Connah's Quay Low Carbon Power

Meeting the need for low carbon, flexible electricity generation

Consultation Brochure

Our Statutory Consultation:

Tuesday 8 October 2024 to Tuesday 19 November 2024

uniper

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Introduction

Uniper UK Limited (hereafter referred to as 'Uniper') is exploring the potential development of a new gas-fired power station with carbon capture technology at its Connah's Quay site, the Connah's Quay Low Carbon Power (CQLCP) project. If consented and developed the new power station would be capable of providing around 1.1 gigawatt (GW) (up to a maximum of 1.38 GW) of low carbon power, to help meet the growing need for electricity, whenever it is required.

The project includes plans to develop a new combined-cycle gas turbine (CCGT) power station on Uniper's land at its Connah's Quay site. The proposed Connah's Quay power station will be fitted with carbon capture technology to capture CO_2 emissions. The proposed power station would connect into nearby CO_2 transport and storage infrastructure as part of the HyNet industrial cluster, enabling the captured CO_2 to then be safely transported to permanent offshore storage facilities in repurposed depleted offshore gas fields.

As we become more reliant on electricity, with the electrification of sectors such as transport, heating and industry, more generation capacity will be needed. According to the UK's independent advisor on climate change, the Climate Change Committee (CCC), demand for electricity is forecast to increase by 50% by 2035[1]. To meet this increasing demand and achieve the UK's decarbonisation goals, the CCC has also advised that a range of different technologies including both renewables and decarbonised generation, such as gas with Carbon Capture and Storage (CCS) technology, will be needed to maintain a secure and stable supply of electricity[2].

Key facts about our proposals

- CQLCP could help to meet the UK's increasing demand for electricity, **which is forecast to increase by 50% by 2035**
- Our Connah's Quay site is the **ideal location for a new low carbon power station**, having had electricity generation on site since the 1950s
- **Critical infrastructure needed for electricity generation is already in place**, including connections to the national electricity grid and a pipeline that can be repurposed and used to transport captured CO_2
- When fully operational CQLCP could generate **enough low carbon electricity to power the equivalent of up to 2.8 million homes a year**
- When fully operational, and at full load, **CQLCP could capture up to 3.7 megatonnes (Mt)[3] of CO_2 per year**, contributing to the UK's transition to net zero
- CQLCP could contribute to economic growth, **protecting skilled technical jobs and creating new opportunities during construction**

[1] In its Balanced Pathway for the Sixth Carbon Budget (Dec 2020), the UK's Climate Change Committee (CCC) forecast a 50% increase in electricity demand by 2035 and a doubling in electricity demand by 2050 (Sixth Carbon Budget - Climate Change Committee (theccc.org.uk) [2] CCC Sixth Carbon Budget electricity generation sector summary Sector-summary-Electricity-generation.pdf (theccc.org.uk) [3] A megatonne is a unit that has the same value as the force produced by 1,000,000 tonnes of TNT (= an explosive). (Definition of megaton from the Cambridge Advanced Learner's Dictionary & Thesaurus, Cambridge University Press).

Our Statutory Consultation: Tuesday 8 October 2024 to 11:59pm on Tuesday 19 November 2024

Our Non-Statutory Consultation took place from Monday 26 February to Monday 25 March 2024. Since then, our project team has been developing the proposals, taking into account the feedback received.

Uniper will seek to obtain development consent for the CQLCP project by submitting a Development Consent Order (DCO) application to the Planning Inspectorate under the Planning Act 2008, covering Nationally Significant Infrastructure Projects (NSIP).

We are now carrying out our Statutory Consultation on our proposals for CQLCP. Our consultation is running from Tuesday 8 October 2024 to Tuesday 19 November 2024. During this time, you will have an opportunity to formally comment on our updated proposals before we submit a DCO application to the Planning Inspectorate, expected to be early in 2025.

This brochure provides an overview of the project at its current stage to help you take part in the consultation and give your feedback. So that we can continue to develop the project with you in mind, please share your views with us through the channels below and scan the QR code to be directed to our feedback form

As part of our engagement during this consultation, we are holding a series of in-person events and webinars, detailed on page 35 of this brochure.

Email us at **info@connahsquaylcp.co.uk**
Call us on **0800 0129156**
Write to us at **FREEPOST CQLCP** (no stamp required)
To find out more about our project please visit https://uniperuk.consulting/cqlcp/ or **scan the QR code** to be directed to our website and feedback form.

About Uniper

Uniper is an international energy company with activities in more than 40 countries and has roughly 7,000 employees worldwide. In the UK, Uniper owns and operates a flexible generation portfolio of seven power stations, a fast-cycle gas storage facility and two high pressure gas pipelines, from Theddlethorpe to Killingholme and from Blyborough to Cottam.

Uniper intends to be completely carbon neutral by 2040 and aims for its installed power generating capacity to be more than 80% zero carbon by 2030. To achieve this, the company is transforming its power plants and facilities and investing in flexible, dispatchable power generating units.

Uniper is already one of Europe's largest operators of hydropower plants in Germany and Sweden, and is helping further expand solar and wind power, which are essential for a more sustainable and secure future.

The company is progressively expanding its gas portfolio to include low carbon gases like hydrogen and biomethane and aims to convert to these gases over the long term.

Project background

Uniper's strategy is to secure a reliable energy supply whilst accelerating the energy transition.

To achieve that goal, we have committed to invest €8 billion into growth and transformation projects between 2023 and 2030. This includes developing new renewables projects, investing in clean gases such as hydrogen, and new low or zero carbon power plants and by progressively transforming our existing fleet into Europe's leading source of zero carbon power.

Providing energy security

The proposed new CCGT power station with carbon capture at Connah's Quay would be able to flexibly and reliably generate low carbon power to meet the growing need for electricity, whenever it is required. Power stations such as this will play a crucial role in the future energy system, as they can help ensure that energy is available at times when it is needed most, and when power from renewable sources can't meet demand.

Delivering carbon reduction and supporting Net Zero

Both the UK's Climate Change Committee (CCC) and the International Energy Agency have stated that CCS is an essential component of a transition to net zero. And to support this, under the previous government, the 2023 budget included a commitment of up to £20 billion to establish a Carbon Capture, Utilisation and Storage (CCUS) sector in the UK, to help unlock economic opportunities and support investment in the sector. The current government in its manifesto committed a further £1bn and is legislating to create GB Energy which would include in its remit co-investment in power CCS.

With the current government's ambition for a decarbonised power sector by 2030 and its commitment to CCS, our proposed new power station with CCS technology is well placed to play a crucial role in the future energy system. It would connect into nearby CO_2 transport and storage infrastructure as part of the HyNet industrial cluster, and an existing pipeline previously used to deliver gas to the site can be repurposed for the transport of captured CO_2, helping to contribute to achieving the UK's net zero targets.

Contributing to economic growth

The development of a new low carbon power station at Connah's Quay could help to maintain economic prosperity in Deeside and across the region, by protecting approximately 60 jobs, as well as creating new opportunities during construction and through the wider supply chain.

The planned development has the potential to contribute up to £1,500m to the UK economy, of which up to £811m could benefit the local area, and £1181m could benefit the wider North East Wales region and North West England[4].

Figure 1 on page 7 includes further information about the DCO process, including details on what comes next in the process, once our application is submitted and through to a decision by the Secretary of State.

More information on the national infrastructure planning process can be found here: **https://national-infrastructure-consenting.planninginspectorate.gov.uk/decision-making-process-guide**

The Development Consent Order process

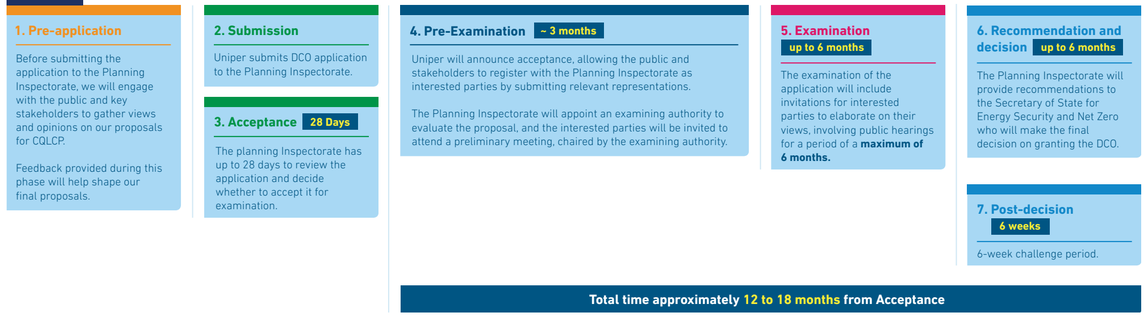
As a major infrastructure development, CQLCP is classified as a Nationally Significant Infrastructure Project (NSIP). An NSIP is a major proposal considered by the UK Government to be of such importance that the permission to build and operate it needs to be confirmed at national level by the Secretary of State for Energy Security and Net Zero.

Uniper will seek to obtain development consent for the CQLCP project by submitting a Development Consent Order (DCO) application to the Planning Inspectorate under the Planning Act 2008, covering Nationally Significant Infrastructure Projects. Engagement with national and local stakeholders, including the public, is an important element of the DCO consenting process.

As part of the consenting process, we are currently undertaking an Environmental Impact Assessment (EIA), to identify any potential environmental impacts associated with the construction, operation and decommissioning phases of the project. This also considers how these have influenced design development and our approach to mitigating or avoiding any likely significant adverse effects.

A Preliminary Environmental Information Report (PEIR) – which contains preliminary environmental information on the potential effects of the project identified at this stage of the ongoing assessments – will be consulted upon as part of this Statutory Consultation.

Figure 1



[4] Based on socio-economic analysis carried out by Mace on behalf of Uniper during 2023-2024. Figures shown based on the 'target' model, which seeks to leverage UK content. 'Local Area' – Flintshire, Wrexham, CWAC, Wirral. 'North West England and North East Wales region' – Conwy, Denbighshire, Flintshire, Wrexham, CWAC, Wirral, Cheshire East, Stockport, Manchester, Trafford, Salford, Warrington, Liverpool, St Helens, Sefton

Our proposals

Project overview

If consented, the new power station is expected to be developed in two phases; with an initial capacity under phase one of around 550MW of low carbon power, and later expansion to around 1.1GW (up to a maximum of 1.38GW). Phase one could potentially be operational by 2030.

An initial capacity of 550MW would be enough low carbon electricity to power up to 1.4 million homes a year or the equivalent of 34% of the average annualised power demand for Wales[5].

The project is at an early stage and final capacity will be determined following completion of Front End Engineering Design (FEED) which is due to commence later in 2024.

The CO_2 captured depends on the amount of electricity generated which will vary to match demand needs. Based on our current modelling we expect that a new low carbon power station with carbon capture technology at Connah's Quay could capture up to 1.2Mt of CO_2 per year for a 550MW single unit and 2.4Mt for 1.1GW capacity overall.

At full load, for a 1.1GW power station the figure could be as high as 3.7Mt per year, which is equivalent to the emissions from more than 2.6 million cars[6]. For a 1.38 GW power station, at full load, the CO_2 captured could be up to 4.7Mt per year, which is equivalent to the emissions from more than 3.3 million cars. However, the quantity captured on an annual basis will be lower (as per our modelling) as the plant is anticipated to operate in dispatchable mode.

The project will consist of the following:

Combined Cycle Gas Turbine power station

A turbine driven by combustion of gas fuel, which is connected to a generator to produce electricity. When fully operational, CQLCP will use two separate turbines.

Heat Recovery Steam Generator

A type of boiler that uses the heat produced by the CCGT to generate additional electricity via a steam turbine.

Gas pipeline

Natural gas will be supplied to the site via the existing Connah's Quay Above Ground Installation (AGI) which will be upgraded to include a new connection point, new gas filtering plant and a new pressure reduction station.

Water and grid connection

CQLCP will use an existing electrical connection to the National Grid 400kV substation and existing water import and wastewater export connections.

Carbon Capture Plant

The proposed carbon capture plant will extract CO_2 from waste gases using a chemical solvent and compress it for transport and storage. **Figure 5** on page 16 illustrates how this type of system works.

Transport pipeline

An existing pipeline, previously used to deliver gas to the site, would be repurposed for the transport of captured CO_2.

Offshore CO_2 storage

As part of the HyNet industrial cluster, CO_2 would be transported to permanent offshore storage facilities in repurposed depleted offshore gas fields.

Additional on-site infrastructure

This is likely to include structures such as an electrical control room, an administration building, workshops, a cooling water pump house, back-up generators, and additional on-site access roads.

[5] Once fully developed, at 1.1GW the power station could supply enough low carbon electricity to power up to 2.8 million homes a year or the equivalent of 69% of the average annualised power demand for Wales. A t 1.38GW, the power station could supply enough low carbon electricity to power up to 3.4 million homes a year or the equivalent of 86% of the average annualised power demand for Wales. The comparison to the average annual power demand for Wales is simply to give a feel for the contribution the low carbon power station would provide. [6] Based on UK annual mileage per car of 6600m (2022) and average CO_2 emissions of 134.4 gm per km per vehicle (2022). Source DfT nts0901.ods (live.com) veh0206.ods (live.com)

Our indicative site map

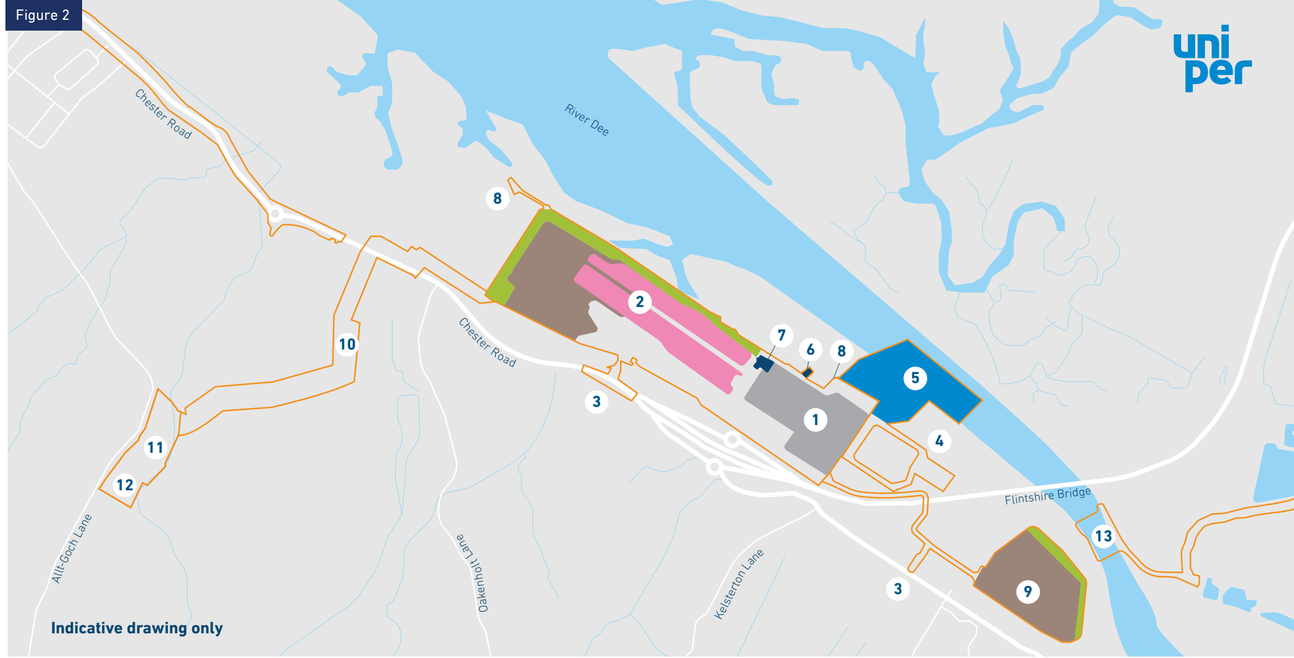
Following feedback we received from our Non-Statutory Consultation, and as our design has continued to develop since our last round of engagement, we are now in a position to show a more detailed indicative design of the proposed development.

Figure 2 shows indicative locations of key infrastructure for the proposed CQLCP project. Please note that these plans are still in an early stage of development and are subject to change following feedback and consultation with national statutory bodies, local authorities and the local community. The final design will be determined during the Front End Engineering Design (FEED) process, which is due to commence later in 2024.

A more detailed description of the proposed development can be found in Chapter 4 of the PEIR and in our Non-Technical Summary (NTS) of the PEIR. To access these documents, please visit https://uniperuk.consulting/cqlcp/ or scan the QR code.

For more detailed information on Abnormal Indivisible Load (AIL) routes and the indicative site boundary, please refer to Section 3 of the Non-Technical Summary (NTS). This section provides an overview of the proposed routes for AIL transport and outlines the project's indicative site boundary.

Figure 2



Key

1. Existing Connah's Quay Power Station
2. Proposed Low Carbon Power Station
3. Temporary Construction Access
4. Electrical Connection Corridor
5. Water Connection Corridor
6. Existing Surface Water Outfall
7. Existing Connah's Quay AGI
8. Access to Wildlife Hides
9. Construction and Indicative Enhancement Area
10. Repurposed CO_2 Connection Corridor
11. Proposed CO_2 Connection Corridor
12. Proposed Flint AGI (HyNet CO_2 Pipeline Project)
13. Connah's Quay North

- Indicative Site Boundary
- Construction Laydown Area
- Ecological Safeguard Zone
- Phased Construction Area
- Water Connection Corridor Indicative Construction Work Area

What is Carbon Capture and Storage?

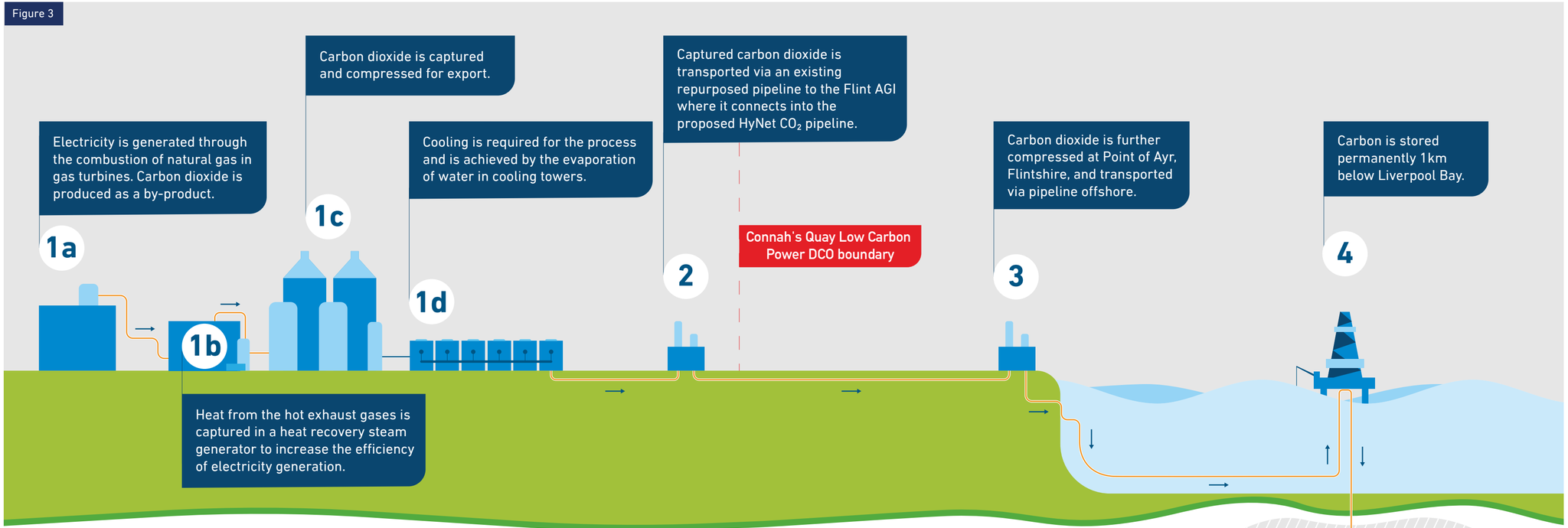
CCS is a key part of the process to reduce carbon emissions in energy generation. It involves the removal and capture of CO_2 from power plant emissions, transporting it away to be securely stored underground, often in aquifers or depleted oil and gas fields.

The plant design will incorporate post-combustion carbon capture technology, capable of capturing at least 95% of CO_2 emissions produced. **Figure 5** on page 16 illustrates how this type of system works.

CCS is a technology that has been in safe operation for a number of years, for example at the Sleipner CO_2 storage project in Norway established in 1996.

The graphic in **Figure 3** provides a visual representation of how we propose to capture CO_2 at our Connah's Quay site and transport it for storage.

Figure 3



Site selection and proposed design

Connah's Quay is an ideal location to establish a low carbon power station - it could connect into nearby CO_2 transport and storage infrastructure as part of the HyNet industrial cluster, and benefits from the on-hand expertise of the existing highly skilled workforce.

There has also been a power station on site for over 70 years, meaning essential energy infrastructure is already in place, including an existing pipeline which can be repurposed for the transport of captured CO_2 to the existing depleted offshore gas fields where it will be permanently stored.

From a coal-powered station in the 1950s, to the current natural gas power station, and with future plans to move to a low carbon power plant; the evolution of the Connah's Quay site is an example of how the energy industry is adapting to the challenge provided by climate change. We are pleased that this project could mean that jobs can be retained at Connah's Quay.

Investment at Connah's Quay could contribute significantly to economic growth in the region, by protecting jobs, creating new opportunities during construction, along with potential opportunities through the wider supply chain.

Our proposed design

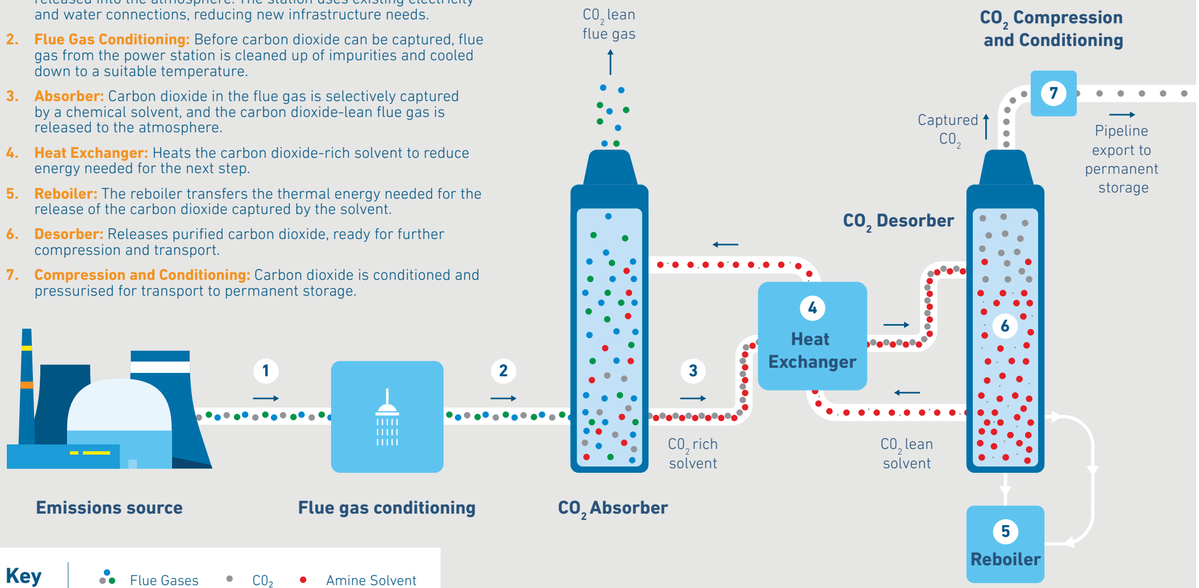
Computer modelling, desk-based assessments and field visits have been undertaken to determine how visible the new facility will be. Based on these assessments, we have worked with Flintshire County Council to select a number of viewpoints that cover the projected visual impact of the project. These viewpoints are representative of views of the new facility from publicly accessible locations in the surrounding area. We have produced photomontages from three of these locations which can be found in **Figure 4**.

Figure 4

Figure 5

The Carbon Capture Process

1. **Emissions Source:** Waste gases from natural gas combustion at the power station contain carbon dioxide that would otherwise be released into the atmosphere. The station uses existing electricity and water connections, reducing new infrastructure needs.
2. **Flue Gas Conditioning:** Before carbon dioxide can be captured, flue gas from the power station is cleaned up of impurities and cooled down to a suitable temperature.
3. **Absorber:** Carbon dioxide in the flue gas is selectively captured by a chemical solvent, and the carbon dioxide-lean flue gas is released to the atmosphere.
4. **Heat Exchanger:** Heats the carbon dioxide-rich solvent to reduce energy needed for the next step.
5. **Reboiler:** The reboiler transfers the thermal energy needed for the release of the carbon dioxide captured by the solvent.
6. **Desorber:** Releases purified carbon dioxide, ready for further compression and transport.
7. **Compression and Conditioning:** Carbon dioxide is conditioned and pressurised for transport to permanent storage.



16 **Key** Flue Gases CO_2 Amine Solvent

Environmental Impact Assessment and Scoping

A key part of the DCO process is conducting an Environmental Impact Assessment (EIA), which is used to identify and assess the environmental, social, and economic impacts of a project. It allows project decision makers to think about the likely adverse effects early on and aims where possible to avoid, reduce or offset those effects.

The environmental topics included within the CQLCP project's EIA are informed by the EIA Scoping Opinion, which was received from the Planning Inspectorate on 20 March 2024. The Scoping Opinion contains advice on assessment methodology, environmental topics scoped into the EIA, and how to present the Environmental Statement (ES).

The EIA will consider and assess likely reasonable 'worst case' effects of the CQLCP project relating to each environmental topic. To understand the potential impacts from a range of perspectives, we are conducting various studies into the following areas:

- Air Quality
- Noise and Vibration
- Traffic and Transport
- Terrestrial and Aquatic Ecology
- Marine Ecology
- Water Environment and Flood Risk
- Geology and Ground Conditions
- Landscape and Visual Amenity
- Physical Processes
- Terrestrial Heritage
- Marine Heritage
- Socio-Economics, Recreation and Tourism
- Climate Change
- Human Health
- Major Accidents and Disasters
- Materials and Waste
- Cumulative and Combined Effects

Within the EIA, these topics are being assessed and, where necessary, appropriate measures will be proposed to address any likely significant adverse environmental effects identified. Whilst these assessments are still ongoing, a PEIR has been produced, setting out the provisional findings of the EIA to date on a 'worst case' basis as outlined above. It has been developed for the project in line with the EIA Scoping Opinion for this Statutory Consultation.

Following our Statutory Consultation, and the completion of surveys and assessments, we will report on the outcomes of the EIA in our ES. This will be submitted as part of our DCO application, which is expected to be in early 2025.

More information on the EIA process and the advice provided in the EIA Scoping Opinion can be found in Chapter 2 of the PEIR or section 2 of the PEIR Non-Technical Summary.

Overview of the Preliminary Environmental Information Report (PEIR)

This section sets out our preliminary findings to date on each of the environmental effects that we have assessed as likely to occur as a result of the construction, operation (including maintenance) and decommissioning of the proposed new power station. This takes into account our projected design development and any identified mitigation at this early stage of the process.

The mitigation measures and general principles to minimise our environmental impact will be considered and further details will be available as we continue to develop our plans. This will be included in the Environmental Statement submitted as part of our DCO application.

The preliminary assessment of the likely environmental effects of the project, predicted at this early stage, is described in full within the PEIR. We have also produced a Non-Technical Summary (NTS) of the PEIR which provides an outline of the key findings of our preliminary assessments to date.

Air Quality

As part of our preliminary assessments to inform the PEIR, we assessed how potential emissions to air from the construction and operation of the new facility could impact air quality in the area surrounding our Connah's Quay site.

During the construction and decommissioning phases of the project, we will be undertaking work that may generate dust emissions and particulate matter, while construction traffic may generate air pollution. There will also be emissions associated with the operation of the power station generating facilities throughout its lifecycle, including operational traffic movements to and from the site.

There will be emissions to air resulting from the combustion of natural gas during the power generation process, including nitrogen oxides and carbon monoxide as well as emissions associated with the carbon capture process, such as amines used to absorb the CO_2.

However, CQLCP would be designed so that the emissions produced by the plant and discharged into the air, comply with emissions limits set and regulated by Natural Resources Wales (NRW) through an Environmental Permit required for operation of the facility.

During the design of the new facility, we have given careful consideration to the height of the stacks from which emissions to air will be released, to minimise ground-level air quality impacts during operation. The new power station will be required to demonstrate that it is applying Best Available Techniques (BAT)[7] to limit emissions to air and emissions will be monitored either continuously or periodically in line with the Environmental Permit requirements.

We will also be following standard construction practices throughout, which are designed to limit dust emissions from potentially dust generating activities such as earthworks and the transport of construction materials from the site.

The process to secure an Environmental Permit to operate the plant is separate to the process required to secure the DCO planning permission. The permitting process will require detailed assessments, including modelling studies, of any significant emissions to air, water and land, demonstrating that operations will not lead to any unacceptable impacts on health or local ecology. Uniper will also be required to demonstrate that it is applying Best Available Techniques (BAT) in terms of mitigating any potential environmental impacts as set out in recently developed regulatory guidance specific to power stations with carbon capture[8].

Uniper has extensive experience of working with natural gas and implementing robust management systems to ensure stringent health, safety, security and environment standards.

Once operational, CQLCP will also be subject to routine audit by the Health and Safety Executive (HSE) and NRW to ensure its processes and safety controls are effective.

To find out more about our preliminary assessments for any air quality effects and our initial considerations for any suitable mitigation measures, see Chapter 8 of the PEIR and section 7.2 of the PEIR NTS.

To access the PEIR and NTS of the PEIR, please visit **https://uniperuk.consulting/cqlcp/ or scan the QR code.**

[7] Post-combustion carbon dioxide capture: best available techniques (BAT)
[8] Best available techniques: environmental permits - GOV.UK **(www.gov.uk)**

Noise and Vibration

As part of our preliminary assessments to inform the PEIR, we assessed the potential noise and vibration impact that could result from the proposed development, during its construction, operation and decommissioning phases.

During the construction and decommissioning phases of the project, we will be undertaking work that may generate some noise and vibration. The operation of the proposed Combined Cycle Gas Turbine power station with Carbon Capture Plant is expected to generate some additional noise. There could also be an increase in traffic noise during the operational phase due to an expected increase in traffic movements as a result of the continued need for HGV's and light vehicles travelling to and from the site.

The control and monitoring of noise during operation will be controlled by the Environmental Permit. This will require operational noise from the power station to be controlled using Best Available Techniques (BAT)[9], which will be determined through the Environmental Permit application.

Uniper is currently carrying out a procurement process to appoint a contractor for the project. We will make it a requirement that all prospective contractors design the proposed development to comply with agreed noise levels. Design measures to mitigate sound are likely to include sound insulation, enclosure of plant and acoustic lagging.

At this current stage of the CQLCP project, we have developed proposed measures to mitigate any noise and vibration impacts which are outlined in the PEIR. For example, construction activities will be undertaken during core construction working hours 07:00 to 19:00 Monday to Friday (except Bank Holidays) and 07:00 to 13:00 on Saturdays where possible.

To find out more about our preliminary assessments for any noise and vibration effects and our initial considerations for any suitable mitigation measures, see Chapter 9 of the PEIR and section 7.3 of the PEIR NTS.

[9] Best available techniques: environmental permits - GOV.UK **(www.gov.uk)**

Traffic and Transport

As part of our preliminary assessments to inform the PEIR, we examined the potential impact that increased work traffic during the construction, operation and decommissioning phases of the new facility could have on the local road network surrounding our Connah's Quay site.

During the construction and decommissioning phases of the project, we will be undertaking work that will require the delivery of materials and products by a range of vehicle types, including heavy goods vehicles (HGVs). During the construction and operation of the facility, waste material will be removed from the site by HGV, and construction traffic may also temporarily impact the local road network when construction materials, equipment and Abnormal Indivisible Loads (AILs)[10] are transported to the site. The operational phase of the project is also expected to see an increase in traffic as a result of the continued need for HGV's and light vehicles travelling to and from the site.

The project has been designed, as far as possible, to avoid or minimise impacts and effects on traffic and transport through the process of design development. The assessments are ongoing to understand the impact traffic could have on the local road network during the construction, operation and decommissioning phases of the project. We have included mitigation measures into the project design through the framework Construction Traffic Management Plan (CTMP) and the framework Construction Worker Management Plan (CWMP), which will be submitted as part of our DCO application.

[10] an abnormal load is defined as any vehicle that has any of the following characteristics:

- a weight of more than 44,000kg
- an axle load of more than 10,000kg for a single non-driving axle and 11,500 for a single driving axle
- a width of more than 2.9 metres
- a rigid length of more than 18.65 metres

To find out more about our preliminary assessments for any traffic and transport effects and our initial considerations for any suitable mitigation measures, see Chapter 10 of the PEIR and section 7.4 of the PEIR NTS.

Terrestrial and Aquatic Ecology

Terrestrial and aquatic ecology refers to the study of habitats and ecosystems that exist both on land and in bodies of water, such as lakes, rivers and wetlands. As part of our Environmental Impact Assessment, we will assess the potential impact that our proposed development could have on these habitats and ecosystems on our Connah's Quay site.

During the construction, operation and decommissioning phases of the project, we will be undertaking work that may impact designated sites, habitats and protected species as a result of, for example, changes in the noise environment, air quality and water flow and quality. The work may also result in some habitat loss and disturbance during construction.

We've identified a number of potential adverse effects the proposed development could have on land and aquatic ecology, and our preliminary findings are set out in Chapter 11 of the PEIR. Ecology survey work is ongoing, and we will continue to develop mitigation measures in more detail for the Environmental Statement, which we will submit as part of our DCO application.

We already work with Natural Resources Wales and local groups to maintain the site of special scientific interest (SSSI) on our land. And throughout this ongoing process, we remain committed to working with NRW and local environmental groups to ensure their knowledge and expertise is reflected in our final proposals.

To find out more about our preliminary assessments for any terrestrial and aquatic ecology effects and our initial considerations for any suitable mitigation measures, see Chapter 11 of the PEIR and section 7.5 of the PEIR NTS.

Marine Ecology

Marine ecology refers to the diverse ecosystems and species that inhabit our oceans and other saltwater bodies. As part of our preliminary assessments to inform the PEIR, we examined the potential impact that our CQLCP project could have on these ecosystems on and around our Connah's Quay site. During the construction, operation and decommissioning phases of the project, we will be undertaking work that may have an effect on marine ecology in the Dee Estuary. For example, there may be a need to upgrade or replace the infrastructure used to abstract water from, and return water to, the Dee Estuary where this is required for use in the cooling and operation of the plant. And there will likely be more shipping movements as some construction materials and plant equipment could be transported by sea. These may cause additional effects, such as changes to water flow or sediment movement.

We will be developing a Site Waste Management Plan (SWMP) and Pollution Prevention Plan to minimise the risk of pollution to the Dee Estuary. We will do this through the management of construction site run-off, and measures to control the storage, handling and disposal of polluting substances.

Our assessments are ongoing to understand the potential impact the project will have on marine ecology, and these effects will be assessed in more detail with the appropriate mitigation measures in the Environmental Statement, which we will submit as part of our DCO application.

To find out more about our preliminary assessments for any effects that the project will likely cause to marine ecology and our initial considerations for any suitable mitigation measures, see Chapter 12 of the PEIR and section 7.6 of the PEIR NTS.

Water Environment and Flood Risk

As part of our preliminary assessments to inform the PEIR, we assessed the potential impacts that the proposed development could have on factors such as water levels and water quality throughout its lifecycle.

During the construction, operation and decommissioning phases of the project, we will be undertaking work that may have the potential for adverse effects on water quality, drainage, groundwater, water flow and flood risk.

There are a number of planned mitigation measures outlined in the PEIR that will help to alleviate any such impacts, including raising land levels at the site to provide flood prevention and measures to control the storage, handling and disposal of potentially polluting substances during construction.

We will continue to develop mitigation measures in more detail for the Environmental Statement and the framework Construction Environmental Management Plan (CEMP), which we will submit as part of our DCO application.

To find out more about our preliminary assessments for any water and flood risk effects and our initial considerations for any suitable mitigation measures, see Chapter 13 of the PEIR and section 7.7 of the PEIR NTS.

Geology and Ground Conditions

As part of our preliminary assessments to inform the PEIR we assessed the potential impacts that activities including excavation and drilling could have on geological features and ground quality on and around our Connah's Quay site.

During the construction, operation and decommissioning phases of the project, we will be undertaking work that has the potential to impact Mineral Safeguard Areas (MSA), soil and agricultural land. The potential for contamination is assessed, as are all other potential effects, on a worst-case basis and includes the potential for fuel and oil spillage from the construction plant and release of contaminants from run-off areas into surface water on the site.

The mitigation measures to manage potential impacts on geology and ground conditions during the life of the development will be to ensure good site practice and management through the development and adherence to, a Construction Environmental Management Plan (CEMP) as a requirement of our DCO application.

Measures contained within the detailed CEMP, which we will develop with our contractor once appointed, will limit the potential for dispersal and accidental releases of potential contaminants and uncontrolled run-off to occur during construction. For example, the detailed CEMP will set out how material is to be excavated, segregated, and stockpiled to minimise the potential for run-off, soil quality degradation and wind dispersal of dusts. The detailed CEMP will also establish procedures for dealing with unexpected soil or groundwater contamination that may be encountered.

The assessments are ongoing to understand the impact the construction, operation and decommissioning phases of the project will likely have on the geology on and around the site.
We will continue to develop mitigation measures in more detail for the Environmental Statement and the framework Construction Environmental Management Plan (CEMP), which we will submit as part of our DCO application.

To find out more about our preliminary assessments for any geology and ground condition effects and our initial considerations for any suitable mitigation measures, see Chapter 14 of the PEIR and section 7.8 of the PEIR NTS.

Landscape and Visual

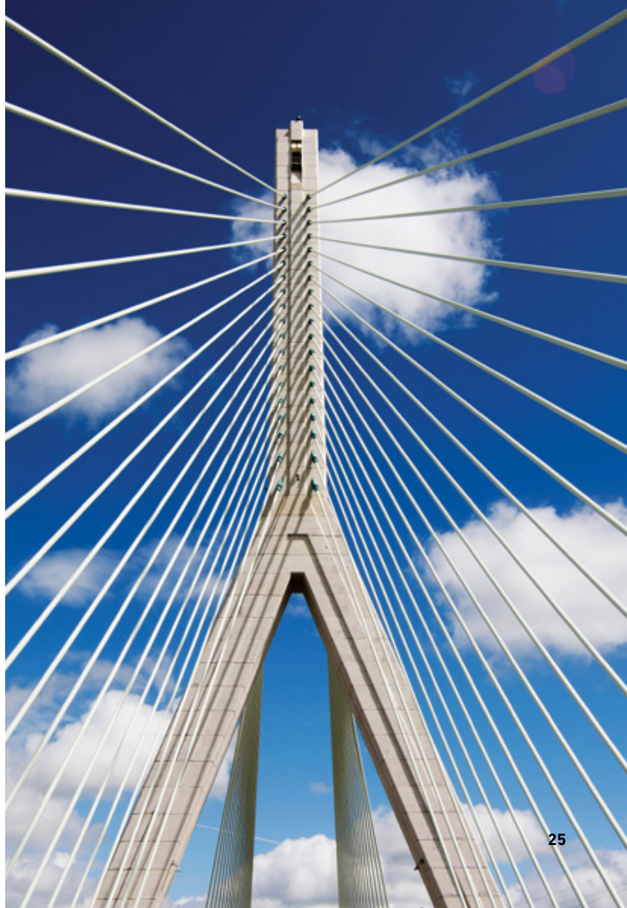
The potential landscape and visual impacts of the project primarily relate to how visible the new temporary and permanent structures will be. As part of our preliminary assessments to inform the PEIR, we have considered how the introduction of these new structures could affect the overall character of the area, and if the new facility could lead to the loss of any natural landscape features within the site.

During the construction and decommissioning phases of the project, we will be undertaking work that may result in the removal of areas of grassland and vegetation, the introduction of construction activities, and the progressive construction of tall structures. Once operational there will be permanent large-scale buildings and structures, the introduction of additional site lighting, the movement of additional vehicles within and around the operational area. There may also be times when plumes of vapour emitted from the stacks on the site will be visible as a result of the warm plume mixing with colder atmospheric air, causing condensation of water vapour.

Computer modelling, desk-based assessments and field visits have been undertaken to determine how visible the new facility will be. Based on these assessments, we have worked with Flintshire County Council to select 15 viewpoints that cover the projected visual impact of the project. These viewpoints are representative of views of the new facility from publicly accessible locations in the surrounding area. We have produced photomontages from three of these locations which can be found in **Figure 4** of this brochure on page 15.

The assessments are ongoing to understand the impact the construction, operation and decommissioning phases of the project will likely have on landscape and character of the area.

To find out more about our preliminary assessments for landscape and visual amenity effects and our initial considerations for any suitable mitigation measures, see Chapter 15 of the PEIR and section 7.9 of the PEIR NTS.



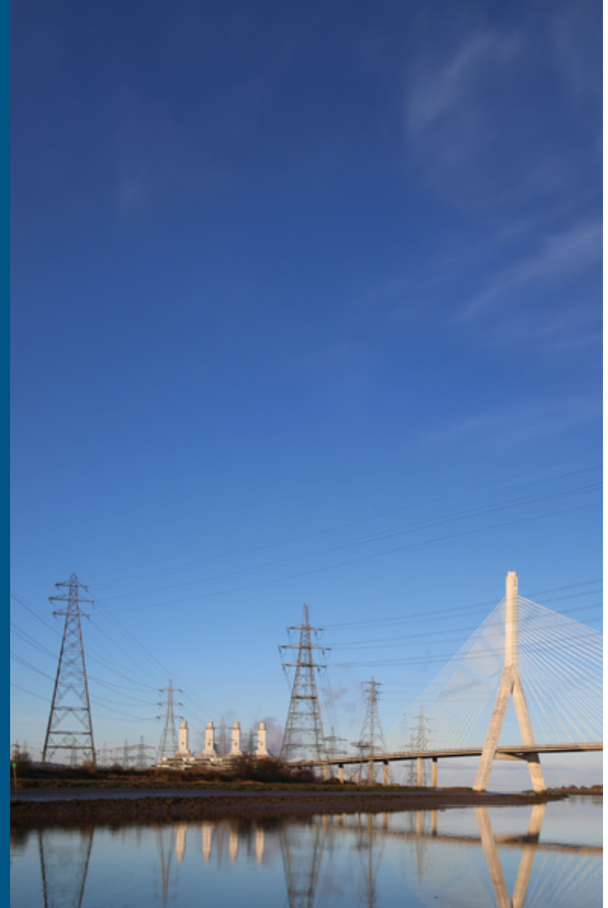
Physical Processes

Physical processes relate to activities that may cause changes to the Earth's physical features, such as erosion and changes to river beds. We are undertaking assessments to understand the impact of these physical processes during the construction, operation and decommissioning phases of the proposed development. This is primarily focused on the potential impact to the local river and estuary beds as our project is situated close to the River Dee, but we have also examined how construction activities such as excavation may impact the land, water and air on and around the site.

During the construction phase of the project, we may need to construct a 'cofferdam', which is a temporary watertight enclosure built within a body of water which allows the enclosed area to be drained. This enables us to conduct work on an area that would otherwise be underwater. The construction of this structure has the potential to disturb the river bed, which could cause disruption to sediment.

The assessments to understand the impact that construction of the cofferdam and other process during the construction, operation and decommissioning phases of the project will likely have on physical processes, are ongoing. Our design and planned mitigation measures will be further refined as part of the Environmental Statement when additional information is confirmed such as the duration, extent and location of the cofferdam, and further detailed assessments on water and sediment movement are undertaken.

To find out more about our preliminary assessments for any effects that the project may cause to physical processes and our initial considerations for any suitable mitigation measures, see Chapter 16 of the PEIR and section 7.10 of the PEIR NTS.



Terrestrial Heritage

Terrestrial heritage refers to historical and cultural assets such as listed buildings and monuments located on land that could be affected by the proposed development. We have carried out initial archaeological desktop studies and considered whether the construction, operation and decommissioning of the proposed power station might affect such assets.

The proposed new power station is located on our land and will be adjacent to our existing Connah's Quay power station, meaning that the new proposed facility would be able to utilise existing infrastructure, reducing the requirement for new infrastructure to support its construction and operation. This also reduces the potential impact for the project to disturb the ground below and any unknown archaeological remains still buried there.

During the construction and decommissioning phases of the project, we will be undertaking work that has the potential to impact heritage assets and may cause permanent physical impacts to unknown archaeological remains buried underground. Potential impacts on heritage assets when the plant is operational could include noise and vehicle movements for staff access.

We will be undertaking archaeological geophysical surveys to determine whether or not there are heritage assets within the proposed footprint for the construction of the CO_2 pipeline. And as we continue to develop our plans, we will look for ways to avoid affecting any identified heritage sites and include these in the project design. This could involve conducting further detailed archaeological studies and designating areas where no work can take place. Any built-in or extra steps to reduce impacts will be considered and evaluated in the Environmental Statement as part of the DCO application.

To find out more about our preliminary assessments for any terrestrial heritage effects, and our initial considerations for any suitable mitigation measures, see Chapter 17 of the PEIR and section 7.11 of the PEIR NTS.

Marine Heritage

Marine Heritage refers to the protection and consideration of historical and cultural assets located in marine and coastal environments during the construction, operation and decommissioning phases of the project. This primarily includes submerged historical artefacts such as shipwrecks and submerged settlements, harbours, and other sites of archaeological interest underwater.

We will be undertaking work that has potential to impact marine heritage assets and archaeological remains as a result of in river construction works and ship and vessel movements, primarily for the transport of construction materials and equipment.

We have undertaken preliminary assessments and at present, there is no evidence of marine heritage assets such as shipwrecks or aircraft crash sites, prehistoric evidence or historical construction and infrastructure within the water connection corridor. Mitigation measures will be explored once we better understand the likely effects of the proposed development on any newly discovered marine heritage within or around the water connection corridor.

A full assessment of the potential impact of the proposed development on marine heritage assets will be included in more detail in the Environmental Statement which will be submitted with the DCO application.

To find out more about our preliminary assessments for any marine heritage effects and our initial considerations for any suitable mitigation measures, see Chapter 18 of the PEIR and section 7.12 of the PEIR NTS.

Socio-economics, Recreation and Tourism

As part of our preliminary assessments to inform the PEIR, we have considered the effect the proposed development may have on the local economy, recreational activities of the surrounding communities and tourism numbers during the construction, operation and decommissioning phases of the proposed development.

This includes, but is not limited to, job creation, the project's contribution to local economic output (Gross Value Added or GVA), potential impacts to local Public Right of Way routes and the surrounding road network.

Our assessments are ongoing so that we can understand the impact that we anticipate the project will have on these factors, and how we expect to mitigate any likely significant adverse effects. Due to its size and significance, we expect the project will bring largely positive changes locally, especially with regard to job creation and contribution towards the local economy.

Based on our assessments, we anticipate that the development of a new low carbon power station at Connah's Quay could protect approximately 60 existing jobs, as well as creating around 1,000 construction jobs at the peak of construction during each phase and further opportunities through the wider supply chain.

To find out more about our preliminary assessments for any effects that this project may have on socio-economics, recreation and tourism and our initial considerations for any suitable mitigation measures, see Chapter 19 of the PEIR and section 7.13 of the PEIR NTS.

Climate Change

Both the UK's Climate Change Committee (CCC) and the International Energy Agency have stated that carbon capture and storage (CCS) is essential to achieve net zero. CQLCP will incorporate carbon capture technology, capable of capturing at least 95% of CO_2 emissions produced during electricity generation.

As part of our preliminary assessments to inform the PEIR, we have considered the impact that the project will have on climate change during the construction, operation and decommissioning phases. While we expect the project to bring net benefits when operational, we acknowledge it has the potential to generate greenhouse gas emissions during construction and decommissioning.

We have also undertaken initial assessments on the vulnerability of the project to the impacts of future climate change, such as extreme temperatures, storms and flooding.

In order to better understand the overall impact that the project is likely to have on climate change, and the resilience of the new facility to future climate change impacts, we have undertaken a number of assessments including a lifecycle greenhouse gas assessment and a Climate Change Risk Assessment. These assessments have identified the main issues related to climate change, and we are developing mitigation measures to limit any likely significant adverse impacts.

The assessments are ongoing to understand the impacts from and to the project. The full findings will be provided in the Environmental Statement, which we will submit as part of our DCO application.

To find out more about our preliminary assessments for any climate change effects and our initial considerations for any suitable mitigation measures, see Chapter 20 of the PEIR and section 7.14 of the PEIR NTS.

Human Health

As part of our preliminary assessments to inform the PEIR, we assessed the potential impact the project may have on the physical and mental health of people living or working in the area.

The project has been designed to avoid or reduce negative impacts on human health as much as possible by including certain protective measures in the design to reduce impacts on air quality, noise and traffic, as outlined above.

Any potential negative impacts on human health will continue to be assessed, with the full findings being provided and the proposed mitigation measures in the Environment Statement, which we will submit as part of our DCO application.

To find out more about our preliminary assessments for any human health effects and our initial considerations for any suitable mitigation measures, see Chapter 21 of the PEIR and section 7.15 of the PEIR NTS.

Major Accidents and Disasters

When developing a project of this size and scale, Uniper must consider all potential scenarios that could occur throughout its lifecycle, including the possibility of a major accident or disaster occurring at the site.

A number of preliminary major accident and disaster scenarios have been identified for the project, which could impact people and the environment during the construction, operation and decommissioning phases. As a result of our preliminary assessments, we have prioritised a number of these potential 'risk events' for further consideration. These include, but are not limited to, flooding, vandalism, structural collapse and accidental release of carbon dioxide into the atmosphere.

While these events have a low probability of occurrence, we have considered the risk of potential major accidents and disasters occurring in the PEIR, Once we've undertaken more detailed risk assessments, we will provide our findings, including the proposed mitigation measures in the Environmental Statement, which we will submit as part of our DCO application.

To find out more about our preliminary assessments for any potential major accidents and disasters and our initial considerations for any suitable mitigation measures, see Chapter 22 of the PEIR and section 7.16 of the PEIR NTS.

Materials and Waste

During the construction phase of the project, we will be undertaking work that will require the use of core construction materials such as aggregates, concrete, steel and asphalt. We will also generate waste throughout the lifecycle of the project, especially during construction, as we will be conducting demolition and excavation work. During the operation of the proposed development, the recycling, storage and disposal of waste generated at the site will be covered by the Environmental Permit for operation of the plant, which is subject to a separate application process overseen by the Natural Resources Wales.

As part of the preliminary assessment process that has informed the PEIR, we have outlined a number of mitigation measures to limit the potential environmental impact of materials and waste. This includes the application of a waste hierarchy structure, which will be applied to prioritise waste prevention, followed by preparing for reuse, recycling and other recovery, and lastly disposal to landfill as a last resort.

The assessments are ongoing to understand the impact that consumption of materials and generation of waste is likely to have during the construction, operation, and decommissioning phases of the project. The framework Construction Environmental Management Plan (CEMP), which will be submitted as part of our DCO application, will set out how waste could be managed during construction, and outline opportunities to prevent material waste, reuse materials and recycle waste in accordance with the waste hierarchy.

To find out more about our preliminary assessments for any effects that materials and waste are likely to cause and our initial considerations for any suitable mitigation measures, see Chapter 23 of the PEIR and section 7.17 of the PEIR NTS.

Cumulative and Combined Effects

This project is located in an already heavily developed industrial area, and when developing a new facility, it is important to understand whether the construction, operation and decommissioning phases of our proposed development may result in cumulative effects caused by concurrent activities with other planned developments, in the same area.

As part of our preliminary assessments to inform the PEIR, we have identified other developments that are likely to have a cumulative impact during the construction, operation, and decommissioning phases of the proposed development. This includes the nearby CO_2 transport and storage infrastructure that the new facility would connect into as part of the HyNet industrial cluster.

This includes the nearby CO_2 transport and storage infrastructure that the new facility would connect into as part of the HyNet industrial cluster. We are following guidance produced by the Planning Inspectorate which sets out how projects should assess cumulative and combined effects, and our full findings will be provided in the Environmental Statement which we will submit as part of our DCO application.

To find out more about our preliminary assessments in respect of cumulative and combined effects and our initial considerations for any suitable mitigation measures, see Chapter 24 of the PEIR and section 7.18 of the PEIR NTS.

Community benefit

Investment at our Connah's Quay site could contribute substantially to economic growth in the region, by protecting jobs, creating new opportunities during construction, along with potential opportunities through the wider supply chain.

We already work with Natural Resources Wales and local groups to maintain a Site of Special Scientific Interest (SSSI) on our land. This includes the provision and maintenance of a field study centre, hides and observatory, as well as a land management plan to optimise ecological diversity.

We are also helping to inspire young people to consider a career in a STEM area (Science, Technology, Engineering and Mathematics) with ongoing outreach activities. We are currently redeveloping the education centre at our Connah's Quay site and we would like to see it play a part in helping local schools to deliver science, technology, engineering and maths lessons.

As part of our plans for the future of our Connah's Quay site, we will work with our local stakeholders to understand any concerns as well as ensuring that we are able to continue to play a positive role within the community.

Consultation and next steps

Feedback we received at our Non-Statutory Consultation

Between Monday, 26 February 2024, and Monday, 25 March 2024, we conducted our first stage of consultation, writing to over 20,000 local addresses to gather feedback about the early project proposals. We received over 50 pieces of feedback, and we appreciate the time given by everyone who shared their views.

Here are our findings:

We were delighted to see growing support for the CQLCP project, with respondents consistently showing a neutral to positive sentiment towards the proposals. Only 15% of responders disagree that the UK should build new low carbon power stations to ensure security of supply and, notably, 61% expressed support or are impartial towards a new power station at our Connah's Quay site.

The consultation highlighted the importance of continued dialogue and transparency with the community.

Concerns were raised regarding potential impacts on biodiversity in the nearby Deeside Nature Reserve.

There was some uncertainty expressed about whether the site location itself was suitable, although the majority of respondents felt that our Connah's Quay site is a suitable location for a new low carbon power station.

Around 30% of respondents had questions about potential disruptions associated with construction activities and increased traffic in the area.

The feedback received during this early consultation has been reviewed and analysed to understand key themes and issues of importance. Having taken onboard this initial information and feedback, we have prepared a more advanced design for the project, with greater detail, including information about how potential impacts have been assessed and how we plan to manage or mitigate them.

How to take part in our Statutory Consultation

Anyone who is interested in this project is welcome to take part in the consultation. We welcome all views and will take them into account before the DCO application is submitted. We will be holding a series of public information events to provide you with an opportunity to view our updated plans in detail, speak with members of our project team and give your feedback on our proposals.

In-person events:

Wednesday 23 October 2024
Conference Centre, Coleg Cambria Deeside, Kelsterton Road, Connah's Quay, CH5 4DZ
16:00 - 20:00

Saturday 26 October 2024
Flint Town Hall, Holywell Street, Flint, CH6 5NW
11:00 - 16:00

Thursday 7 November 2024
Connah's Quay Cricket Club, 5 Cable Street, Connahs Quay, CH5 4DZ
13:00 - 18:00

Online webinars:

Saturday 19 October 2024
11:00 – 12:00

Tuesday 22 October 2024
13:00 – 14:00

Monday 4 November 2024
18:00 – 19:00

Please scan the QR code to register for our webinars.

How to provide feedback

Between Tuesday 8 October 2024 and Tuesday 19 November, you will be able to submit feedback relating to the project. **All responses must be received by 11.59pm on Tuesday 19 November 2024.**

You can provide feedback on our proposals by:

Online – by completing the online feedback form, which can be accessed via the project consultation website: **https://uniperuk.consulting/cqlcp/**

At an in-person consultation event – stakeholders attending a consultation event will be able to complete an online feedback form, or take a copy away to complete following the event and respond to the consultation by post. Physical copies of the feedback form can be returned to the project team via Freepost **(using FREEPOST CQLCP)**.

At an information point – paper copies of the feedback form can also be found at a local information point to send responses to the project team. A full list of information points can be found on page 38 of this brochure.

Via our community contact centre – consultation feedback can be submitted via email or phone. Our telephone line is open from 9am-5:30pm Mon-Fri to allow those that are unable to submit written responses to give their feedback.

Please note that requests for paper copies of the feedback form can be made via the following community contact centre channels:

Telephone: **0800 012 9156**

Email: **info@connahsquaylcp.co.uk**

Post: **FREEPOST CQLCP** (no stamp required).

How we'll use your feedback and next steps

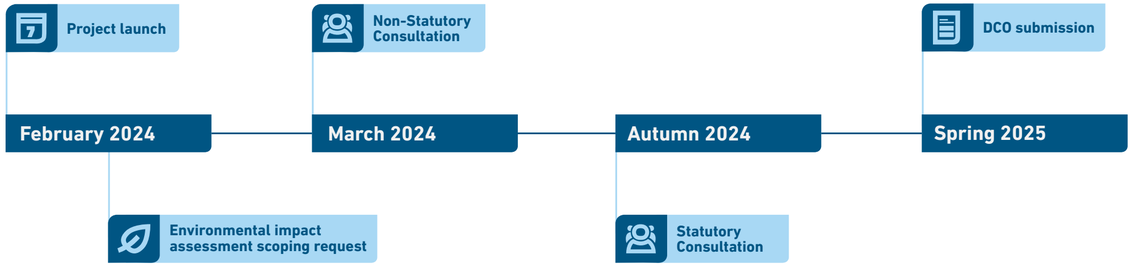
We will consider all comments received during the consultation, as well as from our ongoing engagement with communities and stakeholders. All feedback is important to us and will help to influence the design of the project, where possible.

Following the close of this round of consultation, a Consultation Report will be produced as part of our DCO application, which will be submitted to the Planning Inspectorate. This document will set out how the feedback from the consultation has shaped and influenced the final proposals.

All responses submitted during our Non-Statutory and Statutory Consultation will be answered within the Consultation Report and included within the document with all personal details redacted.

After the application has been submitted, the Planning Inspectorate may ask Uniper to provide a copy of any, or all, of the statutory consultation responses received. We will take reasonable care to comply with the requirements of all applicable data protection legislation and the Planning Inspectorate's Privacy Policy **https://www.gov.uk/government/publications/planning-inspectorate-privacy-notices**.

We have set out our updated indicative project timeline below:



Where to find out more

To find out more about our project and access our consultation materials, including the PEIR and Non-Technical Summary, please visit **https://uniperuk.consulting/cqlcp/** or **scan the QR code** to be directed to our website. Consultation documents can be viewed from the launch date of the consultation, **Tuesday 8 October 2024**.

We will also be hosting consultation materials at the following information points near to the site:

- Flint Library, Church St, Flint, CH6 5AP *(A hard copy of the PEIR will be available at this location for reference).*
- Connah's Quay Library, Wepre Dr, Connah's Quay, CH5 4HA *(A hard copy of the PEIR will be available at this location for reference).*
- Buckley Library, The Precinct, Brunswick Rd, Buckley CH7 2EF
- Ellesmere Port Library, Civic Way, Ellesmere Port CH65 0BG
- Holywell Library, Holywell Leisure Centre, North Road, Holywell, Flintshire, CH8 7UZ

We are committed to ensuring our consultation is accessible to all. Our website and key project materials, including this consultation brochure, our newsletter, feedback form and Non-Technical Summary of the PEIR, will be made available in Welsh. We can also provide our materials in alternative formats.

To note, the PEIR will be available to view at Flint Library and Connah's Quay Library only. The remaining information points will have all consultation materials except the PEIR.

Contact us

If you require any of our materials in an alternative format, please contact us using the information provided below.

If you would like to talk to us about the project, you can contact our Community Relations Team using the following contact information:

Telephone: **0800 012 9156**

Email: **info@connahsquaylcp.co.uk**

Post: **FREEPOST CQLCP** (no stamp required).

This document has been produced by Uniper UK Limited, and every effort has been made to ensure that the information contained within is accurate as of the date of publication. The project is still at an early stage, and therefore future updates or changes may affect the accuracy or relevance of this information.

All graphs and maps in this document are for illustrative purposes only.

Mae'r ddogfen yma hefyd ar gael yn Gymraeg ar ein gwefan yma.