

Keuper Gas Storage Project

Welcome to the Keuper Gas Storage Project (KGSP) Public Information Day where you can find out about the plans to develop additional underground gas storage facilities at the Holford Brinefield, and surrounding area, north of Middlewich, Cheshire.

Image of an existing gas storage wellhead at Holford Brinefield



This Public Information Day is part of the first stage of consultation on the proposals. We will be holding another stage of consultation later in the year.

Please feel free to take a look around and speak to members of the Project Team, who will be happy to talk you through our plans. You can also fill in a questionnaire to let us know your thoughts.

Who is KGSL?

The Keuper Gas Storage Project is being developed by Keuper Gas Storage Limited, a wholly owned subsidiary of INEOS Enterprises Group Limited.

Keuper Gas Storage Limited is the project developer. INEOS Enterprises Limited is the land owner and its Brine & Water Business would be responsible for the solution mining of brine to facilitate this proposed development.

INEOS has strong ties to the region and employs over 1,200 people in Runcorn and Northwich. The Company produces a range of essential chemicals for use by industry in the UK and overseas.

The Project

The proposed development would involve using underground salt cavities - created through solution mining - to store natural gas. All of the proposed new gas storage cavities would be located at the Holford Brinefield and surrounding area north of Middlewich, Cheshire.



There are some other smaller construction works that would need to be undertaken as part of the Project, they include two new brine processing tanks on the Lostock Works Site, off Griffiths road, Northwich and the refurbishment of the existing Whitley Pumping Station in Whitley.

The existing pipelines between Holford and Runcorn will continue to be used to transport brine – these pipelines will not be used to move gas.

At Runcorn, the proposed development would involve extending an existing brine pipeline located at the main INEOS ChlorVinyls site.

The history of solution mining in Cheshire

INEOS Enterprises has been solution mining the Holford Brinefield for over 80 years. This process produces brine, a concentrated salt solution, which is used to produce chlorine, which makes our drinking water safe. Brine is also used in the production of everyday essentials such as washing powder, toothpaste and table salt.



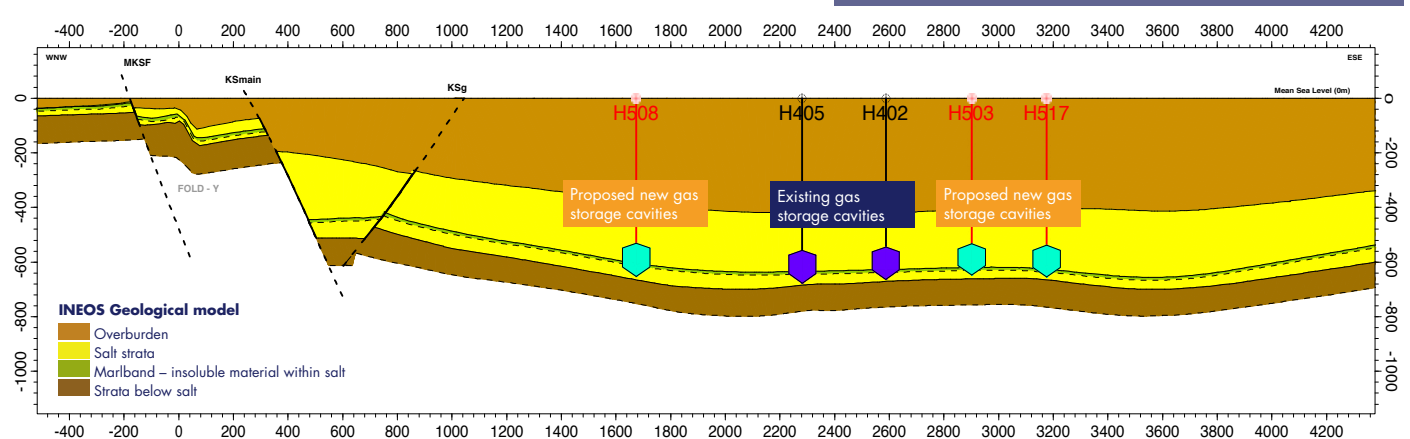
Solution mining has taken place at the Holford Brinefield site since the 1920s, when the site was opened as a controlled solution mining field. Since that time, over 200 cavities have been developed at the site for brine production.

INEOS has an ongoing demand for brine to meet the needs of its operations across Cheshire and other customers in the chemical industry, including Tata in Northwich. Even without gas storage, cavities would still be required to provide the brine. Once the brine is mined, the specially designed cavity left behind can then be used to store natural gas.

Cheshire's geology

Cheshire's geology means it is one of the few places in the UK where gas can be safely stored underground and there are already a number of existing gas storage facilities operating in the area. INEOS Enterprises has an excellent understanding of the geology in the area due to its solution mining activities. Additional surveys have also recently been undertaken to ensure all the geological data is up to date.

Cross-section of geology at Holford Brinefield



Why does the UK need gas storage?

Gas storage helps to keep lights on and homes warm across the UK by providing a secure and flexible source of energy. Over a quarter of the UK's electricity is generated from gas and we rely heavily on imports, meaning domestic storage is needed to respond to variable demands – for example, when more gas is needed during colder, darker winter months. Forecasts show that gas will remain an important energy source for heating and electricity for UK homes for many decades.



The Government has recognised the importance of gas storage and the Energy and Climate Change Committee, which examines the work of government departments, has called for the Government to double the UK's current gas storage by 2020.

The Benefits

- Providing a flexible and secure supply of energy to help keep the lights on in the UK
- Up to 300 construction jobs and 30 operational jobs
- A significant further investment in Cheshire, which can be delivered without subsidies from Government
- Supporting INEOS' businesses at Runcorn by providing brine, which is essential to ongoing operations
- KGSL is committed to giving something back to the local community. KGSL expects to provide a community benefit fund similar to the fund in place for the other existing gas storage projects at the Holford Brinefield, where £20,000 is made available for local community projects each year. We would like feedback from the local community on how this fund could be used to provide local benefit.



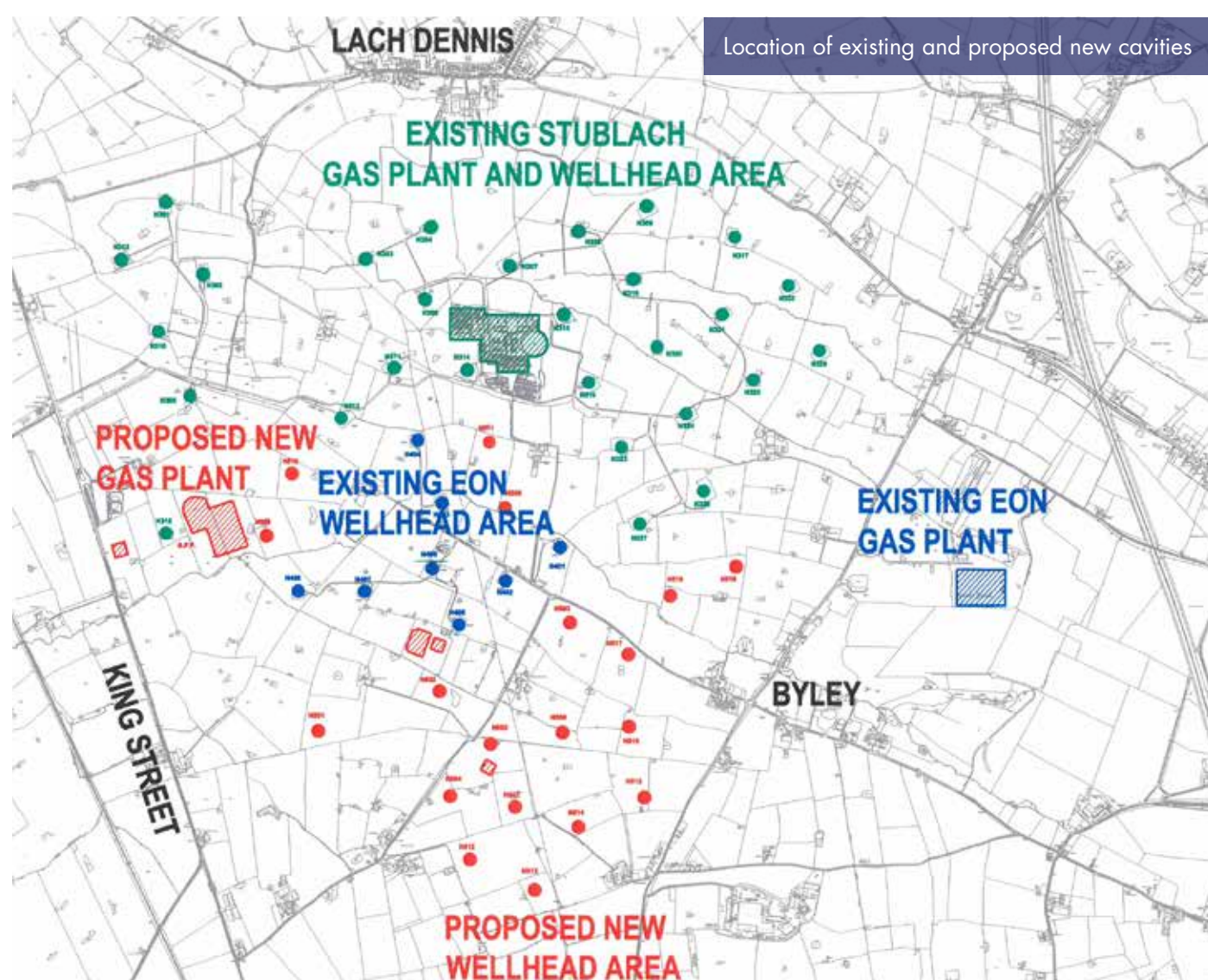
INEOS Enterprises

The main gas storage site

Most of the construction activity would take place at the main gas storage site in the Holford Brinefield, north of Middlewich, Cheshire. Natural gas has been stored safely in cavities in the Holford Brinefield since the 1980s. Today, approximately 60 cavities are in use for the production of brine, and there are 9 which currently store gas with a further 20 being developed for gas storage.

As part of the Keuper Gas Storage Project up to 19 new cavities would be created through solution mining and then used to store natural gas. The location of the cavities is carefully decided based on detailed analysis of the geology and layout of the site.

The map below shows the locations of the existing cavities and the proposed new ones.



What will the main gas storage site look like?

What will it look like?

Most of the proposed development (the cavities) will be located underground. At each cavity there will be a wellhead that will look similar to the image below. The wellhead compounds will typically be 50m x 50m with most of the equipment less than 4m high. The other visible parts of the development will be the Gas Processing Plant and internal site access roads. Typically the Gas Processing Plant will cover an area of approximately 7.5 hectares.

Example of an existing brine wellhead at Holford Brinefield



During construction the most visible machinery that will be used is a drilling rig, which is about 25-30m high. However, the rig is only present at each wellhead for approximately one month and will be removed from the site after construction. There may be two drilling rigs on site at some stages, moving from well-site to well-site. During solution mining there will be occasional visits to each well site by a workover rig to make adjustments to the well.

Example of an existing gas processing plant in Portugal

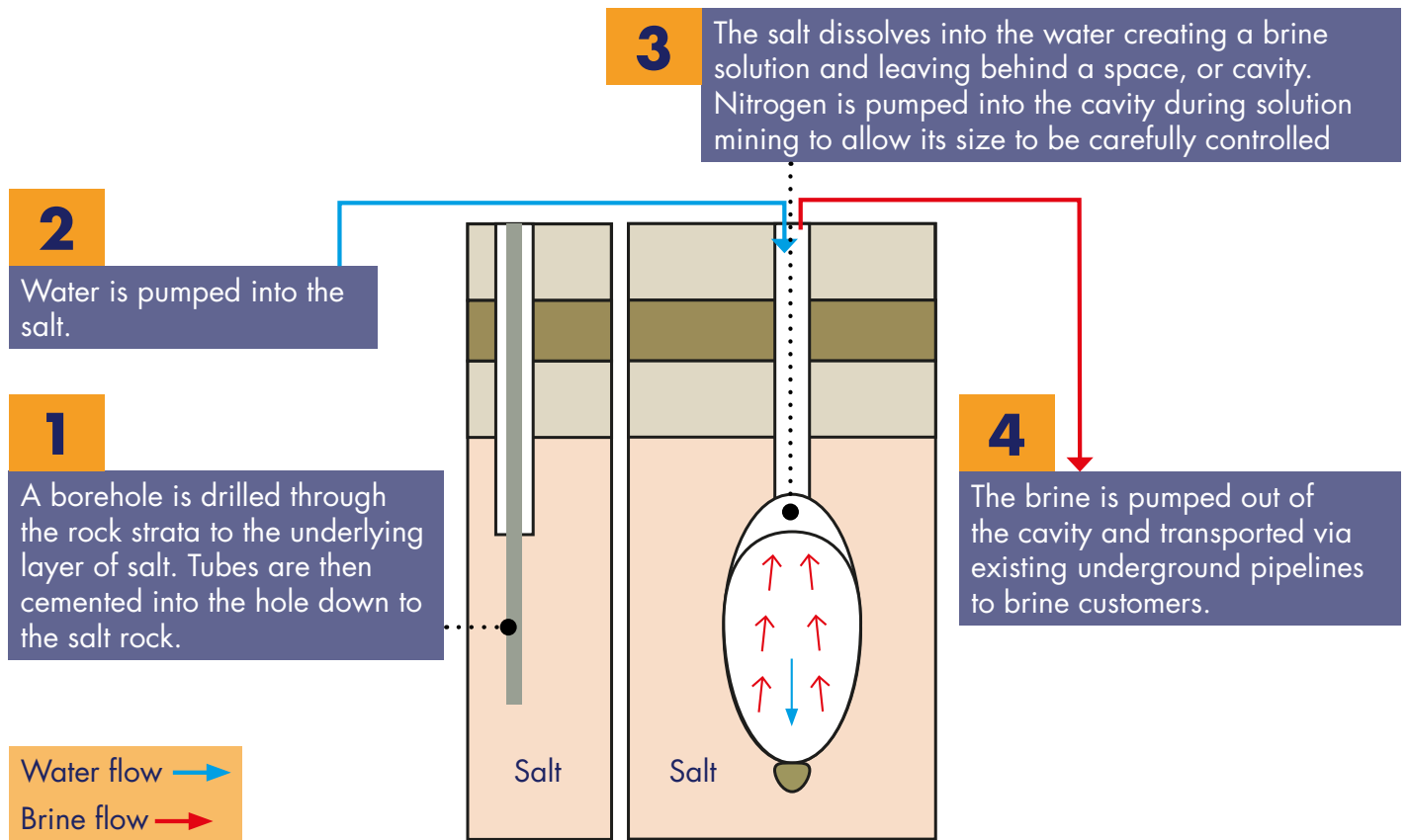


As part of the planning application a Landscape and Visual Assessment will be prepared. This will look at the potential impacts of the proposed development on the local landscape and viewpoints and any mitigation measures that may be required.

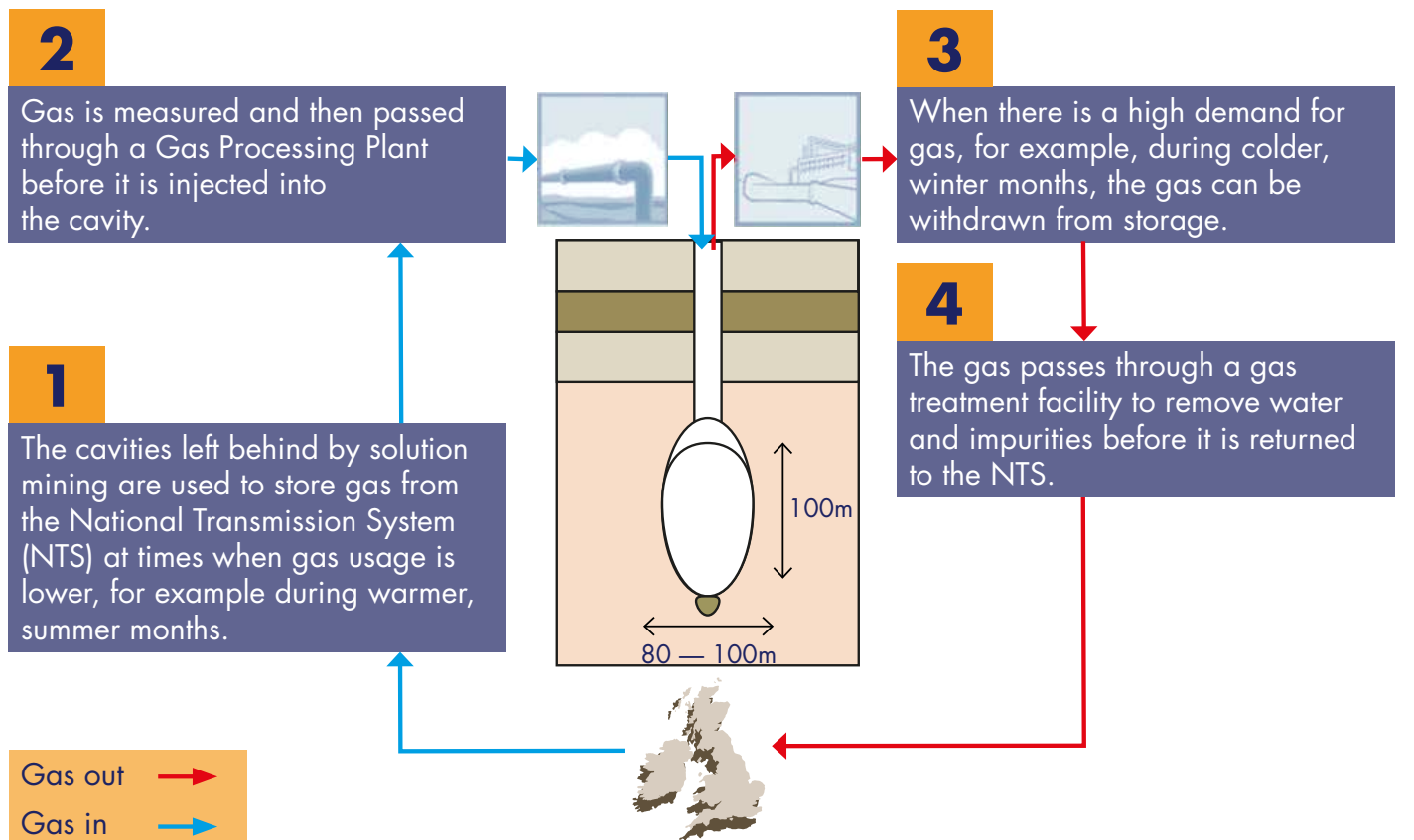
How does it work?

There are two stages to the Project – solution mining and gas storage.

Solution mining



Gas storage



What's happening at Runcorn?

As the purpose of this project is to provide gas storage, sometimes more brine will be removed when making the gas cavities than is needed by INEOS' customers. The brine that is not needed will be transported via existing underground pipelines from the Holford Brinefield to the INEOS ChlorVinyls site at Runcorn, where it will be discharged into the Manchester Ship Canal, Weaver Navigation and, ultimately, the River Mersey.



Location for the proposed brine pipeline extension

As part of the application for the Keuper Gas Storage Project, we will be seeking permission to extend this pipeline by approximately 400m. The proposed pipeline will be routed from close to where it currently enters the Weaver Navigation, through the Runcorn Site and then cross the Weaver Navigation to the Manchester Ship Canal, near to Weaver Sluices. The pipeline will not be used to transport gas and no gas will be stored at the Runcorn Site.

INEOS currently has consent under an Environmental Permit, which is issued by the Environment Agency, to discharge surplus brine in this way. This method has been shown through the permit process not to be harmful to the Manchester Ship Canal, Weaver Navigation or River Mersey as the brine solution is quickly diluted and ultimately enters salt water.

One of the benefits of this project, when compared to other gas storage projects across the world, is that the majority of the brine produced will be supplied to our customers rather than being discharged in the sea.

INEOS in Runcorn

There are 2 INEOS sites in Runcorn, both of which are dependent on the brine produced at Holford Brinefield. INEOS ChlorVinyls uses brine to produce caustic soda and chlorine, this chlorine is used to keep most of the UK's drinking water safe and INEOS Enterprises' Salt Business uses brine to produce table salt, water softeners and de-icing salt.

INEOS employs over 1,100 people at its Runcorn sites.

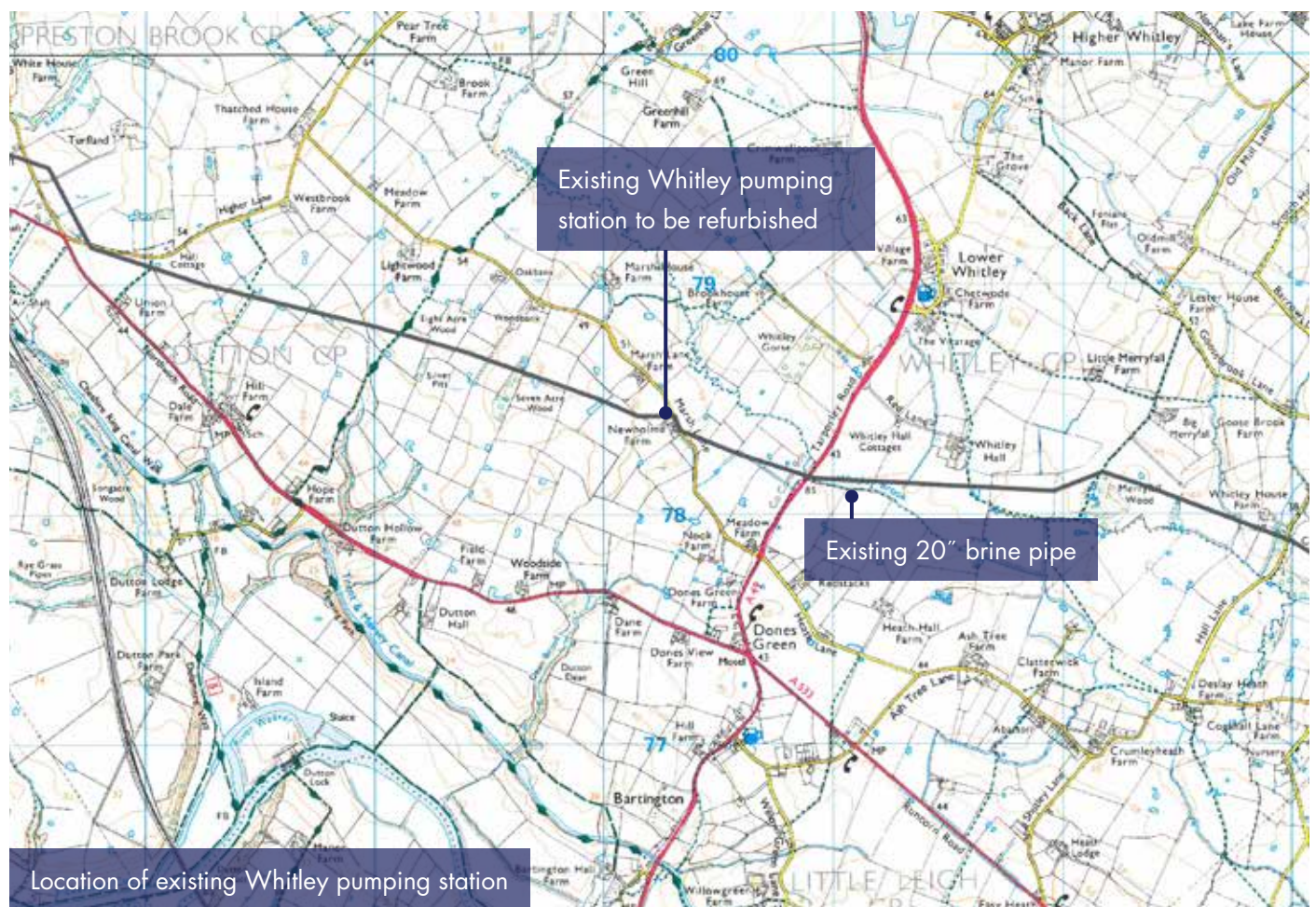
What's happening at Whitley?

The Whitley Pumping Station is an existing, but out of service, pumphouse about half way between Lostock Works in Northwich and INEOS' Runcorn Site.

It was used to help pump the brine that travels in underground pipelines from the Holford Brinefields to INEOS' Runcorn Site.

We are proposing to refurbish the pumphouse so it can be used as part of the Keuper Gas Storage Project. This would involve replacing some of the equipment within the pumphouse building, reconnecting it to the electricity supply and installing a new anti-surge vessel, within the existing site compound but outside of the existing pumphouse.

The refurbished pumping station will be used to pump brine; no gas is being transported through the pipeline.



Salt cavities have been used to store natural gas for over 60 years and gas has been stored safely in cavities at the Holford Brinefield since the 1980s. The gas storage facility will have to meet strict safety standards, which are amongst the most stringent in the world.

Gas storage sites are subject to strict safety standards under the Control of Major Accident Hazards (COMAH) Regulations 1999.

The site will be regulated by the Health and Safety Executive (HSE) and Environment Agency (EA) who are responsible for ensuring local people and the environment are protected. An emergency plan will also be developed and agreed with the HSE, Cheshire West & Chester Council and local emergency services.

Salt cavities are ideal for storing natural gas as the salt strata is impermeable to gas (meaning gas can't pass through it). Between the cavity and the surface pipework there will be three verticle layers of high integrity steel tubing to contain the gas. Systems are in place that will automatically shut down the facility in the event of any potential incident. Each individual wellhead will be surrounded by a security fence and will be under 24 hour CCTV surveillance. The Gas Processing Plant will be manned 24/7.



Security fences around an existing wellhead



Runcorn technicians working to keep the plant safe

Safety at INEOS

Safety runs through the heart of all that INEOS does. INEOS operates to strict regulations that are set by the national environment agencies of the countries in which we operate. We are committed to ensuring that our facilities have as low an impact as possible on local people and the environment and we continue to work in close partnership with community groups and other stakeholders to ensure that we are a responsible neighbour.

As part of the Development Consent Order (DCO) application an Environmental Impact Assessment (EIA) will be undertaken. This will look at the potential impact of the proposed development and any measures that need to be put in place to protect the environment.

The output of the environmental studies will provide important information about the final design, construction and operation of the Facility. Where the studies indicate that environmental impacts could exist, mitigating measures will be developed and incorporated into the proposals.

Ecology

Ecology surveys have started at the Project site to gather a full picture of the existing habitats in the development area prior to any works starting. These surveys will help inform the design in such a way as to minimise impact on habitats. Once operational, much of the development will be underground and therefore have a low direct impact on ecology.

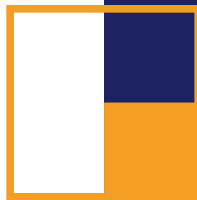
The extracted brine will either be used in chemical manufacturing processes at Runcorn or be discharged, under licence, to the Manchester Ship Canal. This discharge has been assessed and it is not expected that it will have any adverse impact on ecology, as the brine solution is quickly diluted and ultimately enters salt water.

Noise

Noise levels will be assessed, and measures will be put in place to deal with any potential noise disturbance. The potential for noise disturbance is greatest during construction and this will be managed through standard construction practices. It is also likely that construction will be limited to fixed hours during the day to minimise disturbance. Once operational, it is expected that noise generated from the brine mining and gas storage processes will be minimal.

Air quality

The potential impact on air quality will be assessed as part of the EIA. During construction, this could include dust, which will be carefully managed. During operation, the Gas Processing Plant will use gas-fired heaters to help dry and compress the gas for storage. This process will be controlled within limits set out by the Environment Agency in an Environmental Permit.



Traffic

A Traffic Assessment will be undertaken as part of the Environmental Impact Assessment for the Keuper Gas Storage Project. This will look at the likely number of vehicles accessing the site; the times of access; and determine any mitigation measures that may be necessary.

All construction traffic will enter the site at the existing main site entrance on King Street (A530), either travelling from the north on the A556 or from the south on the A54/M6. As some of the proposed wellheads are to the north of Drakelow Lane and east of Yatehouse Lane, it will be necessary for construction vehicles to travel along or across these roads. A routing plan will be developed to ensure that heavy or large loads are brought to site along the safest routes and with as little impact as possible on the surrounding road network.

When the Facility is operational, traffic will be minimal. A traffic management plan will be developed, that will detail any measures needed to minimise the impact of traffic on neighbours and the local community. Full details of the traffic management plan will be published as part of the Traffic Assessment.



The planning process

Because of the importance of the proposed development in helping the UK meet its increasing energy needs, the Keuper Gas Storage Project is classified as a Nationally Significant Infrastructure Project (NSIP). This means that rather than going through the local authority like most planning applications, the Project requires a Development Consent Order (DCO) from the Secretary of State for Energy and Climate Change (DECC). For further information on the NSIP process please visit

<http://infrastructure.planningportal.gov.uk>

As part of the DCO application process it is necessary to undertake a period of statutory consultation on the proposed development. Before doing this a non-statutory or 'informal' stage of consultation will be carried out, which this Public Information Day is part of. This stage of consultation will run until 20th June 2014 and will help to firm up the proposals before undertaking the statutory stage of consultation in September-October this year.

Non statutory consultation

April-June 2014

Statutory consultation

September-October 2014

Submission of DCO application

Early 2015

Determination of the DCO

Early 2016

Construction starts

From 2017

Solution mining starts

From 2018

Gas storage starts

From 2020

Have your say

We hope you have found this Public Information Day useful and thank you for coming along. Please take the time to fill in a feedback form, and return it by 20th June 2014. You can return the feedback form in the box provided today, using the contact methods below, or via our online questionnaire. All feedback received will be collated and, where possible, taken into account throughout the development process.

Getting in touch

You can get in touch with the Project team in the following ways:

- **Call us:** Freephone 0800 1777 250 (During office hours Mon-Fri)
- **Email us:** info@kgsp.co.uk
- **Write to us:** Freepost RSKS-SBBE-LHHZ, Keuper Gas Storage Project, c/o PPS Group, Hanover House, 30-32 Charlotte Street, Manchester, M1 4FD
- **Visit us at:** www.kgsp.co.uk