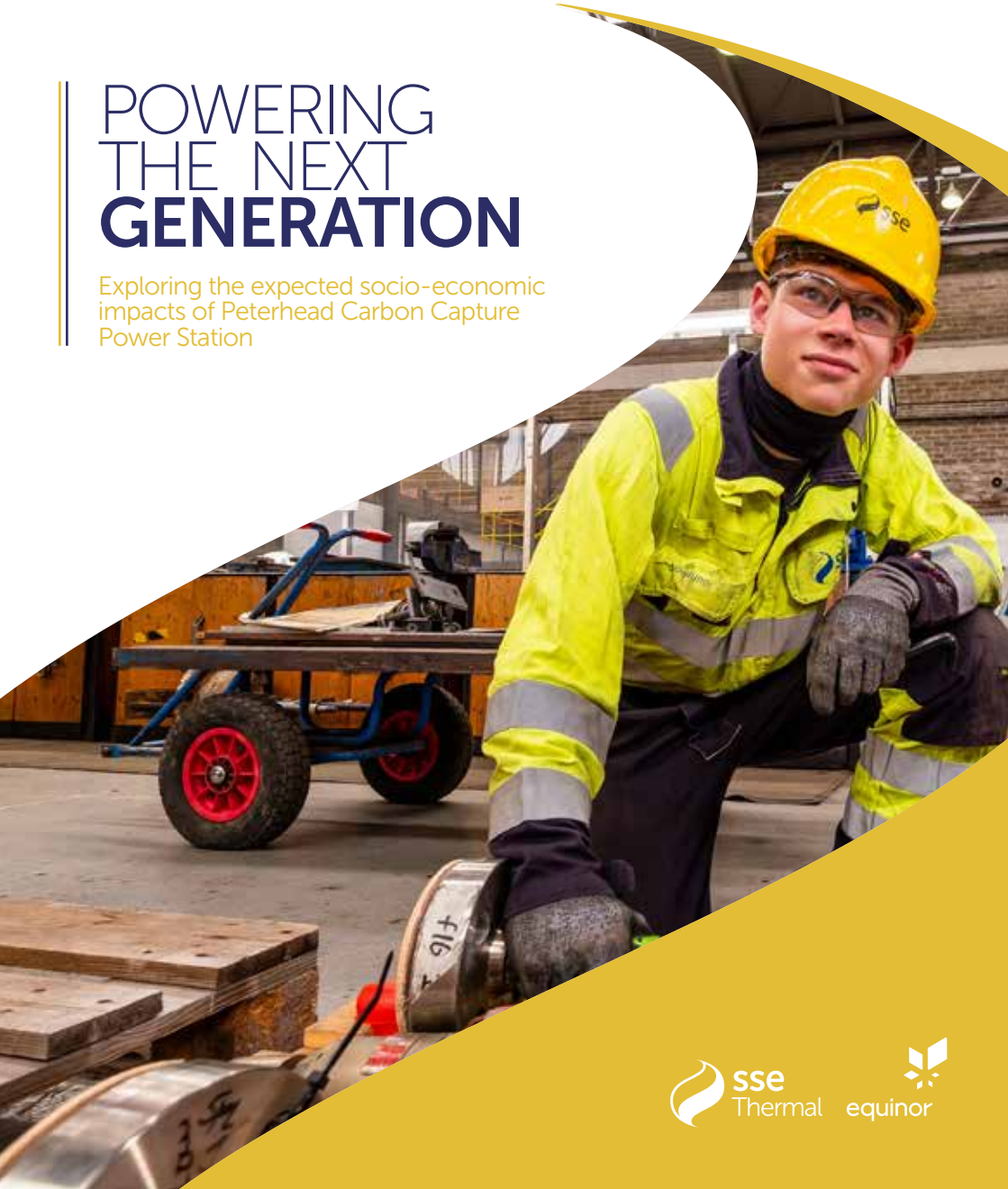
PETERHEAD
CARBON CAPTURE POWER STATION

A collaboration between **SSE Thermal** and **Equinor**

POWERING THE NEXT **GENERATION**

Exploring the expected socio-economic impacts of Peterhead Carbon Capture Power Station



sse Thermal equinor

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About this report

SSE Thermal and Equinor are progressing plans to develop the world-leading Peterhead Carbon Capture Power Station in Aberdeenshire, Scotland. The power station could become one of the UK's first to be equipped with carbon capture technology, removing around 1.5 million tonnes of CO_2 emissions every year.

Peterhead Carbon Capture would replace older, carbon-intensive generation on the electricity system, backing up renewable energy with flexible, low-carbon power.

This report looks at some of the expected socio-economic benefits that would be generated by the investment in the project, with economic contribution analysis undertaken by BiGGAR Economics.

About SSE Thermal

SSE Thermal, part of the FTSE-listed SSE plc, has a vision to become the leading provider of flexible thermal energy in a net zero world and has set independently verified, science-based targets for carbon reduction aligned to the Paris Agreement.

As part of its commitment to a net zero future, the business has a core focus on decarbonising its operations through carbon capture and storage (CCS) and hydrogen technology. In addition to the Peterhead Carbon Capture project, SSE Thermal is progressing plans with Equinor for CCS and hydrogen projects at its Keadby and Albrough sites as part of the East Coast Cluster partnership.

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 CCS and hydrogen, developing the H2H Saltend hydrogen production plant at the heart of the East Coast Cluster.

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FOREWORD

We're delighted that SSE Thermal and Equinor are working together to decarbonise power generation at Peterhead. Through cutting-edge carbon capture technology, we can decarbonise this vital flexible power generation, as well as heavy industry and other hard-to-reach-sectors of the economy, which will be crucial in Scotland transitioning to a net zero future.

The COP26 conference in Glasgow last year presented a clear opportunity for us to demonstrate leadership on CCS, including how we will maximise the benefits of a green recovery in industrial regions, while ensuring a just transition for workers and communities.

The development of this world-leading plant at Peterhead is another important step in the energy partnership between SSE and Equinor. This power station is a milestone for Scotland's ambitions to create a decarbonised industrial cluster. Projects such as these are critical for efforts to reach net zero, contributing to the UK's goals to become a world leader in low carbon technologies, and also helping ensure a just transition for industrial communities.

We're excited to be part of the transition to a net zero economy and are delighted to get an early insight into the investment, opportunities and skilled roles that this project could bring to Aberdeenshire, Scotland and the rest of the UK.

We hope you find this report valuable in demonstrating the expected socio-economic benefits of the project. As we work to bring Peterhead Carbon Capture Power Station to life in the years ahead, we look forward to engaging with our communities and other stakeholders to maximise the benefits of this world-leading power generation project.

John Johnson
Director of Development SSE Thermal

Grete Tveit
Senior Vice President for Low Carbon Solutions Equinor

BRIDGING THE GAP **TO NET ZERO**

Delivering flexible, low-carbon power generation will be vital in backing up renewables and ensuring security of supply through the net zero transition.

About Peterhead Carbon Capture

As Scotland's only major flexible thermal power station, Peterhead Power Station provides critical flexibility to the electricity system, supporting increased penetration from renewable generation while maintaining security of supply.

As part of its commitment to a net zero future, SSE Thermal is progressing plans to decarbonise its power generation at the site, working with Equinor to develop one of the UK's first power stations equipped with carbon capture technology. This will ensure the site can continue to provide essential flexible power generation while supporting the UK's transition to net zero carbon emissions.

The station, which will have a generating capacity of up to 910MW, will utilise class leading technology and infrastructure to deploy carbon capture technology, enabling a reduction of emissions to air of up to 90% in comparison to traditional gas-fired power stations.

Peterhead Carbon Capture could be operational by the end of the 2020s, capturing around 1.5 million tonnes of carbon annually by 2030.

If planning permission is granted for the development, construction could commence during 2023, taking three years to complete followed by commissioning of the station.

What is Carbon Capture and Storage?

CCS is a technology that can capture at least 90% of the carbon dioxide emissions produced from the use of fossil fuels in electricity generation and industrial processes, preventing the carbon dioxide from entering the atmosphere. The CCS chain consists of three parts; capturing the carbon dioxide, transporting the carbon dioxide, and securely storing the carbon dioxide emissions underground, in depleted oil and gas fields or deep saline aquifer formations.

Peterhead Carbon Capture would connect into the shared CCS infrastructure being developed by the Acorn Project and the wider Scottish Cluster. This would see its emissions transported through shared pipelines and safely stored under the North Sea.

DECARBONISING THE **NORTH-EAST OF SCOTLAND**

SSE Thermal and Equinor are working with partners in the Acorn Project, and the wider Scottish Cluster, to kick-start decarbonisation in the north-east of Scotland

This critical infrastructure will support and accelerate Scotland's transition to a net zero economy, while safeguarding vital Scottish industries...

About the Acorn Project

It is proposed that the project will be a key customer to the Acorn Carbon Capture and Storage (CCS) Project. The Acorn Project is led by Storegga with their partners Harbour Energy and Shell, with funding from governments and the European Union.

The Acorn CO_2 Storage Site, where the Acorn Project intends to start safely storing CO_2 from the mid-2020s, is located about 100km offshore in rock formations deep below the North Sea. The Acorn Project will make use of existing gas pipelines and infrastructure to transport CO_2 directly to the Acorn CO_2 storage site.

The gas pipelines to this storage site come onshore at the St Fergus gas terminal, just along the coast from Peterhead and this site alone offers around 150 million tonnes of CO_2 storage and has ready-made access from repurposed gas pipelines.

This critical infrastructure will support and accelerate Scotland's transition to a net zero economy, while safeguarding vital Scottish industries and contributing to a just transition for workers and communities.

PETERHEAD CARBON CAPTURE POWER STATION: **CONTRIBUTING TO THE LOCAL, REGIONAL AND NATIONAL ECONOMIES**

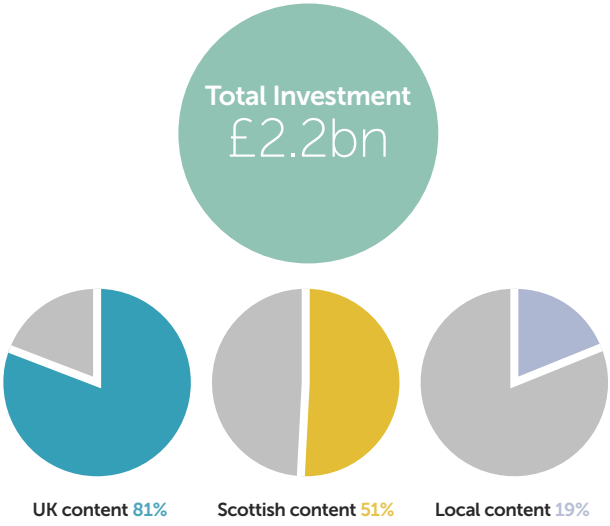
To understand the scale of the economic contribution that the proposed Peterhead Carbon Capture Power Station could make, SSE Thermal and Equinor commissioned BiGGAR Economics to calculate the economic impact of the project

Investment in the Peterhead project drives economic activity through the value it adds to the economy. This Economic impact is measured in terms of Gross Value Added (GVA), which is a measure of economic activity that includes wages and profits, and employment, which is measured in the years of employment it supports. To fully capture the impacts of this spending, the economic contribution results detailed below include activity further down the supply chain (indirect impacts) and activity that results from the spending of salaries (induced impacts), as well as direct impacts.

In summary, the report concluded that SSE Thermal will spend £2.3 billion during the development, construction and the first 25 years of the operational lifetime of the Peterhead Carbon Capture Power Station Technology. This analysis found that majority of expenditure (over £1.6 billion, 68%) will occur within the UK.

This economic activity includes those directly employed by SSE Thermal, their contractors, the wider supply chain and the spending of wages by workers in the wider economy.

There is considerable uncertainty in the share of UK content for the construction of the carbon capture elements of the Peterhead project because it will be one of the first of its kind within the UK. The assumptions used to estimate UK content in this analysis are conservative and assume no growth in the capacity of the UK supply chain to meet the demands of a new CCS market. Supply chain growth will increase the economic impact of the Peterhead Carbon Capture Power Station and every 1% additional capital expenditure that is spent with UK companies will support an additional 140 years of employment.



Over the first 25 years of operation, it was estimated that the Peterhead project would generate:

- £670 million in Aberdeen City and Shire with a net present value of £370 million GVA;
- £850 million GVA in Scotland with a net present value of £470 million GVA; and
- £1.3 billion in the UK with a net present value of £730 million GVA.

EXPECTED **ECONOMIC IMPACTS**

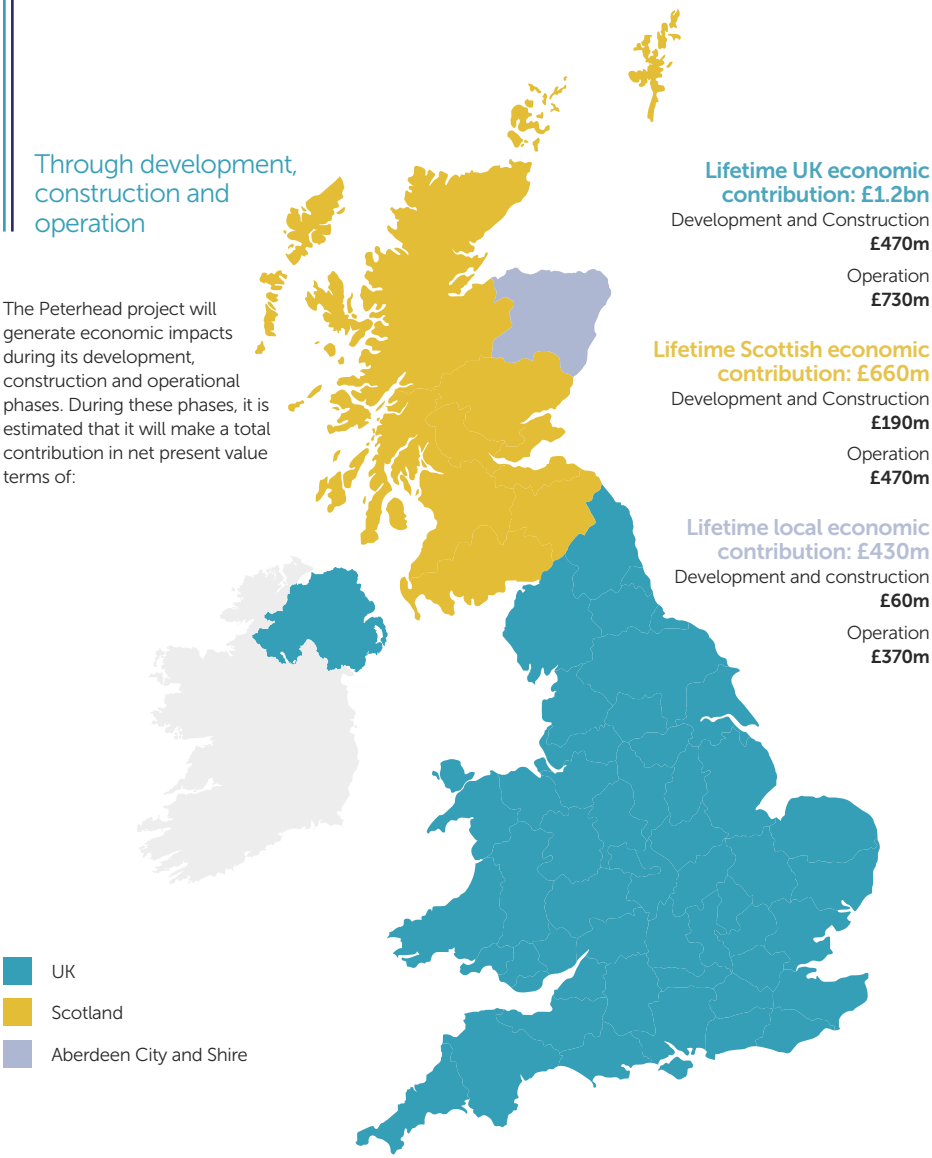
Through development, construction and operation

The Peterhead project will generate economic impacts during its development, construction and operational phases. During these phases, it is estimated that it will make a total contribution in net present value terms of:

Lifetime UK economic contribution: £1.2bn
Development and Construction
£470m
Operation
£730m

Lifetime Scottish economic contribution: £660m
Development and Construction
£190m
Operation
£470m

Lifetime local economic contribution: £430m
Development and construction
£60m
Operation
£370m



SECURING A **JUST TRANSITION**

Ensuring no one is left behind

SSE plc was the first company to publish a "Just Transition" plan, which will help to protect workers and communities as the UK moves towards net zero. This outlines how SSE will approach the social implications of delivering net zero; from jobs and training, to working with communities and ensuring no one is left behind.

Retraining and redeployment will be the first options available to employees affected by business change. SSE has successful and growing businesses which will play an important part in delivering a net zero world in both the UK and Ireland. People working in higher-carbon activities often have valuable skills that are transferable to the low-carbon ones. SSE has a long-standing commitment to avoid compulsory redundancy if possible. If redundancy is unavoidable, SSE will work with its employees and trade union partners to ensure it is able to offer a package of terms which support onward transition.

SSE'S 20 PRINCIPLES FOR A JUST TRANSITION

TRANSITIONING INTO A NET-ZERO WORLD			TRANSITIONING OUT OF A HIGH-CARBON WORLD	
SSE'S PRINCIPLES FOR GOOD, GREEN JOBS (PAGE 9)	SSE'S PRINCIPLES FOR CONSUMER FAIRNESS (PAGE 12)	SSE'S PRINCIPLES FOR BUILDING AND OPERATING NEW ASSETS (PAGE 13)	SSE'S PRINCIPLES FOR PEOPLE IN HIGH-CARBON JOBS (PAGE 15)	SSE'S PRINCIPLES FOR SUPPORTING COMMUNITIES (PAGE 18)
1 Guarantee fair and decent work 2 Attract and grow talent 3 Value employee voice 4 Boost inclusion and diversity	5 Co-create with stakeholders 6 Factor-in-whole-system costs and benefits 7 Make transparent, evidence-based decisions 8 Advoctae for fairness	9 Support competitive domestic supply chains 10 Set social safeguards 11 Share value with communities 12 Implement resonsible developer stanards	13 Re-purpose thermal generators for a net-zero world 14 Establish and maintain trust 15 Provide forward notice to change 16 Prioritise retraining and development	17 Deliver robust stakeholder consultation 18 Form partnerships across sectors 19 Promote further industrial development 20 Respect and record cultural heritage

MAXIMISING LOCAL **OPPORTUNITIES**

Working with the community

SSE Thermal and Equinor are keen to be good neighbours and always work to be a part of the local community in which they operate. As part of the planning process for the project, a full, robust and comprehensive consultation is taking place, in which local stakeholders have the opportunity to give their comments and feedback on the proposals.

SSE Thermal and Equinor engaged with local community councils at an early stage in the development of the project and ensure a key point of contact is readily available for any questions or concerns.

Ahead of any construction works starting, a Community Liaison Group will be established, which key members of the local community will be invited to be a part of. This group meets regularly and allows an open flow of community between the local community and site teams in order to share information, questions and concerns.

Supply chain

Ahead of main construction works starting, SSE Thermal always hold a Meet the Buyer event for each of its projects. This is an event, held at a local venue, where local business and suppliers can meet with and pitch their goods and services to key members of the procurement teams.

SSE Thermal recruits eight new apprentices at Peterhead

Ten young apprentices have been employed by SSE Thermal to launch their careers at Peterhead – a record intake for the north-east power station as it looks to a low-carbon future.

All ten apprentices started further education in September 2021, with the majority based at North East Scotland College's Fraserburgh campus. They will continue to blend formal education with practical work-based learning across a four-year Modern Apprenticeship programme.

All apprentices will be fully supported by the station's senior management team and each will have a designated mentor.

The two apprentices who joined in January are both from Peterhead, with 18-year-old Chloe Corbett working as an Electrical Apprentice and Jude Junor, 17, working as a Mechanical Apprentice.

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