

PETERHEAD LOW CARBON CCGT POWER STATION PROJECT

Stage One Consultation

SSE Thermal and partners Equinor are seeking to develop and operate a new low carbon combined cycle gas turbine (CCGT) power station with a carbon capture plant (CCP) at Peterhead. This project, which will be known as Peterhead Low Carbon CCGT Power Station Project or 'Peterhead CCS' (hereafter referred to as 'the Project'), will be located on land at the existing Peterhead Power Station in Aberdeenshire. The Project will have a generating capacity of up to 910MW and will utilise existing connections at the power station site such as cooling water, gas supply and grid connection.

In line with both companies' vision and commitment to a net-zero future, the power station will use natural gas as its fuel and will be fitted with a carbon capture plant to remove the carbon dioxide (CO_2) from its emissions. The CO₂ will be transported by a pipeline to be safely stored in an offshore storage site. The CO₂ pipeline from the power station will be subject to separate consent applications and undertaken as part of a separate project known as Project Acorn.

In order to develop the Project, we will need to obtain consent under Section 36 of the Electricity Act 1989. We are therefore preparing a Section 36 application for submission to the Scottish Government Energy Consents Unit (ECU). Successful development of the project will also be subject to support for the shared CO_2 infrastructure from the UK Government through its industrial clusters process.

Find out more and provide comments

We would like to invite members of the local community to visit our virtual exhibition space which will be available from 10 May 2021.

Please view our virtual public exhibition space available at peterheadlowcarbon.consultation.ai/

At present, our proposals for the Project are in the early stage of development. However, the virtual exhibition space allows you to find out more about the Project, meet the team and provide initial feedback. Please provide any comments by **Monday 7 June 2021 at 5pm**.

You are also able to provide comments via a freepost comments form which is attached to this newsletter. Please see page 7.

About SSE Thermal

SSE Thermal is part of the FTSE-listed SSE plc, one of the UK's broadest-based energy companies.

Over the last 20 years, SSE has invested over £20bn to deliver industry-leading energy generation projects, including offshore wind, onshore wind, gas generation, energy networks and gas storage projects, including investing millions of pounds to develop carbon capture and storage (CCS) projects. It operates six of the most flexible and efficient power stations in the UK and Ireland and holds around 40% of the UK's conventional gas storage capacity.

By building on established skills in asset management and project development, SSE Thermal's vision is to become the leading generator of flexible thermal energy in a zero-carbon world. SSE owns and operates the existing Peterhead Power Station, which has been operational since 1982. Find out more at www.ssethermal.com

About Equinor

Equinor has been operating in the UK for over 35 years and is the country's leading energy provider, supplying natural gas, oil and electricity. Headquartered in Norway, the company aims to reach net zero emissions globally by 2050. In the UK, Equinor operates one offshore oil field and three offshore wind farms including Hywind Scotland, the world's first floating wind farm whose operations and maintenance base is located in Peterhead. Equinor is also a leader in carbon capture ϑ storage and hydrogen, developing the H2H Saltend hydrogen production plant at the heart of the Zero Carbon Humber alliance, and partnering in the Net Zero Teesside project and the Northern Endurance Partnership. Find out more at www.equinor.co.uk.

SSE at Peterhead

SSE Thermal operates the existing Peterhead Power Station in Aberdeenshire. The power station became operational in 1982 and has an output of up to 1,180MW.

In the 2000s, the plant underwent a major repowering project to convert it into an efficient CCGT power station. At the present time, Peterhead Power Station is the largest power station of its kind in Scotland and SSE's only Thermal plant in Scotland, playing a crucial role in supporting the system and providing reliable and flexible generation.



The Need for the Project and its Benefits

The UK has legislated to cut national greenhouse gas emissions to Net Zero by 2050. This will require a major transition in how we generate and use energy. Scotland has committed to being carbon Net Zero by 2045.

Published in November 2020, the UK Government's ten point plan ¹ sets out the approach government will take to build back better, support green jobs, and accelerate our path to net zero.

The Climate Change Committee ² (CCC) has stated the need to invest in low carbon technologies and that the roll out of carbon capture and storage is a key action in achieving Net Zero.

We believe efficient gas-fired generation is essential to delivering Net Zero emissions by 2050, providing the flexibility needed to back up a system based on renewables. The Project will only be built with a clear route to decarbonisation, by equipping it with post-combustion Carbon Capture Plant (CCP) technology.

The UK Government recently announced its ambition for the UK to become a world-leader in CCS technology, with a target to remove 10MT of CO₂ from UK emissions by 2030.

The Project would safeguard energy generation in the area and support long-term direct and indirect local employment, as well as the economic benefits that it will bring to the region.

What is Carbon Capture and Storage?

Carbon Capture and Storage (CCS) is a technology that can capture at least 90% of the carbon dioxide (CO₂) emissions produced from the use of fossil fuels in electricity generation and industrial processes, preventing the CO₂ from entering the atmosphere.

The CCS chain consists of three parts; capturing the CO_2 , transporting it, and then securely storing the CO_2 underground, in depleted oil and gas fields or deep saline aquifer formations.



A diagram to demonstrate a CO₂ storage system

¹ You can find further information by visiting https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution

² Committee on Climate Change (2020), The Sixth Carbon Budget – The UK's Path to Net Zero. Available at: https://www.theccc.org.uk/publication/sixth-carbon-budget/



What is Carbon Capture and Storage? (Continued)

Schematic of CCGT Power Plant and Carbon Capture Plant

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About the Project at Peterhead

The Project will consist of one combined cycle gas turbine (CCGT) unit with a total electrical output of up to 910MW. The CCGT comprises one high efficiency gas turbine and associated Heat Recovery Steam Generator (HRSG, a type of boiler) and steam turbine.

The CCGT will combust natural gas to drive a gas turbine, which is connected to a generator producing electricity. A by-product of this process is usable heat which remains in the gas; this is passed into an HRSG which makes steam to generate additional electricity via a steam turbine.

The Project will also include a post combustion Carbon Capture Plant (CCP), allowing for the capture and compression of the carbon dioxide (CO_2) from the power station's emissions; this will be connected to a CO_2 transport pipeline that forms part of the Acorn Carbon Capture and Storage (CCS) Project, under development by other parties. The destination for the carbon dioxide transport and storage system is subject to a separate study and consent application.



A key customer to the Acorn CCS Project

It is proposed that the Project will be a key customer to the Acorn Carbon Capture and Storage (CCS) project. This project is led by Pale Blue Dot Energy with their partners Harbour Energy and Shell, with funding support from the UK and Scottish Governments, and the European Union.

Based at the St. Fergus gas terminal in North East Scotland, the Acorn CCS Project will make use of existing gas pipelines and infrastructure to transport CO_2 directly to the Acorn CO_2 storage site below the Central North Sea for safe storage. The Acorn CCS Project is subject to a separate planning consent application and will be undertaken by the Acorn Project partners.

For more information on this project, please visit https://theacornproject.uk/

Indicative Programme

It takes several years to plan and develop this type of project and there are several factors which need to be clarified and confirmed before we would be in a position to take a Final Investment Decision (FID), including obtaining consent. This process would take at least two years, and a FID would be some months after that. Construction would take a further three years approximately. The below diagram sets out an indicative programme.



Next steps

At present, our proposals are in the early stage of development. We are close to submitting an Environmental Impact Assessment Scoping Report to the ECU which will set out the environmental works we are going to undertake and the approaches to assessing environmental impacts. We have begun to carry out on-site surveys of ecological interests, safely and in line with government requirements in relation to coronavirus. We also have a range of existing environmental information from our operation of the existing Peterhead Power Station.

We will be working over the coming months to carry out further environment assessment works and develop our proposals further. A Section 36 application will be progressed for the Project over the coming months and we will be holding a full formal public consultation later in the year.

Formal public consultation – expected late summer 2021

We are committed to providing safe, convenient and clear information on the Project and we will be holding a further, formal public consultation later in the year.

At this time, more developed and detailed plans will be shared, along with an overview of the EIA work which will have identified any potential environmental impacts.

Stakeholders will have the opportunity to engage with members of the project team, in person if the coronavirus restrictions in the UK allow this at that time and feedback on the proposals will be welcomed.

Find out more

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If you have specific questions or comments, please contact the project team using the details below: FREEPHONE 0800 211 8270 Freepost – Peterhead Low Carbon CCGT Project thermalenquiries@sse.com ssethermal.com/peterheadccs

Please telephone on 0800 211 8270 if you require a free paper copy of the consultation materials.

PRIVACY NOTICE

This is the privacy notice for the Peterhead Low Carbon CCGT Power Station Project

What personal data will we collect?

You may provide us with the following categories of personal data:

- Name
- Email address
- Postal address
- Telephone number

How we will use your personal data?

We will use your personal data for the following purposes:

- to record accurately and analyse any questions you raise or feedback you have provided;
- to report on our consultation and notification, detailing what issues have been raised and how we have responded to that feedback;
- to personalise communications with individuals we are required to contact as part of future consultation or communications; and
- to deliver documents you have requested from us.

Our General Privacy Notice

This Privacy Notice is subject to the full terms of SSE Thermal's General Privacy Notice – a copy of which is available here:

https://www.sse.com/privacy-notice/





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