have any comments on the Northop Hall Above Ground Installation (AGI)?

Q.19a Do you favour the Ewloe North, Ewloe Central or Ewloe South option?

- ☐ Ewloe North
- ☐ Ewloe Central
- ☐ Ewloe South
- ☐ No preference
- ☐ None

Q.19b On which of the following key issues are your views based? (Please pick all that apply)

- ☐ Environment (including heritage and historic environment, landscape and how it looks and land use)
- ☐ Construction (including engineering and maintenance)
- ☐ Community (including local businesses, Rights of Way and local amenities)
- ☐ Safety (during and after installation)
- ☐ Other

If 'other', please specify

Q.19c Please give us any further information about these issues.

Q.20a Do you favour the Alltami Brook North or Alltami Brook South option?

- ☐ Alltami Brook North
- ☐ Alltami Brook South
- ☐ No preference
- ☐ Neither

Q.20b On which of the following key issues are your views based? (Please pick all that apply)

- ☐ Environment (including heritage and historic environment, landscape and how it looks and land use)
- ☐ Construction (including engineering and maintenance)
- ☐ Community (including local businesses, Rights of Way and local amenities)
- ☐ Safety (during and after installation)

☐ Other If 'other', please specify

Q.20C Please give us any further information about these issues.

SECTION 6 OF THE PIPELINE (from the B5126 to the A5119)

Q.21 Do you have any comments on the pipeline route in section 6, in particular information about specific locations?

Q.22 Do you have any comments on the Flint Above Ground Installation (AGI)?

SECTION 7 OF THE PIPELINE (from the A5119 to Point of Ayr)

Q.23 Do you have any comments on the Coed-y-Cra, Cornist Lane, Pentre Halkyn or Babell block valve stations (BVSs)?

OTHER

Q.24 Do you have any comments on the possible construction effects and our proposed management of these along the pipeline route?

Q.25 Do you have any comments on the proposed mitigation measures?

Q.26 Do you have any comments on the Preliminary Environmental Information Report (PEIR)?

Q.27 Do you have any comments on the economic and employment benefits forecast for the HyNet project?

Q.28 Do you have any other comments on our carbon dioxide pipeline proposals?

Q.29 Do you have any other comments on HyNet?

ABOUT THE CONSULTATION

Q.30 Did you find all the information on HyNet, Carbon Capture and Storage (CCS) and the carbon dioxide pipeline that you were interested in?

☐ Yes ☐ No ☐ Unsure

If you said no, what additional / further information would you like to have seen?

Q.31 How helpful did you find the following consultation activities?

	Very Good	Good	Unsure	Poor	Very Poor	Didn't use
Online Webinar	☐	☐	☐	☐	☐	☐
In-person exhibition events	☐	☐	☐	☐	☐	☐
Digital materials – HyNet hub	☐	☐	☐	☐	☐	☐
Consultation materials available (FAQs, brochure, etc.)	☐	☐	☐	☐	☐	☐

Q.32 Do you have any other comments or suggestions regarding this consultation?

Your comments will be analysed by the Applicant and any of its appointed agents. Copies may be made available in due course to the Secretary of State, the Planning Inspectorate and other relevant statutory authorities so that your comments can be considered as part of the DCO application process. Responses may therefore be made public however we will request that your personal details are not placed on public record. The Applicant and its appointed agents will hold your personal details securely in accordance with applicable data protection legislation and will use them solely in connection with the consultation process and subsequent DCO application and, except as noted above, they will not be passed to third parties. Please refer to our Privacy Notice for more details: [redacted]

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Factsheets

HyNet
North West

HyNet
North West

2022

HyNet North West is an exciting new hydrogen and carbon capture project in North West England and North Wales. It is paving the way for a more sustainable future that will contribute significantly to regional and national 'net zero' targets, while creating and protecting local jobs. The first step of this journey is to capture carbon dioxide that is currently being released into the atmosphere to be secured deep beneath the seabed.

CARBON CAPTURE AND STORAGE

A CRITICAL ELEMENT OF HYNET NORTH WEST

FACTSHEET

Carbon dioxide (CO_2) released into the atmosphere is a major cause of climate change. Reducing CO_2 emissions is an essential part of managing our climate emergency. The UK Government has therefore established a net zero emissions target. This means that by 2050, any CO_2 emissions to the atmosphere must be offset by equivalent emissions removal.

Nearly 70% of the UK's local authorities have set even stronger targets, including the Greater Manchester Combined Authority, Liverpool City Region, Cheshire West and Chester Council and Flintshire County Council, which are aiming for net zero carbon emissions by 2040 or earlier.

Industrial processes produce a huge amount of CO_2 that is released to the atmosphere. To meet our targets, we need to significantly reduce these emissions. This can be achieved by switching to low carbon fuel types, such as hydrogen, or by directly capturing the emissions via a process known as Carbon Capture and Storage (CCS).

HOW ARE WE CAPTURING AND STORING CARBON AS PART OF HYNET?

CCS is an important part of the HyNet low carbon cluster.

We will be capturing CO_2 from existing industry in the Ince and Stanlow area, as well as CO_2 that is produced from the new low-carbon hydrogen production plant at Stanlow. The CO_2 will then be transported safely by underground pipeline to the depleted gas reservoirs in Liverpool Bay.

Natural gas has been safely extracted through production wells for over 25 years in Liverpool Bay. Extraction of the gas has progressively left space within the sandstone reservoir that can be used for CO_2 storage. The capacity in the reservoirs is large but finite, and the original pressures will not be exceeded.

HOW DOES CARBON CAPTURE AND STORAGE (CCS) WORK?

CCS is a proven technology that can capture up to 95% of CO_2 emissions produced in industrial processes.

1. The first step involves installing technology that will capture CO_2 emissions. For HyNet, these will be installed at the premises of existing industry to capture the CO_2 that is currently generated from burning natural gas as a fuel or as part of the manufacturing process.

2. The CO_2 is then compressed so that it can be transported via a pipeline. For HyNet, we are currently consulting on our proposals for the CO_2 pipeline, which will connect industry sites to CO_2 storage facilities in Liverpool Bay.

3. The CO_2 is transported through the pipeline to be stored deep beneath the seabed in carefully selected offshore sites. The HyNet CO_2 storage site is a depleted natural gas field beneath Liverpool Bay, which has previously held natural gas securely for millions of years.

HOW CAN WE ENSURE SAFE CCS?

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.

Throughout all the phases of operation, CO_2 transportation, injection and its safe containment within the reservoir will be carefully monitored using state of the art techniques (including but not limited to geophysical surveys, pressure sensors, seabed surveys and dedicated monitoring wells).

CAN WE BE SURE THE CO_2 WON'T ESCAPE?

Gas has remained safely trapped in geological structures such as sandstone reservoirs, like the ones in Liverpool Bay, for millions of years. These reservoirs are deep below the surface of the seabed. The Liverpool Bay CO_2 store will be more than 1km below the seabed and approximately 20 miles offshore. Hundreds of metres of shale lie over the top of these sandstone reservoirs, making an impermeable layer which traps the gas in place.

The CO_2 will be stored in the same way as the original natural gas. It will remain safely contained in the sandstone reservoirs.

HyNet
North West

2022

HyNet North West is an exciting new hydrogen and carbon capture project in North West England and North Wales. It is paving the way for a more sustainable future that will contribute significantly to regional and national 'net zero' targets, while creating and protecting local jobs. Hydrogen production will be key to delivering low carbon energy for UK industry.

HYDROGEN PRODUCTION

THE CRUCIAL PART IT PLAYS IN HYNET NORTH WEST

FACTSHEET

WHAT IS HYDROGEN?

Hydrogen is one of the most abundant elements on earth. It occurs naturally within other compounds, like water (H_2O) and natural gas (CH_4). To enable use of hydrogen as a single element (for example, as a fuel), it must be extracted from these compounds.

WHY ARE WE USING HYDROGEN?

Hydrogen can be used to supply energy safely and reliably. It can directly replace natural gas or other hydrocarbon-based fuels. The main benefit of hydrogen is that, when used as a fuel, no CO_2 is produced.

Hydrogen can also be used in multiple sectors – presenting an opportunity to reduce emissions across different industries, in power generation, transport and to heat our homes.

Hydrogen can be stored which can help balance the supply and demand of energy. For HyNet, we are planning to develop an underground hydrogen storage site in mid-Cheshire.

WHERE WILL THE HYDROGEN BE USED AS PART OF HYNET?

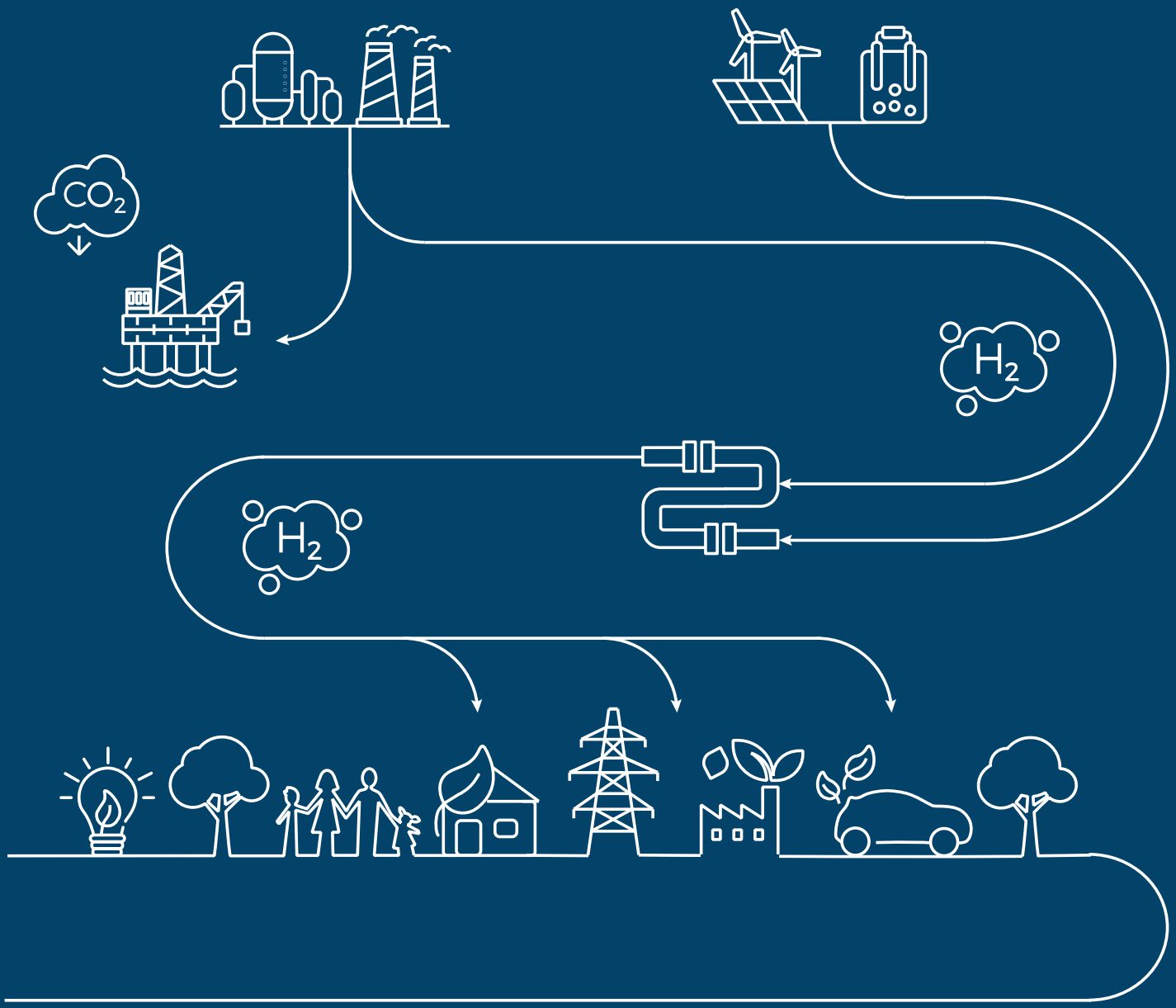
In North West England and North Wales, the local economy is based on a range of world class energy intensive industries that are currently reliant on natural gas. This includes global companies and brands across the chemicals, glass, oil refining, food, paper and automotive sectors.

HyNet brings together many major industries from across these sectors in a collective effort. By switching fuels from natural gas to hydrogen these companies can cut their CO_2 emissions, making these industries consistent with the UK's net zero pathway while allowing them to continue to operate and therefore helping to protect jobs as well as the environment.

Enabling hydrogen will allow local industries to thrive while keeping carbon emissions low.

WHAT ARE THE DIFFERENT TYPES OF HYDROGEN?

Low-carbon hydrogen is generally described as either 'green' or 'blue'. HyNet will initially be based on blue hydrogen, but will subsequently accept green hydrogen as costs fall.



BLUE HYDROGEN is produced by 'splitting' natural gas. CO_2 is produced as a by-product of this process, which is then captured and stored underground, offshore. Blue hydrogen is regarded as 'low carbon' because almost all of the CO_2 produced during production never enters the atmosphere.

GREEN HYDROGEN is produced via the electrolysis of water . This process might be powered by wind, solar or other renewable electricity so that no CO_2 is emitted in production. To generate green hydrogen on a large-scale the UK needs to construct more new renewable electricity generation infrastructure.

HyNet North West

2022

HyNet North West is an exciting new hydrogen and carbon capture project in North West England and North Wales. It is paving the way for a more sustainable future that will contribute significantly to regional and national 'net zero' targets, while creating and protecting local jobs. Hydrogen production will be key to delivering low carbon energy for UK industry.

CONTRIBUTING TO THE HYDROGEN ECONOMY

FACTSHEET

The North West of England and North Wales are the ideal location to lead the growth of the UK's hydrogen economy. Establishing a hydrogen network will boost the regional economy while reducing carbon dioxide (CO_2) emissions. It will help establish the UK as a global leader for clean industrial innovation.

The North West has the most manufacturing jobs of any UK region, employing 345,000 people in 2019. HyNet will protect existing high skilled manufacturing jobs, as well as create thousands more new exciting and long-term opportunities.

HyNet has the potential to decarbonise one of the UK's largest clusters of industrial sites. The area around HyNet includes a high concentration of energy intensive manufacturers, covering a variety of industries: from chemicals, glass and oil refining to food, paper and automotive.

HyNet will help to secure the future of these sites by enabling their decarbonisation either via use of low carbon hydrogen as a fuel or via direct capture of CO_2. This will support both the North West of England and North Wales to attract inward investment helping industry and jobs.

Enabling hydrogen in the North West will allow local industries to remain viable by keeping carbon emissions low.

- Investing in hydrogen could unlock £18bn in GVA (Gross Value Added – the measure of value from goods and services within an area) by 2035 and support 75,000 additional jobs in the UK.
- By 2030, around 30 TWh (terawatt hours - a measure of energy) per year of hydrogen will be supplied by HyNet as energy to fuel transport, power generation and industry and to heat homes and businesses.
- HyNet will reduce carbon dioxide (CO_2) emissions by around 10 million tonnes of carbon per year by 2030, equivalent to taking 4 million cars off the road.

HyNet
North West

FEBRUARY/MARCH 2022

HyNet North West is an exciting new hydrogen and carbon capture project in North West England and North Wales. It is paving the way for a more sustainable future that will contribute significantly to regional and national 'net zero' targets, while creating and protecting local jobs.

The first step of this journey is to develop a pipeline which will transport carbon dioxide from industry to depleted gas reservoirs in Liverpool Bay. As a major infrastructure project, it will go through a nationally regulated planning process to ensure its delivery is as safe and smooth as possible while reflecting the needs of local people.

PLANNING FOR THE CO_2 PIPELINE

FACTSHEET

WHAT IS THE PLANNING PROCESS?

The carbon dioxide (CO_2) pipeline for HyNet North West will run from the Stanlow area in Cheshire, transporting CO_2 through Flintshire to be stored in underground depleted gas reservoirs in Liverpool Bay. This will involve building a new section of pipeline, as well as re-purposing an existing natural gas pipeline for CO_2.

As the CO_2 pipeline will be over 16km in length, the project is classified as a 'Nationally Significant Infrastructure Project' (or NSIP) under the Planning Act 2008. This means that one of the main types of consent we will be seeking to obtain is a Development Consent Order (DCO). Obtaining the DCO will allow us to construct the new pipeline.

We will also need to get approvals from Flintshire County Council under the Town and Country Planning Act 1990 (TCPA) to modify the facilities at the existing Point of Ayr gas terminal and undertake foreshore works to be able to manage CO_2 rather than natural gas.

HOW DO WE OBTAIN A DEVELOPMENT CONSENT ORDER (DCO)?

The DCO process helps to streamline the decision-making process for large infrastructure projects and helps to ensure that communities and stakeholders are given fair opportunity to make their views known. We will need to apply to the Planning Inspectorate for the DCO, after which point there are clear stages which we will need to follow.

Our application process will need to meet certain requirements as we progress through the different stages. You can find more information on the DCO process online at: infrastructure.planninginspectorate.gov.uk

WHO MAKES THE DECISIONS?

The Secretary of State for Business, Energy and Industrial Strategy (BEIS) will make the final decision on whether to grant or refuse permission for our CO_2 pipeline project.

DCO APPLICATION STAGES

1

PRE-APPLICATION

Consultation with stakeholders and assessing environmental impacts before submitting an application.

2

ACCEPTANCE

The application is submitted and the Planning Inspectorate decides whether it meets the standards required to be accepted.

3

PRE-EXAMINATION

Members of the public can register to become an interested party. An Examining Authority will be appointed.

4

EXAMINATION

The Examining Authority will conduct their examination on behalf of the Secretary of State. Interested parties can provide further views at this stage.

5

RECOMMENDATION

The Examining Authority provides a report and recommendation to the Secretary of State.

6

DECISION

The Secretary of State makes a decision on the application

WHAT IS THE DIFFERENCE BETWEEN DCO AND TCPA CONSENTS?

Parts of our proposals within Wales which will need to be approved through a TCPA application, as opposed to a DCO application.

The TCPA application follows a different legal process, and the decision-maker for these applications will be Flintshire County Council. However, the principles of our TCPA application will remain the same:

- We will undergo robust consultation with stakeholders and communities
- We will consider the potential impacts of these proposals (including environmental impact assessment)

Our application will be considered by the members of the Flintshire County Council planning committee before any decisions are made.

WHAT STAGE ARE WE IN NOW?

We are currently in the pre-application stage, focusing on seeking comments for the preferred route for the CO_2 pipeline before submitting the DCO application in Summer 2022. We are committed to engaging the local community about this project. We have already undertaken an initial consultation in 2021 to introduce the CO_2 pipeline and raise awareness of HyNet North West as a whole. This is the second round of consultation and is an opportunity for communities and stakeholders to give feedback on the more detailed proposals.

WHAT ARE THE NEXT STEPS

Following this statutory consultation, we will review the feedback and finalise the design for the CO_2 pipeline. We will prepare the DCO planning application for submission. This will include conducting surveys and completing our assessment of the potential environmental impacts of the scheme. This will be presented in an Environmental Statement (ES). Other parts of HyNet, such as the hydrogen production plant, will also be going through separate planning applications and consenting processes. More information on these projects will be made available in due course at: [redacted]

HyNet North West

2022

HyNet North West is an exciting new hydrogen and carbon capture project in North West England and North Wales. It is paving the way for a more sustainable future that will contribute significantly to regional and national 'net zero' targets, while creating and protecting local jobs. Hydrogen production will be key to delivering low carbon energy for UK industry.

UNLOCKING A LOW CARBON ECONOMY

FACTSHEET

WHAT ARE THE UK'S CARBON NET ZERO 2050 ASPIRATIONS?

The UK Government has created a legally binding net zero CO_2 emissions target in response to the global climate emergency. This means that by 2050, any CO_2 emissions to the atmosphere must be offset by equivalent emissions removal.

Nearly 70% of the UK's local authorities have set even stronger targets, including the Greater Manchester Combined Authority, Liverpool City Region, Cheshire West and Chester Council and Flintshire County Council, who are aiming for net zero carbon emissions by 2040 or earlier.

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

HOW WILL WE ACHIEVE THIS?

Achieving these targets will involve a complete transformation of the way people live, shop, travel, work and do business over the next 20 years. HyNet has a critical contribution to make in achieving that goal. The project aligns with the ambitions of the UK Committee on Climate Change, who have said that low cost carbon capture and storage (CCS) will play a big part in the UK meeting its net zero goal. Hydrogen will transform our energy system – being able to power our industry, replace petrol and diesel in heavy goods transport and replace natural gas in homes.

HOW DOES HYNET NORTH WEST HELP?

HyNet could reduce the region's carbon emissions by a quarter over five years. The project provides a viable solution to the local and national climate emergency. The CO_2 pipeline upon which we are currently consulting will transport CO_2 emissions from industries in the HyNet area to permanent and safe underground storage.

WHY DO WE NEED HYNET NORTH WEST?

Many industrial emissions come from fuel combustion, and currently the fuel used is generally natural gas. Work such as HyNet North West's Industrial Fuel Switching programme is demonstrating that natural gas can be easily replaced with low-carbon hydrogen which emits no CO_2 when combusted. A smaller proportion of industrial emissions come from the raw materials themselves, and for these industries CCS will be required to allow them to continue to operate.

Without the deployment of hydrogen and CCS at scale, not only will the UK struggle to meet net zero in 2050, but the operating costs of industry in the region could increase, which could threaten thousands of jobs

HYNET NORTH WEST'S ASPIRATIONS

HyNet will produce clean low carbon hydrogen to replace natural gas to provide energy for industry and power generation, as well as energy for homes and transport to decarbonise North West England and North Wales.

To ensure we can provide hydrogen in homes, we are also partners in the HyDeploy Project, which is testing and demonstrating the blending of hydrogen with natural gas, so that it can be used as a safe alternative without needing to change heating or cooking appliances.

HyNet North West

2022

Climate change is happening and urgent action is needed. HyNet will help decarbonise the North West England and North Wales by providing low carbon hydrogen to replace fossil fuels and locking up industrial CO_2 emissions. HyNet will contribute to the UK's race to net zero carbon emissions by 2050 by decarbonising industry, transport and how we heat our homes, paving the way for a more sustainable future.

WHY DO WE NEED HYNET?

FACTSHEET

We must act now to decarbonise our economy and combat emissions which are leading to a climate emergency. National and international experts have demonstrated that we need to go harder and faster in our response to keep global temperatures below 1.5°C above the pre-industrial average. The UK has committed to have net zero greenhouse gas emissions by 2050. This means all greenhouse gases emitted must equal the amount of greenhouse gas emissions we are removing from the atmosphere.

The Intergovernmental Panel on Climate Change's (IPCC) report stated that in order to reduce the challenge climate change will have on human life, we must not see an increase in global temperature of over 1.5°C. CO_2 emissions must decline by 45% by 2030 from levels seen in 2010 and we must reach net zero by 2050. Currently 70% of local authorities in England and Wales have declared a climate emergency with many councils setting net zero goals earlier than the national 2050.

Carbon Capture and Storage (CCS), a technology that will be used by HyNet, is essential to move the country towards net zero. CCS can capture up to 95% of CO_2 emissions.

A proven well established technology, CCS has been capturing and storing CO_2 from industrial processes in Europe since 1996. Globally, large-scale CCS projects are in operation, capturing emissions from multiple sectors including power generation, cement manufacturing and gas processing.

HyNet partners will design, develop and construct the infrastructure to support regional decarbonisation. The initial phases will include an underground pipeline to carry captured CO_2, the UK's first low carbon hydrogen production plant and the development of the UK's first hydrogen network. HyNet will capture and lock up CO_2 from regional industrial sectors such as cement making and chemical production. It will also produce low carbon hydrogen which will replace fossil fuels to fuel industry, transport and to heat our homes. By doing this, HyNet will contribute to the reduction of CO_2 emitted in to our atmosphere and make a significant contribution to the international, national and local effort against climate change. Local air quality will improve and make the region a safer and healthier place for future generations to thrive.

Without the deployment of hydrogen and CCS at scale, not only will the UK struggle to meet net zero in 2050, but the operating costs of industry in the region could increase, which could threaten thousands of jobs.

HyNet has the potential to capture 10 million tonnes of CO_2 per year by 2030, the equivalent of taking 4 million cars off the road.

The North West of England and North Wales are perfectly set up to lead the delivery and utilisation of low cost hydrogen production:

- The North West of the UK is an industrial hub located close to ideal natural geological structures, reducing the cost of moving and storing both hydrogen and CO_2.
- The Cheshire salt basin is already used extensively for natural gas storage and is suitable, and available, for hydrogen storage.
- The gas reservoirs in Liverpool Bay will be depleted in time for CO_2 storage to begin in the mid 2020s. Further areas of potential for CO_2 storage are also in the nearby Morecambe Bay gas fields, which could be repurposed for CO_2 storage in future. Both these areas are ideally located to reduce CO_2 transport and storage costs.

HyNet will reuse existing natural gas infrastructure to transport and store the captured CO_2. This will not only allow HyNet to start sooner, but will also minimise cost. The high cost of decommissioning an oil or gas structure falls upon government and the operators. However, by repurposing the depleted gas reservoirs, HyNet removes the need to decommission them, significantly reducing the burden on UK taxpayers.

OTHER BENEFITS HYNET WILL DELIVER ARE:

ECONOMIC

- Directly create 6,000 permanent local jobs;
- Support up to 75,000 jobs across the UK by 2035
- Generate up to £17 billion for the region by 2050
- Generate up to £31 billion for the UK by 2050.

ENVIRONMENTAL

- HyNet could provide enough hydrogen to replace nearly 50% of natural gas use across the region
- Deliver 80% of the UK's clean power target for transport, industry and homes by 2030.

SOCIAL

- Create thousands of new jobs during construction to support the local, regional and national economy, and will help to safeguard many more jobs for the future
- Generate opportunities for local people, tapping into the area's blend of industrial experience and scientific expertise, which together will create a hotspot for innovation and growth
- Improve local air quality by reducing CO_2 emissions, making the region a safer and healthier place for future generations to thrive.

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Online Presentation

HyNet North West

HyNet North West

Carbon dioxide pipeline consultation

February-March 2022

Agenda

- Housekeeping
- What is HyNet North West?
- Introducing our carbon dioxide (CO_2) 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.

Housekeeping

- Please keep your microphone on mute and camera off while our presenters are speaking
- Please type your questions into the chat function at any time
- You will be able to provide feedback on our plans via our online survey at www.hynethub.co.uk
- This event will only focus on the carbon dioxide pipeline proposals
- We will be recording this webinar

1 What is HyNet?

The climate change challenge

- Climate change has far-reaching effects on our planet.
- We are in a climate emergency and we need to act quickly to reduce our emissions.
- In order to tackle climate change, all parts of our economy must decarbonise.
- Heavy industry is a big contributor to global carbon emissions.
- By reducing carbon dioxide emissions from industry we can make a big difference, quickly.

The UK's net zero 2050 aspirations

- The UK Government has created a legally binding Net Zero CO_2 emissions target.
- By 2050, any CO_2 emissions to the atmosphere must be eliminated, captured or offset by equivalent emissions removal.
- International events, such as COP26, have further instilled the need for us all to move quickly to net zero.

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.

What is HyNet ?

- HyNet is the UK's leading industrial decarbonisation project.
- The North West England and North Wales industrial clusters were selected by Government to lead the UK's industrial decarbonisation.
- From 2026, HyNet will:
  - produce, store and distribute low carbon hydrogen to replace fossil fuels
  - capture and lock up carbon dioxide emissions from industry.
- We will build new infrastructure and reuse pre-existing infrastructure.

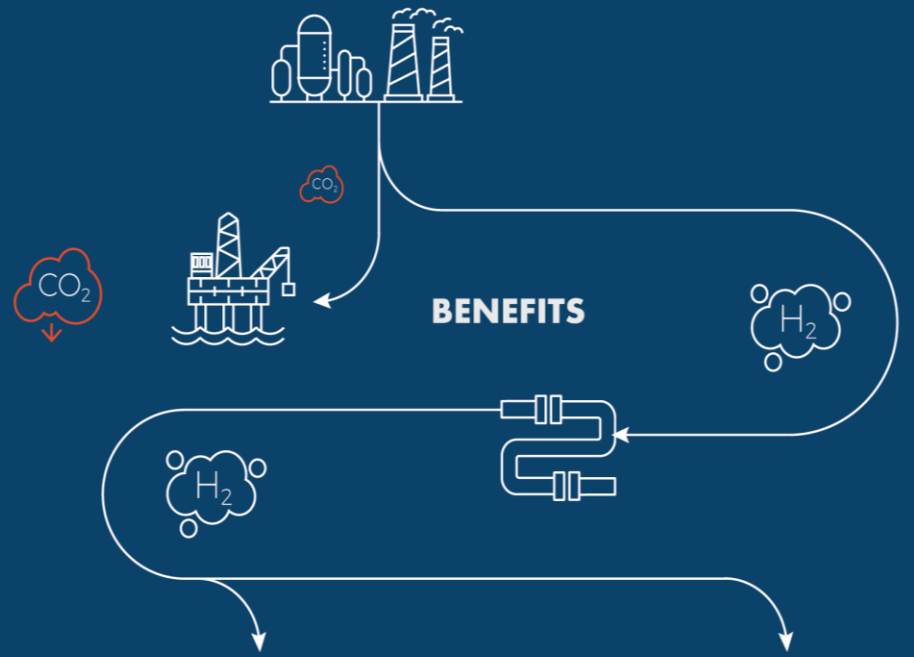
Elements of HyNet

The HyNet project includes:

- Low-carbon hydrogen production plants
- A hydrogen pipeline network
- Salt caverns in which hydrogen can be stored
- Facilities to capture CO_2 emissions
- Underground pipelines to transport CO_2 emissions to permanent safe storage

What will HyNet bring to the region?

- Building on the region's rich industrial heritage to provide a lasting legacy for generations to come.
- Tapping into industrial experience and scientific expertise.
- Leading the UK's hydrogen and CCS economy - creating a hotspot for innovation and growth to encourage inward investment.
- Improving local air quality to make the region a safer and healthier place.



ENVIRONMENTAL

4 million cars

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

50% natural gas displacement

Replace nearly 50% of the region's natural gas use with low carbon hydrogen.

80% hydrogen target

HyNet North West will single-handedly be able to deliver 80% of the UK's clean power target for low carbon hydrogen by 2030.

ECONOMIC

£31 billion

By 2050, HyNet North West could generate up to £17 billion for the local region, and £31 billion for the UK.

6000 local jobs

HyNet North West will directly provide 6,000 permanent jobs in the region.

75,000 UK jobs

HyNet North West is leading the way to a hydrogen economy, which will support up to 75,000 jobs across the UK by 2035.

The HyNet Consortium

HyNet is a collaboration of eight partners who have joined together to decarbonise the region.

Each partner is led by industry experts who are working collaboratively to develop HyNet.

2 Introducing our proposals for a carbon dioxide pipeline

DCO Application Stages

1

PRE-APPLICATION

Consultation with stakeholders and assessing environmental impacts before submitting an application.

2

ACCEPTANCE

The application is submitted and the Planning Inspectorate decides whether it meets the standards required to be accepted.

3

PRE-EXAMINATION

Members of the public can register to become an interested party. An Examining Authority will be appointed.

4

EXAMINATION

The Examining Authority will conduct their examination on behalf of the Secretary of State. Interested parties can provide further views at this stage.

5

RECOMMENDATION

The Examining Authority provides a report and recommendation to the Secretary of State.

6

DECISION

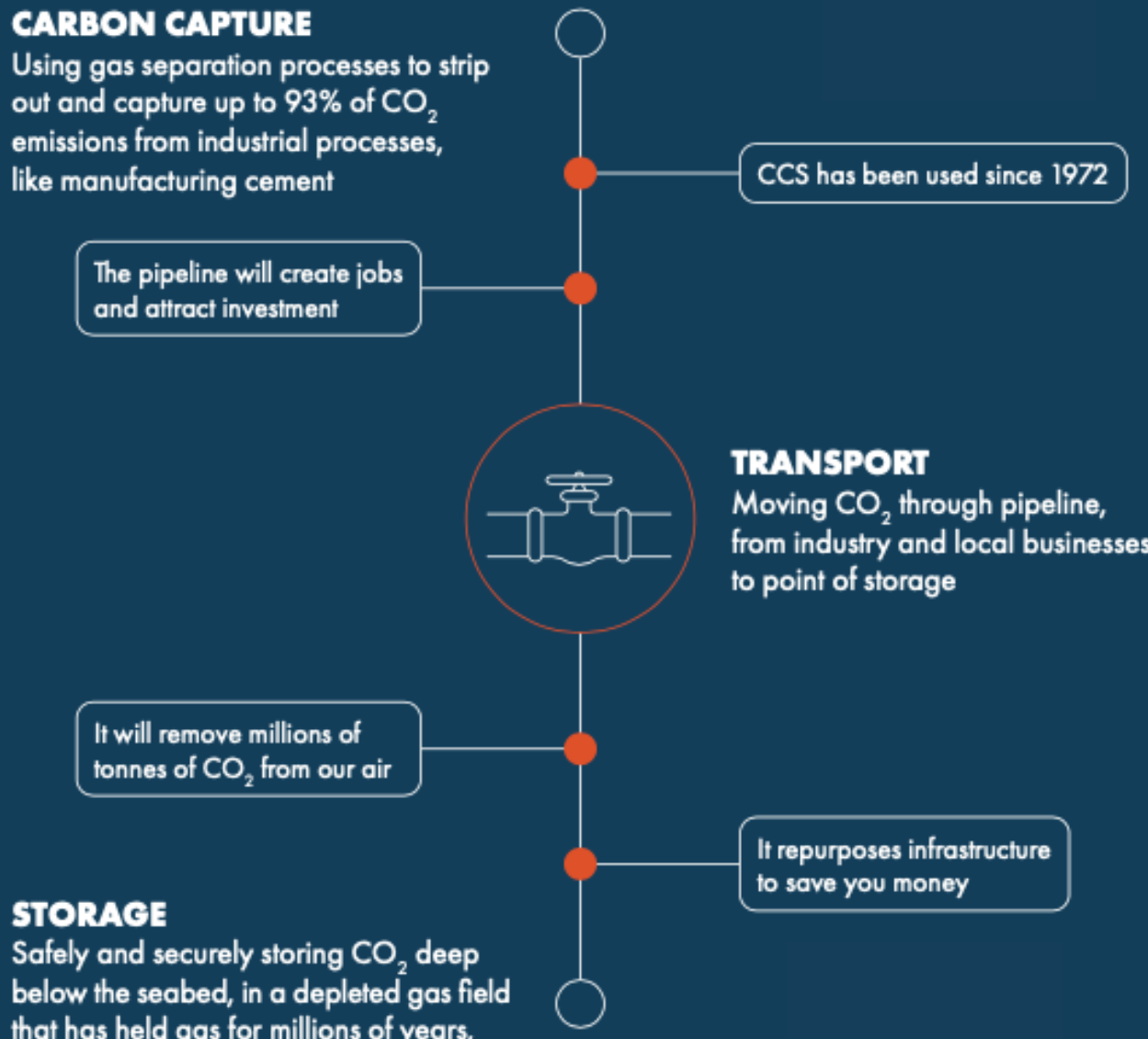
The Secretary of State makes a decision on the application

What is carbon capture & storage?

- Carbon Capture and Storage (CCS) is a safe and proven technology.
- It securely stores CO_2 and prevents it from being released into the atmosphere.
- The CO_2 is captured from industry. It is then transported by pipeline to permanent storage sites.

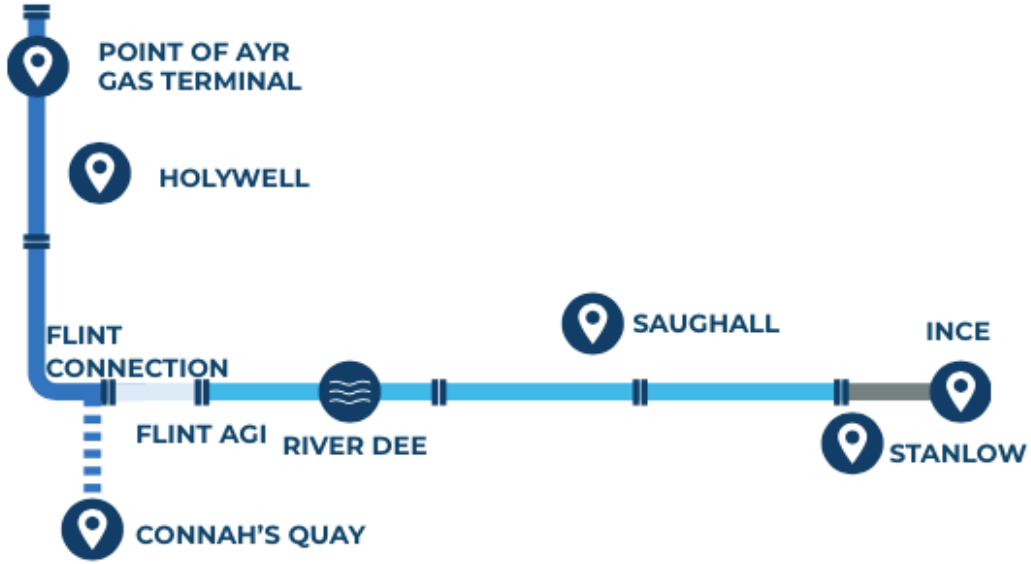
"CCS technology is essential to reducing greenhouse gas emissions across the economy, and to meet the UK's climate change targets."

Climate Change Committee



How is the captured CO_2 transported?

- The CO_2 will be safely transported to depleted reservoirs in Liverpool Bay by a pipeline network comprising new and existing pipelines:
  - A new 20" pipeline to convey CO_2 from Ince to Stanlow
  - A new 36" pipeline running from Stanlow and connecting to the existing Point of Ayr to Connah's Quay NG pipeline at a location close to Flint
  - The existing 24" Point of Ayr to Connah's Quay NG pipeline which will be repurposed to flow CO_2 to Point of Ayr
- The CO_2 pipeline then runs through the Point of Ayr plant and then through another 'foreshore' pipeline which extends underwater to the depleted gas reservoirs, where the CO_2 is injected and safely stored.



	Existing Flint Connection - PoA Pipeline (24") (part of the Existing Connah's Quay - PoA Pipeline)
	The part of the Existing Connah's Quay - PoA Pipeline which is to be decommissioned
	Proposed Flint AGI - Flint Connection Pipeline (24")
	Proposed Stanlow - Flint AGI Pipeline (36")
	Proposed Ince - Stanlow Pipeline (up to 20")

About the CO_2 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_2 offshore?

- The CO_2 will be transported in a pipeline under the sea to an offshore platform, located approximately 30km offshore in Liverpool Bay.

- From here, the CO_2 will be injected into the depleted gas reservoir. As an offshore pipeline, this will be regulated by the Oil and Gas Authority.

The underwater elements are not included in this consultation with consent being applied for separately.

How we decided on the preferred CO_2 pipeline route

- We held an initial consultation in Summer 2021 to introduce HyNet and to explain how we developed and identified potential options for the new CO_2 pipeline route.
- We presented the two preferred route options (options G and I) and possible variations to both options and asked for feedback within our consultation.
- Since then, we have been reviewing both options, taking a range of considerations, including feedback from stakeholders and local people, into account.
- Through this current consultation, we are now sharing our proposals for our preferred route which is Option G.

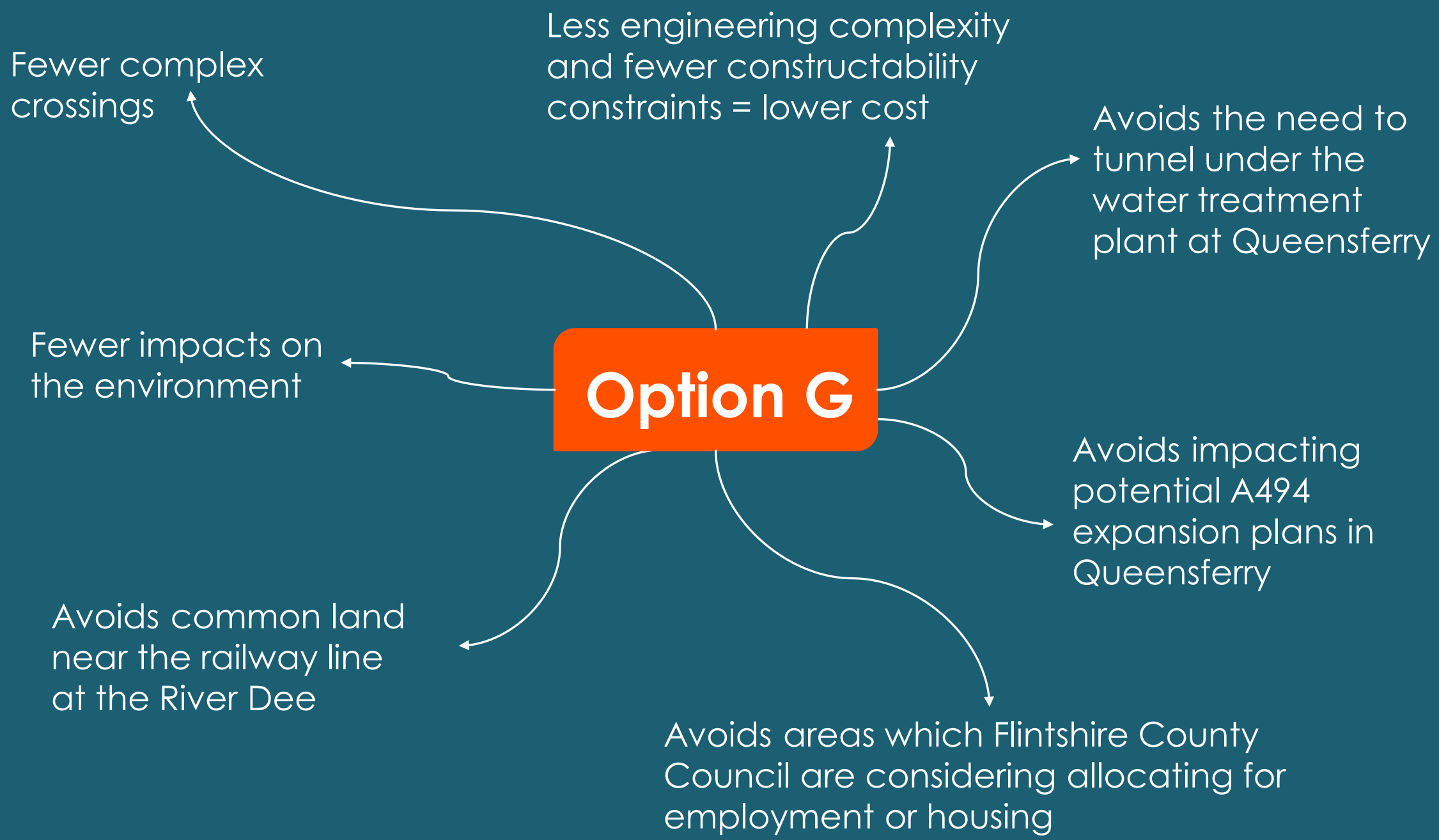
Our aim is select a route which:

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

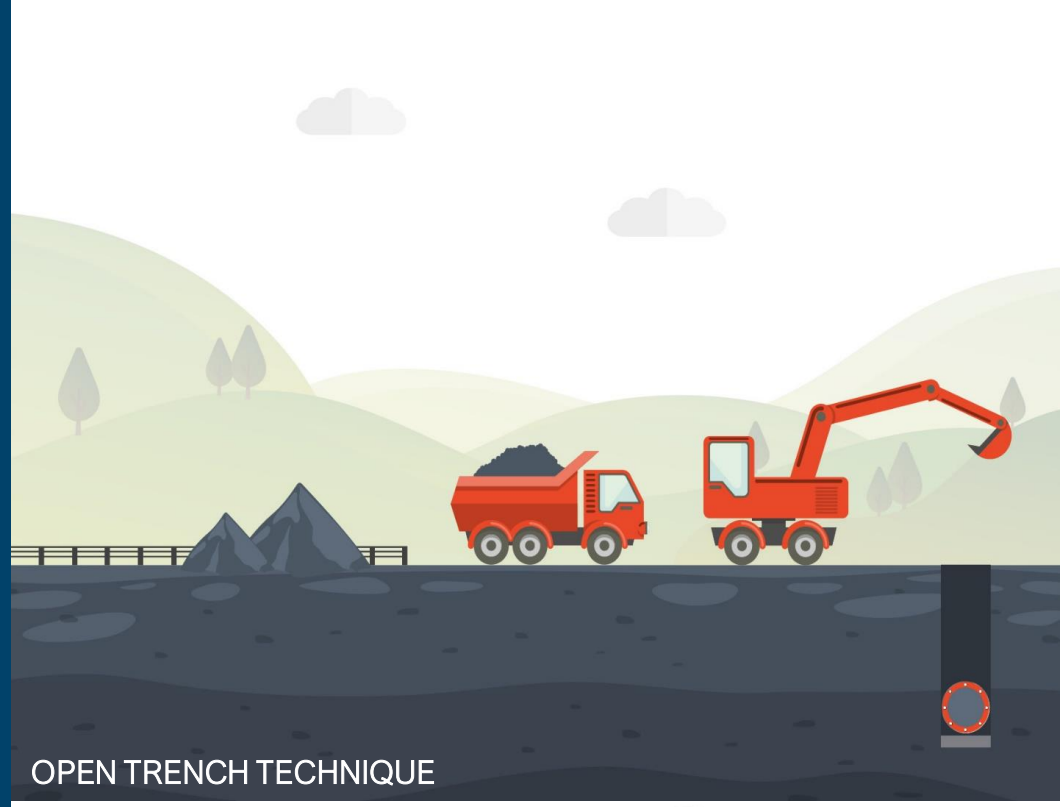
can be constructed with minimal disruption to the local area

provides a cost-effective and deliverable solution

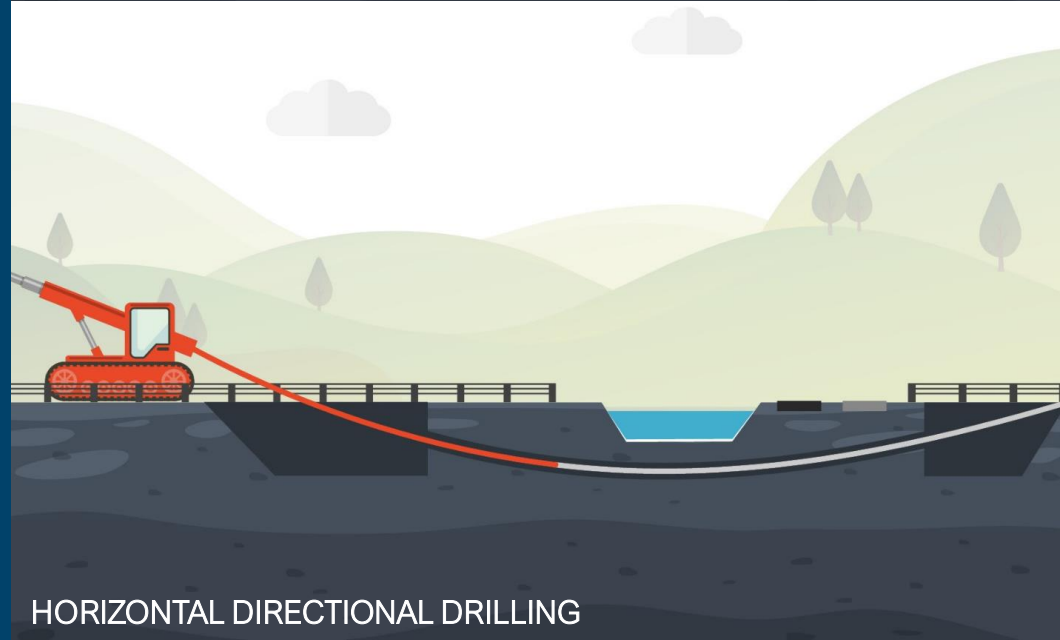

Fewer complex crossings
Less engineering complexity and fewer constructability constraints = lower cost
Avoids the need to tunnel under the water treatment plant at Queensferry
Fewer impacts on the environment
Option G
Avoids impacting potential A494 expansion plans in Queensferry
Avoids common land near the railway line at the River Dee
Avoids areas which Flintshire County Council are considering allocating for employment or housing

Construction

- The entire newbuild pipeline will take approximately 16 months to construct.
- There will typically be 1-2 months of construction at a particular location.
- Once installed, we will reinstate the land as close as possible to its original condition.
- For much of the pipeline construction, we will use an open trench technique.
- In more complex areas, we will use methods such as horizontal directional drilling or auger boring.



OPEN TRENCH TECHNIQUE



HORIZONTAL DIRECTIONAL DRILLING

How can you provide your feedback?

- The consultation is open from **9 February – 22 March 2022**
- 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 **22 March 2022**

info@hynet.co.uk

0203 116 5919

FREEPOST
HyNet North West

Q&A

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

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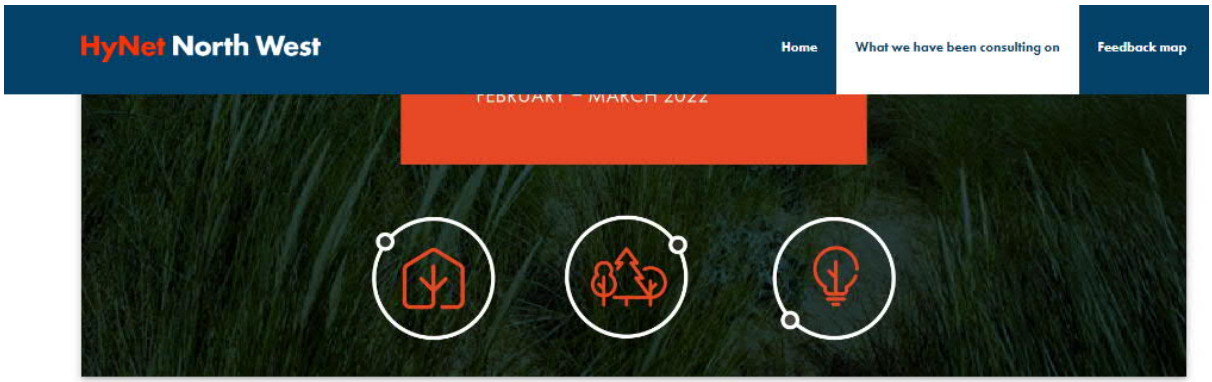
Project Website (Screenshots)

HyNet North West

Hynet website screenshots

Screenshot of consultation home page. Shown on the page are links to the PIER, the PIER Non-technical summary in both English and Welsh, Factsheets, the consultation brochure, and the Statement of Community Consultation in both English and Welsh.

Once the green box was clicked this opened the corresponding documents in a separate tab in the browser. This could be downloaded from the link as well.



Key consultation documents

To help you further understand our plans for this project, and to inform your feedback, there are a number of additional consultation documents to supplement the brochure above:

PEIR

This document provides details on all of the potential impacts of the development of this project, and how these will be avoided, minimised or mitigated against.

Preliminary Environmental Information Report (PEIR) - ZIP, 453MB

Non-technical summary

This document provides a summary of the information that is in the more-detailed PEIR report

Non-technical summary - PDF, 1.3MB | Crynodeb Annhechnegol - PDF, 1.3MB

Factsheets

Factsheet 1 (CCS) - PDF, 1.5MB | Factsheet 2 (Hydrogen) - PDF, 0.5MB | Factsheet 3 (Hydro economy) - PDF, 0.2MB

Factsheet 4 (Consents) - PDF, 1.1MB | Factsheet 5 (Net Zero) - PDF, 0.7MB | Factsheet 6 (Needs case) - PDF, 0.8MB

Consultation brochure

This document outlines all of the information about our plans for the CO_2 pipeline. Including the background of the project and the need for this part of it, how it will be developed, and details on how you can provide your feedback.

Consultation brochure - PDF, 14.1MB | Llyfryn ymgynghori - PDF, 12.2MB

SoCC

This document sets out how we have planned to consult local people and communities on our plans, and how we have worked with the relevant local authorities on the best ways of doing so.

Statement of community consultation (SoCC) - PDF, 1MB | Datganiad Ymgynghori Cymunedol - PDF, 1MB

HyNet North West Carbon Dioxide CO_2 Pipeline Consultation

HyNet North West is a ground-breaking energy project that will unlock a low carbon economy for North West England and North Wales to put the region at the forefront of the UK's drive to net zero.

HyNet will produce low carbon hydrogen to replace the fossil fuels we use to fuel our industry, transport and to heat our homes. HyNet will also capture and lock away carbon dioxide (CO_2) emissions produced by the energy intensive industries which make the products we rely on every day.

The project is made up of several different components, including upgrades to existing facilities as well as the development of new infrastructure.

HyNet will play a big part in helping to create the UK's low carbon economy, bringing economic and environmental benefits to the local area and across the UK.

About you

1. Please provide your name.

2. If responding on behalf of an organisation, please provide your organisation name.

3. Please provide your postcode.

4. If you would like to be kept informed of future updates for HyNet North West, please provide your email address.

Section 1 of the pipeline (from Ince via Stanlow to Cryers Lane)

5. Do you have any comments on the pipeline route in section 1, in particular information about specific locations?

6. Do you have any comments on the Ince Above Ground Installation (AGI)?

7. Do you have any comments on the Stanlow Above Ground Installation (AGI)?

Section 2 of the pipeline (from Cryers Lane to the A41)

8. Do you have any comments on the pipeline route in section 2, in particular information about specific locations?

9. Do you favour Shropshire Union Canal North, no preference or Shropshire Union Canal South sub-option?

- [ ] North
- [ ] South
- [ ] No preference
- [ ] Neither

Comments:

10. On which of the following key issues are your views based?

- [ ] Environment (including heritage and historic environment, landscape and visual effect and land use)
- [ ] Construction (including engineering and maintenance)
- [ ] Community (including local businesses, Rights of Way and local amenities)
- [ ] Safety (during and after installation)
- [ ] Other

If 'other', please specify

11. Do you have any comments on the Rock Bank Block Valve Station (BVS)?

Section 3 of the pipeline (from the A41 to the A548)

12. Do you have any comments on the pipeline route in section 3, in particular information about specific locations?

13. Do you have any comments on the Mollington Block Valve Station (BVS)?

14a. Do you favour Chester and Birkenhead Railway Line North sub-option or Chester and Birkenhead Railway Line South sub-option?

- [ ] North
- [ ] South
- [ ] No preference
- [ ] Neither

Comments:

14b. On which of the following key issues are your views based?

Please pick all that apply

- [ ] Environment (including heritage and historic environment, landscape and visual effect and land use)
- [ ] Construction (including engineering and maintenance)
- [ ] Community (including local businesses, Rights of Way and local amenities)
- [ ] Safety (during and after installation)
- [ ] Other

If 'other', please specify:

14c. Please give us any further information about these issues

Section 4 of the pipeline (from the A548 to the A550)

15. Do you have any comments on the pipeline route in section 4, in particular information about specific locations?

Section 5 of the pipeline (from the A550 to the B2156)

16. Do you have any comments on the pipeline route in section 5, in particular information about specific locations?

17. Do you have any comments on the Aston Hill Block Valve Station (BVS)?

18. Do you have any comments on the Northop Hall Above Ground Installation (AGI)?

19a. Do you favour the Ewloe North, Ewloe Central or Ewloe South option?

- [ ] Ewloe North

- [ ] Ewloe Central
- [ ] Ewloe South
- [ ] No preference
- [ ] None

19b. On which of the following key issues are your views based?

Please pick all that apply

- [ ] Environment (including heritage and historic environment, landscape and how it looks and land use)
- [ ] Construction (including engineering and maintenance)
- [ ] Community (including local businesses, Rights of Way and local amenities)
- [ ] Safety (during and after installation)
- [ ] Other

If 'other', please specify

19c. Please give us any further information about these issues

20a. Do you favour the Alltami Brook North or Alltami Brook South option

- [ ] Alltami Brook North
- [ ] Alltami Brook South
- [ ] No preference
- [ ] Neither

Section 7 of the pipeline (from the A5119 to Point of Ayr)

20b. On which of the following key issues are your views based?

Please pick all that apply

- [ ] Environment (including heritage and historic environment, landscape and visual effect and land use)
- [ ] Construction (including engineering and maintenance)
- [ ] Community (including local businesses, Rights of Way and local amenities)
- [ ] Safety (during and after installation)
- [ ] Other

If 'other', please specify:

20c. Please give us any further information about these issues

Section 6 of the pipeline (from the B5126 to the A5119)

21. Do you have any comments on the pipeline route in section 6, in particular information about specific locations?

22. Do you have any comments on the Flint Above Ground Installation (AGI)

Section 7 of the pipeline (from the A5119 to Point of Ayr)

23. Do you have any comments on the Coed-y-Cra, Cornist Lane, Pentre Halkyn or Babell block valve stations (BVSs)

Other

24. Do you have any comments on the possible construction effects and our proposed management of these along the pipeline route?

25. Do you have any comments on the proposed mitigation measures?

26. Do you have any comments on the Preliminary Environmental Information Report (PEIR)?

27. Do you have any comments on the economic and employment benefits forecast for the HyNet project?

28. Do you have any other comments on our carbon dioxide pipeline proposals?

29. Do you have any other comments on HyNet?

About the consultation

30. Did you find all the information on HyNet, Carbon Capture and Storage (CCS) and the carbon dioxide pipeline that you were interested in?

- [ ] Yes
- [ ] No
- [ ] Unsure

If you said no, what additional / further information would you like to have seen?

31. How helpful did you find the following consultation activities?

Online Webinar

- [ ] Very Good
- [ ] Good
- [ ] Unsure
- [ ] Poor
- [ ] Very Poor
- [ ] Didn't use

In-person exhibition events

- [ ] Very Good
- [ ] Good
- [ ] Unsure
- [ ] Poor
- [ ] Very Poor
- [ ] Didn't use

Digital materials – HyNet hub

- [ ] Very Good
- [ ] Good
- [ ] Unsure
- [ ] Poor
- [ ] Very Poor
- [ ] Didn't use

Consultation materials available (FAQs, brochure, etc.)

- [ ] Very Good
- [ ] Good
- [ ] Unsure
- [ ] Poor
- [ ] Very Poor

Didn't use

32. Do you have any other comments or suggestions regarding this consultation or the HyNet project?

Submit

Go back

Return home

Share this page:

Meet the HyNet project team

We'd love to meet you at one of our in-person or online events where you can hear from, and chat to, members of the project team.

Check out when and where below. All events are currently proceeding as planned:

Date	Location	Time
Tuesday 15 February 2022	Llanasa Village Hall, Llanasa, Holywell, CH8 9NF	2-4pm
Tuesday 15 February 2022	Talacre Community Centre, Gamfa Wen, Talacre, CH8 9RT	5-7pm
Saturday 19 February 2022	Online event - book your place	1-2pm
Thursday 24 February 2022	Online event - book your place	6-7pm
Monday 28 February 2022	Vernon Institute, 62 Hermitage Road, Saughall, CH1 6EN	3-7pm
Saturday 5 March 2022	Quay Building, Fron Road, Connah's Quay, CH5 4PJ	11am - 1pm
Saturday 5 March 2022	Northop Village Hall, High Street, Northop, CH7 6BQ	2-4pm
Saturday 5 March 2022	Queensferry War Memorial Institute, Chester Road West, Queensferry, CH5 1SA	5-7pm
Wednesday 9 March 2022	Ellesmere Port Civic Hall, Civic Way, Ellesmere Port, CH65 0AZ	3-7pm
Friday 11 March 2022	Online event - book your place	11am - 12pm

Share this page:

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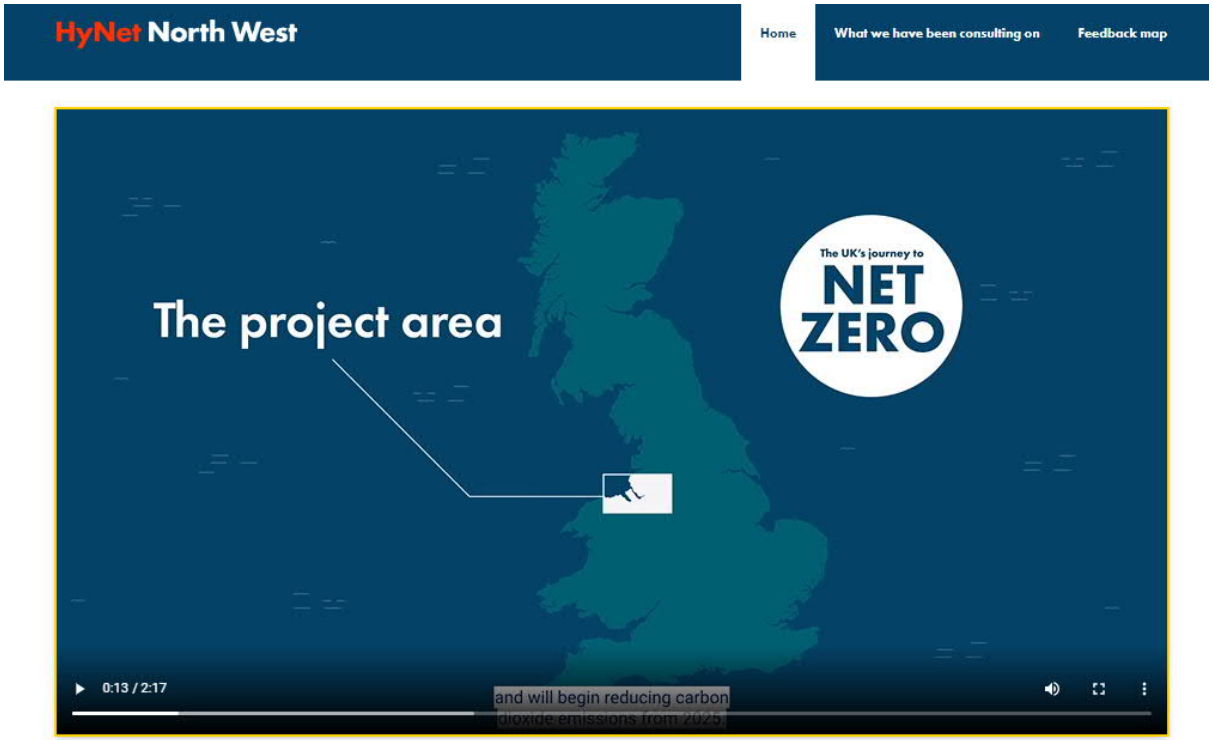
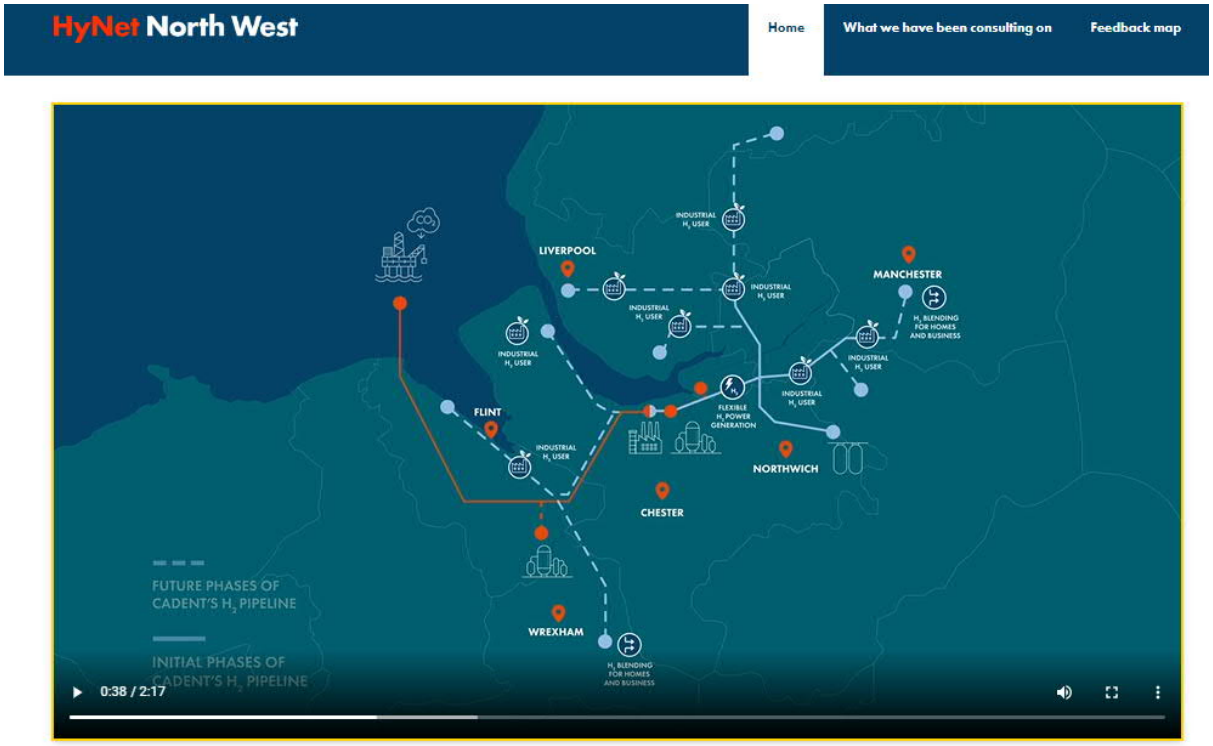
Hynet video screenshots

HyNet North West

Hynet explainer video screenshots





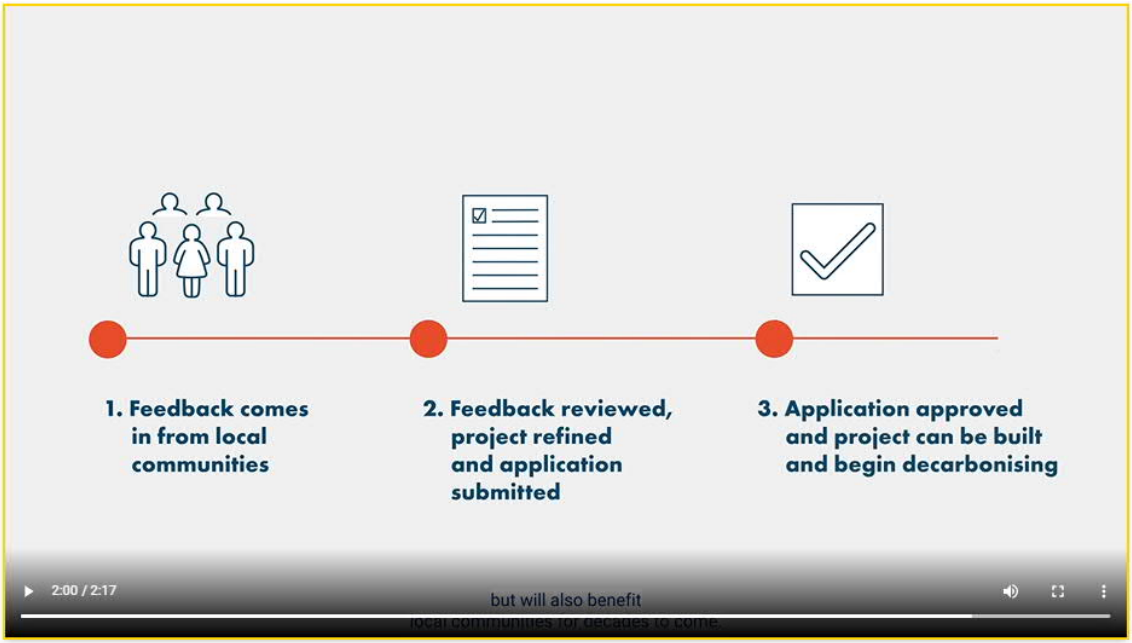
HyNet North West

Home | What we have been consulting on | Feedback map

now seeking your views on this final route before we submit our application to build the project. By having your say, you are helping us to deliver a project that will not only power our drive to net zero, but will also benefit the region for decades to come.

The carbon dioxide pipeline consultation is now closed.

Watch our short animation below on this process:



now seeking your views on this final route before we submit our application to build the project. By having your say, you are helping us to deliver a project that will not only power our drive to net zero, but will also benefit the region for decades to come.

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