



UK Geoenery Observatories

Cheshire Energy Research Field Site

1.1 BACKGROUND INFORMATION

The UK Geoenery Observatories is a £31 million capital infrastructure project commissioned by The Natural Environment Research Council (NERC), the UKs' main agency for funding environmental sciences, and delivered by the British Geological Survey (BGS), the UK's leading research centre in geoscience.

This major project will provide infrastructure for future research opportunities with one site in Glasgow and another site in Cheshire.

The UK Geoenery Observatories Project [Science Plan](#) was developed with world-class expertise and aims to establish new centres for research into the subsurface environment, research how natural processes can control resource availability and how natural resources can be used responsibly. The Project will generate an understanding of low-carbon energy technologies both in the UK and internationally.

The Project is NERC's response to the government announcement in the 2014 Autumn Statement that it would create world-class subsurface energy research test centres.

Funding for the £31 million [UK Geoenery Observatories](#) project is provided to the Natural Environment Research Council by the Department for Business, Energy and Industrial Strategy and was [confirmed](#) in April this year (2017).

1.1.1 Delivery progress

The British Geological Survey has been exploring potential locations in the UK for two energy research field sites. Broadly speaking, this would involve creating a network of boreholes containing scientific instrumentation for monitoring and observing research in the subsurface.

The Ince Marshes area of Cheshire has been identified as a potential location for a site in England. It was first mentioned in the [autumn statement](#) from the Chancellor of the Exchequer in 2014, which committed funding for an Energy Security and Innovation Observing System for the Subsurface (ESIOS).

Following this announcement, NERC consulted with the academic community throughout 2015 to determine research that could be conducted at such a facility. The research areas were captured in the [Science Plan](#), which was published in July 2016.

Since the science consultation was completed last summer, BGS geologists and geoscientists have been undertaking detailed data analysis, modelling and scientific study to determine the potential of Ince Marshes as a site to carry out research on a wide range of energy technologies (as set out in the Science Plan).



The BGS is now in a position to be able to confirm the Ince Marshes area as our preferred location for the England site. We have named our preferred location the Cheshire Energy Research Field Site.

The preferred location is subject to consultation with landowners on borehole locations, technical and environmental assessments, public consultation and the planning process.

Landowner negotiations are live and the proposed borehole locations are being discussed. Site visits are underway at borehole sites to identify mutually-acceptable locations that take account of surface and subsurface infrastructure across the 28 sqkm of land under survey and that meet science plan needs. The BGS will be undertaking shallow seismic surveys to gain more geological evidence at the end of September.

1.1.2 The Cheshire Energy Research Field Site

The British Geological Survey has been exploring potential locations in the UK for two energy research field sites. Broadly speaking, this would involve creating a network of boreholes containing scientific instrumentation for monitoring and observing research in the subsurface.

Survey work is nearing completion to determine the best locations for the monitoring, observation and science boreholes that will form the proposed Cheshire Energy Research Field Site.

The boreholes will be for science purposes only. Any infrastructure will be for observation. The research activity will not involve fracking for shale gas.

THE PURPOSE OF THE CHESHIRE ENERGY RESEARCH FIELD SITE IS:

- **To observe underground energy technologies (which might be carried out in the area by commercial operators)**
- **To test and improve new and innovative energy technologies**

Any project development will be subject to a planning application to Cheshire West and Chester Council (first stage anticipated October 2017, with full planning application in March 2018).

1.1.3 Why was the Cheshire location chosen for this project?

The Ince Marshes area was chosen for its geological structure and proximity to potential subsurface energy activities. Ince Marshes is an excellent test bed representation of Carboniferous and Permo-Triassic sedimentary rock for energy and environment research questions. The complex geology of the area is suitable for researching a range of energy technologies and subsurface science and the network of boreholes has been designed to facilitate research on this range of energy science research. This idealised energy geology fits the following research requirements raised in the Project Science Plan:

- A complex, heterogeneous and evolving rock mass
- Fluid flow through rock
- Mechanical response to artificial perturbations
- How the subsurface responds to changes
- Biogeochemical response



The Ince Marshes area is also subject to a Petroleum Exploration Development Licence. Exploratory shale gas and coal bed methane wells have been drilled across the PEDL blocks in north Cheshire, which increases the possibility of the Cheshire Energy Research Field Site observing the extraction of energy.

The Observatory will provide the best-characterised, and most closely-observed geological environment in the UK. It will provide an unrivalled evidence base on the relationships between the surface, shallow rock (-50m) and the deep subsurface to -1,200m. It will identify and map fluid and gas pathways and movements within and between the rock layers.

The evidence base can be utilised to support the development of new low-carbon energy technologies, and to guide environmental management around industrial activities and processes that affect the surface and subsurface environment.



25th September 2017

The BGS to hold a national media briefing through the Science Media Centre in London. National, regional and local reporters invited. Professor Mike Stephenson, Professor Zoe Shipton and Professor Tim Wheeler to brief national correspondents on the investment and the science vision. Local press statement issued confirming Ince Marshes as the preferred location in England for the UK Geoenery Observatories and publicising dates of community engagement events.

11th October 2017

Community meetings in the Ince Marshes area start, beginning in Elton, Thornton and Helsby community venues. Meeting dates are currently being fixed for Ince, Dunham, Hapsford and Chester during the following weeks:

- 11th October (Elton and Thornton)
- 30th October (Helsby)
- w/c 13th November
- w/c 27th November
- w/c 11th December

Once confirmed, dates will be publicised in the local media, on the BGS and NERC websites, on village notice boards, via parish, town and county councils and through local MP offices.

February 2018

A large-scale public consultation and technical briefing will be held in February/March before the planning application is submitted. We are working with public engagement specialists Sense About Science to deliver the public engagement event, focus groups and online engagement.

Ongoing local business engagement

NERC and the BGS are continuing consultation with stakeholders in the Cheshire locality to understand current occupier responses and concerns for their operations in the area. NERC and BGS are acting on the responses and feedback arising.

Briefing note contents embargoed until 0.01 Tuesday, 26th September 2017
*(which follows the media briefing at the Science Media Centre on
Monday 25th September 2017 – see milestones above).*